YMCA's role in helping Canadians to protect their homes from *Weather Gone Wild*

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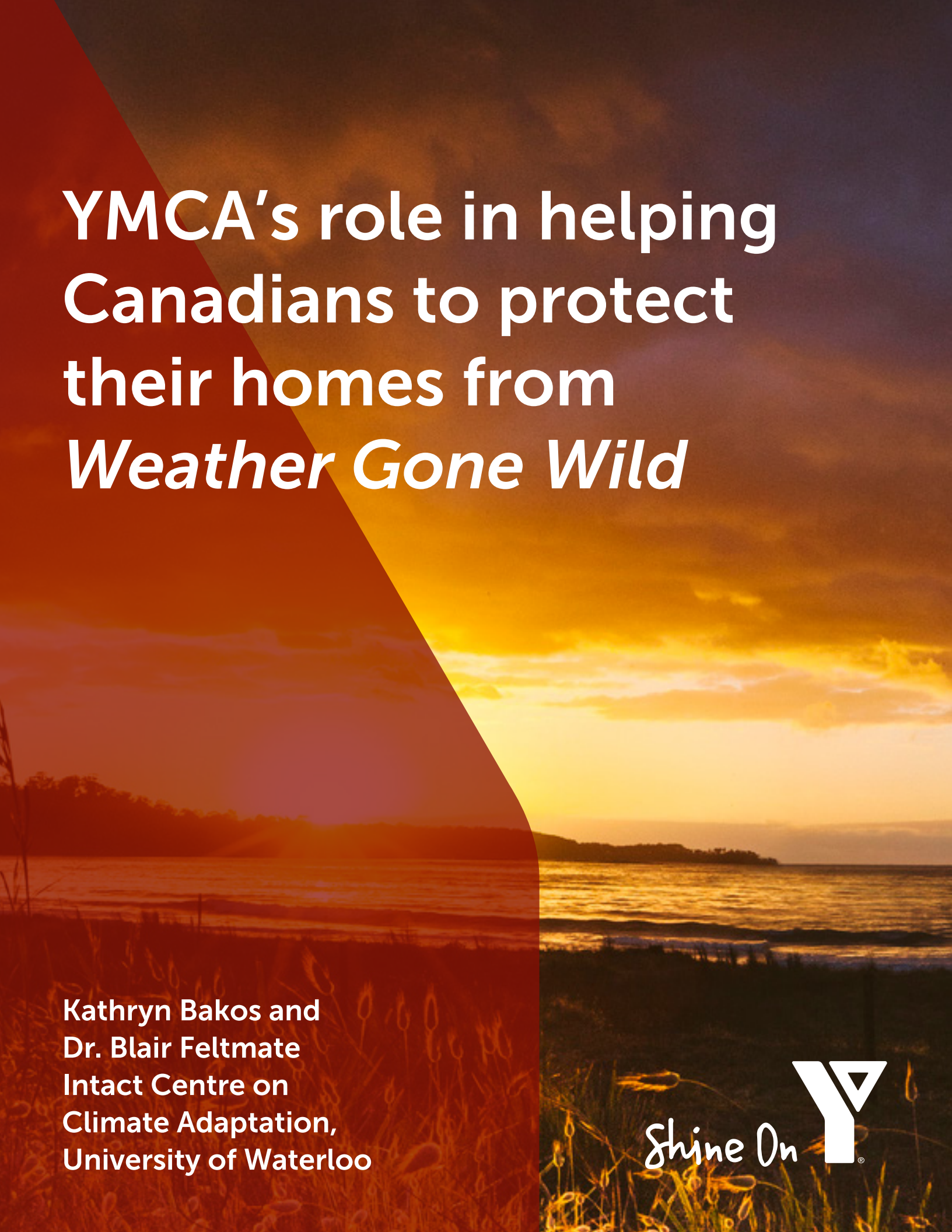


As we look to the future and how the YMCA can continue to be a vital part of nurturing vibrant, healthy communities, YMCA Canada commissioned four reports to explore areas where significant changes lie ahead.

Launched at the 2024 YMCA National Conference in Halifax in June, the goal is to have the reports provide additional insights and context for YMCA leaders across the Federation as we consider our next strategic plan and where we go from here.

