

July 29, 2007

Charles van Hemmen
District Manager
Cascades Forest District
P.O Box 4400
Merritt, BC V1K 1B8

Dear Charles van Hemmen:

Re: Woodlot #364 –Woodlot Licence Plan.

Please find attached two signed copies of the Woodlot Licence Plan being submitted as a requirement under the Forest and Range Practices Act.

Please direct your attention to the approval of this Plan.

If you have any questions or concerns of a technical nature regarding the Plan, please direct them to Simon Warhurst of Transition Forestry Ltd.

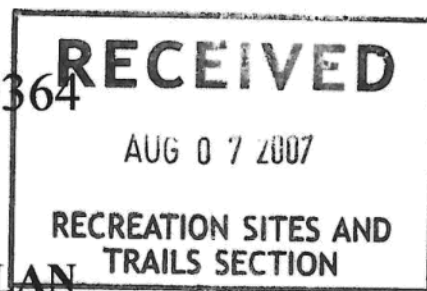
Sincerely,



John Barten
Barten Ranch
Box 1321
Lillooet, BC V0K 1V0



WOODLOT LICENCE # 0364



WOODLOT LICENCE PLAN

Proposed First Term

2007 to 2017

**Barten Ranch
Box 1321
Lillooet, BC
V0K 1V0**

E-mail: bartenranch@xplornet.com
Phone: 250 256-1653

Authorized Licensee Signature:

John Barten

]

[Signature]

[Date]

Dale Barten

[Signature]

[Date]

Disclaimer

The undersigned Registered Professional Forester certifies that I have reviewed this Woodlot Licence Plan and the supplemental information and, while I did not personally supervise the work described, I have determined that this work has been done to the standards expected of a member of the Association of British Columbia Forest Professionals.

Signed Clint Ely

Name (Print) Clint Ely

RPF # 3935 Contact phone number 250 256-7782

Email clint-e@telus.net

Seal:



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I Content of the Woodlot Licence Plan (WLP)

1. Plan Area

- ☒ This plan covers the entire Woodlot Licence area.
- ☐ This plan covers a portion of the Woodlot Licence area.

2. Map and Information

All of the applicable information required to be addressed under section 8(1) of the Woodlot Licence Planning and Practices Regulation (WLPPR) is identified on the map in Appendix I and/or described in text hereunder.

Biogeoclimatic zones and subzones:

The Woodlot Licence area is predominantly in the IDFdk2 biogeoclimatic subzone. There is a narrow band of IDFxh2, parallelling the Yalakom River, inside the Woodlot Licence area. See the map in Appendix I.

Wildlife Habitat Areas:

At the time of preparing this WLP there were no Wildlife Habitat Areas established in the Woodlot Licence area. However, a Notice is given under the authority of section 9(3) of the WLPPR over the entire crown land portion of the Woodlot Licence area to include indicators of the amount, distribution and attributes of wildlife habitat required for the survival of grizzly bear (species at risk) in the Cascades Forest District. A map produced by Ecosystems Branch, Ministry of Environment, February 2005 indicates the Woodlot Licence area to be in a identified grizzly bear watershed.

Scenic Areas:

The entire Woodlot Licence area is outside of any established scenic area.

Ungulate Winter Ranges:

There is a Notice given under the authority of section 9(3) of the WLPPR over the entire crown land portion of the Woodlot Licence area to include indicators of the amount, distribution and attributes of wildlife habitat required for the winter survival of the ungulate species, mule deer.

Community Watersheds:

At the time of preparing this WLP there are no community watersheds established on the Woodlot Licence area..

Fisheries Sensitive Watersheds:

At the time of preparing this WLP there were no fisheries sensitive watersheds that overlap the Woodlot Licence area.

Community and domestic water supply intakes that are licensed under the Water Act and any related water supply infrastructures:

The location of the two licensed domestic water supply intakes on and adjacent to the Woodlot Licence area are shown on the map in Appendix I. The intake that is on LaRochelle Cr is licensed to the Holder of the Woodlot Licence.

Contiguous areas of sensitive soils:

Contiguous areas of sensitive soil that the Holder of the Woodlot Licence is aware of are indicated on the map in Appendix I. A registered geoscientist carried out a field reconnaissance of the woodlot on October 17, 2006 looking specifically at the areas identified on Reconnaissance level mapping produced for the Ministry of Forests by J M Ryder and Associates. As a result of this assessment, some of the areas that were identified on this original reconnaissance mapping have been determined to be not sensitive whereas some other areas, formerly not indicated as being sensitive, have been included. See Appendix IV for the full report.

Temporary or permanent barricades that restrict vehicle access:

At the time of preparing this WLP there are no permanent or temporary barricades on the Woodlot Licence area to restrict vehicle access.

Private property within or adjacent to the woodlot licence area:

See the map in Appendix I for private land adjacent to the Woodlot Licence area.

Resource features other than wildlife habitat features, archaeological sites, and other features where the location must not be disclosed: ★

At the time of preparing this WLP, no resource features had been established within the Woodlot Licence area under the Government Actions Regulation. There were also no resource features within the Woodlot Licence area that were made "known" by the district manager under the regulations or a higher level plan under the *Forest Practices Code of BC Act*.

3. Areas Where Timber Harvesting Will be Avoided

In the areas described in the Terrain Stability Assessment (Appendix IV) as hazard classes IV and V (sensitive soils) along the escarpment slopes of Yalakom River and LaRochelle Creek, harvesting will be avoided.

4. Areas Where Timber Harvesting Will Be Modified**Modified harvesting where practice requirements in the WLPPR apply**

At the time of writing this WLP, there are no portions of the Woodlot Licence area where the Holder of the Woodlot Licence is aware of a legal requirement to modify harvesting apart from the areas noted in the following sections.

Modification of harvesting to protect resource values

At the time of preparing this WLP, the Holder of the Woodlot Licence is not aware of any resource values which require modification of harvesting to protect.

Retention of trees in riparian management zones

Unless exempted by the district manager, the Holder of the Woodlot Licence is committed to retaining the following post harvest stand structure in riparian management zones:

Description of Post Harvest Stand Structure to be Retained in Riparian Management Zones				
Retain a minimum of 50% basal area of dominant and co-dominant conifers; retain non-merchantable conifer trees, deciduous trees, shrubs and herbaceous vegetation within the established riparian management zone.				
Trees to be Retained	Species	Douglas-fir, Ponderosa pine, cedar, birch, cottonwood, aspen		
	Characteristics	Mature		
	Function	Vertical diversity in RMZ and, where present, protect the integrity of the Riparian Reserve Zone .		
Range of Residual Basal Area (m ² /ha)		10-20	OR	Range of Residual Trees/ha

Ungulate winter range

Harvesting will be modified within the ungulate winter range to provide and maintain the attributes described in the Notice. In general, a combination of group and individual tree selection harvesting, patch cuts (<1 ha) and small clearcuts (<10 ha) will be employed across the woodlot.

Grizzly Bear (Species at Risk)

With reference to the Notice for the grizzly bear habitat and information in the *Accounts and Measures for Managing Identified Wildlife* (Identified Wildlife Management Strategy Version 2004), and also considering the distribution of riparian and berry producing sites (there are no *Vaccinium sp* on the Woodlot Licence area; *Shepherdia canadensis* is present), harvesting will not be modified in the sole interest of grizzly bear. The maintenance of riparian reserve zones and riparian management zones along the Yalakom River and LaRochelle Cr, and partial cutting as specified for the ungulate winter range will benefit grizzly bear- hiding and thermal cover in riparian zones and areas where snow interception cover must be maintained, and an increase in the production of *Shepherdia*, other berry species and spring forage in partial cut areas as opposed to full canopy conditions.

5. Strategy to Conserve and Protect Cultural Heritage Resources

In producing this strategy, the local First Nation's communities of Bridge River, Seton Lake, Canoe Creek, High Bar, and Whispering Pines were consulted to ascertain their possible traditional use of the woodlot licence area (see Section 2 of Supplemental Information for details of discussions). At the time of the writing of this strategy, some preliminary information has been given. The cultural heritage resources, available on the Woodlot Licence area, that are of continuing importance to the aboriginal community are: deer and *Shepherdia* (soopolalie) berries. These resources may be found virtually anywhere on the woodlot in varying abundance. The deer resource will be protected by maintaining the attributes required for ungulate winter range. Soopolalie is known to grow on both disturbed and un-disturbed ground conditions. Occasionally, soopolalie is targeted for treatment where manual brushing activities are required. Where manual brushing takes place, soopolalie will only be cut if the survival (not just the growth) of a conifer crop tree is in jeopardy. No chemical brushing treatments will be carried out. The Holder of the Woodlot Licence will contact the local communities at the planning stages of any primary forest activity to determine if new information on CHR's has become available during the term of the WLP.

When road locations are being determined and the boundaries of cutblocks are being established in the field, and before a Cutting Permit or Road Permit is applied for, the Holder of the Woodlot Licence will have a Heritage Field Reconnaissance (HFR) carried out, using qualified individuals. The HFR is a ground survey of the proposed area conducted by a crew of 1-3 whose objective is to identify, document, and make management recommendations on any traditional trails and associated trail marker trees, cache pits, Culturally Modified Trees, indications of historical camp or settlement sites in the immediate vicinity of the proposed primary forest activity (road construction and harvesting). The members of the HFR crew are First Nations people (usually from a community that has a traditional claim to the area of the woodlot) who have attended a formal, provincially-standardized training session on conducting HFR's. If a CHR is identified during the HFR, and it is not regulated under the Heritage Conservation Act RSBC 1996, c.187, the woodlot licensee will implement the necessary mitigative measures to conserve and protect the CHR, considering the amount of the CHR, the importance of the CHR to the communities, and the government-granted timber harvesting rights of the Holder of the Woodlot Licence.

6. Wildlife Tree Retention Strategy

Note: the proportion of the Woodlot Licence area that is occupied by wildlife tree retention areas is specified in the "Performance Requirements" section of this plan.

Individual wildlife trees

a) Species and Characteristics:

Trees of all species occurring on the Woodlot Licence area may be selected as individual wildlife trees (Fdi, Pli, Py, Sx, Bl, Cw, At, Ep, Ac). Selection will favour trees that provide valuable wildlife tree attributes including signs of internal decay, trees with forks, large branches, loose or cracked bark, recent scars, active wildlife use, existing cavities, nest trees, veteran trees and other large windfirm trees.

b) Conditions Under Which Individual Wildlife Trees May Be Removed:

Individual wildlife trees may be removed if they are considered a safety hazard or they become infested with insects which threaten the health of adjacent trees.

c) Replacement of Individual Wildlife Trees:

If individual wildlife trees are removed they will be replaced with trees of comparable wildlife tree value in a nearby location.

