# ECOSYSTEM RESTORATION PRESCRIPTION

## Rocky Mountain Forest District

☒ Single ☐ multi-area

| AREA IDENTIFIER: OPENING NO.; 82G024-131 | ☐ ORIGINAL ☒ AMENDMENT # 1 | DATE Y / M / D |
|---|---|---|
| UTM 11N 635000 5457000 | Location: Cemetery Pasture, Baynes Lake | 2014/05/09 |
| N49 14.906 W115 12.693" | | |

### A. GENERAL DESCRIPTION OF AREA

| SU | TU | Treatment Regime | Gross Area (ha) | Reserve/ Area (ha) | NP Area (ha) Powerline/ Roads | Net TREATMENT AREA (ha) |
|---|---|---|---|---|---|---|
| OR | A | Open Range/ Log and slash / Prescribed burn | 66.9 | 7.0 | 1.4 | 58.5 |
| OR | B | Open Range / Burn as is/ Prescribed burn | 122.2 | 4.2 | 2.0 | 115.9 |
| OR | C1 | Open Range/ Log and slash / Prescribed burn | 243.8 | 42.0 | 6.7 | 195.1 |
| OR | C2 | Open Range/ Log and slash / Prescribed burn | 3.1 | 0.0 | 0.1 | 2.9 |
| OR | C1 | Open Range/ Log and slash / Prescribed burn | 5.7 | 0.0 | 0.1 | 5.6 |
| OR | D | Open Range/ Log and slash / Prescribed burn | 5.9 | 5.9 | 0.0 | 0.0 |
| OR | E1 | Open Range/ Log and slash / Prescribed burn | 59.9 | 1.5 | 0.7 | 57.7 |
| OF | E2 | Open Forest/Lodgepole Pine/ Leave as is | 16.0 | 0.0 | 0.0 | 16.0 |
| OR | F | Open Range/ Log and slash / Prescribed burn | 23.6 | 0.0 | 0.8 | 22.8 |
| OR | G | Open Range / Burn as is/ Prescribed burn | 32.5 | 0.0 | 2.9 | 29.6 |
| OR | H | Open Range/ Hand slash / Prescribed burn | 3.2 | 0.0 | 0.0 | 3.2 |
| OR | I | Open Range/ Hand slash / Prescribed burn | 9.0 | 0.0 | 0.0 | 9.0 |
| OR | 2 | Open Range/ Log and slash / Prescribed burn | 9.5 | 0.0 | 0.1 | 9.4 |
| OR | Cemetery | Reserve | 5.3 | 5.3 | 0.2 | 0.0 |
| | | Totals | 606.6 | 66.0 | 14.9 | 525.8 |

| FIELD WORK BY: R Harris, RPF. John Brace, RPF, Ryan Fuselle, RFT | TOTAL TREATMENT AREA SLASH 12.2, PRESCRIBED BURN 600HA | DATE COMPLETED: Field work July 22, 2009 |
|---|---|---|

### B. HIGHER-LEVEL PLANS

ARE THESE TREATMENT AREAS WITHIN LOCAL RESOURCE USE, TOTAL RESOURCE, INTEGRATED WATERSHED MANAGEMENT, OR OTHER SPECIFIC PLANNING AREAS? X NO

ARE ANY OF THESE TREATMENT AREAS WITHIN A COMMUNITY WATERSHED? ☐ YES ☒ NO

SU number:

| IF YES: | PLAN NAME |
|---|---|
| | Kootenay Boundary Land Use Plan, Ungulate Winter Range Orders U-4-006 (Cranbrook). |

**IF NO:** CONSULT WITH OTHER RESOURCE AGENCIES TO ASSIST IN DEVELOPING MANAGEMENT OBJECTIVES FOR THE PRESCRIPTION.

SUMMARY OF HIGHER-LEVEL OBJECTIVES FOR THESE TREATMENT AREAS (Please rank specific objectives *[1 = highest priority, 10 = lowest]* ):

( 6 ) Timber ( 3 ) Range ( 5 ) Recreation ( 6 ) VQO (1 ) Wildlife Habitat ( 8 ) Biodiversity ( 4 ) Wildlife Trees ( ) Fisheries ( 7 ) Water Quality ( 2 ) Other: interface

### C. STAND-LEVEL OBJECTIVES

ARE CURRENT STAND-LEVEL OBJECTIVES AVAILABLE FROM SILVICULTURE PRESCRIPTIONS? ☒ Yes ☐ No IF 'YES,' CP 292 and 553 FL A19040

