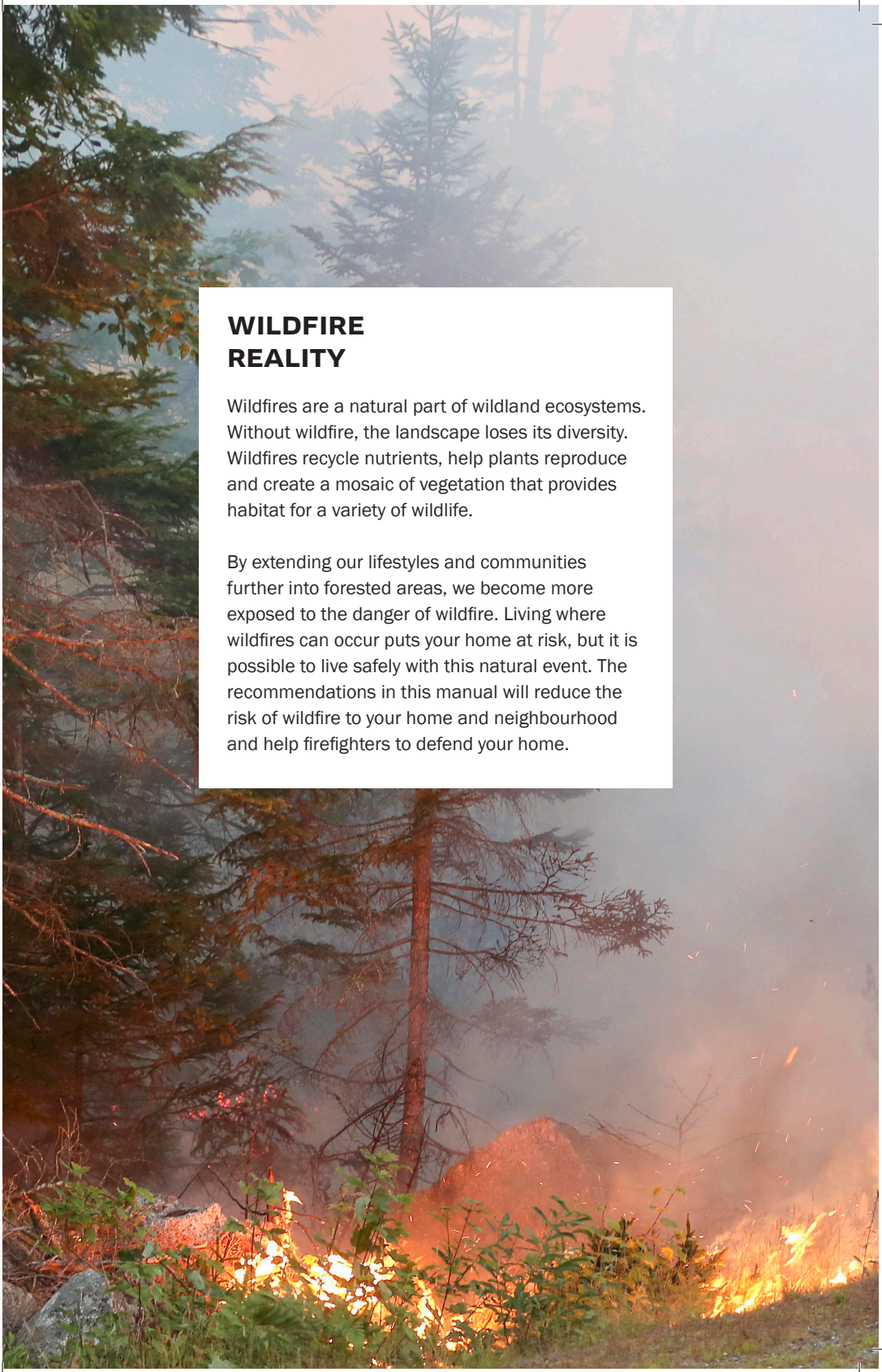
FireSmart

Begins at Home

MANUAL

FireSmart



WILDFIRE REALITY

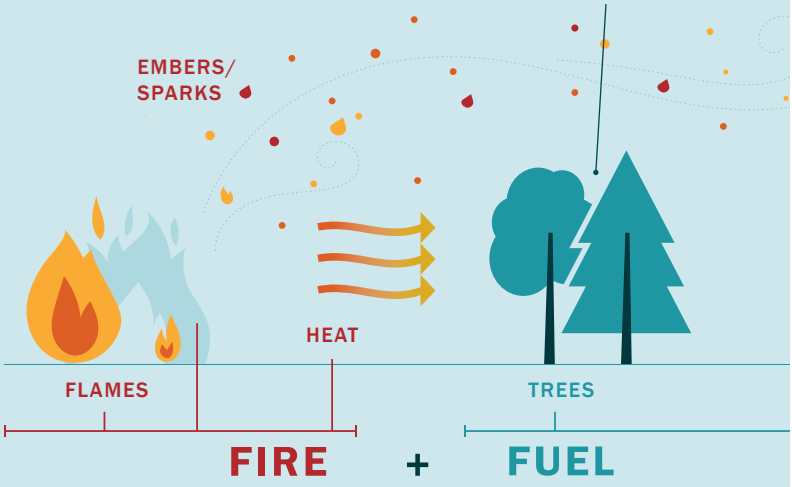
Wildfires are a natural part of wildland ecosystems. Without wildfire, the landscape loses its diversity. Wildfires recycle nutrients, help plants reproduce and create a mosaic of vegetation that provides habitat for a variety of wildlife.

By extending our lifestyles and communities further into forested areas, we become more exposed to the danger of wildfire. Living where wildfires can occur