Wildlife tree retention areas

a) Forest Cover Attributes:

Preference will be given to locating wildlife tree retention areas in stands that contain or have a good likelihood of developing valuable wildlife tree attributes as described above. To maintain biodiversity, an attempt will be made to provide representation of all tree species found on the woodlot licence area and focus on riparian management areas, relatively rare biogeoclimatic site series and other area where harvesting constraints provide the best long term potential for stands to develop wildlife tree attributes associated with advanced age. Root disease centres may also be selected to provide a continuing supply of dead and dying trees, coarse woody debris and biodiversity associated with stand openings.

For purposes of measuring the contribution of individual wildlife trees, 30 m² of basal area of individual wildlife trees is deemed to represent 1 hectare of wildlife tree retention.

b) Conditions Under Which Trees May Be Removed from Wildlife Tree Retention Areas:

Trees may be removed if they are considered a safety hazard, if they become infested with insects or diseases which threaten the health of adjacent trees, or there is a need to remove the trees to provide access to adjacent stands. If providing access to adjacent stands the number of high quality wildlife trees removed will be kept to a minimum.

c) Replacement of Trees Removed from Wildlife Tree Retention Areas:

If trees are removed from wildlife tree retention areas they will be replaced with trees, in a nearby location inside the woodlot licence area, which have comparable wildlife tree value or will develop good wildlife tree value in the near future.

7. Measures to Prevent Introduction or Spread of Invasive Plants

1) Definition

In Paragraphs 2) to 5):

“High Hazard Invasive Plant Zone” means the zone as determined by the holders of this WLP, and updated on an annual basis, designed to encompass, and buffer by 500 m, the known locations of the following invasive plant species: Marsh Plume Thistle, Rush Skeleton Weed, Orange Hawkweed, Plumeless Thistle, Hoary Alysum, Field Scabious and Leafy Spurge. The known locations are those identified in the Invasive Alien Plant Program maintained by the Ministry of Forests and Range.

At the time of the writing of this WLP, there is no high hazard invasive plant zone within or adjacent to the Woodlot licence area.

2) Seeding

If a Holder of this WLP exposes mineral soil:

- (a) within the Woodlot Licence area,
 - (b) that exposure results from the activities to which this WLP applies,
 - (c) the exposure results from the activities in the following table,
 - (d) the exposure meets the criteria in the following table, and
 - (e) it is likely that an invasive plant will be introduced or spread as a result of this exposure,
- that Holder of this WLP will seed the exposed area in accordance with Paragraphs 3) and 4)

Activity	Description of area to be seeded	Location of exposed mineral soil
Construct, reconstruct, or deactivate	<ul style="list-style-type: none">Permanent landingsCut slopes, fill slopes and ditch lines of permanent roads;	Within the woodlot licence area
Construct or use	<ul style="list-style-type: none">Borrow pit authorized under a RP or CP	Within the woodlot licence area
Timber harvesting, silviculture treatments, road construction and road deactivation	<ul style="list-style-type: none">Exposed mineral soil exceeding 0.1 contiguous ha (excluding the running surface of permanent roads)	At the time the activity takes place, the activity is within the “High Hazard Invasive Plant Zone”

3) **Timing and Seed Quality**

- (a) Subject to Paragraph 4), a Holder of this WLP referred to in Paragraph 2) will seed with common #1 forestry grass seed mix:
- (i) at least 90% of the total area exposed in a calendar year that requires seeding under Paragraph 2), by July 1 of the immediately following calendar year; and
 - (ii) the remainder of such exposed area prior to December 31 of the same immediately following calendar year.
- (b) If within 24 months of the grass seeding identified in subparagraph (a) above, it is identified during road inspections that an insufficient grass catch has occurred, and that re-seeding is likely to increase the vegetative cover, then the exposed area will be re-seeded at least once in addition to the seeding identified in subparagraph (a) above.

4) **Timing When Area to be Reused**

If a Holder of this WLP may use a structure referred to in any of subparagraphs 2), that is located outside the high hazard invasive plant zone, within 2 years of the activity referred to in that subparagraph for a subsequent activity that would render seeding referred to in Paragraph 3) ineffective:

- (a) Paragraph 3) does not apply to the exposed area referred to in Paragraph 2) that relates to that structure;
- (b) that Holder of this WLP will seed with common #1 forestry grass seed mix:
- (i) at least 90% of the exposed area referred to in subparagraph (a) by July 1 of the calendar year immediately following the calendar year in which the subsequent activity is completed; and
 - (ii) the remainder of such exposed area prior to December 31 of the same immediately following calendar.

5) **Inspection of Equipment**

If a Holder of this WLP conducts timber harvesting, silviculture treatments, road construction, or road deactivation, to which this WLP applies, within the high hazard invasive plant zone, then the Holder of this WLP will instruct the person conducting the activity to remove any observed invasive plant material from the machinery prior to that machinery being relocated outside of the high hazard invasive plant zone.

8. Measures to Mitigate Effect of Removing Natural Range Barriers

1) Measures

- (a) The holders of this WLP will request information on the location of natural range barriers from those who hold agreements under the *Range Act* R.S.B.C. 1996, c. 396 that authorizes the holder of that agreement to graze livestock within this Woodlot Licence area.

(b) If:

- (i) within the Woodlot Licence area subject to an agreement under the *Range Act* R.S.B.C. 1996, c. 396 there is a significant topographic or vegetative feature that stops or significantly impedes movement of livestock permitted to graze under that agreement, to and from an adjacent area; and
- (ii) the holder of that agreement identifies to the Holder of this WLP prior to the issuance of an RP or CP referred to in subparagraph (iii) that the holder of that agreement will rely on that feature to control the movement of that livestock,

then if:

- (iii) that feature is breached by a holder of this WLP through the construction of a road authorized by a CP or an RP, or the harvesting of a cutblock authorized by a CP;
- (iv) that breach will enable those livestock to pass through the feature; and
- (v) the Holder of this WLP determines through discussions with that agreement holder that it is necessary to mitigate the breach,

the Holder of this WLP that constructed the road, or harvested the cutblock, will:

- (vi) re-establish a barrier to livestock movement, or
- (vii) carry out other similar measures agreed to with the holder of the agreement.

2) Timing

A Holder of this WLP referred to in Paragraph 1) will carry out the measures referred to in that Paragraph:

- (a) within 1 month of the completion of road construction or harvesting if the construction or harvesting is completed with more than one month remaining in an existing grazing season;

- (b) within 1 month after the start of the next grazing season at the location of the breach, if construction or harvesting is completed with one month or less remaining in an existing grazing season or after conclusion of that grazing season; or
- (c) at such alternate time as that holder of this WLP may agree with the holder of the agreement.

9. Stocking Information for Specified Areas

Unless exempted by the district manager, the stocking standards indicated below apply to areas where the establishment of a free growing stand is not required and harvesting is limited to commercial thinning, removal of individual trees, or a similar type of intermediate cutting, and for harvesting special forest products.

☒ *For the purposes of section 12 and 34(3) of the WLPPR the Uneven-aged Stocking standards for single-tree selection, as found in the MoF publication "Reference Guide for FDP Stocking Standards", are adopted.*

10. Performance Requirements

Soil disturbance limits

- ☐ Default WLPPR s.24(1)(b):
 - 8% of Net Area to be Reforested

- ☒ Alternative WLPPR s.24(1)(a):

For the purposes of WLPPR section 24(1)(a), the maximum amount of soil disturbance that may be caused by the woodlot licence holder in the net area to be reforested is:

1. 5 % if the Standards Unit is predominantly comprised of sensitive soils
2. 10 % (and 25% for the roadside work area) if the Standards Unit is not predominantly comprised of sensitive soils

In this alternative performance requirement:

"sensitive soils" means soils that, because of their slope gradient, texture class, moisture regime, or organic matter content have the following risk of displacement, surface erosion or compaction: a very high hazard

Prior to harvesting, the soils in the net area to be reforested of each cutblock will be carefully examined and areas predominantly comprised of sensitive soils will be indicated on the maps that are prepared under WLPPR section 33.

This alternative performance requirement applies over the entire woodlot licence area. See Appendix II for the rationale supporting this alternative performance requirement.

Permanent access structures

☒ Default: WLPPR s.25:

The maximum area occupied by permanent access structures is as follows:

1. For Cutblocks ≥ 5 ha – 7% of the total cutblock area
2. For Cutblocks < 5 ha – 10% of the total cutblock area
3. For the Total Woodlot Licence area – 7% of the total Woodlot Licence area

☐ Alternative WLPPR s.25:

Stocking standards

☐ Default: WLPPR s.35(1)(b): Adopt the stocking standards, regeneration dates and free growing dates described in the MoF publication “Reference Guide for Forest Development Plan Stocking Standards”, as amended from time to time, that are in place on the commencement date for the area.

See http://www.for.gov.bc.ca/hfp/forsite/stocking_stds.htm

☒ Alternative WLPPR s.35 (1)(^a~~b~~):

For the purposes of WLPPR section 35(1)(a) the stocking standards that are in effect over the Woodlot Licence area are listed in Appendix IV.

Width of stream riparian areas

☒ Default WLPPR s.36(4)(b):

The minimum width of the riparian reserve zone, riparian management zone and riparian management area are as described in WLPPR s.36(4)(b).

☐ Alternative WLPPR s.36(4)(a):

Width of wetland riparian areas

☒ Default: WLPPR s.37(3)(b) The minimum width of the riparian reserve zone, riparian management zone and riparian management area are as described in WLPPR s.37(3)(b).

☐ Alternative WLPPR s.37(3)(a):

Width of lake riparian areas

☒ Default: WLPPR s.38(2)(b) The minimum width of the riparian reserve zone, riparian management zone and riparian management area are as described in WLPPR s.38(2)(b).

☐ Alternative WLPPR s.38(2)(a):

Restrictions in a riparian reserve zone

☒ Default: WLPPR s.39(1) Cutting, modifying or removing trees in a riparian reserve zone is limited to the purposes described in Section 39(1) of the WLPPR.

☐ Alternative WLPPR s.39(1): Additional purposes for cutting, modifying or removing trees in a riparian reserve zone.

