

Forestry Annual Report 2013



The Corporation of the
District of North Cowichan

March 2013

Report

Date March 20, 2014 File 8930-20 ANN

To Mayor & Council

From Darrell Frank, RPF, Municipal Forester Endorsed by

Subject **2013 Annual Report**

Listed below are the 2013 Forestry Program highlights:

HARVESTING:

The 2013 budget was 20,500m³, generating \$1,358,000, with logging expenses of \$609,000. The actual accomplishment was 24,355m³, generating \$1,802,484, with logging costs of \$692,325. A total of 60.4 ha were logged, with an average net volume of 403m³/ha from eight cut blocks. The average cut block size was 7.4 ha.

Accomplishments:

Logging Sales	\$1,802,484.	24,355m ³	\$74.01/m ³
Direct Logging Costs	\$692,325.	24,355m ³	\$28.43/m ³

Firewood Permits: *Revenue \$1,100* *Budget - \$1,500*

The public purchased 29 cords of wood, and Cowichan Valley Alternate School purchased 20 cords.

Salal Permits: *Revenue \$705* *Budget \$500*

The public purchased 8 permits for salal and 1 permit for boughs.

PLANTING:*Costs - \$56,925**Budget - \$53,000***Accomplishments:**

43.8 hectares were planted with 46,563 seedlings at a cost of \$56,925 or \$1.22 per seedling.

Initial Planting:

40.7 hectares were planted with 44,863 seedlings.

Fill Planting:

3.1 hectares were planted with 1,700 seedlings.

Species Planted:

	Seedlings	Percent
Douglas-fir*	35,817	76.9
Western white pine	4,270	9.2
Western red cedar	5,476	11.8
Grand fir	1,000	2.1
Totals	46,563	100

**Note: 17,160 Douglas-fir were planted with a fertilizer tea bag to assist early growth.

Historical Accomplishment:

The Municipality has planted 1,922,367 seedlings since the start of its intensive silviculture program in 1982, and harvested 1,585 ha.

SURVEYS:

Survival surveys were established in the 2013 plantations to monitor seedling survival rates by our summer student. The 2013 plantations had a survival rate of 99%. The 2012 plantations were re-visited, and they had a survival rate of 87% after two growing seasons.

Root rot surveys were conducted for 43.1 ha (six blocks) at a cost of \$3,822. Total cost - \$89/ha.

Tree Protection:*Costs \$28,149**Budget - \$14,000***Accomplishments:**

Deer repellent was applied to the Douglas-fir and Western red cedar 2013 planting stock prior to planting at a cost of \$0.07 per tree. Tree cages were installed on 5.2 ha of seedlings. Installation costs were \$1.55/tree, plus the cost of stakes and cages. Two types of deer repellent were used in established conifer plantations, Plantskydd and Bobex. Blocks treated included M-152 (Plantskydd), and SH-203 and M-650 (Bobex). Cages were removed from blocks R-260, R-261, and SH-203. These were repackaged for using again. The estimate of the number of cages recovered is 6,800.

Road Construction and Maintenance: *Costs \$206,250.* *Budget - \$193,000*

Road construction, road maintenance, and road deactivation were:

Activity

Major road construction, improvements, and temporary roads	14.4 km
Road maintenance post-harvesting cleanup	4.5 km
New culverts installed by North Cowichan	7
Quarries: rock developed	1,481 m ³
Debuilt roads	700 m
Recovered rock from debuilt road	330 m ³
Road grading	10.7 km
Snowplowing	3.0 km
Roadside brush cutting for roadside visibility improvements	17.3 km
Gate installation	none
Dust lay Mt. Prevost Rd and Grace Rd	1.0 km

The Forestry Department maintains an estimated 170 km of roads in the Municipal Forest Reserve.

SITE PREPARATION: *Costs \$7,869* *Budget - \$15,000*

Accomplishments:

Logging debris areas piled and burned	48.6 ha
Logging debris areas piled in 2013, to be burned in 2014	8.5 ha

The fall burning program consisted of 107 piles from seven harvesting blocks. Burning results were good. The burning program was focused on cured piles, with logging completed prior to July 1. Piles were built according to the best management practices of the Southern Vancouver Island Smoke Management Plan. The members of the Committee include the Ministry of Forests, Ministry of Environment, and major licensees operating on Southern Vancouver Island. The group exchange results, information, and training establishing the best practices for open air burning on forested lands. Burning took place on September 30 and November 15, 2013.

Burning Costs - \$8.25/pile (\$833)

Estimated cost of chipping this material would have been approximately \$43,000.

