

Table of Contents

Executive Summary 1

1 Introduction and Purpose of the Plan.....4

1.1 Introduction4

1.2 Ecosystem Management and Adaptive Management Philosophy5

1.3 Company Philosophy and Goals6

1.4 The Forest Management Agreement8

1.5 History of Management Plans13

1.6 Embedded Timber Operators15

1.7 Community / Local Timber Program (CTP/LTP)17

1.8 Blue Ridge Lumber Assignments17

1.9 Loss of Annual Allowable Cut to BRL19

1.10 Blue Ridge Lumber Timber Supply21

2 Plan Development23

2.1 Reference and Guiding Documents23

2.2 Integrated Resource Management Plans25

2.3 Forest Management Planning Manual25

2.4 Terms of Reference26

2.5 Public Involvement Process26

2.6 Issue Identification and Resolution29

2.7 The 20-Year Status Report31

2.8 Landscape Issues32

3 Landscape Assessments34

3.1 Economic and Social Impact Analysis - KPMG Report34

3.2 Cultural Heritage Resource Study35

3.3 Fire History Study35

3.4 Forest Health Strategies36

3.5 Sustainable Forest Management-Fish and Wildlife Strategies37

3.6 Habitat Suitability Index Model for Moose38

3.7 Vegetation Landscape Assessment39

3.8 Landscape and Stand Level Strategies for Retaining Representative Ecosystems39

3.9 Soil Modeling Project39

3.10 Ecological Land Classification and Wildlife Project43

3.11 Natural Subregions46

3.12 Coarse Woody Debris Assessment48

3.13 Fisheries Inventory Swan Hills Whitecourt51

3.14 Environment Canada Climate Data51

3.15 Landscape Assessment Summary Matrix54

4 Processing Facilities57

4.1 Economic and Social (Community) Stability57

4.1.1 Blue Ridge Lumber Inc. History57

4.1.2 West Fraser Timber History58

4.1.3 Employment and Communities60

4.1.4 Maintaining Economic and Social Values63

4.2 Processing Facilities64

4.2.1 Sawmill64

4.2.2 Planermill64

4.2.3	Medium Density Fiberboard – Value Added	65
4.2.4	Lumber Recovery and Log Input	68
4.2.5	Chips and Other By-Products	70
4.2.6	Capital Investments	72
4.2.7	Major Pollution and Waste Control Initiatives	75
5	Resource Management	77
5.1	Harvest Planning and Operations	77
5.1.1	BRL Woodlands Operating Manuals	77
5.1.2	Operating Districts and Units	77
5.1.3	Merchantability and Utilization Standards	79
5.1.4	Pre-Harvest Stand Assessment	81
5.1.5	Harvesting Methods	81
5.1.6	Hauling	82
5.1.7	Cut Control and Timber Operating Year	82
5.1.8	Scaling	83
5.1.9	Stumpage (Crown Dues)	83
5.1.10	Annual Cutover Photography	83
5.2	Silviculture Planning and Operations	85
5.2.1	General Overview	85
5.2.2	Strategies for Successful Reforestation	86
5.2.3	Cone and Seed Collection	91
5.2.4	Seedling Supply	94
5.2.5	Planting	94
5.2.6	Seeding	96
5.2.7	Site Preparation	96
5.2.8	Vegetation Management	97
5.2.9	Spacing and Cleaning	109
5.2.10	Regeneration Standards and Monitoring	111
5.2.11	Silviculture Records Management	114
5.2.12	Silviculture Records Management	114
5.2.13	Genetic Tree Improvement	115
5.2.14	Forest Resource Improvement Program	116
5.2.15	The BRL Growth and Yield Program	117
5.2.16	Enhanced Forest Management Opportunities	118
5.3	Roads, Watercourse Crossings and Access Management	121
5.3.1	The BRL Road System	121
5.3.2	Road Planning	123
5.3.3	Road Safety	123
5.3.4	Construction, Maintenance & Reclamation - Roads & Watercourse Crossings	124
5.3.5	Access Management	126
5.4	Cultural and Heritage Resource Values	130
5.4.1	Protecting Community/Heritage Values	130
5.5	Rare and Endangered Plants	134
5.6	Insects and Disease and Weeds	143
5.6.1	General Overview	143
5.6.2	Northern East Slopes Integrated Pest Management Working Group	145
5.6.3	BRL Insect and Disease Training and Reporting Policy	145
5.6.4	Virginia Hills Fire & Expected Insect and Disease Problems	146
5.6.5	Managing Forest Health	147
5.6.6	Weed Control	148
5.7	Fire Protection	150
5.7.1	Blue Ridge Lumber Fire Control Program	150
5.7.2	Alberta Forest Fires 1998	151

