

## Cariboo-Chilcotin Agriculture/Wildfire Preparedness Project

### Summary of Wildfire Risk Assessment and Management Planning Resources

#### Prepared for

BC Agriculture & Food Climate Action Initiative  
Cariboo Cattlemen's Association

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## Executive Summary

Wildfires have always been a part of life in the BC interior, but several recent severe wildfire seasons and projections for increasingly hot and dry summers have brought increased attention to the likelihood that fires may become a more regular feature in the Cariboo-Chilcotin region.

Helpful planning resources exist for homeowners and small communities in areas at high risk of wildfire – like the Chilcotin – but many are tailored for those living at the urban/wildland interface. This document pulls useful elements from those resources that take into account the unique concerns of ranches related to livestock and agricultural infrastructure far from the urban interface.

Our intention here is to provide a brief summary of existing resources that we believe will be helpful for ranch owners in the Cariboo-Chilcotin Regional District in preparing for and managing wildfire on their ranches. For the purposes of this summary, we focus the process of planning for wildfires around four questions:

1. *What are the risks to the ranch and where are they greatest?*
2. *What can be done to reduce the risk to the ranch from wildfires?*
3. *What should happen in the event of a wildfire?*
4. *What can be done after a wildfire?*

The resources described here provide specific and useful guidance, but common to all the resources is the minimum set of actions that all ranches and farms should do:

- Get to know the fire history and past fire behavior in the region. Become familiar with the vegetation around the ranch, and what that implies for fire behavior.
- Maintain defensible space around high-value infrastructure. This space reduces fire intensity close to those values and also provides emergency response workers room to access and protect infrastructure. Eliminate high-risk hazards (e.g., fuel tanks, wood piles, etc.) immediately adjacent to ranch buildings.
- Make contingency plans that describe what to do with livestock in the event of a fire. Prepare and maintain safe spaces where livestock can be kept safe during a fire. Plan multiple evacuation routes for ranch workers and livestock, if that becomes necessary. Know which gates and fences can be opened in order to free animals if required.



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## 1 Overview

Wildfires have always been a part of life in the BC interior, but several recent severe wildfire seasons and projections for increasingly hot and dry summers have brought increased attention to the likelihood that fires may become a more regular feature in the Cariboo-Chilcotin region.

Helpful planning resources do exist for homeowners and small communities in areas at high risk of wildfire – like the Chilcotin – but are often tailored for those living at the urban/wildland interface. Because of this focus, they fail to take into account the unique concerns of ranches related to livestock and agricultural infrastructure, and the unique considerations that result from being far from emergency response resources. Ranches in the Chilcotin are well beyond the urban/wildland interface, and their isolation and the high value of their assets increases the need for self-sufficiency through good and careful planning.

The wildfire planning resources that do address the interface of wildlands and agricultural lands often provide only general preparedness guidelines that follow from the general principles of fire preparedness. These principles are important and helpful, but specific guidance for developing detailed pre-, and post-wildfire action plans for ranches does not seem to exist.

Our intention here is to provide a brief summary of existing resources that we believe will be helpful as information resources for ranch owners in the Cariboo-Chilcotin Regional District in preparing for and managing wildfire on their ranches. We drew from these resources to develop a planning template that addresses the unique concerns of the ranching community in the Cariboo-Chilcotin. Taken together, this summary and the template should guide ranchers in the region through the questions that are important to address and toward the resources that can help them do that.

For the purposes of this summary, we focus the process of planning for wildfires around four questions:

1. *What are the risks to the ranch and where are they greatest?*
2. *What can be done to reduce the risk to the ranch from wildfires?*
3. *What should happen in the event of a wildfire?*
4. *What can be done after a wildfire?*

Developing the answers to each of these questions is meant to guide the reader through the steps of assessing the risk to ranch resources, mitigating existing risks to an acceptable level, preparing for the possibility of fire, and recovering after a fire. Within each section, we point to informational resources and tools to help answer these questions. Though many of these resources are intended either for individual homeowners or communities, the basic principles apply to farms and ranches as well. In particular, principles of homeowner preparedness can be applied to individual farm buildings or small clusters of buildings, while principles of community wildfire protection can be applied to the spatially distributed nature of ranch lands and infrastructure.

