

Understanding the Effects of Prescribed Burns on Sheep Habitat and Populations

Presented By:

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Prescribed Fire for Wildlife Habitat

Prescribed Fire in Northeast BC

- First Nations
- Guide Outfitters
- Ranchers
- Provincial Government



History in MKMA

- Pre-MKMA (1970-1990s)
 - Conversion burns to ↑ habitat and expand wildlife populations
 - Stone's Sheep & Elk Habitat Enhancement Programs
- Since MKMA establishment (1998-2015)
 - Repeat burning to maintain habitat
 - No conversion burns
- 2015-present → no Gov't habitat management burns in MKMA
- 2017 → 1,200 ha burned in Tuchodi River valley

Prescribed Burning & M-KMA

2.0 Plan Foundations

2.1 Vision

The Muskwa-Kechika Wildlife Management Plan has been developed under the umbrella of the *Muskwa-Kechika Management Area Act*, the Muskwa-Kechika Management Plan,¹¹ and the Fort Nelson, Fort St. John, and Mackenzie Land and Resource Management Plans.^{12,13,14} It is through this Act and these plans that the Muskwa-Kechika Management Area is to be established as a model of land and resource management integration in which wilderness quality and the diversity and abundance of wildlife and ecosystems on which it depends is maintained in perpetuity while allowing sustainable resource development and use.

The Muskwa-Kechika Wildlife Management Plan, in the context of maintaining “the diversity and abundance of wildlife and ecosystems” (as per the preamble to the Act) provides wildlife

7

Muskwa-Kechika Wildlife Management Plan: Strategic Document

October 2009

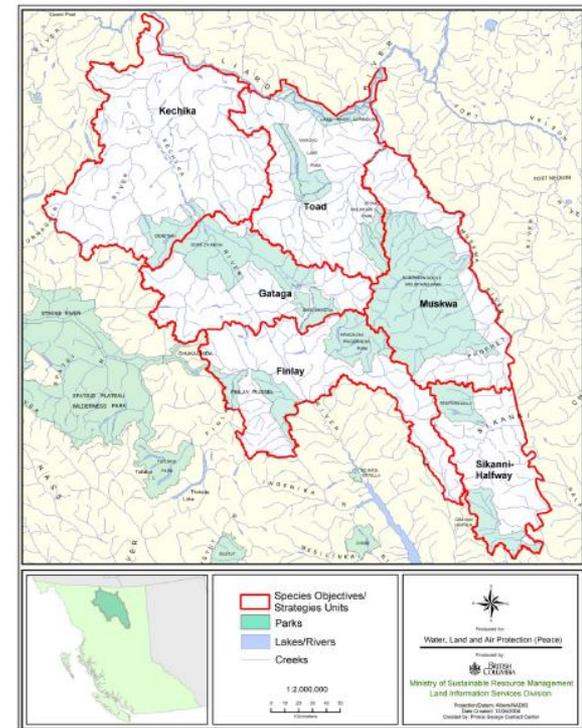
management outcomes that have been designed to facilitate compatible management and use of the Muskwa-Kechika Management Area to achieve the wildlife conservation intent of the Act.

The vision underlying the Muskwa-Kechika Wildlife Management Plan is the Muskwa-Kechika Management Area with its diversity and abundance of indigenous wildlife and their habitat maintained over time, and passed on in undiminished splendour and value to future generations.

Muskwa-Kechika Wildlife Management Plan: Strategic Document

October 2009

Figure 1. The Muskwa-Kechika Management Area and Species Objectives/Strategy Units.



