

## Table of Contents

<b>1</b>	<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
1.1	B.C. INTERIOR FIBRE AVAILABILITY & OUTLOOK .....	1
1.2	B.C. MPB SAWMILL ECONOMICS .....	2
1.3	B.C. PRODUCTION OUTLOOK TO 2028 .....	4
1.4	NORTH AMERICAN LUMBER OUTLOOK TO 2028.....	8
<b>2</b>	<b>INTRODUCTION &amp; OVERVIEW.....</b>	<b>11</b>
2.1	INTRODUCTION .....	11
2.2	OVERVIEW OF THE MOUNTAIN PINE BEETLE EPIDEMIC.....	12
2.2.1	<i>Impacts on Timber Supply</i> .....	13
2.2.2	<i>Impacts on Log Quality</i> .....	14
<b>3</b>	<b>B.C. INTERIOR FIBRE AVAILABILITY &amp; OUTLOOK.....</b>	<b>15</b>
3.1	THE BC FIBRE MODEL.....	15
3.2	KEY ASSUMPTIONS .....	17
3.2.1	<i>Key Economic Indicator Forecast</i> .....	17
3.2.2	<i>Mill Data and Benchmarks</i> .....	18
3.2.3	<i>Mill Operating Rates</i> .....	18
3.2.4	<i>Annual Allowable Cut (AAC) Forecast by Forest Management Unit</i> .....	21
3.2.5	<i>MPB Harvest Partition</i> .....	22
3.2.6	<i>MPB Shelf Life</i> .....	23
3.2.7	<i>MPB Stand Merchantability</i> .....	23
3.2.8	<i>Other Assumptions</i> .....	24
3.3	IMPACTS ON SAWLOG AVAILABILITY .....	26
3.3.1	<i>Reaction to Falling Sawlog Supply</i> .....	26
3.3.2	<i>Reaction to Falling Residual Fibre Supply</i> .....	26
3.3.3	<i>Forecast Sensitivity</i> .....	27
<b>4</b>	<b>B.C. MPB SAWMILL ECONOMICS .....</b>	<b>29</b>
4.1	INTRODUCTION .....	29
4.2	BASE CASE .....	30
4.2.1	<i>Impact of MPB-killed Timber on Key Sawmill Operating Variables</i> .....	30
4.2.1.1	<i>Lumber Recovery (LRF)</i> .....	31
4.2.1.2	<i>Lumber Grade Recovery</i> .....	32
4.2.1.3	<i>Production Costs</i> .....	35
4.2.1.4	<i>Logging &amp; Stumpage Costs</i> .....	35
4.3	CATEGORIES OF PINE SAWLOGS .....	36
4.4	LUMBER PRICES USED FOR VARIOUS LUMBER GRADES .....	37
4.5	SAWMILL PROFORMA MODELS.....	37
4.5.1	<i>Proforma Tables</i> .....	38
4.5.2	<i>Proforma Results</i> .....	38
4.5.3	<i>Cost Variances by Pine Sawlog Category</i> .....	41
4.5.4	<i>Continuous Improvement in Sawmill Technology</i> .....	42
4.6	ECONOMIC OPPORTUNITIES BEYOND SAWLOGS .....	43
4.6.1	<i>Sawmill Residual Wood Products</i> .....	45
4.6.2	<i>Future biomass resources</i> .....	45
<b>5</b>	<b>B.C. PRODUCTION OUTLOOK TO 2028 .....</b>	<b>46</b>
5.1	EAST PRINCE RUPERT REGION.....	49
5.1.1	<i>Annual Allowable Cut Forecast</i> .....	50
5.1.2	<i>Sawlog Availability</i> .....	51