ARE CURRENT STAND-LEVEL OBJECTIVES STILL APPROPRIATE FOR THESE STANDS? X No ☐ NA

USE THIS SECTION TO SUMMARIZE OBJECTIVES FROM HIGHER-LEVEL PLANS OR FOR DEVELOPING OR CLARIFYING STAND-LEVEL OBJECTIVES.

| TIMBER | MANAGEMENT OBJECTIVES |
|---|---|
| SU All | **1.** Open Range stands are to maintain 0-75 stems/ha on site with a target of 20 stems/ha while maintaining largest trees on site emphasizing trees greater than 30cm DBH. Open Range areas will not be managed for timber production. |

| | |
|---|---|
| | Repeated low intensity fire is intended to perpetuate an open landscape and fire proof the stems to allow them to emulate old growth characteristics.<br>**2.** Open Forest stands are to maintain 76 to 400 stems/ha on sites with a target of 150 stems/ha while maintaining largest trees on site emphasizing trees greater than 30cm DBH. One third of trees retained are to be from largest diameter class present on site.<br>**3.** Open Forest stands shall produce 50% of their volume potential, this half production is estimated to be 70 m3/ha in a 100 year rotation. No merchantable volume is expected from Open Range stands. |

Classification of the FMER layer is changed as per this prescription based on field reconnaissance. The following previous harvests and prescriptions occur on site:

- TU A was first harvested as small patch cut units under Tembec Forest License A19040 CP 236 block 118 in 1998 (55.5 hectares gross, 27.2 ha NAR) and declared free growing to Open Forest standards in 2000 (see opening 82G024-98) with 69 mature well spaced/ ha (age 84 height 23) 43 pole sized/ha 109 advanced regen and 43 regen trees; 97 to 100% Douglas fir. Intent was a mule deer improvement.
- The area around 82G024-98 TU A, D, E and F was reharvested by TEMBEC Industries as Forest License A19040 Cutting Permit 292 in 2008 (No opening file, copy of prescription on opening file 82G024-131) as Open Range PPdh2 EA1
- All of TU C1 (excludes C2 and C3) and TU2 were harvested in 2013 as Canfor's as Forest License A19040 Cutting Permit 553 blocks 2 (TU 2) and 3 (TU C). A copy of the prescription is on opening file 82G024-131. The harvesting was as Open Range PPdh2 EA1 in TU C and in TU 2 as IDFdm2 01 Open Forest.

Some further spacing of the eastern portion of TU C1 will be needed to drop stocking standards to Open Forest or Open Range. Spacing WTPs 11 through 16 should be carried out so as to save the older trees on site. Despite the classification of the site by Canfor foresters; this unit shall be managed in long term by the classifications called for in this prescription. With the dryness of the site it is unlikely that a second commercial crop of saw logs will occur in TU A, F, C1, C2 and C3. Given cultural values in Cemetery TU, it should be treated as a reserve and Wildlife Tree patch. TU D was established as a WTP under CP 292 and continues so under this prescription.

TU E2 has a close crop of Lodgepole pine and provides wildlife with visual cover near a high use recreation road; it should be able to grow a good commercial stand for future harvest.

| UNDERSTORY (Grasses, Forbs, Shrubs) | MANAGEMENT OBJECTIVES |
|---|---|
| SU All | 1. Increase the native grass and forb plant cover by 25% within ten years of initial burn treatment. Initially, until better inventory data is available, the rough fescue/ Idaho fescue/ blue bunch wheatgrass is to be used as the default community to be increased. Measurement of the increase shall be determined by photo plots taken during routine monitoring that will be calibrated by effectiveness monitoring plots where actual measurements will be taken.<br>2. Increase forage biomass production by 5% within 5 years of initial burn treatment.<br>3. Increase the forage biomass of valuable decreaser (e.g. Saskatoon berry, rose spp., ceanothus, and chokecherry) shrubs by 25% cover in treated areas within 5 years. |

The success of these objectives shall be determined by routine monitoring plots being rephotographed and remeasured before and after treatments.

