

Farm and Ranch Wildfire Preparedness Workshop

For SLRD Electoral Areas A & B Farms,
Ranches, and Rural Properties

Agenda

- Understanding Wildfire History and Behaviour
- Developing a Farm/Ranch Wildfire Preparedness Plan
- Safe Open Burning Practices
- *Refreshment Break!*
- Emergency Response and Evacuation Planning
- Recovery and Returning Home After a Wildfire
- Available Resources for Planning and Preparation
- Q & A Session

Understanding Wildfire History & Behaviour

*Wildfire Patterns and Past Incidents in SLRD
Electoral Areas C & D*

The Wildfire Environment



Fuels are the only element of the fire environment over which we have direct control

Wildfire Risk = Probability X Consequence



Historical Wildfire Activity in Electoral Areas A & B

Electoral Area A

- Historical frequent natural wildfires of all sizes
- **Major incidents:** 2023 Dontown Lake Fire (>9000 ha), 2009 human-caused Carpenter Lake fires (>8,000 ha + >2,000 ha)
- **Recent Events:** Structural loss/damage and evacuation orders during the 2023 Dontown Lake fire

Electoral Area B

- Historical frequent natural wildfires with surface fires carried by grasslands
- **Significant Event:** 2021 Pavilion (>44,000 ha), indicating severe fire spread and behaviour
- **Recent Events:** Yalakom Park lightning-caused fire (>6,000 ha), 2022 lightning-caused fire north of Marble Canyon Park (1,000 ha)



Historical Wildfire Activity in Electoral Areas C & D

Electoral Area C

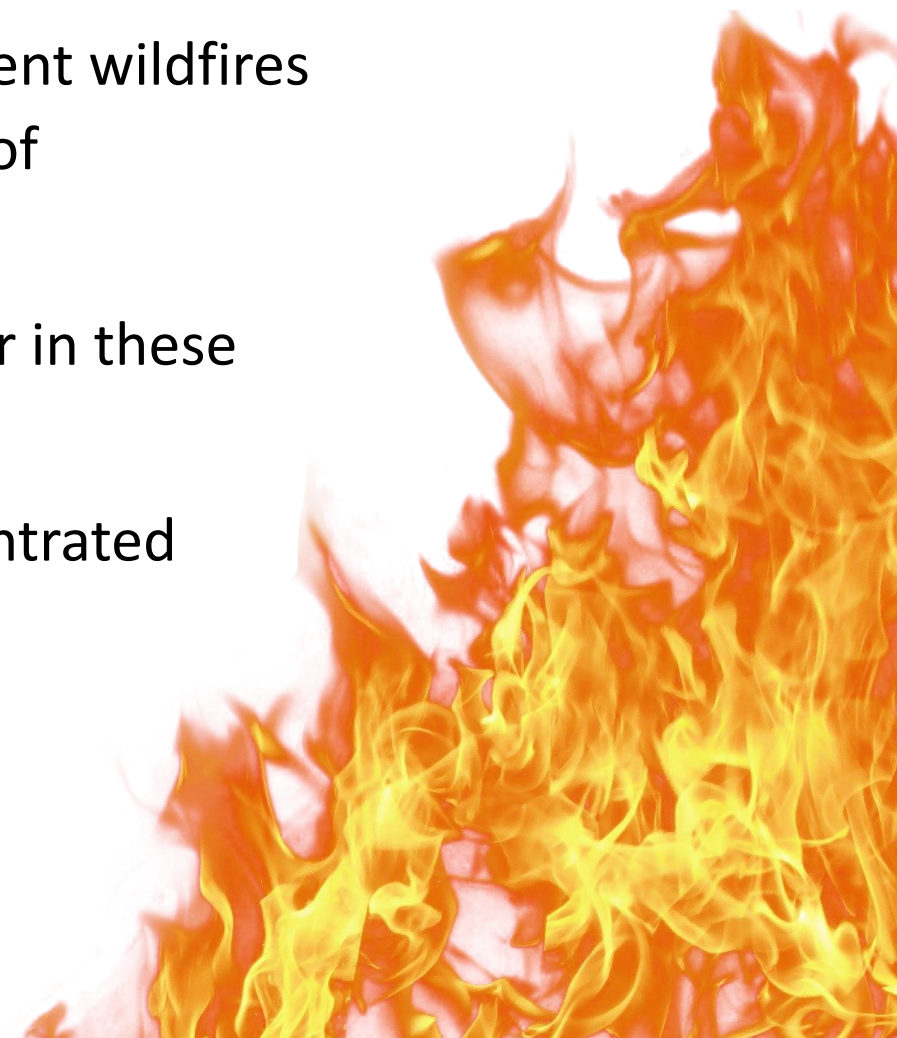
- Frequent natural wildfires, showcasing the ecosystem's fire dynamics
- **Major incidents:** 1926 human-caused fire (>4,000 ha), 2009 lightning fire (>650 ha), 2015 Boulder Fire (>6,600 ha)
- **Recent Events:** 2018 Anderson Lake fires (500 & 800 ha), 2020 Lillooet Lake Fire (~370 ha)

Electoral Area D

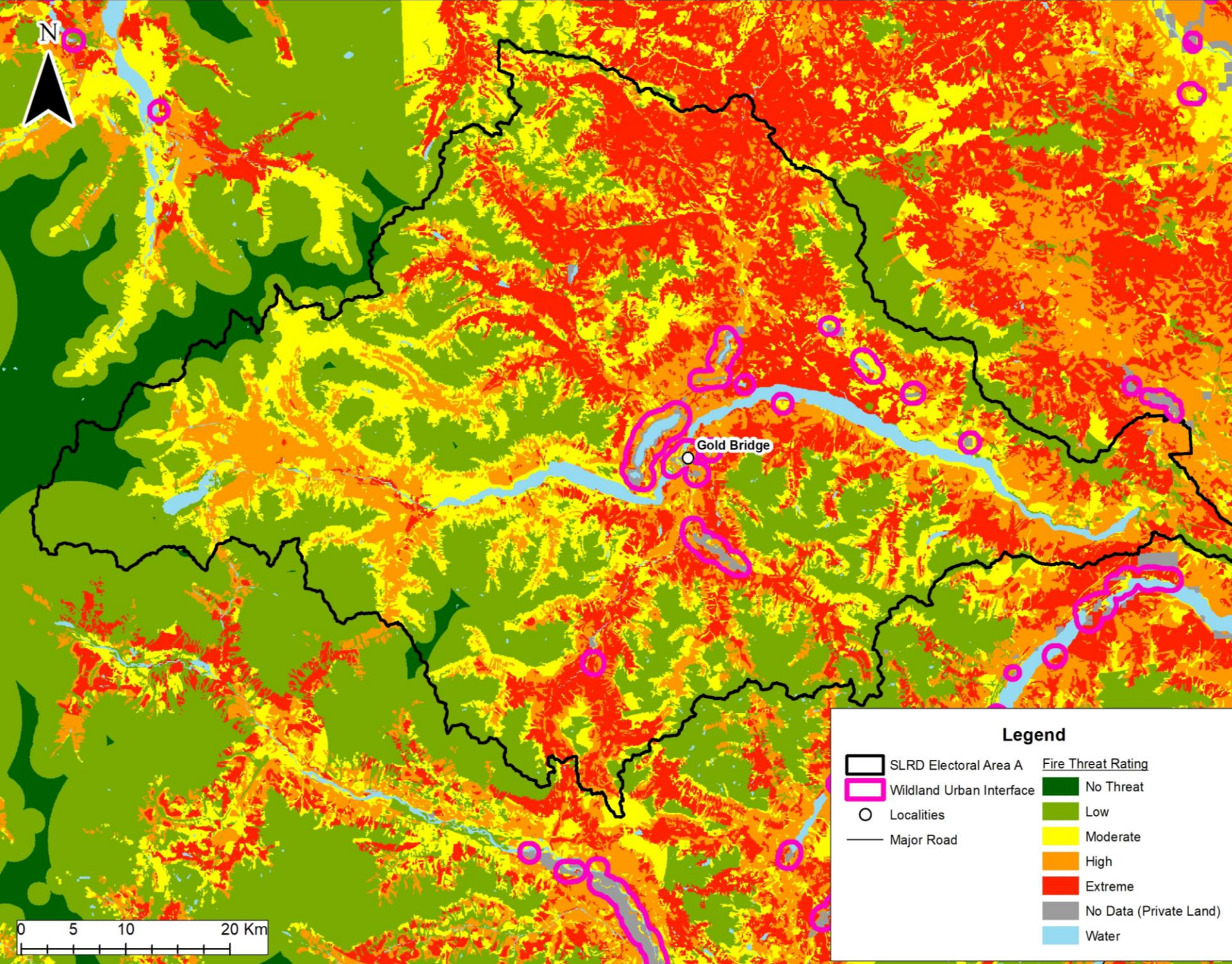
- Less frequent but high potential for large fires
- **Significant Event:** 2015 Elaho Fire (>12,000 ha), indicating severe fire behavior under extreme conditions
- **Recent Challenges:** Squamish Valley Fires in 2019 (~70 ha), 2020 (~200 ha), and Cloudburst Mountain Fire in 2021

