BRITISH COLUMBIA
FireSmart

FIRESMART BEGINS AT HOME MANUAL

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?

BRITISH COLUMBIA

BC Wildfire Service

WILDFIRE REALITY

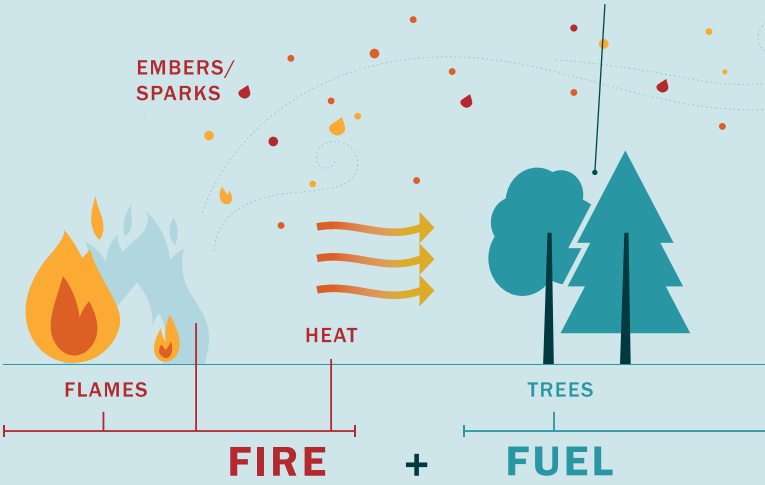
Wildfires are a natural part of British Columbia's wildland ecosystems. Without wildfire, the landscape loses its diversity. Wildfires recycle nutrients, help plants reproduce and create a mosaic of vegetation that provides habitat for a variety of wildlife.

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

TREES

Coniferous trees are highly flammable.
Deciduous (leafy) trees are much less flammable.



HOW WILDFIRES SPREAD

SPARKS/EMBERS

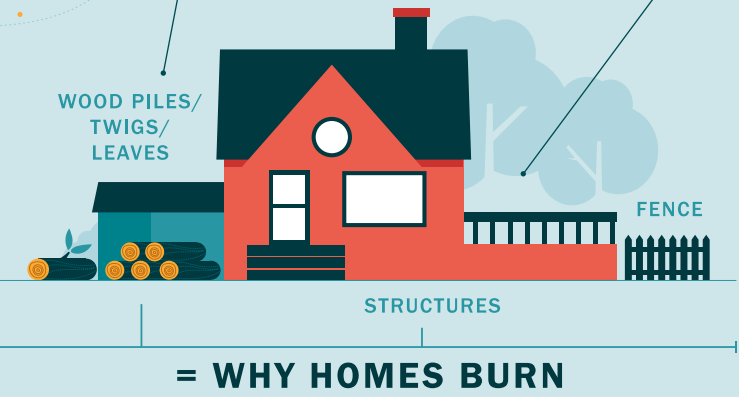
This is the burning debris that can be thrown up to two kilometres ahead of a wildfire. Sparks and embers can ignite materials on or near your home, causing severe damage.

SURFACE FUELS

Plants, leaves, twigs, wood piles and dried grasses are surface fuels.

STRUCTURES

Building materials include: wood shakes, wood or vinyl siding, wooden fences attached to homes.



= WHY HOMES BURN

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.