## Riparian; streams, wetlands Lakes and Fisheries

MANAGEMENT OBJECTIVES

1. All streams, wetlands and lakes shall be identified and classified in the Ecosystem Restoration Prescription for each treatment area as per Forest Practices Code Stream Classification Guidebook and Riparian Management Guidebook.
2. Management within each riparian management area shall follow the best management practices contained in the Riparian Management Guidebook; namely:
   - ❑ Retain all under story shrubs and suppressed and intermediate trees in all Riparian Management Areas.
   - ❑ Retain all dominant and co-dominant trees in all Riparian Reserve Zones, except where provisions of FRPA require harvest. (i.e. safety or road construction)
   - ❑ Natural drainage pattern shall be maintained for classified and non classified drainages.

| TU | Stream or wetland class | Riparian Reserve zone width (m) | Riparian management zone width(m) | Retention strategy Riparian management zone |
|---|---|---|---|---|
| | | | | |
| | | | | |

No classifiable surface streams or wetlands noted on site; WTP 2 and 16 cover small unclassifiable wetlands. No action is required.

| Community WATERSHED | MANAGEMENT OBJECTIVES |
|---|---|

| | |
|---|---|
| SU All | Control sediment within 100 metres upstream of all consumptive water intakes and increase riparian retention in consumptive stream watershed. Increased level will be decided on a stand level basis but will exceed the average targets suggested in riparian section. |

There are no water intakes within or in the immediate vicinity of the unit. There is no surface connection to the intakes south of the unit. No action is required

| STAND LEVEL BIODIVERSITY (WT and CWD) | MANAGEMENT OBJECTIVES |
|---|---|
| SU All | 1. ER Program shall maintain the Old Growth Management Areas as laid out by Integrated Land Management Bureau in 2006, and will thin and burn them only to maintain function and stand health.<br>2. Treatment will maintain and recruit 2 to 10 wildlife trees (over 30cm DBH, 40cm preferred) per hectare throughout treatment cycle on open forest treated area. Tree species in descending order of preference are Ponderosa Pine, Western Larch, Douglas-fir, Trembling Aspen and Black Cottonwood (the latter if available).<br>3. Recruited patches of snags Trees will be in patches of .1 to 1.0 hectares rather than even single tree distribution so as to proximate the natural occurrence of snags after a wildfire.<br>4. Maintain and recruit 3 cubic metres of CWD (over 30cm DBH and all rot stages not just sawlog grade) per hectare throughout treatment cycle on the treated area. Number and distribution shall, at least, meet minimums set by FPPR namely as minimum of 4 logs per hectare, greater than 5 metres long and 7.5cm diameter at small end. |

1. There was one spatially explicit OGMA in TU 2. This OGMA was relocated by Canfor to facilitate the harvest of CP 553 block 2.
2. Up to 450 snags can be created in this block by piling debris at the base of the tree or by heart rot inoculation. Very few wildlife trees on site at this time due to the young age of the stand
3. Nineteen wildlife trees and patches have been established in the prescription area (See attached spreadsheet for detailed description), most WTPs are retention strategies set out by Canfor under CP 292 (WTPs 18 and 19) or CP 553. Spacing to retain large trees on site it may be necessary to space the understory trees in WTP 11 through 16 and 18 and 19.
4. The minimum number of CWD should be easily met by the logging and slashing debris on site. If CWD appears to in short supply 2 to 5 piles per hectare shall be left unburnt in areas at least 50 metres from existing skid and access roads.
5. Vegetation at the base of high value wildlife trees (as defined in Section 5 of GENERAL GUIDELINES for LAYING OUT WILDLIFE TREE PATCHES AND BIODIVERSITY PATCHES (attached)) should be removed to create a mineral soil guard to protect the wildlife tree prior to burning operations.

| SPECIES AT RISK | MANAGEMENT OBJECTIVES |
|---|---|
| SU All | Maintain or increase the species richness and population density of endemic wildlife species in treated areas; with special emphasis in species listed as being red or blue listed by the Conservation Data Centre (CDC). |

The Conservation Data Centre records Yellow badger as being on this site. Site will need thinning to become good ground squirrel and badger habitat.

| Rare Plant Species or Plant Community | MANAGEMENT OBJECTIVES |
|---|---|
| SU All | Maintain or increase the species richness and population density of endemic plant species and plant communities in treated areas; with special emphasis in species listed as being red or blue listed by the Conservation Data Centre (CDC). |

A search of the Conservation Data Centre database indicates that Pinewood Peavine (*Lathyrus lanswerti* var *sandbergi*) and Wild licorice (*Glycyrhizae lepidata*) may occur on this site. Wild licorice requires wet meadows to thrive and may exist near the small wetlands in WTP 2; especially given that licorice occurs in Kikkomun Park adjacent to this block. The reserve around the wetlands should protect this species. Pinewood Peavine is known from one spot near Grasmere. It requires openings in the dry forest to grow; it may exist in TU B, but thinning and maintaining this unit as Open Forest / Open Range will increase the chances that this plant will do well on site. Workers on site will be shown photos of these plants and they will be directed to report any locations to the contract supervisor and the locations found will be exempt from treatment.

