BRITISH COLUMBIA
FireSmart™

FireSmartBC.ca

FireSmart Begins With You Guide

For homeowners and renters.

To order this guide, visit the Online Distribution Centre or use the FireSmart Resource Ordering Form.

Questions? Email info@firesmartbc.ca

CIFFC

The FireSmart BC Indigenous Outreach Alliance was consulted during the making of this guide.

Using This Guide

Wildfires can affect everyone—urban or rural, owner or renter. Being prepared is essential for safety. This guide outlines simple, actionable steps you can take to improve the fire resiliency of your home.

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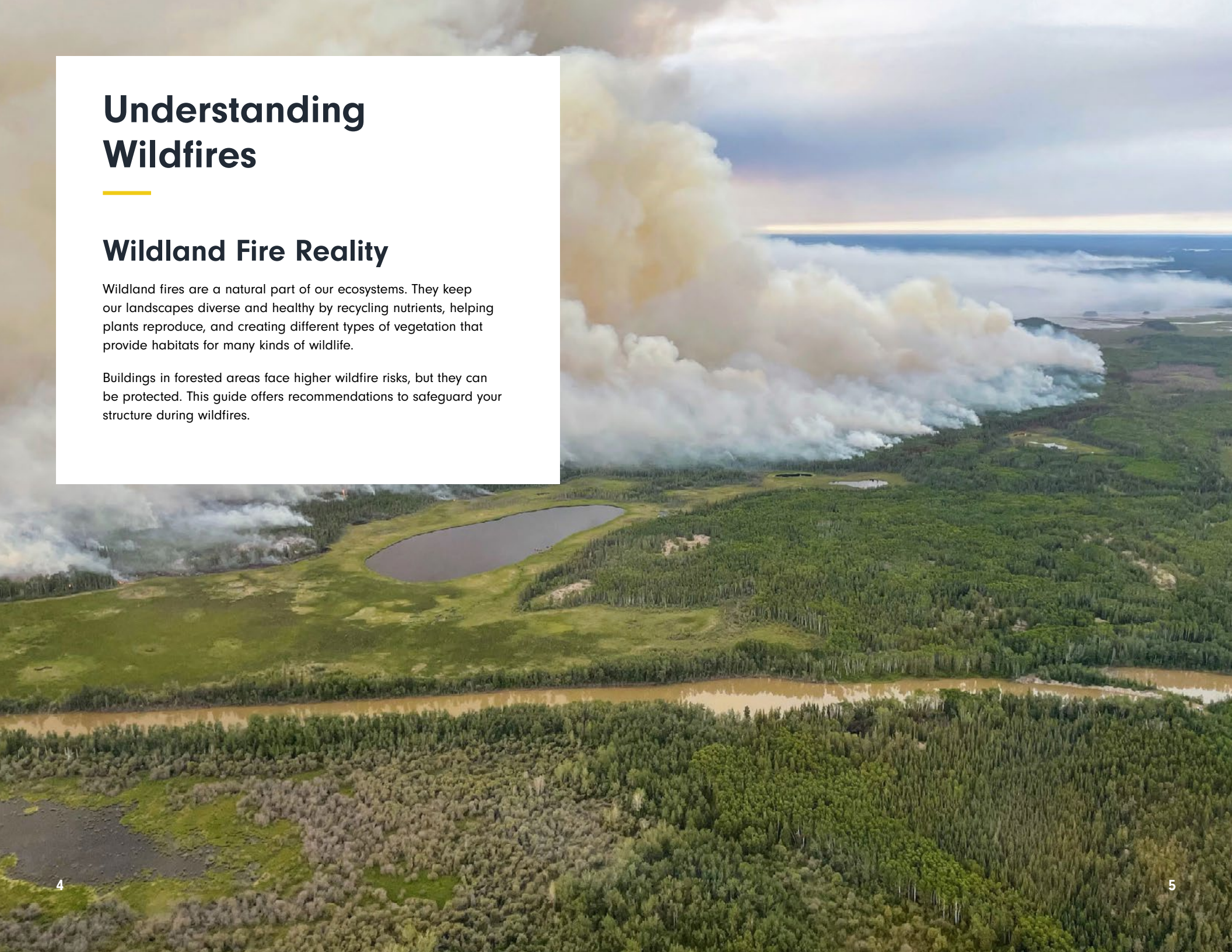
Understanding Wildfires

Wildland Fire Reality

Wildland fires are a natural part of our ecosystems. They keep our landscapes diverse and healthy by recycling nutrients, helping plants reproduce, and creating different types of vegetation that provide habitats for many kinds of wildlife.