puts your home at risk, but it is possible to live safely with this natural event. The recommendations in this manual will reduce the risk of wildfire to your home and neighbourhood and help firefighters to defend your home.

HOW WILDFIRES GROW

TREES

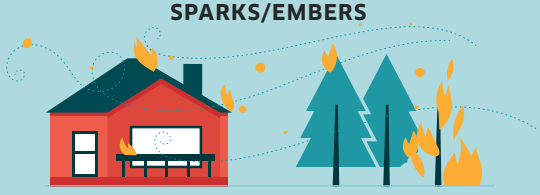
Evergreens are highly flammable, deciduous (leafy) trees are much less flammable.



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.

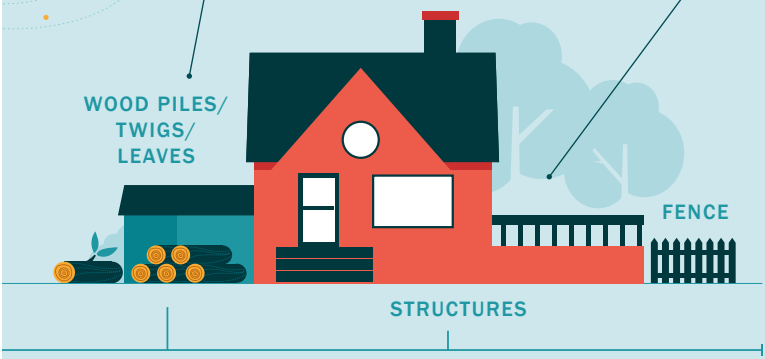


SURFACE FUELS

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.

