



## HOMEOWNER'S MANUAL

FireSmart Begins at Home



BRITISH  
COLUMBIA

### REDUCE THE POTENTIAL IMPACTS OF WILDFIRE ON YOUR HOME

You and your neighbours can reduce wildfire hazards by following simple, preventative steps.

Take a FireSmart Assessment test!

Is your home at risk?

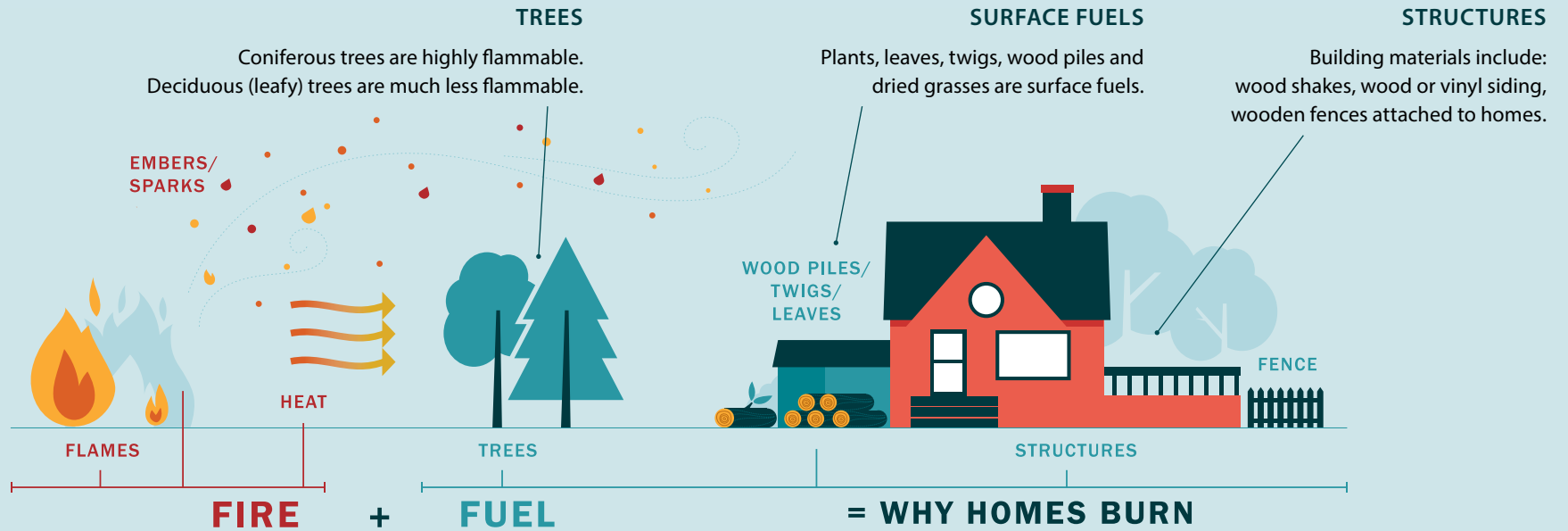


## **WILDFIRE REALITY**

Wildfires are a natural part of British Columbia's wildland ecosystems. Without wildfire, the landscape loses its diversity. Wildfires recycle nutrients, help plants reproduce and create a mosaic of vegetation that provides habitat for a variety of wildlife.

By choosing to extend our communities, resource developments and recreational pursuits into forested areas, we become more exposed to the danger of wildfire. Living where wildfires can occur may put your home at risk, but it's possible to reduce the potential impacts on your home from these natural events. The recommendations in this manual will help reduce the risk of wildfire near your home and neighbourhood and provide a better opportunity for firefighters to defend your home.

## HOW WILDFIRES GROW



## HOW WILDFIRES SPREAD

### SPARKS/EMBERS

This is the burning debris that can be thrown up to two kilometres ahead of a wildfire. Sparks and embers can ignite materials on or near your home, causing severe damage.