5.7.3	History of Forest Fires on the FMA Area.....	155
5.7.4	General Description of FMA Landscape Fire Mosaic.....	158
5.7.5	Causes of Forest Fires.....	158
5.7.6	Season of Fires.....	159
5.7.7	Lightning Strike Density and General Locations.....	163
5.7.8	Spatial Distribution of Man Caused Fires.....	163
5.7.9	Proportion of Large Fires.....	164
5.7.10	Fire Implications for the BRL FMA Area.....	164
5.7.11	Fire Tower Visibility.....	165
5.7.12	Whitcourt Fire Management District Landscape Fire Assessment Project.....	166
5.7.13	Fire Prediction Models.....	168
5.8	Fish and Wildlife.....	176
5.8.1	General Overview.....	176
5.8.2	Endangered, Threatened and Vulnerable Species in Alberta.....	178
5.8.3	Fish Surveys.....	180
5.8.4	Fishing.....	180
5.8.5	Laura Lake Aeration Project.....	183
5.8.6	Northern Moose Management Program.....	185
5.8.7	Hunting.....	186
5.8.8	Grizzly Bear Conservation in the Alberta Yellowhead Ecosystem.....	188
5.8.9	Foothills Model Forest Grizzly Bear Research Project.....	189
5.8.10	Caribou.....	190
5.8.11	Trumpeter Swan Nesting Observations.....	192
5.9	Watershed Protection.....	194
5.9.1	Canadian Heritage River System.....	196
5.9.2	Northern River Basins Study.....	196
5.9.3	Sustainable Forest Management Centres of Excellence.....	197
5.9.4	FORWARD Research Project.....	198
5.9.5	Watershed Assessment of Freeman River.....	202
5.10	Grazing.....	203
5.11	Private Land.....	207
5.12	Purchase Wood from Private Landowners.....	210
5.13	Land Withdrawals.....	212
5.14	Alexander First Nations Land Claim.....	216
5.15	Protected Areas.....	218
5.16	Aesthetics.....	220
5.17	Recreation.....	222
5.17.1	General Overview.....	222
5.17.2	Campgrounds.....	223
5.17.3	Carson-Pegasus Provincial Park.....	224
5.17.4	Eric Huestis Demonstration Forest.....	225
5.17.5	Whitcourt Forestry Interpretive Centre.....	226
5.17.6	Snowmobiling.....	228
5.17.7	Cross Country Skiing.....	229
5.17.8	Klondike Trail.....	231
5.18	Trapping.....	234
5.19	Outfitters and Guides.....	236
5.20	Protection of Conifer Understorey.....	237
5.21	Strategy for Protection of Conifer Understorey.....	240
5.21.1	Introduction.....	240
5.21.2	Inventory and Classification.....	241
5.21.3	Operational Protection.....	241
5.21.4	Monitoring.....	242