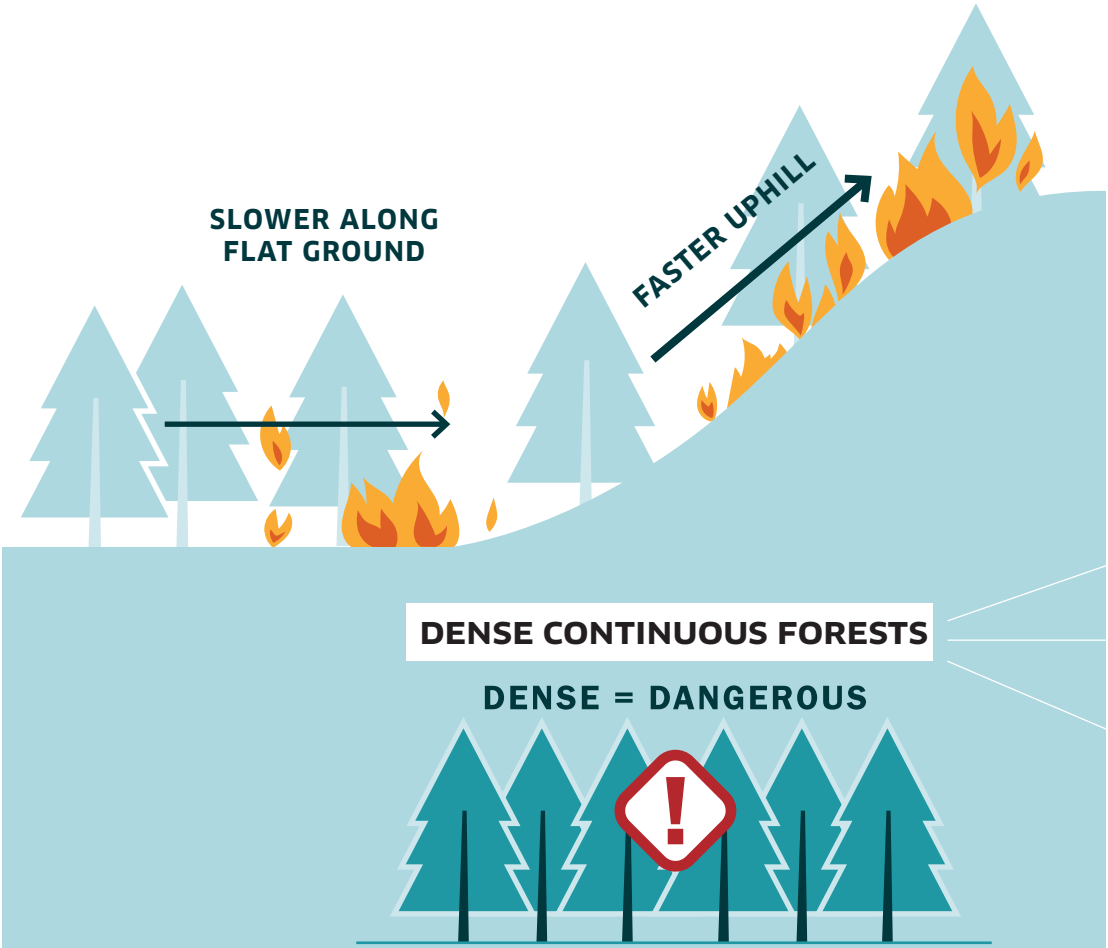
DIRECT FLAME

As wildfires spread towards homes, they ignite other flammable objects in their path. To stop fire from directly affecting your home, create breaks in this path, especially closest to your home.

FACTORS INFLUENCING WILDFIRE SPREAD

DENSE, CONTINUOUS FORESTS

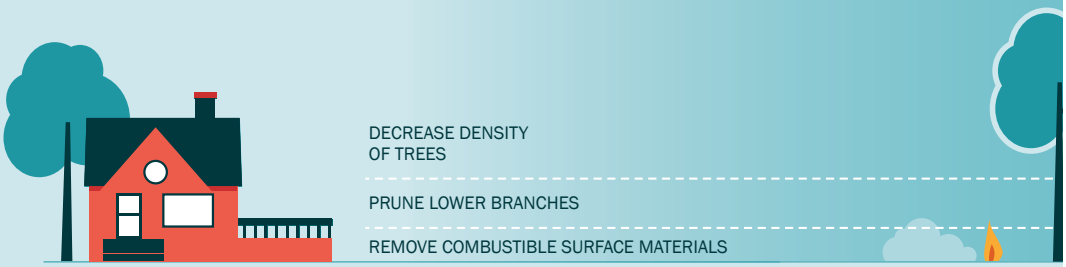
Wildfire can spread quickly in forests where trees are in close proximity to each other. Fire spreads quickly and directly from tree to tree and can produce sparks and embers which may travel distances of two kilometres. These embers may land on trees or homes well ahead of the fire and create a multiple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