Restrictions in a riparian management zone

☒ Default: WLPPR s.40(1)(b)(c) or (d) Construction of a road in a riparian management zone is limited to the conditions described in Section 40(1) of the WLPPR without additional conditions to allow road construction being provided in the woodlot licence plan.

☐ Alternative WLPPR s.40(1)(a): The construction of a road is proposed in a riparian management zone which does not appear to satisfy the criteria listed in WLPPR s.40(1)(b)(c) or (d).

Wildlife tree retention

Unless exempted by the district manager, the proportion of the Woodlot Licence area that will be occupied by wildlife tree retention is:

☐ Default WLPPR s.52(1)(a): [Enter Details] % specified for the area in a land use objective,

☒ Default WLPPR s.52(1)(c): 8 % of the woodlot licence area

☐ Alternative WLPPR s.52(1)(b): [Enter Details] % of the total Woodlot Licence area

Coarse woody debris

Unless exempted by the district manager, the minimum amount of coarse woody debris to be left on areas where there is a requirement to establish a free growing stand is

☒ Default: WLPPR s.54(1)(b)

- Area in Interior – minimum retention of 4 logs per ha ≥ 2 m in length and ≥ 7.5 cm in diameter at one end.

☐ Alternative WLPPR s.54(1)(a):

Resource features

Unless exempted by the district manager, the woodlot licence holder will

☒ Default WLPPR s.56(1)(b): Ensure that forest practices do not damage or render ineffective a resource feature.

☐ Alternative WLPPR s.56(1)(b):

Note: Only the performance requirements in Part 3 (Practice Requirements) of the WLPPR for which an alternative can be proposed are shown in this Woodlot Licence Plan. The remaining performance requirements in Part 3 are not shown, nor are the performance requirements in Part 4 (Roads).

Appendix II: Supplemental Information Required to be Submitted in Support of the Proposed Woodlot Licence Plan

1. Review and Comment

a) Advertising

The following is an advertisement that appeared in the Bridge River-Lillooet News on July 26, 2006.

WOODLOT LICENCE PLAN #1

WOODLOT LICENCE #0364

The public has the opportunity at the invitation of Woodlot Licensee, Barten Ranch., to view and comment on the Woodlot Licence Plan (WLP) for Woodlot #0364 in the Yalakom River area northwest of Lillooet. If approved by the Ministry of Forests and Range District Manager, this plan may apply for a term of 10 years from the date of approval.

The viewing times and place are: weekdays from 9 a.m. to 5 p.m., July 26, 2006 until August 25, 2006 at 1323 Roshard Rd, Lillooet, BC. An alternate time for viewing the plan may be arranged by calling 256-7109 or transition@telus.net. Your comments and input must be in writing and can be submitted to Registered Forest Technologist Simon Warhurst, Box 1751, Lillooet, BC V0K 1V0. The deadline for submissions is September 5, 2006.

The Woodlot Licence Plan is a new requirement, introduced in the Forest and Range Practices Act and the Woodlot Licence Planning and Practices Regulation. Under these new statutes this WLP covers the entire Woodlot Licence area and requires the licensee to develop strategies or results to attain government's objectives and establish performance requirements to achieve the objectives.

b) Referrals
Referral Summary Table

Activity	Date (yy/mm/dd)	Location (and media with respect to	Comments Received	
		Public Review)	Y/N	Date (yy/mm/dd)
Submission of WLP				
MOF, Cascades Forest District	2006/08/17	WLP referral	Y	2006/10/04
First Nations				
St'at'imc Chiefs Council	2006/09/15	WLP referral	N	
Canoe Creek Indian Band	2006/08/09	WLP referral	N	
Bridge River Indian Band	2006/08/09	WLP referral	N	
High Bar Indian Band	2006/08/09	WLP referral	N	
Seton Lake Indian Band	2006/08/09	WLP referral	N	
Whispering Pines Indian Band	2006/08/09	WLP referral	N	
Other Tenure Referral Letters				
Range Tenure RAN3010	2006/08/06	Letter	N	n/a
Guide Outfitter	2006/08/06	Letter	N	n/a
Trapper	2006/08/06	Letter	N	n/a
Major Licensee (Ainsworth)	2006/08/06	Letter	N	n/a
Department of Fisheries and Oceans	2006/08/22	Letter	N	n/a
Public Review				
Advertising	2006/07/26	Bridge River -- Lillooet News, Lillooet	N	n/a
Public Viewing Forum(s)	2006/07/26 through 2006/09/05	Transition Forestry Ltd 1323 Roshard Rd Lillooet V0K 1V0	N	n/a
Proposed Agency Meeting(s)				
N/A	n/a	n/a	N	n/a
Comments Deadline	(30 days from the date of the newspaper advertisement, unless extended by the DM)			2006/09/15
Submission for approval				2007/05/14

c) Copy of written comments received.

The following comments were made by Ralph Kossinn, Tenures Forester, Cascades Forest District on Oct 4, 2006.

WLP Map

- In some areas the woodlot boundary line disappears where it overlaps with private lot boundaries. I also noticed an area along the W/SW boundary where the line differs from the Exh. A map (i.e. we have the recent area deletion shown as a straight line).
- In the FDP it says that Yalakom and LaRochelle were classified as S2 streams - are these classifications on any official maps, i.e. should they be shown on this map?

Sec. 3 - Areas Where Timber Harvesting Will Be Avoided

- This section (and the map) should not only identify areas where there is a legal requirement to avoid harvesting, but also areas where the licensee needs or wants to avoid harvesting to protect resource values, etc. I assume there is no such area on the woodlot? What about areas of potentially unstable terrain along the Yalakom that was referred to in the previous FDP (location of WTP?). The FDP stated that no development was planned in that area, was that just meant to be for the term of the FDP? Please discuss with me or send a quick note to clarify before you submit plan.

Sec. 4 - Areas Where Timber Harvesting Will Be Modified

- Although this text is in s.22 template, the wording "...that cause the licensee concern" could be a problem, since this statement doesn't really mean much (what would cause the licensee concern?). I could take it to the DM as is but would prefer to have something a bit more specific.
- Grizzly Bear - I talked to Tony Hamilton, an expert on Grizzly Bears and other species at risk, about this woodlot and the text included in the plan. He had just a few suggestions for improving the text (last sentence): "...and a **potential** increase in the production of **Shepherdia, other berry species and spring forage** in partial cut areas as opposed to full canopy conditions."
Tony also mentioned that MOE would take any Grizzly bear/livestock conflicts very serious and hope that operators would commit to calling in sightings of Grizzly bears (via s.22 and, via the provincial call centre in the event of livestock/bear conflict, at 1-877-952-7277. Maybe you could forward those numbers to the licensee.

Sec. 5 - Strategy to Conserve and Protect Cultural Heritage Resources

- Bruce Walter took a look at the Cultural Heritage Resources section of both WLP's. He only had 2 suggestions - 1) to define in broad terms what is meant by HFR, and 2) to define what is meant by "qualified individuals". He assumes that this usually means field crew personnel from the local bands (?), which should be OK, or maybe archaeologists if they have one on staff? Also, will the results of any AIA's (or other assessments) be used to alter harvesting plans, if necessary?

Sec. 8 - Measures to Mitigate Effect of Removing Natural Range Barrier

- As discussed, this should be addressed in the plan. s.22 has some good suggestions for sample text in his package. You could also start this section by saying that you believe there is no natural range barrier on the woodlot, but if one is encountered during harvesting and it is breached, the following will happen.....
Measures could include the construction of a cattle guard if a road causes a problem, or a drift fence otherwise.
Another option may be to say that the licensee will work closely with the range tenure holder to develop a successful strategy, which may include the installation of cattle guards and fences.

FN Referrals

- You mention a number of FN's that were contacted about this plan. Based on the traditional territory/interest areas map we have in our office (which may not be accurate or up to date in all areas), WL 364 is not within Bridge River and Seton Lake territory. I also noticed that the Whispering Pines Band, following a previous FDP referral, indicated that WL 364 is outside their traditional territory. Referral should go to the Sta'time CC and, as you mentioned earlier, LTC will get a copy from them.

d) Revisions made as a result of comments received.

The Map. bullet 1: The map has been amended to address the comments about linework.
Bullet 2: Stream classifications don't appear to show up on any official maps, so have not been shown on the WLP map.

Section 3. The areas along the Yalakom River (and LaRochelle Creek) that have been classified as slope stability class IV and V will be avoided for harvest.

Section 4. bullet 1: The paragraph has been removed.

Bullet 2: The text has been modified with the suggestions from Tony Hamilton.

Section 5. bullet 1: The definitions of a HFR and "qualified individuals" are given. A large part of the text has been modified with recommendations from Ralph Kossinn received May 22 regarding text that has been accepted in a recent FSP submission.

Section 8. bullet 1: The text of this section has been modified considerably with recommendations from Ralph Kossinn received May 22 regarding text that has been accepted in a recent FSP submission.

First Nations Referrals: The First Nations that were referred the woodlot licence plan are listed in the Referral Summary under (b) above.

2. Efforts Made To Meet With First Nations

See the following table for Details of the First Nations Referral Process carried out by Simon Warhurst of Transition Forestry Ltd.

Date	Contact/Action
✓ 06-Jun	Met Bruce Walter (First Nations Stewardship Officer) in his office in Lillooet; went over maps of "Claim Areas" covering the Woodlot and received contact list (names, addresses) for the bands dated Nov, 2005. Note: Brige River and Seton Lk Bands were not indicated as having territory covering the area of the WL, but Bruce and I agreed that they should be consulted.
✓ 20-Jun	Sent coveing letters and maps outlining WL Licence Plan Area and asking for information on cultural heritage resources that may be present so I can write Results and Strategy- to: Canoe Cr Band, High Bar Band, Cariboo Tribal Council, Whispering Pines Band, Pavilion, Seton Lk and Bridge River, SLRA (asked Lillooet bands if they'd prefer I dealt just with SLRA); asked Canoe Cr and High Bar if they'd prefer I dealt just with CTC.
✓ 07-Jul	Email from Rhonda Leach at Pavilion saying their area of interest was not on that side (south) of the Yalakom River.

