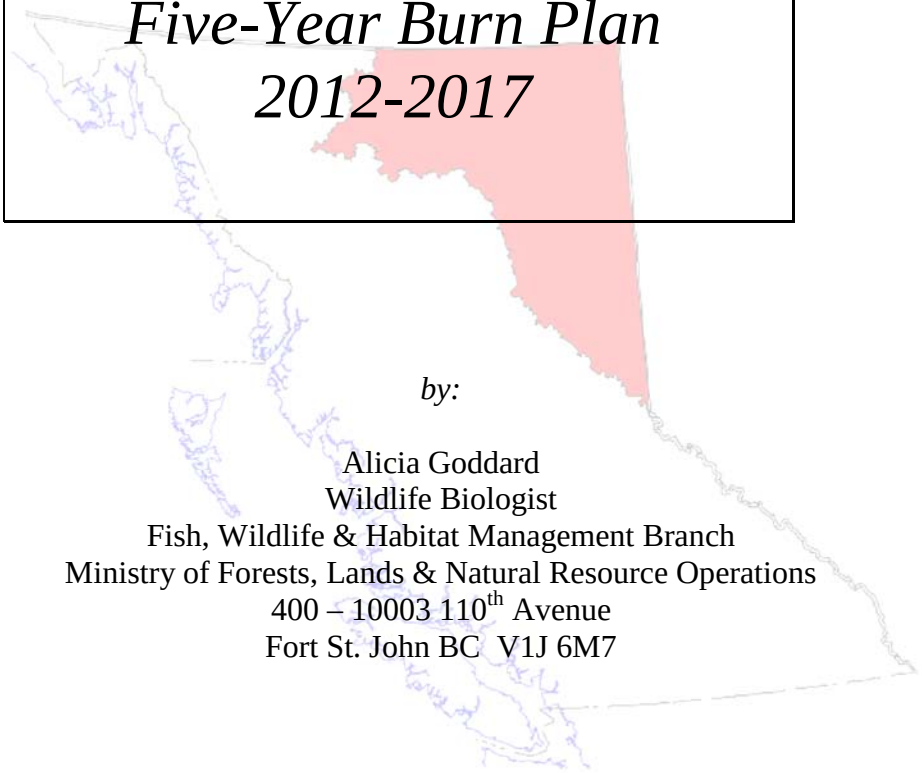
Peace-Liard Burn Program

Five-Year Burn Plan 2012-2017



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BRITISH COLUMBIA

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Executive Summary

The purpose of this document is to be used a planning tool for the Peace-Liard Burn Program over the next 5 years, and the intent of the plan is to be flexible to allow for proposed burns to be amended each year given variability in annual timing and site conditions.

The Peace-Liard Burn Program is an ongoing program of habitat enhancement conducted by the Ministry of Forests, Lands and Natural Resource Operations (FLNRO; formerly Ministry of Environment) that builds upon past successes dating back to 1978 (previously South Peace Burns, North Peace Burns and Peace Burns). The goal of the program is to reduce forest encroachment by developing and maintaining a broad range of seral stages across the Peace Region, allowing for increased plant diversity and subsequently enhanced quality and quantity of ungulate winter range (AMEC, 2002a). This is achieved across the land base by creating a mosaic of differing successional stages with the use of prescribed fire. Prescribed fire is a proven and accepted habitat enhancement technique in northeastern BC (Backmeyer et al., 1992; AMEC, 2002a), and is well supported in regional Land and Resource Management Plans (LRMPs) for the maintenance of wildlife habitat across the region.

This project has been funded by the Habitat Conservation Trust Foundation and Northern BC Guides Association. In past years, NEBC Wildlife Fund and the North Peace Rod & Gun Club have also provided significant funding for the burn program.

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1 Introduction

1.1 Background

The Peace-Liard Burn Program has been treating areas with fire in the Peace Sub-region for over 30 years, with the primary purpose of enhancing and maintaining habitat for wildlife. In 2001, a 10-year burn plan was initiated to strategically plan burning and vegetation monitoring activities within the Peace Region.

This document continues with the work completed during the 10-year plan, and will provide a 5-year plan of the prescribed burning activities proposed for the Peace Region from 2012 to 2017, including a rationale for site selection, methods of reporting results, and funding requirements for the project.

1.2 Objectives

The overall objectives of the burn program are to:

1. Maintain early seral, grassland habitat and provide forage for a variety of ungulates, and other non-target species (e.g. birds, plants, etc.), by:
    a. Reducing woody vegetation and aspen encroachment,
    b. Promoting regrowth of warm and cool season plants that provide optimal forage for ungulates;
2. Maintain ecosystem diversity by promoting early seral and grassland habitats across the Peace Region;
3. Maintain quality natural winter range areas for ungulates to minimize conflict with agricultural habitats in the Peace Sub-region.
4. Compare and quantify vegetation response in treatment and controls areas to provide a measure of treatment success and to guide treatment timing and frequency.
5. Digital mapping of historical and current burn sites.

These long-term objectives provide guidance and justification for the Peace-Liard Burn Program; however, in each year of the burn plan, short-term objectives will be identified for each of the specific sites identified for treatment.

1.3 Scientific Rationale for Burning

Since 1992, the prescribed burning program in the Peace Sub-region has been evaluated and re-evaluated on several occasions (Backmeyer et al. 1992, AMEC 2002, Lousier et al. 2009); however, questions continue to be posed with regards to the success and effectiveness of prescribed burning on wildlife. Without scientific research being undertaken to measure ungulate habitat usage in response to burning, ungulate population

response, vegetation response, and predator-prey response to prescribed burning, the Peace-Liard Burn Program has continued for the past decades on the following premises:

- Early seral habitats are being maintained where they have existed on the landbase historically and new early seral habitats are not being created at the expense of old-growth or forested habitats.
- Spring burning generally (site dependent) results in aspen (*Populus tremuloides*) suppression and increased forage production (including grasses, forbs and shrubs; AMEC 2002, Van Dyke and Darragh 2007).
    - By decreasing aspen encroachment and increasing palatable forage production, ungulate use (as well as numerous other non-target species) increases in the burn areas primarily in the short-term (in response to increased forage production and protein levels; Van Dyke and Darragh 2007).
    - Targeted burning activities can influence the distribution of animals on the landscape (i.e. retaining ungulates in preferred areas and/or attracting animals to more favourable areas).
- The Burn Program is not attempting to emulate natural fire history in the Peace Sub-region. Naturally occurring wildfires in the boreal forest and Rocky Mountains were large, infrequent and catastrophic (Lousier et al. 2009), resulting in decreased heterogeneity of ecosystems across the landscape.
    - The intent of the Burn Program is to maintain a diversity of habitats across the landscape to support the variety of wildlife within the Sub-region.
- Elk (*Cervus elaphus*) populations are native to the region and require early seral habitats in conjunction with thermal cover for winter habitat (Photo 1).
    - Prescribed wildlife burns are maintaining existing elk habitat, and loss of this winter range could result in elk moving into less favourable habitats, creating conflicts with other landuses (e.g. agricultural) or increasing competition with other native wildlife species.
    - Burn areas targeted at elk populations are located in areas, such as major river and creek valleys, to maintain elk habitat and minimize the luring of elk into higher-elevation habitats where competition with other species may occur.
- Stone's sheep (*Ovis dalli stonei*) and mountain goat (*Oreamnos americanus*) require suitable forage (shrubs, forbs and grasses) in close proximity to escape terrain and in areas of low snow accumulation for suitable winter range (Seip 1983).
    - Burns targeted at Stone's sheep and mountain goat populations are generally located in higher-elevation, sub-alpine, steep terrain and are in conjunction with known winter ranges (slopes that support low snow accumulations) or located in proximity to escape terrain for spring and summer usage (Photo 2).
- Mule deer (*Odocoileus hemionus*) populations are generally restricted to the Peace Lowlands and the most significant winter range habitats are found along the open, south and westerly aspect slopes of the Peace, Pine, Beatton, Doig, Halfway, and Moberly Rivers that support grassland and shrubland ecosystems, which provide important forage and areas of low snow accumulation (Photo 3).

- Burning in these areas is directed at reducing encroachment of trembling aspen, which reduces grass, forb and shrub forage.

There are many questions around the effectiveness of burning on ungulates; however, these can only be addressed through directed scientific research. The burn program has been successfully operating for over 30 years, and anecdotal information from intensive users of the landbase suggest that without burning in our region, the quality and diversity of large ungulates would be decreased. Further, there are many other species that derive benefits from burning including grassland-dominated plants, birds, and invertebrates. Grasslands are one of the most species-rich ecosystems in the world, and maintenance of these ecosystems within the Peace Sub-region further promotes these less common species.

Currently, research is being lead by the University of Northern British Columbia, in partnership with the Wildlife Branch of FLNRO, to investigate the response of elk and Stone's sheep to prescribed fire in the Besa-Prophet area. Through collaring of both elk and Stone's sheep, the project will monitor individual ungulate use of prescribed burns treated in 2009 to 2011. Further, seasonal habitat use of burned areas will be quantified, and vegetation response will be measured through comparisons of burned sites with control sites. Vegetation sample plots will be clipped to measure biomass and nutritional analyses on both burn and control sites (methods available in Parker et al. 1999). It is the intent that this research project will provide scientific rationale for the prescribed burning program, and guide the successful implementation of the Burn Program into the future.

(a)

(b)

Photo 1. Example of a prescribed burn for elk along the Wapiti River: (a) pre-burn conditions (May 2011) and (b) post-burn conditions (August 2011). Elk were observed in the burn area within days of burning.

Photo 2. Example of a prescribed burn site targeted specifically for Stone's Sheep habitat. Sheep-targeted burns are usually higher elevation, patchy in nature, and in proximity to escape terrain. Low-elevation forested areas are not targeted for burning. This site was burned in June 2011. Two bull caribou were observed in the burn in August 2011.

Photo 3. Example of a prescribed burn site for mule deer along the Peace River. The intent of these burns is to reduce aspen encroachment and stimulate grass, forb and shrub production.

1.4 Higher Levels Plans

The Land and Resource Management Plans in the Peace Sub-region have clear direction as to the importance of burning within the region for the maintenance of important habitats for wildlife purposes. The general management direction of each of the LRMPs identifies several objectives that can be achieved through prescribed burning:

Dawson Creek LRMP:

- "Conserve the biodiversity of natural ecosystems." (pg. 15)
- "Sustain and manage wildlife habitat for red, blue and yellow-listed species." (pg. 15)
- "Sustain and manage wildlife and critical wildlife habitat to reduce wildlife-agriculture/range conflicts." (pg. 15)

Fort St. John LRMP:

- "Maintaining the opportunity for the sustainable harvest of fish and wildlife resources by maintaining *sufficient habitat of appropriate capability* to sustain populations." (pg. 13)
- "*Conserving biodiversity, rare ecosystems, plant communities and habitat types*. This will be achieved by identifying and mapping rare ecosystems, plant communities and habitat types and considering them for incorporation into more detailed plans with designations such as sensitive areas or wildlife habitat areas

and managing them with *ecologically appropriate silvicultural systems*. This goal will be further achieved by maintaining larger patches of unfragmented mature and older seral stage forests, where appropriate, and ensuring connectivity between important habitat types by using naturally occurring corridors (e.g. riparian areas)." (pg. 14)

Fort Nelson LRMP:

- "Maintain the diversity and abundance of wildlife." (pg. 28)
- "Maintain the integrity and diversity of *existing habitats and ecosystems* (including functional large predator-prey systems." (pg. 28)

Areas identified for prescribed burning under the Peace-Liard Burn Plan satisfy all these objectives, as most of the proposed burns identified overlap directly with ungulate winter range areas and sustain biodiversity across the landscape through the maintenance of early seral habitats, such as grasslands. Loss of fire from the landscape would result in decreased biodiversity, as grasslands and other early seral habitats would be lost through succession, and ungulate winter range areas would no longer support ungulate populations at the level required. A loss of high capability ungulate winter range areas in proximity to agricultural areas would further impose upon the agriculture/range conflict as a lack of natural habitats would reduce the capability and suitability of existing natural habitats, forcing ungulates into agricultural areas for forage, further exacerbating the conflict.

In addition to the general management directions specified in the plans, the LRMPs also provide specific direction for the maintenance of habitats for wildlife within Parks and Protected Areas identified through the LRMP process:

Northern Rocky Mountains Protected Area (FN LRMP):

- "This area provides key winter ranges for wildlife populations. Prescribed fires have been historically used for wildlife habitat enhancement." (pg. 128)

Redfern-Keily Protected Area (FSJ LRMP):

- "Maintain high capability ungulate winter habitat (e.g. elk, deer, moose, mountain sheep and mountain goat)." (pg. 146)
- "Maintain *functioning and healthy ecosystems* in the resource management zone." (pg. 146)

Goal 2 Approved Protected Areas (FSJ LRMP):

- Sites along the Peace River Corridor – "They [sites] offer locally important recreational opportunities, as well as, protecting rare grassland ecosystems and mule deer winter range".

2 Methods

2.1 Study Area

The Peace-Liard Burn Program encompasses the entire northeast corner of British Columbia, and includes all of Fish and Wildlife Region 7B (Government of British Columbia 2010; Figure 1). The region is approximately 19 million hectares in size and

includes three biogeoclimatic zones that are targeted for prescribed fire: Engelmann Spruce-Subalpine Fir (ESSF), Boreal White and Black Spruce (BWBS), and Spruce-Willow-Birch (SWB; Ministry of Forests 1991; refer to Figure 2). The burn program specifically targets areas that satisfy a number of criteria:

- The area has been historically burned by either natural (e.g. lightning) or human-induced causes (e.g. prescribed wildlife burns, First Nations burns, etc).
- The area has been removed from the timber harvesting landbase and is considered as non-contributing (e.g. grassland).
- The burn area provides significant habitat to one or more species, and if not maintained through fire, the area would not support the necessary habitat for the species.

The current burn program does not target areas that are presently forested with mature timber. Further, the goal of the Burn Program is not to create new early seral habitats, but to maintain the effectiveness of existing early seral and grassland habitats across the region through fire regeneration.

