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FireSmart Discipline: vegetation management



Vegetation management is the FireSmart discipline that deals with managing fuels on the landscape through effective treatments and by using the best available science.

The BC Wildfire Service supports the use of prescribed fire as a land management tool, but it is not the only way to encourage the growth of vibrant, healthy forests. Fuel treatments may include: trimming; pruning; chipping; piling and burning; or any combination of these methods.

In British Columbia, fuel management is considered to be a shared responsibility of all levels of land managers, all levels of government, First Nations and homeowners. Although the BC Wildfire Service plans and conducts fuel treatments, its primary role is to support others who develop fuel treatment plans and carry them out.

Those proponents may be local governments, First Nations or organizations that have hired contractors or have qualified people on staff to conduct prescribed burns. However, anyone carrying out a fuel management project that requires a fuel treatment or prescribed burning must seek the guidance and expertise of the BC Wildfire Service.

Once an area is identified as having a high wildfire hazard, a “prescription” is written to minimize that hazard. In the *Dictionary of Natural Resource Management* (authored by Julian and Katherine Dunster), a prescription is defined as “a written statement defining the objectives to be attained and the factors involved in aspects such as prescribed fire and silviculture treatments.”

If it’s determined that the best way to mitigate a particular hazard is to conduct a prescribed burn, then the next step is to write a detailed burn plan. That plan includes: the burn’s objectives; a description of the fuels involved; slope of the proposed burn site; type of soil; depth of the duff layer; fuel load (i.e. how much flammable material is present on the landscape); elevation; and weather.

The planning for any prescribed burn is extensive and detailed. Other parts of the prescription deal with: any values that may be at risk; public communications; preparations for the burn; details



about how the burn will be monitored; and which firefighting tools and other equipment will be available at the burn site. When the plan has been completed, it must be approved by both the land manager and a fire official representing the BC Wildfire Service.

In 2016, the B.C. government made a significant investment through the Strategic Wildfire Prevention Initiative (SWPI) to reduce wildfire risks faced by communities. Now the Community Resiliency Investment (CRI) program and monies through the Forest Enhancement Society of BC continue to support large-scale risk mitigation projects being undertaken throughout B.C.

One of the persistent issues associated with prescribed burns is the smoke that these fires generate. Although every attempt is made to reduce the effects of the smoke (by timing the burns to align with good venting conditions, for example), some amount of smoke is a natural consequence of burning.

After the last two fire seasons, however, British Columbians realize that the alternative to this relatively limited amount of smoke is the uncontrollable smoke created by wildfires.

They therefore tend to be more supportive of fuel mitigation projects that include prescribed fires — and the resulting smoke.



Some helpful Fuel Management Tools

Fuel Management Tools including FuelCalc: <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/prevention/vegetation-and-fuel-management/fire-fuel-management/fuel-management>

Risk Class Maps: <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/prevention/vegetation-and-fuel-management/fire-fuel-management/wui-risk-class-maps>

Resource Management Open Fires

A resource management open fire (RMOF) is often referred to as a prescribed fire, or sometimes as a broadcast fire. As with any prescribed fire, an approved burn plan is required before the burn can go ahead. The Prescribed Fire Burn Plan (PFBP) is very detailed, describes how and when the fire will be ignited, and defines its objectives. A "Burn Boss" is in charge of the prescribed fire and has the training, experience and certification to ensure that it's conducted safely and meets the objectives outlined in the burn plan.

Prescribed fire is used for a variety of reasons, including wildfire risk mitigation, fuel management, and ecosystem restoration. The size of a prescribed fires can range from under one hectare to many thousands of hectares, depending on its location and the burn plan's objectives.

In some respects, prescribed fire has been occurring in British Columbia for thousands of years. First Nations used fire as a tool to enhance wildlife habitat and improve rangeland for hunting and other food production purposes (cultural burning). Although indigenous peoples didn't use formal plans, they certainly had clear objectives. Today, biologists, ranchers, farmers, guide outfitters, agrologists and some First Nations may use fire for the exact same reasons. The forest industry has also used broadcast burning extensively in the past to prepare sites for tree planting after harvesting operations were completed (silviculture).

In recent decades in British Columbia, fire has not been used as a tool to the extent it once was. In the 20th century, using open fires to manage large landscapes gradually gave way to conservation and the preservation of trees for economic benefit. In this same period, more "values" (e.g.

buildings and infrastructure) began appearing on the land base as non-indigenous settlements increased. Natural resources were often a primary economic driver for such rural communities (and still are).