FIRE PROTECTION: *Costs - \$5,303 Budget - \$11,000*

The Municipal Forest Reserve gates were locked from July 18 to August 29, 2013. The year was quiet, with no forest fires on the Municipal Forest Reserve, but three piles of logging slash were lit by an arsonist on three different occasions in late September. The fires were contained to the piles.

SECURITY AND VANDALISM: *Costs - \$4,520 Budget - \$15,000*

The expenditures were predominantly for blocking 4x4 access to our lands and replacing locks.

INTEGRATED RESOURCE MANAGEMENT: *Costs - \$12,215 Budget - \$3,000*

Definition - the term is used to describe the management of the Municipal Forest Reserve for other uses including recreation, wildlife, viewscales, and biodiversity.

All harvesting areas incorporated single and group tree retention. Old growth Douglas-fir, Western white pine, wildlife trees, and 10 dominant and co-dominant trees were retained in all cut blocks.

The Maple Mountain trails, namely the green, yellow, orange, pink, and red trails, had windfalls, hazards, and danger trees removed. The trails had not been done in several years, and the works took a significant amount of costs to reestablish portions of the trail, which had significant in-growth of broom in the open areas, remark the trails, and remove trees blown over and blocking portions of the trail.

WATERSHED ANALYSIS - Mount Sicker: *Costs - \$3,600 Budget - \$4,000*

Ongoing annual water monitoring has been done since 2003. The sampling has been done to measure the water for turbidity and suspended sediment from creeks which drain through the mid-slopes of the north face of Mount Sicker. The sampling has given us a short term baseline before a mid slope road and harvesting take place.

SILVICULTURE:

Contract crews completed the following:

Accomplishments:

	Ha	Budget	Costs	Cost/ha
Plantation brushing - mechanical	97.4	21,000	24,376	250 ha
Plantation brushing – hand pulling	28.0	10,000	11,810	422 ha
Invasive species – Scotch broom	1.3			
Invasive species – Tansy Ragwort	26.7			
Herbicides gross area	35.1	23,000	12,558	358 ha
Deer repellent application on seedlings	18.1		2,420	134 ha
White pine pruning	44.0	13,200	22,682	516 ha
Tree caging installations (4,914)			8,781	1.55 tree
Tree caging maintenance and cone recovery	10.0	14,000	16,521	

Plantation Brushing

*Manual Treatment: are carried out as required on a spot basis. The treatments are done where the plantations have been established with evenly distributed potential crop trees. Cutting is done where the competing vegetation will impact the growth of crop trees.

**Herbicide Treatment: is carried out where we have had problems getting a conifer plantation established. Competing vegetation, such as broom, has grown aggressively and spread through the cut block. The herbicide treatments will allow fill planting to get these areas back to restocked and healthy young stands of conifers.

With the addition of this year's activities, the Municipality has completed the following activities since 1982.

Juvenile Spacing	2,206
Pruning	1,102
White Pine Pruning	894
Plantation Brushing	3,076
Harvesting	1,584



JOB CREATION PROGRAM:

No Activity

COMMUNITY RELATIONS:

The North Cowichan Forestry Department took part in six woods tours. Other highlights include the Cowichan Challenge Triathlon on July 14 in the Fuller Lake/Cottonwood area, the Gutbuster running race on Mt. Tzouhalem on June 9, the Cowichan Cycles cross country race on Maple Mountain on April 7, the Prevost Downhill race on May 19, the Fat Tire Festival on Maple Mountain and Mt. Tzouhalem on July 27 and 28, and various mountain biking demo days on Mt. Tzouhalem organized by the local bike shops in April and May.

Donations/Scholarship/Bursaries funded by the Forestry Department:

2	Logging truckloads of firewood	\$1,400
2	Bursaries @ \$600	\$1,200
	Prizes for the Value-added Woodworking Contest through our local high schools	\$1,025
	Bonsall Creek Salmon Enhancement Work through a local farmer	\$1,789

Please find attached, the following:

Appendix A	2013 Harvesting Summary
Appendix B	1987 to 2013 Harvesting
Appendix C	2013 Direct Employment Created from the Municipal Forest Reserve
Appendix D	2013 Tours
Appendix E	2013 Revenue and Expenditures