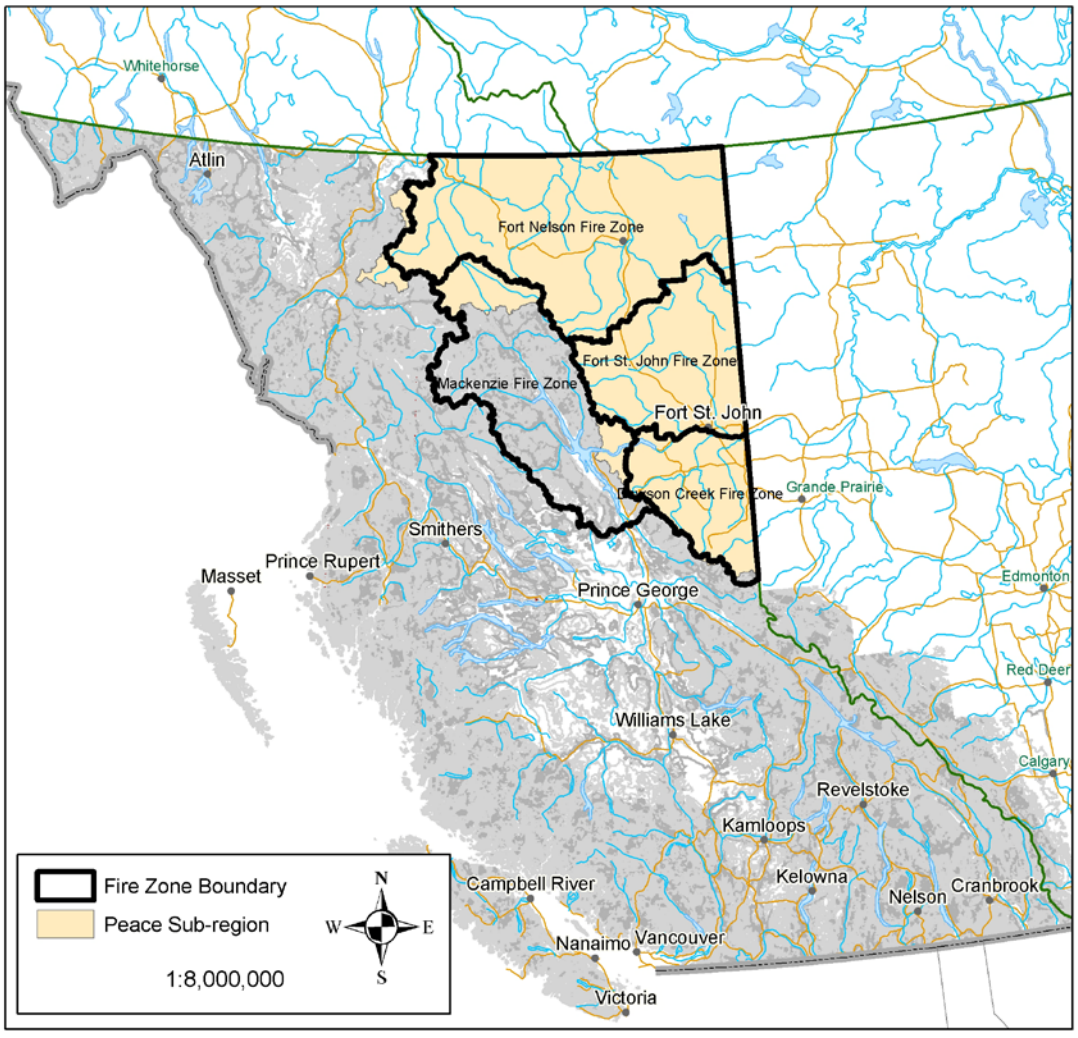

Figure 1. Peace Sub-region 7B and overlapping Fire Management Zones, northeastern British Columbia.

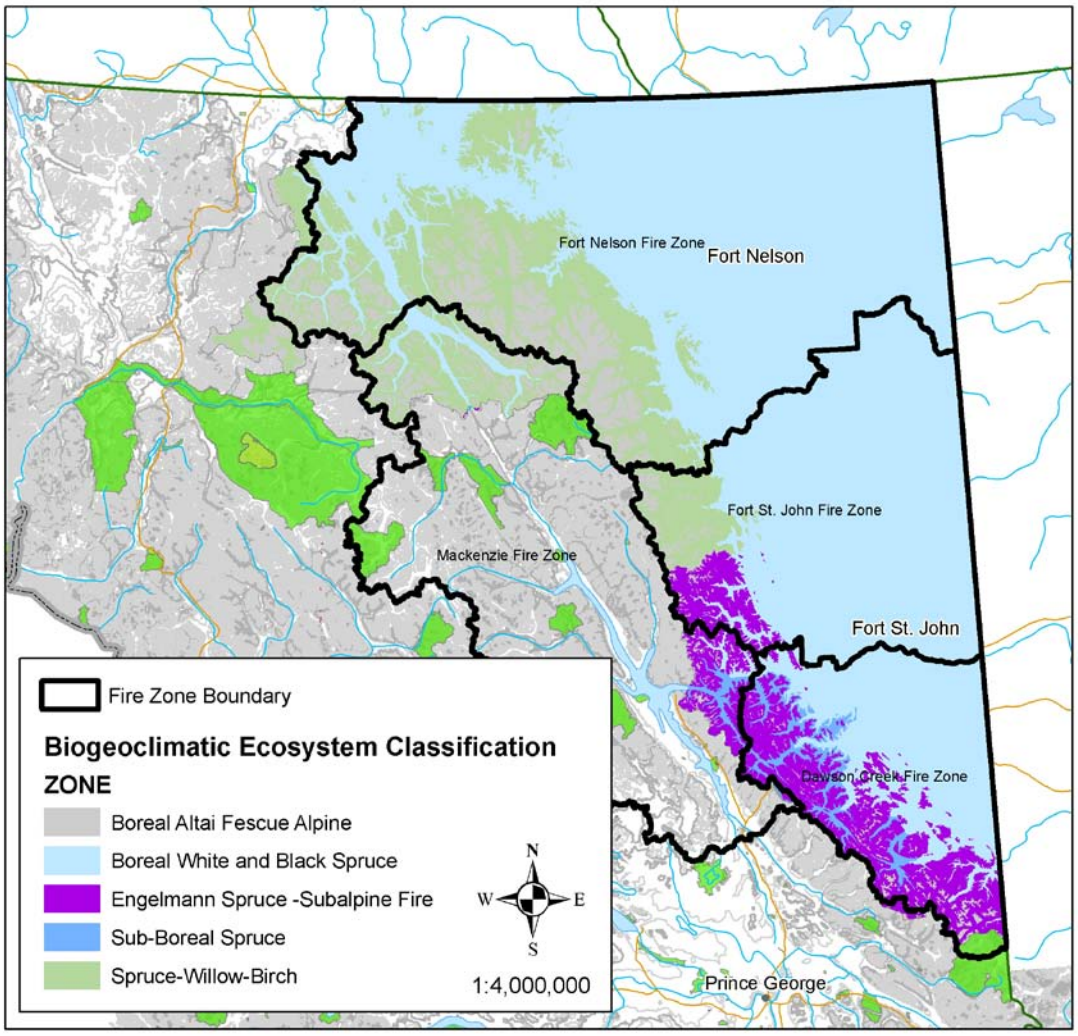

Figure 2. Biogeoclimatic zones in the Peace Sub-region.

2.2 Treatment

Various methods of treatment with fire are available and have been used across the province, including the helicopter drip torch and the Aerial Ignition Device. Although the helicopter drip torch has been used successfully elsewhere across BC, the aerial ignition device method is the preferred method in the Peace given the topography and conditions of the areas being treated, as well as the overall goals of treating habitats with fire. Most of the burn areas are southerly or westerly-facing slopes in relatively mountainous or steep terrain. Use of the aerial ignition device from a helicopter allows for precise lighting of target areas, including the creation of fire break lines and avoidance of features such as cliffs, talus slopes and other areas not suitable for treatment. The aerial ignition device provides quick ignition coverage of the burn area, which, in conjunction with topography, creates favourable rapid and hot burning

conditions to kill aspen, while promoting herbaceous and grass growth without scorching of soils.

2.3 Vegetation Monitoring

The vegetation monitoring protocol that has been used for monitoring wildlife prescribed burns follows the *Procedures for Environmental Monitoring in Range and Wildlife Habitat Management* (Habitat Monitoring Committee 1996). Extensive vegetation monitoring was conducted between 1994 and 1996, and more recently since 2007. Not all burn sites have vegetation monitoring completed, due to the large cost of accessing remote areas. Burn sites have been selected for vegetation monitoring each year to represent the 3 different biogeoclimatic zones that burn sites are located in, to represent the species targeted in each burn, and to reduce the cost involved in accessing each burn site across the region.

Since 1994, formal vegetation monitoring activities have occurred on over 30 different sites across the Peace Region (Table 1); 12 of these sites were new sites that had not had previous vegetation monitoring. Many of these sites are more remote locations, were treated specifically for mountain goat or Stone's sheep populations (i.e. higher elevation burns), or had varying burn conditions, necessitating the need for targeted vegetation monitoring to measure the response post-burning. Also, since 2008, a measure of pre- and post-treatment biomass has been incorporated into the vegetation monitoring procedures, as a method to compare vegetation response. To measure biomass change, all vegetation, including all forbs, grasses and shrubs, is clipped and removed from a 1 m x 1 m frame along one of the macroplots selected in the proposed burn area. The dried vegetation is then weighed to the nearest gram and recorded. Post-treatment, the same procedure is completed in the same 1 m x 1 m location, and compared to pre-treatment weight.

The vegetation monitoring procedures includes a complete list of species presence, distribution, and a coarse estimate of species coverage (split out by vegetation layer) at four 11-m radius macroplots (Habitat Monitoring Committee 1996). The four macroplots are located at 50 m intervals along a sample strip within the representative ecosystem unit (Habitat Monitoring Committee 1996). Given the steep topography of the burn sites, all attempts are made to ensure the sample strip runs perpendicular to the elevational gradients (i.e. upslope) to capture vegetation differences between upper, middle and lower slopes.

In addition to the vegetation monitoring activities being conducted as part of the Burn Program, the University of Northern British Columbia is conducting concurrent research on the use of prescribed burns by elk and Stone's sheep, measuring vegetation response to prescribed burns through quality and quantity of vegetation in both burned and non-burned areas. This data will be used to determine effectiveness of the burns and describe ungulate use of the burns.

Table 1. List of burn sites and control areas where vegetation monitoring has been conducted.

Burn Name	Site Number	Plot Type	Years Monitored
Moule Creek		Treatment	2009
		Control	2009
Mt. Rothenberg		Treatment	2009
		Control	2009
Horneline Creek		Treatment	2011
Duffield Creek		Treatment	2011
		Control	2011
Chee Mtn.		Treatment	2008, 2009, 2010, 2011
		Control	2008
Denetiah Creek		Treatment	2008, 2009, 2010, 2011
		Control	2008
Moodie Lakes		Treatment	2008, 2011
		Control	2008, 2011
Graham River	B04	Treatment	1988, 1994, 2007
	B03	Treatment	1988, 1994, 2007
	Z13	Control	1988, 1994, 2007
Besa River	C09	Treatment	2007
	C10	Control	2007
Richards Creek Blk 217		Treatment	2007
	Z10	Control	2007
Richards Creek Blk 214		Treatment	2011
		Control	2011
Farrell Creek	Z11	Treatment	2007
		Control	2007
Falk Creek	Z05	Treatment	2007
	Z06	Control	2007
Tuchodi River	Z03	Treatment	2007
	Z04	Control	2007
Golata Creek	Z01	Treatment	2007
	Z02	Control	2007
	B16	Treatment	1994
	B17	Control	1994
Withrow Mtn.	Z07	Treatment	2007
	Z08	Control	2007
Sikanni River	C07	Treatment	1996, 2007
	C08	Control	1996, 2007
Moberly River	B08	Treatment	2007
	B09	Treatment	1994
	B10	Control	1994, 2007
Wapiti River	A14	Treatment	1988, 1996, 2007
		Treatment	2011
	A13	Control	2007, 2011
Bear Flats	A04	Treatment	1996
Halfway River	A08	Treatment	1994, 1996
Windy Creek	A24	Treatment	1994, 1996
Williston Lake	A28	Treatment	1996
	A29	Treatment	1996
Gravelhill Creek	B01	Treatment	1994, 1996
	B02	Control	1994
	B14	Treatment	1994, 1996

Deadhorse Creek	C01	Treatment	1996
	C02	Control	1996
Branham Slide	C03	Treatment	1996
	C04	Control	1996
Salt Ridge	C05	Treatment	1996
	C06	Control	1996
Alces River	B13	Treatment	1994
	B15	Control	1994
Blair Creek	B11	Treatment	1994
	B12	Control	1994
Bluff Creek	B06	Treatment	1994
	B07	Treatment	1994
	B08	Control	1994
Chowade River	A18	Treatment	1994
Trapper Mtn.	A10	Treatment	1994

3 Proposed Burn Sites (2012-2017)

Approximately 150 sites have been proposed for burning over the next 5-year period in the Peace Sub-region (Figure 3). The intent of the 5-year plan is to propose numerous sites for a variety of ungulate species and in a variety of habitats across the Peace Sub-region. Proposed burns have been presented by Fire Zone as used by the Fire Protection Branch (Tables 2-5).

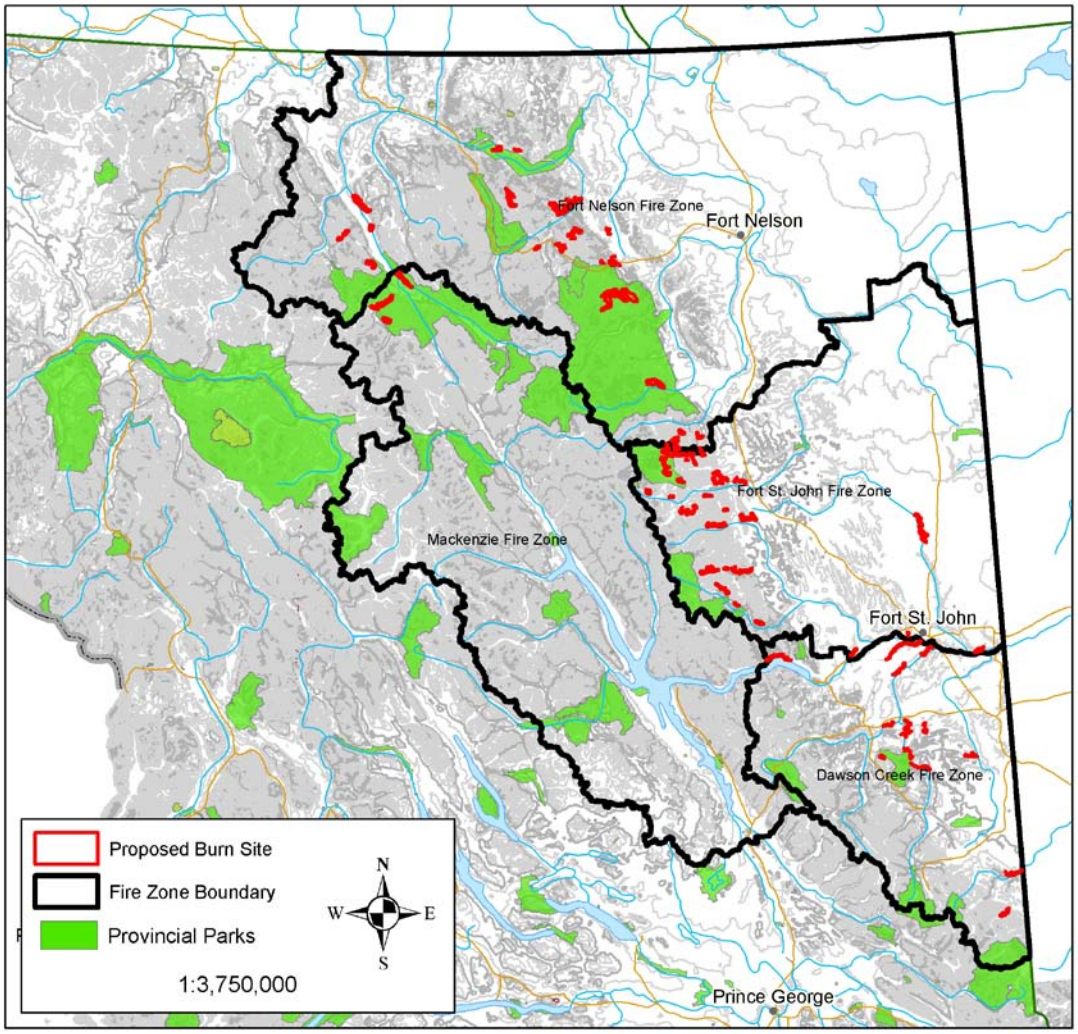

Figure 3. General locations of sites proposed for burning in the 5-year burn plan Peace Sub-region, northeastern BC.