As we pulled back from using open fires to manage large landscapes, we increasingly extinguished fires that occurred naturally due to lightning strikes. Fire was perceived as an



Using prescribed fire in a Garry Oak Ecosystem. Rocky Point in Metchosin.

unwanted threat to natural resource development and private property, even though this more active wildfire suppression approach was at odds with the natural rhythms and patterns that have existed in British Columbia for thousands of years. Science now tells us what First Nations have known all along.

In British Columbia, for the most part, we live in fire-dependent ecosystems. If we exclude fire in all cases, we do so at our own peril. The 2017 and 2018 wildfire seasons hammered this point home. The historical exclusion of fire on the landscape (along with other land management practices) have resulted in high fuel loads, represented by dense and less healthy forest stands that are more susceptible to insect infestations and high-intensity wildfires.

In response to recommendations contained in the Abbott-Chapman report on the 2017 wildfire and freshet seasons (*Addressing the New Normal: 21st Century Disaster Management in British Columbia*), the Ministry of Forests, Lands, Natural Resource Operations and Rural Development is creating a more comprehensive prescribed burning program, which will also incorporate traditional ecological

Resource Management Open Fires cont'd

knowledge. It's supported by an initial \$10 million that was provided in Budget 2019.

In the Coastal Fire Centre, we have fire-dependent ecosystems along the eastern boundaries of the fire centre and we plan to use prescribed fire in those areas to meet a variety of objectives. However, most people here live or participate in recreational activities in a temperate rainforest, which is not a fire-dependent ecosystem.

There is one little-known exception: the Garry oak ecosystem.

Garry oak ecosystems are found along the Sunshine Coast and on southeast Vancouver Island. For example, Greater Victoria is located almost completely within a Garry oak ecosystem. First Nations used fire annually to maintain these areas before European settlement and for some time after that. Significant urban development has occurred in these areas over the past 125 years, so intact Garry oak ecosystems are now rare. Those that remain are isolated and have often been degraded by the introduction of invasive species and incursions from surrounding forests. Native species cannot compete with plants such as broom and gorse.

The increased vegetation in these ecosystems presents a fire risk to surrounding homes and infrastructure. Restoring these ecosystems mechanically or by hand is costly and doesn't affect the seeds that have fallen from the invasive plants, so the plants keep returning.

Over the last few years, however, the BC Wildfire Service has begun to partner with governmental and non-governmental agencies to reintroduce prescribed burning to pockets of the Garry oak ecosystem on southeast Vancouver Island. The results — in terms of eradicating invasive species and promoting the growth of native species — are promising. Another benefit of these efforts is decreased fuel loads (flammable vegetation), which helps reduce wildfire risks for neighbouring properties.

The prescribed burns provide valuable data that will assist with the expansion of the prescribed burning program into other areas of Garry oak ecosystems, ensuring that they are maintained as part of the region's natural history. First Nations have provided important historical context,

support and other land management expertise that helps guide the BC Wildfire Service's activities. The support of nearby communities and local governments is also critical.

The proximity of smoke and open fire near private residences is a legitimate concern. However, it's better to remove excess vegetation under controlled conditions than to have an unwanted wildfire occur in that area. The use of prescribed fire by qualified professionals is a valuable tool to safely rejuvenate Garry oak ecosystems.

Learn more about cultural burning, as done by the Xwisten Nation:

<https://www.youtube.com/watch?v=SjiMzZY1Msw&feature=youtu.be&fbclid=IwAR2TyCsPAPDiQr29NCH8XRgEZhEUCMgRcVf0WHD7LVANrb4zQo7aVRcW0wE>

Learn more about fuel types and fuel treatments (Slocan Integral Forestry Cooperative): <https://www.sifco.ca/video-gallery-2>

Planned Resource Management Burns

Maple Bay Garry Oak Preserve

This is a 1.5 hectare prescribed burn being carried out at the Maple Bay Garry Oak Preserve in conjunction with the Nature Conservancy of Canada. The purpose of the fire is for fuel reduction and Garry Oak Ecosystem Restoration.

Rocky Point, Metchosin

This is a 20 hectare prescribed burn at the southern tip of Vancouver Island at Rocky Point Metchosin, Canadian Armed Forces Base, which is being carried out in conjunction with the Department of National Defense with the assistance of DND Fire Department. The purpose of this prescribed fire is for fuel reduction and Garry Oak Ecosystem Restoration.