By understanding these trends and their impact on the YMCA and our communities, we can ensure our mission remains relevant as Canada and the world around us changes. The four areas of focus are:

- Demographics
- Technology
- Climate Change
- Future of Work

Human-induced climate change is causing increasingly severe weather across Canada – think of the floods, wildfires and heat waves that fill the nightly news. Unfortunately, despite efforts by governments and businesses to limit greenhouse gas emissions that drive climate change, the tipping point to reverse this impact has passed[i]. That is to say, climate change is irreversible – we can slow it, but not stop it[ii] [iii].

Against this backdrop of daunting news, how should homeowners and renters prepare for a future filled with extreme weather that, if left unchecked, will convey growing hardship?

The answer is ***adaptation***. This is where YMCA can play a key role in disseminating new guidance on means to protect homes from flooding, wildfire and extreme heat.

The challenge in mobilizing guidance to limit the impacts of extreme weather resides in communicating best practices to those living in homes and apartments.

YMCAs across Canada could be conveyors of information – in the form of easily understood infographics – that outline well-tested actions to limit the impacts of flooding, wildfire and extreme heat that will otherwise bring great suffering to households.

Below, we briefly describe three infographics that, when put into the hands of homeowners by a trusted community partner such as YMCA, result in about 70 per cent of homeowners taking at least two immediate actions to reduce their exposure.

Canada in 2050

Before turning to the utility of infographics, it is first necessary to understand how climate change and extreme weather will continue to evolve across Canada.

Based on current projections from the Intergovernmental Panel on Climate Change[iv] and Environment and Climate Change Canada[v], Canada will get **hotter** and **wetter** by 2050 (particularly in central and eastern Canada).

Temperature: Canada is warming at twice the global average[vi], which will lead to more frequent and intense heatwaves particularly in urban areas. As a "rule of thumb", between now and 2050-2080, major Canadian cities will realize an increase in maximum summer temperature of 3-5oC, and the number of hot-days, over 30°C, will double, and in some cases go up by a factor of 4x (e.g., Windsor, Ontario).

Wildfire: Hotter temperatures will lead to the drying out of natural spaces (soils, grasslands, forests) and more lightning strikes, which will increase the risk of wildfire within the wildland-urban interface (human settlements that meet wildland vegetation).

Precipitation: Warm air holds more moisture, and with an increase in average temperature this will lead to more intense rainfall events – i.e., more rain falling over shorter periods. This will increase the likelihood of rainwater and sewage systems becoming overwhelmed, leading to flooded homes and communities.

In sum, climate change is likely to contribute to more frequent and severe extreme heat, wildfire and flood events across Canada by 2050. These events will have significant economic and social impacts, affecting community infrastructure and human safety.

Home Flood Risk Protection

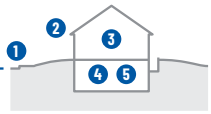
The costliest impact of climate change in Canada is residential basement flooding. In recent years, the increasing costs of flooding have escalated to the point that 10 per cent of residential housing in Canada (1.5 million homes) is no longer eligible to receive basement flood insurance[vii]. This is problematic for homeowners – the average cost of a flooded basement in Canada is approximately $50,000[vii ix]. Without insurance, an "average flood" would require the immediate expenditure of this unplanned spending by the homeowner (as flooding in a basement is generally sewer water).

To limit basement flood risk, YMCA could distribute the infographic **Three Steps to Cost-Effective Home Flood Protection** (Figure 1), to all patrons, through multiple communication channels. This could include making paper copies of the infographic available at YMCA facilities, sending electronic copies to member emails, or placement of the infographic in YMCA newsletters.

Figure 1: Three Steps to Cost-Effective Home Flood Protection

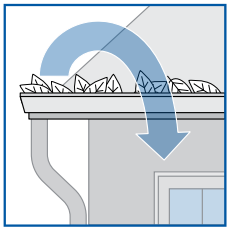
THREE STEPS TO COST-EFFECTIVE HOME FLOOD PROTECTION

Step 1: Maintain what you've got at least twice per year

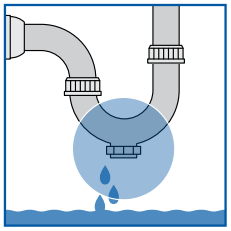


Do-it-yourself, $0

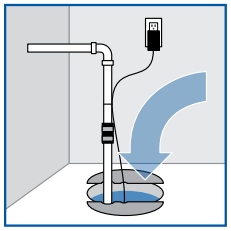
1. Remove debris from nearest storm drain or ditch and culvert.