Prescribed Burning & M-KMA

Without regular prescribed burning:

➤ We are at risk of losing the values that the M-KMA was established for:

- Ecosystem diversity
- Species diversity
- Hunting opportunities
- Backcountry experience



Prescribed Burns for Sheep Habitat

Rationale:

- Lack of recent prescribed burns in sheep ranges (>30 years since fire in some areas)
- Habitat change, lower quality for sheep



Krista Sittler, 2010

Objective:

Restore, maintain and enhance sheep habitat for long-term population sustainability

Prescribed Burns for Sheep Habitat

1. Location location location!

- South and west-aspect slopes
- High-elevation
- Adjacent to escape terrain

2. Timing

- Frequent burns (every 5-10 years)
- Spring burns

3. Quality over quantity

- ↑ Herbaceous forage
- ↓ Tree and tall shrub cover



4. Predator avoidance and detection

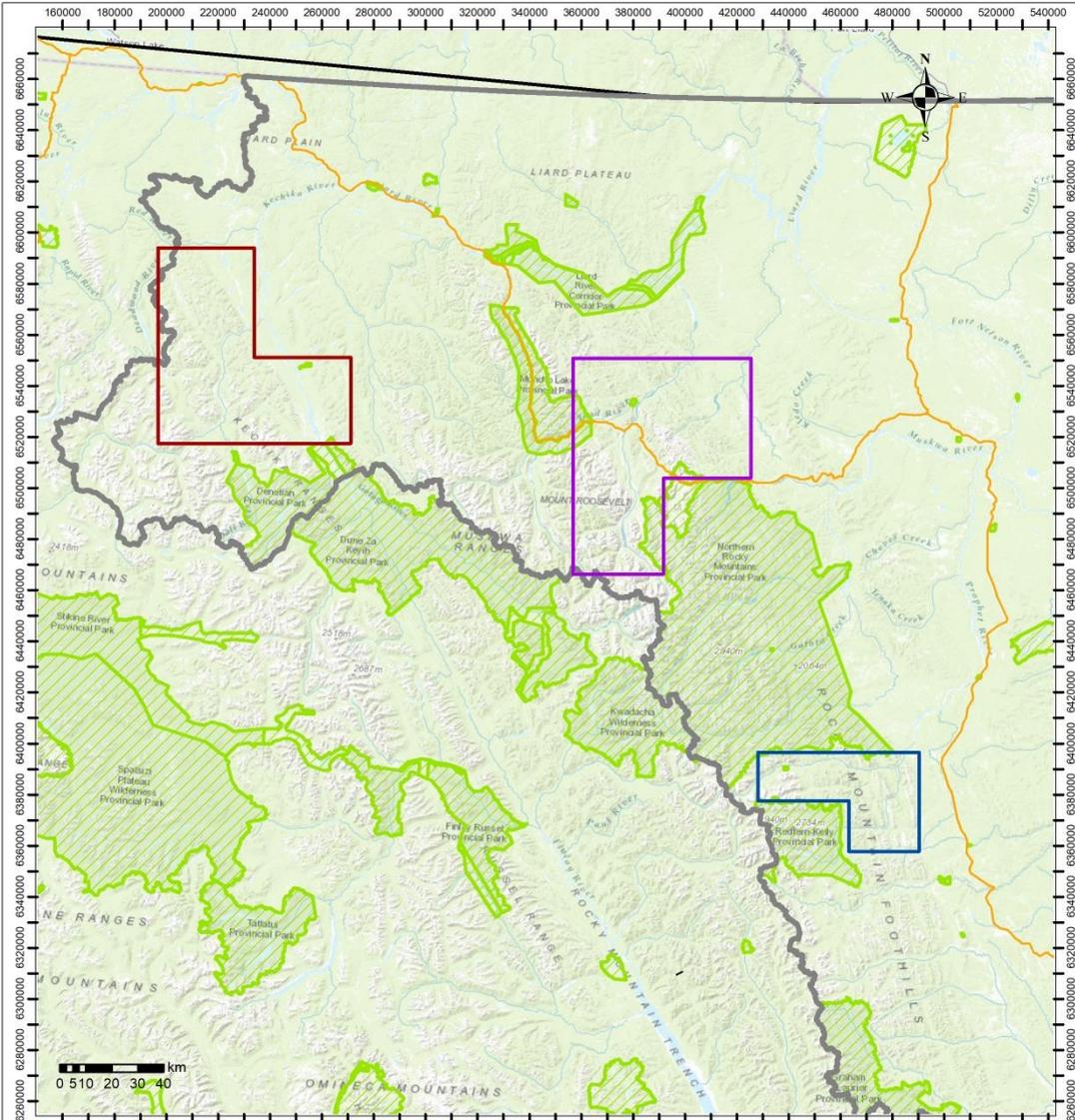
- Mobility
- Line of sight

Prescribed Burns for Sheep Habitat

Site Selection Criteria (2021-2023):