Managing the Vegetation on Your Property

Zone 1A

The most critical zone (0 to 1.5 metres from the home)

- Remove combustible material right down to the mineral soil
- Use non-flammable materials such as gravel, brick or concrete in this critical area adjacent to your home
- Avoid having woody shrubs, trees or tree branches in this zone
- Consider planting **FIRE-RESISTANT PLANTS**. Avoid planting **HIGHLY FLAMMABLE PLANTS** such as cedar, juniper, pine, tall grass and spruce.

Zone 1

1.5 to 10 metres from the home

- Create a FireSmart yard so that fire will not easily transmit to your home.
- Plant low-density, fire-resistant plants and shrubs.
- Avoid planting coniferous trees (cones and needles) in this zone, since they are highly flammable.
- Keep lawns mowed.
- Move firewood piles, construction materials, storage sheds and other combustible structures out of this zone and into Zone 2.

Zone 2

10 to 30 metres from home

- Prune and trim evergreen trees to create at least three metres of horizontal space between single or grouped tree crowns.
- On the remaining evergreen trees, remove all branches to a height of 2 metres above the ground.
- Regularly clean up fallen branches, dry grass and needles from the ground to eliminate potential surface fuels.

Zone 3

30 to 100 metres from home

- Create an environment that will not support high-intensity crown fires.
- A focus on fuel reduction and conversion (rather than removal) is the main priority in this zone.
- Look for opportunities to create a fire break by creating space between trees and other flammable vegetation.



Prevention Blog— Alan Berry, Senior Wildfire Officer - Prevention

Even though September is now here, I'd like to remind everyone in the Coastal Fire Centre that the fire season is not over. Instead, the wildfire hazard will start to slowly decline due to fewer hours of daylight and the gradually cooler weather that signify the transition to fall.

September also typically signals the start of the fall burning season, when the forest industry uses open burning to abate fire hazards created by industrial activities such as logging. The main fire hazard is "slash", which is a forestry term for the coarse and fine woody debris that's generated during logging operations. When left unmanaged, it can be a volatile fuel type.

Forestry companies are required to abate these hazards under the *Wildfire Act* and Wildfire Regulation, and open burning is usually the most economical and efficient way to do that. Most abatement activity involves the piling and burning of roadside accumulations of slash.

Anyone planning to conduct a Category 3 open burn or a Resource Management Open Fire must obtain a burn registration number before igniting those types of fires. Information about the planned burn is then entered into a provincial database. Such fires can only be lit if site and weather conditions are favourable, to reduce the likelihood of the fire escaping or of smoke affecting nearby communities.

Questions that I commonly receive about the fall burning season include:

Why does the BC Wildfire Service support the use of open fire in the forest under certain circumstances?

- Many wildfires originate or spread into slash fuels, so one of the BC Wildfire Service's key priorities is working with the forest industry to support their responsibility to abate potential fire hazards.
- Forest industry personnel have been conducting these types of open burns for decades and their expertise contributes to a low risk of such a fire escaping from the intended burn area.