Wildfire Behaviour in Electoral Area A

- Historically, these forest ecosystems experienced frequent wildfires ranging from small spot fires to wildfires covering tens of thousands of hectares
- Historically, the largest fires in the province would occur in these forest ecosystems
- High and extreme wildfire behaviour potential is concentrated around the Chilcotin Mountain Range



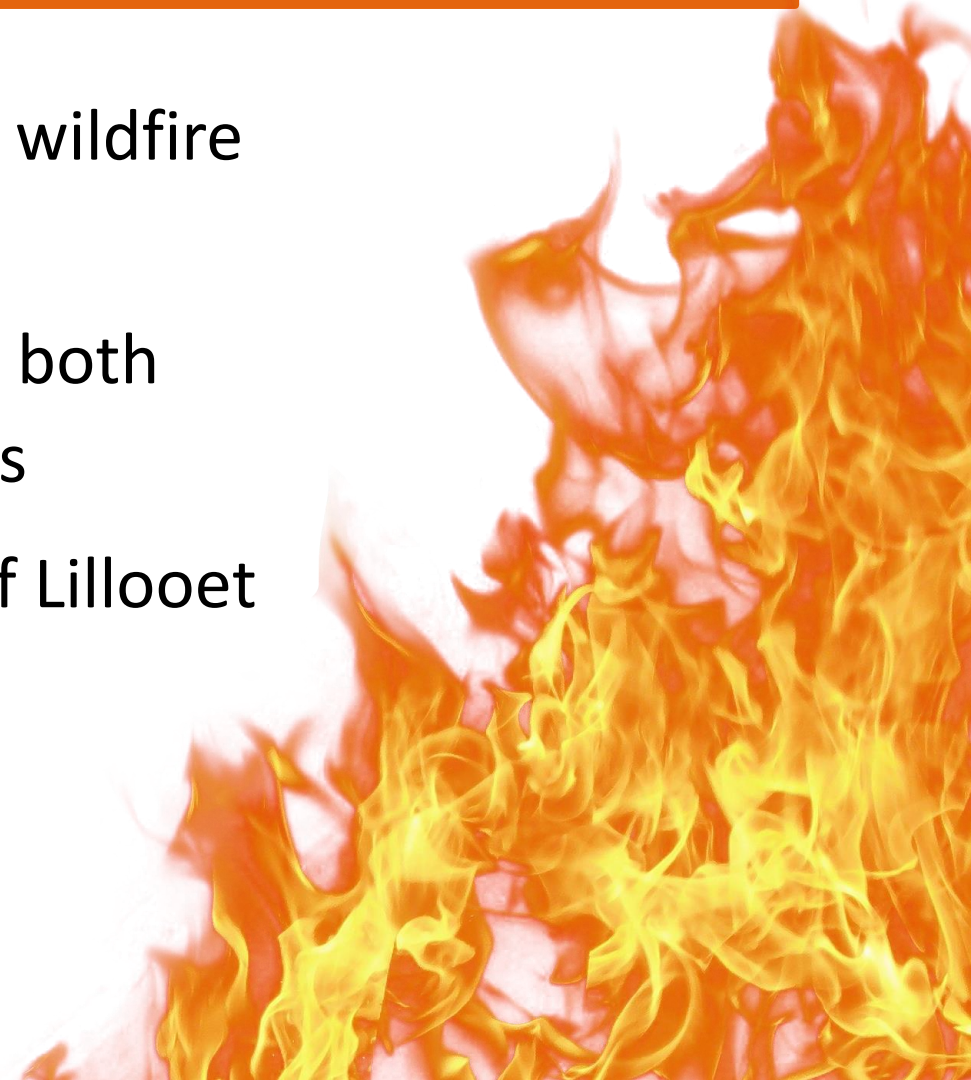
Wildfire Behaviour in Electoral Area A

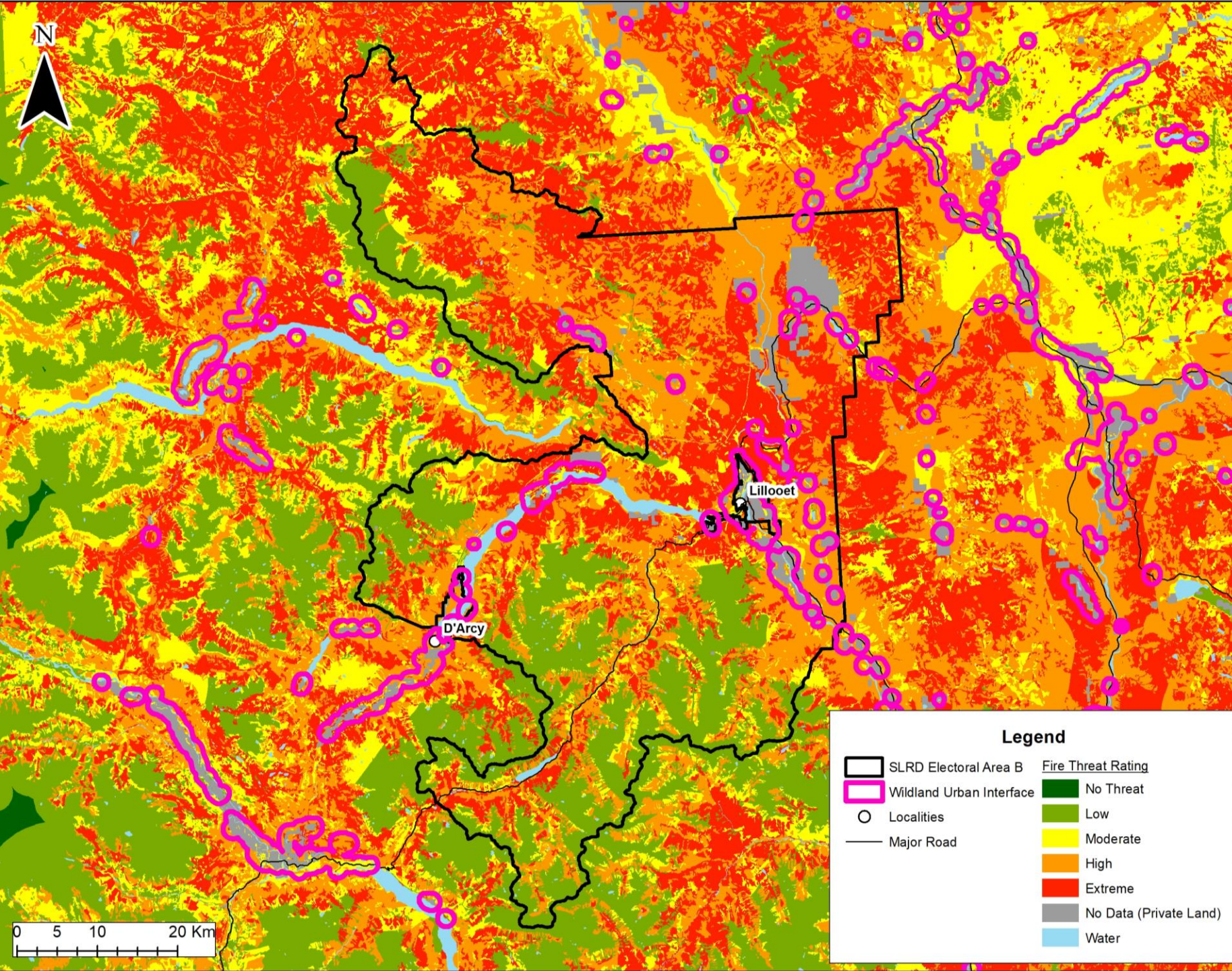


Threat Class	WUI %
Extreme	11%
High	36%
Moderate	21%
Low	2%
Very Low/No Threat (Water)	13%
No Data (Private)	16%

Wildfire Behaviour in Electoral Area B

- Coniferous forests and dry, grassy fuels carry wildfire with fire-prone areas on south-facing slopes
- Historically, the landscape frequently carried both forest-replacing wildfires and rapid grass fires
- Potential wildfire behavior increases north of Lillooet