- Known sheep habitat
- Previously burned
- Outside of Parks
- Outside of BRFN Consultative area
- <400 ha in size
- Limits on the #ha of proposed burns in a watershed
- Natural Disturbance Unit limits
- In and out of wolf control zones
- Not overlapping caribou UWR/WHA
- Not in areas of high bison or elk use



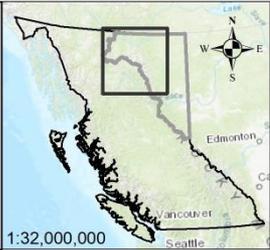


**Prescribed Burns for Wild Sheep Habitat
- Program Study Areas -**

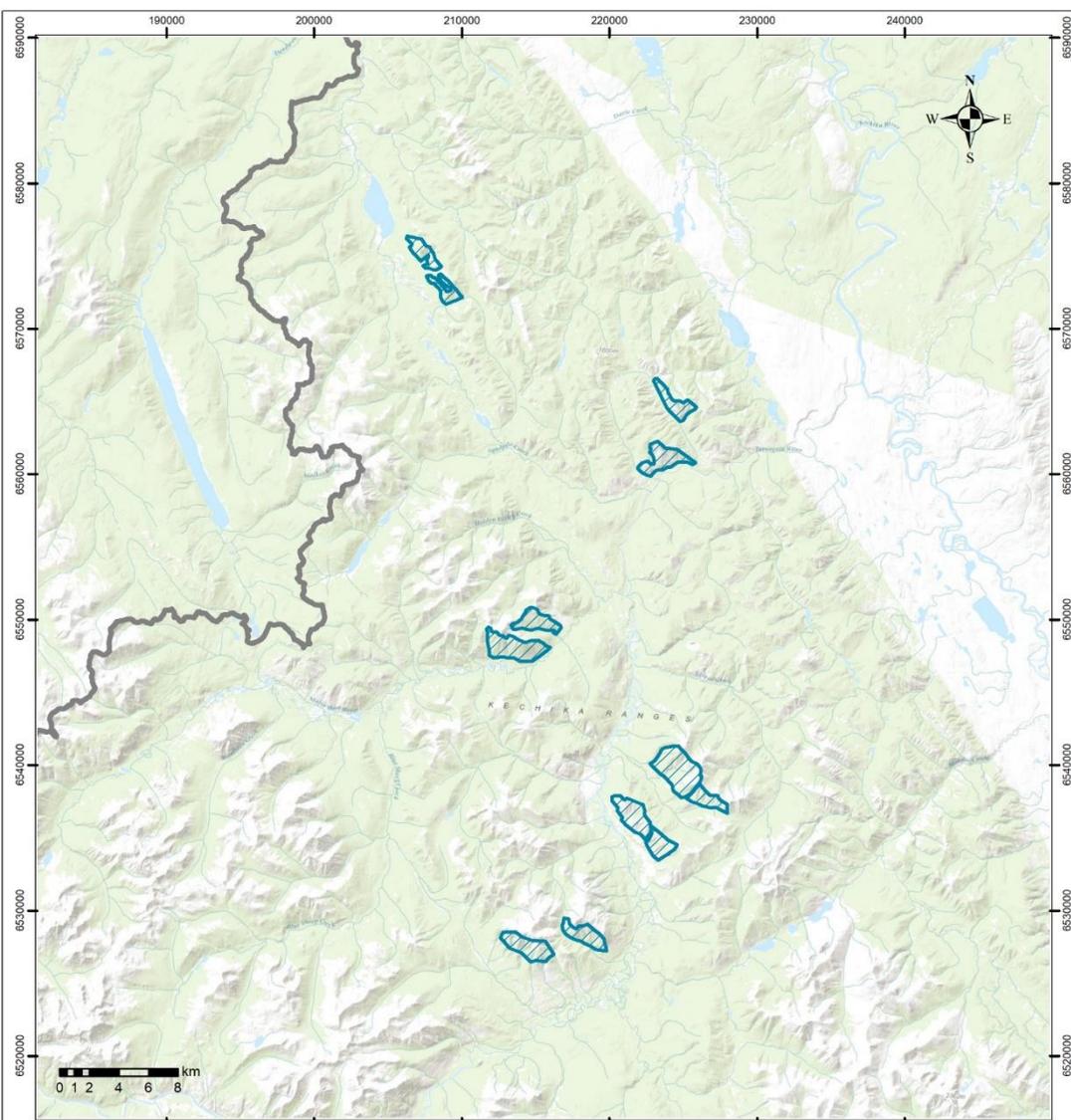
Legend	
	Kechika
	Racing-Stone
	Besa-Prophet
	Parks and Protected Areas
	Highway
	Northeast Region