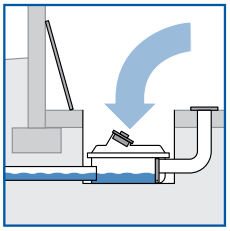
2. Clean out eaves troughs.



3. Check for leaks in plumbing, fixtures and appliances.



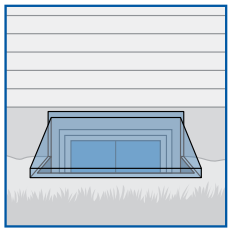
4. Test your sump pump.



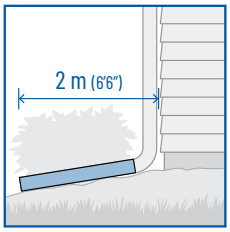
5. Clean out your backwater valve.

Step 2: Complete simple upgrades

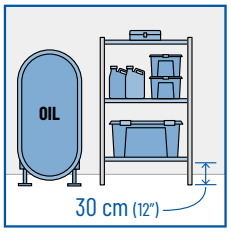
Do-it-yourself, for under $250



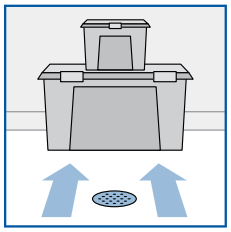
1. Install window well covers (where fire escape requirements permit).



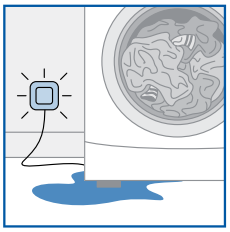
2. Extend downspouts and sump discharge pipes at least 2 m from foundation.



3. Store valuables and hazardous materials in watertight containers and secure fuel tanks.



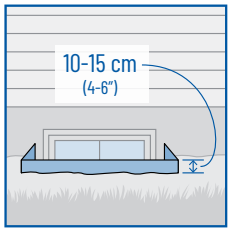
4. Remove obstructions to floor drain.



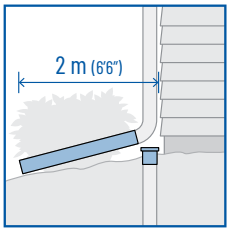
5. Install and maintain flood alarm.

Step 3: Complete more complex upgrades

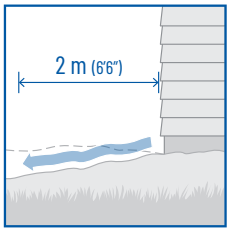
Work with a contractor, for over $250



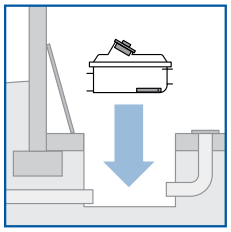
1. Install window wells that sit 10-15 cm above ground and upgrade to water resistant windows.



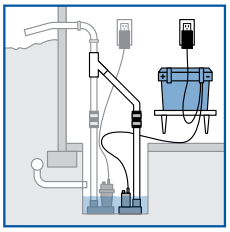
2. Disconnect downspouts, cap foundation drains and extend downspouts to direct water at least 2 m from foundation.



3. Correct grading to direct water at least 2 m away from foundation.



4. Install backwater valve.



5. Install backup sump pump and battery.

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UNIVERSITY OF WATERLOO

HOME FLOOD PROTECTION

Limiting basement flooding serves not only homeowners, but also a growing number of those who rent basement apartments. With higher interest rates, many homeowners are renting basement apartments to support mortgage payments.

The number of people living in basements in major metropolitan areas can be significant. For example, in the Greater Toronto Region, the number of basement rentals is approximately 500,000 tenants. Often, basement tenants tend to have limited liquidity. Therefore, in the event of a flood – which literally can put a tenant on the street – many would not have the funds to live in a motel while waiting for their basement restoration[x].

Action by the YMCA to bring flood protection to homeowners and renters would serve a growing number of Canadians.

Home Wildfire Risk Protection

The second most costly impact of climate change affecting Canadian homeowners is wildfire.

