

Woodlot Licence W1832
Forest Development Plan #1
Term: January 1, 2000 to December 31, 2004

Licensees: Tom Bradley, Bernie Clover, Breakaway Enterprises Ltd.

Arrow Forest District
Nelson Forest Region

Woodlot Licence W1832
Forest Development Plan #1
Term: January 1, 2000 to December 31, 2004

Arrow Forest District
Nelson Forest Region

Licensees: Tom Bradley, Bernie Clover, Breakaway Enterprises Ltd.
R.R. 1
Winlaw, B.C.
Fax: (250) 226-7159

Authorized Licensee Signature:

Name: **Tom Bradley**

Signature: _____

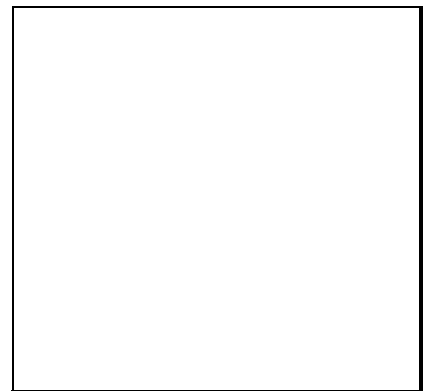
Date:

RPF Signature:

Name: **Heather Pinnell, R.P.F.**

Signature: _____

Date:



Woodlot Licence W1832

Forest Development Plan #1

Table of Contents

1	Introduction	1
1.1	Summary of Proposed Development Activity.....	1
1.2	Description of W1832	3
1.3	Referral Summary	5
2	Strategic Plans	6
3	Sources of Information	8
3.1	Base Mapping.....	8
3.2	Forest Cover Mapping.....	8
3.3	Streams and Wetlands	8
3.4	Known Items	9
3.4.1	Known Items Identified by MOF and MELP.....	9
3.4.2	Domestic Water Supply Intakes	13
3.4.3	Fish Streams	13
3.4.4	Riparian Class of Streams and Wetlands.....	13
3.4.5	Old Growth Management Areas.....	14
4	Measures to Protect Forest Ecosystems and Resources	15
4.1	Timber	15
4.1.1	Mountain Pine Beetle	15
4.1.2	Douglas-fir Bark Beetle.....	16
4.1.3	Larch Mistletoe.....	17
4.1.4	Root Diseases	17
4.2	Water	19
4.2.1	Introduction	19
4.2.2	Watershed Mapping.....	23
4.2.3	Watershed Assessments.....	24
4.2.3.1	Woodward Face Watershed.....	26
4.2.3.2	Lower Main Winlaw Creek Watershed.....	33
4.2.3.3	North Fork Creek Watershed.....	39
4.2.3.4	Dumont Creek Watershed	45
4.2.4	Flat Over Steep.....	49
4.2.5	Contingency Plan for Domestic Watersheds.....	49
4.3	Fisheries.....	50
4.4	Riparian Ecosystem Management	50
4.5	Wildlife and Biological Diversity	52
4.5.1	Species at Risk.....	52

4.5.2	Coarse Woody Debris.....	53
4.5.3	Wildlife Trees.....	55
4.5.4	Wildlife Tree Patches.....	56
4.5.5	Ungulate Winter Range.....	58
4.6	Recreation.....	60
4.6.1	Recreation Inventory Results.....	60
4.6.2	Observed Recreational Use.....	60
4.6.3	Potential Recreation Activities.....	61
4.6.4	Management Implications.....	61
4.7	Visual Resource Management.....	61
4.8	Botanical Forest Products.....	64
4.9	Cultural Heritage Resources and Archaeological Sites.....	64
5	Proposed Logging.....	65
5.1	Mapped Information.....	65
5.2	Cutblock Information.....	65
5.3	Logging Method.....	65
5.4	Greenup.....	65
5.5	Riparian Management.....	68
5.6	Minor Salvage Operations.....	68
5.6.1	General Description.....	68
5.6.2	Purpose.....	68
5.6.3	Maximum Volumes.....	68
5.6.4	Salvage Management Priorities.....	68
5.6.5	Protection of Other Resources.....	69
5.6.6	Notice and Review.....	69
5.7	Minor Harvesting Operations.....	70
6	Access Management.....	71
6.1	Introduction.....	71
6.2	Road Construction, Major Culverts and Bridges.....	72
6.3	Road Maintenance.....	75
6.4	Road Deactivation.....	75
7	Referrals Process and Responses.....	76
7.1	Advertisement.....	76
7.2	Referral Letter.....	77
7.3	First Nations Consultation Process.....	79
7.4	Water Licences Consultation Process.....	80
7.5	Public Review Open House.....	82
7.6	Review and Comment / Documentation and Referral.....	83
7.6.1	Written Comments Received from Public Review.....	83
7.6.1.1	Written comments from the Winlaw Watershed Committee:.....	83