| UNGULATE CONCERNS | MANAGEMENT OBJECTIVES |
|---|---|
| SU All | The Ecosystem Restoration program shall follow the direction of Ungulate Winter Range (UWR) Orders, which will meet the habitat requirement of ungulates on site. |

Mapping for this unit shows that it is class 5 winter range for moose, mountain goat and bighorn sheep, class 1 to 2 for elk and class 1 to 3 for whitetail and mule deer. The thinning and burning operations will improve the forage on site while the WTP and biodiversity patch retention will provide thermal and security cover. Lead species to manage for are elk and mule deer, lower values for both species on north aspect.

| FOREST HEALTH | MANAGEMENT OBJECTIVES |
|---|---|
| SU All | 1. Keep root rot incidence to less than 8% of stand affected based on ocular estimates undertaken during routine monitoring surveys of the ER blocks.<br>2. Action 50% of all Mountain Pine Beetle infestations within one year of detection, as per the District Forest Health Strategy. Action may not necessarily be taken by ER program due to forest licensing constraints. |

No sign of Mountain Pine beetle or root rot seen in the stand or on forest health maps. Pixel survey for CP 236 (TU A-opening 82G024-98) shows only 0.5% armillaria survey on site

| INVASIVE PLANTS | MANAGEMENT OBJECTIVES |
|---|---|
| SU All | Invasive plant infestations of priority species should not increase from those recorded by the Ministry of Forests and Range, Range Branch for the Range Unit being treated. |

The Invasive Alien Plants (AIP) application website was consulted and shows spotted knapweed on the Baynes Lake Dump road and the Jaffray Baynes Lake road. Incidents of Blue weed, hounds tongue and hawkweed are also on the Jaffray Baynes Lake Road. TU B shows extensive amounts of common St John's wort on site; this plant has been infected with a bio control but the population does not appear to be falling off.

This area is being actively treated for knapweed. All new fire guards must be grass seeded with an erosion control agronomic seed mix within one growing season of construction. Any burn piles areas shall be grass seeded within one year of burning with a native plant mix or a nurse crop of agronomic species.

| RECREATION | FEATURE SIGNIFICANCE |
|---|---|
| SU All | MANAGEMENT OBJECTIVES:<br>ER program shall manage consistent with the objectives for any recreation sites or trails falling with the NDT4 area and act in concert with the District Recreation Officer. |

No recreation sites or trails in this block

| ACCESS | MANAGEMENT OBJECTIVES: |
|---|---|
| SU All | Access control is to be considered in each prescription and appropriate action prescribed and implemented. Actions are to be documented and kept on Opening or Ecosystem Restoration Plan files. |

Area is adjacent to small community whose residents use a lot of off-road vehicles; no ATV trails noted yet on site but this issue will have to be monitored to see if action is warranted.

| Visual Quality | LANDSCAPE SENSITIVITY Medium | VISUAL QUALITY OBJECTIVE Modification |
|---|---|---|

| SU | MANAGEMENT OBJECTIVES |
|---|---|
| All | All tree harvesting prescriptions are to meet existing declared visual quality objectives. |

The entire block is immediately adjacent to Kikkomun Provincial Park and Baynes Lake. No VQO was set for this area. Retained trees should meet partial retention objective after cutting and burning is complete.

| ARCHAEOLOGICAL | Archaeological Assessment Required? Yes polygon C 29-42 and 41 | Completed? No |
|---|---|---|

| SU All | |
|---|---|
| | 1. All ER Prescriptions that overlay medium to high potential archaeological polygons will be considered for examination by an archaeologist acceptable to First Nations and recommendations for treatments (e.g. avoidance, treat only under sufficient snow pack) will be discussed with the archaeologist and incorporated into the ER Prescription.<br>2. Notwithstanding the above an archaeological assessment shall be completed for any ER operation that requires the exposure of earth (i.e. the construction of new road, landing, fireguard or reopening an existing road) within a medium to high archaeological polygon prior to work commencing. Operations shall respect the recommendations of the assessment. |

There are no medium to high archaeological polygons on this block. The historic Baynes Lake Cemetery is to be protected during all operations.

Fireguards will be restricted to existing trails or roads.

| CULTURAL AND HERITAGE CONCERNS | MANAGEMENT OBJECTIVES |
|---|---|
| SU All | **a.** ER prescribers shall note, in the ER prescription the occurrence of plant species noted by experts as being "cultural keystone species". The current list is blue camas, bitter root, Soopallalie, Saskatoon berry. |

Reburning this site should reinvigorate the sparse copses of Soopallalie and Saskatoon on site.

