

Sustainable Forest Management

Annual Review of Performance to
Indicators and Targets
2006-2007 reporting period
Part 2/2

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April 1, 2008

Outline

- 32 Commitments which the companies are measured against, plus others.
 - Approved DFMP
 - Sustainable Forest Management Plan
- In this presentation 15 (and other items) commitments will be covered.
- 17 Commitments were reviewed at the February PAC meeting.

Outline (cont'd)

- Review will consist of:
 - Commitment #
 - Objective, Indicator and Target
 - Discussion, chart, table
 - Plan for go forward if target was not achieved



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#1: Adherence to Spatial Harvest Sequence

- "Adherence to SHS is important in ensuring that landscape-level objectives such as the availability of habitat for wildlife species as well as those associated with water quality and yield are maintained."
- See handout provided.
- Total SHS Variance (Deletions & Deferrals) remains below the 20% threshold across the FMA, at 11%



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#2: Cover Types

- **Objective:** Manage the DFA to emulate natural disturbance patterns.
- **Indicator:** Proportion of Cover types (C,CD,DC,D)
- **Target:** Area harvested will return to pre-harvest declaration (+/-5%).
- 5 year roll up indicator and target
- End of 2007, companies developing process to effectively track declarations, and action plan to correct any swings in %
- Summary will be available in 2008.



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#4: Age Class Distribution

- **Objective:** Provide an age class distribution that maintains older age classes.
- **Indicator:** Percentage (%) of the forested landbase represented in older age classes.
- **Target:** The target indicates that >10% of the forested landbase to be maintained in older age classes. In addition, the Companies will determine the Natural Range of Variability (NRV) before the next Detailed Forest Management Plan (DFMP).



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Age Class Distribution

2006/2007 AGE CLASS COVER TYPE SUMMARY - NET LANDBASE						
AGE CLASS	0-20	21-40	41-80	81-120	121+	TOTAL
Pure Conifer (Sw Leading)	74727	27318	40897	134403	137758	415103
Pure Conifer (P Leading)	1617	40399	19570	7952	2291	71829
Pure Conifer (Sb Leading)	7406	2709	43443	84610	57921	196089
Mixedwood	10157	12615	51678	83967	25082	183499
Deciduous	26223	33356	436688	366596	29703	892566
TOTAL	120130	116397	592276	677528	252755	1759086
% of Total Forested Area	6.8	6.6	33.7	38.5	14.4	



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Age Class Distribution

- (See pdf file)
- Age class bar graph
 - Gross Forested Landbase
 - Sb stands and other marginal included
 - Net Forested Landbase
 - Majority of Sb stands have been removed
 - Noticeable age class gap
 - Maintaining older age classes
- Natural Range of Variability project was completed by Bandalooop (D. Andison) in 2007
- Providing basis for natural range within the FMA
- Companies will utilize this information in determining VOIT for next DFMP



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#5: Habitat Availability

- **Objective:** To incorporate the needs of wildlife into operational planning to minimize the effects of operations on wildlife populations.
- **Indicator:** Habitat availability for representative and unique species.
- **Target:** 1) Complete an analysis on habitat availability for selected species on the DFA. 2) Involve the public in identifying additional species to be included in future analyses.
- Analysis for habitat availability completed with current DFMP
 - Adherence to SHS within acceptable thresholds meant operations meeting habitat availability requirements
 - Variance at 11% vs limit of 20%
 - New habitat availability analysis will be completed with new DFMP
- Reporting of Species at Risk responsibility of company staff and contractors (Op. Exp. Book)
 - Ads in local paper on Species at Risk – no response



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#6: Vertical and Horizontal Retention

- **Objective:** To incorporate the needs of wildlife into operational planning to minimize the effects of operations on wildlife populations.
- **Indicator:** Amount of vertical and horizontal diversity retained in cutblocks.
- **Target:** 1) A minimum of 1% of the merchantable coniferous and deciduous volume will be retained during harvest operations. 2) A minimum of 5% of the harvested area to be retained as residual material.