### EXTREME HEAT

Radiant heat from a wildfire can melt vinyl siding, ignite your home and even break windows. Extreme heat can come from flames within 30 metres of your home.

### DIRECT FLAME

As wildfires spread toward homes, they ignite other flammable objects in their path. Breaks in this path, especially close to your home, can help reduce this threat.



## FACTORS INFLUENCING WILDFIRE SPREAD

### DENSE, CONTINUOUS FORESTS

Wildfire can spread quickly in forests where trees are in close proximity to each other. Fire spreads quickly and directly from tree to tree and can produce sparks and embers that may travel distances of two kilometres. These embers may land on trees or homes well ahead of the fire and create a multiple fire situation. It is important to be aware of the dangers of sparks and embers when creating a FireSmart property.



**DENSE CONTINUOUS FORESTS**

**DENSE = DANGEROUS**



## SLOPE CAN AFFECT WILDFIRE

Fire moves fastest uphill. The steeper the slope, the faster a wildfire will spread. Homes on hills or at the top of hills face the greatest risk from wildfire. If your home is located on a hill, you should consider taking on extra measures suggested in this manual, such as removing trees adjacent to the slope and planting fire-resistant plants. If you are planning on building a new home, consider having your home set back at least 10 metres from the crest of any hills or slopes, as well as the landscaping around it.



## HOW FIRESMART TREATMENTS INFLUENCE WILDFIRE SPREAD



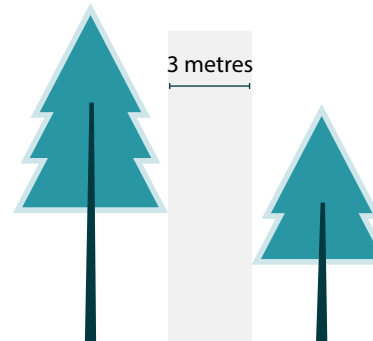
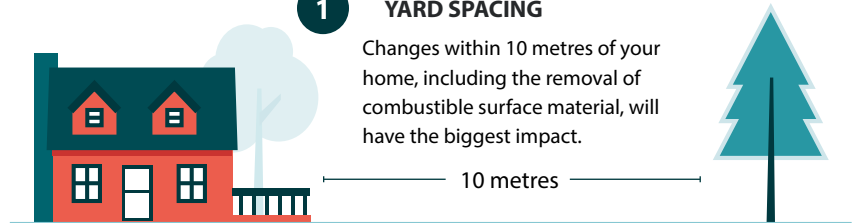
Wildfire can follow a path from a forest or grassland to your home. A wildfire moving from the tops of trees can be slowed if the trees are spaced out. It can be further slowed by flame-resistant plants and shrubs in your yard. Since plants have different flammability, consider spacing out your plants to increase your home's ability to withstand a wildfire.



### FIRESMART RULES OF THUMB

#### 1 YARD SPACING

Changes within 10 metres of your home, including the removal of combustible surface material, will have the biggest impact.



#### 2 TREE SPACING

Spacing trees at least 3 metres apart will help reduce the intensity of a wildfire.



#### 3 PRUNE TREES

Prune all tree branches within 2 metres of the ground.

## BEGINNING YOUR FIRESMART JOURNEY

Each section of this manual will help you to focus on changes that can help protect your home from wildfire. Start from your home and work your way outwards. Changes made to the area closest to your home and your home itself have the greatest impact on reducing the risk of wildfire damage.

## MAKING THE MOST OF YOUR TIME

Home renovations and upgrades can be costly and time-consuming. FireSmart focuses on what is realistic for you to achieve, in order to limit the risk of wildfire to your home. Integrate FireSmart into your long-term renovations and incorporate regular yard clean-ups to reduce your risk of damage from wildfire.

### IMPACT TO REDUCE RISK FROM WILDFIRE



### ZONE 1

HOME / YARD - 10 metres

This should be a fire-resistant zone, free of all materials that could easily ignite from a wildfire.