Buildings in forested areas face higher wildfire risks, but they can be protected. This guide offers recommendations to safeguard your structure during wildfires.



Wildland Urban Interface

The WUI is anywhere where wildland, such as forests or grasslands, comes into contact with built structures, such as houses or commercial buildings. This occurs all over Canada in both remote rural locations and urban centres, such as Indigenous people living in their traditional territory and cities expanding new neighbourhoods into nearby land.

When we live, work, and play in WUI zones, there is a higher chance that we'll be exposed to wildland fire. However, there are things that we can do to lessen our risk before these natural events occur.

Fire Fuels

Natural vegetation and human-made structures burn differently. When combined, they cause fire to start and spread differently than when fire is in either just a forest or a building. This combination is called the Wildland Urban Interface (WUI) fuel complex.

"Fuel" is anything a fire can use to burn, like trees, buildings, fences, and grass.

To suppress these complicated fires, we need to understand how fire acts when it has both plants and buildings to burn. We also need to look at the shape of the land and weather, since these affect how the fire will spread. Every WUI fire is different, and it can be very challenging to recover from the effects of a WUI fire. This is why prevention of damage and loss ahead of such an event is an important step.

Understanding Fire Behaviour

Fire + Fuel = Why Homes Burn

Unmitigated Property

FireSmart-Mitigated Property

Fuels include trees, woodpiles, structures, fences, plants, etc.

How Wildland Fires Affect Buildings

Embers

Embers are small burning pieces of fuel. They can be both natural fuel like branches and produced material such as tar paper. Embers can travel several kilometers ahead of a wildfire, often igniting materials on or near buildings and leading to structural fires. In fact, embers are responsible for 90% of home ignitions during wildfires. In West Kelowna in 2023, embers were blown 2.5 km across Okanagan Lake and started multiple new fires on the east side of the lake.

Radiant Heat

Radiant heat is the type of heat you feel from a campfire. If a wildfire comes within 30 metres of a structure, the intense radiant heat can cause significant damage. Wildfires can produce temperatures exceeding 800°C (1,472°F), according to Natural Resources Canada. This extreme heat can melt vinyl siding, shatter windows, and ignite the building. The majority of wildfire damage comes from structure to structure ignitions, including those from radiant heat.

Direct Flame

A wildfire consumes all available fuel in its path when flammable materials create a corridor for it to advance. Fuel treatments such as thinning a forest area can slow down a wildfire's spread and reduce its intensity, and having fuel-free areas around structures is critical to stop flames from running directly up to buildings.

How Wildland Fires Spread

Dense Continuous Forests

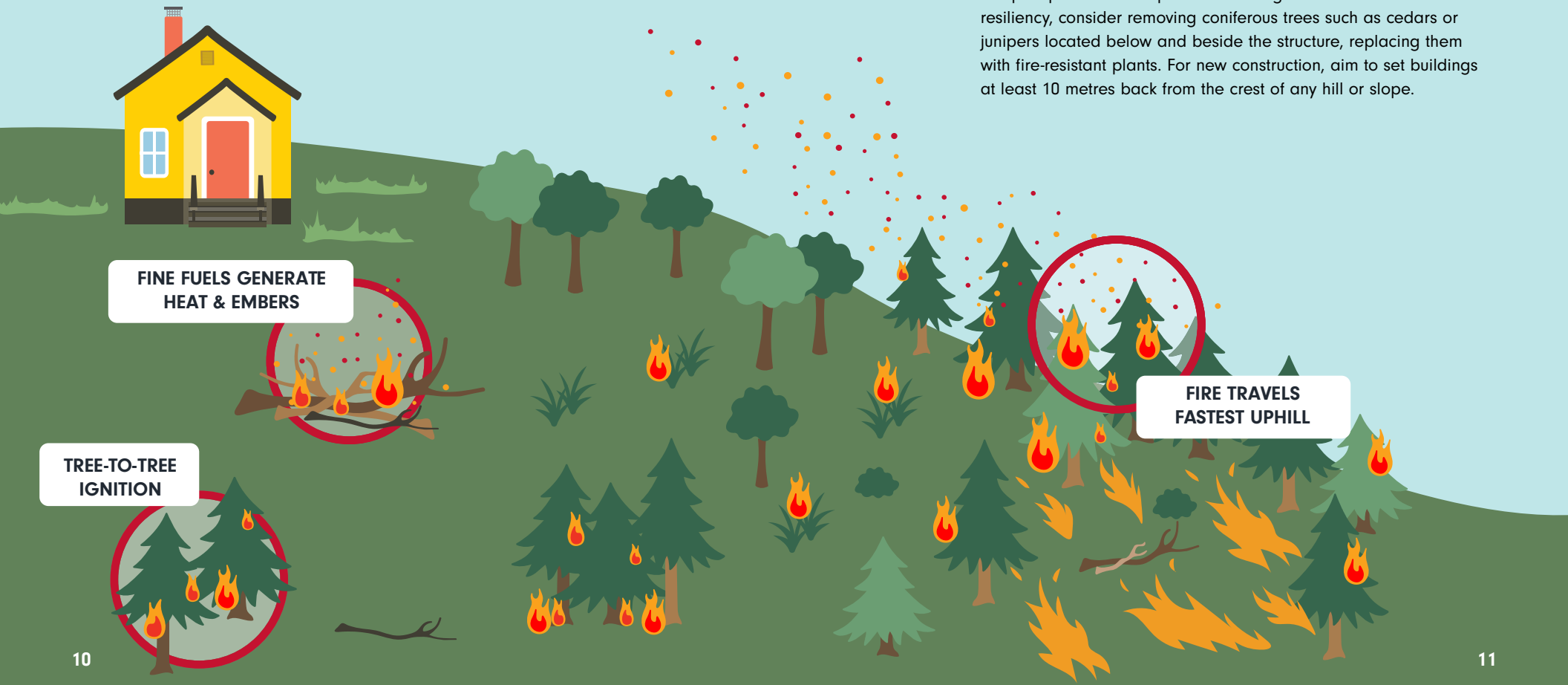
Wildfires can spread rapidly in forests where trees are closely spaced, allowing flames to move easily from tree to tree. Embers generated by the fire can travel up to 2.5 kilometres ahead of a wildfire, often landing on trees or buildings that start additional fires. Coniferous trees (trees with needles) are highly flammable, making forests with these trees more susceptible to fast-moving and hot-burning wildfires. In contrast, deciduous trees (trees with leaves) are less flammable and burn less easily. There is also significant risk from quick-moving grass fires that mostly burn small, dry materials.