5.22	Incidental Volume Replacement Strategy	243
5.22.1	Growth & Yield Information Review	243
5.22.2	Incidental Volume Replacement Sensitivity Analysis	245
5.22.3	Incidental Volume Replacement Strategy Development	246
5.23	Structure Retention Strategy.....	249
5.24	Integration of Operations.....	256
5.25	Industrial Salvage Strategy and Tracking Procedure	257
6	Reconciliation Volumes	258
6.1	BRL 20-Year Reconciliation of Unused Green Timber Volume (Audited)	258
6.2	Mostowich Lumber Reconciliation of Unused Green Timber Volume	259
6.3	Millar Western Forest Products Reconciliation of Deciduous Timber Volume.....	259
7	Implementation of the DFMP	260
7.1	Timber Harvest Planning and Operating Guidelines.....	260
7.2	Annual Operating Plans	262
7.2.1	General Development Plan	262
7.2.2	Annual Harvesting Plan	262
7.2.3	Annual Silviculture Plan	263
7.3	Fire Control Agreement	263
7.4	Fire Protection Plan.....	264
7.5	Woodlands Organization.....	264
7.6	Geographic Information System	265
8	Compliance of Acts and Regulations.....	267
8.1	Natural ReSource (MediaLogic Inc.).....	268
9	Forest Certification.....	269
9.1	FORESTCARE.....	270
9.2	ISO 14001 – Environmental Management System (EMS)	271
9.3	Sustainable Forestry Initiative.....	272
9.4	Partners in Injury Reduction Program.....	273
10	Research and Innovation	274
11	Education, Training and Cooperation with Other Agencies.....	279
12	Developing Values, Objectives Indicators and Targets (VOITS)	281
12.1	Introduction	281
13	Looking Ahead to the Next DFMP	288
13.1	Challenges and Opportunities.....	288
13.2	Next Detailed Forest Management Plan	289

List of Tables

Table 1: Approved Allocations 15/10 Utilization	2
Table 2: Blue Ridge Lumber FMA Historical Allocations and Annual Allowable Cuts	15
Table 3: Blue Ridge Lumber Inc. Loss of Conifer AAC.....	20
Table 4: Blue Ridge Lumber Inc. Timber Supply	21
Table 5: Issue Identification and Resolution	30
Table 6: Landscape Assessment Matrix	55
Table 7: Manufacturing Capacities and Direct Employment in the Whitecourt Area March 2004	61
Table 8: Blue Ridge Lumber Wood Chip Production	71
Table 9: Blue Ridge Lumber By-Product Production (ODT) from 1999 to 2005.....	71
Table 10: Major Capital Projects Blue Ridge Lumber & Ranger Board.....	73
Table 11: Silviculture Strategy (General Prescriptions by Cover Type).....	90
Table 12: Provincial Vegetation Management Use by Year	99
Table 13: Actual Number of Growth & Yield Plots Established	117
Table 14: Blue Ridge Lumber Roads with Gate Control.....	127
Table 15: Alberta Natural Heritage Information Centre Ranking System for Rare Plants.....	137
Table 16: Summary of Rare Plant Findings by Source	137
Table 17: Rare Vascular Plants in the Blue Ridge Lumber FMA Area.....	138
Table 18: Summary of 1998 Fires Affecting Blue Ridge Lumber and Slave Lake Pulp	152
Table 19: Fire History 1995 to 2005	157
Table 20: Causes of Forest Fires for former W2, W3 and W4 FMU's from 1961 to 1998	159
Table 21: Monthly Occurrence of Class E Fires Caused by Lightning 1961 to 1998	160
Table 22: Annual Number of Fires Associated with Human Travel Corridors and Recreational use Over a 34- Year Period from 1961 to 1995.....	163
Table 23: Total Number of Class E Fires 1961 to 1998	164
Table 24: Fire Towers Within and Adjacent to the FMA Area.....	165
Table 25: Fire Tower Blind Areas.....	166
Table 26: List of Fuel Types that are Common to the Blue Ridge Lumber FMA Area	169
Table 27: Species at Risk in the Southwest Region, Woodlands Area.....	179
Table 28: Lakes Stocked with Fish Within and Adjacent to the BRL FMA Area	181
Table 29: Estimated Harvested Animals & Hunter Success by Wildlife Management Unit in 1995.....	187
Table 30: Trumpeter Swan Nesting Site Observations 1981 to 2000.....	193
Table 31: Grazing Licenses and Leases within the BRL FMA Area	203
Table 32: Private Land within the BRL FMA Area	208
Table 33: Total Wood Purchase Deliveries (m ³) (May 1, 1995 to April 30, 2005).....	211
Table 34: Land Withdrawals BRL FMA Area 1995 to 2004	214
Table 35: Developed Recreation Areas within the FMA Area.....	223
Table 36: Incidental Volume Replacement Sensitivity Analysis Results.....	245
Table 37: Summary of the Conifer Incidental Volume Harvested from the Pure Deciduous Strata in the First 20 Years of the 2005 SHS.....	246
Table 38: Estimated Incidental Conifer Volume Replacement for 20 YR 2005 SHS (pure D Yield Strata = 22,242 ha)	247
Table 39: Incidental Volume Replacement Monitoring Activities.....	248
Table 40: Research Projects from 1995 to 2004.....	275
Table 41: 2004 Research Program.....	278
Table 42: Annex 4 Performance Standards: Values, Objectives, Indicators and Targets (VOIT)	282