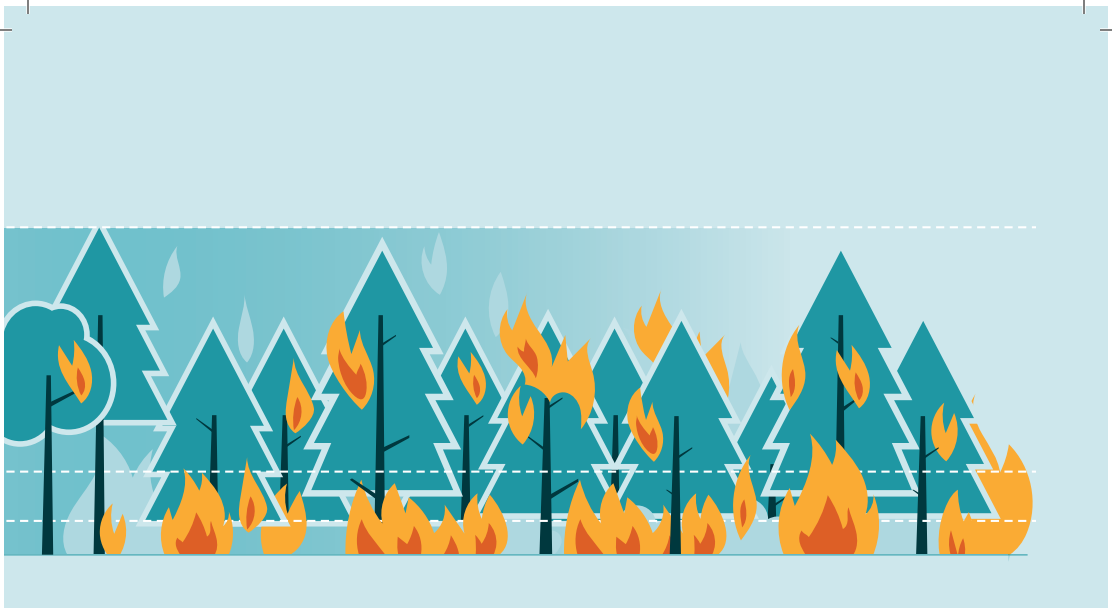
SLOPE CAN AFFECT WILDFIRE

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. Maintain a 1.5 metre non-combustible surface around your entire home and any attachments, such as decks.

HOW FIRESMART TREATMENTS INFLUENCE WILDFIRE SPREAD



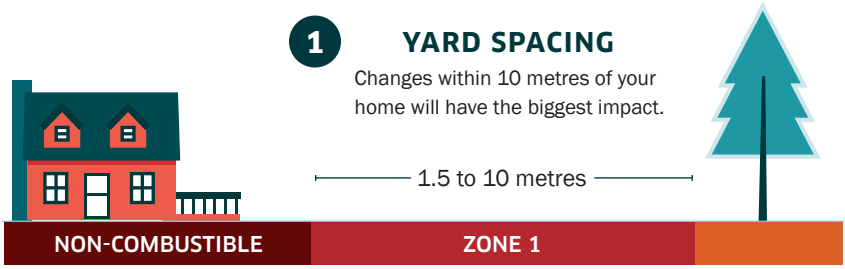
Wildfire can follow a path from the forest or grassland to your home. A wildfire moving from the tops of the trees can be slowed if the trees are spaced. It can be further slowed by flame-resistant plants and shrubs in your yard. As plants have different flammability, consider spacing your plants to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

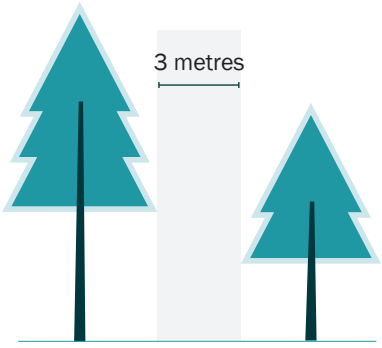


FIRESMART RULES OF THUMB

1 YARD SPACING

Changes within 10 metres of your home will have the biggest impact.