### ZONE 2

10–30 metres

Thin and prune coniferous trees to reduce hazards in this area. Regularly clean up accumulations of fallen branches, dry grass and needles from the ground to eliminate potential surface fuels.

### ZONE 3

30–100 metres

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.



## ZONE 1

### HOME / YARD - 10 metres

Preparing your home and yard as recommended can help your home survive a wildfire.

#### 1 ROOF

##### Material

Fire-resistant or fire-retardant roofing is referred to as Class A, B or C rated roofing. Options include metal, asphalt, clay and composite rubber tiles. Untreated wood shakes create a dangerous combination of combustible material and crevices for embers or sparks to enter. Refer to manufacturer's guidelines to maintain the fire resistance of your roof.

##### Maintenance

Every inside corner of your roof is a place where debris and embers can collect. Regularly clean your roof of combustible materials.

#### 2 CHIMNEY

A spark arrestor on your chimney will reduce the chance of sparks and embers escaping and starting fires.

#### 3 GUTTERS

Regularly remove debris from your gutters, since sparks and embers can easily ignite these dry materials. Consider screening your gutters with metal mesh to reduce the amount of debris that can accumulate.

#### 4 EAVES AND VENTS

While vents play an important role in removing moisture from attics, they create an opening for sparks and embers. Consider screening your vents with 3-millimetre wire mesh. Open eaves also create a surface that can be affected by embers and direct heat. Properly fitted soffits and fascia help reduce the risk of embers and heat reaching the wooden rafters of your home.

#### 5 SIDING

Stucco, metal siding, brick/ concrete and fibre cement siding offer superior fire resistance. Logs and heavy timbers are still reasonably effective. Untreated wood and vinyl siding offer very little protection against wildfire.

#### 6 WINDOWS

Tempered, thermal (double-paned) windows are recommended. Single-pane windows provide little resistance to heat from an advancing wildfire.

#### 7 DOORS

All doors into your home should be fire rated and have a good seal. This is true for your garage doors as well as your entry doors.

#### 8 DECKS

Embers and sparks can collect under these spaces. Enclose these areas. Sheath in the base of the decks, balconies and houses with fire-resistant material to reduce the risk of sparks and embers igniting your home.

#### 9 OTHER

##### ATTACHMENTS TO YOUR HOME

##### Fence Lines

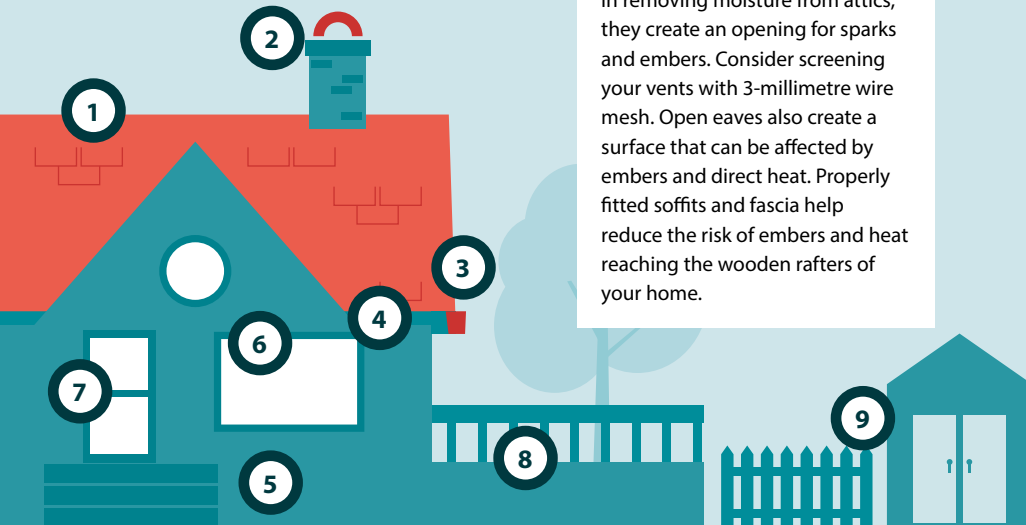
Wooden fences/boardwalks create a direct path from the fire to your home. Separating your house from a wooden fence with a metal gate can slow the advance of a fire. Remember to cut the grass along your fence line, since long, dry grass can ignite easily.