3.1 Fort Nelson Fire Zone

The Fort Nelson Fire Zone has an extensive history of prescribed burning for wildlife. Table 2 lists the sites proposed for burning over the next 5 years in the Fort Nelson Fire Zone. Multiple burn sites have been proposed within the Northern Rockies Park, Horneline Creek Park, and the Liard River Corridor Park for this 5-year plan. One of which, Horneline Creek, is of increased importance for treatment. Horneline Creek Provincial Park was established to protect significant mountain goat habitat, including a known mineral lick location (Ministry of Environment 2006). Further, this area has been identified for its importance under the Fort Nelson LRMP (1997). It is believed that the goat population in this area is declining, due to a lack of forage in proximity to escape terrain for this somewhat isolated goat population. This area has an extensive burn history (large wildfire in the Kechika River valley in 1985), and the lack of forage can be attributed to a lack of fire within the area to promote new forage, which may be resulting in decreasing mountain goat populations. As part of this 5-year plan, the Horneline Creek site (block 613) has been separated from the larger Chee Mountain site (block 598) to specifically identify the mountain goat values and address the overlap with a Class A Park (Figure 4; Photo 4). Given the relatively small proposed treatment area (~612 ha) and relatively distinct population of goats, this proposed burn provides opportunity for collaboration across agencies to identify the impacts of burning on the goat population. Pre-treatment vegetation monitoring, including a biomass assessment from vegetation clipping, was completed in the proposed burn area in 2011. Repeat vegetation monitoring will be conducted post-treatment for subsequent years to measure how biomass of forage increased from burning. To complement vegetation monitoring, a subsequent inventory of goats in the Horneline Creek area should be a management priority to measure the short- and long-term population response to the burn treatment.

Four new burn areas have been proposed in the Turnagain River area for restoration of winter habitats for Stone's sheep (Figure 4). These areas have been burned in the past from either wildfire, guide outfitters, First Nations, or were old wildlife enhancement burns that were never formally recorded. These areas would require a field assessment prior to treatment, but are documented as important winter range areas for Stone's sheep based on a winter survey conducted in 2007 by the Wildlife Branch (Thiessen 2009) and require burning to maintain suitability of these habitats as significant winter range.

As with the Horneline Creek Park, burn areas in the Liard River Corridor Park are specifically targeted at increasing habitat for red-listed wood bison (*Bison bison athabascae*) populations that occur in the Nordquist Lake-Liard River area (Figure 5). Due to a lack of suitable natural habitat, bison populations have moved to the Alaska Highway corridor to utilize easily available forage planted along the right of way. Without the creation of suitable natural habitat, bison will continue to use the highway corridor, resulting in increased collisions leading to the potential loss of human life as well as greater bison mortalities. The Wildlife branch of FLNRO has successfully treated areas in the Liard area since 1985, but more recently since 2009 with the specific purpose of increasing habitat suitability for wood bison populations. Continued treatment is required to increase ecosystem diversity in the area as well as provide suitable forage to attract bison off the highway corridor. The 5-year plan proposes to continue burning in the Liard area every year, by treating small patches over time to achieve these habitat

objectives. Without continued burning, this area will not be able to successfully support the bison population, and will quickly lose suitability by reverting back to a monoculture of aspen-dominated young forest.

Six burn areas have been proposed in the Northern Rockies Park (Figures 7&8). These areas have been burned in the past (last known treatment ranging from 1983-1991) and sustain important wintering habitat primarily for Stone's sheep and elk populations. These areas have not been burned in many years, and in order to sustain winter range quality and thus sustain wildlife populations, it is important that these areas be addressed within the next few years for treatment.

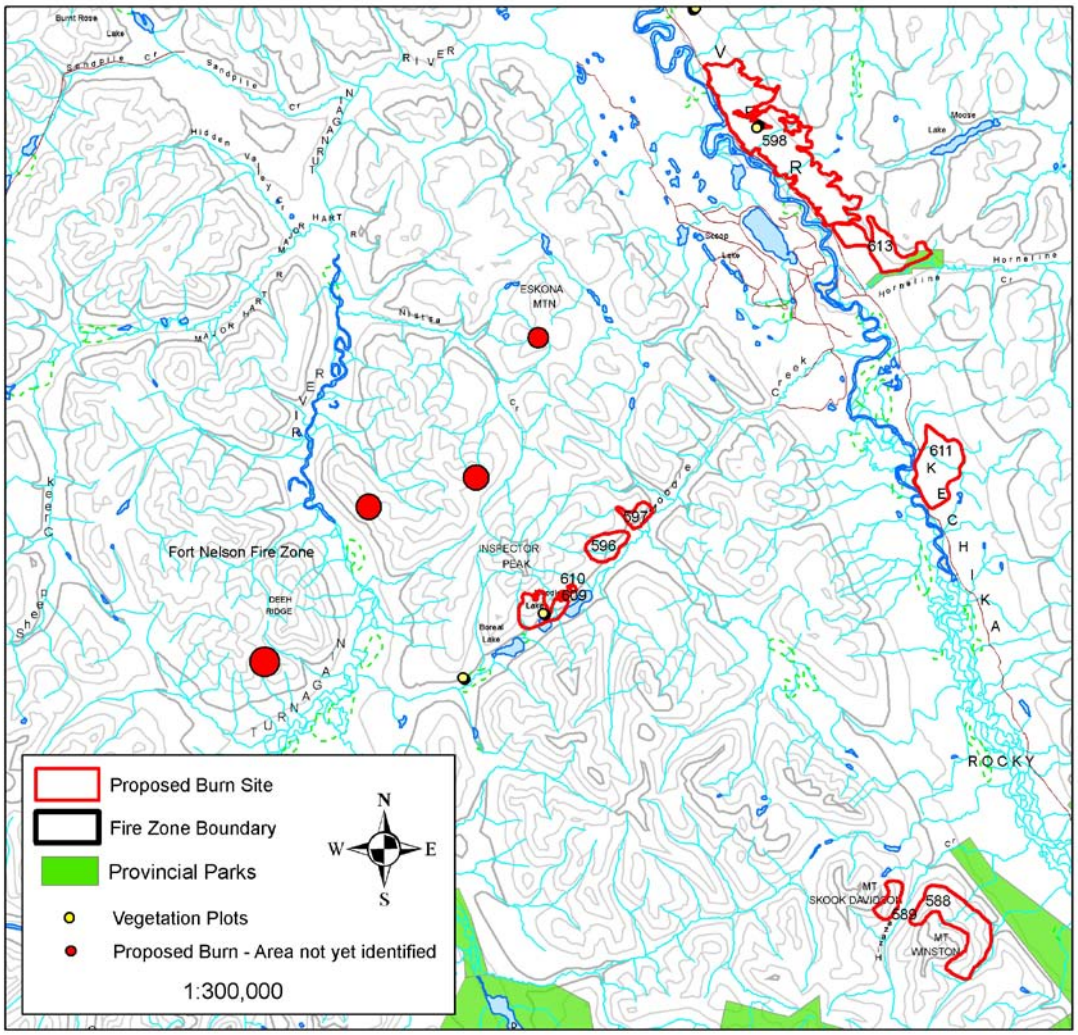

Figure 4. Proposed blocks in the Kechika River area. Lower elevation blocks along the Kechika River target maintenance of elk habitat, while higher elevation blocks away from the main valley target Stone's sheep winter range. Four new blocks have been proposed in the Turnagain River area for restoration of sheep winter range habitat.

(a)

(b)

Photo 4. (a) Pre-burn conditions of the Horneline Creek burn area (August 2011). (b) Example of the current vegetational state of the Horneline Creek block: overgrown with aspen and does not provide sufficient grass and forb growth for goat populations (August 2011).

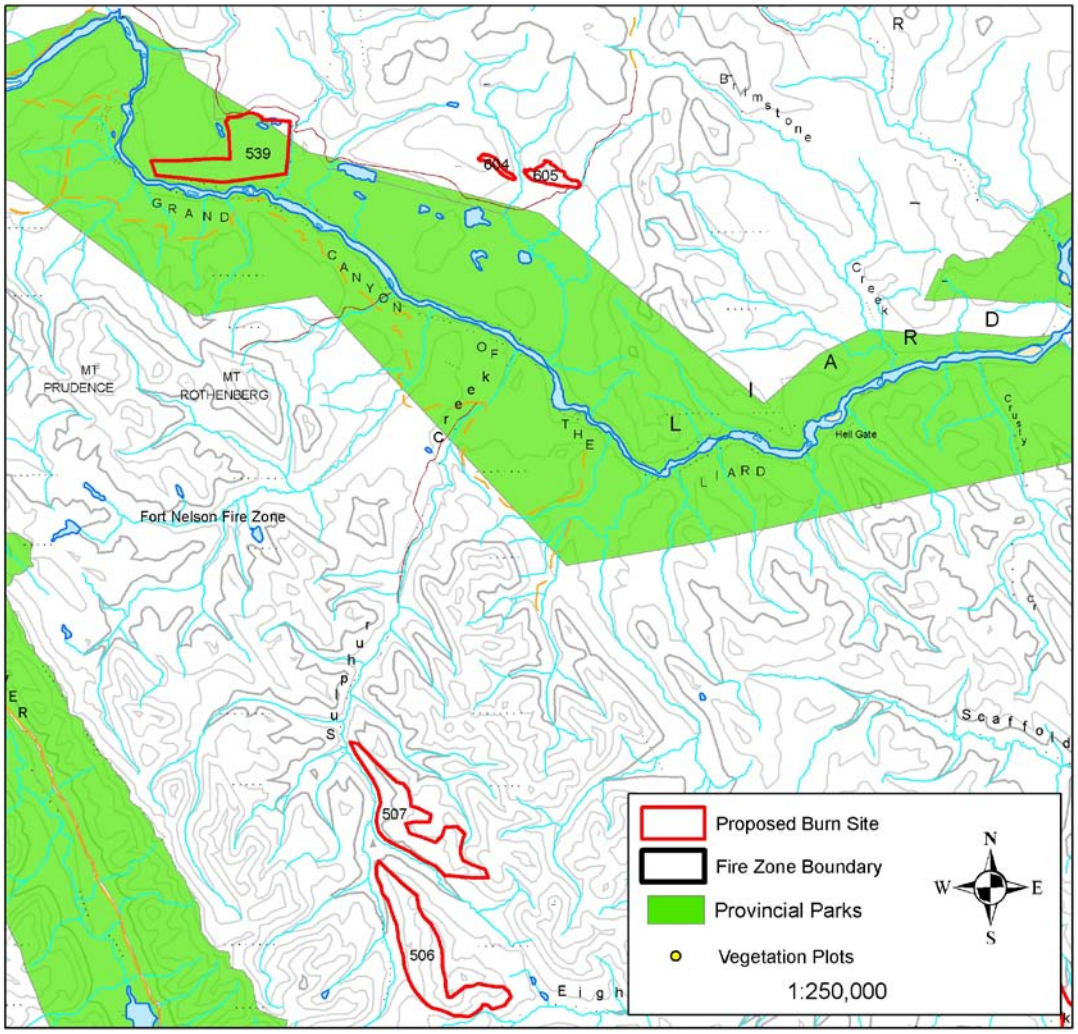

Figure 5. Proposed blocks on Sulphur Creek and in the Liard-Nordquist area in the Fort Nelson Fire Zone. The Liard-Nordquist burns are specifically targeted at creating habitat for the red-listed wood bison population, while the Sulphur Creek burns address habitat needs for Stone's sheep populations.

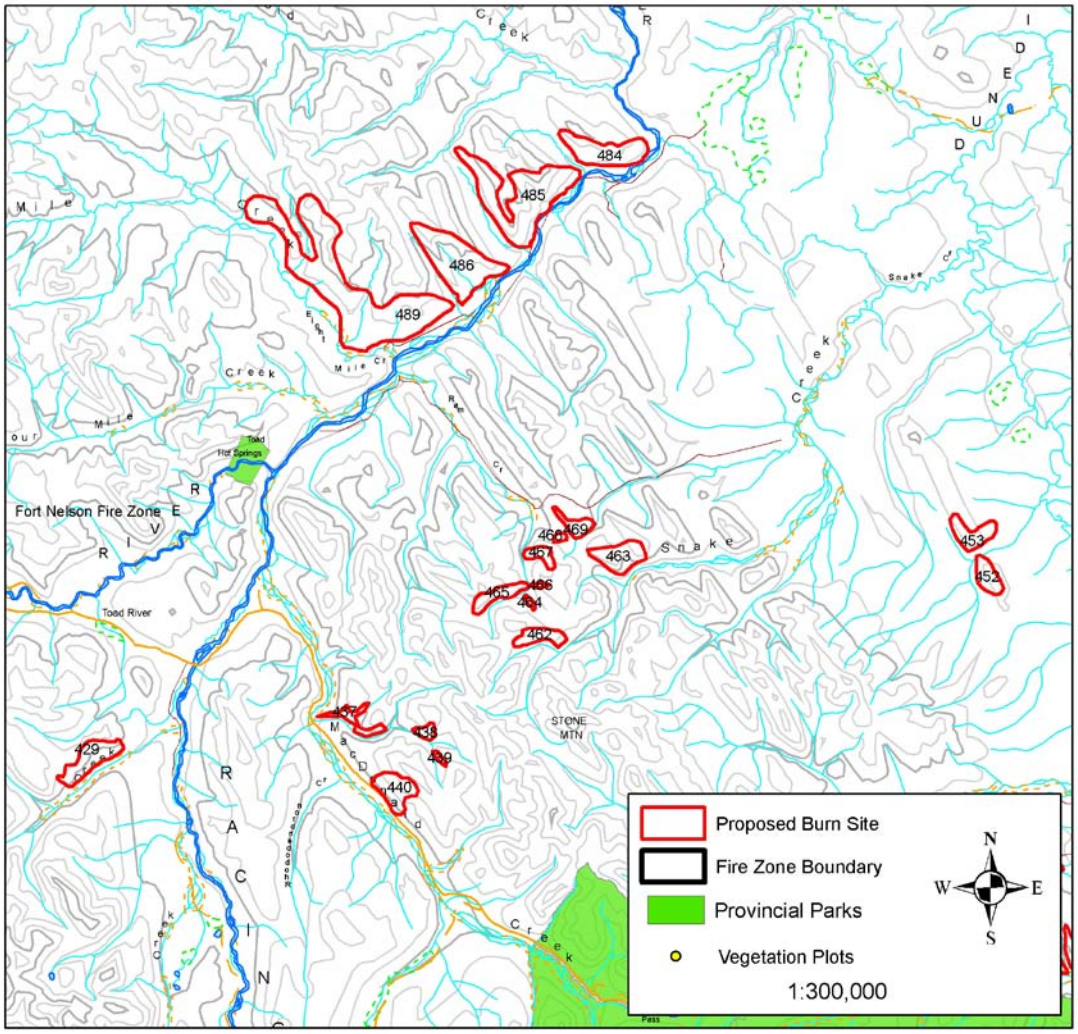

Figure 6. Proposed blocks on Toad River, Dunedin River, Ram Creek and MacDonald Creek in the Fort Nelson Fire Zone. The majority of these burns specifically target habitat for Stone's sheep.