7.6.1.2	Written Comments from New Family Society.....	88
7.6.1.3	Written Comments from Eric Clough	89
7.6.1.4	Written Comments from Ross Pease.....	90
7.6.2	Written Comments Received from First Nations	90
7.6.3	Written Comments Received from Resource Agencies	90
7.7	Summary of Revisions	91
8	Forest Development Plan Map	93

List of Figures

Figure 1: Planimetric view of proposed development activity in W1832.	2
Figure 2: Perspective view of proposed developments in W1832.....	3
Figure 3: Watershed Boundaries and Proposed Development in W1832 Crown Portion. 24	
Figure 4: Location of and Hydrologic Cover Classes in Woodward Face watershed.	27
Figure 5: Hydrologic Cover Classes in Woodward Face sub-unit.....	28
Figure 6: Class IV and V Terrain and Silica Mine Road location in Woodward Face and Lower Main watershed sub-units.	30
Figure 7: Location of and Hydrologic Cover Classes in Lower Main Winlaw Creek watershed.	35
Figure 8: Hydrologic Cover Classes in Winlaw Lower Main sub-unit.	36
Figure 9: Location of and Hydrologic Cover Classes in North Fork watershed.....	40
Figure 10: Hydrologic Cover Classes in North Fork Creek sub-unit.	41
Figure 11: Class IV Terrain and Silica Mine Road location near proposed cut blocks.	43
Figure 12: Location of and Hydrologic Cover Classes in Dumont Creek watershed...	46
Figure 13: Hydrologic Cover Classes in Dumont Creek watershed.	47
Figure 14: Riparian Reserve Zone and Riparian Management Zone.....	51
Figure 15: Ungulate Winter Range Management Boundaries in W1832.	59
Figure 16: W1832 from near the bottom of Kazakoff Road, south of Winlaw.	63
Figure 17: Culvert Locations on Silica Mine Road Upgrade.....	74

List of Tables

Table 1: Referral Summary Table.	5
Table 2: Proposed Logging Development by Watershed Sub-Basin.....	23
Table 3: Interpretation Guide for IWAP Report Card Scores.	26
Table 4: Wildlife Species at Risk Possibly Found in W1832.....	52
Table 5: Proposed Cutblock Information Table.	67
Table 6: Road Construction, Major Culvert and Bridge Table.	75
Table 7: Mailing list for First Nations referral letters.....	79
Table 8: Mailing list for Water Licensee referral letters.	82

List of Appendixes

- Appendix 1: Full Cycle Trees
- Appendix 2: Correlation between mapped Point of Diversion Codes and Water
Licencee Names
- Appendix 3: Interior Watershed Assessment Procedure: Results for Sub-Basins in
W1832 for which Development is Proposed

- Appendix 4: Detailed Drainage Plan and Terrain Stability Assessment: Proposed Silica Mine Forest Road
- Appendix 5: Excerpts from the Forest Practices Code Riparian Management Area Guidebook
- Appendix 6: Archeological Overview Assessment and Archeological Impact Assessment

Woodlot Licence W1832

Forest Development Plan #1

Term: January 1, 2000 to December 31, 2004

1 Introduction

This is the first Forest Development Plan for Woodlot Licence W1832, which is located just east of the unincorporated settlement of Winlaw, B.C.