Consultation with First Nations regarding entire Ecosystem Restoration program occurred in 2013 review of the Rocky Mountain Trench ER Program Annual plan. No comments specific to this block were received.

| RANGE | CATTLE USE? ☒Yes ☐No | IF 'YES,' RANGE UNIT: Waldo | PASTURE: Cemetery |
|---|---|---|---|
| RANGE IMPROVEMENTS<br>CATTTLE PRIMARYACCESS TRAILS? ☒Yes ☐No | | IF 'YES,' LOCATE ON ATTACHED MAP | SEEDED? ☐Yes ☒No |

| SU | MANAGEMENT OBJECTIVES |
|---|---|
| All | 1) Improve forage quality and quantity.<br>2) ER program shall not open up closed forests that would change the distribution of cattle (i.e. not remove natural barriers) and shall ensure that any fence damaged by ER practices is repaired to acceptable standard. |

Treatment will improve forage on site. Roads and trails noted on prescription map will be kept clear of slash. This project was referred to the range licensee in spring 2013; no comments received from range licensee. Operations should not breach any natural range barriers. Fence lines along all boundaries shall be protected during burn.

| PRESCRIBED BURN | MANAGEMENT OBJECTIVES Fire intensity class 3 burns during initial prescribed burn and a fire intensity class 2 burn during maintenance burns. Fire intensity class 3 burns have rate of spread of 1.5 to 3 metres per minute, with 2 metre high flames and an organised front and may display candling. Fire intensity class 2 fires spread at less than 1.5 metre per minute with a disorganised head and virtually no candling. |
|---|---|
| SU All | **Measurable of initial burn**;<br>a. kill trees under 3 metre tall, end stocking to less than 400 stems/ha in Open Forest TUs and less than 76 stems/ha in Open Range TUs<br>b. Reduce all fine fuels, stems under 5 cm diameters by 80%. For fine fuels the stand should end up with a low to moderate hazard rating as determined by Wildland Urban Interface Wildfire Threat Worksheet<br>c. Maintain seed bank and nutrients by creating a moderate fire over 75% of the burn area as determined by a post fire evaluation using the US National Parks Service Fire monitoring Handbook FMH 21 and FMH 22 criteria. (National Parks Service, 2003)<br>d. time the burn to avoid killing grass growing points,<br>e. do not burn more than 10% of pole and co-dominant trees (need 5% for recruitment as WT and CWD),<br>f. lift live canopy to 1.5 metres<br>g. Rejuvenate shrubs |

1. This shall be a maintenance burn, emphasise achievement of measurable a and b from above list.
2. Fence lines on all four boundaries to be protected during operations.
3. Burn is adjacent to Baynes Lake; use mail out to contact local residents prior to burn operations. Also query Regional District and Baynes Lake fire chief about the need for public meeting prior to operations. Contact adjacent land owners directly six months prior to light up.
4. New fire guards should not be needed
5. Protect cemetery in Cemetery TU from prescribed burn

**Fireguards:**

**Southern and Eastern** - Burn off from Baynes Lake Dump and Jaffray Baynes Lake Highway

**Northern** – Burn from Kikkomun public highway and Caven FSR.

**Western** Burn from private land fence line and Jaffray-Baynes Lake highway

| Fuel Management | MANAGEMENT OBJECTIVES |
|---|---|
| SU All | 1. Prescribers shall estimate fuel loading by TU and propose hazard abatement strategy for the fuel. |
| Fuel loading in TU A, B, and C will be very negligible and fine mostly to grass, very little logging debris on site. | |
| Smoke Management | MANAGEMENT OBJECTIVES |
| SU All | 1. Prescriber shall outline smoke control issue for information of burn plan and operations on site. |
| Burn is adjacent to Baynes Lake; use mail out to contact local residents prior to burn operations. Also query Regional District and Baynes Lake fire chief about the need for public meeting prior to operations. Contact adjacent land owners directly six months prior to light up. Broadcast Burn under good venting only; smoke control is critical here as citizens have been sensitised to previous smoke issues. | |
| OTHER RESOURCE VALUES/INTERESTS (Public Utilities, research plots etc.) | MANAGEMENT OBJECTIVES |
| All | Conduct operations next to transmission and TELUS telephone lines as per attached "STANDARD OPERATING PROCEDURE FOR ECOSYSTEM RESTORATION PROJECTS CONDUCTED NEAR PUBLIC UTILITIES" |
| | |