##### Sheds/Outbuildings

If these are within 10 metres of your home, give them the same FireSmart considerations as you do your home.



Check for other ignition points in and around your home. Look around your yard for other combustible materials. Consider how close you store combustible lawn furniture or deck storage boxes to your home.





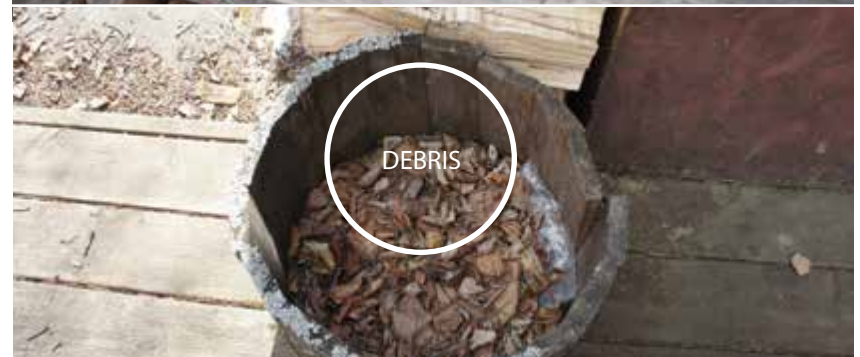
### **YOUR YARD**

Adding a few FireSmart actions to your regular yard work routine will reduce wildfire risks. Changes within 10 metres of your home will have the biggest impact.

Fire embers may seem small, but they should not be underestimated — 50% of home fires caused by wildfires are started by sparks and embers. Regular maintenance and cleaning the corners and crevices of your home and yard (where needles and debris build up) will leave nothing for embers to ignite. Remember to remove any windblown leaves from under decks, as well as any flammable debris on balconies and patios.



Remove debris that is easily ignited by sparks and embers.





## ZONE 1

### HOME / YARD - 10 metres

## LANDSCAPING AND YARD

A FireSmart yard includes smart choices for plants, shrubs, grass and mulch. Selecting fire-resistant plants and materials can increase the likelihood of your home surviving a wildfire.

#### LANDSCAPING WITHIN 10 METRES

Plant low-density, fire-resistant plants and shrubs. Avoid having any woody debris present, including mulch, since it can provide places for fires to start.



#### CHARACTERISTICS OF FIRE-RESISTANT PLANTS

- moist, supple leaves
- minimal accumulation of dead vegetation
- water-like sap that produces little odour
- low amount of sap or resin material

#### CHARACTERISTICS OF HIGHLY FLAMMABLE PLANTS

- aromatic leaves or needles
- accumulations of fine, dry, dead material
- resin or oils
- loose, papery or flaky bark

#### PLANTS TO AVOID

- cedar
- juniper
- pine
- tall grass
- spruce

#### GRASS

A mowed lawn is a fire-resistant lawn. Grasses shorter than 10 centimetres are less likely to burn intensely.

#### BARK MULCH AND PINE NEEDLES

Do not use bark or pine needle mulches within 10 metres of your home, since they are highly combustible. Gravel mulch and decorative crushed rock mulch significantly reduce the risk of wildfire.

#### FIREWOOD PILES

Wood piled against a house is a major fire hazard. Moving your firewood pile may be a key factor that allows your home to survive a wildfire. Clean up any such areas regularly, since easily ignited debris often collects here.

#### BURN BARRELS AND FIRE PITS

Burn barrels should be placed as far as possible from structures and trees. Keep the area within 3 metres of the burn barrel free of combustible material. Always ensure that your burn barrel has proper ventilation and is screened with 6-millimetre (or finer) wire mesh.