	15:00 Telephoned Chief Bradley Jack(BRIB 256-7423) to ask him if he'd received the package. He'd received, now buried on his desk. I gave him the thumbnail of the covering letter. He said he'd received the letter (I had it dated July 29 instead of June!). He said he's not sure about how the band is dealing with the SLRA at present, he'll hand the file over to Gerald Michel and I should contact him in a while. I said I'd send him the first draft of the WL Licence Plan sometime next week (minus Cultural Heritage Resources section) and call the following week to see if he had any info.
18-Jul	15:25 Telephoned Ida Peters (SLIB 259-8227). Not in; left message asking her to call me re referral package.
	13:45 Telephoned Ed LeBourdais (Whisp Pines 579-5772). He's on call for fire fighting; left message asking him to call me if possible.
	13:45 Telephoned Harold Harry (Canoe Cr 440-5645). He says they're planning on doing some work in the "area" this summer. He asked the timeframe on the referral- I said I was planning on submitting finalized plan to MOF in mid-Sept. I said I'd send him the first draft of the WL Licence Plan sometime next week (minus Cultural Heritage Resources section) and call the following week to see if he had any info. He gave me his email address s.22
	13:55 Telephoned Mike Custance (High Bar 459-2117). He said Chief and Council had no problem with it. He asked if a verbal was ok or if we needed a letter. I said an email note would be good and gave him my email address.
	14:00 Telephoned Ida Peters-no answer.
	14:01 Telephoned Cariboo Tribal Council- found out that they're now called the Northern Shushwap Tribal Council (NSTC 392-7361). Receptionist said it went to Executive Director- Yvonne Smith who's out for most of the afternoon. Said I'd try her back later.
21-Jul	Received email from Mike Custance (High Bar) as I requested in our phone conversation. Will email him back with some general questions about what cultural heritage resources they "might" utilize traditionally in the area of the woodlot.
	10:00 Telephoned Ida Peters. She said that Seton Band may use the Yalakom area, it's mostly utilized by BRIB. I said that I would just deal with BRIB on this area then and she said that would be fine.
	9:50 Telephoned Yvonne Smith at NSTC. High Bar not associated. Northern Shushwap Treaty Society -Robert Phillips (same address) is probably who I should deal with in regard to "what is going on on the land". We agreed that I would send a copy of the final Strategy for conserving and protecting cultural heritage resources once it's worked out with input from Canoe Cr band and others.
	Sent email to Mike Custance asking for general info on cultural heritage resources they might use (and is of continuing importance) to help in producing a Strategy.
	11:15 Telephoned Ed LeBourdais. He's not in.
28-Jul	16:20 Telephoned Ed LeBourdais. He's very busy with fires. He says that if I send him an email outlining general strategies for maintaining hunting (deer) and berry gathering (soopolalie) he'll reply as these are of concern to his band in relation to this area. He's OK with HFR's being done by LTC crew to help cover this stuff off as well as identifying sites that may be regulated under the Heritage Conservation Act. He'll be gone fire fighting for 14 days starting Sunday. s.22
08-Aug	Sent draft WL Lic Plan to: brib, seton, canoe cr, whispering pines, high bar (sent to whispering pines and high bar though they didn't ask for; wanted to make sure they would buy into what was so far in the plan)

✓ 01-Sep	8:30 Telecon w Bradley Jack (BRIB). He said August is a bad month for getting anything done w forestry issues as they are doing fisheries work. Agreed I should phone back at the end of next week.
✓ 05-Sep	Email to Harold Harry (Canoe Cr) asking if he had a look at the Protection/Conservation section of the draft WLLP I sent and did he have any comments or anything to add. Asked if the band had a crew in the area this summer as he'd mentioned in our phone conversation July 21. Asked for a response from him by Monday Sept 11.
✓ 20-Sep	14:30 Met with Larry Casper of LTC. Gave him Contract for doing HFR on the Woodlot- Blk 4. He said that he couldn't sign until the communities agreed that this should be done. 16:00 Telecon with Gerald Michel "Bobo" (BRIB). Gave him background on Woodlot Licence Plan. He asked for timeframe for response. I said Sept 5, but agreed that October 5 would be the final deadline. He said he would try and look at what I'd sent this week. I said I'd call him late next week. I asked him about whether he would agree to having the LTC crew carry out an HFR- he agreed.
✓ 27-Sep	16:00 Called Gerald Michel. He has the file on his desk now and will look at it hopefully by Monday. He has concerns with harvesting on the WL as it is in close proximity to Ainsworth's CP 205 recent harvesting. I said that the harvesting on the WL will include much partial cutting as opposed to CP 205 clearcuts. Blk 4 will have some cc where root disease (possible de-stumping) and IBM but selective also. Told him I'd find out from Terry Adolph when the HFR would be done and to make sure he gets a copy.
✓ 27-Sep	Email from Ralph Kossinn asking about whether I referred to LTC. I didn't as I was "told" by someone that it would get to the LTC through the SCC.
✓ 28-Sep	6:30 Met Terry Adolph to give him map for report. He said that the block was looked at on Friday. I asked him to do the report asap and get a copy to Gerald Michel.
✓ 09-May-07	Telecon with Harold Harry (Canoe Cr band) re whether they ever did have a crew working in the Yalakom area last year. He said the closest they were was French Bar. I told him that I had written the Cultural Heritage Resource section of the WLP with limited input from Whispering Pines. We agreed that I would email him this section and he would respond. (sent email asking for a response by the end of this week)
→	Telecon with Yvonne Smith at NSTC. s.22 and they haven't replaced him yet. She asked what input I'd had from Canoe Cr (as above) She said to email her the Cultural Heritage Resource section and she would have it looked at by appropriate personnel. I said I'd do this after waiting a couple of days for a response/input from Harold Harry. y.smith@nstq.org
✓	Email to Gerald Michel with the Cultural Heritage Resource section of the WLP attached, asking him if he has anything further to add.
✓	10:05 Telecon with Harold Harry 440-5649 (Canoe Cr band). He hadn't had a chance to look at what I'd emailed (he opened up the email while we were on the phone). He said that he would try to have his technician look at the area of the WL in ArcView today. I asked him to specifically look at the text I'd written regarding Cultural Heritage Resources and respond by email as to whether he agreed with what was written or if he could suggest any additions or modifications. He asked about "fee for service" and I said that the position of the licensee was that they are willing to pay for a HFR to be carried out on proposed harvest areas before CP application and that they would deal with the band(s) and Tribal Association that was closest-linked geographically to the area. He said that he'd be away the rest of the week after today.

22-May	Emailed Cultural Heritage Resource section to Yvonne Smith with a note about my conversation with Harold Harry.
✓	Telephoned Gerald Michel. He's in a meeting at the moment; receptionist wasn't sure if it would go all day.
✓	Stopped in at BRIB in afternoon; talked to Gerald Michel. He's been busy with various committees. Had a quick look at the section of WLP I emailed. He doesn't have as much concern with WL harvesting as with Ainsworth's CP 205 development (2005-2007) adjacent. He stated that harvesting on WL may even enhance soopolalie berry production. s.16 He said he'd have a written response for me on Friday or possibly Monday.
23-May	
31-May	Emailed Gerald Michel asking for written response as he'd committed.
→	Emailed Yvonne Smith, asking if she'd had a chance to pass along the Cultural Heritage Resource section that I'd emailed her to appropriate person(s)
✓	email from Gerald Michel indicating that he had an approval letter written up and on file. He requests funding for a few hours of work that he's spent reviewing the plan, responding etc.
01-Jun	
03-Jun	Discussed Gerald's email request with the WL licensee. The licensee feels that it's not within their mandate to be funding First Nations' referral response.
07-Jun	Telecon with Gerald Michel (with follow-up email) denying request for funding.

3. Rationale In Support Of Proposed Alternative Performance Requirements

a) Rationale For Alternative Soil Disturbance Limits:

The maximum soil disturbance limits established in this alternative performance requirement are consistent with section 35 of the Forest Planning and Practices Regulation and propose the same basic maximum soil disturbance limits and process for assessing soil hazards that have been prescribed for major licensees on the majority of the forest landbase in BC. The alternative performance requirement is also consistent with WLPPR section 9(1)(b) and Factor 3(b) of Schedule 1 of the WLPPR. Under this alternative performance requirement areas of sensitive soils (where productivity and hydrologic function could be easily impaired) will have a lower maximum soil disturbance limit than the default soil disturbance limit of 8 % in the WLPPR. More resilient soils where the Soil Conservation Guidebook suggest a maximum soil disturbance limit of 10 % (for interior sites) will be afforded this traditional maximum 10 % limit for soil disturbance in the general NAR and 25% in roadside work areas. Roadside work area designations allow for some flexibility in harvest operations, and on those areas (cutblocks) where roadside logging is utilized as opposed to processing at landings, there will be less area in permanent access structures. The classification and the mapping of sensitive soils will provide guidance (i.e. a warning) to persons carrying out the harvesting and a mechanism to facilitate compliance and enforcement.

b) Rationale For Alternative Stocking Standards (For Species Acceptability):

The stocking standards proposed in this Woodlot Licence Plan (Appendix V) are virtually the same as in the MoF&R publication "Reference Guide for Forest Development Plan Stocking Standards", with a variance of accepting western red cedar (Cw) as a minor percentage of the Acceptable species (maximum 20%) on sites with a soil moisture regime of mesic and wetter. The alternative performance requirement is consistent with Factor 2(a) and 4(a) of Schedule 1 of the WLPPR. Generally the Lillooet area, adjacent to the Fraser River has desert-like conditions; hot, dry summers and cool, low-precipitation winters. The drainages that enter the Fraser River

from the west do however have a slight maritime influence. Western red cedar (Cw) grows in varied amounts (although never in patches larger than 1 ha) along these drainages; almost always in areas with a riparian influence, or at least on sites with a soil moisture regime of mesic and wetter. The Cw that grows in this geographic area is consistently infected with heart rot and the mature stems are often, for this reason, colonized by wildlife that require hollow trees for habitat. On woodlot 364, Cw has been noted at all elevations and grows as individual stems and in small groups to a co-dominant height and diameter (see attached photos) within 100 m of the Yalakom River and LaRochelle Creek.

Root disease (*Phellinus weirii*) is present on the woodlot in varying amounts and Cw is moderately resistant to this pathogen.

Appendix III: Background Information

Under Section 4: Areas Where Timber Harvesting Will Be Modified

Ungulate Winter Range

Planning cells for ungulate winter range are at the draft stage as of the submission date of this WLP. Indications from a telephone conversation April 24, 2007 with Michael Burwash, Senior Ecosystem Biologist, Ministry of Environment-Kamloops are that woodlots meet the area requirement of a planning cell (200-500 ha) and most likely will be defined as a planning cell. The general intent of defining planning cells is to limit the amount of large-scale removal of suitable habitat and cover in a relatively small area.