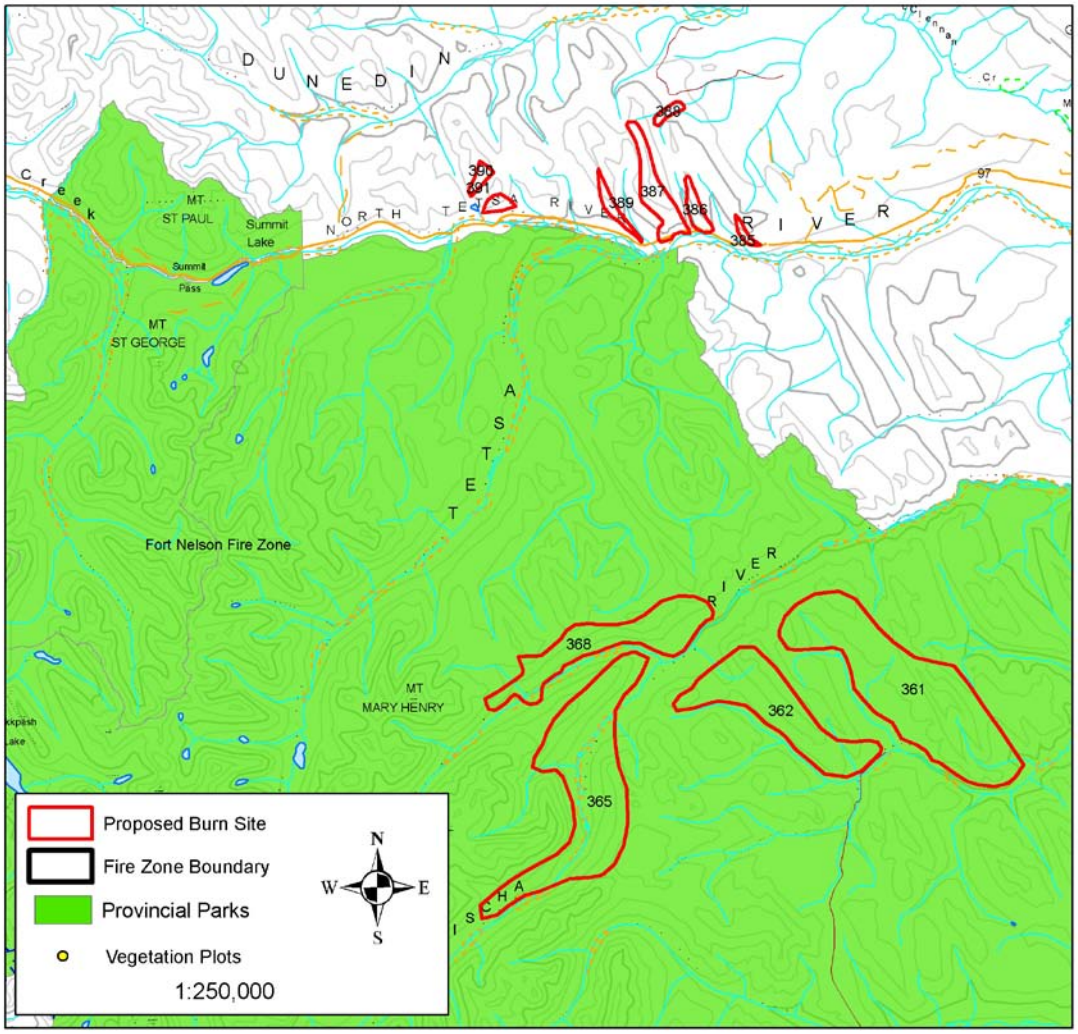

Figure 7. Proposed blocks on Tetsa River, Chlotapecta Creek and Chischa River in the Northern Rockies Park, Fort Nelson Fire Zone. The majority of these burns will benefit Stone's sheep and elk populations.

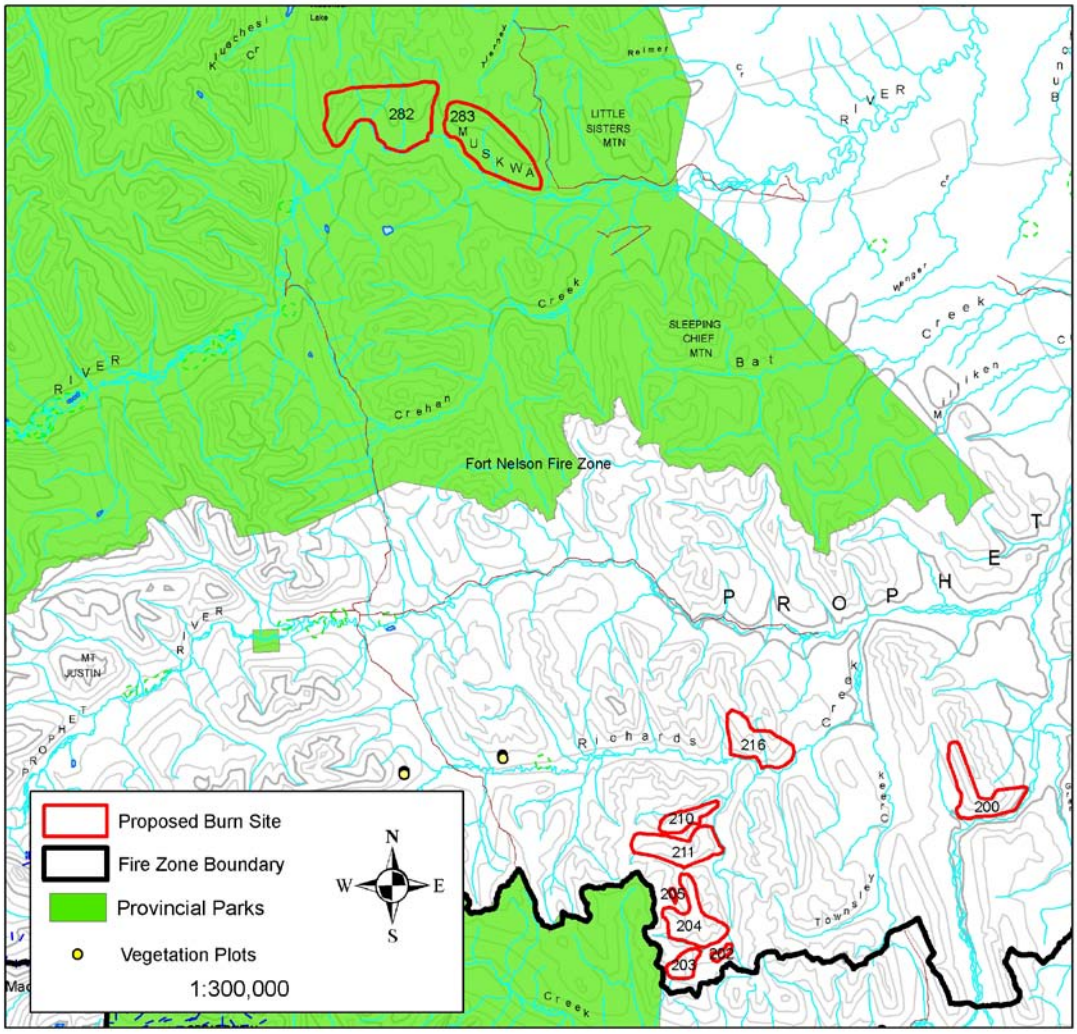

Figure 8. Proposed blocks on Richards Creek, Besa River and the Muskwa River in the Northern Rockies Park, Fort Nelson Fire Zone. These burns will benefit Stone's sheep and elk populations.

Table 2. Areas identified for burning within the Fort Nelson Fire Zone. Burns in green are located in Parks and would require approval from the Parks Regional Manager.

Burn Name	Block Number	Burn Years		Burn Area (ha)**	Species Targeted	Proposed Vegetation Monitoring	Comments
		Last Known Treatment	Proposed*				
Muskwa River	282	1991	2012	1,752	Stone's Sheep, Elk	-	
Muskwa River	283	1991	2012	1,340	Stone's Sheep, Elk	-	
Henry Creek	368	1983	2012	1,586	Stone's Sheep, Elk	-	
Chlotapecta Creek	361	1983	2012	3,864	Stone's Sheep, Elk	-	
Chlotapecta Creek	362	1987	2012	1,875	Stone's Sheep, Elk	-	
Chischa River	365	1983	2012	3,199	Stone's Sheep, Elk	-	
Moule Creek	539	2010	2012-17	1,340	Wood Bison, Moose	Yes	
Nordquist	604	2009	2012-17	49	Wood Bison, Moose	Yes	
Nordquist	605	2009	2012-17	153	Wood Bison, Moose	Yes	
Horneline Creek	613	Unknown	2012	612	Mountain Goat, Elk	Yes	
Besa Canyon	200	1995	2012	686	Stone's Sheep, Elk	-	
Richards Creek	202	1987	2015	53	Stone's Sheep	-	
Richards Creek	203	1987	2015	202	Stone's Sheep	-	
Richards Creek	204	1987	2015	659	Stone's Sheep	Yes	
Richards Creek	205	1987	2015	19	Stone's Sheep	Yes	
Richards Creek	210	1990	2015	267	Stone's Sheep	-	
Richards Creek	211	1990	2015	686	Stone's Sheep	-	
Richards Creek	216	1987	2015	677	Stone's Sheep, Elk	-	
Tetsa River	385	1991	2017	45	Stone's Sheep, Elk	-	
Tetsa River	386	1991	2017	143	Stone's Sheep, Elk	-	
Tetsa River	387	1991	2017	473	Stone's Sheep, Elk	-	
Tetsa River	388	Unknown	2017	62	Stone's Sheep, Elk	-	
Tetsa River	389	1991	2017	121	Stone's Sheep, Elk	-	
Tetsa River	390	1984	2017	78	Stone's Sheep, Elk	-	
Tetsa River	391	2003	2017	83	Stone's Sheep, Elk	-	
Yash Creek	429	1990	2014	405	Stone's Sheep	-	
Bridge Creek	437	2004	2016	164	Stone's Sheep, Elk	-	
Bridge Creek	438	1982	2016	70	Stone's Sheep, Elk	-	

Bridge Creek	439	1982	2016	25	Stone's Sheep, Elk	-	
MacDonald Creek	440	1983	2016	345	Stone's Sheep, Elk	-	
Dunedin River	452	Unknown	2016	206	Elk	-	
Dunedin River	453	1991	2016	272	Elk	-	
Snake Creek	462	1982	2013	198	Stone's Sheep	-	
Snake Creek	463	2011	2017	365	Stone's Sheep	-	
Bear Mtn.-Ram Creek	464	1982	2013	22	Stone's Sheep	-	
Bear Mtn.-Ram Creek	465	1991	2013	202	Stone's Sheep	-	
Bear Mtn.-Ram Creek	466	1982	2013	20	Stone's Sheep	-	
Bear Mtn.-Ram Creek	467	1991	2013	119	Stone's Sheep	-	
Bear Mtn.-Ram Creek	468	1982	2013	30	Stone's Sheep	-	
Bear Mtn.-Ram Creek	469	1991	2013	147	Stone's Sheep	-	
Toad River	484	2008	2014	586	Elk	-	
Toad River	485	2008	2014	1,468	Elk	-	
Toad River	486	2008	2014	1,027	Elk	-	
Eight Mile Creek	489	2005	2012	2,890	Elk	-	
Sulphur Creek	506	1988	2012	1,282	Stone's Sheep	Yes	
Sulphur Creek	507	1988	2012	1,046	Stone's Sheep	Yes	
Winston Mtn.	588	1985	2013	977	Stone's Sheep	-	Needs assessment prior to burning
Mt. Skook Davidson	589	1985	2013	188	Stone's Sheep	-	Needs assessment prior to burning
Chee Mtn.	598	2010	2013, 2016	2,455	Elk	Yes	
Moodie Lakes	596	1985	2013	273	Stone's Sheep, Mountain Goat	Yes	
Moodie Lakes	597	1985	2013	150	Stone's Sheep, Mountain Goat	Yes	
Moodie Lakes	609	2009, 2011	2017	17	Stone's Sheep, Mountain Goat	Yes	
Moodie Lakes	610	2009, 2011	2017	11	Stone's Sheep, Mountain Goat	Yes	
Willards Hill-Kechika River	611	2011	2012, 2014 2017	801	Elk	-	
Turnagain River	New[1]	Unknown	2012	?	Stone's Sheep	Yes	
Eskona Mtn.	New[1]	Unknown	2012	?	Stone's Sheep	-	Needs assessment prior to burning
Nistsa Creek	New[1]	Unknown	2012	?	Stone's Sheep	-	Needs assessment prior to burning
Deeh Ridge	New[1]	Unknown	2012	?	Stone's Sheep	-	

* Proposed burn years are subject to change depending on site conditions, yearly weather conditions and length of burning window.

** Burn area is larger than the actual treatment area. The proposed burn area represents the area that *could* be burned, but actual burn/treatment area is significantly smaller, and is digitally mapped separately post-treatment to represent most recent conditions.

[1] Area has a burn history, but has not formally mapped or documented. Burn area to be determined after site assessment.

3.2 Fort St. John Fire Zone

The Fort St. John Fire Zone covers a large area that includes multiple land uses, habitat types and Parks, which creates a wide variety and number of burn areas within the zone (Table 3; Figures 9-11).

Seven sites on the upper Beatton River have been proposed (Figure 9). It is unknown when these sites were last burned for wildlife habitat, however, these sites are located in an area that supports moose, elk, mule and white-tailed deer populations, and treatment of these areas with burning would increase existing winter range habitat. Prior to burning, however, these areas would need assessment to determine if fuel loads are available and if burning is feasible to promote natural habitat conditions.