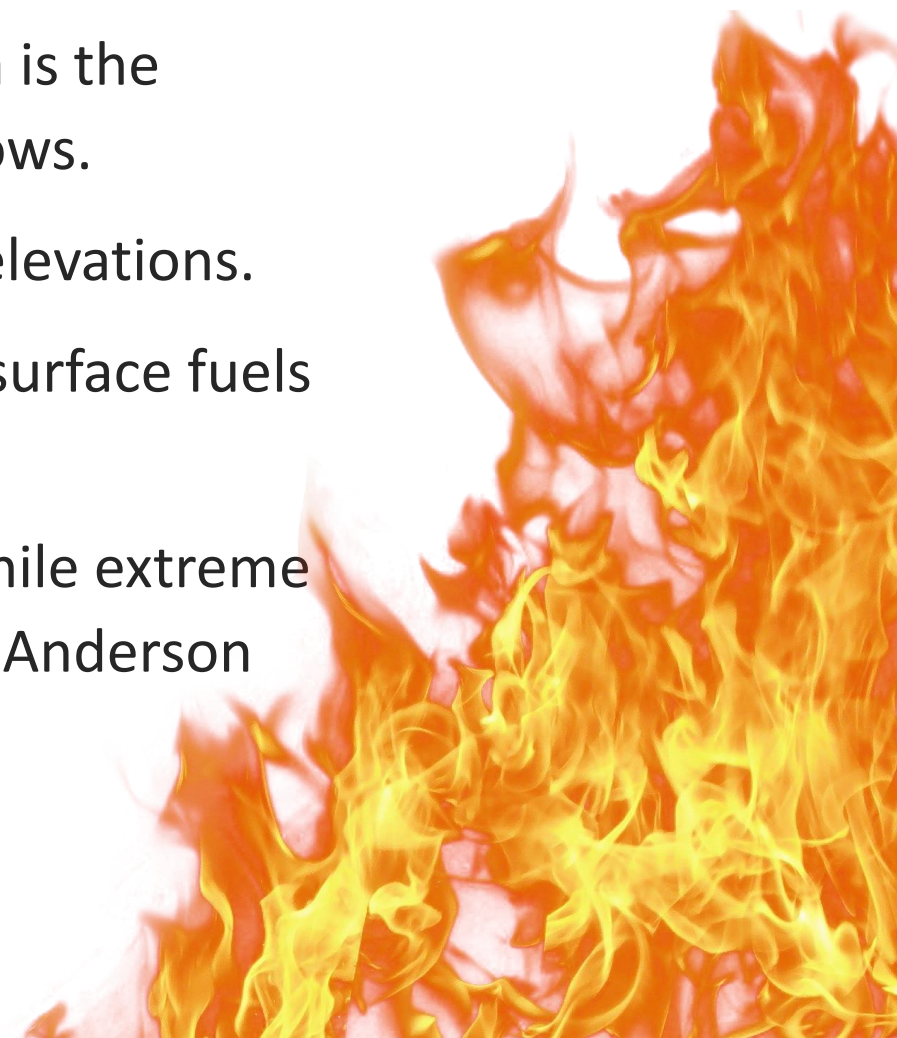


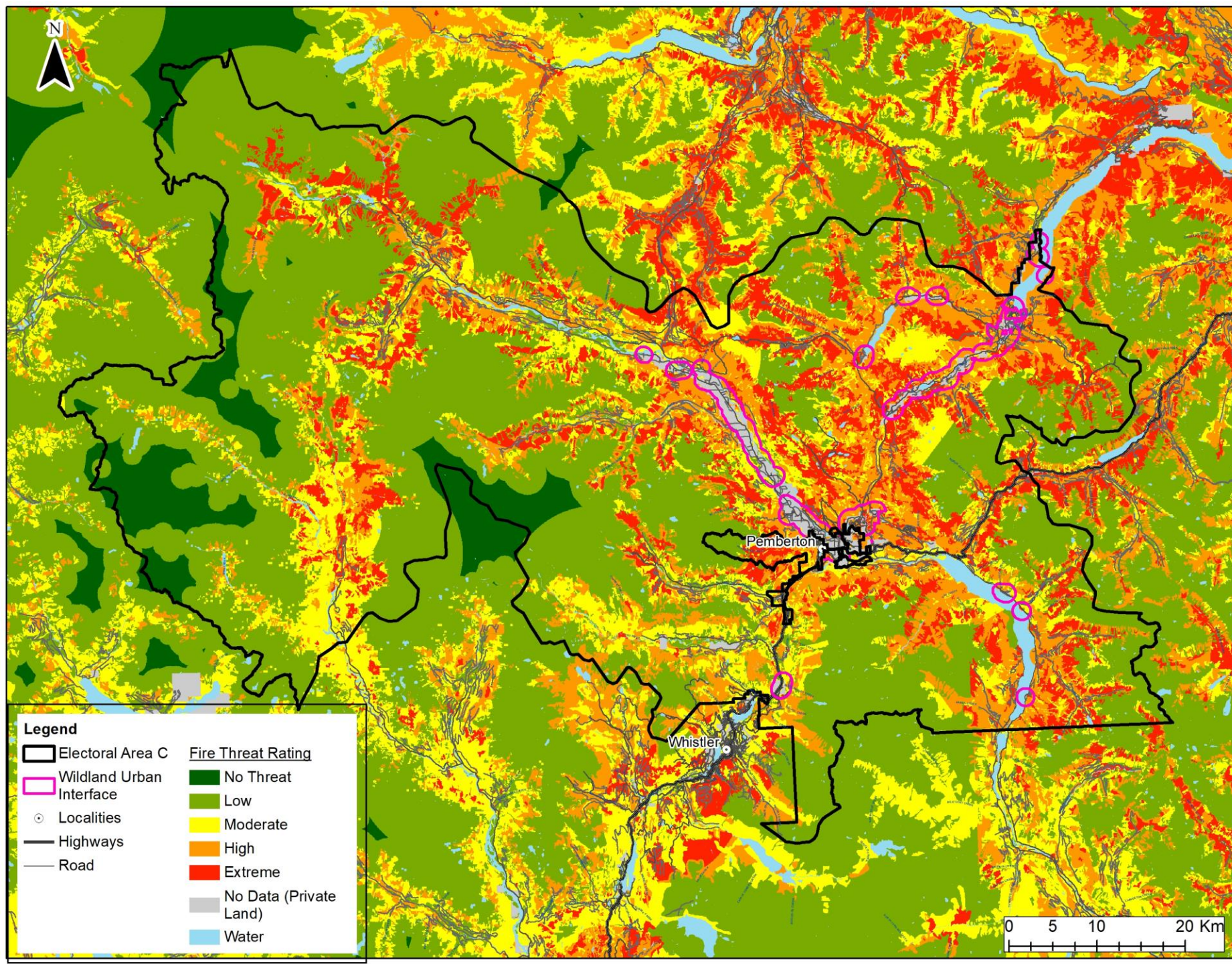
Wildfire Behaviour in Electoral Area B

Threat Class	WUI %
Extreme	6%
High	52%
Moderate	10%
Low	1%
Very Low/No Threat (Water)	6%
No Data (Private)	25%

Wildfire Behaviour in Electoral Area C

- The major risk factor common to almost the entire area is the continuity of forest cover, except for Pemberton Meadows.
- Wildfires occur across varying fuel types, aspects, and elevations.
- Wildfires on steep south and west slopes with shallow surface fuels (lichens) are particularly receptive to growth.
- High threat areas are scattered throughout the area, while extreme threat areas are concentrated around Lillooet Lake and Anderson Lake.