Coniferous trees are highly flammable.

Deciduous trees are less flammable.

Slope

Fire spreads most rapidly uphill, with steeper slopes causing wildfires to burn even faster. Homes and other structures built on steep slopes or at hilltops are at the highest risk. To enhance fire resiliency, consider removing coniferous trees such as cedars or junipers located below and beside the structure, replacing them with fire-resistant plants. For new construction, aim to set buildings at least 10 metres back from the crest of any hill or slope.

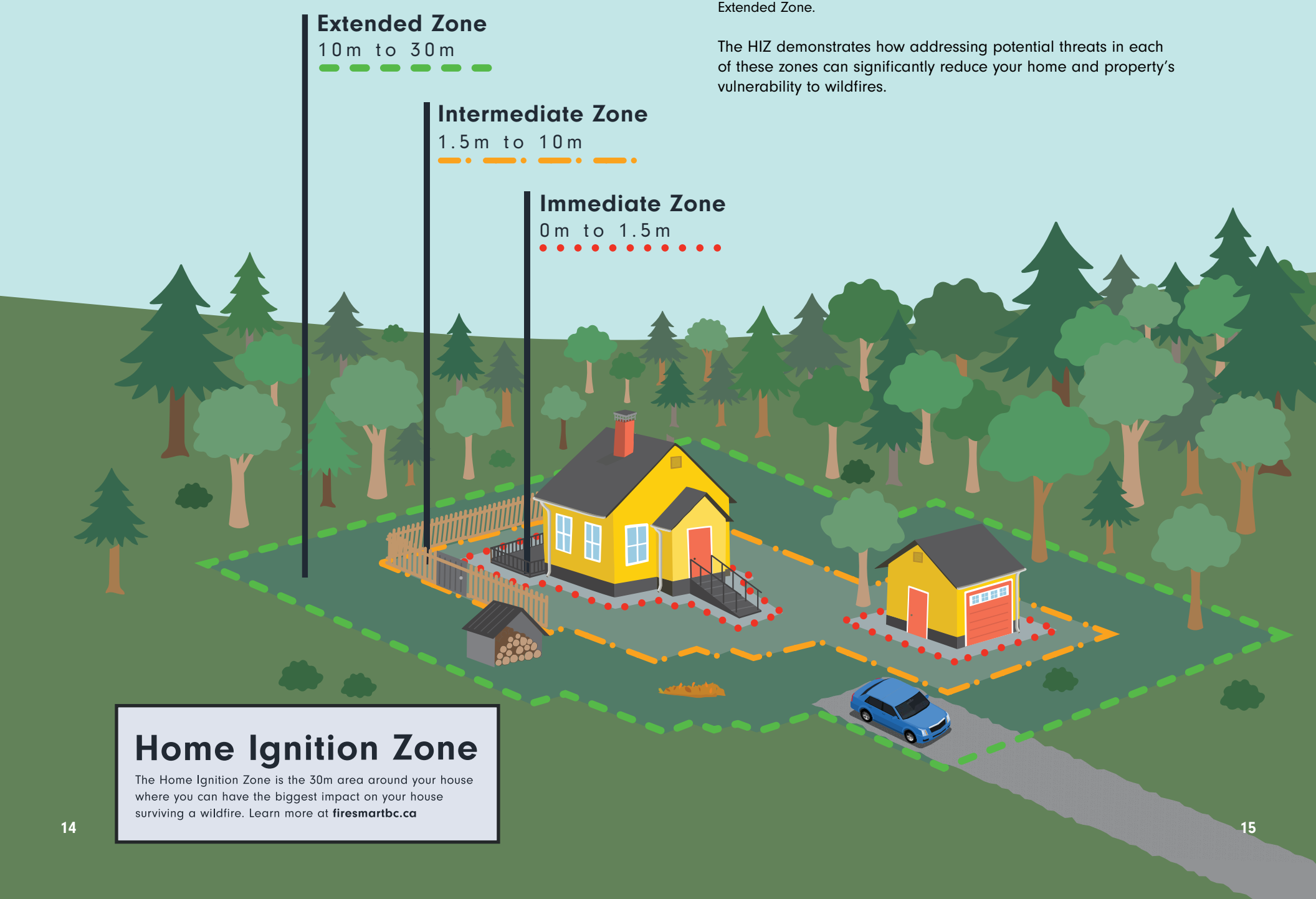


How to Make Your Residence FireSmart

Each section of this guide focuses on changes that can help protect your residence from wildfires. The most impactful steps are those made to a structure itself and the area immediately surrounding it, as these significantly reduce the risk of wildfire damage.

The Home Ignition Zones (HIZ) infographic visually represents best FireSmart practices within 30 metres of a home or structure. It highlights three priority areas: the Immediate Zone, the Intermediate Zone, and the Extended Zone.