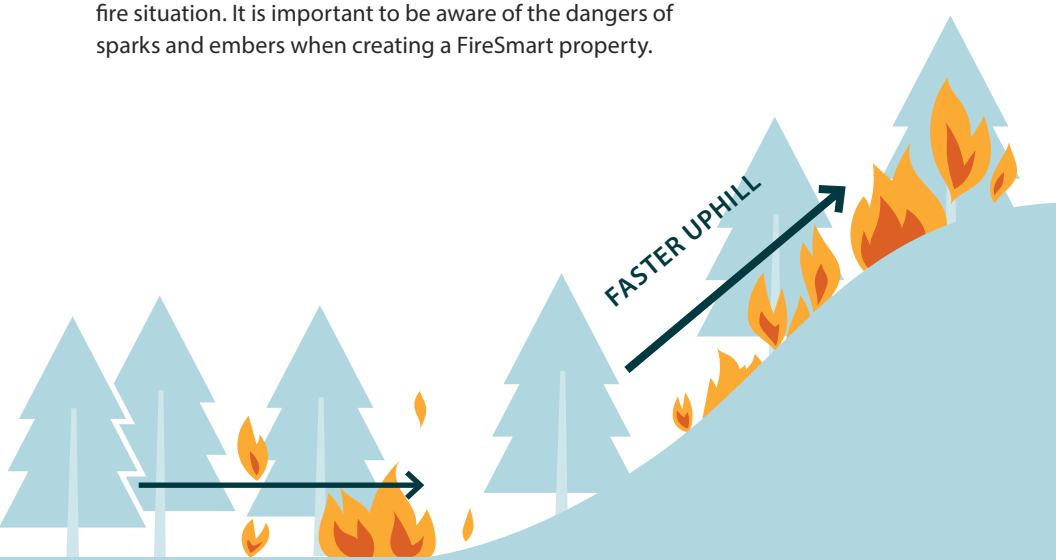
DIRECT FLAME

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

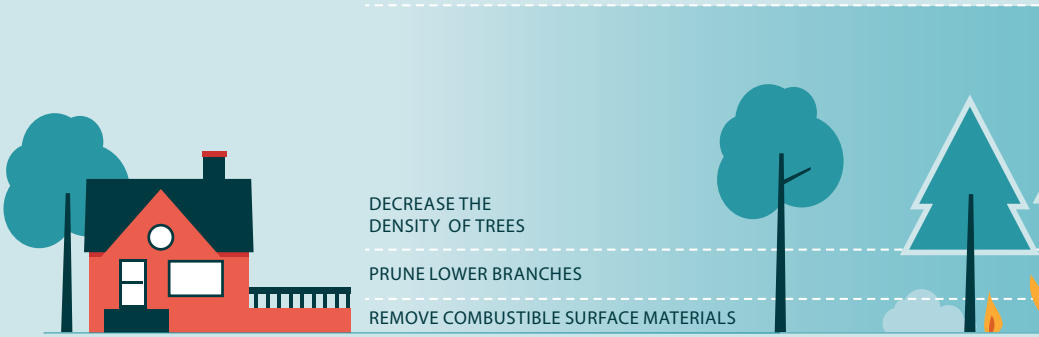
Wildfire can spread quickly in forests where trees are in close proximity to each other. Fire spreads quickly and directly from tree to tree and can produce sparks and embers that may travel distances of two kilometres. These embers may land on trees or homes well ahead of the fire and create a multiple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



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

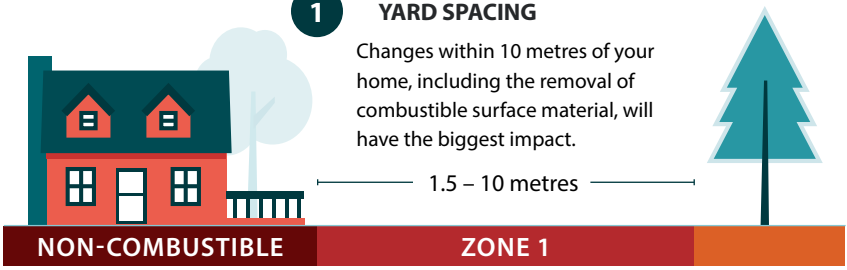


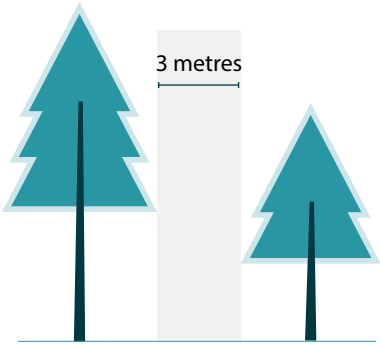
Wildfire can follow a path from a forest or grassland to your home. A wildfire moving from the tops of trees can be slowed if the trees are spaced out. It can be further slowed by flame-resistant plants and shrubs in your yard. Since plants have different flammability, consider spacing out your plants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

IMPACT TO REDUCE RISK FROM WILDFIRE

NON-COMBUSTIBLE ZONE
0 – 1.5 METRES

A minimum 1.5 metre non-combustible surface should extend around the entire home and any attachments, such as decks.