Company	% Patch Area Retained	% Conifer Volume Retained	% Deciduous Volume Retained
Tolko	3.02	0.82	4.05
FFP	3.92	4.55	0.99
LaCrete	7.32	2.00	11.56
Netaskanin	0.87	0.36	0.11
Precision	1.08	1.97	0.20
Total	3.48	1.26	1.82



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#7: Coarse Woody Debris

- **Objective:** To incorporate the needs of wildlife into operational planning to minimize the effects of operations on wildlife populations.
- **Indicator:** Amount of Coarse Woody Debris (CWD) retained in cutblocks following operations.
- **Target:** 5% (+/-2%) of the total number of debris piles across the landscape will be retained within harvest areas.



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Coarse Woody Debris

Block Size	# of Blocks	Total # of Piles	Average Piles Per Block	Min Target	Max Target
0 to 10	198	35	0.2	0	0
10 to 25	108	152	1.4	1	3
25 to 50	59	204	3.5	4	6
50 to 100	32	131	4.1	4	9
100 to 200	13	151	11.6	6	11
200 to 300	1	21	21.0	14	22
Total	411	694			



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Coarse Woody Debris

Company	Total # of CWD Piles
TOLKO	415
FFP	189
LCSM	86
Netaskinan	0
Precision	4
Total	694



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#10: Compliance with Seed Zones

- **Objective:** To ensure that cutblocks are reforested with genetically diverse seedlings.
- **Indicator:** Native seed used in operational reforestation will be best suited to the area being reforested.
- **Target:** Seed deployment will comply with ASRD guidelines for seed movement.
- 9 seedling requests made
- 9 approvals granted
- Full compliance with seed transfer guidelines



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#13: Volume from Budworm areas

- **Objective:** To minimize the impacts of insects and disease on the DFA.
- **Indicator:** Annual harvest (%) from areas identified as being infested by spruce budworm or other insects and disease.
- **Target:** A minimum of 15% of the coniferous volume harvested during the first 5-year period will come from areas infested by spruce budworm.

Company	Area Harvested	Area in SBW	% Area Harvested in SBW Area
Tolko	5092.4	4261.8	83.7
LCSM	633.6	0	0
PLP	179.3	0	0
All	5905.3	4261.8	72.2

Company	Volume Harvested	Volume in SBW	% Volume Harvested in SBW Area
Tolko	1112049	705232	63.4
LCSM	123372	0	0
PLP	37931	0	0
All	1273352	705232	55.4



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#14: Salvage from natural disturbance

- **Objective:** To minimize the effects of fire and other natural disturbances on forest health and productivity on the DFA.
- **Indicator:** Productive landbase that is harvested and reforested following natural disturbance.
- **Target:** >50% of the salvageable area will be harvested and reforested over a 5-year period.
- Unfortunately, no data from Alberta at this time
- Summary of 2007 fires will be provided in annual report
- Salvage activity to date will be provided as well



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#15: Road Disturbance

- **Objective:** To minimize the effects of timber harvesting and/or silvicultural operations on soil productivity.
- **Indicator:** Road Disturbance
- **Target:** Road disturbance (area) should not exceed 5% of the total area harvested over a 5-year period.



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Road Disturbance

Road Disturbance by Company							
Company	Block Area (ha)	In-block Road Area (ha)	In-block Road Area (%)	Seismic Area (ha)	Seismic Area (%)	Total Road Area (ha)	Total Road Area (%)
TOLKO	5092.38	102.51	2.0%	123.20	2.4%	225.71	4.4%
FFP	2724.31	53.82	2.0%	45.80	1.7%	99.62	3.7%
LCSM	633.66	21.84	3.4%	2.07	0.3%	23.91	3.8%
Precision	212.92	4.74	2.2%	2.32	1.1%	7.06	3.3%
Netaskinan	309.31	7.67	2.5%	2.73	0.9%	10.40	3.4%
TOTALS	8972.58	190.58	2.1%	176.12	2.0%	366.70	4.1%