The impacts of wildfires are felt acutely in forested and grassland regions. The 2023 wildfire season forced 200,000 Canadians from their homes, and an area three times the size of Nova Scotia burnt (approximately 18.5 million hectares), representing eight times the annual average area burned over the past 25 years[xi].

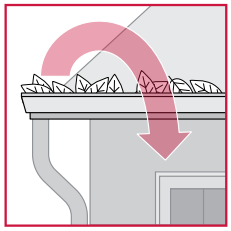
To help reduce the risk of wildfires in communities throughout Canada, YMCA could disseminate the infographic Three Steps to a Cost-Effective FireSmart Home (Figure 2) to patrons using various communication methods described under home flood protection.

Figure 2: Three Steps to a Cost-Effective FireSmart Home

THREE STEPS TO A COST-EFFECTIVE FIRESMART™ HOME

Step 1: Maintain what you've got at least twice per year

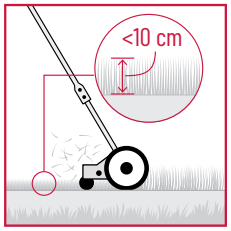
Do-it-yourself, $0 - $300



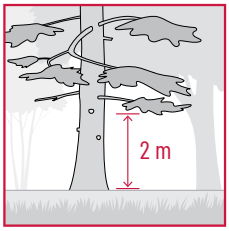
1. Remove needles, leaves and other debris from gutters, roof surfaces, decks and balconies. Regularly clean vents.

2. Remove all combustible ground cover (mulch and plants) within 1.5 m of the house perimeter.

3. Remove combustible materials (firewood and lumber) stored within 10 m of house perimeter and under decks.



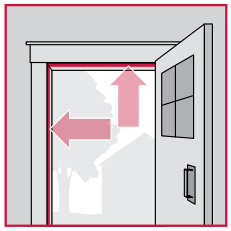
4. Mow the lawn to <10 cm and plant low-growing, well-spaced shrubs and other fire-resistant plants.



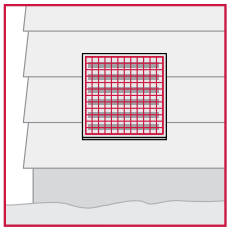
5. Prune trees to create a 2 m clearance from the ground to the lowest tree branches.

Step 2: Complete simple upgrades

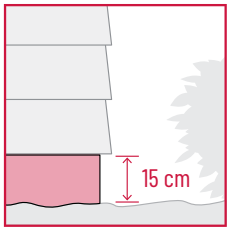
$300 - $3,000



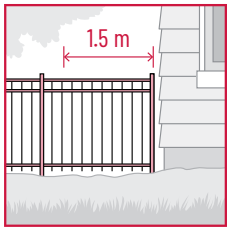
1. Replace worn or missing weather stripping on all doors including garage doors.



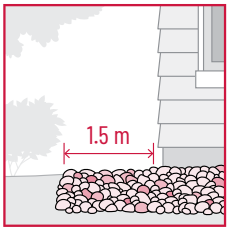
2. Add a non-combustible 3 mm screen to all external vents, except dryer vents.



3. Create a 15 cm ground-to-siding non-combustible clearance (e.g., install cement board or metal skirting).



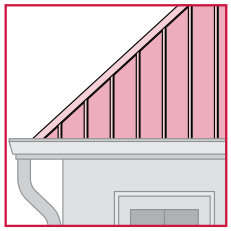
4. Install non-combustible fencing within 1.5 m of the house (cement fiber, metal, chain link or stone).



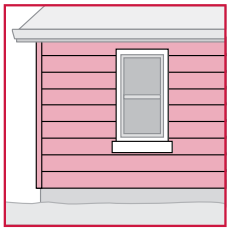
5. Install non-combustible ground surfaces within 1.5 m of the house (mineral soil, rock, concrete or stone).

Step 3: Complete more complex upgrades

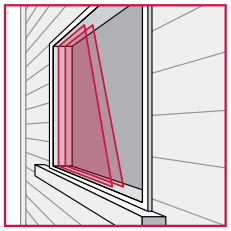
Work with a contractor, $3,000 - $30,000



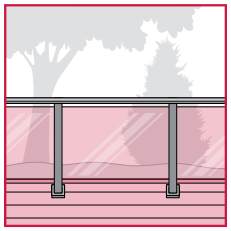
1. Install Class A fire-resistant roof covering (e.g., cement fibre, metal or asphalt shingles).