## D. PRESCRIPTION APPROVAL

| PREPARATION | | PRESCRIPTION REVIEW |
|---|---|---|
| PREPARED BY<br>*(SIGNATURE / SEAL-RPF)* | | MINISTRY OFFICIAL<br>*(SIGNATURE)* |
| PRINTED NAME<br>BJ Randall Harris<br>RPF #2609 | DATE SUBMITTED Y / M / D<br>2014/05/12 | DATE REVIEWED Y / M / D |
| **LICENSEE SIGNING AUTHORITY** | | **FINAL APPROVAL** |
| *I certify that the work described herein fulfills the standards expected of a member of the Association of British Columbia Forest Professionals and that I did personally supervise the work.*<br><br>* SIGNATURE | | **District Manager: Approval: Approval given under Section 52.1(b) of the Forest and Range Practices Act authority when the Rocky Mtn Trench ER Program Forest Stewardship Plan was approved in March 2013**<br><br>*(SIGNATURE)* |
| PRINTED NAME | DATE SIGNED Y / M / D<br>2013/08/01 | DATE APPROVED Y / M / D |

**FS68 HFP 98/6**

- May be mandatory if activity part of license agreement

**TREATMENT UNIT (TU) DESCRIPTION**

## TU Descriptions:

| Treatment Unit | Forest type | Fuel type |
|---|---|---|
| A, C1, C2, C3, 2, F | Steep drumlins, previously harvested. Dry morainal soils Open Forest sites; natural forest was only in draws and north aspects | C-7 Douglas fir Ponderosa Pine |
| B, G | Flat roadside Open range sites. Dry sandy glacial fluvial soils; no possibility of commercial harvest | O-1 standing Grass |
| E1 | Steep drumlins, previously harvested. Dry morainal soils Open Forest sites; natural forest was only in draws and north aspects | O-1 Standing Grass |
| E2 | Dense thickets of Pli, Fdi, Py; fluvial soils flat gully bottom site. Leave as hiding cover for wildlife. | C-7 Douglas fir Ponderosa Pine |
| H, I | Flat roadside open forest type; interface issues immediately adjacent to private land and housing. Dry fluvial soils. Proposed for hand treatments | C-7 Douglas fir Ponderosa Pine |

## Ecological Description

| Treatment Unit | Manage as | SSID | BEC Zone, Subzone Variant/Phase | Site Series (series - %) | Elevation | | Aspect | Slope position | Slope Percent | Length Uniformity |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Min | Max | | | | |
| E2 | 1001839 | Open Forest | PPdh2 | **03** ($01_{30}$) | 820 | 850 | South west | Lower to toe | 0-25 ave=7 | Long broken |
| A, C1, C2, C3, D, F, H I, 2 | 1001836 | Open Range | PPdh2 | **01** | 818 | 870 | S-SW, variable | Upper to toe | 5-65 ave=10 | Long broken |
| B, E1, G | 1001838 | Open Range | PPdh2 | **02b** | 805 | 850 | SE | Lower | 0-30 ave=5 | Long broken |

## Soil Description

| SU | Stratum | SUFACE ORGANIC MATERIAL DEPTH (cm) | SOIL TEXTURE | SOIL COARSE FRAGMENTSIZE (%) | SUBSOIL TEXTURE | SOIL COARSE FRAGMENTSIZE (%) | CARBONATES? Unfavourable SUBSTRATE |
|---|---|---|---|---|---|---|---|
| OF | E2 | MOR-4cm | SiL | 10 Gravel cobble | SiCL | 2-40 gravel cobble | None to 35cm |
| OR | C1 | Moder 5-mull 2 | SiL | 10-30 all sizes | SL | 60 all sizes | 30-40 carbonates |
| OR | H | Moder 3 | SiL | 40 cobble | SiL | 65 gravel cobble | None to 50 |
| OR | B | Mull 2 | L | 0-40 Gravel stone | L-S | 30-50 gravel | Root restrict 15-40cm |