Check with your local government about any specific requirements and restrictions regarding backyard fire pits.

Fire permits for burn barrels and fire pits are required in many jurisdictions.

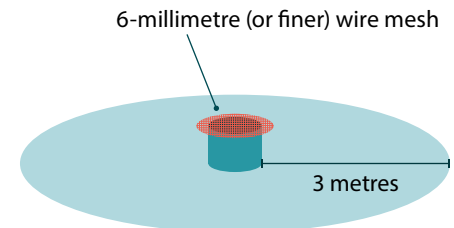
#### ON-SITE FIRE TOOLS

Every home should have readily accessible shovels, rakes, axes, garden hoses, sprinklers and ladders to assist in suppressing wildfires.

#### POWER LINES

Power lines should be clear of branches and other vegetation. Contact your local utility company to discuss removing any branches or vegetation around overhead electrical installations.

#### BURN BARREL



Firewood piles should be at least 10 metres from your home.



Bark mulch is highly flammable.

## ZONE 1 HOME / YARD - 10 metres

## TREES CLOSEST TO YOUR HOME

We often choose to live surrounded by the natural environment and trees are a cherished part of our relationship with nature. By following the recommendations in this manual, you can have a lush, green yard that is also resistant to wildfire.

### TREES TO PLANT

Deciduous (leafy) trees are resistant to wildfire and include:

- poplar
- birch
- aspen
- cottonwood
- maple
- alder
- ash
- cherry



### MAINTENANCE

- Include debris clean-up in your spring and fall yard maintenance.
- Dry leaves, twigs and branches are flammable and should be removed from your yard and gutters.
- Older deciduous (leafy) trees can have rot and damage that makes them susceptible to fire. An arborist or forester can help you assess the condition of mature trees.

### TREES TO AVOID

Coniferous trees, with cones and needles, are highly flammable and should not be within 10 metres of your home.

- spruce
- fir
- pine
- cedar

If these trees ignite within 10 metres of your home, the direct flames and intense heat can cause damage or even ignite your home.

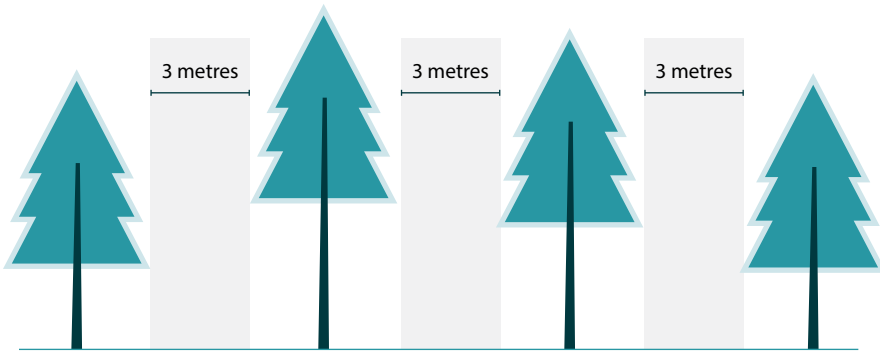


## ZONE 2 YARD - 10–30 metres

## TREES FURTHER FROM YOUR HOME

### CONIFEROUS TREE SPACING

Once fire moves into treetops, it can easily move into neighbouring trees and increase the overall intensity of the fire. Spacing trees at least 3 metres apart will reduce the risk of this happening.



### TREE-TO-TREE SPACING

Measure the distance between the outermost branches of your trees. There should be a minimum of 3 metres between trees.

### REMOVAL OF COMBUSTIBLE MATERIAL

Remove smaller coniferous trees that could act as a “ladder” and allow fire to move into the treetops.

Clean up woody debris on the ground.

### TREE PRUNING

A surface fire can climb up into trees quickly. Removing branches within 2 metres of the ground will help stop surface fires from moving into treetops.