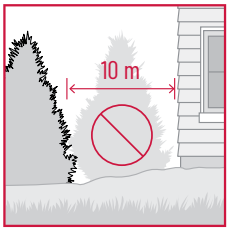
2. Install non-combustible siding (stucco, metal, stone, cement fibre board).



3. Install multi-pane or tempered glass windows and exterior fire rated doors.



4. Retrofit all deck components to be fire-rated, with a continuous surface.



5. Remove conifer trees that are within 10 m of the house.

Note: not all actions will be applicable to each home. Completing these steps does not eliminate the risk of home or structure ignition.

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FireSmart™ Canada

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FIRESMART™ HOME

YMCA efforts to limit the impact of wildfires would benefit homeowners and renters, particularly as an estimated 60 per cent of Canadian communities are located in the wildland-urban interface – the area where human settlement meets or intermingles with forests and grasslands[xii]. Proximity to these wildfire-prone natural ecosystems make communities vulnerable to damage and disruption due to wildfire.

Home, Apartment and Condo Extreme Heat Risk Protection

Flooding and wildfires are the most financially costly extreme weather events in Canada. However, extreme heat is the leading cause of death among climate change-related weather events[xiii]. Severe implications of extreme heat occurred in British Columbia in 2021, when 619 people died prematurely, and prior to that, in 2018 in Quebec, 86 people died during a heat wave[xiv xv].

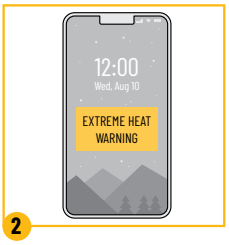
Driven by a changing climate, extreme temperatures and heat waves across Canada will intensify. In the absence of preparedness – and consistent with experience – extreme temperatures will lead to an increase in heat-related illnesses (e.g., heat exhaustion, heatstroke), and in worst-case scenarios, fatalities[xvi]. Not all Canadians will be impacted the same.

Figure 3: Three Steps to Cost-Effective Home Heat Protection

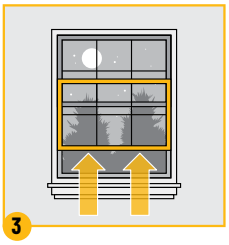
Step 1: Plan ahead to keep cool

Do-it-yourself, $0

Help vulnerable neighbours, family, friends prepare and arrange to check on them during heat events.

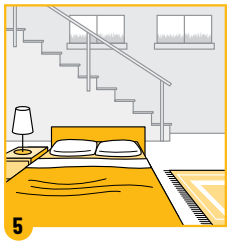


Sign up for heat alerts on your phone (e.g., WeatherCan).



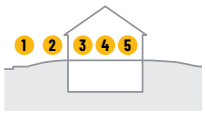
Learn how to best use windows and doors to naturally ventilate your home, particularly at night.

Choose energy efficient lights and appliances that produce less "waste" heat.

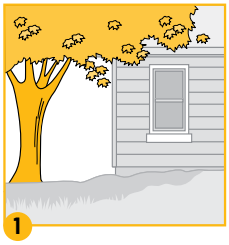


Temporarily arrange to work or sleep in cooler rooms (e.g. basement).

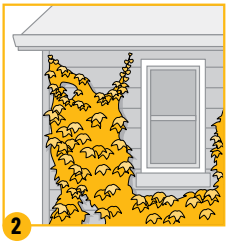
Step 2: Complete simple upgrades



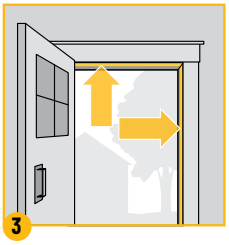
Do-it-yourself, for under $250



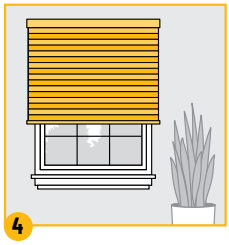
Plant and maintain shade trees, especially along south, east and west facing walls.*



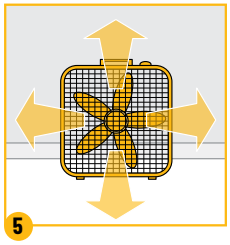
Grow plants climbing up your walls, and on decks and balconies.*



Improve home insulation and air tightness (e.g., draft strips).