## Soil Hazard Description:

| TU | Soil Compaction | SOIL DISPLACEMENT | SURFACE EROSION | FOREST FLOOR DISPLACEMENT | MASS WASTING | Max. Allowable Soil Disturbance (%) | Maximum Permanent Access Structures (%) for Roads. |
|---|---|---|---|---|---|---|---|
| E2 | M-H | L-M | L | L | L | 10 | 7 |
| C1 | VH-H | M | M | M | M_L | 10 | 7 |
| B | H | M | L-M | M | L | 10 | 7 |

| G. UNDERSTORY DESCRIPTION | | | | | |
|---|---|---|---|---|---|
| TU B | | | | | |
| Grasses forbs | | Grasses forbs | | Shrubs | |
| Species | % cover | Species | % cover | Species | % cover |
| Balsam root | | | | Bitterbrush | 45 |
| Rosy puss toes | | | | Soopallalie | |
| Pine grass | 20 | Mosses | 2 | Spirea | |
| June grass | | Pine needles | 5 | Mahonia | |

| | | | | | |
|---|---|---|---|---|---|
| Bluebunch wheatgrass | 50 | Open soil | 20 | Rose | |
| TU C1 | | | | | |
| SHRUBS | | Grasses forbs | | Moss | |
| Species | % cover | Species | Species | % cover | Species |
| Rosa | 5 | Pinegrass | 20-90 | Pleirozium schreiberi | 5-10 |
| Juniper Comm. | | Balsam Root | 3 | Haircap | |
| Shephardia can | 5 | Harebell | 5 | Needles | |
| Snowberry | 1-5 | Heart leaf Arnica | 1 | | |
| Mahonia | 20-1 | Alum Root | 1 | Yarrow | |
| Saskatoon berry | 0-5 | Owl Clover | 1 | Pussytoes | |
| Ceanothus | | Kentucky bluegrass | | Mariposa | |
| Spirea betufolia | | Fescue | 10 | | |
| | | | | | |
| TU H | | | | | |
| SHRUBS | | Grasses forbs | | Moss | |
| Species | % cover | Species | Species | % cover | Species |
| Rosa | t | Pinegrass | 15 | Pleirozium schreiberi | 30 |
| Juniper Comm. | | Prairie crocus | t | Haircap | |
| Shephardia can | | dandelion | 2 | Needles | 80 |
| Snowberry | | viola | t | | |
| Mahonia | | Needlegrasses | 5 | Yarrow | 5 |
| Saskatoon berry | 1 | Kinnikinnick | 4 | Dessert parsleys | t |
| Ceanothus | | Sedge | t | Strawberry | 5 |
| Spirea betufolia | | Fescue | 5 | | |
| | | | | | |
| | | | | | |
| TU E2 | | | | | |
| SHRUBS | | Grasses forbs | | Moss | |
| Species | % cover | Species | Species | % cover | Species |
| Rosa | | fescue | 1 | Pleirozium schreiberi | 1 |
| Juniper Comm. | | Owl Clover | | Haircap | |
| Shephardia can | | Yarrow | | Needles | |
| Snowberry | | Columbia Needlegrass | | | |
| Ceanothus | 20 | Arnica | | Invasives | |
| Saskatoon berry | 0-1 | Pine grass | 10-50 | St John's Wort | |
| Purshia | 5-20 | Blue bunch wheatgrass | 10 | Spotted Knapweed | |
| Spirea betufolia | | Pussytoes | | Sulphur Cinquefoil | |
| | | | | | |

## Stocking Standards Description

| Treatment Unit | Stocking Regime ID | Stocking Type | Biogeoclimatic zone | Minimum Height | Minimum well spaced/ha | Maximum well spaced/ ha | Preferred species | Acceptable species |
|---|---|---|---|---|---|---|---|---|
| E2 | 1001839 | Open Forest | PPdh2 03 | All 0.5 | 0 | 75 | Fdi, Sx, Py | Pli, Lw |
| A, C1, C2, C3, D, F, H I, 2 | 1001836 | Open Range | PPdh2 01 | All 0.5 | 0 | 75 | Fdi, Py | Pli, Lw |
| B, E1, G | 1001838 | Open Range | PPdh2 2b | All 0.5 | 0 | 75 | Fdi, Py | |

Following conditions apply to all species and all stocking regimes:

- Minimum Inter Tree distance is 2 metres.
- No regen delay or early free growing period specified.
- Late free growing period 20 years from initiation of operations.
- Minimum Height at Free Growing is 0.5 metres all species.
- Relative height to competition is 125% all species
- Maximum countable coniferous stems per hectare on all stocking standards is 10,000 stems per hectare

| PROJECT DESCRIPTION | |
|---|---|
| **ECOSYSTEM RESTORATION ( 2 )** | **WILDFIRE Hazard Reduction ( 1 )** |
| **RANGE IMPROVEMENT ( 3 )** | **RECREATION ( )** |
| **WILDLIFE HABITAT ( 4 )** | |
| **DESCRIPTION: Thin forest ingress to reduce fuel loading, improve range and wildlife habitat, restore ecosystem to historic plant species and cover.** | |
| | |
| Masticate or hand fall all trees over thirty centimetres tall and under 15 cm DBH (measure 25 Diameter at stump height) in parts of TU C1, C2, C3, and all of TU H and I. In H and I This should remove 63 stems/hectare of trees 10 to 20cm DBH while retaining 5 stems/ha of larger sizes. In H and I Expect about 200 stems hectare of regen and advanced regen trees to be cut and masticated. | |
| | |