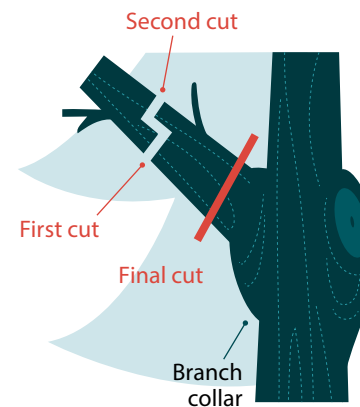
Remove all branches to a height of 2 metres from the ground on coniferous trees within 30 metres of your home. If possible, pruning trees up to 100 metres from your home (Zone 3) is recommended.

### WHEN TO PRUNE

You can prune dead branches at any time of the year, but it is best to prune coniferous trees in the late winter when they are dormant.

### HOW TO PRUNE

- Prune branches close to the tree trunk, but not so close that you damage the main trunk and bark of the tree.
- Never remove more than 1/3 of the canopy of a tree. Doing so can harm the tree.



Prune tree branches within 2 metres of the ground.



## ZONE 3

### LARGE YARDS - 30–100 metres

Taking FireSmart actions in Zone 3 will influence how a wildfire approaches your home. You can change the dynamics of wildfire behaviour by manipulating vegetation within this zone. FireSmart treatments in Zone 1 and Zone 2 can influence the amount of work necessary in Zone 3.

Just as in Zone 1 and Zone 2, slope is a consideration. If your home is on a slope, consider extending this area further, since fire moves fastest uphill. Consider slope stability when removing trees.

The goal in Zone 3 is to reduce the intensity and rate of spread of a wildfire. This is done by thinning and pruning coniferous trees and reducing excess vegetation and branches.

- Remove low-hanging branches within 2 metres of the ground.
- Space trees 3 metres apart (from branch tips) to reduce the intensity and rate of spread of a wildfire.
- Remove smaller coniferous trees that could act as a “ladder” and allow fire to move into the treetops.
- Clean up woody debris on the ground.

#### ROADWAYS AND DRIVEWAYS

In an emergency, you and your family may need to leave your community while emergency responders enter. In order for this to happen safely and efficiently, consider the following tips:

1. Clearly mark your property with your address.
2. Clear vegetation from access routes to and from your home. Target trees and branches that could make it difficult for a firetruck to approach your home.
3. If you have a large property, make sure that your driveway has a turnaround and, if possible, provide two access routes to your home.

**1** Many of the recommendations in this manual assume that you have direct control over the property within 100 metres of your home. If that is not the case, the FireSmart recommendations still apply. Chat with your neighbours about FireSmart. Shared information, along with mutual co-operation and planning, can help.

**3** Are you concerned about your community’s wildfire risk? Ask your local government, planning department or fire service how they are integrating FireSmart into their plans.

**2** The FireSmart Canada Community Recognition Program recognizes communities that:

- complete a community assessment and FireSmart plan
- organize a local FireSmart committee
- host a FireSmart event, such as a clean-up day
- contribute in-kind or monetary support toward FireSmart actions



To learn more, go to:  
[FireSmartCanada.ca](https://www.fire-smartcanada.ca)



# Assess Your Risk from Wildfire

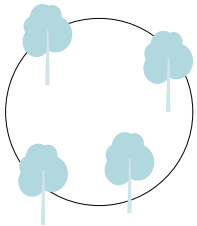
Answer the questions below to see which changes will make the greatest difference in reducing your home's risk from wildfire.