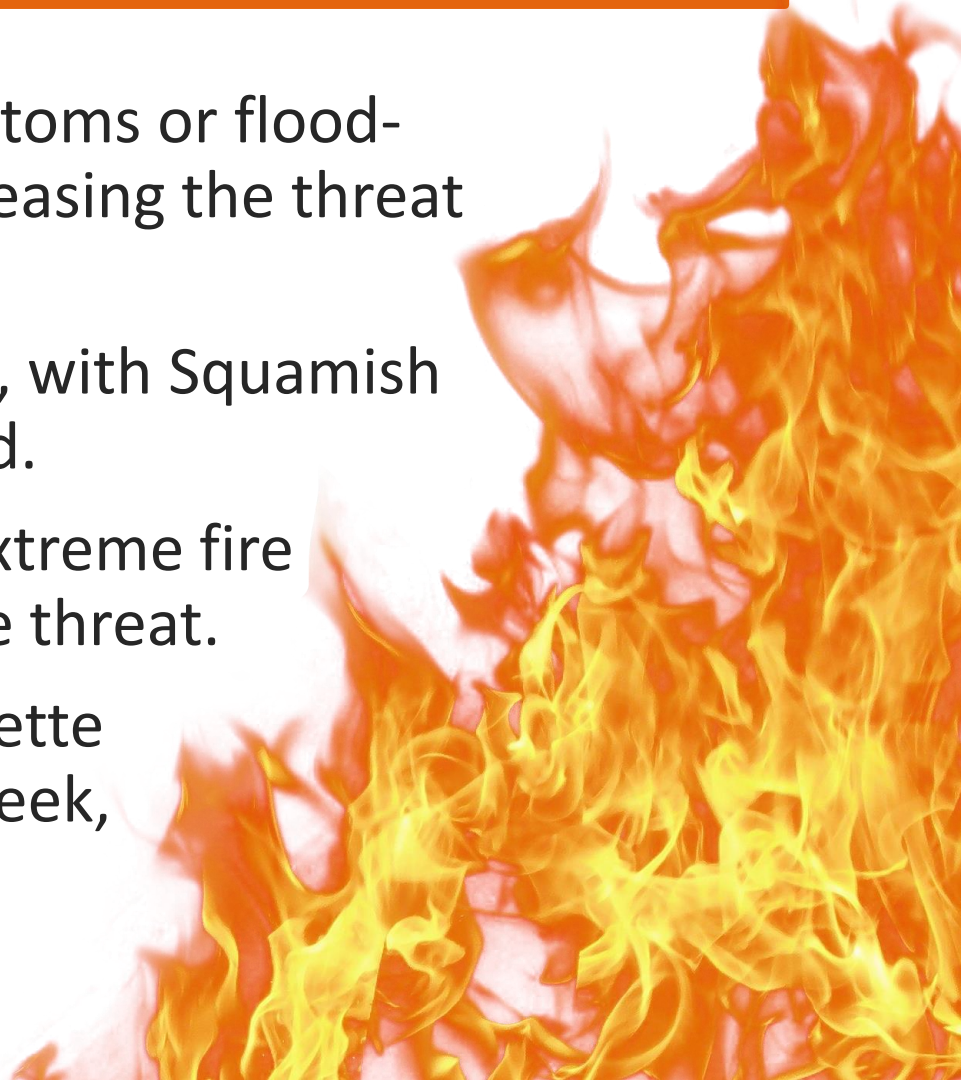


Wildfire Behaviour in Electoral Area C

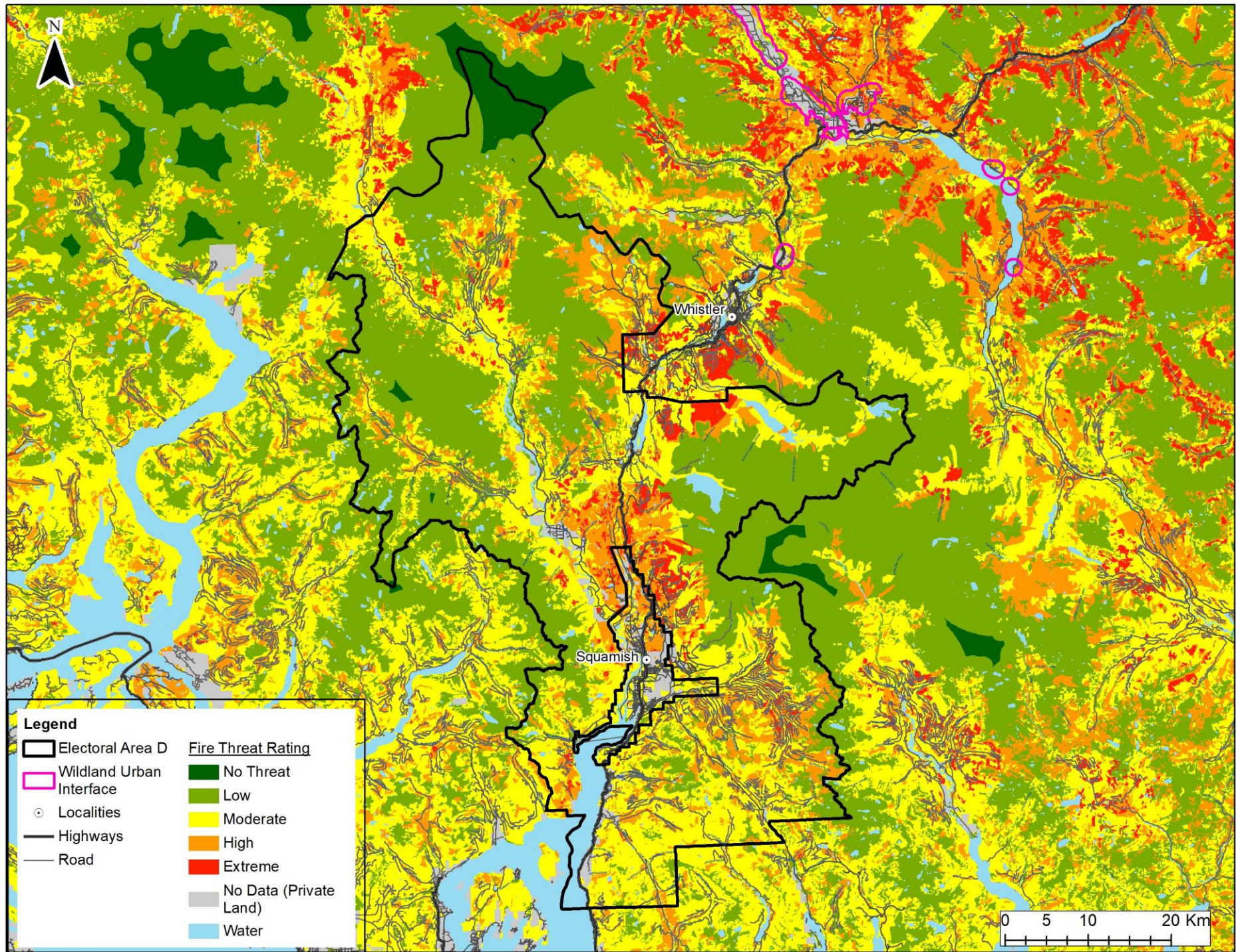
Threat Class	WUI %
Extreme	2%
High	11%
Moderate	22%
Low	16%
Very Low/No Threat (Water)	11%
No Data (Private)	38%

Wildfire Behaviour in Electoral Area D

- Communities are often situated in flat valley bottoms or flood-plain benches but extend into lower slopes, increasing the threat of uphill fire spread.
- Most of the area is dominated by conifer forests, with Squamish Valley having a significant portion of mixed wood.
- 5% of the electoral area is classified as high or extreme fire behavior threat, with 31% classified as moderate threat.
- High threat areas are located mainly around Levette Lake, Upper Paradise Valley, and most of Ring Creek, with scattered extreme threat areas.



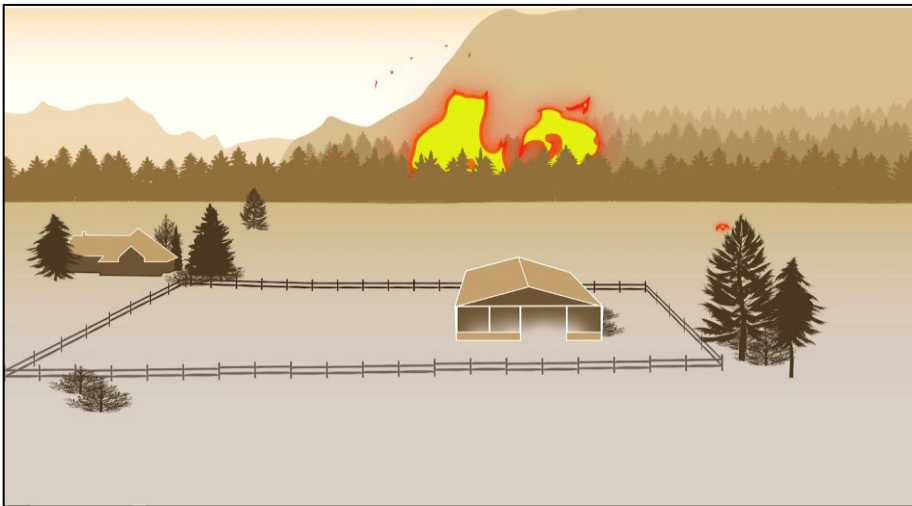
Wildfire Behaviour in Electoral Area D



Threat Class	WUI %
Extreme	1%
High	4%
Moderate	31%
Low	26%
Very Low/No Threat (Water)	15%
No Data (Private)	24%

How Wildfires Start & Spread

Three forms of ignition: embers, radiant heat & direct flame



Ignition Sources: Natural (*lightning*), human (*campfires, cigarettes*) & accidental (*power lines, railways*)

Spread Mechanisms: Wind-driven embers, slope inclines & fuel continuity

Influence of Weather: Dry conditions, high winds & heat waves exacerbate spread

Impacts of Wildfire on Agriculture Operations

- Land
- Livestock
- Crops
- Agricultural infrastructure
- Business disruption
- Homes, families, employees



Determine Current Fire Danger Rating

- Stay informed about the [current fire danger rating](#) in your area and other fire weather information.
- BCWS operates ~260 weather stations, providing hourly reports. These reports support fire weather forecasting and the Canadian Forest Fire Danger Rating System (CFFDRS).
- The CFFDRS aids fire managers in assessing ignition potential, spread, and intensity, guiding fire prevention, preparedness, suppression, and management decisions.
- Temperature, humidity, precipitation, wind speed, and direction are recorded by automated stations. Data is transmitted hourly from April to October, with reduced frequency in winter.

Fire Danger Rating

- Updated daily around 2 pm.
- The rating indicates the risk of wildfire ignition and spread.

Fire Danger Class Map

- Provides an overview of danger levels.
- Classes include Low, Moderate, High, and Extreme.

Danger Class Report

- Offers estimated and forecast fire danger ratings for specific weather stations.
- Updated daily based on provincial weather station data.

Regional Danger Class Reports

- Cariboo, Coastal, Kamloops, Northwest, Prince George, Southeast Fire Centres.
- Important for regulated forest operations; ensure weather station location represents operational area.