Darrell J. Frank, RPF
Municipal Forester



Appendix A

2013 Harvesting Summary

Block	Ha (Gross)	Treatment	Vol m³/ha	Total Vol m³	Net Profit \$/m³	Net Revenue	Net Revenue Per/ha	Costs Stump to Dump \$/m³	Total Logging Costs	Gross Revenue	Gross Revenue Per m³	Gross Revenue Per Ha
M-500	4.9	Patch Cut GTR/Hoe Forwarding	379	1,859	\$37.52	\$89,742	\$14,233	\$29.53	\$54,885	\$124,627	\$87	\$25,434
M-650	4.7	Patch Cut GTR/Hoe Forwarding	284	1,242	\$35.27	\$43,802	\$9,320	\$32.98	\$40,970	\$94,772	\$88	\$18,037
P-548	7.7	Patch Cut GTR/Hoe Forwarding	467	3,593	\$53.33	\$191,625	\$24,888	\$23.21	\$83,366	\$275,021	\$77	\$35,717
P-599	7.7	Patch Cut GTR/Hoe Forwarding	411	3,163	\$39.44	\$124,746	\$16,201	\$28.95	\$91,552	\$216,298	\$68	\$28,091
P-797	7.9	Patch Cut GTR/Hoe Forwarding	305	2,413	\$40.49	\$97,712	\$12,369	\$30.48	\$73,541	\$171,253	\$71	\$21,678
P-804	9.6	Patch Cut GTR/Hoe Forwarding	485	4,658	\$45.72	\$212,948	\$22,182	\$28.72	\$138,445	\$351,393	\$75	\$36,803
R-204	12.6	Patch Cut GTR/Hoe Forwarding	434	5,467	\$51.50	\$281,542	\$22,345	\$28.31	\$154,809	\$436,351	\$80	\$34,831
R-351	4.3	Patch Cut GTR/Hoe Forwarding	343	1,474	\$43.99	\$64,846	\$15,080	\$32.21	\$40,382	\$105,228	\$71	\$24,472
Log Salvage Prevost	N/A	Salvage Blowdown	N/A	172	\$28.41	\$4,887	N/A	\$40.15	\$6,896	\$11,783	\$69	N/A
Misc	1.0	Patch Cut GTR/Hoe Forwarding	N/A	314	\$58.31	\$18,309	N/A	\$23.72	\$7,449	\$25,758	\$82	N/A
Balancing												
Total	60.4		403	24,355	\$45.58	\$1,110,159	\$18,380	\$28.43	\$692,325	\$1,802,484	\$74	\$29,842

GTR Green Tree Retention

Logging Costs per m³ \$28.43

Silviculture Systems Summary

	Ha
Patch Cut GTR	56.70
Commercial Thinning	0.00
Individual Tree Harvesting	0.00
Seed Tree	4.70
Total	60.40

Average Cut Block Size (Ha)

7.4

Conifer and Hardwood Component

	Volume	By Percent	Revenue	Revenue \$/M³	Revenue By %
Hardwoods	150	0.6%	\$4,657	\$31.05	0.42%
Conifer	24,205	99.4%	\$1,105,502	\$45.67	99.58%
Total	24,355	100.0%	\$1,110,159	\$45.58	100.00%