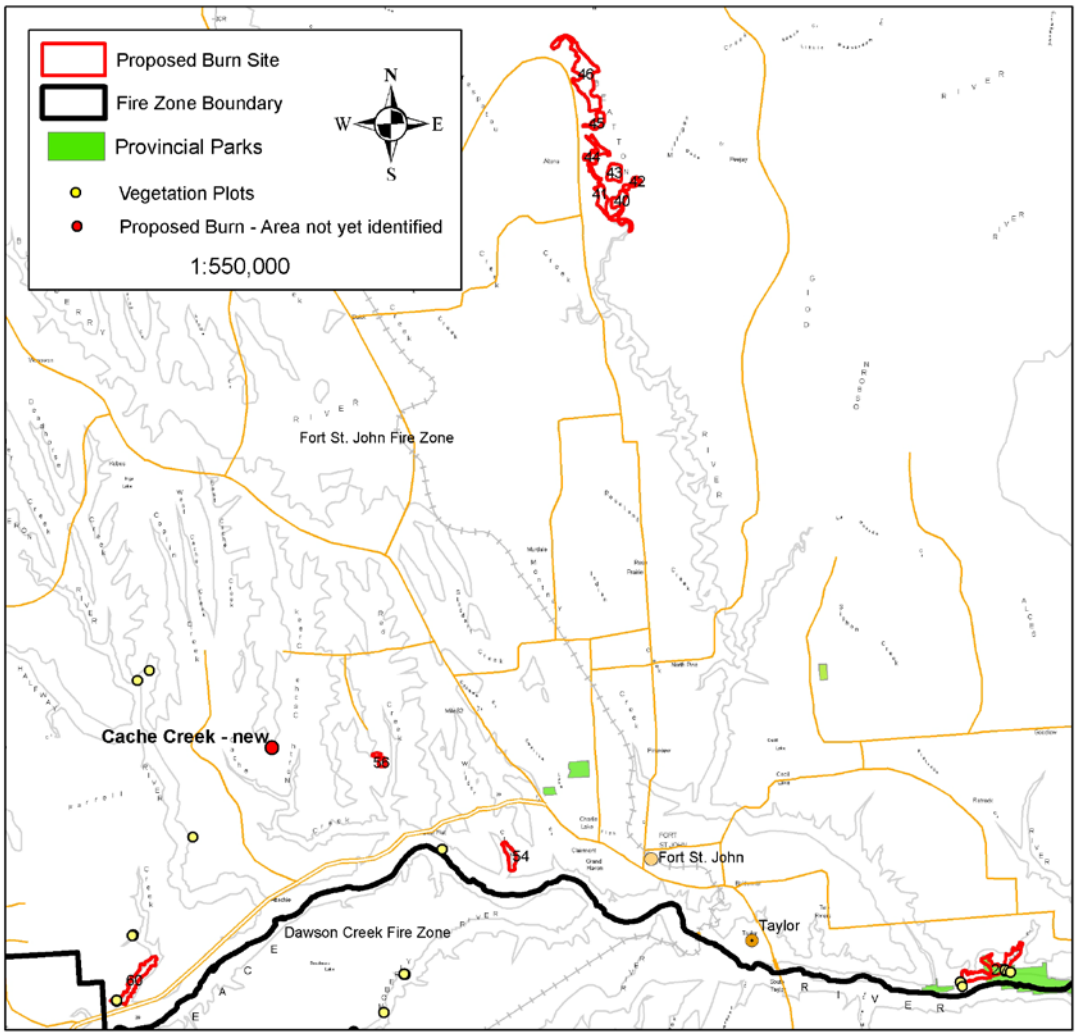

Figure 9. Proposed blocks in the Peace Lowlands: the upper Beatton River, Farrell Creek, Red Creek, Wilder Creek, Golata Creek, and a new site along North Cache Creek in the Fort St. John Fire Zone. The majority of these burns will benefit elk, moose and deer populations.

The Halfway River sites have had an extensive burning history from Wildlife Branch staff, guide outfitters and First Nations (Figure 10). However, grazing from bison and elk populations in the valley have reduced the amount of fuels available to achieve optimal burning conditions. The proposed sites in the Halfway River valley will have to be assessed for available fuel loads prior to burning.

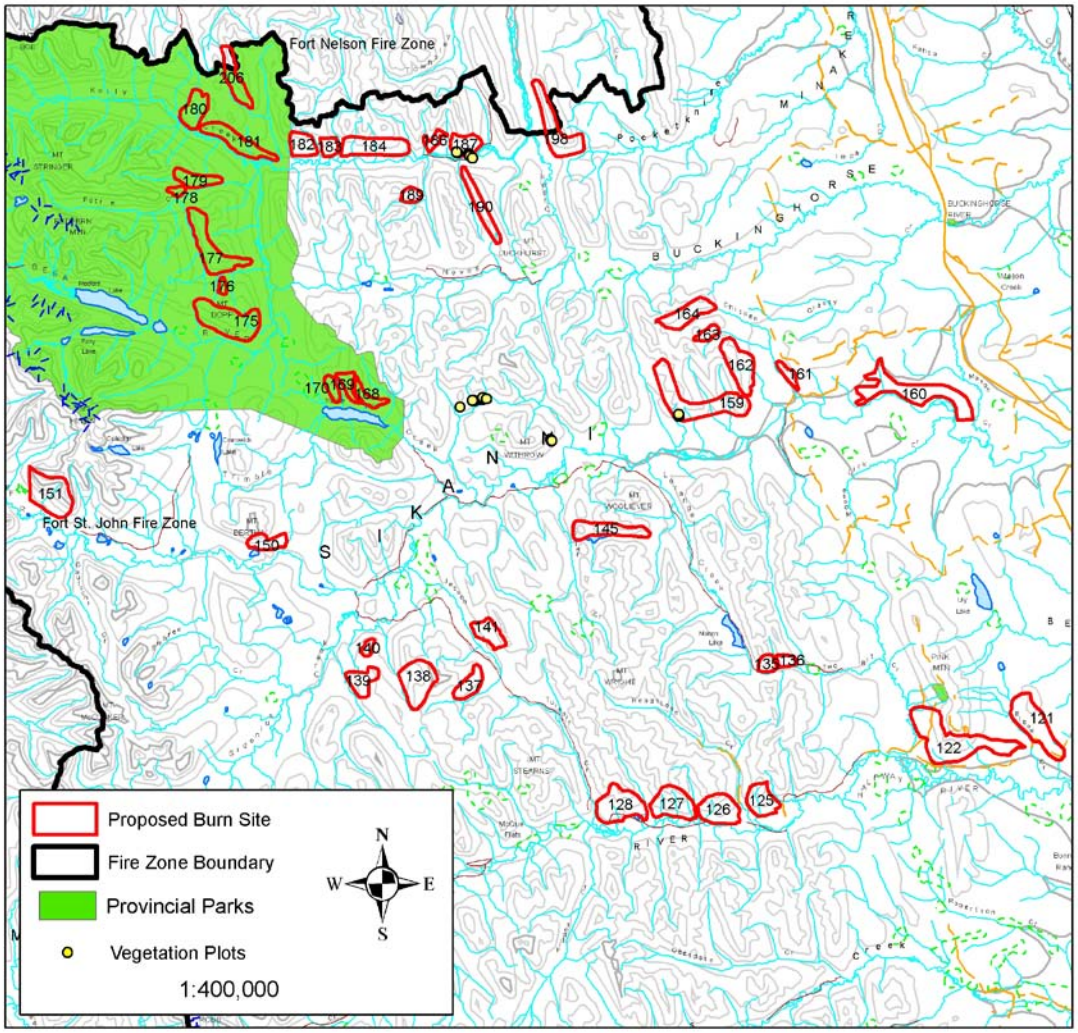

Figure 10. Proposed blocks in the Halfway River, Sikanni River, Besa River and Neves Creek areas in the Fort St. John Fire Zone. Many of these burns are higher-elevation burns for Stone's sheep and mountain goat. Several are located in the Redfern-Keily Park.

The Peace Sub-region Wildlife Branch has been conducting an ongoing sharp-tailed grouse research and monitoring project in the Cache Creek area since 2007. As part of this project, we would like to conduct a research trial involving burning an area adjacent to a known sharp-tailed grouse lek (Figure 9). Sharp-tailed grouse have used this area for many years; however, recent radio telemetry work suggests that nesting females are moving upwards of 10 km from the lek (normal nesting occurs within 2 km of a lek), suggesting that habitat within a 2 km radius of the lek site may not provide suitable conditions for nesting. Adjacent to the lek is an east aspect slope that is

overgrown with aspen, and therefore does not provide suitable nesting cover for sharp-tailed grouse. Treating this slope with fire would reduce the aspen encroachment and promote herbaceous and shrub growth, while opening the canopy, to better suit nesting sharp-tailed grouse. The overall objective of the research project is to measure use of the proposed burn area by nesting sharp-tailed grouse, pre-treatment and post-treatment for up to 5 years post-burn, to determine if burning the identified area increases the habitat available to sharp-tailed grouse and minimizes the large-scale movements of females away from the lek.

The intent of the project is to create partnerships with the primary forest licensee (Canfor) as well as with the range tenure holders to maximize involvement of all affected parties and to minimize risk to other values on the landbase. With approval for this new burn site, it is the intent to treat the area within the next five years as part of this larger research project. In addition to sharp-tailed grouse, this burn would also create habitat for elk, mule deer and moose in the area.

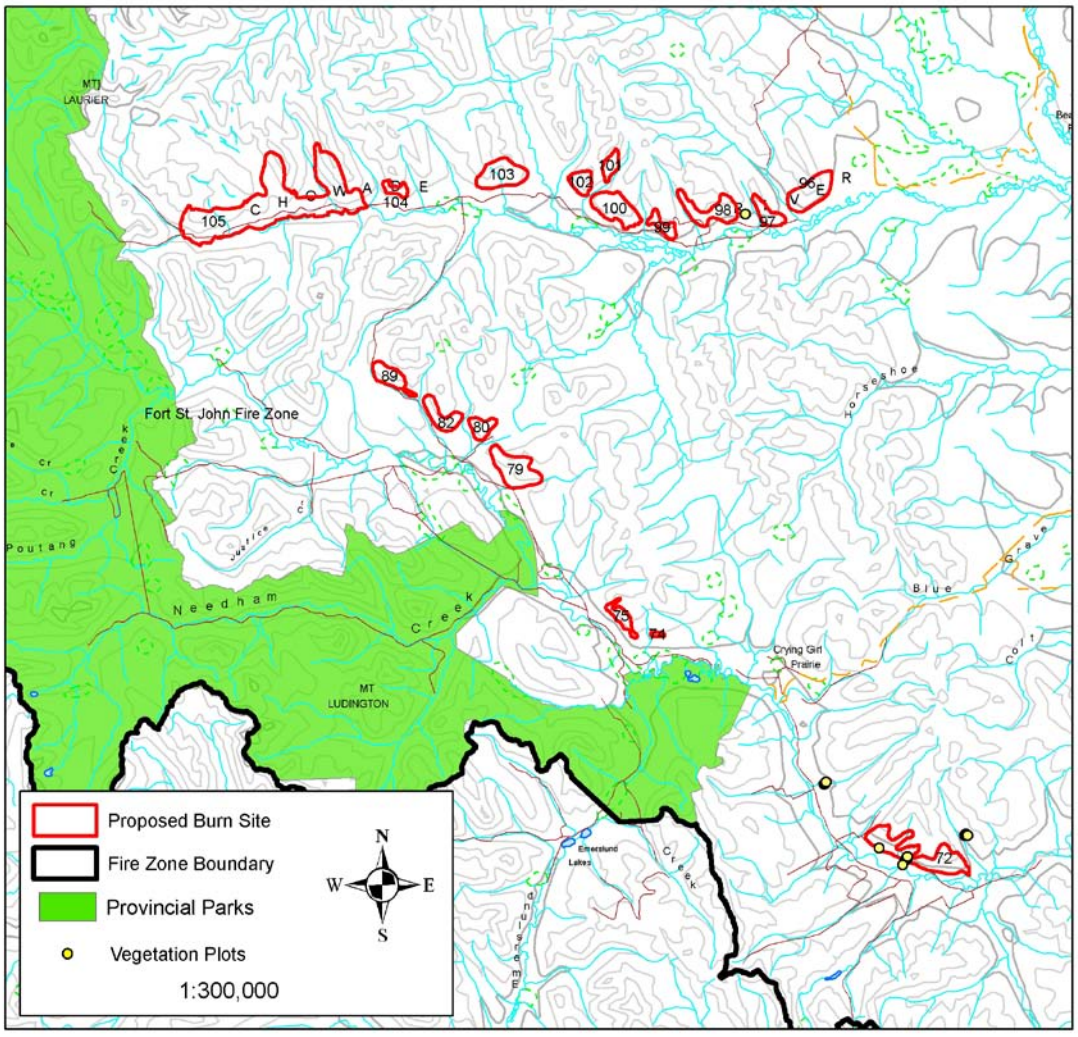

Figure 11. Proposed blocks on the Graham River and Chowade River in the Fort St. John Fire Zone. The majority of these burns will benefit elk and moose populations.

Table 3. Areas identified for burning within the Fort St. John Fire Zone. Burns in green are located in Parks and would require approval from the Parks Regional Manager.

Burn Name	Block Number	Burn Years		Burn Area (ha)**	Species Targeted	Proposed Vegetation Monitoring	Comments
		Last Known Treatment	Proposed*				
Golata Creek	27	2007	2014	420	Elk, Moose, Mule Deer, Sharp-tailed Grouse	Yes	
Golata Creek	28	2008	2014	223	Elk, Moose, Mule Deer, Sharp-tailed Grouse		
Trimble Lake	168	1987	2013	182	Stone's Sheep, Mountain Goat, Plains Bison	-	
Trimble Lake	169	1987	2013	170	Stone's Sheep, Mountain Goat, Plains Bison	-	
Trimble Lake	170	1987	2013	139	Stone's Sheep, Mountain Goat, Plains Bison	-	
Besa River Redfern	175	1988	2013	915	Stone's Sheep, Mountain Goat	-	
Besa River Redfern	176	1987	2013	59	Stone's Sheep, Mountain Goat	-	
Besa River Redfern	177	1988	2013	739	Stone's Sheep, Mountain Goat	-	
Besa River Redfern	178	1987	2013	68	Stone's Sheep, Mountain Goat	-	
Besa River Redfern	179	1987	2013	291	Stone's Sheep, Mountain Goat	-	
Keily Creek	180	1989	2013	397	Stone's Sheep, Mountain Goat, Elk	-	
Besa River	181	1988	2013	539	Stone's Sheep, Mountain Goat, Elk	-	
Keily Creek	206	1987	2013	410	Stone's Sheep, Mountain Goat, Elk	-	
Beatton River	40	Unknown	2015	298	Elk, Moose, Mule Deer	-	Needs assessment prior to burning
Beatton River	41	Unknown	2015	252	Elk, Moose, Mule Deer	-	Needs assessment prior to burning
Beatton River	42	Unknown	2015	95	Elk, Moose, Mule Deer	-	Needs assessment prior to burning
Beatton River	43	Unknown	2015	226	Elk, Moose, Mule Deer	-	Needs assessment prior to burning
Beatton River	44	Unknown	2015	244	Elk, Moose, Mule Deer	-	Needs assessment prior to burning
Beatton River	45	Unknown	2015	164	Elk, Moose, Mule Deer	-	Needs assessment prior to burning
Beatton River	46	Unknown	2015	1,019	Elk, Moose, Mule Deer	-	Needs assessment prior to burning
Wilder Creek	54	1999	2014	201	Elk, Moose, Mule Deer	-	
Red Creek	56	1984	2014	57	Elk, Moose, Mule Deer, Sharp-tailed Grouse	-	

Red Creek	57	1984	2014	27	Elk, Moose, Mule Deer, Sharp-tailed Grouse	-	
Farrell Creek	60	2007	2013, 2017	441	Elk, Moose, Mule Deer, Sharp-tailed Grouse	Yes	
Graham River	72	2002	2012	588	Elk, Moose	Yes	
Graham River	74	1995	2012	15	Elk, Moose	-	
Graham River	75	1995	2012	120	Elk, Moose	-	
Graham River	79	2004	2012	375	Elk, Moose	-	
Graham River	80	2004	2012	125	Elk, Moose	-	
Graham River	82	2004	2012	190	Elk, Moose	-	
Graham River	89	2004	2012	187	Elk, Moose	-	
Chowade River	96	1988	2013	325	Elk, Moose	-	
Chowade River	97	1988	2013	144	Elk, Moose	Yes	
Chowade River	98	1988	2013	300	Elk, Moose	-	
Chowade River	99	1988	2013	105	Elk, Moose	-	
Chowade River	100	1988	2013	334	Elk, Moose	-	
Chowade River	101	1988	2013	98	Elk, Moose	-	
Chowade River	102	1988	2013	129	Elk, Moose	-	
Chowade River	103	1988	2013	336	Elk, Moose	-	
Chowade River	104	1988	2013	71	Elk, Moose	-	
Chowade River	105	1988	2013	2,018	Elk, Moose	-	
Halfway River	121	1987	2014	828	Elk, Plains Bison, Moose, Mule Deer	-	Need to assess fuel loads
Halfway River	122	1985	2014	1,396	Elk, Plains Bison, Moose, Mule Deer	-	Need to assess fuel loads
Halfway River	125	2001	2012	418	Elk, Plains Bison, Moose, Mule Deer	-	Need to assess fuel loads
Halfway River	126	2003	2012	552	Elk, Plains Bison, Moose, Mule Deer	-	Need to assess fuel loads
Halfway River	127	2003	2012	609	Elk, Plains Bison, Moose, Mule Deer	-	Need to assess fuel loads
Halfway River	128	2002	2012	720	Elk, Plains Bison, Moose, Mule Deer	-	Need to assess fuel loads
Two Bit Creek	135	2003	2016	140	Plains Bison, Mountain Goat	-	
Two Bit Creek	136	2003	2016	110	Plains Bison, Mountain Goat	-	
Jesson Creek	137	1987	2016	289	Plains Bison, Moose	-	
Jesson Creek	138	1987	2016	670	Plains Bison, Moose	-	
Sidenius Creek	139	1995	2016	316	Stone’s Sheep, Moose	-	