This term of this Forest Development Plan is from January 1, 2000 to December 31, 2004.

W1832 is a Woodlot Licence over crown forest land issued and administered per Division 8 of the B.C. Forest Act, and the Woodlot License Forest Management Regulation (WLFMR). The Woodlot Licence is held by a partnership formed between:

- Bernie Clover
- Tom Bradley
- Breakaway Enterprises Ltd.

Breakaway Enterprises Ltd. is a B.C. registered Limited Company which owns 21 hectares of private land on lower Perry's Ridge which is part of W1832. George Perrier is a shareholder of Breakaway Enterprises and takes an active role in management of the woodlot.

This Forest Development Plan is based on field work carried out in the 2000 and 2001 field seasons. The plan outlines the location and type of proposed timber cutting, road development, and resource management activities in W1832.

This Forest Development Plan addresses portions of W1832 within the Woodward Face, Lower Main Winlaw, North Fork and Dumont Creek watersheds. Resource management issues in the remainder of the Woodlot, which is not accessible except on foot at this time, are not explicitly addressed in this FDP.

This Forest Development Plan will be subject to a formal public review process.

The Woodlot Licence Forest Management Regulation instructs the Licencee to present detailed information regarding stand composition, stand ecology, cutting prescriptions, and logging methods either entirely in the development plan or entirely in the site plan (the next level of operational planning). We have chosen to present the detailed information in the site plans, so this development plan contains general information only.

Unless otherwise noted, terms used in this Forest Development Plan are as defined by the definitions sections in WLFMR.

1.1 Summary of Proposed Development Activity

This Forest Development Plan proposes the following activities:

- Upgrading of 3.7 km of the existing Silica Mine Road and an existing short spur thereto from the point where Silica Mine Road leaves Woodward Road to the end of

the short spur. The upgraded road and spur will be a permanent access road to W1832. The road will be upgraded to a standard which permits safe travel of standard highway weight logging truck traffic, and which manages water flow and maintains natural drainage patterns to minimize risk to water. Road clearing width, running surface width, ditch width, and turnouts will be kept to the minimum which meets these objectives.

- Upgrading of 72 meters of spur road running from the Silica Mine Road along the east edge of Block 1 to access a landing location. This road will be a permanent block access road used over multiple harvest entries.
- Construction of 330 meters of new road to access Block 2, from the end of the existing road. This new road will be part of the permanent access road to W1832.
- Two intermediate cut or partial cut blocks in Douglas-fir and mixed species forest types near the 3 km point on Silica Mine Road. One cut block of 18.3 hectares and one block of 9.2 hectares are proposed.

Most of the above activities are proposed within the Winlaw Creek Watershed and Woodward Face watershed. An area of 3.1 hectares of the proposed cutting and 32 meters of the proposed road upgrading are in the Dumont Creek watershed.