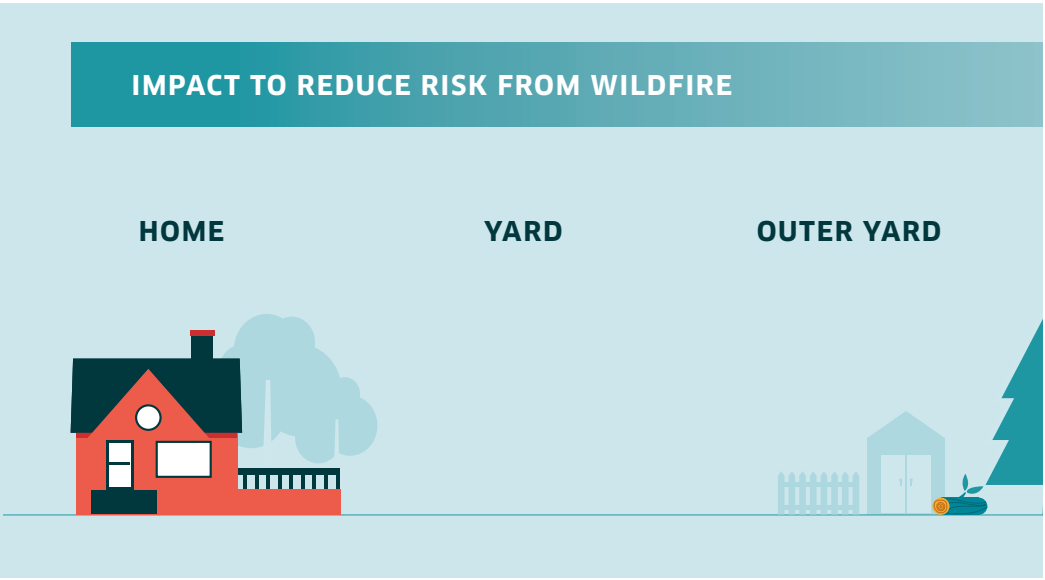
2 TREE SPACING

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

BEGINNING YOUR FIRESMART JOURNEY

Each section of this manual will help you to focus on the changes that 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 to reducing your 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

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 yard clean up 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

A Class A fire-rated roof assembly offers the best protection. Metal, asphalt, clay and composite rubber tiles are all options. Untreated wood shakes create a dangerous combination of combustible material and crevices for embers or sparks to enter. Refer to manufactures 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 from escaping and starting fires.

3 GUTTERS

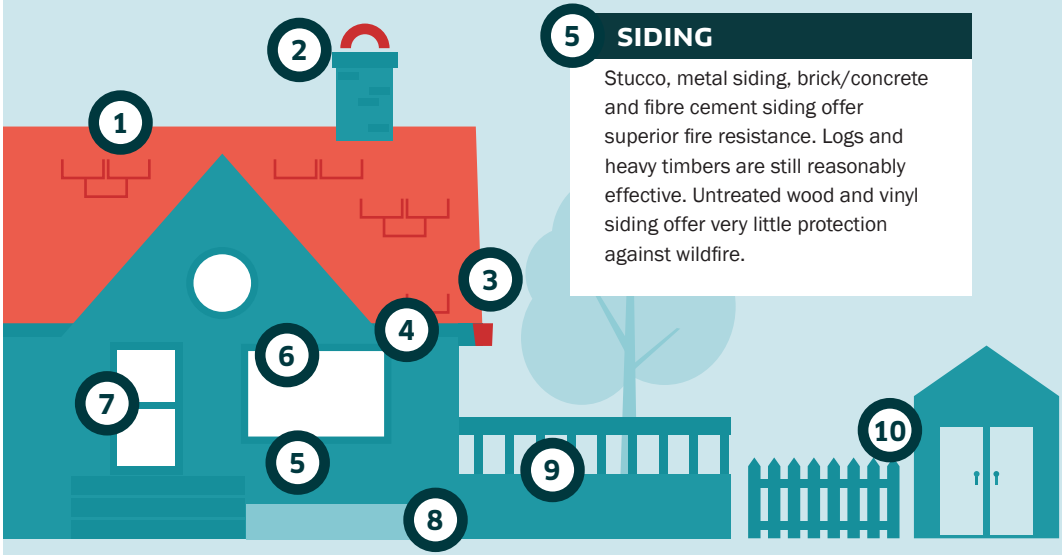
Regularly remove debris from your gutters as sparks and embers can easily ignite these dry materials. Consider screening your gutters with metal mesh to reduce the amount of debris that can accumulate.

4 EAVES AND VENTS

While vents play an important role in removing moisture from attics, they create an opening for sparks and embers. Install non-combustible material for all vents. Should be 3 millimetre screening or ASTM fire rated vents. Open eaves also create a surface for embers and direct heat. Properly fitted soffits and fascia help to 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.



Preparing your home and yard as recommended can help your home survive a 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 GROUND TO SIDING CLEARANCE

Siding is vulnerable when it ignites and when flames or embers get into the cavity behind the siding. With inadequate ground-to-siding clearance, accumulated embers can ignite combustible siding directly. 15 centimetres of ground-to-siding non-combustible clearance is recommended.

9 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.

10 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 fire. Remember to cut the grass along your fence line as long dry grass easily ignites.

Sheds/Out Buildings

If these are within 10 metres of your home, give these the same FireSmart consideration 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 are to your home.

ZONE 1 / YARD
1.5 - 10 METRES

YOUR YARD

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

Fire embers may seem small but are not to be underestimated— 50 % of the homes that burn from wildfires are started by sparks and embers. Regular maintenance and cleaning in 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 under the deck as well as any flammable debris from balconies and patios. Maintain a 1.5 metre non-combustible zone around your home and any attachments, such as decks.