Appendix B

1987 To 2013 Harvesting Summary

Forestry Program Profit

Year	Ha	Volume m ³	Volume/Ha	Net Revenue	Net Revenue \$/m ³	Annual Profit	Annual Profit \$/m ³	Annual Forestry Profit Split As Follows:					Land Purchases	Acres
								General Revenues	Forest Reserve Fund	Forest Legacy Fund	Scholarship Fund			
1987	63.4	13,159	208	\$204,772	\$15.56	-\$24,625	-\$1.89	\$0	-\$24,825	\$0	\$0	\$0	\$0	
1988	73.9	18,602	252	\$354,256	\$19.04	\$115,885	\$6.23	\$0	\$115,885	\$0	\$0	\$0	\$0	
1989	43.2	14,796	343	\$272,913	\$18.44	\$38,486	\$2.60	\$0	\$38,486	\$0	\$0	\$0	\$0	
1990	36.1	10,969	304	\$254,831	\$23.23	\$48,571	\$4.43	\$0	\$48,571	\$0	\$0	\$0	\$0	
1991	32.2	12,740	396	\$271,217	\$21.29	-\$12,370	-\$0.97	\$0	-\$12,370	\$0	\$0	\$0	\$0	
1992	63.3	12,935	204	\$289,102	\$22.35	\$67,231	\$5.20	\$45,000	\$22,231	\$0	\$0	\$0	\$0	
1993	55.2	14,907	270	\$542,821	\$36.42	\$272,276	\$18.27	\$240,000	\$32,276	\$0	\$0	\$0	\$0	
1994	58.6	16,160	276	\$692,414	\$42.85	\$275,890	\$17.07	\$250,000	\$25,890	\$0	\$0	\$0	\$0	
1995	78	21,556	276	\$1,205,329	\$55.92	\$755,771	\$37.24	\$489,230	\$33,313	\$92,308	\$0	\$140,920	\$0	35 acres
1996	48.7	14,427	296	\$639,017	\$44.29	\$131,057	\$9.08	\$65,000	\$51,057	\$15,000	\$0	\$0	\$0	
1997	32.3	13,371	414	\$625,437	\$46.78	\$24,815	\$1.86	\$24,815	\$0	\$0	\$0	\$0	\$0	
1998	30.2	12,085	400	\$444,933	\$36.82	\$47,420	\$3.92	\$0	\$37,935	\$9,485	\$0	\$0	\$0	
1999	41	16,428	401	\$564,867	\$34.36	\$97,579	\$6.04	\$29,274	\$48,789	\$19,516	\$0	\$0	\$0	26 acres
2000	35.9	13,378	373	\$564,778	\$42.22	\$33,745	\$2.52	\$9,965	\$17,057	\$9,823	\$0	\$0	\$0	
2001	39.34	15,538	395	\$660,924	\$42.54	\$111,851	\$7.20	\$100,666	\$11,185	\$0	\$0	\$0	\$0	
2002	39.9	13,890	348	\$590,631	\$41.83	\$95,375	\$6.87	\$28,612	\$47,698	\$19,075	\$0	\$0	\$0	
2003	49.2	15,841	322	\$661,089	\$41.73	\$94,484	\$5.96	\$52,162	\$22,273	\$18,609	\$1,440	\$0	\$0	
2004	64.47	19,126	297	\$773,940	\$40.47	\$121,932	\$6.38	\$29,183	\$68,880	\$19,455	\$4,414	\$0	\$0	
2005	54.6	16,018	293	\$672,876	\$42.01	\$29,901	\$1.87	\$14,951	\$0	\$14,950	\$0	\$0	\$0	
2006	53.4	17,518	328	\$792,562	\$45.24	\$30,343	\$1.73	\$15,171	\$0	\$15,172	\$0	\$0	\$0	
2007	65.6	21,153	322	\$804,375	\$38.03	\$65,344	\$3.09	\$0	\$65,344	\$0	\$0	\$0	\$0	
2008	39.5	13,703	347	\$619,866	\$45.24	-\$20,393	-\$1.29	\$0	-\$20,393	\$0	\$0	\$0	\$0	
2009	46.5	14,296	307	\$439,936	\$30.77	-\$119,362	-\$6.24	\$0	-\$119,362	\$0	\$0	\$0	\$0	
2010	42.1	16,418	390	\$451,287	\$27.49	-\$137,409	-\$8.37	\$0	-\$137,409	\$0	\$0	\$0	\$0	
2011	45.5	17,775	391	\$664,170	\$37.37	-\$55,879	-\$3.14	\$0	-\$55,879	\$0	\$0	\$0	\$0	
2012	42.7	17,142	401	\$618,045	\$36.05	\$9,602	\$0.56	\$0	\$9,602	\$0	\$0	\$0	\$0	
2013	60.4	24,355	403	\$1,110,159	\$45.58	\$435,606	\$17.89	\$130,682	\$217,803	\$87,121	\$601	\$0	\$0	
Total	1335.21	428,278	321	\$15,776,548	\$36.84	\$2,532,896	\$5.91	\$1,524,611	\$543,997	\$317,514	\$6,455	\$140,920	\$0	61 Ac
Average	51.4	16,472	321	\$606,790	\$36.84	\$97,419	\$5.91	\$58,639	\$20,923	\$12,212	\$248	\$5,420	\$0	

Summary 1987 to 2013
Net Revenue from the MFR 1987 to 2013

\$11,816 / Ha
\$2,532,896

- Note: the 2011 transfer from Forest Reserve Fund includes a \$10,000 to Public Works for the new Fire Truck, \$9,000 for the truck replacement fund
- Note: The contribution for 2001 to Forest Reserve Fund went into the Fire Fighting Contingency Fund
- Note: The Land Purchase of 26 acres done in 1999 was paid for by a transfer out of the Forestry Dept Reserve Acct
- Note: Profit from 1995 includes \$47,000 carried forward to 96 for 5 yr plan unspent in 1995 to 96
- Note: Interest income from 2005 and on is not shown in revenues to comply with the finance dept accounting practices. Interest income for 2005 and on was retained in the Forest Reserve and Scholarship funds respectively.