This document is not a comprehensive list of every available resource, as many of them provide the same general guidance. Instead, we have highlighted those resources that provide unique

and particularly helpful guidelines and tools and that address the major principles of wildfire risk assessment, risk mitigation, and preparedness.

Throughout this document, the titles of each resource should contain a clickable link to the electronic version. Alternatively, searching for the titles and publisher should lead directly to the electronic document.

## **2 Step 1: What are the risks to the ranch and where are they greatest?**

The first step in risk management of any kind involves collecting information on the sources of risk, on the values-at-risk, and on how those sources might impact those values. In the case of Cariboo-Chilcotin ranches planning for wildfire, these values-at-risk might be fencing, livestock, water pumps, and ranch buildings, among other things. Understanding the risk to a particular ranch involves combining this information at two levels of assessment: first, it is important to know the level of risk that comes from the region surrounding the ranch (i.e., the 2-3 kilometres outside the property), and second, it is important to identify specific hazards on the ranch itself that increase the risk to any infrastructure.

The following resources for assessing community-level wildfire risk help address the sources of wildfire risk in the region based on fuel types, typical fire behavior, fire history, and other similar factors.

Title: **Alberta FireSmart Guide for Community Protection: A Guide for Wildland/Urban Interface Communities**

Publisher/Holder: Alberta Ministry of Agriculture and Forestry

Description: Pages 14-22 in this guide provide helpful information about how to identify and differentiate between different classes of values-at-risk, and about the kinds of information that are important to include on planning and wildfire response maps. A useful template for organizing this information is provided on page 66. Pages 82-88 provide a guide to understanding likely fire behavior associated with different forest vegetation types.

Title: **Alaska Interagency Community Wildfire Protection Planning Template**

Publisher/Holder: Alaska Department of Natural Resources Division of Forestry

Description: Pages 2-11 in this template provide a guide and a structure for assembling important information on fire risk based on the types and condition of fuels in concentric regions around the community. While the specific information on fire return intervals and vegetation types in this template is not likely to apply directly to the Chilcotin, the approach is sound, and the structure is helpful for understanding the risk to areas around neighbourhoods.

In addition, assessing home-level risk is important for ranches in the Cariboo-Chilcotin. Home-level risk is primarily a product of specific hazards close to buildings or other values-at-risk that increase the likelihood of severe damage in the event of a fire (e.g., fuel tanks, ladder fuels close to a building).

Title: **British Columbia FireSmart Guide for Homeowners**

Publisher/Holder: Emergency Management BC

Description: This guide focuses on assessing risk at the home scale, and provides a scoring chart for assessing the risk to buildings based on the location of specific hazards, the construction of the building, and the vegetation surrounding the building. The guide also provides general guidelines for the design of home site areas that reduce fire intensity around buildings, and also allow adequate defense against fire by emergency response services.

### **3 Step 2: What can be done to reduce the risk to the ranch from wildfires?**

There are many ways to mitigate the existing risk to ranches, and depending on the results of the initial assessments, some options may be more appropriate than others. In general, these management practices reduce the likelihood of large fires close to valuable infrastructure or reduce the impact that a large fire would have. Many good resources exist that provide basic guidelines that all ranches should follow to help reduce impacts from fires by reducing the occurrence of specific hazards on the ranch or by creating space with low fuel loads around valuable assets (i.e., defensible space).

The following resources provide a range of guidelines and considerations for the management strategies with greatest application for ranches in the Cariboo-Chilcotin region. They address guidelines for thinning and elimination of ladder fuels, creation of defensible space and firebreaks, creation of safe spaces for livestock, and the elimination of specific and common hazards around farms and ranches.