1:2,000,000



1:32,000,000



**Proposed Burns 2022-2024
- Kechika Area -**

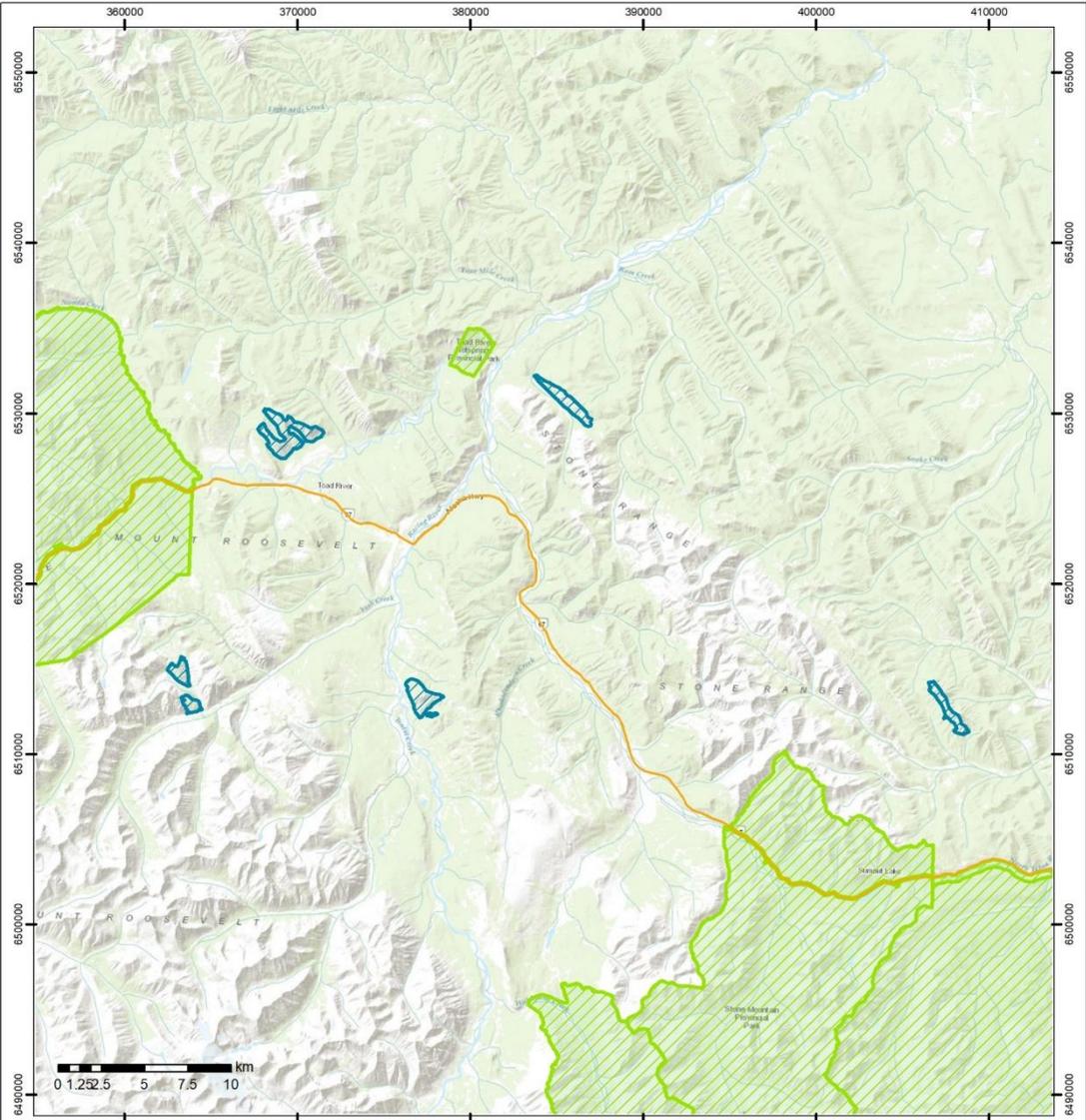
Legend

-  2022-2024 Proposed Burns
-  Parks and Protected Areas
-  Highway
-  Northeast Region



1:350,000