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Simon Warhurst RFT
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Box 1751 Lillooet, BC
V0K 1V0

May 10, 2007

Simon,

Re: TSA for WL 364, Yalakom River.

The terrain in Woodlot 364 was assessed on October 7, 2006. It is located on the southwest side of the Yalakom River valley (Figure 1), and is accessed from La Rochelle mainline. The Woodlot area is suited for ground based yarding (Map 1).

The purpose of the assessment was to review and comment on terrain stability with respect to the proposed logging plan, including assessment of proposed roads that cross areas of questionable stability. Geotechnical prescriptions for road design and construction are provided as required. The report is based on field observations and on 14 years experience conducting stability field assessments in the area.

Results of the TSA are presented herein. Map 1 shows the block boundary, proposed roads, mapped streams and the traverse route. A criteria table for slope stability classification is provided in the map legend. Terrain mapping methodology follows Howes and Kenk (1988). Terrain interpretation was based on direct observations of slope, surface morphology, sediment textures from available exposures and windfall pits, and experience.

Site Description

Climate in the area is continental. Average annual precipitation at Lillooet is about 330 mm, with the rainfall peak between October to January, and a secondary peak in July-August. Fall rain, winter rain-on-snow and summer thunder showers are the primary triggers for landslide activity. Extreme 24 hour precipitation at Lillooet is about 60 mm, but this increases about 80 mm in the mountains.

Bedrock in the area consists of metasedimentary rocks of the Bridge River Group. The rock is weak and produces rubbly talus. Tills derived from this bedrock are generally fine grained.

The incidence of post-logging instability in the Lillooet District is generally low, but slides and instability do occur, especially where water is mismanaged (i.e., Green Mountain). Terrain attribute studies for the Coast Mountain region to the west are summarised on the maps provided and give some expectation for post-logging instability: slope is the predominant factor controlling instability, with material type and soil moisture contributing factors. In areas underlain by till or colluvial veneers, terrain over 70% slope has a moderate potential for post-logging instability, with 10-35% of logged polygons showing post-logging instability. This may rise to 60% of openings in gullied terrain. Wetter biogeoclimatic zones or wet sites may show a higher frequency of post-logging instability compared to drier areas. Poor road construction may also exacerbate the potential for post-logging instability. Most post-logging failures are related to escarpments, gully sidewalls and poorly constructed roads.

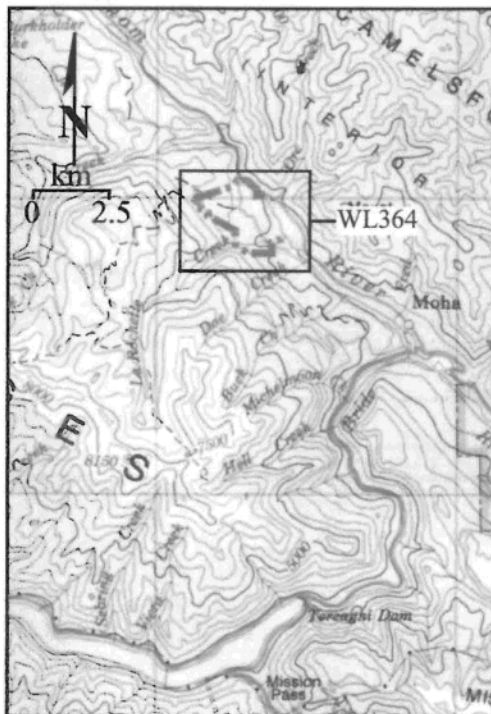


Figure 1. Location of Block WL364

Observations and Conclusions

The woodlot is located on a benchland above Yalakom River. Terrain on the bench consists of undulating glacial drift, with gentle to moderate slopes. Yalakom River and LaRochelle Creek are incised into the upland producing active floodplains bounded by river cut escarpments.

Along Yalakom River the escarpment is about 50 m tall, and in places is actively undercut by Yalakom River producing ravelling bluffs. Elsewhere the escarpment is moderately steep to steep. The top of the escarpment was traversed using GPS by Transition Forestry following instruction by Cordilleran Geoscience, and is accurately portrayed on Map 1.

The escarpment slopes into LaRochelle Creek are 10-20 m tall, and are not actively undercut by creek erosion. At one locality where a small tributary creek joins from the north there is a small 15 m x 15 m rotational slump at a seepage site. This is the only instability noted in the woodlot away from the main escarpment into Yalakom River.

Reconnaissance terrain mapping polygons that have been transferred onto the TRIM base map have an uncorrected shift, and do not accurately portray the escarpment slopes. Further, slope stability criteria table employed by JM Ryder and Associates was over conservative. For these reasons, this mapping replaces previous reconnaissance maps for the woodlot area.

In general terrain stability within the woodlot, away from escarpment slopes, supports negligible to very low potential for post logging instability. Potential impacts of instability on the benchland surface is considered low. A small area of moderately steep terrain in the north part of the woodlot near Verbenkov Creek supports a low potential for post logging instability. Small slides in this area could impact Verbenkov Creek and/or Yalakom River, and potential impacts are considered high. The escarpment slopes along Yalakom River are considered unstable where active undercutting has exposed ravelling bluffs, and potentially unstable elsewhere. Potential slides or slumps from the escarpment could impact Yalakom River, and potential impacts are therefore considered high. Similarly, escarpment slopes along LaRochelle creek are considered potentially unstable with a moderate potential for post logging instability. Potential slides or slumps could impact the floodplain of LaRochelle Creek, but are unlikely to directly impact the creek, and impact is considered moderate.

Recommendations

1. Keep all cutblocks off the escarpment slopes of Yalakom River and LaRochelle Creek, and set boundaries back from escarpment edges where feasible.
2. On benchland areas within Woodlot 364, no geotechnical prescriptions are required to reduce post logging instability.

Caveat

The conclusions and recommendations presented herein are derived from visual inspection of select areas, based on evidence from site indicators, direct observations of slope, surface morphology, sediment textures from available exposures and windfall pits, and aided by experience. Detailed subsurface investigations were not conducted. If conditions other than those identified in this report are encountered during development operations then Cordilleran Geoscience should be notified immediately.

This report was prepared for use by Transition Forestry, including distribution as required for purposes for which the report was commissioned. The work has been carried out in accordance with generally accepted geoscience practice. Judgment has been applied in developing the conclusions stated herein. No other warranty is made, either expressed or implied to our clients, third parties, and any regulatory agencies affected by the conclusions.

Should you have any questions please call.

Sincerely,

Pierre Friele, P. Geo.



Professional Geoscientist
Cordilleran Geoscience

Page 2

Appendix V page 1

BGC			Regeneration Guide						Free Growing Guide			
Classification			Species		Stocking(i)			Regen Delay	Assessment		Min. Height(ii)	
Zone/SZ	Series	Standards ID	Conifer		Target	MIN pa	MIN p		Earliest	Latest	Species	Ht
			Preferred (p)	Acceptable (a)	(well-spaced/ha)			(Max yrs)	(yrs)	(yrs)		(m)
IDFxb2	01	364-1*	Fd ²⁷ Py	Cw ⁵⁶	1000	500	400	7	12	15	All	0.6
	02	82166	Py ²⁷ Fd ²⁷		400	200	200	7	12	15	All	0.6
	03	82167	Py ²⁷ Fd ²⁷		400	200	200	7	12	15	All	0.6
	04	82168	Py Fd ²⁷		600	400	400	7	12	15	All	0.6
	05	364-2*	Fd ²⁷ Py	Cw ⁵⁶	1000	500	400	7	12	15	All	0.6
	06	364-3*	Fd Py	Cw ⁵⁶	1200	700	600	7	12	15	All	0.6
	07	82171	Fd ³² Sx	Py ³² Cw ^{32,56}	1200	700	600	4	9	15	All	0.6
	08	82172	Sx ¹ Fd ^{1,32}	Pl ^{1,23}	1000	500	400	4	9	15	PI	0.8
										Others	0.6	
IDFdk2	01	364-4*	Fd ³² Pl	Cw ⁵⁶ Py ^{9,14} Sx ^{10,13}	1000	500	400	7	12	15	PI	1.0
											Fd	0.8
											Sx,Py,Cw	0.6
	02	82114	Fd ²⁷ Py ¹⁴		600	400	400	7	12	15	Fd	0.8
											Py	0.6
	03	82115	Fd ²⁷ Pl	Py ¹⁴	1000	500	400	7	12	15	PI	1.0
											Fd	0.8
											Py	0.6
	04	364-5*	Fd ³² Pl Sx ^{10,13}	Py ^{9,14} Cw ⁵⁶	1200	700	600	7	12	15	PI	1.4
											Fd	1.0
05	82117	Fd ³² Sx Pl	Cw ^{32,56}	1200	700	600	4	9	15	Py,Cw	0.8	
										PI	1.4	
										Fd	1.0	
										Others	0.8	
06	82118	Pl ¹ Sx ¹ Fd ^{1,32}		1000	500	400	4	9	15	PI	1.0	
										Fd	0.8	
										Others	0.6	
07	82119	Pl ¹ Sx ¹	Cw ^{32,56}	1000	500	400	4	9	15	PI	1.0	
										Others	0.6	
08	-	-	non-forested		-	-	-	-	-	-	-	-

* These identifiers will be used until Standards ID have been designated by MOF&R

Appendix V page 2

Trees must be the greater than the approved minimum inter-tree distance apart in order to be well spaced:

<u>Minimum inter-tree distance (m)</u>	<u>Location/condition</u>
1.6	planting on hygric, sub-hydric or mechanically site prepared areas
2	all other areas

Height of Trees Above Brush

In addition to being at least the required minimum height, trees must be greater than the approved minimum percentage height above brush in order to be free growing:

<u>% Ht above brush</u>	<u>Location/condition</u>
125%	WL 364

Footnote # Footnote

Conifer Tree Species

"Cw" means western red cedar;

"Pl" means lodgepole pine;

"Py" means ponderosa pine;

"Fd" means Douglas-fir;

"Sx" means hybrid spruce or interior spruce;

1	elevated microsites are preferred
9	restricted to southerly aspects
10	restricted to northerly aspects
13	restricted to upper elevations of biogeoclimatic unit
14	restricted to lower elevations of biogeoclimatic unit
23	restricted to trial use
27	partial canopy cover required for successful establishment
32	limited by growing-season frosts

Localized Footnote

"MIN or "Min" means minimum.