The HIZ demonstrates how addressing potential threats in each of these zones can significantly reduce your home and property's vulnerability to wildfires.



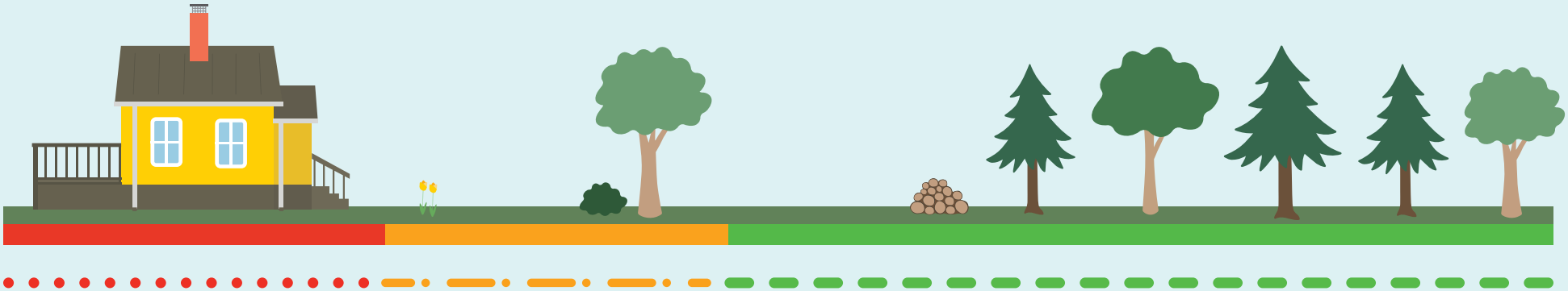
Home Ignition Zone

The Home Ignition Zone is the 30m area around your house where you can have the biggest impact on your house surviving a wildfire. Learn more at **firesmartbc.ca**

How to Get Started

The most vulnerable part of a home is the Immediate Zone, and it is highly recommended to start by making improvements in this area. Once this zone is FireSmart, gradually work outwards to address the Intermediate and Extended Zones.

Home renovations and upgrades can be costly and time-consuming. FireSmart principles focus on what is realistic for you to achieve to limit the risk of wildland fire to your home. Integrate FireSmart practices into your long-term renovation plans and make regular yard cleaning part of your routine to reduce potential fire hazards.



IMMEDIATE ZONE
0m to 1.5m

A minimum 1.5 metre area free of flammable materials should extend around the entire home and any attachments, such as decks.