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Road Disturbance

									Total		
	2003/04		2004/05		2005/06		2006/07		Area Harvested	Disturbance	Percentage (%)
	Area Harvested	Disturbance	Area Harvested	Disturbance	Area Harvested	Disturbance	Area Harvested	Disturbance			
Tolko	3539.235	118.85	4017.3181	128.79	3780.59	158.41	5092.38	225.71	16429.52	631.76	3.85
Footner	1365.7518	33.67	1733.9701	59.68	2080.81	67.52	2724.31	99.62	10262.91	386.58	3.77
Netaskinan	557.3031	4.41	820.5446	22.33	310.53	8.73	309.31	10.40	6780.76	261.18	3.85
Precision			174.3304	6.23	194.54	6.60	212.92	7.06	5461.25	238.54	4.37
DMI											
LaCrete Sawmills			669.4136	24.09	865.16	28.62	633.66	23.91	6636.95	278.42	4.19
Ridgenew											
Che KLJ											
									45571.4	1796.5	3.94



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#18: Water Resources – Adherence to SHS

- **Objective:** To minimize the effects of timber harvesting and/or silvicultural operations on water quantity and/or quality.
- **Indicator:** Adherence to Spatial Harvest Sequence (SHS).
- **Target:** 100% (+/-20%) adherence to the SHS.
- As reported earlier, SHS variance is within acceptable limit – 11%



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#20: Watercourse Crossings

- **Objective:** To minimize the effects of timber harvesting and/or silvicultural operations on water quantity and/or quality.
- **Indicator:** Satisfactory installation and removal of watercourse crossings.
- **Target:** 0% ($\leq 5\%$) of the Companies watercourse crossings will require reclamation work following removal.
- **Results**
 - Steen: 1 stream crossing seeded to control erosion
 - Bistcho: 2 stream crossings in one block were manually reclaimed and seeded



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#21: Reforestation Activities

- **Objective:** To ensure that harvested areas are promptly reforested to maintain carbon recycling.
- **Indicator:** Reforestation activities.
- **Target:** Where the Companies have maintained silviculture liability, reforestation activities will be completed within 2 years of the harvest date.



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Reforestation Activities

Two Year Treatment Summary				Updated Jan 28, 2008							
2005/06 Harvest Areas				2006 Planting Summary				2007 Planting Summary			
May 1, 2005 to April 30, 2006				May 1, 2006 to October 1, 2006				May 1, 2007 to October 1, 2007			
Licence	# Blocks	Area		Licence	# Blocks	Area Planted	Tree Planted	Licence	# Blocks	Area Planted	Tree Planted
Basset 1	1	41.5		Basset 1	0	0	-	Basset 1	Complete		
Basset 3	38	1,333.3		Basset 3	37	1321.7	2,183,062	Basset 3	1	11.6	21,867
Bistcho 2	37	826.0		Bistcho 2	34	810.1	1,355,358	Bistcho 2	3	15.9	25,085
Negus 5	2	69.8		Negus 5	0	0	-	Negus 5	Complete		
Rainbow 5	14	705.9		Rainbow 5	14	705.9	1,158,750	Rainbow 5	Complete		
Wadlin 5	72	1,046.5		Wadlin 5	67	1010.7	252,720	Wadlin 5	5	35.8	64,980
Watt 4	35	822.2		Watt 4	35	822.2	1,356,868	Watt 4	Complete		
Total	199	4,845.2		Total	187	4670.6	6,306,758.0	Total	9	63.3	90,065
					196	4,845.20					
Blocks harvested in Basset 1 and Negus 5 are part of an Understory Research Trial and will not be planted.											