List of Graphs

Graph 1: Blue Ridge Lumber Inc. & Ranger Board Direct Employees from 1982 to 2005.....62
 Graph 2: Ranger Board Production (MMsf).....65
 Graph 3: Ranger Board Raw Material Sources66
 Graph 4: Ranger Board End Use Markets67
 Graph 5: Blue Ridge Inc. Log Volume Input and Lumber Recover Factor from 1975 to 2005.....69
 Graph 6: Blue Ridge Lumber Inc. Production of Lumber (Mfbm) & Chips (ODT) from 1975 to 2005 and Ranger Board MDF (Msf) Production from 1986 to 2005.....70
 Graph 7: Blue Ridge Lumber Inc. & Ranger Board Capital Expenditures (\$millions) from 1995 to 200574
 Graph 8: Average Establishment Survey % by Harvest Year88
 Graph 9: Total Cone Collection from 1975 to 2003.....92
 Graph 10: Total Seedlings Planted 1975 to 200495
 Graph 11: Total Herbicide Treatment – 1975 to 2004100
 Graph 12: Total Manual Space & Clean – 1975 to 2004111
 Graph 13: Total Silviculture Ground Surveys – 1975 to 2004.....113
 Graph 14: Forest Volume Loss in Alberta, 1988 to 1992.....144
 Graph 15: Total Fire Loss in Hectares on BRL FMA Area 1931 to 1998 (W3, W4 FMU’s).....156
 Graph 16: The Monthly Occurrence of Number of Fires, Lightning Caused Fires and Fires >200 Hectares Caused by Lightning – BRL FMA Area.....161
 Graph 17: Land Withdrawals within Blue Ridge Lumber Inc. FMA Area213
 Graph 18: Pure Conifer and Pure Deciduous Yield Curves used in the Blue Ridge Lumber Preferred Forest Management Strategy (PFMS).....244

List of Maps

Map 1: Provincial Map Outlining the FMA Area	10
Map 2: Blue Ridge Lumber Inc. FMA Area (W14 FMU) and the Volume Supply Areas	11
Map 3: Digital Elevation Model (DEM)	12
Map 4: Historical Provincial Forest Management Units (FMU's)	16
Map 5: FMA Area and Coniferous Timber Quota Areas	22
Map 6: Soil Mapping Data Sources.....	41
Map 7: Surficial Geology	42
Map 8: Provincial Natural Subregions	47
Map 9: Coarse Woody Debris Model.....	50
Map 10: Operating Districts and Units.....	78
Map 11: Seed Zones of Alberta July 2005	93
Map 12: FMA Road Access	122
Map 13: Gate Control for Access Management	129
Map 14: Cultural Heritage Features	133
Map 15: Distribution of Endangered Plant Species (GDC and ASRD Plots)	141
Map 16: Distribution of Endangered Plant Species (ANHIC Plots)	142
Map 17: Virginia Hills Fire Boundary and Fire Salvage Cutblocks.....	154
Map 18: Class E Forest Fires (1931 – 2001) on the BRL FMA Area	162
Map 19: Fire Behavior Potential (Spring)	171
Map 20: Fire Occurrence Risk (Summer)	172
Map 21: Wildfire Threat (Spring)	173
Map 22: Values at Risk	174
Map 23: Suppression Capability.....	175
Map 24: Wildlife Referral Map for Land Use Activities in Areas 3 and 4 of the Southwest Region (June 8, 2004)	177
Map 25: Timing Constraints for Stream Crossings	182
Map 26: Primary Watersheds	195
Map 27: FORWARD Study Area.....	201
Map 28: Grazing Dispositions.....	206
Map 29: Private Land	209
Map 30: Land Use	215
Map 31: Alexander First Nations Land Claim	217
Map 32: Protected Areas	219
Map 33: Visual Assessment	221
Map 34: Recreation Areas	227
Map 35: Snowmobiling, Cross Country Skiing and Horse Riding Trails	230
Map 36: Klondike Trail.....	233
Map 37: Registered Traplines.....	235