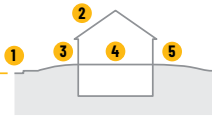


Install blinds, heat-resistant curtains, or films on windows.



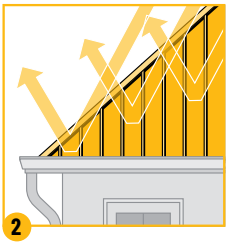
Use portable or ceiling fans that increase air circulation.

Step 3: Complete more complex upgrades

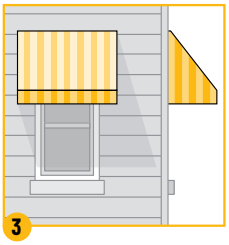


Work with a contractor, for over $250

Convert paved areas to vegetation which absorbs less heat and more water.*

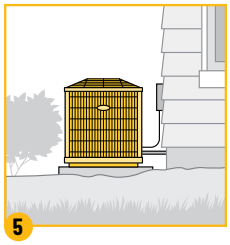


Install a green (vegetated) or reflective roof.*



Shade windows with outdoor shutters and awnings.

Install windows and doors that have a low Solar Heat Gain Coefficient (let less heat in).



Install and maintain a heat pump or air conditioning unit.

* Seek local advice on appropriate native species, and, in places at risk of wildfire, consider FireSmart™ guidance.

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UNIVERSITY OF WATERLOO

HOME HEAT PROTECTION

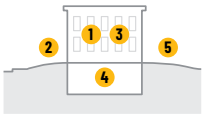
The elderly, over 70 years of age, living alone, and of limited financial means, are the most at risk due to extreme heat. At a minimum, we need a system – which YMCA might potentially help to organize – to keep track of where these vulnerable people are living. Knowing their location, during a heat wave an agency could check on them daily and ensure they have access to AC or a fan, that they are hydrated, and determine if they need transport to a cooling centre.

The next most vulnerable group to the impacts of extreme heat are the homeless, who during heat waves, must have access to cooling shelters and hydration. Roving teams in a city could check on those living on street, with such simple acts as delivering bottled water.

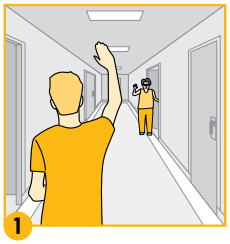
Figure 4: Three Steps to Cost-Effective Apartment and Condo Heat Protection

THREE STEPS TO COST-EFFECTIVE APARTMENT AND CONDO HEAT PROTECTION

Step 1: Plan ahead to keep cool

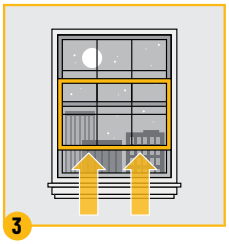


Do-it-yourself, $0



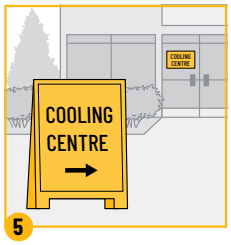
1 Help vulnerable neighbours, family, friends prepare and arrange to check on them during heat events.

2 Sign up for heat alerts on your phone (e.g., WeatherCan).



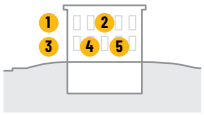
3 Learn how to best use windows and doors to naturally ventilate your unit, particularly at night.