INTERMEDIATE ZONE
1.5m to 10m

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

EXTENDED ZONE
10m to 30m

This area should be regularly maintained to reduce the risk of rapid fire spread. Thin and prune trees, remove any combustible materials, and create space between trees and vegetation.

IMMEDIATE ZONE

0m to 1.5m

The Immediate Zone encompasses your residence and extends 1.5 metres around it, including decks and ramps. This zone must be entirely free of materials that can catch fire. Outbuildings such as sheds, garden suites, or detached garages each require their own 1.5-metre Immediate Zone, as do any other structures on the property. Examples of materials that can create a non-combustible zone are concrete, rocks, paving stones, and bare dirt (mineral soil).

The Immediate Zone is critical because windblown embers can ignite any flammable material they come into contact with.

1. Windows

Use tempered or thermal (multi-paned) windows for better heat resistance.

2. Siding

Use stucco, metal, brick, concrete, and fiber cement siding as they offer excellent fire resistance.

3. Roof

Construct your roof from Class A fire-resistant materials such as metal, asphalt, clay, or composite rubber tiles. Regularly clean your roof to remove leaves and other flammable objects.

4. Gutters

Regularly clean debris from your gutters and consider screening them with metal mesh to prevent the accumulation of flammable materials.

5. Decks

Cover the base of decks and balconies to prevent embers from gathering underneath. Keep the surface, corners, underside, and gaps between planks clean, avoid storing anything underneath the deck, and regularly replace rotten or cracked planks. During peak fire season, store patio furniture like cushions and umbrellas inside and only bring them out when they are in use. These items can burn easily and trap embers.

6. Ground-to-Siding Clearance

Ensure at least 15 centimetres of clearance between the ground and your siding, using non-combustible materials. Siding can ignite if flames or embers make contact.

7. Eaves and Vents

Install vents made of non-combustible material with 3 millimetre screening (⅛") or ASTM fire-rated vents. Protect open eaves by installing properly fitted soffits and fascia to block embers from entering.

8. Home Attachments

Separate wooden fences from your house with a metal gate to slow fire spread, as wooden fences and boardwalks can act as fire paths to your home. Regularly cut grass along the fence line since long, dry grass can easily catch fire.

9. Ramps

Construct ramps using non-combustible materials and cover the open spaces underneath with ember-resistant barriers. Keep plants away from ramps to prevent fire from igniting the ramp and spreading to the home.

INTERMEDIATE ZONE

1.5m to 10m

The Intermediate Zone extends outward from a home and includes the surrounding yard. A FireSmart yard will include plants and landscape features that have been strategically chosen to improve the home's chances of withstanding a wildfire.

Yards are common places to store building supplies, vehicles, wood piles, outbuildings, and more. Many of the things that are stored in yards are highly flammable, and should be placed farther away from the home or spaced out appropriately.

1. Plants

Choose low-density, fire-resistant plants and shrubs for the yard. Look at the FireSmart Plants section later in this guide or on the FireSmart website to find suitable plants.

2. Mulch

Avoid using bark or pine needle mulch within 10 metres of your home. Instead, opt for gravel or decorative crushed rock mulch to significantly reduce wildfire risk. See the FireSmart BC mulch guide for more information.

3. Firewood Piles

Storing firewood against a house poses a major fire hazard. Keep firewood piles at least 10 metres away from the home, or store the wood in a FireSmart mitigated shed.

4. Grass

A well-maintained lawn is more fire-resistant. Keep grass mowed to a height of 10 centimetres or shorter to reduce its flammability, and consider sowing different mixes (including clover) to reduce the need to mow.

5. Space Out Plants

Maintain at least 2 metres (6 feet) between shrubs, trees, or clusters of plants to limit fire spread.