ZONE 1
1.5 – 10 METRES

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

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.

ZONE 2
10 – 30 METRES

Thin and prune evergreen trees to reduce hazard in this area. Regularly clean up accumulations of fallen branches, dry grass and needles from on 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.

NON-COMBUSTIBLE ZONE / HOME
0 – 1.5 METRES

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

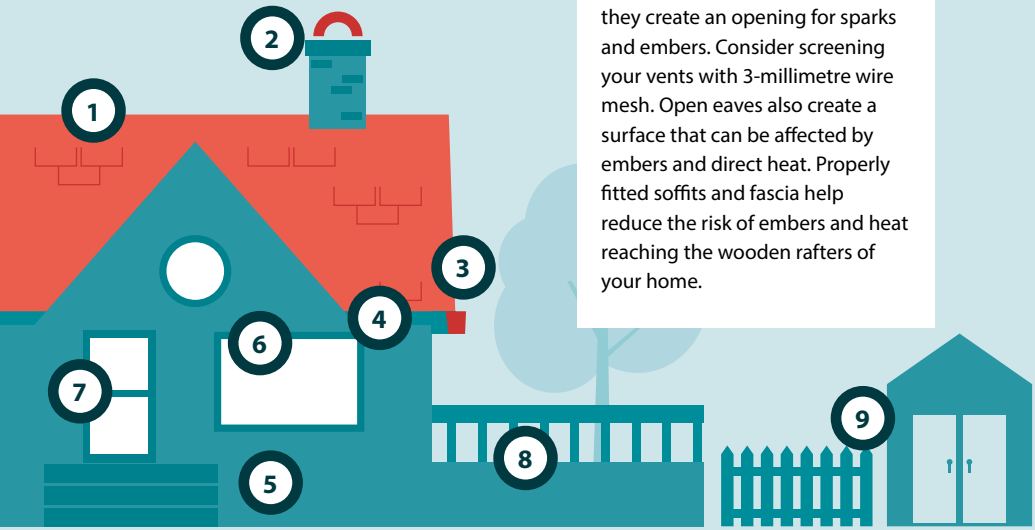
A spark arrestor on your chimney will reduce the chance of sparks and embers escaping and starting fires.

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.



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

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.

NON-COMBUSTIBLE ZONE / YARD
0 – 1.5 METRES

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.

Before

After

ZONE 1 / YARD
1.5 – 10 METRES

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.

Make sure that you maintain a 1.5-metre, non-combustible zone around your entire home and any attachments.

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.

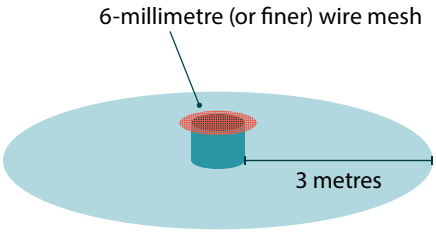
ON-SITE FIRE TOOLS

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 / YARD
1.5 – 10 METRES

A FireSmart yard can still include trees.

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.