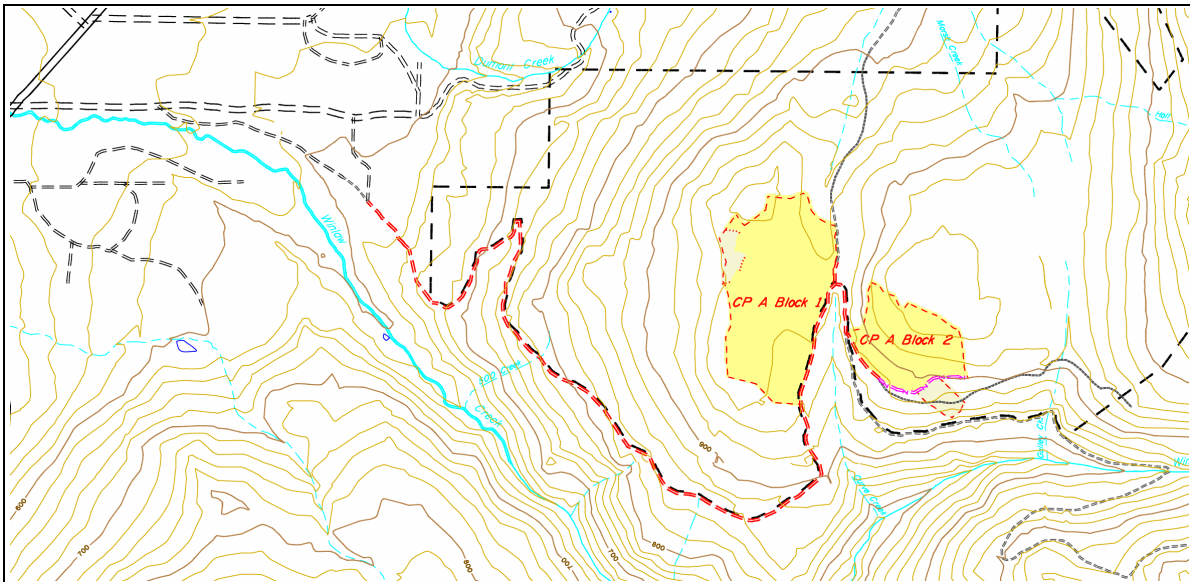


Figure 1: Planimetric view of proposed development activity in W1832.

Proposed road upgrade shown in red, proposed new road construction in magenta.

Proposed cut blocks shown in yellow, wildlife tree patches light green.

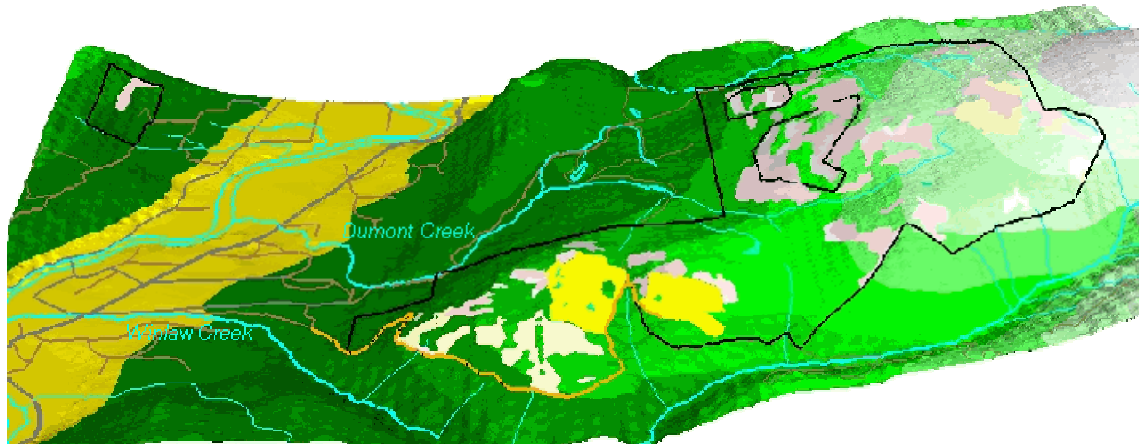


Figure 2: Perspective view of proposed developments in W1832.

Proposed cut blocks and wildlife tree patches are shown in bright yellow. Silica Mine road is shown in orange.

W1832 boundary is black. Light yellow polygons are open meadows and deer range, red-brown polygons are ecologically sensitive areas.

1.2 Description of W1832

W1832 is composed of two separate parcels of land near Winlaw, B.C.

- The crown land portion of the woodlot is a 598 ha area just east and uphill of the unincorporated settlement of Winlaw. The crown land portion is located on the height of land at the junction of the Trozzo Creek, Dumont Creek, and Winlaw Creek watersheds. Access to this area is provided by the Silica Mine Road. Note that there are two large exclusions from W1832 in the Dumont Creek watershed area. These areas were removed from the Woodlot because they contain significant areas of ecologically sensitive terrain with dry, shallow soils and steep slopes.
- The private land portion of the woodlot is a 21 ha parcel on lower Perry's Ridge, in the middle portion of the Dunn Creek watershed.