56	WL 364 - cedar content restricted to < 20% well-spaced and free growing trees on a standards unit
----	---

"Biogeoclimatic unit" or "BGC classification" means the zone, subzone, variant and site series described in the most recent field guide published by the Ministry of Forests for the identification and interpretation of ecosystems, as applicable to a harvested area.

Footnote #**Footnote****Conifer Tree Species**

	1	elevated microsites are preferred
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"Cw" means western red cedar;	10	restricted to northerly aspects
"Pl" means lodgepole pine;	13	restricted to upper elevations of biogeoclimatic unit
"Py" means ponderosa pine;	14	restricted to lower elevations of biogeoclimatic unit
"Fd" means Douglas-fir;	23	restricted to trial use
"Sx" means hybrid spruce or interior spruce;	27	partial canopy cover required for successful establishment
	32	limited by growing-season frosts

Localized Footnote

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----	---

"**Biogeoclimatic unit**" or "**BGC classification**" means the zone, subzone, variant and site series described in the most recent field guide published by the Ministry of Forests for the identification and interpretation of ecosystems, as applicable to a harvested area.

"**MIN**" or "**Min**" means minimum.

Uneven-aged Stocking Standards* -- Single-tree selection only

Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 1	Col. 2	Col. 3	Col. 4	Col. 5
Target from Table A standards	Layer**	Stocking***			Target from Table A standards	Layer**	Stocking***		
		Target pa	MIN pa	MIN p			Target pa	MIN pa	MIN p
(stems/ha)		(well-spaced/ha)			(stems/ha)		(well-spaced/ha)		
1200	1	600	300	250	600	1	300	150	150
ID 86000	2	800	400	300	ID 86004	2	400	200	200
(all layers)	3	1000	500	400	(all layers)	3	500	300	300
	4	1200	700	600		4	600	400	400
1000	1	400	200	200	400	1	200	100	100
ID 86001	2	600	300	250	ID 86005	2	300	125	125
(all layers)	3	800	400	300	(all layers)	3	300	150	150
	4	1000	500	400		4	400	200	200

MIN - minimum

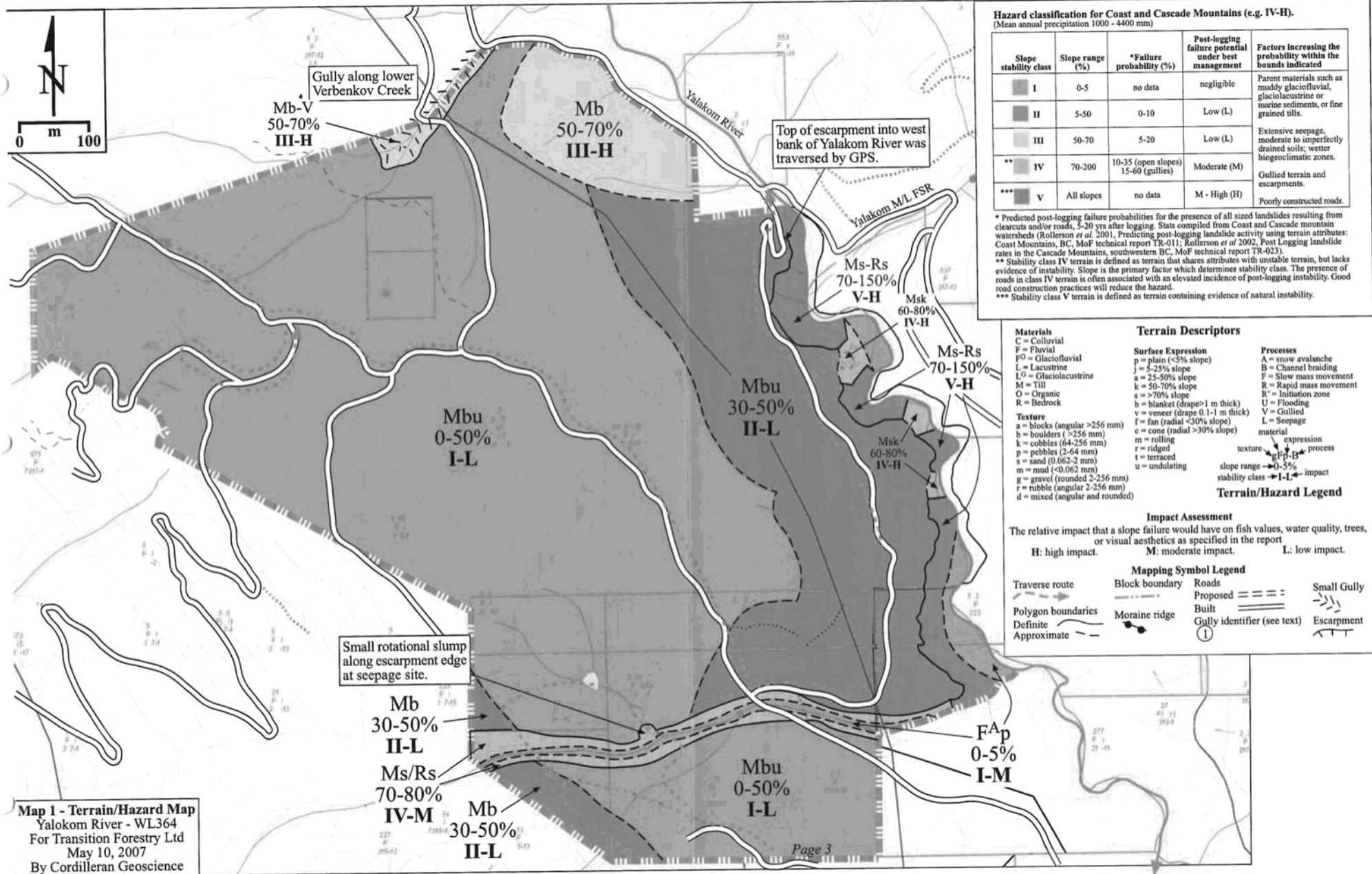
* Maximum regeneration delay is seven years. For a seven-year regeneration delay, the early free growing is 12 years and the late free growing is 15 years. Regeneration delay can be met immediately following harvest if the residual stand has no significant damage or pest problems and meets minimum stocking standards. If regeneration is achieved immediately following harvest, earliest free growing date is 12 months after completion of harvest and the latest date is 24 months after completion of harvest.

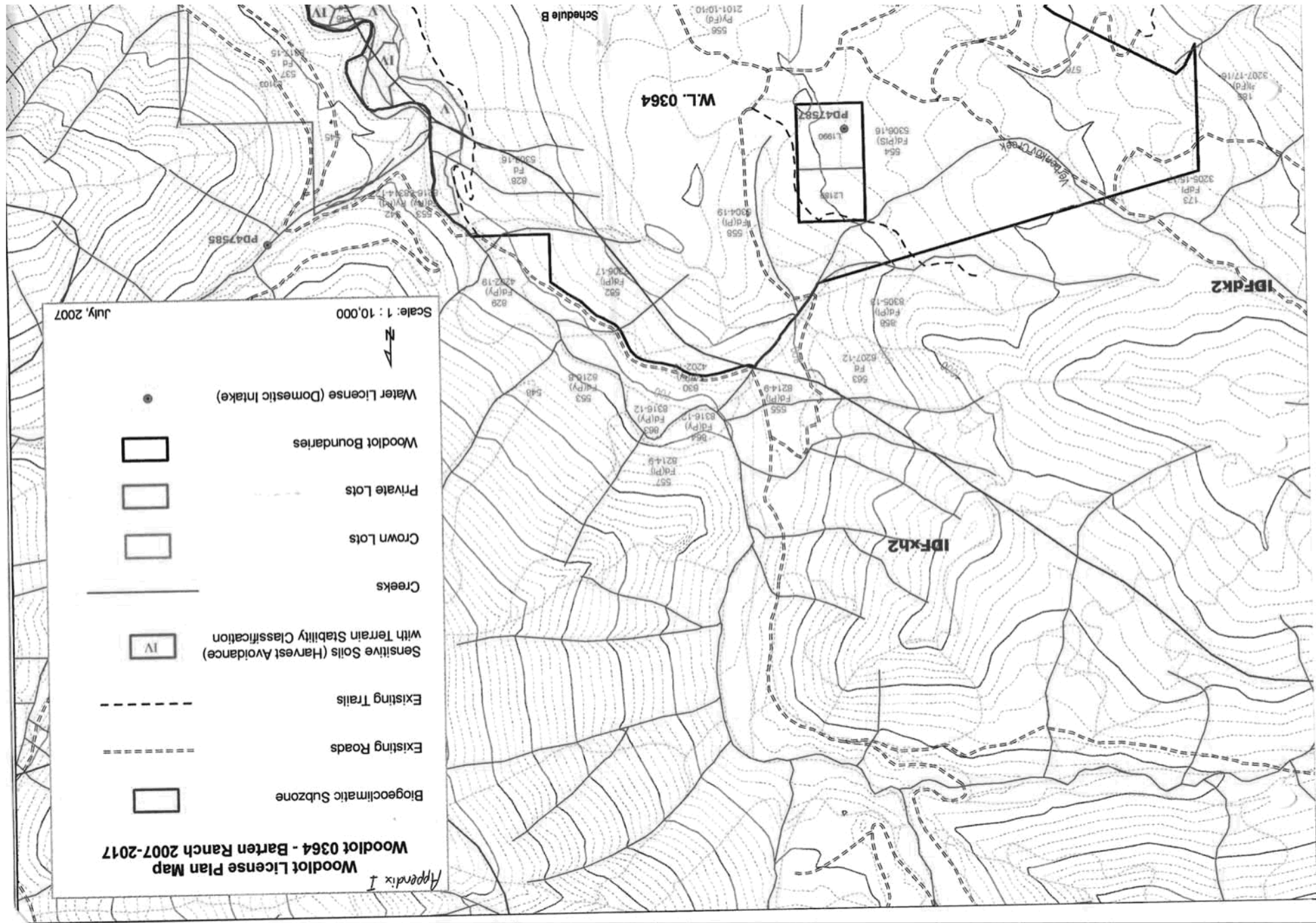
**Stand Layer Definition

Layer 1	Mature	trees \geq 12.5 cm dbh
Layer 2	Pole	trees 7.5 cm to 12.4 cm dbh
Layer 3	Sapling	trees \geq 1.3 m height to 7.4 cm dbh
Layer 4	Regeneration	trees < 1.3 m height

*** pa - preferred and acceptable species p - preferred species

Preferred and acceptable species and "Target from Table A standards" are as specified in Table A by biogeoclimatic system classification (BEC) site series.