HOME / 10 metres		ZONE 1	
What type of roofing material do you have?	Metal, clay tile, asphalt shingle or ULC-rated shakes (may be affected by the condition of your roof)	0	
	Unrated wood shakes	30	
How clean is your roof?	No needles, leaves or other combustible materials	0	
	A scattering of needles and leaves	2	
	Clogged gutters and extensive leaves	3	
What is the exterior of your home built of?	Non-combustible material, stucco, metal siding or brick	0	
	Logs or heavy timbers	1	
	Wood, vinyl siding or wood shakes	6	
How fire-resistant are your windows and doors?	Tempered glass in all doors/windows	0	
	Double-pane glass - small/medium (smaller than 1 metre x 1 metre)	1	
	Double-pane glass - large (greater than 1 metre x 1 metre)	2	
	Single-pane glass - small/medium (smaller than 1 metre x 1 metre)	2	
	Single-pane glass - large (greater than 1 metre x 1 metre)	4	
Are your eaves closed up and your vents screened?	Closed eaves, vents screened with 3-millimetre wire mesh	0	
	Closed eaves, vents without mesh	1	
	Open eaves, vents not screened	6	

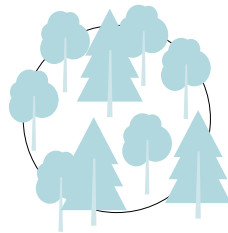
HOME / 10 metres		ZONE 1	
Have you sheathed-in the underside of your balcony, deck, porch or open foundation?	Sheathed with fire-resistant materials	0	
	Sheathed with combustible materials	2	
	Not sheathed	6	
Is your home set back from the edge of a slope?	Building is located on the bottom or lower portion of a hill	0	
	Building is located on the mid to upper portion of a hill or the crest of a hill	6	
<b>HOME SCORE</b>			
YARD / within 10 metres of home		ZONE 1	
Where are your outbuildings located?	More than 10 metres from home	0	
	Less than 10 metres from home	6	
Where is your woodpile located?	More than 10 metres away from any building	0	
	Less than 10 metres away from any building	6	
What type of forest grows within 10 metres of your home?	TREES		
	Deciduous (e.g. poplar, birch)	0	
	Mixed wood (both conifer and deciduous)	30	
	Conifer (e.g. spruce, pine, fir, cedar)	30	
What kind of surface vegetation and combustible materials are within 10 metres of your home and outbuildings?	Well-drained lawn or non-combustible landscaping material	0	
	Uncut grass or shrubs	30	
	Twigs, branches and tree needles on the ground	30	
<b>YARD (within 10 metres of home) SCORE</b>			



What type of forest surrounds your home?	TREES	
	Deciduous (e.g. poplar, birch, cottonwood)	0
	Mixed wood (both conifer and deciduous)	10
What kind of surface vegetation grows within 10–30 metres of your home?	CONIFER (e.g. spruce, pine, fir, cedar) <i>See illustration below.*</i>	
	Separated	10
What kind of surface vegetation grows in the zones around your buildings?	Continuous	30
	TWIGS, BRANCHES AND NEEDLES ON THE GROUND	
	Scattered	5
	Abundant	30
	Uncut grass or shrubs	5
Are there shrubs and low branches (within 2 metres of the ground) in the surrounding forest?	None within 10–30 metres	0
	Scattered within 10–30 metres of buildings	5
	Abundant within 10–30 metres of buildings	10
<b>YARD (10–30 metres) SCORE</b>		



**SEPARATED**  
Trees are widely spaced and crowns do not touch or overlap



**CONTINUOUS**  
High stand density, where trees are tightly spaced and crowns frequently touch or overlap

## Home and Yard Hazard Score

SITE		TOTAL SCORE
Zone 1 / Home and Yard	Home	
	10 metres from the home	
Zone 2 / Yard	10–30 metres from the home	

HAZARD SCORE: Low: <21 Moderate: 21-29 High: 30-35 Extreme: >35

### HOME CONSIDERATIONS

- Have you discussed wildfire damage and loss with your insurance provider?
- Is your roof in poor condition? A roof in poor condition will not provide protection from sparks and embers. Fire resistance deteriorates over time; check manufacturer guidelines to assess your roof's condition and potential fire resistance.
- Is your chimney clean? Does it have proper clearances, screens and spark arrestors?