Sidenius Creek	140	1987	2016	79	Stone's Sheep, Moose	-	
Jesson Creek	141	1995	2016	320	Plains Bison, Moose	-	
Beattie Lake	145	1989	2014	504	Stone's sheep	-	
Mt. Bertha	150	1989	2014	267	Stone's Sheep, Elk	-	
Upper Sikanni River	151	1989	2014	786	Elk, Moose, Stone's Sheep	-	
Sikanni River	159	2005	2014	1,117	Stone's Sheep, Plains Bison, Elk	-	
Sikanni River	160	1987	2014	1,079	Elk, Mountain Goat	-	
Chicken Creek	161	1987	2014	125	Elk, Moose	-	
Chicken Creek	162	1988	2014	591	Stone's Sheep, Elk, Plains Bison	-	
Chicken Creek	163	1987	2014	127	Stone's Sheep, Mountain Goat	-	
Chicken Creek	164	1987	2014	455	Stone's Sheep, Mountain Goat	-	
Besa River	182	2001	2014	296	Stone's sheep, Elk	-	
Besa River	183	1995	2014	157	Stone's sheep, Elk	-	
Besa River	184	1995	2014	622	Stone's sheep, Elk	-	
Besa River	186	1995	2014	121	Elk	-	
Besa River	187	1995	2014	289	Elk	-	
Besa River	189	1989	2014	134	Stone's Sheep	-	
Little Ram	190	1987	2012	368	Stone's Sheep	Yes	
Besa-Pocketknife	198	2003	2012	699	Stone's Sheep, Elk	-	
North Cache Creek	New[1]	Unknown	2015	?	Sharp-tailed Grouse, Elk, Moose, Mule Deer	Yes	Consultation required

* Proposed burn years are subject to change depending on site conditions, yearly weather conditions and length of burning window.

** Burn area is larger than the actual treatment area. The proposed burn area represents the area that *could* be burned, but actual burn/treatment area is significantly smaller, and is digitally mapped separately post-treatment to represent most recent conditions.

[1] Area has a burn history, but has not been previously burned for wildlife habitat. Burn area to be determined after site assessment.

3.3 Dawson Creek Fire Zone

There has been a lack of prescribed fire for wildlife habitat in the Dawson Creek Fire Zone for a number of years, due to a variety of reasons including multiple overlapping values on the landbase, risk of escape (i.e. mountain beetle has created a fuel-laden environment), and infrastructure/values compromised in the event of an escape. Further, the area has not had the same level of historical fire disturbance as compared to other areas across the region, largely due to the values on the landbase in this area. For this reason, many of the prescribed burn areas are overgrown with aspen and do not provide the forage or the wildlife habitat required to be effective winter range for ungulates.

A number of prescribed burn areas in the Dawson Creek Fire Zone have been included in this 5-year burn plan (Table 4; Figures 12-15); recognizing that there are numerous values on the landbase and that a special consultation process will be undertaken prior to initiating any burning activities in the Dawson Creek Fire Zone. It is the intent of the Wildlife Branch of FLNRO to create an open consultation process, with all tenure holders and First Nations within the Dawson Creek Fire Zone, to ensure that all values are identified on the landbase, to minimize potential conflicts between wildlife and the agricultural community, and that the intent of maintaining and re-establishing natural winter range habitats (primarily for elk) is well-defined and supported.

Three sites have been proposed for burning along the Peace Reach of the Williston Reservoir (Figure 12). These areas overlap with the Dunlevy Creek Management Plan (MSRM 2002) and have been identified under this plan (and the Dawson Creek LRMP) specifically for their high capability and suitability as ungulate winter range for elk, moose and Stone's sheep. Further, the plan identifies the requirement for the creation and maintenance of these winter ranges, through prescribed burning, to augment historical winter ranges lost to the flooding of the reservoir (MSRM 2002). Partnerships and coordination with the Peace-Williston Fish and Wildlife Compensation Program will be initiated prior to treatment of these areas.

Three new burns are being proposed in the southern-most portion of our region: Secus Mtn., Nekik Mtn. and Saxon Creek (Table 4; Figure 15). These areas are new to the Peace-Liard Burn Program, but have a burn history from wildfire, old, undocumented wildlife burns, or First Nations related burns. Prior to burning, these burn sites will be visited to determine if the sites are suitable for treatment with fire and to determine approximate burn area. The 3 burns would be relatively high-elevation burns to support and maintain ungulate winter range for bighorn sheep (*Ovis canadensis*) and/or mountain goat. Our region contains only a small portion of the bighorn sheep's range in BC, and burning within the Saxon Creek area would maintain winter range areas for this species.

The Belcourt Creek burn has been proposed (and approved by Protection Branch) for several years, but has not been fully burned due to inadequate site (e.g. snow cover) and spring burn conditions (Figure 15). Photo 5 shows the current state of the Belcourt site in May 2011.

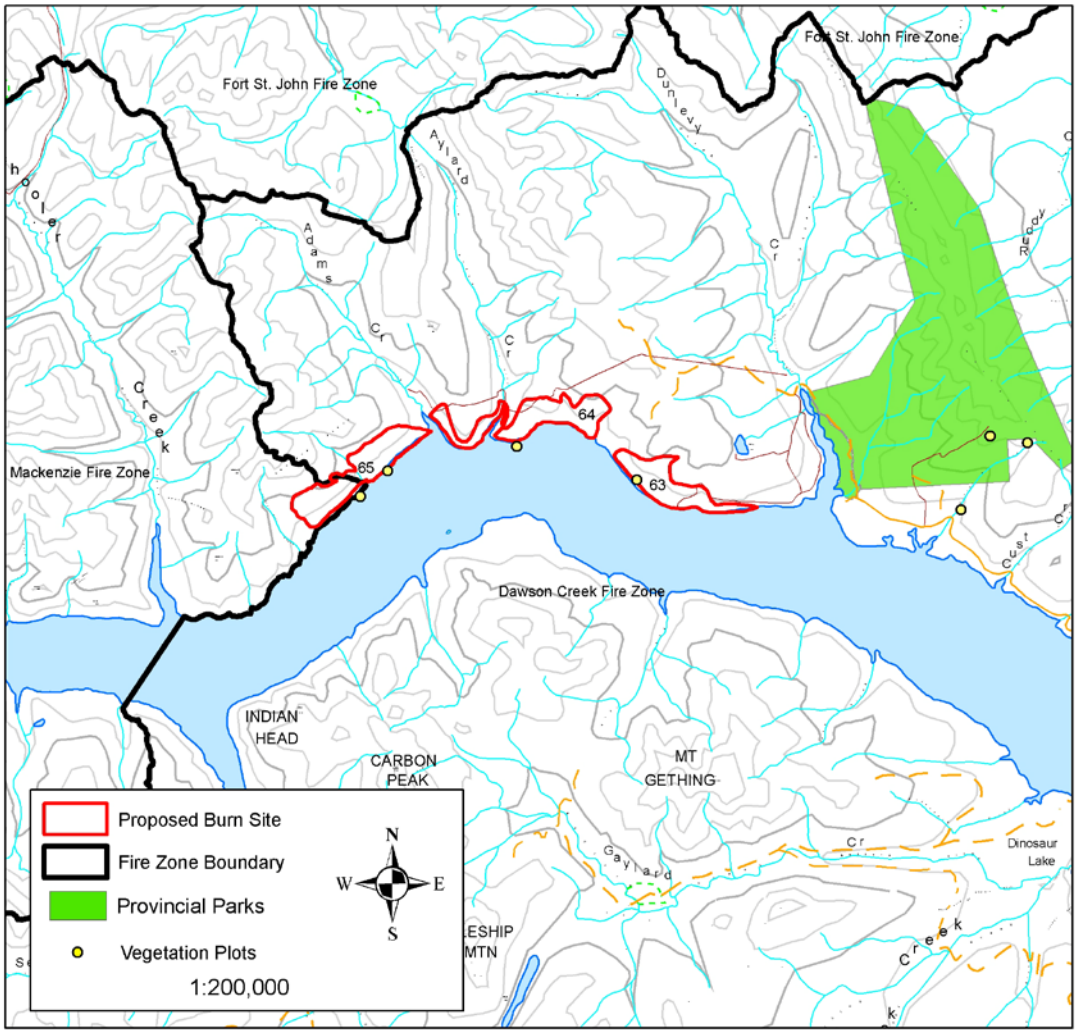

Figure 12. Proposed blocks along the Peace Reach of the Williston Reservoir in the Dawson Creek Fire Zone. These areas have been identified in the Dunlevy Creek Management Plan as ungulate winter range for elk and Stone's sheep.

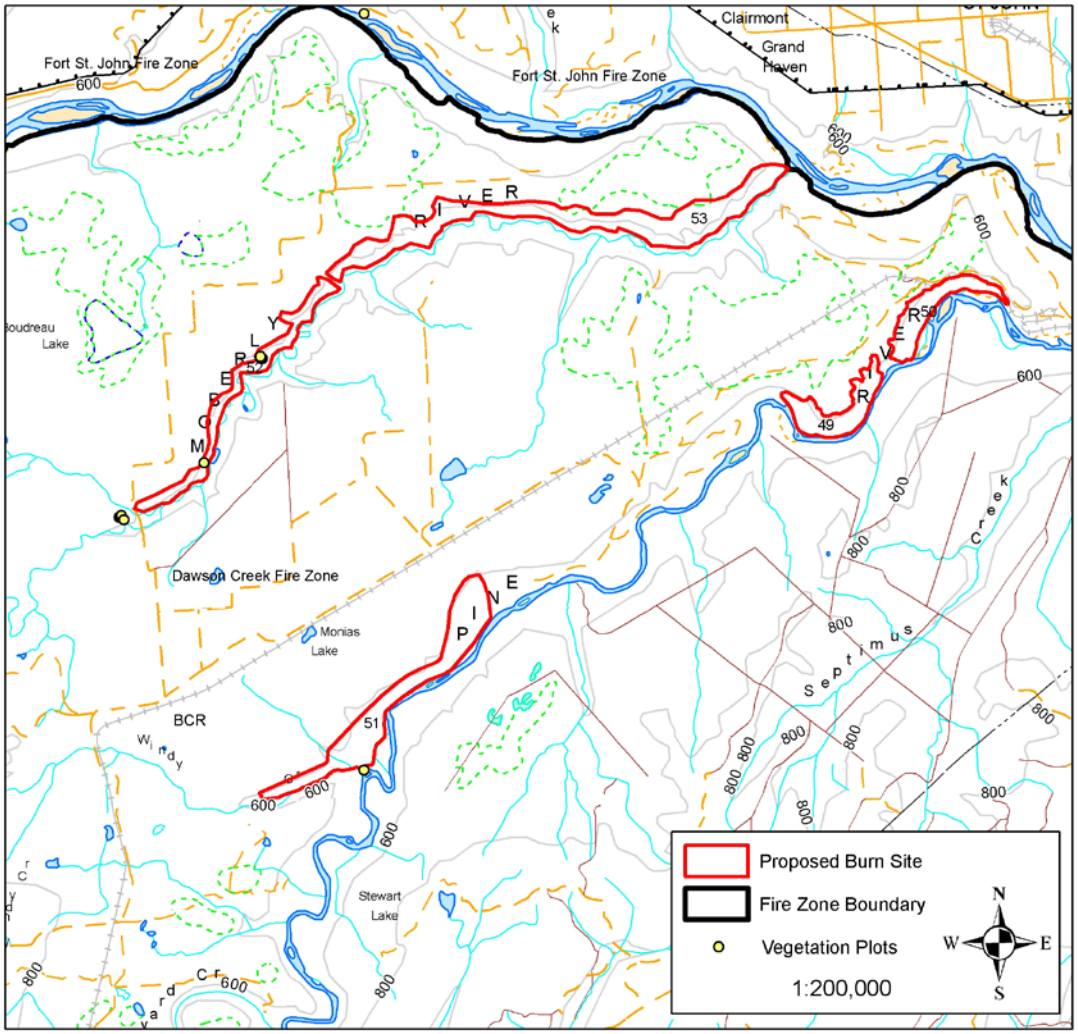

Figure 13. Proposed blocks on the Moberly River, Pine River and Windy Creek in the Dawson Creek Fire Zone. Due to land-use conflicts, these proposed areas will undergo a more comprehensive consultation process prior to burning.

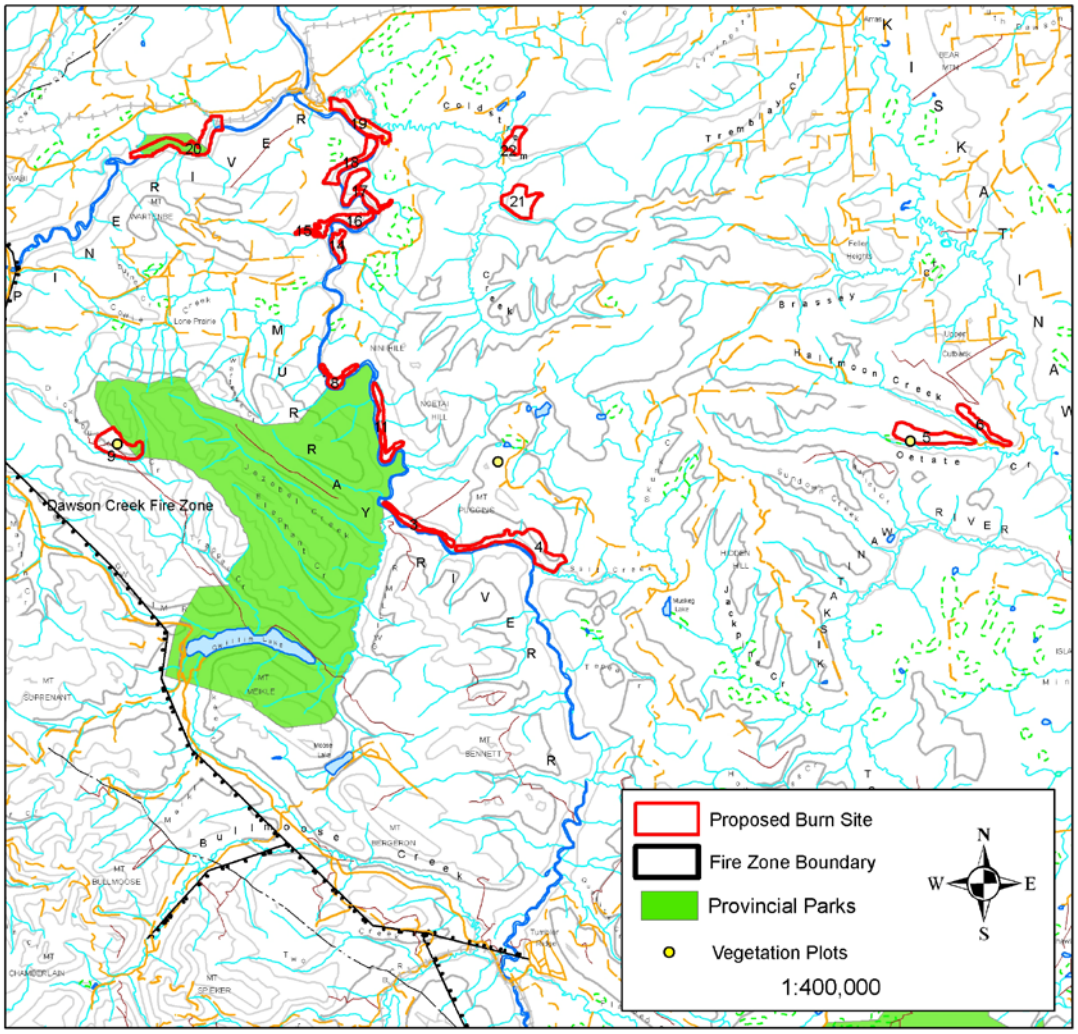

Figure 14. Proposed blocks along the Murray River, Pine River, and Coldstream Creek in the Dawson Creek Fire Zone. Due to land-use conflicts, these proposed areas will undergo a more comprehensive consultation process prior to burning.