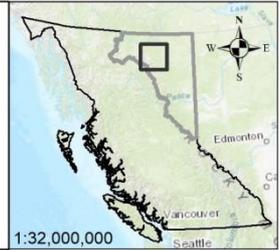
**Proposed Burns 2022-2024
- Racing-Stone Area -**

Legend

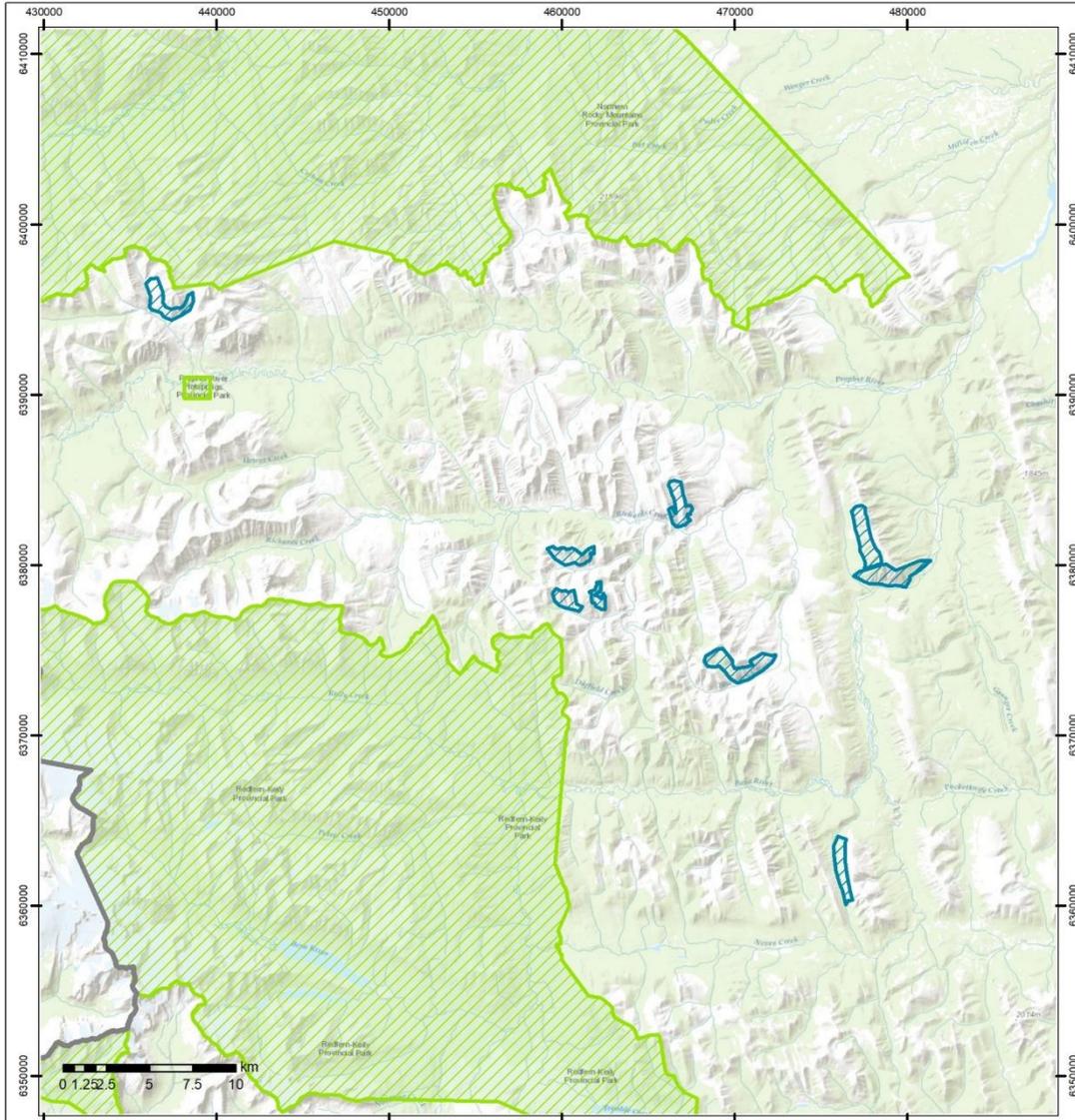
-  2022-2024 Proposed Burn Site
-  Parks and Protected Areas
-  Highway
-  Northeast Region