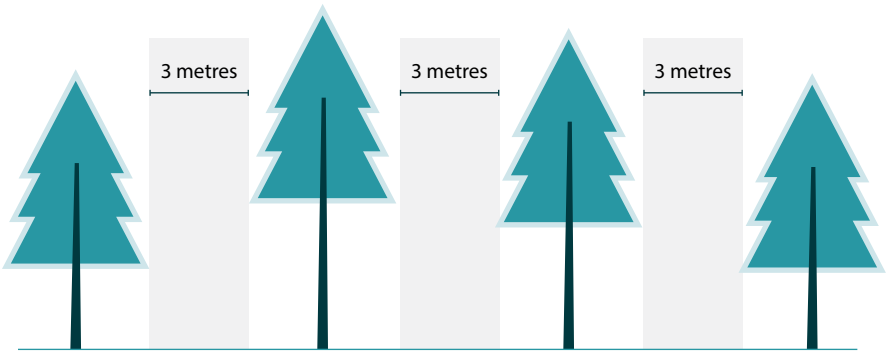
- spruce
- fir
- pine
- cedar

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

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.

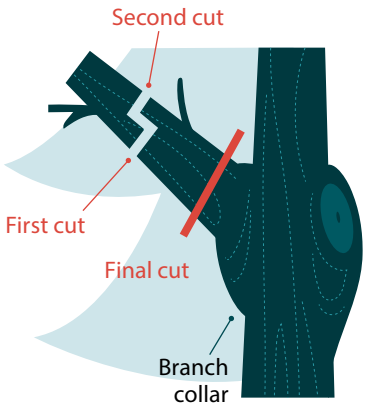
Remove all branches to a height of 2 metres from the ground on coniferous trees within 30 metres of your home. If possible, pruning trees up to 100 metres from your home (Zone 3) is recommended.

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 then 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.**

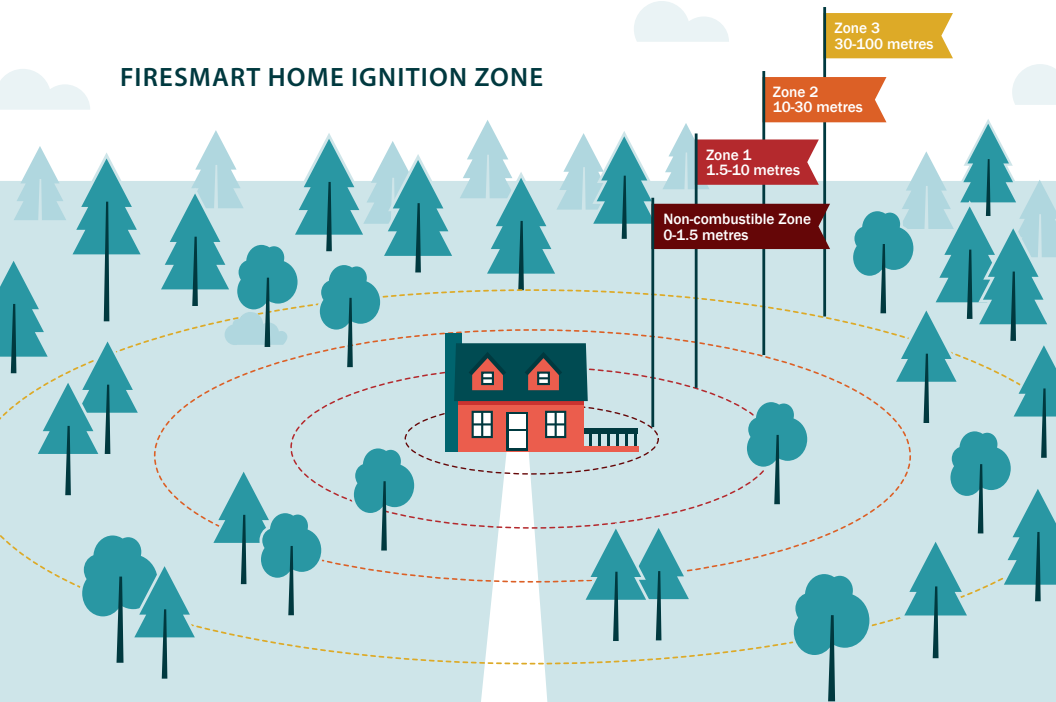
2. **The FireSmart Canada Community Recognition Program recognizes communities that:**