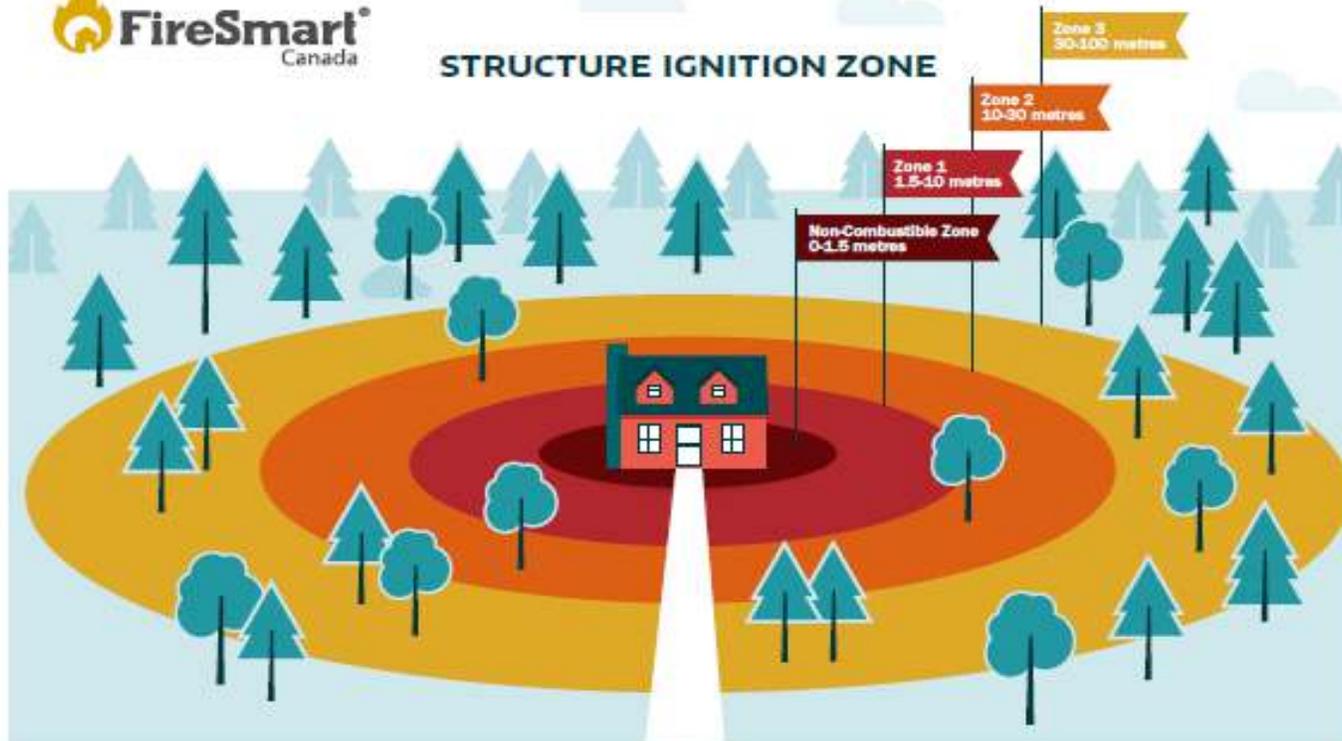
Why does the BC Wildfire Service require Category 3 fires and Resource Management Open Fires to be registered?

- When these types of planned burns are registered, they're entered into a provincial database and details of those burns are available to BC Wildfire Service staff.
- If a report of a wildfire is received, staff can cross-reference its location with registered open burns to check if it's a planned burn or an actual wildfire.

Learn more about the industrial use of open fire on the BC Wildfire Service website: www.bcwildfire.ca

To learn more about smoke management and the Open Burning Smoke Control Regulation, visit the Ministry of Environment and Climate Change Strategy website: <https://www2.gov.bc.ca/gov/content/environment/air-land-water/air/air-pollution/smoke-burning/regulations/openburningregulation>

STRUCTURE IGNITION ZONE



Work with your neighbours in any overlapping priority zones!

Non-combustible Zone (0-1.5 metres)

Reduce the chance of wind-blown embers igniting materials near your home. A non-combustible surface should extend around the entire home and any attachments, such as decks. Creating a non-combustible surface can be as easy as clearing vegetation and combustible material down to mineral soil. To add to your landscape design, use non-combustible materials such as gravel, brick, or concrete in this critical area adjacent to your home. Woody shrubs, trees or tree branches should be avoided in this zone, any that are present should be properly mitigated.

Zone 1 (1.5-10 metres)

Create a landscape that will not easily transmit fire to the home. A FireSmart yard includes making smart choices for your plants, shrubs, grass and mulch. Selecting fire-resistant plants and materials can increase the likelihood of your home surviving a wildfire. Plant a low density of fire-resistant plants and shrubs. Avoid having any woody debris, including mulch, as it provides potential places for fire to start. Storing items such as firewood piles, construction materials, patio furniture, tools and decorative pieces against or near a house is a major fire hazard. Move firewood piles, trailers/ recreational vehicles, storage sheds and other combustible structures out of this zone and into Zone 2. If unable to move, store firewood inside your mitigated garage, shed or other ember resistant structures, create a non-combustible zone underneath and for 1.5 metres around trailers/ vehicles and mitigate sheds and other structures to the same standards as those of your home.

Zone 2 (10-30 metres)

If your property extends out to this zone, thin and prune evergreen trees to reduce hazard in this area. Within 30 metres of your home, selectively remove evergreen trees to create at least 3 metres of horizontal space between the single or grouped tree crowns and remove all branches to a height of 2 metres from the ground on the remaining evergreen trees. If possible, pruning trees up to 100 metres from your home (Zone 3) is recommended. Regularly clean up accumulations of fallen branches, dry grass and needles from on the ground to eliminate potential surface fuels. Consider seeking the guidance of a forest professional with wildland fire knowledge on appropriate management options for this zone.