List of Appendices

Appendix 1	Technical Issues Checklist
Appendix 2	Forest Management Agreement
Appendix 3	Company Philosophy
Appendix 4	Climate Data for 14 Fire Towers and the Whitecourt Airport
Appendix 5	List of Forest Resource Improvement Programs
Appendix 6	Reporting Policy for Rare and Unique Discoveries and Scarce Resources
Appendix 7	Heritage Compliance Plan for West Fraser Mills Ltd. Alberta Forestry Operations
Appendix 8	Reporting Policy for Insect and Disease Infestations
Appendix 9	Wildlife Guidelines for Land Use Activities in Areas 3 and 4 of the Southwest Region (September 15, 2005)
Appendix 10	Habitat Matrix for Mammals
Appendix 11	Woodlands Organization Chart

Acronyms

The following acronyms may be found in this Detailed Forest Management Plan.

AAC	Annual Allowable Cut
AAFMI	Alberta Advanced Forest Management Institute
ACA	Alberta Conservation Association
AF&PA	American Forest and Paper Association
AFPA	Alberta Forest Products Association
ALP	Alberta Plywood Limited
ANC	ANC Timber Ltd.
AOP	Annual Operating Plan
AVI	Alberta Vegetation Inventory
BCTMP	Bleached Chemical-Thermal-Mechanical Pulp
BRL	Blue Ridge Lumber Inc.
CFS	Canadian Forest Service
CHRS	Canadian Heritage Rivers System
CSA	Canadian Standards Association
CAPF	College of Alberta Professional Foresters
CLMA	Caribou Landscape Management Association
CTQ	Coniferous Timber Quota
CTP	Commercial Timber Permit
CTP	Community Timber Program
DFMP	Detailed Forest Management Plan
DTA	Deciduous Timber Allocation
DWD	Downed Woody Debris
EFM	Enhanced Forest Management
ELC	Ecological Land Classification
EMS	Environmental Management System of ISO 14001
FBM	Foot Board Measure
FORWARD	Forest Watershed and Riparian Disturbance Research Project
FMA	Forest Management Agreement
FMF	Foothills Model Forest

FMU	Forest Management Unit
FRIAA	Forest Resource Improvement Association of Alberta
FRIP	Forest Resource Improvement Program
F & W	Alberta Fish and Wildlife Division
GDP	General Development Plan
GIS	Geographic Information System
GPS	Global Positioning System
G & O	Goals and Objectives
G & Y	Growth and Yield
HWP	Hinton Wood Products
I & D	Insects and Disease
ISO	International Standards Organization
IRP	Integrated Resource Plan
LRF	Lumber Recovery Factor
MDF	Medium Density Fibreboard
MOST	Mostowich Lumber Ltd.
MTU	Miscellaneous Timber Use
MWFP	Millar Western Forest Products Ltd.
NCE	University of Alberta, Network Centre of Excellence
NSERC	Natural Sciences and Engineering Research Council of Canada
NIVMA	Northern Interior Vegetation Management Association
NRBS	Northern River Basins Study
NRV	Natural Range of Variability
ODT	Oven Dry Tonnes
OSB	Oriented Strand Board
PIR	Partner Injury Reduction
PHA	Pre-Harvest Assessment
PLFD	Public Lands and Forests Division
PNT	Protective Notation
PSP	Permanent Sample Plot
SF	Square Feet
SFI	Sustainable Forestry Initiative
SFM	Sustainable Forest Management

SLPC	Slave Lake Pulp Corporation
SRD	Alberta Sustainable Resource Development
SFP	Sundre Forest Products Inc.
SWR	South West Region
RET	Rare, Endangered or Threatened
RFAC	Whitecourt Regional Forest Advisory Committee
TDA	Timber Damage Assessment
TROLS	Terrestrial Riparian Organisms Lakes and Streams
TSP	Temporary Sample Plot
U of A	University of Alberta
VSA	Volume Supply Area
VOIT	Value, Objective, Indicator, Target
WA	Woodlands Area
WAG	Western Aquatic Group
Weyer	Weyerhaeuser Company Limited
WFM	West Fraser Mills