### YARD CONSIDERATIONS

- Is the area within 10 metres of buildings free of flammable trees, other vegetation and combustible materials?
- Are large-capacity propane tanks within 10 metres of buildings? Are they clear of vegetation?
- Is fire suppression equipment readily available? Shovels, rakes, buckets and hoses should be easily accessible.
- Are burn barrels screened and at least 10 metres from combustible materials and buildings?
- Are overhead power lines clear of vegetation? Contact your service provider for assistance with removing trees close to utility lines.

# Evacuation Tips

## “READY TO GO” KIT

2 litres of water for each person
non-refrigerated food and a manual can opener
plastic or paper plates, cups and utensils
flashlights and extra batteries
radio with batteries
a change of clothes
emergency contact information and the number of someone to call who lives out of town
pet food and supplies for at least three days (if applicable)
small first aid kit
personal identification card
personal hygiene items, soap and hand sanitizer
medicines (store any medicines that you usually take near your “ready to go” kit)
cash (in small denominations)

## WHEN YOU LEAVE, REMEMBER TO:

make sure you are safe before assisting others
listen to the radio or television for information from authorities
turn off your home’s water, electricity and gas
post easy-to-see signs for water and gas shut-off valves
follow your family evacuation plan
bring your “ready to go” kit
close doors and windows

# Family Evacuation Plan

Fill out this form and keep it near your home phone or somewhere else where everyone in your house can easily find it. Keep a copy in your emergency kit. Rehearse your evacuation plan at least once per year.

**EMERGENCY: 911  
TO REPORT A WILDFIRE, CALL:  
1 800 663-5555 OR \*5555 ON  
YOUR CELL PHONE.**

For more information on how to prepare for a wildfire and other emergencies, go to: [getprepared.gc.ca](http://getprepared.gc.ca)

## OUR OUT-OF-TOWN EMERGENCY CONTACT IS:

Name	
Relationship	
Home Phone	
Cell Phone	
Address	
Email	

## OUR EVACUATION ROUTES ARE (SKETCH ROUTES BELOW):



The BC Wildfire Service of the Ministry of Forests, Lands and Natural Resource Operations would like to thank the following:

- Partners in Protection for providing the information used in this manual
- Alberta Environment and Sustainable Resource Development for allowing the use of its FireSmart Homeowner's Manual as a model for this manual
- B.C. Office of the Fire Commissioner and Emergency Management BC for their support in the production of this publication

Copies of this manual are available at your local fire centre office or online at <http://bcwildfire.ca/Prevention/firesmart.htm>

**Waiver:**

The British Columbia Ministry of Forests, Lands and Natural Resource Operations and the Crown accept no responsibility of liability for any loss or damage that any person may sustain as a result of the information in, or anything done or omitted pursuant to, this manual.

*Cover photo: Mount McLean wildfire near Lillooet, 2009  
(BC Wildfire Service)*

For more information about the BC Wildfire Service,  
please contact the office nearest you:

Provincial Wildfire Coordination Centre  
BC Wildfire Service  
250 312-3000 (Kamloops)

Kamloops Fire Centre  
250 554-5500 (Kamloops)

Coastal Fire Centre  
250 951-4222 (Parksville)

Southeast Fire Centre  
250 365-4040 (Castlegar)

Northwest Fire Centre  
250 847-6600 (Smithers)

Cariboo Fire Centre  
250 989-2600 (Williams Lake)

Prince George Fire Centre  
250 565-6124 (Prince George)

First Nations' Emergency Services Society of British Columbia  
North Vancouver office:  
604 669-7305  
1 888 822-3388

First Nations' Emergency Services Society of British Columbia  
Kamloops regional office:  
250 377-7600  
1 888 388-4431



# FireSmart

FireSmartCanada.ca



Ministry of  
Forests, Lands and  
Natural Resource Operations

Emergency  
ManagementBC

BC Wildfire Service



**First Nations'  
Emergency Services Society**

OF BRITISH COLUMBIA

[www.bcwildfire.ca](http://www.bcwildfire.ca)

To report a wildfire, call:

1 800 663-5555

or

\*5555 on your cellphone