5.1.3	<i>Residual Wood Chip Availability</i> .....	52
5.1.4	<i>Sawdust and Shavings Availability</i> .....	52
5.1.5	<i>Hog Fuel Availability</i> .....	53
5.1.6	<i>Biomass Situation and Outlook</i> .....	54
5.2	PRINCE GEORGE REGION.....	55
5.2.1	<i>Annual Allowable Cut Forecast</i> .....	56
5.2.2	<i>Sawlog Availability</i> .....	57
5.2.3	<i>Residual Wood Chip Availability</i> .....	58
5.2.4	<i>Sawdust and Shavings Availability</i> .....	59
5.2.5	<i>Hog Fuel Availability</i> .....	60
5.2.6	<i>Biomass Situation and Outlook</i> .....	61
5.3	MACKENZIE REGION.....	62
5.3.1	<i>Annual Allowable Cut Forecast</i> .....	63
5.3.2	<i>Sawlog Availability</i> .....	64
5.3.3	<i>Residual Wood Chip Availability</i> .....	65
5.3.4	<i>Sawdust and Shavings Availability</i> .....	66
5.3.5	<i>Hog Fuel Availability</i> .....	67
5.3.6	<i>Biomass Situation and Outlook</i> .....	68
5.4	PEACE REGION.....	69
5.4.1	<i>Annual Allowable Cut Forecast</i> .....	70
5.4.2	<i>Sawlog Availability</i> .....	71
5.4.3	<i>Residual Wood Chip Availability</i> .....	72
5.4.4	<i>Sawdust and Shavings Availability</i> .....	73
5.4.5	<i>Hog Fuel Availability</i> .....	74
5.4.6	<i>Biomass Situation and Outlook</i> .....	75
5.5	CARIBOO REGION.....	76
5.5.1	<i>Annual Allowable Cut Forecast</i> .....	77
5.5.2	<i>Sawlog Availability</i> .....	78
5.5.3	<i>Residual Wood Chip Availability</i> .....	79
5.5.4	<i>Sawdust and Shavings Availability</i> .....	80
5.5.5	<i>Hog Fuel Availability</i> .....	81
5.5.6	<i>Biomass Situation and Outlook</i> .....	82
5.6	KAMLOOPS OKANAGAN REGION.....	83
5.6.1	<i>Annual Allowable Cut Forecast</i> .....	84
5.6.2	<i>Sawlog Availability</i> .....	85
5.6.3	<i>Residual Wood Chip Availability</i> .....	86
5.6.4	<i>Sawdust and Shavings Availability</i> .....	87
5.6.5	<i>Hog Fuel Availability</i> .....	88
5.6.6	<i>Biomass Situation and Outlook</i> .....	89
5.7	EAST KOOTENAY REGION.....	90
5.7.1	<i>Annual Allowable Cut Forecast</i> .....	91
5.7.2	<i>Sawlog Availability</i> .....	92
5.7.3	<i>Residual Wood Chip Availability</i> .....	93
5.7.4	<i>Sawdust and Shavings Availability</i> .....	94
5.7.5	<i>Hog Fuel Availability</i> .....	94
5.7.6	<i>Biomass Situation and Outlook</i> .....	95
5.8	WEST KOOTENAY REGION.....	96
5.8.1	<i>Annual Allowable Cut Forecast</i> .....	97
5.8.2	<i>Sawlog Availability</i> .....	98
5.8.3	<i>Residual Wood Chip Availability</i> .....	99
5.8.4	<i>Sawdust and Shavings Availability</i> .....	100
5.8.5	<i>Hog Fuel Availability</i> .....	101
5.8.6	<i>Biomass Situation and Outlook</i> .....	102
5.9	B.C. INTERIOR SUMMARY.....	103
5.9.1	<i>Annual Allowable Cut Forecast</i> .....	104
5.9.2	<i>Sawlog Availability</i> .....	106
5.9.3	<i>Lumber Production</i> .....	107

5.9.4	<i>Plywood Production</i> .....	108
5.9.5	<i>Residual Wood Chip Availability</i> .....	109
5.9.6	<i>Sawdust and Shavings Availability</i> .....	110
5.9.7	<i>Hog Fuel Availability</i> .....	111
5.9.8	<i>Biomass Situation and Outlook</i> .....	112
<b>6</b>	<b>NORTH AMERICAN LUMBER OUTLOOK TO 2028</b> .....	<b>114</b>
6.1	LUMBER OUTLOOK ASSUMPTIONS .....	115
6.2	NORTH AMERICAN LUMBER CONSUMPTION TO 2028 .....	117
6.2.1	<i>North American Housing Starts</i> .....	117
6.2.2	<i>North America Lumber Consumption</i> .....	119
6.3	B.C. LUMBER PRODUCTION TO 2028 .....	120
6.4	WESTERN CANADA LUMBER PRODUCTION TO 2028.....	122
6.5	EASTERN CANADA LUMBER PRODUCTION TO 2028.....	123
6.6	CANADA LUMBER PRODUCTION TO 2028 .....	124
6.7	U.S. LUMBER PRODUCTION TO 2028 .....	125
6.8	NORTH AMERICAN LUMBER PRODUCTION & IMPORTS TO 2028.....	127
6.9	MPB ATTACK REGIONS OUTSIDE OF BC.....	129
<b>7</b>	<b>APPENDICES</b> .....	<b>132</b>
	<b>APPENDIX 1: B.C. MOUNTAIN PINE BEETLE INFESTATION MAPS</b> .....	<b>132</b>
	<b>APPENDIX 2: SAWMILL TRIALS USING MPB LOGS</b> .....	<b>143</b>
	<b>APPENDIX 3: B.C. MPB TIMBER INFESTATION &amp; TRENDS</b> .....	<b>147</b>
	<b>APPENDIX 4: B.C. INTERIOR LOG GRADES</b> .....	<b>148</b>
	<b>APPENDIX 5: SAWMILL TECHNOLOGY WITH MPB LOGS</b> .....	<b>151</b>
	<b>REFERENCES</b> .....	<b>152</b>
<b>8</b>	<b>GLOSSARY AND ACRONYMS</b> .....	<b>153</b>
<b>9</b>	<b>PROFILES OF THE AUTHORS</b> .....	<b>154</b>