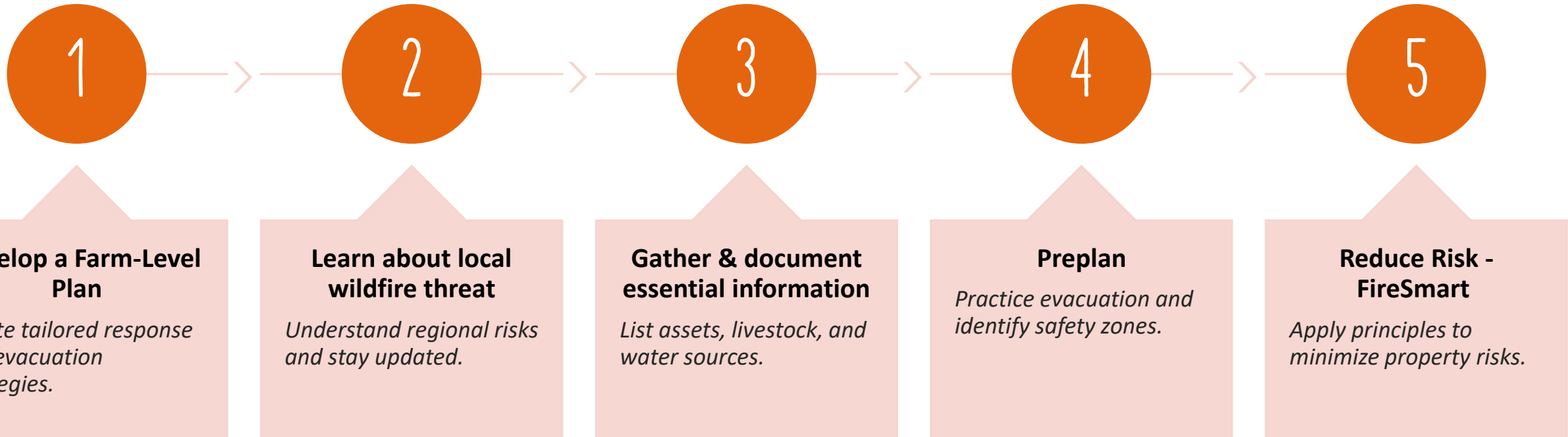


Developing a Farm/Ranch Wildfire Preparedness Plan

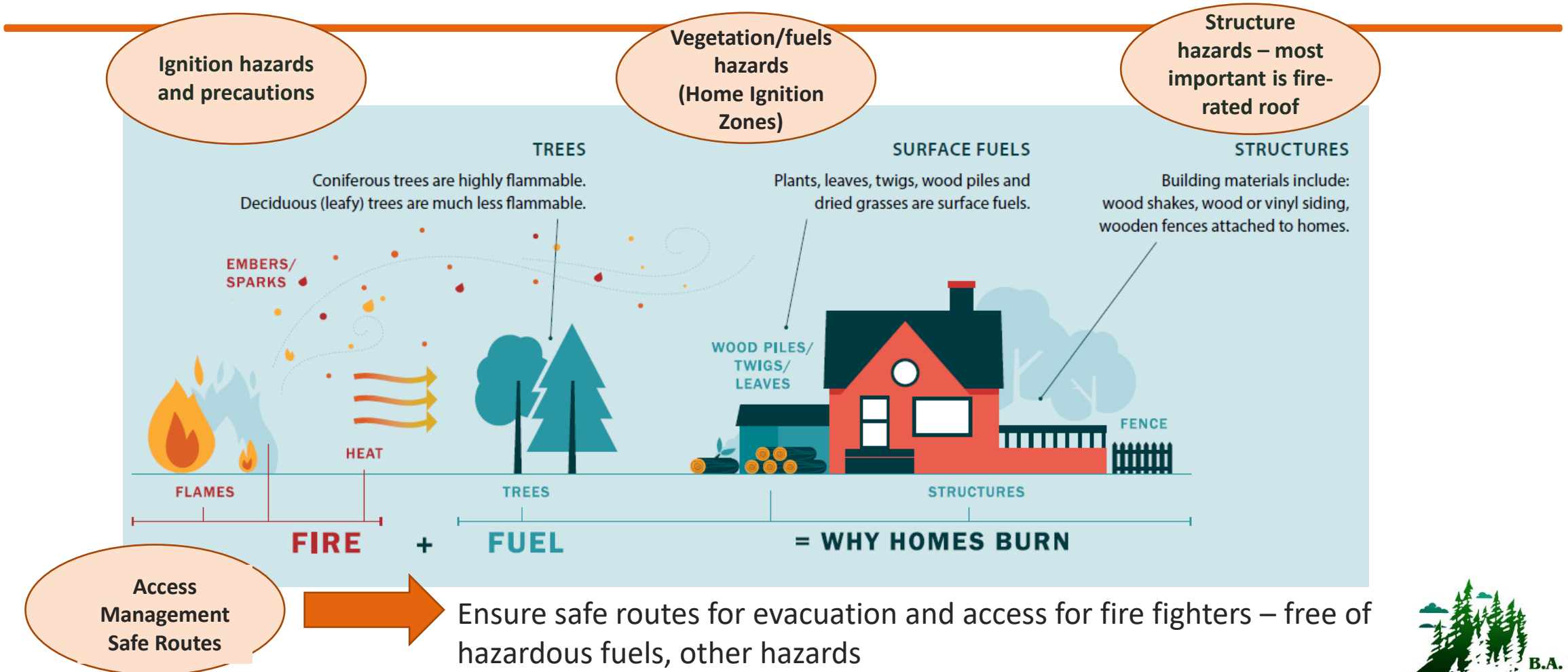
*Implementing FireSmart Principles and
Creating Defensible Spaces*