- 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

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.**

To learn more, go to:
FireSmartCanada.ca

FIRESMART HOME IGNITION ZONE



FIRESMART SCORE CARD

ASSESS YOUR RISK FROM WILDFIRE

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

HOME (0 – 1.5 metres)		NON-COMBUSTIBLE ZONE	
What type of roofing material do you have?	Metal, clay tile or asphalt shingles	0	
	Unrated roof assembly (including wood shakes and wood shingle roofs)	30	
How clean are your roof and gutters?	No needles or other combustible material	0	
	Needles and other combustible material present	3	
Are your eaves closed up and vents screened?	Closed eaves and vents with 3 mm screening (e.g. ASTM rated vents)	0	
	Open eaves with accumulated combustible debris, vents not screened or operational (e.g. dryer vents)	6	
What type of exterior siding do you have?	Ignition resistant or noncombustible (fibre cement board, stucco, log, metals, brick/stone)	0	
	Combustible siding or non-ignition resistant siding (vinyl, wood, acrylic stucco)	6	
Is exterior siding free of gaps, holes, or other areas where embers could accumulate, lodge, or penetrate?	No gaps or cracks, missing siding or holes	0	
	Gaps, cracks or holes	6	
Are walls protected from ignition with a minimum 15 centimetres (6 inches) of noncombustible ground-to-siding clearance?	15 centimetre noncombustible vertical ground-to-siding surface	0	
	No 15 centimetre noncombustible vertical ground-to-siding surface	30	
How fire resistant are your windows or doors?	Tempered glass in all doors and windows and treated Noncombustible Zone and Priority Zone 1	0	
	Double pane glass small/medium and treated Noncombustible Zone and Priority Zone 1	1	
	Double pane glass large and treated Noncombustible Zone and Priority Zone 1	2	
	Single pane glass- small/medium and treated Noncombustible Zone and Priority Zone 1	4	
	Single pane glass large and treated Noncombustible Zone and Priority Zone 1	6	

HOME (0 – 1.5 metres)		NON-COMBUSTIBLE ZONE	
Have you sheathed-in the underside of your balcony, deck, porch or open foundation?	N/A, no gaps or cracks, solid wood, non-combustible or fire-rated construction with non-combustible surface and no combustible debris under deck	0	
	Gaps or cracks, no solid wood or fire-rated construction with combustible surface and combustible debris under deck	30	
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 or crest of a hill	6	
		HOME / SCORE	

YARD (0 – 1.5 metres)		NON-COMBUSTIBLE ZONE	
1.5 metres from furthest extent of home (includes overhangs, extensions and decks)	Noncombustible surface, no combustible debris, materials, fences or plants present	0	
	Combustible surface, combustible debris, fences or plants present	30	
		NON-COMBUSTIBLE ZONE / SCORE	

YARD (1.5 – 10 metres)		ZONE 1	
Where are your woodpiles or other combustible materials stored? (Vehicles, construction materials, debris etc.)	More than 10 metres from home	0	
	Less than 10 metres from home	30	
Where are your unmitigated outbuildings located? (buildings that are not-mitigated to the same standards as the primary home)	More than 15 metres from home	0	
	Less than 15 metres from home	30	

YARD (1.5 – 10 metres)			ZONE 1
What type of forest grows within 10 metres of your home?	TREES		
	Healthy deciduous (i.e. poplar, aspen, birch)	0	
	Mixedwood (both conifer and deciduous)	30	
	Conifer (i.e. spruce, pine, fir, cedar)	30	
What kind of surface vegetation and combustible materials are within 10 metres of your home and outbuildings?	Well maintained lawn (15 centimetres or shorter; low flammability; low growing discontinuous plants with treated Noncombustible Zone (0 – 1.5 metres)	0	
	Unmaintained grass (greater than 15 centimetres); flammable plants; continuous plants or tall growing plants; untreated Noncombustible Zone	30	
	Twigs, branches, logs and accumulations of tree needles or leaves and other combustible materials	30	
		ZONE 1 / SCORE	