**F: TREATMENT DESCRIPTION:**

| F 1: MERCHANTABLE TREE REMOVAL |
|---|
| **ROADS, LANDINGS AND TRAILS: *Not Required*** |
| **FELLING: *Not required*** |
| **YARDING/SKIDDING: *Not Required.*** |
| **LOADING & HAULING: *Not Required.*** |
| **SLASH DISPOSAL: As per non-commercial section** |
| **SITE DISTURBANCE: 10*% (hand treatment assume no disturbance)*** |
| **SPECIAL MEASURES:** |

| F 2: NON-MERCHANTABLE TREE REMOVAL |
|---|
| **BRUSHING: *see thinning*** |
| **PRUNING: Prune by prescribed burn; H and I by chainsaw to 1.5 metres.** |
| **THINNING: on TU H and I and parts of C1, C2, C3 *Thin by mechanical means, prefer excavator mounted masticator to reduce trees at lower cost. Hand fell and pile burn is acceptable as is hand fall and chipping on site.*** <br> ***Where possible, retain 0-5 stems/ha of layer 2 Fd in areas devoid of Layer 1 stems.*** <br> ****In areas grassy opening where there are only scattered layer 3 and 4 <100stems/ha, retain these stems.*** |
| **MULCHING: *not required*** |
| **MASTICATION: T*U C1, C2, C3 masticate all stems over one metre height and under 20 cm diameter. K*eep chip debris to less than 10cm depth.** |
| **GRINDING: *not required*** |
| **PRESCRIBED FIRE: B*urn within two years of cutting see notes in prescribed fire section. Prepare for a ground fire if burnt before first growing season of grass. If burn occurs within one growing season of mulching plan for surface fire and fine fuels.*** |
| **OTHER: TU C1, C2, C3 *Machine is to traffic site on dry soil condition or snow pack to reduce rutting on a highly visible site; soils are sensitive to compaction. Machine is not to traverse areas over 55% slope; hand fell and pile these units.*** |
| |

**F-3: OTHER ISSUES**

| F-3: OTHER ISSUES |
|---|
| **WEED CONTROL:** ***To be conducted pre and post treatment by East Kootenay Invasive Plant Council, serious issue on site. Clean vehicles before and after traversing interior of block.*** |
| **TRAFFIC CONTROL:** ***Will be required on Kikkomun Highway*** |
| **SMOKE MANAGEMENT:** ***Light up during good venting*** |
| **SAFETY:** ***Follow OHS regulation and the guidelines for operating near public utilities*** |
| **PUBLIC CONSULTATION:** ***See burn plan comments; inform landowners prior to light up*** |
| **OTHER: use existing roads as fire guards.** |
| |

| F-4: POST-TREE REMOVAL |
|---|
| **EXPECTED VEGETATION RESPONSE:** ***Increase in grass and shrub communities.*** |
| **OTHER TREATMENTS AND THEIR EFFECT: n/a** |
| **ADDITIONAL FUELS MANAGEMENT TREATMENTS:** ***Area will be burnt on 10 to 15 year cycle.*** |

| J. SPECIAL AREAS | | |
|---|---|---|
| SPECIAL AREAS WITHIN STANDARDS UNIT?<br>☒Yes ☐No | | TYPE OF SPECIAL AREA; Trails N1, N2, S1, S2, S3<br>(e.g., Riparian Reserve Zone, Riparian Mgmt Zone, Lakeshore Mgmt Zone, FENs, research installations, other) |
| AREA NO. I and H | SIZE 9 and 3.1 ha | Description of special area and significant features; Unharvested interface areas adjacent to urban area |
| Cut all stems over 30cm tall and less than 15cm DBH. Prune retained trees to 1.5 metres height. Pile and burn debris or chip on site. | | |
| DESCRIBE HOW MANAGEMENT ACTIVITIE IS DIFFER FROM THE REST OF THE STANDARDS UNIT | | |
| | | |

| COMMENTS | INITIALS | | | |
|---|---|---|---|---|
| | PREPARED BY | LICENSEE | MINISTRY OFFICIAL | DISTRICT MANAGER |
| | | | | |

**FS68 HFP 98/6**
****F9 to update totals**