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Reforestation Activities

Two Year Treatment Summary				Updated Jan 28, 2008							
2006/07 Harvest Areas				2007 Planting Summary				2008 Planting Forecast			
May 1, 2006 to April 30, 2007				May 1, 2007 to October 1, 2007				May 1, 2008 to October 1, 2008			
Operator	Licence	# Blocks	Area	Licence	# Blocks	Area Planted	Tree Planted	Licence	# Blocks	Area Planted	Tree Planted
Tolko	Zama 1	67	1,222.5	Zama 1	67	1222.5	2,193,358	Zama 1	Complete		
Tolko	Watt 6	2	78.6	Watt 6	0	0	-	Watt 6	2	78.6	
Tolko	Bassett 4	39	713.2	Bassett 4	37	681.6	1,111,629	Bassett 4	2	31.6	
Tolko	Bistcho 2	51	912.7	Bistcho 2	51	912.7	1,589,713	Bistcho 2	Complete		
Tolko	Negus 5	15	289.1	Negus 5	15	289.1	468,436	Negus 5	Complete		
Tolko	Rainbow 5	31	554.2	Rainbow 5	20	322	529,872	Rainbow 5	11	232.2	
Tolko	Steen 2	26	662.7	Steen 2	25	661.2	1,128,776	Steen 2	1	1.5	
Tolko	Steen 3	8	137.8	Steen 3	8	137.8	245,421	Steen 3	Complete		
Tolko	Steen 4	3	21.4	Steen 4	3	21.4	32,940	Steen 4	Complete		
Precision	Wabasca 6	10	183.1	Wabasca 6	9	168.8	234,776	Wabasca 6	1	14.3	
LCSM	Wadlin 5	28	654.2	Wadlin 5	28	654.2	945,327	Wadlin 5	Complete		
Tolko	Watt 4	47	611.6	Watt 4	47	611.6	1,022,672	Watt 4	Complete		
Total		327	6,041.1	Total	310	5682.9	9,502,918.0	Total	17	358.2	0



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#22: Area identified as being SR

- **Objective:** To ensure that harvested areas are promptly reforested to maintain carbon recycling.
- **Indicator:** Area identified as being Satisfactorily Restocked (SR).
- **Target:** 100% of the harvested area will meet the applicable regeneration standard with an acceptable variance of $\leq 5\%$ of the area harvested over a 5-year period.
- *Note: Only 2006 regeneration survey results are shown. Summary of previous years will be provided with final report.*



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Area identified as being SR

Tolko Industries Ltd, HLLD 2006 Survey Program						
Licence	# Blocks	Area	Area SR		Area NSR	
			# Blocks	Area	# Blocks	Area
CTLF020015	11	110	5	43	6	67
CTLF050014	41	485.3	40	469.4	1	15.9
CTLF070009	25	253.4	24	249.2	1	4.2
CTLF070010	1	4.2	1	4.2		
CTLF080014	1	8.7	1	8.7		
CTLF130002	8	140.3	8	140.3		
CTLF150021	2	25.7	2	25.7		
CTLF210001	2	7.4	2	7.4		
FMAF120001	38	998.5	32	936.8	6	61.7
FMAF150002	21	577.4	10	275.1	11	302.3
FMAF220001	27	923.2	22	859.8	5	63.4
	177	3534.1	147	3019.6	30	514.5
				85.4%		14.6%



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#23: Forested area on DFA

- **Objective:** To maintain or increase the amount of forested land on the DFA.
- **Indicator:** Amount of non-forested area (ha) on the DFA.
- **Target:** Decrease the total area currently identified as non-forested.
- No wellsites were available to be reforested during the 2006 program
- NSR associated with Caribou burn and pre-91 areas
 - 560 ha
 - Field visit and prescribe possible treatment



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Other commitments:

- Waste Management
 - Contractor audits
- Forest Protection
 - FPP
 - Fire equipment checks
- Promotional Activities
 - Limited donations
- Forest Inventory
 - Hay completion
 - Zama photos
 - Steen (late 2007)
- Research:
 - Natural Range of Variability
 - Structure Retention
 - Mixedwood Management Association
 - Spruce Budworm
 - SFM Network
 - Aerial Strip Spraying
 - White Spruce Tree Improvement
 - Western Boreal Aspen Corporation



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Questions?



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