Zone 3 (30-100 metres)

Taking FireSmart actions in Zone 3 on your property will influence how a wildfire approaches your home. You can change the dynamics of wildfire behaviour by managing vegetation within this zone. Look for opportunities to create a fire break by creating space between trees and other potentially flammable vegetation. Thinning and pruning is effective here as well. These actions will help reduce the intensity of a wildfire. Consider seeking the guidance of a forest professional with wildland fire knowledge on appropriate management options for this zone.

Fires to Date Since April 1, 2019

Total 150

Lightning 44

Person 106

Number of fires since August 23 2019

Total 21

Lightning 9

Person 11

Fire Danger Rating today



Current Prohibitions (within BCWS jurisdictional area)

Category 2 Open Fire Prohibition throughout the Coastal Fire Centre with the exception of Haida Gwaii.

Campfire and Category 3 prohibitions are being considered, but not implemented yet.

Go to BCWildfire.ca for the latest information.

Coastal Fire Centre

Wildfire news

At Coastal

Lightning rolled through the Coastal Fire Centre on September 3, 2019. The result was the ignition of several fires, particularly within the Pemberton Zone.

Due to the timing of precipitation (despite warm temperatures), the fire season has passed without the enactment of a campfire prohibition. This is not without precedent as 2005, 2006, 2011 and 2012 were also years when campfires were allowed throughout the summer.

Staff continue to work on a variety of fuel mitigation projects. The prescribed burns in the Garry Oak ecosystems, slated for September and October (as conditions allow), are just two in the works. Information Bulletins about this project were released yesterday. Please feel free to share these out.

The fire danger rating is extremely variable throughout the fire centre with northern sections at Low, central areas of the mainland and the island at Moderate and High and some locations on the eastern side of Vancouver Island still maintaining a rating of Extreme. With rains arriving over the weekend it is expected that the fire danger will drop in all locations.

Helpful Information about Open Burning from the Ministry of Environment:

<https://www2.gov.bc.ca/gov/content/environment/air-land-water/air/air-pollution/smoke-burning/regulations/openburningregulation>

Interested in Becoming a Local FireSmart Representative?

Registration is now open.

Go to: <https://firesmartbc.ca/events/>

If you are going to be holding a FireSmart Presentation then a Powerpoint is now available for your use:

<https://firesmartbc.ca/resource/firesmart-public-presentation-2019/>

Weather

SYNOPSIS: (Today-tomorrow) A more and more complicated pattern today but with a well placed but weak ridge overhead the southern zones look to be sunny and warm again. Bands of unstable moisture are moving north through Washington state towards eastern Fraser sections and there is a 20 per cent chance of late afternoon isolated thunderstorms. Also due to moisture being injected into the atmosphere, there is a small chance of isolated thunderstorms developing near Whistler. However, it continues warm and very dry and both Manning Park and the Fraser Canyon remain under a Fire Behaviour Advisory for the C3 fuels. Further north, an advancing Pacific system has brought clouds and showers to Haida Gwaii. Clouds are still holding off the Mid-coast but likely arrive sometime Saturday. In fact, all areas see clouds moving in tomorrow but not a lot of rainfall at first. Further, more widespread instability arrives with the Saturday clouds and areas east of Chilliwack to north of Whistler see a 40 to 60 per cent chance of mostly dry isolated thunderstorms. Showers move into the Mid-coast Saturday afternoon as the northern system becomes more active due to a deepening low pressure system moving down the outer coast.

Showers start filling in Saturday evening.

OUTLOOK: (Sunday-Tuesday) A deep upper low parks west of Vancouver Island bringing heavy clouds and widespread showers to all Coastal zones. This pattern continues Monday and Tuesday with much cooler temperatures and frequent showers.

CONFIDENCE/DISCUSSION: This is very difficult forecast. The instability is increasing and there are good chances of some convective development both this afternoon, or evening, or tomorrow. The forecast models, computer generated, show the instability but little or no associated rainfall. But is this dry lightning or just a bad forecast? For Saturday, although considerable cloudiness arrives, the forecast models hold off any shower activity until either late in the day or Sunday morning. There are some forecasts that show the rains not arriving until Monday.

6 TO 10 DAY: (next week) A temporary ridge brings partial clearing and dry weather for Wednesday but soon after another low arrives and showers or periods of rain return.