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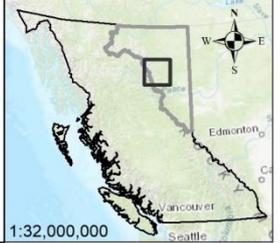


**Proposed Burns 2022-2024
- Besa-Prophet Area -**

- Legend**
-  2022-2024 Proposed Burn Site
 -  Parks and Protected Areas
 -  Highway
 -  Northeast Region



1:300,000



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Prescribed Burns for Sheep Habitat

Richards-Duffield Site

- South aspect, high-elevation
- Adjacent to good escape terrain
- >35 sheep on site in late-winter 2021
- Last burned in 1987



Treatment Objectives:

- ↓ down woody debris
- ↓ aspen encroachment
- ↑ herbaceous growth
- ↑ line of site

Date & Time: Sat Oct 17 12:22:02 PDT 2020

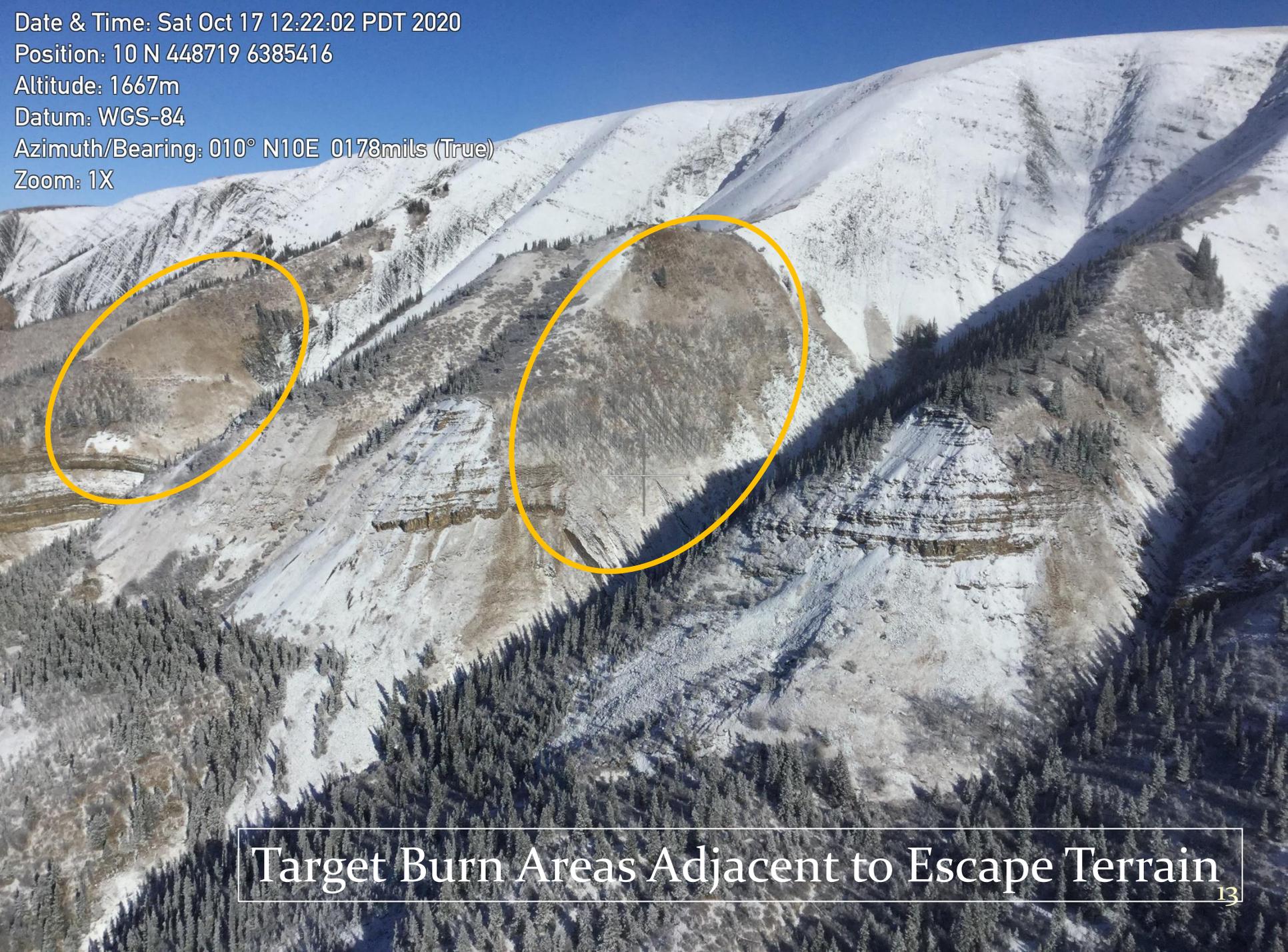
Position: 10 N 448719 6385416

Altitude: 1667m

Datum: WGS-84

Azimuth/Bearing: 010° N10E 0178mils (True)

Zoom: 1X



Target Burn Areas Adjacent to Escape Terrain

Prescribed Burns for Sheep Habitat

Project Update

1. Burn Permits

- Burn permits submitted to FLNRORD in October 2020 (13 sites)
- Unable to burn in 2021 (no permits)
- FN consultation completed by FLNRORD in July 2021
- Decision held up due to BRFN Court Decision
 - Still waiting.....
- Burn permits for 25 new sites submitted to FLNRO in September 2021
 - In FLNRORD technical review

2. Parks Use Permits

- BC Parks not supportive of prescribed burns for wildlife habitat
 - Therefore → use areas in Parks as “controls” for research project
- PUP required
 - To collect vegetation, wildlife use, pellets, recruitment survey
- Permit timeframe = 18+ months

Prescribed Burns for Sheep Habitat

Project Update

3. Pre-treatment Monitoring

- Late-winter recruitment survey (March 2021)
 - Scheduled again for March 2022
- Trail cams, vegetation plots and wildlife transects on 7 burn and control sites



Graduate Research Project

Investigate the effects of habitat treated with fire on sheep health, physiology and recruitment

- Partnership with UNBC to improve our knowledge of ungulate population response to habitats treated with fire
 - Hormone analysis to measure physiological and nutritional stress
 - Parasite loading
 - Diet quality
 - Annual lamb recruitment
 - Population response in sheep ranges with recent burns and without recent burns
- Compliments previous burn-wildlife research in the M-KMA (Seip & Bunnell 1985, Sittler 2011)



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