4 Choose energy efficient lights and appliances that produce less "waste" heat.

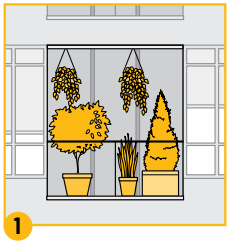


5 Arrange to work or sleep in a cooler place (e.g., shared cooling space).

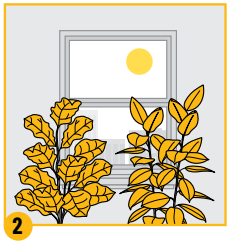
Step 2: Complete simple upgrades



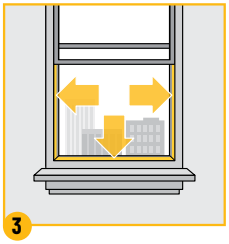
Do-it-yourself, for under $250



1 Green your balcony or deck with potted, hanging and climbing plants.*

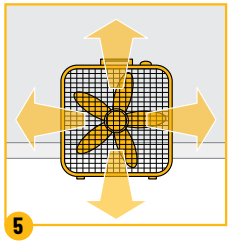


2 Place tall plants with large leaves near light-facing windows.



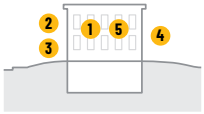
3 Improve unit insulation and air tightness (e.g., draft strips).

4 Install blinds, heat-resistant curtains, or films on windows.

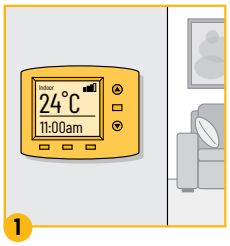


5 Use portable or ceiling fans that increase air circulation.

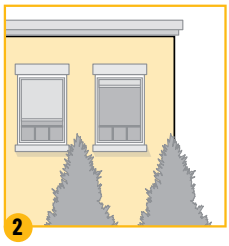
Step 3: Complete more complex upgrades



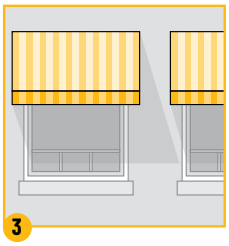
With building managers, for over $250



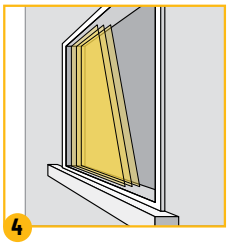
1 Install temperature and humidity monitors or controls.



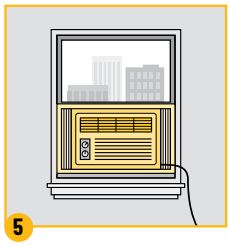
2 Paint unit walls with white paint or light colours.



3 Shade windows with outdoor shutters and awnings.



4 Install windows and doors with low Solar Heat Gain Coefficients, that let less heat in.



5 Install and maintain a heat pump or air conditioning unit.

* In places at risk of wildfire, the use of green infrastructure must be considered alongside FireSmart™ guidance.

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APARTMENT AND CONDO HEAT PROTECTION

To reduce the discomfort realized due to extreme heat, YMCA could disseminate two infographics titled Three Steps to Cost-Effective Home Heat Protection (Figure 3) and Three Steps to Cost-Effective Apartment and Condo Heat Protection (Figure 4) throughout communities.

Similar to flood and wildfire guidance, these extreme heat risk mitigation infographics profile affordable actions that involve passive cooling (e.g., glazing on windows to attenuate sunlight), or active cooling delivered through AC or a heat pump.

Summary

The escalating costs (financial and social) of extreme weather events, driven by irreversible climate change, necessitates the need for all Canadians to double-down on efforts to mobilize adaptation to climate change. An excellent place to start with this commitment is "in the home", with a focus on flood, wildfire and extreme heat protection. When informed on means to protect their home from risks due to extreme weather, Canadians act.

YMCA – a trusted and respected member within communities – can be a distribution channel to place existing guidance on home flood, wildfire and extreme heat protection directly into the hands of homeowners and tenants.

Every day that Canada does not adapt is a day we do not have. YMCA can be the catalyst for action, TODAY.

Shine On

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About YMCA Canada:

The YMCA is a charity that ignites the potential in over 2 million people annually, helping them grow, lead, and give back to their communities. Across Canada, the YMCA delivers a wide variety of programs and services that empower people of all ages and life stages to overcome barriers and rise to their full potential. Programs include child care, health and wellness, aquatics, employment services, immigrant settlement, camps, mental wellness, and many other community initiatives that respond to local needs. Foundational to all this is the YMCA's commitment to creating spaces and experiences where everyone feels safe, welcome, and a sense of belonging.

The YMCA in Canada is comprised of 37 YMCA Member Associations, supported by YMCA Canada, the national office, working together so all Canadians can shine on.

For more information, please visit **ymca.ca**.

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