6. Ground Cover

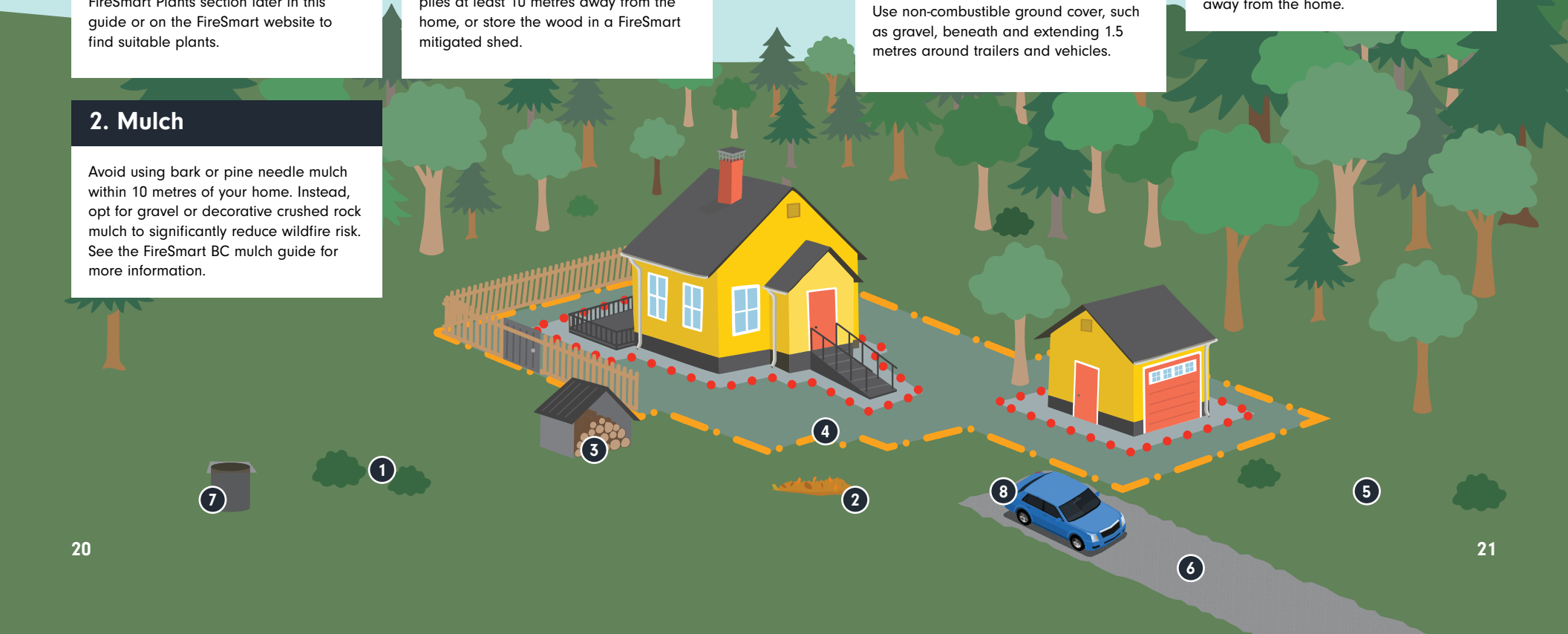
Use non-combustible ground cover, such as gravel, beneath and extending 1.5 metres around trailers and vehicles.

7. Burn Barrels & Fire Pits

Position burn barrels as far as possible from structures and trees. Clear a 3-metre area around the barrel of any combustible materials. Ensure the barrel has proper ventilation and is covered with wire mesh no larger than 6 millimeters.

8. Vehicles

Many types of vehicles are commonly stored in yards, from personal vehicles to ATVs to motor homes. Vehicles that are not situated on a non-combustible surface are at risk of being ignited by a fast moving grass fire or a wildfire. Mitigation around stored vehicles is very important, as is keeping stored vehicles away from the home.



Regular Maintenance

Incorporating FireSmart practices into your regular yard work routine can significantly reduce your wildfire risk. Prioritize changes within 10 metres of the home for the greatest impact.

Clean debris:

Remove anything flammable, such as windblown leaves, from decks, balconies, patios, and gutters.

Prune trees:

Trim tree limbs to be at least 2 metres (6 feet) above the ground to prevent ground fires from climbing into trees.

Mow grass:

Keep grass short (under 10 cm) to minimize the risk of ignition and flame spread.

Clear yard debris:

Regularly remove dead leaves, branches, and dry grass.

Remove shrubs under trees:

Eliminate combustible shrubs beneath trees to stop fires from spreading upward.

Assess mature trees:

Older deciduous trees may develop rot or damage, making them vulnerable to fire and follow all local tree protection bylaws.

Store belongings safely:

Ensure furniture, children's toys, outdoor gear, building materials and firewood are stored away from the house when not in use or inside a FireSmart structure.

Remove debris easily ignited by sparks and embers.

EXTENDED ZONE

10m to 30m

The goal of the Extended Zone is not to eliminate fire but to reduce its intensity. After completing your initial FireSmart actions, make regular maintenance a priority. By implementing the recommendations in this section, you can enjoy a lush, green yard that is also more resistant to wildfires.

1. Tree Types

Some trees are naturally more fire resistant than others. Coniferous trees (trees with needles) are highly flammable, while deciduous trees (trees with leaves) are less likely to catch fire quickly. Refer to the FireSmart Plants section for specific recommendations.