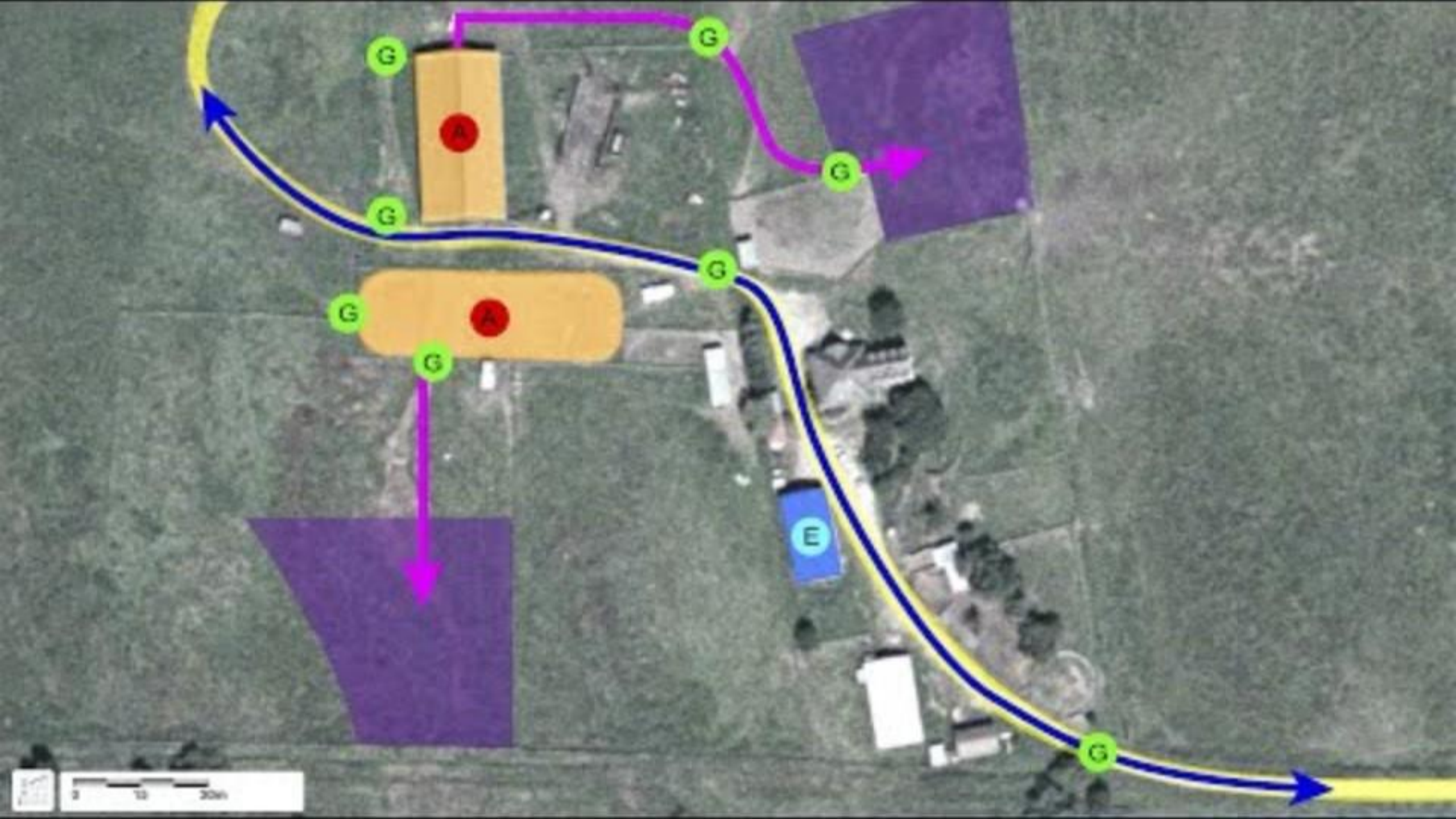


Action Plan Development



FireSmart Hazard Assessment





Identify Fuel Reduction Priorities Around Farm Buildings & Assets



Building Defensible Spaces for Safety

Immediate Zone (0 - 1.5m)

- Remove all flammable materials including feed, bags, straw and other farm materials
- Use gravel, dirt or concrete paths instead of grass
- Install metal siding on barns and outbuildings to resist heat

Intermediate Zone (1.5 - 10m)

- Ensure crop fields, especially those prone to dry out, are well irrigated and maintains
- Space out trees and large shrubs, especially around livestock areas
- Remove dead plant material that could fuel a fire

Extended Zone (10 - 30m)

- Manage fields and pastures by creating firebreaks using plowed fields or wide dirt paths
- Regularly mow grass areas to keep them short
- Consider grazing livestock in these areas to natural manage vegetation



Water Systems Information for Pre-Planning & Response

- **Connection points** – identified/mapped (i.e., stand pipes, wells, etc.)
- **Source** – well, pond, etc.
- **Capacity** – how many gallons?
- **Pressure** – suitable for suppression?
- **Volume** – gallons/minute
- **Refill Rates** – consider that the water may be essential for farm ops
- **Uses** – is it suitable for fire suppression, safe or not safe for livestock?
- **Operations** – battery or wired power, location of breaker system, diesel pump, pump location





Managing Water Resources for Firefighting

- **Inventory Water Sources:** Conduct an inventory of all water sources available on the farm, including wells, ponds, rivers, rainwater collection systems, and storage tanks
- **Accessibility:** Maintain clear access to water sources, marked with non-combustible materials.
- **Storage and Distribution:** Increase storage with tanks and cisterns; set up mobile tanks for quick access. Ensure efficient water distribution systems are in place.
- **Maintenance:** Conduct regular checks and flow tests on pumps, valves, and hydrants to ensure operational readiness.
- **Plan Integration:** Map out water sources and include them in your wildfire plan for easy reference during emergencies.



Planning for Livestock During Wildfires

- **Preparation and Identification:** Tag all livestock with owner contact information. Prepare an emergency livestock kit including food, water, and medical supplies.
- **Evacuation Plan:** Develop clear, practiced evacuation routes and procedures for all types of livestock
- **Sheltering Options:** Decide between on-site sheltering in safe, cleared areas or off-site relocation. Ensure all locations have sufficient food, water, and space.
- **Emergency Contacts:** Maintain a list of emergency contacts including local veterinarians, animal rescue, and transport services.
- **Documentation:** Keep records of all livestock, including photos and medical histories, for identification and insurance claims.



Enhancing Structural Resilience

Materials:

Use metal roofs, brick siding for barns and sheds. Install heat-resistant glass in key areas.

Layout:

Keep storage and livestock areas clear from vegetation. Plan clear escape paths.

Features:

Add ember-proof vents to barns; set up sprinklers in critical zones.

Maintenance:

Clean roofs and surroundings regularly. Inspect and fix fences and firebreaks.

Preparedness:

Update fire safety equipment list. Train workers on fire emergency protocols.



Hazardous Fuels



Rapid Spread

- Tall grass can quickly catch and spread fire.



Intense Heat

- Accumulated debris can create hot, long-lasting fires.



High Combustibility

- Wooden pallets ignite easily and burn intensely.



Direct Ignition

- Long grass can lead fires directly to wooden structures.



Varied Ignition Points

- Combustible waste can easily ignite from various sources.

Hazardous Fuels Near Infrastructure and Fuel Pathways



*Grass as a Fuel
Pathway to Wooden
Barn*



*Interior
Combustibles
Amplifying
Fire Risk*

*Forest Setting
Increases Gas Tank
Fire Threat*



*Cardboard as
Immediate Ignition
Source Near
Buildings*



Vegetation & Landscaping Management



Crop Choices

- Opt for low-flammability crops near structures.
- Arrange rows to act as fire barriers.



Grazing Techniques

- Use livestock to control grass height.
- Implement effective rotational grazing.



Pruning Practices

- Keep orchards and vineyards clean.
- Remove ladder fuels and dead material.



Fire-Resistant Barriers

- Plant fire-resistant windbreaks.
- Ensure they are healthy and well-maintained.



Maintenance Routines

- Regularly clear brush and weeds from fields and property edges to reduce fire risk.



Open Burning Practices

Implementing Safe Open Burning Practices

Preparation for Open Burning

Registration and Legal Compliance

- Obtain a burn registration number by calling 1-888-797-1717.
- Ensure compliance with all local regulations and obtain necessary permits.

Pre-Burn Planning

- Check current weather conditions and the venting index to ensure it's safe to burn.
- Determine the size and location of the burn to minimize risks.

Creating Defensible Spaces

- Build fire guards around burn areas, ensuring they are clear of vegetation and other flammable materials.
- Ensure all fire guards and windrows are appropriately sized and distanced from timber and structures.

Equipment and Resources

- Prepare adequate firefighting resources: water, tools, and manpower.
- Ensure machinery and equipment are available and in good working order.



Burning Grass and Stubble

Timing: Avoid burning grass or stubble in the heat of the day; prefer evening burns when cooler.

Weather Conditions: Never conduct burning in windy conditions.

Fire Guards: Blade or plow a fire guard, a minimum of 5 meters wide, around your burn site down to the mineral soil.

Segmentation: Burn larger fields by working on smaller sections individually, with fire guards built around each section.