Remove debris easily
ignited by sparks and embers.

ZONE 1 / YARD
1.5 - 10 METRES

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.

LANDSCAPING WITHIN 10 METRES

Plant a low density of fire-resistant plants and shrubs. Avoid having any woody debris, including mulch, as it provides potential 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
- Accumulates minimal dead vegetation
- Water-like sap with little odour
- Low amount of sap or resin material

CHARACTERISTICS OF HIGHLY FLAMMABLE PLANTS

- Leaves or needles are aromatic
- Accumulates fine, dry, dead material
- Contain 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 in height 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 as 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 the factor that allows your home to survive a wildfire. Clean up this area regularly as 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 your burn barrel has proper ventilation and is screened with 6 millimetre or finer wire mesh.

Check with your local municipality regarding specific requirement and restrictions regarding back yard fire pits.

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

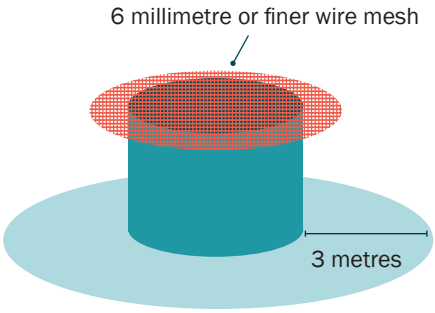
ON-SITE FIRE TOOLS

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



Bark mulches are highly flammable.

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

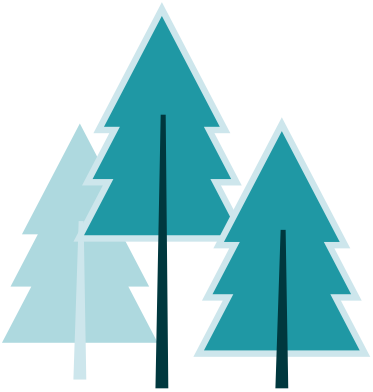
ZONE 1 / YARD
1.5 - 10 METRES

A FireSmart yard includes trees. Often we 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
- Maples
- Alders
- Ash
- Cherry



MAINTENANCE

- Include debris clean-up in Spring and Fall as part of your 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
- Remove combustible shrubs from the drip line of trees.

TREES TO AVOID

Evergreen trees with cones and needles (conifer trees) are highly flammable and should not be within 10 metres of your home.

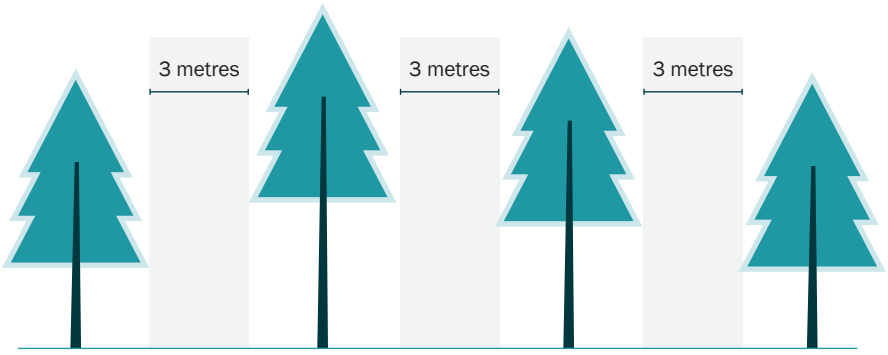
- Spruce
- Fir
- Pine
- Cedar

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

EVERGREEN TREE SPACING

Once fire moves into the tree tops 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.

TREE PRUNING

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

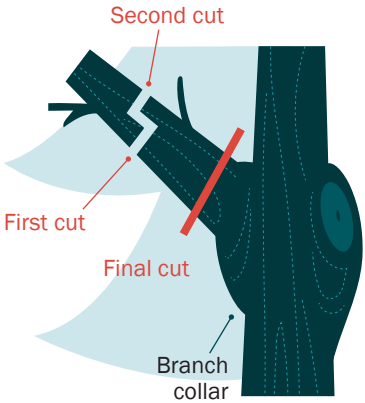
Remove all branches to a height of 2 metres from the ground on evergreen trees within 30 metres of your home. If possible, pruning trees up to 100 metres from your home (Zone 3) is recommended.