2. Tree-to-Tree Spacing

When fire spreads to treetops, it can easily jump to neighbouring trees, intensifying the blaze. To reduce this risk, maintain at least 3 metres of spacing between trees or clusters of trees, measured from the outermost branches.

3. Reducing Shrubs

Avoid tall shrubs beneath trees, as fire can easily climb from shrubs into the treetops.

4. Tree Pruning

Surface fires can climb trees quickly. Prune lower branches up to 2 metres from the ground to prevent surface fires from reaching the canopy.

Roadways and Driveways

In an emergency, you and your family may need to evacuate while emergency responders enter your neighborhood. To ensure both your safety and that of responders during a wildfire, consider the following tips.

Clearly mark your address:

Rural properties often lack visible addresses, making it difficult for emergency responders to locate them.

Clear roads and driveways:

Remove plants, debris, trees, and branches that could obstruct fire truck access to your home.

Provide turning space and multiple access routes:

If you have a large property, ensure your driveway has a designated turn-around area and, when possible, provide two access routes to your home.

FireSmart Plants

Being FireSmart doesn't mean sacrificing beauty in your landscape! Many plants are naturally more fire-resistant, making them a better choice for your home. In many cases, there are plants that are both FireSmart and water efficient, making them good choices for drought prone areas.

Characteristics Of Fire-Resistant Plants

- Moist, soft leaves
- Minimal accumulation of dead vegetation
- Water-like sap with little odour
- Low levels of sap or resin

Characteristics Of Highly Flammable Plants

- Aromatic leaves or needles (strong smell)
- Accumulates fine, dry, dead material
- Contains resin or oils
- Loose, papery, or flaky bark

Trees to Plant

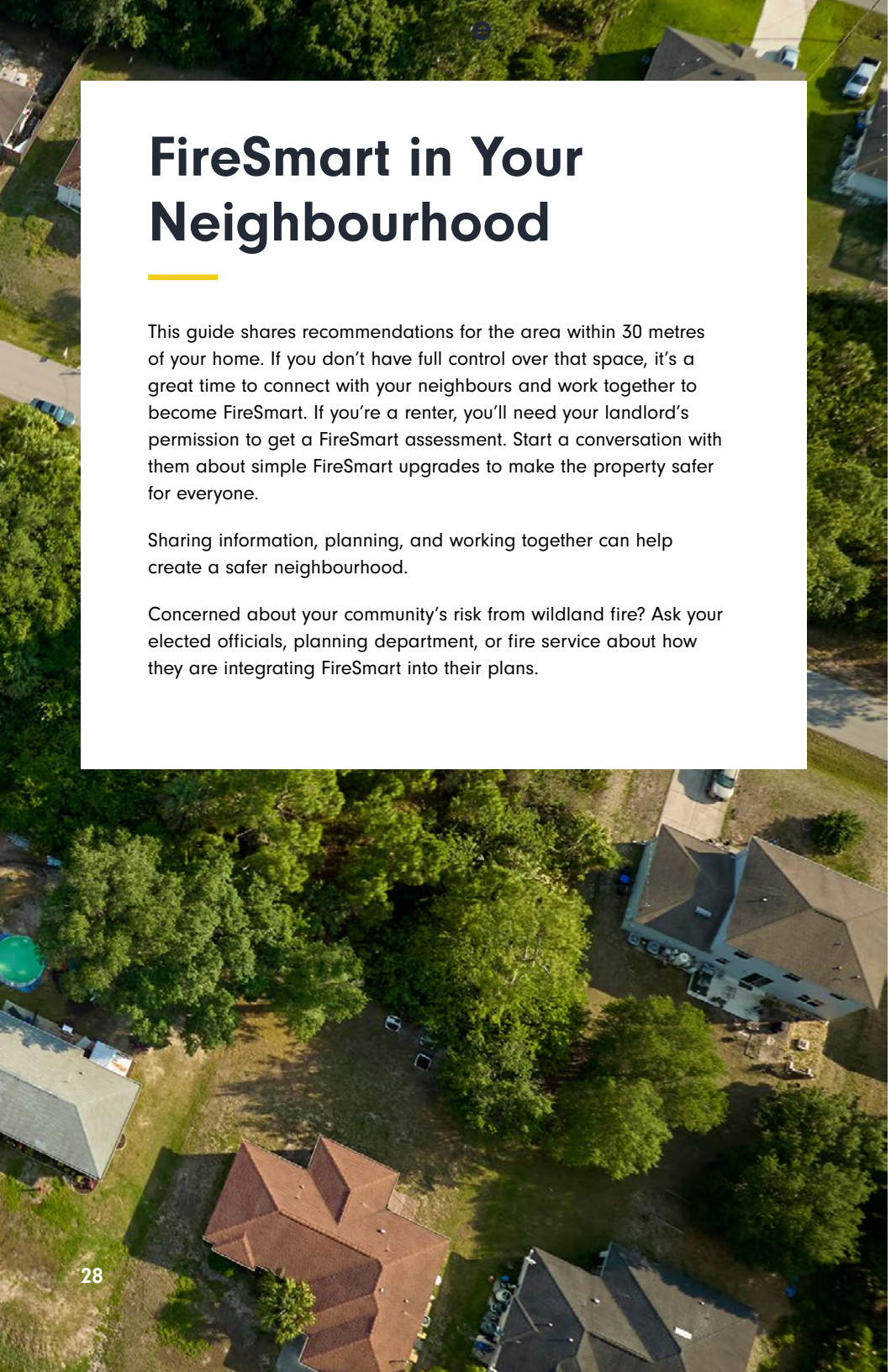
Deciduous trees (leafy) are resistant to wildland fire and include:

- Poplar
- Birch
- Aspen
- Cottonwood
- Maple
- Alder
- Ash
- Cherry

Trees to Avoid

Coniferous trees (with cones and needles) are highly flammable. Avoid placing the below species within 10 metres of your home.

- Cedar (especially cedar hedges)
- Juniper
- Spruce
- Fir
- Pine



FireSmart in Your Neighbourhood

This guide shares recommendations for the area within 30 metres of your home. If you don't have full control over that space, it's a great time to connect with your neighbours and work together to become FireSmart. If you're a renter, you'll need your landlord's permission to get a FireSmart assessment. Start a conversation with them about simple FireSmart upgrades to make the property safer for everyone.

Sharing information, planning, and working together can help create a safer neighbourhood.

Concerned about your community's risk from wildland fire? Ask your elected officials, planning department, or fire service about how they are integrating FireSmart into their plans.

Check Out These Great FireSmart™ Resources!

Who is FireSmart BC?
www.firesmartbc.ca/who-we-are

Find Your Local FireSmart Coordinator Map
www.firesmartbc.ca/local-firesmart-representatives

FireSmart BC Wildfire Mitigation Program
www.firesmartbc.ca/wmp

Tips to FireSmart Your Home
www.firesmartbc.ca/resource/tips-to-firesmart-your-home

Home Ignition Zone Resources
www.firesmartbc.ca/resource/firesmart-home-ignition-zone

Landscaping Hub
www.firesmartbc.ca/landscaping-hub

Ember's Den
www.firesmartbc.ca/ember

PreparedBC: Get Prepared for a Wildfire
www.preparedbc.ca/wildfires

Self-Assessment

Complete the following self-assessment to find out how FireSmart your residence is.

Immediate Zone (0m to 1.5m)		
Does the structure have acceptable fire-rated roofing material?	Yes ○	No ○
Are the roof and gutters clean of debris?	Yes ○	No ○
Are the eaves closed?	Yes ○	No ○
Are the vents non-combustible and screened?	Yes ○	No ○
Is exterior siding non-combustible or ignition-resistant?	Yes ○	No ○
Is exterior siding free of gaps, holes, or other areas where embers can accumulate?	Yes ○	No ○
Are windows multi-paned or tempered glass?	Yes ○	No ○
Are exterior walls protected with a minimum 15 cm vertical non-combustible ground-to-siding clearance?	Yes ○	No ○
Is the area beneath the deck or ramp enclosed?	Yes ○	No ○
Is the deck/porch made with fire-rated materials?	Yes ○	No ○
Is the area free of combustible materials?	Yes ○	No ○

Intermediate Zone (1.5m to 10m)		
Is the lawn cut to a length of 10 cm or less?	Yes ○	No ○
Is the yard free of combustible debris?	Yes ○	No ○
Are garden beds lined with crushed rock/decorative gravel?	Yes ○	No ○
Does landscaping include fire-resistant plants?	Yes ○	No ○
Are coniferous trees pruned to a height of 2 metres?	Yes ○	No ○
Are coniferous trees spaced at least 3 metres apart?	Yes ○	No ○

Extended Zone (10m to 30m)		
Are all firewood piles and other combustible materials located within the Extended Zone?	Yes ○	No ○
Are coniferous trees pruned to a height of 2 metres?	Yes ○	No ○
Are coniferous trees spaced at least 3 metres apart?	Yes ○	No ○
Have accumulations of fallen branches, dry grass, and needles on the ground been removed?	Yes ○	No ○

Start a Self Assessment:

Ready to Get Started?

We offer a variety of programs and resources online! For more information about making your residence FireSmart, visit our website:

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