Resources: Ensure adequate supervision, manpower, equipment, and water are nearby to control the fire.

Monitoring: Never leave a burn unattended; maintain a patrol on your fire until completely extinguished.



Burning Piles & Windrows

Optimal Conditions: Whenever possible, burn piles when there is still snow cover and the ground is frozen.

Management: Re-pile and re-burn as necessary until the entire pile is gone. Check for hot spots and ensure they are completely extinguished.

Windrow Specifications: Ensure windrows are no longer than 60 meters and built no closer than 25 meters from standing timber.

Fire Guards: Build a fire guard of bare mineral soil, at least 15 meters wide, around all windrows.

Construction: Build windrows perpendicular to the prevailing wind to minimize spread.



Understanding Your Legal Obligations

Penalties for Non-Compliance

- Fines starting from \$1,150 for violations of open burning regulations.
- Administrative penalties can reach up to \$10,000.
- Severe cases may lead to court fines of up to \$100,000 and/or one year in jail.

Importance of Safe Burning Practices

- Following regulations ensures the safety of your property, community, and environment.
- Safe practices help prevent unintended fires, reducing potential legal and financial consequences.
- Compliance demonstrates responsible stewardship of land and resources.

Consequences of Contributing to a Wildfire

- Individuals found responsible for starting a wildfire may be liable for firefighting costs and damages.
- Legal action can result in significant financial burdens and long-term repercussions.
- Reputational damage can affect personal and professional relationships and opportunities.

Emergency Response and Evacuation Planning

*Emergency Protocols & Evacuation
Strategies*

Effective Evacuation Planning

Contacts, Inventory & Communication

Emergency Contacts

Compile a list of local emergency numbers, neighbors, and employees.

Livestock and Asset Inventory

Maintain an updated list for quick decisions during evacuation.

Evacuation Priorities

Establish a hierarchy: people, animals, equipment.

Communication Plan

Set up systems for updates and instructions during a wildfire.

Practice and Drills

Conduct regular evacuation drills with your team and family.

Understanding Evacuation Levels

Evacuation Alerts & Orders: Key Differences

Evacuation Alert

Purpose

- Inform residents of the potential threat to their area due to an approaching wildfire.

Action Required

- Be ready to evacuate at a moment's notice.
- Prepare personal belongings, pets, and livestock for quick departure.
- Monitor local news and communications for updates.

Not Mandatory

- No need to evacuate yet, but preparation is crucial.

Evacuation Order

Purpose

- Immediate threat to life and safety due to nearby wildfire. Residents must leave the area immediately.

Action Required

- Evacuate immediately following instructed routes.
- Leave all non-essential items behind.
- Register at the designated evacuation center.

Mandatory Compliance

- Ignoring this order puts your life and others at risk.

Evacuation Rescind

Purpose

- The threat has diminished, and it is safe to return to the area.

Action Required

- Return home safely, but remain alert as conditions may change.
- Assess property damage safely and report to the appropriate authorities.

Voluntary Return

- Follow guidance for safe re-entry and be prepared for potential lingering hazards.

Sheltering In Place

Options for Livestock Protection

Option 1: Shelter Livestock in Barn

- This option is best if:
 - ☐ There is a barn on the farm where animals can be safely removed from danger (*Ex. barn protected by sprinklers*)



Option 2: Move Livestock to On-Site Outdoor Location

- This option is best if:
 - ☐ There is a pasture or other area on the range tenure where animals can be safely removed from danger
 - ☐ There is sufficient time, personnel, and equipment

Option 3: Relocate Livestock Off-Site

- This option is best if:
 - ☐ Arrangements have been made for off-site relocation (*transportation, feed, water, and veterinary care*)



Option 4: Open Gates and/or Cut Fences to Free the Animals

- Freeing animals is considered only if:
 - ☐ They cannot be moved to a safer area
 - ☐ There is no danger to people or vehicular traffic
 - ☐ There is sufficient time and personnel to do so safely.

Recovery and Returning Home

Recovery & Re-entry After a Wildfire

Re-entry Planning for Farmers & Ranchers

Considerations	Key Actions	Additional Information
Damage Assessment	<ul style="list-style-type: none">• Conduct a thorough damage assessment of property, livestock, and crops.• Document all findings with photos and notes for insurance and recovery purposes.	<ul style="list-style-type: none">• <i>Re-entry to the property should only occur after authorities have declared it safe.</i>
Health and Safety Checks	<ul style="list-style-type: none">• Check for hazards like downed power lines, gas leaks, and structural damages.• Ensure water sources are safe for use.	<ul style="list-style-type: none">• <i>Consult with health authorities for water testing and safety protocols before resuming use.</i>• <i>Provide protective gear for cleanup activities.</i>
Insurance and Financial Support	<ul style="list-style-type: none">• Contact your insurance provider to report damages and initiate claims.• Explore federal and provincial disaster assistance programs for additional support.	<ul style="list-style-type: none">• <i>Keep detailed records of all communications and financial transactions related to recovery and claims.</i>
Infrastructure and Equipment Repairs	<ul style="list-style-type: none">• Inspect and document damage to farm buildings, machinery, and equipment.• Prioritize repairs based on safety and operational needs.	<ul style="list-style-type: none">• <i>Coordinate with professionals for structural assessments.</i>• <i>Utilize disaster relief programs for funding assistance in repairs.</i>
Recovery Planning and Documentation	<ul style="list-style-type: none">• Update the farm emergency plan based on recent experiences.• Document lessons learned and adjust future planning accordingly.	<ul style="list-style-type: none">• <i>Organize debrief sessions with family and employees.</i>• <i>Consider community resources for psychological support and recovery planning.</i>

Resources Available for Planning & Preparation

*Local Resources & Support for Planning &
Preparation*

Supporting Local Resources - *SLRD*

- Develop your **Wildfire Preparedness Emergency Plan** and **Business Continuity Plan**.
- Work within your network to identify a **“Buddy Farm”** and means to transport your livestock during an emergency
- Register for a **Ministry of Agriculture Premises ID**, so that we can know about your operation and look for ways we can support you
- Register for **SLRD Alert** so that you will know if and when your area goes on Evacuation Alert or Evacuation Order.



Steps for Local Stakeholder Fire Suppression Actions

REPORT

Report any fires the BCWS immediately (*5555)

NOTIFY

Notify BCWS that you are initiating fire suppression activities

CREW SAFETY

Communicate your location to fire command, have water on hand and have an exit plan

KEEP RECORD

Keep record of equipment and personnel engaged in local stakeholder suppression

FIRE COMMAND

Fire command will be assumed by BCWS immediately upon arrival

Additional Resources

Farm and Ranch Wildfire Preparedness:

<https://firesmartbc.ca/farm-and-ranch-wildfire-preparedness/>

Open Burning Practices for Farmers & Ranchers:

<https://firesmartbc.ca/resource/open-burning-practices-for-farmers-and-ranchers/>

Livestock relocation support:

[SLRD Emergency Commercial Livestock Relocation Guide](#)
[Livestock Relocation Support - Gov BC](#)

Extreme Weather Preparedness E-Newsletter:

<https://iafbc.ca/extreme-weather-preparedness/>



Thank you!



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<https://www.slrld.bc.ca/emergency-program/hazard-reports-information/general-hazard-information/wildfires>