WHEN TO PRUNE

You can prune dead branches at any time of year, but it is best to prune evergreen 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 from 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 within the Non-combustible Zone, 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 as fire moves fastest up hill. Consider slope stability when removing trees.

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

- Remove low hanging branches within 2 metres of the ground
- Space trees 3 metres from branch tips to reduce the intensity and rate of spread of a wildfire
- Remove smaller evergreen trees that can act as a ladder for fire to move into the tree tops
- Clean woody debris and combustible shrubs from 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 address
2. Clear vegetation from access routes to and from your home. Target trees and branches that would make it difficult for a fire truck to approach your home
3. If you have a large property, make sure your driveway has a turn around and, when 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 cooperation and planning, can help.

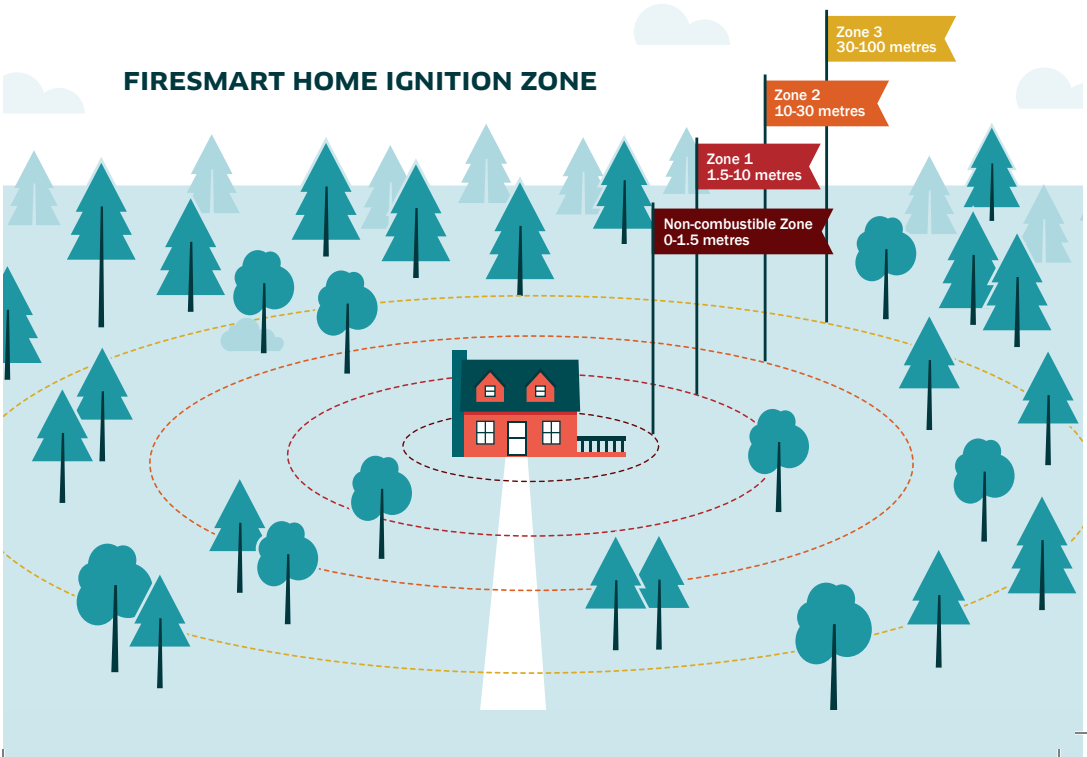
2. The FireSmart Canada Community Recognition Program gives recognition to communities that:

- 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 towards FireSmart actions.

3. Concerned about your community's risk to wildfire? Ask your municipal councillor, planning department or fire service how they are integrating FireSmart into their plans.

To learn more go to:
FireSmartCanada.ca

FIRESMART HOME IGNITION ZONE



The Department of Lands and Forestry would like to thank the following: Partners in Protection for providing the information used in this manual. Copies of this manual are available at your local fire centre office.

Any loss or damage that any person may sustain as a result of the information in, or anything done or omitted in reliance on this pamphlet; and any personal injury or bodily injury, including death, and any loss or damage caused by a wildfire to insured or uninsured structures and/or property where FireSmart principles have been applied.

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FireSmartCanada.ca

NOVA SCOTIA

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For information on Nova Scotia domestic brush burning
and burning restrictions, call **1-855-564-2876 (BURN)**
or visit **novascotia.ca/burnsafe**

To report a wildfire, call **911** and/or
1-800-565-2224