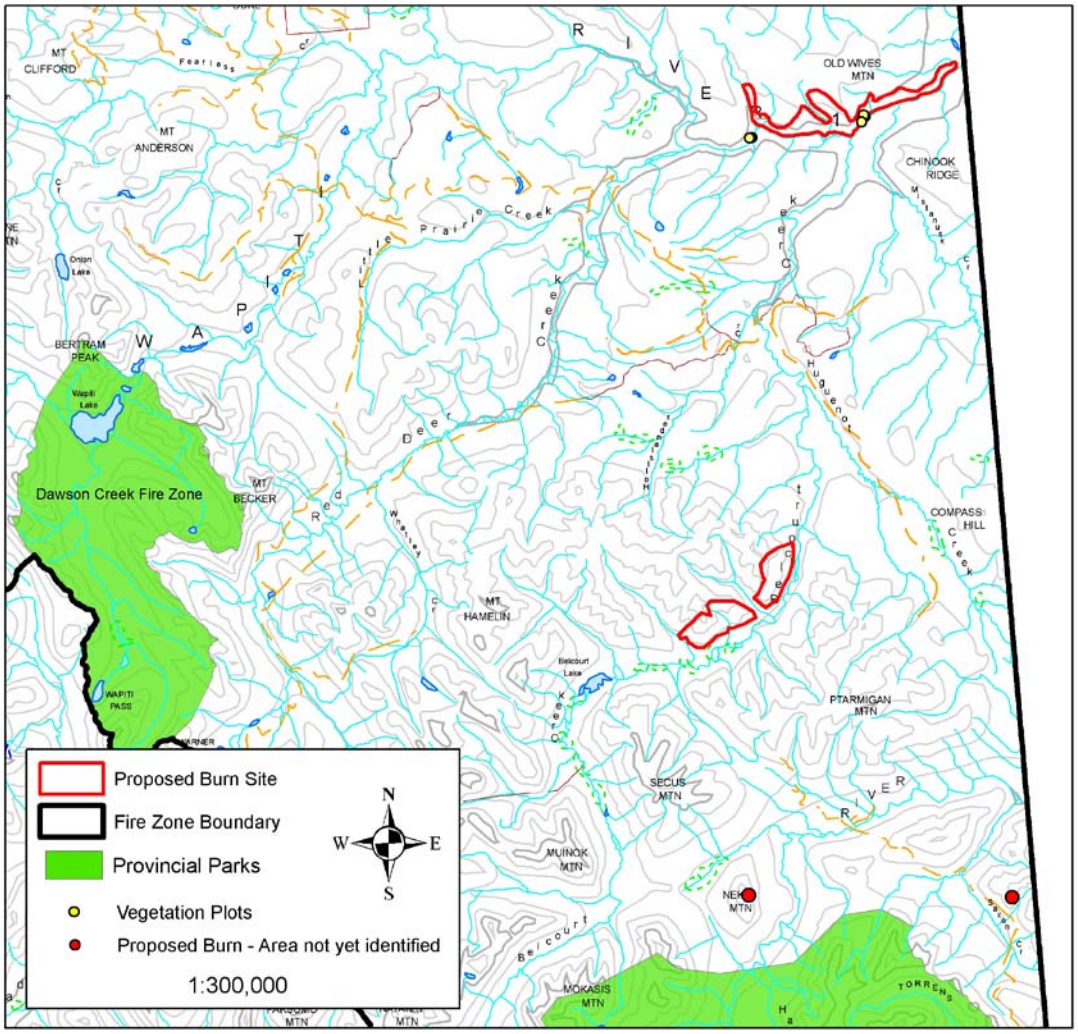

Figure 15. Proposed blocks along the Wapiti River, Belcourt Creek, Nekik Mtn. (new block), and Saxon Creek (new block) in the Dawson Creek Fire Zone. The areas identified as new burn proposals have been burned in the past; however, the source of the burn history is unknown and the burn areas have not been formally mapped.

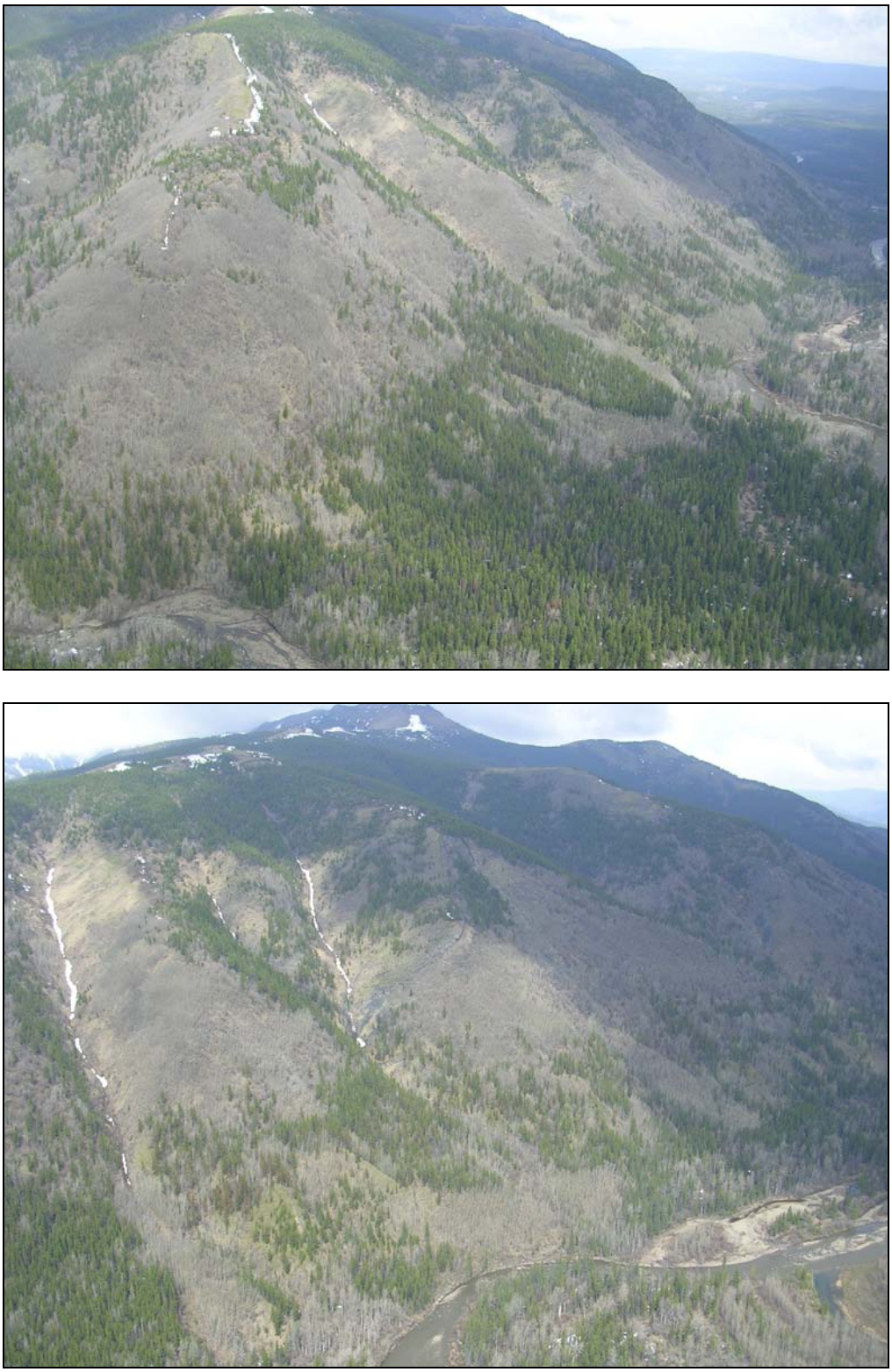

Photo 5. Existing site conditions within the proposed prescribed burn area on Belcourt Creek. Photos taken May 2011.

Table 4. Areas identified for burning within the Dawson Creek Fire Zone. Burns in green are located in Parks and would require approval from the Parks Regional Manager. The majority of burns identified in the Dawson Creek Fire Zone will require a complex consultation process to identify all values on the landscape prior to treatment.

Burn Name	Block Number	Burn Years		Burn Area (ha)**	Species Targeted	Proposed Vegetation Monitoring	Comments
		Last Known Treatment	Proposed*				
Murray River	3	1987	2015	185	Elk, Moose, Mule Deer	-	
Murray River	8	1987	2015	139	Elk, Moose, Mule Deer	-	Maintenance of Ungulate Winter Range
Trapper Mtn.	9	1993	2015	460	Elk, Moose, Mule Deer	Yes	
Murray River	11	1987	2015	289	Elk, Moose, Mule Deer	-	Maintenance of Ungulate Winter Range
Pine River	20	1987	2015	607	Elk, Moose, Mule Deer	-	Maintenance of Ungulate Winter Range
Wapiti River	1	2011	2012	1,051	Elk, Moose	Yes	Additional burning within existing polygon
Murray River	4	1987	2015	708	Elk, Moose, Mule Deer	-	
Salt Ridge	5	1995	2015	481	Elk, Moose, Mule Deer	-	
Halfmoon	6	1997	2015	242	Elk, Moose, Mule Deer	-	
East Pine	14	1987	2015	151	Elk, Moose, Mule Deer	-	Maintenance of Ungulate Winter Range
East Pine	15	1987	2015	44	Elk, Moose, Mule Deer	-	Maintenance of Ungulate Winter Range
East Pine	16	1987	2015	275	Elk, Moose, Mule Deer	-	Maintenance of Ungulate Winter Range
East Pine	17	1987	2015	396	Elk, Moose, Mule Deer	-	Maintenance of Ungulate Winter Range
East Pine	18	1987	2015	298	Elk, Moose, Mule Deer	-	Maintenance of Ungulate Winter Range
East Pine	19	1987	2015	398	Elk, Moose, Mule Deer	-	Maintenance of Ungulate Winter Range
Coldstream Creek	21	Unknown	2015	417	Elk, Moose, Mule Deer	-	
Coldstream Creek	22	Unknown	2015	176	Elk, Moose, Mule Deer	-	
Pine River North	49	1996	2015	408	Elk, Moose, Mule Deer	-	Maintenance of Ungulate Winter Range
Pine River North	50	1996	2015	378	Elk, Moose, Mule Deer	-	Maintenance of Ungulate Winter Range
Windy Creek	51	1997	2015	986	Elk, Moose, Mule Deer	-	Maintenance of Ungulate Winter Range
Moberly River	52	1992	2015	522	Elk, Moose, Mule Deer	Yes	Maintenance of Ungulate Winter Range
Moberly River	53	1987	2015	1,458	Elk, Moose, Mule Deer	-	Maintenance of Ungulate Winter Range
Dunlevy	63	2003	2013	421	Elk, Stone's Sheep, Moose	-	Maintenance of Ungulate Winter Range; identified in Dunlevy Creek Management Plan
Aylard Creek	64	1997	2013	554	Elk, Stone's Sheep, Moose	-	Maintenance of Ungulate Winter Range;

							identified in Dunlevy Creek Management Plan
Branham	65	2003	2013	577	Elk, Stone's Sheep, Moose	-	Maintenance of Ungulate Winter Range; identified in Dunlevy Creek Management Plan
Belcourt Creek	New[1]	2010	2012	1,034	Elk, Mountain Goat	Yes	Additional burning within existing polygon
Nekik Mtn.	New[1]	Unknown	2012	?	Mountain Goat, Bighorn Sheep	-	Needs assessment prior to burning
Saxon Creek	New[1]	Unknown	2012	?	Bighorn Sheep	-	Needs assessment prior to burning; maintenance of Ungulate Winter Range

* Proposed burn years are subject to change depending on site conditions, yearly weather conditions and length of burning window.

** Burn area is larger than the actual treatment area. The proposed burn area represents the area that *could* be burned, but actual burn/treatment area is significantly smaller, and is digitally mapped separately post-treatment to represent most recent conditions.

[1] Areas have a burn history (source of burning unknown). Burn areas to be determined after site assessment. Refer to Photo 1 for existing site conditions.

3.4 Mackenzie Fire Zone

A small portion of the Peace Sub-region is covered by the Mackenzie Fire Zone. A few blocks have been proposed within this fire protection zone for prescribed burning over the next 5 years, three of which are located within the Dune Za Keyih (Frog-Gataga Park; Table 5, Figures 16).