Woodlot Licence #364

Management Plan #4

Licencee

John Barten

RECEIVED

JAN 28 2015

CASCADES DISTRICT
PROVINCE OF BC

Southern Interior Forest Region

Cascades Forest District

Lillooet Timber Supply Area

General Location: Lillooet, BC


Prepared by:

R. John Childerley, RPF
Atlas Information Management
#101 - 1383 McGill Road
Kamloops, B.C.
V2C 6K7



Submitted by:

John Barten
Woodlot Licence #364


Signature

Approved by:

Charles van Hemmen
District Manager
Cascades Forest District

Signature

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WOODLOT LICENCE #364 MANAGEMENT PLAN #4

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1.0 Licencee's Goals

To manage the timber resource of Woodlot 364 on a sustained yield basis, following the principles of integrated resource management; to supplement income; and to be involved in small-scale forestry.

It is the intent of the licensee to manage Woodlot 364 in an efficient, cost effective and profitable manner to supplement farming income.

To ensure that all basic silviculture is kept current and to judiciously implement intensive silviculture treatments where appropriate.

The intent of timber harvesting activities on the Woodlot is to maintain the forest health and promote vigorous stands of mixed all-age and even-age stands.

2.0 Licencee's Statement of Commitments

To monitor the Woodlot for the presence of Douglas-fir bark beetle and windthrow and to expeditiously address any beetle outbreaks or wind events that cause damage to timber.

Harvesting priorities will be salvaging of insect attacked, fire damaged or windthrown timber ahead of healthy stands.

There will be no restrictions placed on the reasonable use of the Woodlot for snowmobiling, horseback riding, hunting, hiking, cross country skiing or other recreational uses by the public.

3.0 Resource Inventories

3.1 Timber Resources Inventory

The current forest inventory information for the Crown Land portion (Schedule 'B') of the Woodlot Licence are based on the up to date (2013) Vegetation Resource Inventory Data available through the Land and Resource Data Warehouse. This inventory will be updated as disturbances and other changes occur on the license area. An inventory on Schedule 'A' Lands has not been completed at this time, as there has been no activity on Private Lands and there are no plans at present.

Updated information for both Schedule 'A' and 'B' lands will be provided with the next revision to the Management Plan.

3.2 Terrain Stability Inventory

A Terrain Stability Assessment was carried out in fall, 2006. The areas that are classified as Terrain Class IV and V along the Yalakom River and LaRochelle Creek will not be harvested unless a Terrain Stability Assessment (TSA) is completed by a qualified professional. The results of TSA will be followed if harvesting within Terrain Class IV and V.

3.3 Fish Stream Classification Inventory

The lower reach of LaRochelle Creek has characteristics that are amenable to fish presence (low gradient, good year around volume, direct tributary to a known fish-bearing watercourse – Yalakom River). Since it has not been sampled for fish presence, at this point it is assumed to be fish bearing (S3),

There are no other streams within the Woodlot that are fish bearing.

4.0 Timber Utilization Standards

The management objective for the utilization of timber on the woodlot licence area is to conduct harvesting in a manner consistent with the merchantability specifications in the Provincial Logging Residue and Waste Measurement

Procedures Manual dated. The proposed allowable annual cut for the woodlot licence is based on these merchantability specifications for timber utilization.

The Licensee understands that utilization of deciduous species is currently discretionary. If a market for deciduous species is found, deciduous species may be utilized.

5.0 Proposed Allowable Annual Cut

Proposed Allowable Annual Cut (AAC) for Woodlot Licence #364 is:

Schedule A lands:	57 m ³ per year
Schedule B lands:	904 m ³ per year
Total:	961 m ³ per year

This new Management Plan reflects the change of Schedule B Lands AAC.

A Volume Calculation report for Schedule B Lands has been attached in Appendix I using the model WOODLOT for Windows Version 4.1.0.20. (July 29, 2015) Schedule A Lands AAC is unchanged.

APPENDIX I

WOODLOT for Windows

Information Used to Calculate the AAC

Data for the AAC Calculation was obtained by a GIS exercise to extract VRI information from un-harvested polygons and updating stocking information for previously harvested openings.

WOODLOT LICENCE 364

Woodlot Licence Harvest Planning report

Date: January 27, 2015 - 9:50 AM
 Woodlot File: WL364AAC - Dec 2014.wlt
 Harvest Rate: 904 m³/year
 Tenure: Woodlot #364
 Company Name: Atlas Information Management
 User Name: R. John Childerley, RPF
 Scenario Number: Version 3
 Forest District: Cascades

Model Information
 Woodlot Version: Release 4.1.0.20 (July 29, 2014)
 VDYP Version: VDYP7Console: 7, 9, 3, 37
 TIPSy Version: BatchTIPSy: 4.3
 Sindex Version: SINDEx33: 1.45

Summary
 Total Area: 597.8 ha
 Net Area: 593.3 ha
 THLB Area: 517.4 ha

Woodlot Settings
 Coast/Interior: Interior
 Default VDYP Utilization: 2G - Second Growth
 Default BEC: IDF
 Minimum Harvest Age: 80 years
 Minimum Harvest Diameter: 13 cm
 Minimum Harvest Vol/ha: 100 m³/ha
 Default TIPSy OAF1: 0.85
 Default TIPSy OAF2: DWB
 P.C. Adjustment Factor: 0.80
 Planning Horizon: 250 years
 Base Year: 2014

1.0 Introduction

This section summarizes information used to calculate a long term harvest rate on Woodlot Licence No. Woodlot #364. The calculated harvest rate can be used to assist in determining the allowable annual cut (AAC). It should be assessed in light of the assumptions used, social and economic considerations in determining the AAC.

2.0 Summary

a) Area Summary

Description	Area (ha)	Area (ha)	Volume (m ³)	Polygons (#)
Total Area		697.8		62
- Non Forest		4.6		3
- Non FMLB (Non-Productive)	4.6			3
= FMLB (Forest management landbase)		693.3	68,364.5	59
- Reduction	0.0			0
- Future Roads	0.0			0
= Net Area		693.3	68,364.5	59
- Excluded (Constraints)		65.3	7,520.1	59
= Contributing Forest		528.0	60,844.4	59
- Missing yield data	0.0			0
- Area Not down (constraint)	10.8		1,216.9	59
- Minimum Parameters not met	0.0			0
- Silviculture System - Do Not Harvest	0.0			0
= THLB (timber harvesting landbase)		517.4	69,627.7	59

								st
092J089 32158883	[5.0002]	[5.0002]	162	V Fd 13.5	120.2	601.0	601.0	CC-Reforest
092J089 254	[3.4928]	[3.4928]	218	V FdPy 12.5	145.6	508.6	508.6	CC-Reforest
092J089 207	[11.9761]	[11.9761]	147	V FdPl 13.2	192.8	2,309.0	2,309.0	CC-Reforest
092J089 129	[3.4684]	[3.4684]	199	V Fd 12.2	145.6	505.0	505.0	CC-Reforest
092J089 247	[15.8199]	[15.8199]	137	V Fd 15.2	202.6	3,205.1	3,205.1	PC
092J089 35018681	[5.8757]	[5.8757]	117	V FdPl(Sx) 13.4	154.9	910.1	910.1	CC-Reforest
092J089 34258647	[2.6906]	[2.6906]	167	V FdPl 12.2	157.1	422.7	422.7	CC-Reforest
092J089 251	[8.6203]	[8.6203]	127	V FdPy 17.3	238.4	2,037.8	2,037.8	CC-Reforest
092J089 33598798	[0.4645]	[0.4645]	167	V FdPl 12.2	157.1	73.0	73.0	CC-Reforest
092J089 220	[9.4959]	[9.4959]	237	V SxFdBl 7.9	169.1	1,605.8	1,605.8	CC-Reforest
092J089 205	[4.0042]	[4.0042]	187	V PlFd 15.0	237.1	949.4	949.4	CC-Reforest
092J089 246	[5.1622]	[5.1622]	237	V Fd 12.8	203.7	1,051.5	1,051.5	CC-Reforest
092J089 250	[6.4323]	[6.4323]	167	V PlFd 14.2	227.3	1,462.1	1,462.1	CC-Reforest
092J089 249	[0.9015]	[0.9015]	147	V PlFd 12.6	187.1	168.7	168.7	CC-Reforest
092J089 256	[0.4779]	[0.4779]	237	V Fd 11.8	168.1	75.6	75.6	CC-Reforest
Excluded	593.261	0.0			0.0	0.0	0.0	
FHILB Non FHLB (Non-Productive)	4.505	0.0			0.0	0.0	0.0	
Total	597.7662	593.2614			129.6	68,364.5	68,364.5	

c) Priority

Priority
Partial Cut
Closest To Harvest

d) Harvest Order

Order	Polygon
-------	---------

e) Constraints

Constraint	Polygon
(Roads) All: 2% AREA net down	
(WTP Netdown (8%)) All: 8.0% EXCLUDE from Woodlot	
(Riparian Reserve Zones (1%)) All: 1.0% EXCLUDE from Woodlot	
(Terrain) 2% reduction) All: 2.0% EXCLUDE from Woodlot	

f) Actual average Harvest with constraints and non harvest years over 250 year planning horizon:

Item	Gross Area (ha)	Net Area (ha)	Inc. Area (ha)	Conifer (m³)	Deciduous (m³)	Total (m³)	Average (m³/yr)
Ownership							
Crown	597.8	593.3	517.4	225,821	179	226,000	904.0
Total	597.8	593.3	517.4	225,821	179	226,000	904.0

g) Harvest Issues

Years	Issue
-------	-------

h) Polygons not harvested

Polygon	Reason	Area
092J099 830	Don't harvest	0.0
092J099 829	Don't harvest	0.0
092J099 543	Don't harvest	0.0
Total		0.0

3.0 Conclusions

It is determined the AAC for Woodlot Licence 364 (Schedule 'B' Lands) is 904 m³/year based in VRI date entered into program and assumption utilized.