Title: **A Guide to Managing Community Wildfire Risk**

Publisher/Holder: Saskatchewan Ministry of the Environment

Description: Pages 7-16 in this guide provide an excellent overview of the role of fuels management, the spectrum of options from species-specific thinning to creating total firebreaks, and provides guidelines for the design and implementation of a variety of these approaches.

Title: **Alberta FireSmart Guide for Community Protection: A Guide for Wildland/Urban Interface Communities**

Publisher/Holder: Alberta Ministry of Agriculture and Forestry

Description: Pages 38-44 in this guide provide additional helpful information about fuel and vegetation management to reduce wildfire risk to homes and small neighbourhoods. In particular, there are helpful guidelines for adjusting vegetation management strategies spatially within zones around critical buildings.

Title: **Protection of Rangeland and Pastures for Wildfire**

Publisher/Holder: Texas Extension Disaster Education Network (Texas A&M University)



Description: This short information packet guide provides a thorough overview of the various methods for creating and maintaining firebreaks to protect rangeland and pasture in particular.

In addition to the detailed information found in the resources above, there are also several short summaries of best practices for mitigating risk on and around farms and ranches.

Title: **FireSmart Farm and Ranch Practices**

Publisher/Holder: FireSmart Canada, FireSmart Farm and Acreage Magazine  
(Spring/Summer 2012)

Title: **Controlling Fire Risk in Shelterbelts**

Publisher/Holder: Alberta Environmental Farm Plan

Title: **Saskatchewan FireSmart: Farm and Ranch Practices**

Publisher/Holder: Saskatchewan Ministry of Environment

#### **4 Step 3: What should happen in the event of a wildfire?**

Even the best preventative risk management strategies can only reduce – but not eliminate – the likelihood of fires occurring on ranches in Cariboo-Chilcotin. Wildfires will occur at some point, and it is important to know in advance how to respond. As with mitigation, there are many possibilities for how to respond, and the best choice will depend on specific details at the time – fire location, intensity, and spreading rate, the weather, the location of your cattle and your available resources etc. Therefore, having a few detailed contingency plans to select from depending on the specifics of the situation will help ensure the best possible response. Below are some resources for helping to develop response plans (including evacuation) for the unique concerns of farms with livestock.

The following resources provide guidelines and templates for creating plans for both evacuation and shelter-in-place response strategies for people and for livestock. Several common themes emerge from these resources, including the need to have multiple copies of each plan, and for the plan to be clearly written so that emergency response services or neighbours can execute the plan in the owner's absence.

Title: **Emergency Management Guide for BC Dairy Producers**

Publisher/Holder: BC Ministry of Agriculture

Description: This guide provides some excellent guidelines and tips for choosing between possible responses in the event of an emergency (i.e., between shelter-in-place, evacuation, and releasing livestock). It also provides an excellent template for listing and mapping critical farm information to be used by farm owners, employees, or emergency response workers, including emergency contacts, maps, on-farm response resources, and on-farm hazards.

Title: **Emergency Management Guide for BC Beef Producers**

Publisher/Holder: BC Ministry of Agriculture

Description: This guide provides some general guidelines from the basic principles of emergency preparedness, but also includes templates for organizing important ranch information that will be required in the event of a wildfire emergency, including maps. It also provides a list of additional resources and contacts that may be useful during an emergency.

Title: **Emergency Preparedness for Farm Animals**

Publisher/Holder: Public Safety Canada, Agriculture and Agri-Food Canada, & Environment Canada (Government of Canada)

Description: This brochure provides a thorough set of considerations for emergency planning for evacuation and shelter-in-place response options for farms and ranches with livestock in response to wildfire and other emergencies.

Title: **Provincial Support for Livestock Relocation During an Emergency**

Publisher/Holder: Emergency Management BC

Description: This EMBC policy statement describes the conditions and process for ranchers getting reimbursed for livestock evacuation and relocation costs during wildfire emergencies.

There are also several lists of general emergency preparedness principles as they apply to farms and ranches that are helpful to keep in mind when developing emergency response plans.