The management objective for Woodlot Licence W1832 is to manage the timber resources of the woodlot on a sustained yield basis following the principles of ecosystem management, while simultaneously maintaining or enhancing the non-timber uses, functions and products of the forest ecosystems of the woodlot.

Our long term goals are the development of diverse forest stands of mixed species and mixed ages, the maintenance of biodiversity, and the management of ecologically important forest structures¹.

Watershed management issues are the key non-timber component of forest and land use in W1832. The crown portion of W1832 occupies much of the remaining forested area in the

¹ Large standing green trees, large standing snags, and large fallen logs. Standing snags and fallen logs are often referred to as coarse woody debris.

Dumont Creek watershed, which is the source of domestic and agricultural water for many water licensees. The crown portion also occupies parts of the Trozzo Creek and Winlaw Creek watersheds, much larger hydrologic systems which are also domestic water sources, and a small portion of the Woodward Face watershed between Winlaw and Dumont Creeks. The private land portion of W1832 is on the lower slopes of Perry's Ridge, in the Dunn Creek watershed, a small creek which is also a domestic water source. Our watershed management objective is to have no detrimental impact on the quantity, quality and/or timing of flow of water supplies.

The crown land portion of W1832 is an area of stepped terrain, composed of a repeated series of flat benches, moist areas, short cliffs, and dry, rocky ridges. The varied terrain results in varying soil depth, site moisture, and vegetation communities across the woodlot. A total of 31% of the crown land portion of W1832 has been classed as ecologically sensitive or as ungulate winter range in the Management Plan.

Forests in the crown land portion regenerated following a hot, stand replacement forest fire in 1912, and are dominated by relatively even aged stands of Douglas-fir, larch and lodgepole pine. Moist sites also have a cedar and hemlock understory. Little logging activity has taken place on the crown land portion of W1832 to date. Human disturbance following the fire seems limited to mining exploration activity and possibly some cedar salvage.

The private land portion of W1832 is located on uniform, moderately steep slopes on the lower portion of Perry's Ridge. This area is mantled with a deep layer of coarse colluvial soil. Water holding capacity of this soil type is limited, but the soil is extremely stable and provides an excellent, deep rooted growing medium. The fire disturbance history of the private land portion is similar to that of the crown land portion. However, the private land portion has been extensively logged in the last 20 years, and may have been partially cut prior to that. Current forest stands are composed of 5 to 10 year old regeneration with a variable density 80 year old Douglas-fir overstory.

1.3 Referral Summary

Activity	Date	Location (and media with respect to Public Review)	Comments Received	
			Y/N	Date
Submission of FDP				
MoF Arrow Forest District	April 30, 2002	Submission of FDP to Arrow Forest District Office	Y	May 30, 2002
Ministry of Water, Land and Air Protection		Submission of FDP to Arrow Forest District Office	N	
Ministry of Sustainable Resource Management	April 30, 2002	Submission of FDP to Arrow Forest District Office	N	
Other Tenure Referral Letters				
Trapline	April 26, 2002	TR0417T001 Referral letter.	N	
First Nations (See Section 7.3)	April 26, 2002	Referral Letters	N	
Water Licensees (See Section 7.4)	April 26, 2002	Referral Letters	N	
Public Review				
Advertising	May 2, 2002	Valley Voice newspaper, Slocan Valley	Y	June 2002
Public Viewing Forum	May 7, 2002	Spicer Center, Winlaw B.C.		
Internet Posting of FDP and planning documents	May 6, 2002	http://www.winlawwoodlot.ca	Y	May 8, 2002
Others:				
Winlaw Watershed Committee		Provided with Copies of Forest Development Plan April 30, 2002 Met with WWC May 8, 2002	Y	June 5, 2002
Marilyn James	April 26, 2002	Referral Letter	N	
Comments Deadline	(30 days from the date of the newspaper advertisement)			June 5, 2002
Submission for approval				July 15, 2002
<i>Anticipated Approval Date</i>				

Table 1: Referral Summary Table.

The referrals process is discussed in more detail in Section 7.