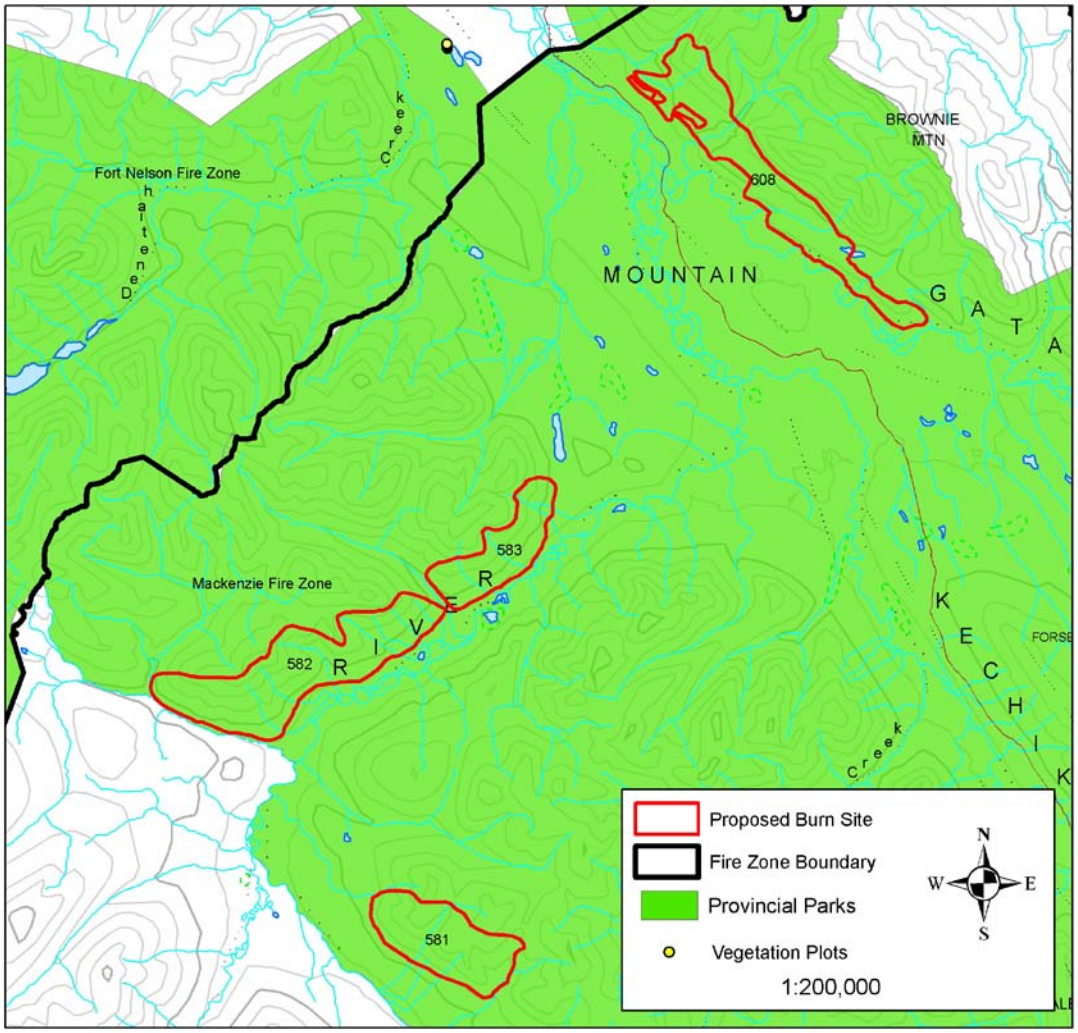

Figure 16. Proposed Frog River and Brownie Mtn. burn sites in the Frog-Gataga Park, Mackenzie Fire Zone.

It is unclear of the current vegetational state of the two Schooler Creek blocks (66 & 67) and whether these sites can support burning activities. In some cases, burns conducted in the past did not achieve the objective of increasing forage, reducing aspen encroachment, and actually impeded vegetation growth due to burning of soils or improper site conditions to allow for burning (e.g. soils, topography, poor fuel loading, etc). The 2 blocks will be proposed in the 2012 burn plan; however, prior to burning, the sites will be assessed to determine if they are able

to support future burning. Further, the Schooler Creek sites will be assessed to ensure that treating the site with fire will enhance the forage and habitat quality for elk in the area.

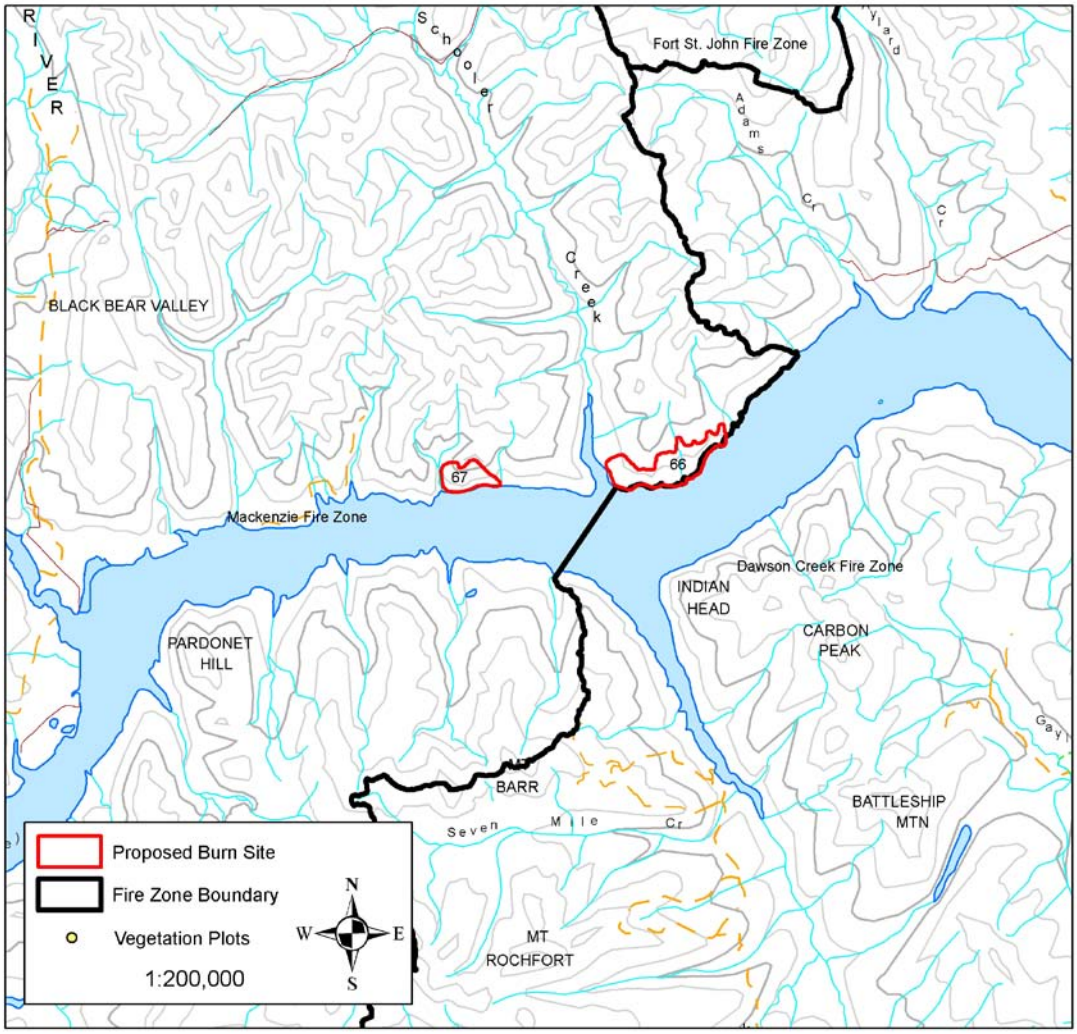

Figure 17. Proposed Schooler Creek burn sites in the Mackenzie Fire Zone. These blocks have been burned historically, but will need to be re-assessed to determine if prescribed burns are appropriate for these areas.

Table 5. Areas identified for burning within the Mackenzie Fire Zone. Burns in green are located in Parks and would require approval from the Parks Regional Manager.

Burn Name	Block Number	Burn Years		Burn Area (ha)*	Species Targeted	Proposed Vegetation Monitoring	Comments
		Historical	Proposed*				
Frog River	581	Unknown	2013	1,237	Stone's sheep, Mountain goat	-	
Frog River	582	2007	2013	2,288	Stone's sheep, Mountain goat	-	
Frog River	583	2007	2013	959	Stone's sheep, Mountain goat	-	
Brownie Mtn.	608	2010	2017	1,946	Stone's sheep, Mountain goat, Elk	-	
Schooler Creek	66	1995	2012	442	Elk	Yes	Needs assessment prior to burning
Schooler Creek	67	Unknown	2012	175	Elk	Yes	Needs assessment prior to burning

* Proposed burn years are subject to change depending on site conditions, yearly weather conditions and length of burning window.

** Burn area is larger than the actual treatment area. The proposed burn area represents the area that *could* be burned, but actual burn/treatment area is significantly smaller, and is digitally mapped separately post-treatment to represent most recent conditions.

4 Proposed Vegetation Monitoring

Vegetation monitoring activities have been proposed for a number of burn sites. Rather than monitoring every site, a subset of sites have been chosen for vegetation monitoring to represent the different biogeoclimatic zones that have been treated as well as the different ungulate species targeted (Table 6). In addition to the sites identified in Table 6, other sites may be monitored during each treatment year where conditions or response may vary from what was expected. Where feasible, certain sites have been identified for both pre- and post-treatment biomass collection.

Table 6. Sites proposed for vegetation monitoring between 2012 and 2017, by Fire Zone, including previous vegetation monitoring history, whether pre- and post-treatment measurements have been or will be conducted, and the biogeoclimatic zone represented. Sites highlighted in green overlap parks.

Burn Name	Block Number	Previous Vegetation Monitoring	Pre- & Post-Treatment Measurement	BEC Zone
Fort Nelson Fire Zone				
Moodie Lakes	596, 597, 609, 610	2008	Yes	SWB
Chee Mtn.	598	2008-2011	Yes	BWBS
Denetiah Creek	584	2008-2011	-	BWBS, SWB
Horneline Creek	621	2011	Yes	BWBS
Moule Creek-Nordquist	539, 604, 605	2009	-	BWBS
Sulphur Creek	506, 507	-	-	SWB
Richards Creek	204, 205	-	-	SWB
Turnagain River	New	-	-	SWB
Fort St. John Fire Zone				
Golata Creek	27, 28	2007	-	BWBS
Farrell Creek	60	2007	-	BWBS
Graham River	72, 74, 75, 79, 80, 82, 89	2007	-	ESSF-BWBS
Little Ram	190	none	Yes	SWB
Cache Creek	New	none	Yes	BWBS
Chowade River	96-105	1988	-	ESSF-BWBS
Dawson Creek Fire Zone				
Belcourt Creek	622	2011	Yes	ESSF
Wapiti River	1	2007, 2011	-	BWBS
Moberly River	52, 53	1988, 1994, 2007	-	BWBS
Trapper Mtn.	9	1994	-	BWBS
Mackenzie Fire Zone				
Schooler Creek	66/67	none	-	BWBS

5 Proposed Funding Summary

Funding for the Burn Program has come predominantly from the Habitat Conservation Trust Foundation. The Northern BC Guides Association has also consistently contributed funds towards the program for the past several years. In order to maintain the Burn Program

functioning at its current capacity (approximately 10-15 burn treatment areas each year), being lead by Wildlife staff at FLNRO, with the option of having a contractor assist with field activities (lite-up, treatment monitoring, and vegetation monitoring) the following funding will be applied for in each fiscal:

- Habitat Conservation Trust Fund – $100,000/year
- Northern BC Guides – approximately $20,000/year
- Northeast Wildlife Fund – approximately $20,000/year

6 Reporting

As per funding requirements through the Habitat Conservation Trust Foundation, an annual report of project activities will be completed for each funding year. In attempts to communicate the activities and results of the Peace-Liard Burn Program, in conjunction with HCTF reporting requirements, Wildlife Branch of FLNRO will report on the sites treated, total hectares actually burned, vegetation monitoring results, and maps of actual burn area versus proposed burn area. This will be distributed to all interested parties, including Forest District offices, Protection Zone offices, funding agencies and through the Wildlife Board (established under the Collaborative Management Agreement).

7 Acknowledgements

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8 References

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Appendix 1. List of proposed burns by year. Areas not burned in the proposed year will be carried forward to the next year.

Year	Fire Protection Zone	Burn Name	Block Number	Within Park	Vegetation Monitoring
2012	Fort Nelson	Muskwa River	282, 283	Yes	-
		Henry Creek	368	Yes	-
		Chlotapecta Creek	361, 362	Yes	-
		Chischa River	365	Yes	-
		Moule Creek	539	Yes	Yes
		Nordquist	604, 605	Yes	Yes
		Horneline Creek	613	Yes	Yes
		Besa Canyon	200	-	-
		Willards Hill-Kechika River	611	-	-
		Turnagain River	New	-	Yes
		Eskona Mtn.	New	-	-
		Nistsa Creek	New	-	-
		Deeh Ridge	New	-	-
	Fort St. John	Graham River	72, 74, 75, 79, 80, 82, 89	-	Yes
		Halfway River	125-128	-	-
		Little Ram	190	-	Yes
		Besa-Pocketknife	198	-	-
	Dawson Creek	Wapiti River	1	-	Yes
		Belcourt Creek	New	-	Yes
		Nekik Mtn.	New	-	-
		Saxon Creek	New	-	-
	Mackenzie	Schooler Creek	66, 67	-	Yes
2013	Fort Nelson	Snake Creek	462	-	-
		Bear Mtn.-Ram Creek	464-469	-	-
		Winston Mtn.	588	-	-
		Mt. Skook Davidson	589	-	-
		Chee Mtn.	598	-	Yes
		Moodie Lakes	596, 597	-	Yes
		Moule Creek	539	Yes	Yes
		Nordquist	604, 605	Yes	Yes
	Fort St. John	Trimble Lake	168-170	Yes	-
		Besa River-Redfern	175-179	Yes	-
		Keily Creek	180, 206	Yes	-
		Besa River	181	Yes	-
		Chowade River	96-105	-	Yes
		Farrell Creek	60	-	Yes
	Dawson Creek	Dunlevy	63	-	-
		Aylard Creek	64	-	-
		Branham	65	-	-
	Mackenzie	Frog River	581-583	Yes	-
2014	Fort Nelson	Yash Creek	429	-	-
		Toad River	484-486	-	-
		Willards-Kechika River	611	-	-
		Moule Creek	539	Yes	Yes
		Nordquist	604, 605	Yes	Yes
	Fort St. John	Golata Creek	27, 28	Yes	Yes
		Wilder Creek	54	-	-

		Red Creek	56, 57	-	-
		Halfway River	121, 122	-	-
		Beattie Lake	145		
		Mt. Bertha	150	-	-
		Upper Sikanni River	151	-	-
		Sikanni River	159, 160	-	-
		Chicken Creek	161-164	-	-
		Besa River	182-189	-	-
2015	Fort Nelson	Richards Creek	202-205, 210, 211, 216	-	Yes
		Moule Creek	539	Yes	Yes
		Nordquist	604, 605	Yes	Yes
	Fort St. John	Beatton River	40-46	-	-
		North Cache Creek	New	-	Yes
	Dawson Creek	Murray River	3, 8, 11	Yes	-
		Trapper Mtn.	9	Yes	Yes
		Pine River	20	Yes	-
		Murray River	4	-	-
		Salt Ridge	5	-	-
		Halfmoon	6	-	-
		East Pine	14-19	-	-
		Coldstream Creek	21, 22	-	-
		Windy Creek	51	-	-
		Moberly River	52, 53	-	Yes
2016	Fort Nelson	Bridge Creek	437-439	-	-
		Chee Mtn.	598	-	Yes
		MacDonald Creek	440	-	-
		Dunedin River	452, 453	-	-
		Moule Creek	539	Yes	Yes
		Nordquist	604, 605	Yes	Yes
	Fort St. John	Two Bit Creek	135, 136	-	-
		Jesson Creek	137, 138, 141	-	-
		Sidenius Creek	139, 140		
2017	Fort Nelson	Moule Creek	539	Yes	Yes
		Nordquist	604, 605	Yes	Yes
		Tetsa River	385-391	-	-
		Snake Creek	463	-	-
		Moodie Lakes	609, 610	-	Yes
		Willards-Kechika River	611	-	-
	Fort St. John	Farrell Creek	60	-	Yes
	Mackenzie	Brownie Mtn.	608	Yes	-