Title: **Livestock Evacuation**

Publisher/Holder: FireSmart Canada, FireSmart Farm and Acreage Magazine (Spring/Summer 2012)

Title: **Ready, Set, Go! for Farmers, Ranchers, and Growers**

Publisher/Holder: Ventura County (California) Fire Department, Ventura County Farm Bureau, Ventura County Cattlemen's Association

Title: **Wildfires and Livestock**

Publisher/Holder: Alberta Ministry of Forestry and Agriculture

## **5 Step 4: What can be done after a wildfire?**

Recovering from a wildfire can be a long process for ranches and their resources, but also for the landscape. Having an understanding of what is involved before being in the middle of the process reduces stress and the likelihood of costly mistakes.

The following resources provide information on post-fire range monitoring and management, and on resources for seeking compensation for damaged or lost property.

Title: **Rangeland and Recovery**



Publisher/Holder: FireSmart Canada, FireSmart Farm and Acreage Magazine (Fall/Winter 2012)

Description: Starting on page 23 in this magazine is an article about rangeland recovery after wildfire that provides a thorough discussion of how to evaluate fire intensity, and then develop recovery plans based on that information to ensure the long-term health of the range.

Title: **After a fire: A Checklist of Considerations for Post-fire Management**

Publisher/Holder: Texas Extension Disaster Education Network (Texas A&M University)

Description: This short information packet guide provides a thorough checklist of considerations for recovery from a wildfire specific to the rangeland itself, cattle, and fencing and facilities.

Title: **Business Insurance and Risk Management Tools for Agriculture**

Publisher/Holder: BC Ministry of Agriculture

Description: This brochure provides a list of federal, provincial, and private insurance programs, as well as other financial assistance programs to help with recovery from a range of disasters.

## **6 Helpful Templates and Existing Model Plans**

No amount of information is as helpful as a good example. Below are two models of wildfire preparedness plans and templates that are helpful for assembling the kinds of important information for wildfire planning.

Title: **Lower Eyre Peninsula Bushfire Management Area Plan**

Publisher/Holder: Lower Eyre Peninsula Bushfire Management Committee (South Australia)

Description: This resource has three parts: an detailed description of the brushfire (i.e., wildfire) risk assessment and risk mitigation planning phase, a list of values-at-risk with risk ratings and specific treatment/mitigation methods, and a list of area-wide treatment/mitigation steps to be taken. All three sections are well done, but in particular, the list of values-at-risk and treatment methods for each value-at-risk is a particularly good model.

Title: **Oklahoma Forestry Service Community Wildfire Protection Plan Template**

Publisher/Holder: Oklahoma Forest Service

Description: This is a template for organizing most of the critical assessment data, relevant mitigation strategies, and emergency response information that is important for farms and ranches to provide. Though intended for small rural communities, this same format could easily be adapted to the ranch setting.

## 7 Summary of Concepts:

A relatively short list of basic preparedness principles is common to all wildfire planning resources, and with a few minor adjustments, those same principles apply to ranches and farms in the Cariboo-Chilcotin region. At a bare minimum, all ranches and farms should:

- Get to know the fire history and past fire behavior in the region. Become familiar with the vegetation around the ranch, and what that implies for fire behavior.
- Maintain defensible space around high-value infrastructure. This space reduces fire intensity close to those values and also provides emergency response workers room to access and protect infrastructure. Eliminate high-risk hazards (e.g., fuel tanks, wood piles, etc.) immediately adjacent to ranch buildings.
- Make contingency plans that describe what to do with livestock in the event of a fire. Prepare and maintain safe spaces where livestock can be kept safe during a fire. Plan multiple evacuation routes for ranch workers and livestock, if that becomes necessary. Know which gates and fences can be opened in order to free animals if required.
- Ensure that all critical farm information (including maps and response plans) is written down, in multiple copies, and that these copies are stored in different locations around the ranch buildings. Ensure that the information is clearly labelled, and that all residents and employees know where to find it.



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