YARD (10 – 30 metres)			ZONE 2
What type of forest surrounds your home?	TREES		
	Healthy deciduous (i.e. poplar, birch, cottonwood)	0	
	Mixedwood (both deciduous and conifer)	10	
	Conifer (i.e. spruce, pine, fir, cedar) See Fig. 1, 2*		
	Separated	10	
	Continuous	30	
What kind of surface vegetation grows within 10 – 30 metres of your home?	None within 10 – 30 metres	0	
	Scattered within 10 – 30 metres	5	
	Unmaintained grass (greater than 15 cm)	5	
	Abundant within 10 – 30 metres	10	
Are flammable shrubs well-spaced?	None within 10 – 30 metres	0	
	Scattered within 10 – 30 metres	5	
	Abundant within 10 – 30 metres	10	
	Separated coniferous	10	
Are there low tree branches within 2 metres of the ground?	None within 10 – 30 metres	0	
	Present within 10 – 30 metres	10	
		ZONE 2 / SCORE	

HOME AND YARD HAZARD SCORE

SITE		TOTAL SCORE
Non-combustible and Zone 1 Home and Yard	HOME (0 – 1.5 metres)	
	YARD (0 – 1.5 metres)	
	YARD (1.5 – 10 metres)	
Yard Zone 2	YARD (10 – 30 metres)	

HAZARD: 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 roof 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 in close proximity to utility lines.

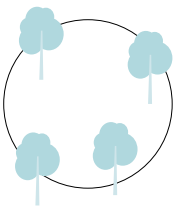


FIG. 1 – SEPARATED
Trees are widely spaced and crowns do not touch or overlap

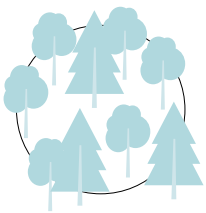


FIG. 2 – CONTINUOUS
High stand density where trees are tightly spaced and crowns frequently touch or overlap

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
	Small first aid kit
	Personal identification card
	Personal hygiene items, soap and hand sanitizer
	Store medicine 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
	Do not turn off your home's gas supply
	Post easy to see signs for water and gas shut-offs
	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 someplace where everyone in your house can easily find it. Keep a copy in your emergency kit, and rehearse your evacuation plan at least once a year.

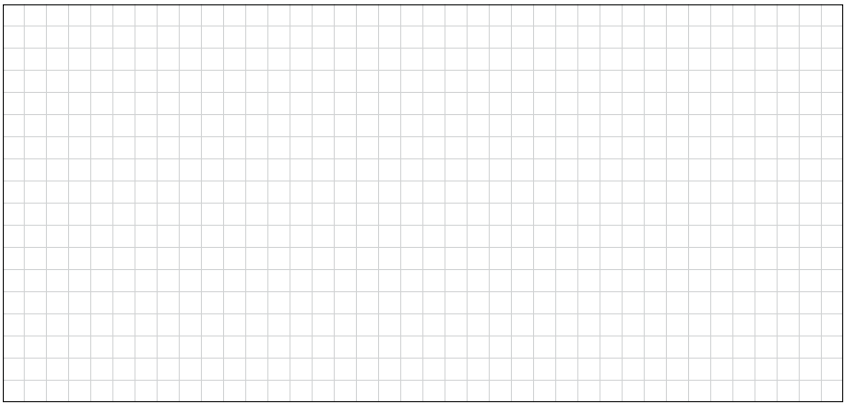
Visit your provincial/territorial wildfire management agency website for up-to-date wildfire information.

For more information on how to prepare for a wildfire and other emergencies, go to: **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):



FireSmart Canada

FireSmartCanada.ca

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Copies of this manual are available at your local fire centre office or online at firesmartbc.ca

Waiver:
British Columbia's Ministry of Forests, Lands, Natural Resource Operations and Rural Development, 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: 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
250 951-4201 (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
250 561-4628 (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

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Ministry of Forests, Lands, Natural Resource Operations and Rural Development

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FESBC Forest Enhancement Society of British Columbia

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UBCM

www.bcwildfire.ca

To report a wildfire, call:
1 800 663-5555
or
***5555** on your cellphone