Net downs for constraints are as followed:

- Roads 2%
- WTP 8%
- Riparian Reserves 1%
- Terrain 2%

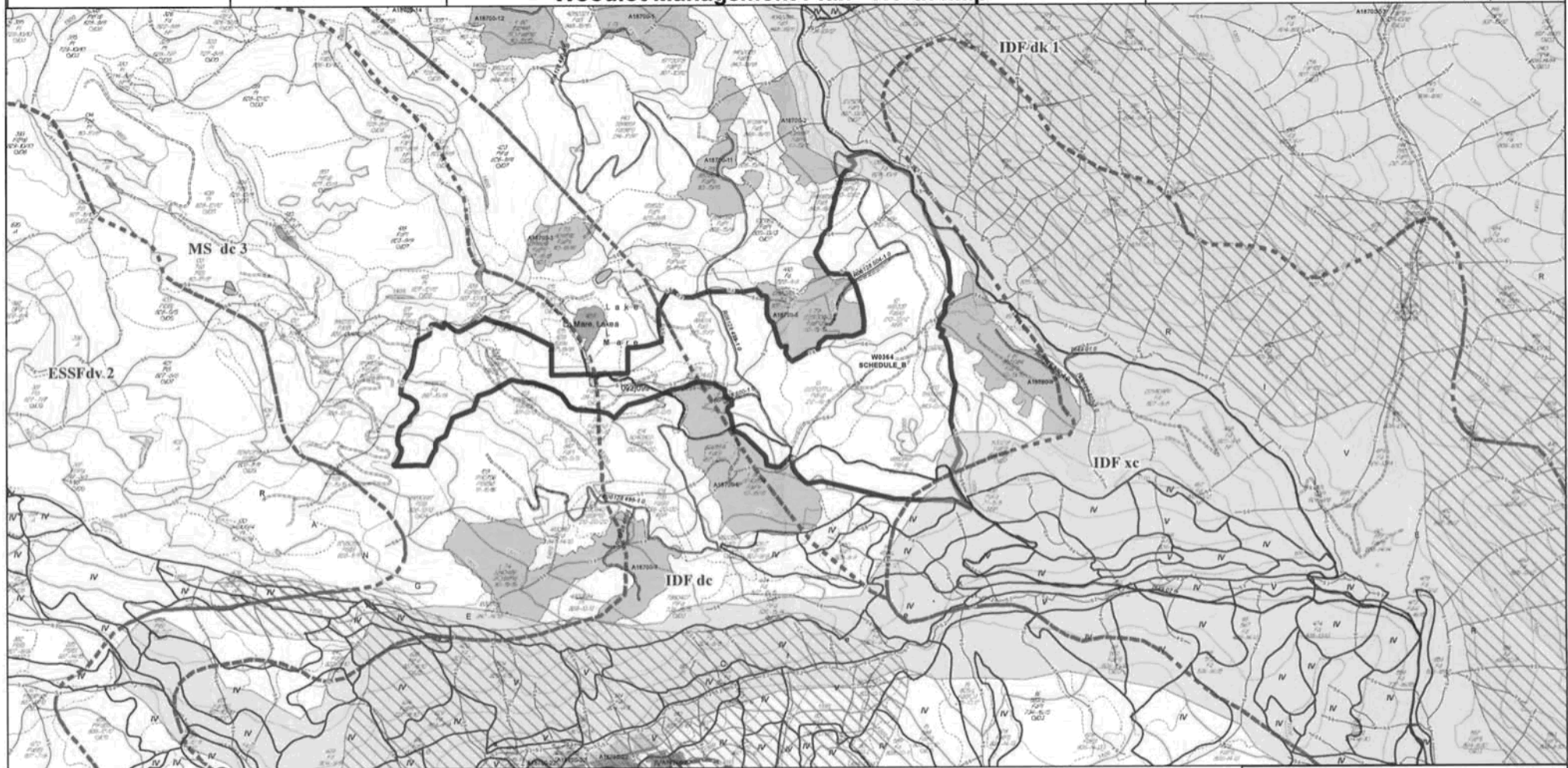
John Barten

SOUTHERN INTERIOR FOREST REGION
Cascades Forest District
Location: La Mare Lake
Map Sheet Reference: 92J089, 099
NAD 1983 UTM Zone 10

Woodlot 364

Woodlot Management Plan - North Map

0 200 400 600 800 1,000
Meters
Scale 1:20,000



Roads - Forest Service
Roads - Permit Roads
Roads - Existing
Roads - Proposed
Roads - Temporary
Trails
Skid Trails
Pipeline
Railway
Contour - Major
Contour - Minor

Streams with Stream Class Label
Streams - Unclassified
Landing - Existing
Landing - R/W
Landing - Proposed (perm.)
Landing - Proposed (temp.)
Domestic Water Intakes
Culvert

Silviculture Status (Self-factorily Restored)
Woodlot Boundary
Other Woodlots
Visual Quality Objective Areas
Old Growth Management Areas
Recreational Areas
Provincial Parks
Forest Cover (timber type/line)
Wildlife Tree Patch

Private Land
I.R. Areas
Riparian Reserve Zone
Riparian Management Zone
Ungulate Winter Range
Lakeshore Management Zones
BEC Zones
Lakes
Wetland
Community Watershed

Sensitive Soils
Terrain Class
Ungulate Winter Range
Deer UWR
Goat UWR

Prepared By:

Atlas Information Management

Map Date: Jan. 27, 2015
Drawn By: N. Martin
AIM No: 5383
Drawing No: W364-Woodlot-Management-Plan.mxd

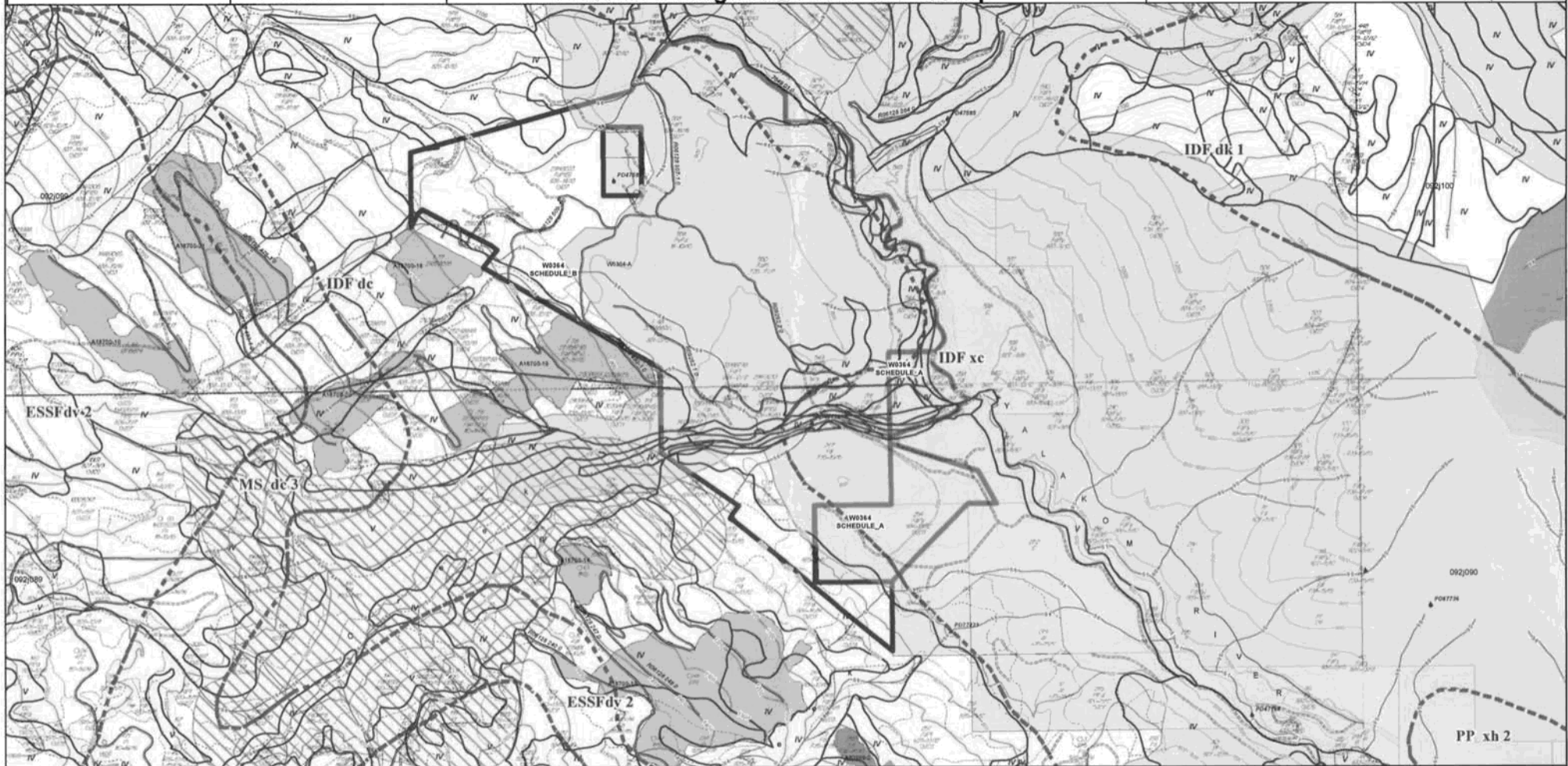
John Barten

SOUTHERN INTERIOR FOREST REGION
Cascades Forest District
Location: La Mare Lake
Map Sheet Reference: 92J089, 099
NAD 1983 UTM Zone 10

Woodlot 364

Woodlot Management Plan - South Map

0 200 400 600 800 1,000
Meters
Scale 1:20,000



Roads - Forest Service
Roads - Permit Roads
Roads - Existing
Roads - Proposed
Roads - Temporary
Trails
Ski Trails
Pipeline
Railway
Contour - Major
Contour - Minor

Streams with Stream Class Label
Streams - Undersified
Landing - Existing
Landing - R/W
Landing - Proposed (perm.)
Landing - Proposed (bump)
Domestic Water Intakes
Culvert

Silviculture Status (Satisfactorily Restocked)
Woodlot Boundary
Other Woodlots
Visual Quality Objective Areas
Old Growth Management Area
Recreational Areas
Provincial Parks
Forest Cover (timber typeline)
Wildlife Tree Patch

Private Land
L.R. Areas
Riparian Reserve Zone
Riparian Management Zone
Ungulate Winter Range
Lakeshore Management Zones
BEC Zones
Lakes
Wetland
Community Watershed

Sensitive Soils
Terrain Class
Ungulate Winter Range
Deer UWR
Goat UWR

Prepared By:

Atlas Information Management

Map Date: Jan 27, 2015
Drawn By: N. Martin
AIM No: 5383
Drawing No: W364-Woodlot-Manage-Plan.mxd