2013 Averages

403 M³ / Ha

\$18,388/ Ha Net Revenue

Proposed profit distribution for 2013

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Appendix C

2013 Direct Employment Created from the Municipal Forestry Program

Activity	Description	Accomplishments yr / person	Person years	Person days
Harvesting	Hoe-forwarding/ Log Salvage	4,200	5.80	1014.8
	Swing Yarder/High Lead	24,355 m³	0.00	0.0
	Trucking	0 m³ 663 Loads	0.75	165.8
	Total		6.55	1180.5
Tree Planting	Planting Supervision and marking Root Rot areas	45,943 Trees	0.33	57.4
	Total		0.33	57.4
Road Construction Road Maintenance, and Road Debuilding	Rubber Tired Backhoe, Gravel Truck, Excavator, Cat, & Lowbed		0.97	213.6
	Grading, and Snow Plowing		0.05	10.2
	Blasting		0.04	8.0
	Labour		0.10	21.3
	Total		1.15	253.1
Site Preparation	Excavator & Rubber Tired Backhoe Piling Slash		0.05	10.8
	Labour - burning		0.01	2.0
	Total		0.06	12.8
Silviculture	Plantation Brushing - Mechanical	97.4 Ha	0.28	61.0
	Invasive Species - Herbicide	35.1 Ha	0.14	30.1
	Invasive Species - Manual	12.1 Ha	0.22	48.1
	Apply Deer Repellent on Seedlings	18.1 Ha	0.03	6.0
	Tree Caging and Maintenance	22.1 Ha	0.25	55.2
	White Pine Pruning	44.0 Ha	0.30	65.4
	Total		1.21	265.8
Engineering, Security, Surveying & Fire Fighting	Cut Block layout, Silviculture Prescriptions, Wildlife and tree assessments		0.27	59.3
	Security, one wildfire in 2013		0.02	5.3
	Trail Maintenance & Construction		0.14	30.3
	Land Assessments		0.00	0.0
Job Creation	Forest Fuel Reduction, & Control of Invasive Species		0.00	0.0
	Total		0.43	94.8
Staff Time	Two full time staff and 40% of secretary		2.40	528.0
	Summer student		0.37	81.0
	Total		2.77	609.0
	Total		12.55	2484.8

Indirect Jobs — Applying a Multiplier effect of 2 times the number of direct jobs

25.10

Total Direct and Indirect Jobs Managing the Municipal Forest

37.64

APPENDIX D

TOURS 2013

TOUR NO.	GROUP/CLUB	DATE	PARTICIPANTS	COSTS	STAFF TIME		Site Visits
					FORESTER	TECH	
1	Ministry of Forests	18-Jun	10	0	3 Hr	0 Hr	P-170 lookout, and active logging P-599
2	Stoney Hill Road Committee	29-Jan			2	0	Public Meeting Maple Bay Fire Hall
3	Stoney Hill Road Committee	04-Feb	12		8		Road and site inspection Stoney Hill area
4	Stoney Hill Road Committee	09-Sep	??		8	0	Road and site inspection Stoney Hill area
5	Forestry Nursery Tour	19-Sep	2		8	8	Staff toured the nurseries growing MNC 2014 planting stock
6	Cowichan Valley Trail Stewards	24-Oct	4		4	0	Toured new trail on Maple Mt
7							
					28	\$0	33 HR 8 HR
					Or as Expressed in Days		
					4.7	Days	1.0 Days

Appendix E

Statement of Operations and reserve Balances, December 31, 2013

		2013 <u>Budget</u>		Year End Jan 1 to Dec 31
Revenue				
Log Sales		1,358,000		1,802,484
	20,500m3			24,354 m3
Cost of Sales				
Logging		609,000		692,325
Scaling		500		0
Contract Engineering		30,000		17,209
Road Construction		136,000		147,816
Road Maintenance		50,000		50,236
Road Deactivation		4,000		5,317
Site Preparation		15,000		7,869
Planting		53,000		56,925
Brushing and Weeding		21,000		24,376
Brushing and Herbicides		23,000		12,558
Pruning		13,200		22,682
Tree Protection		14,000		28,149
		<u>968,700</u>		<u>1,065,462</u>
Gross Margin	29%	389,300	41%	737,022
Other Revenue		15,300		17,665
Rentals (Cell Towers)		<u>70,025</u>		<u>84,023</u>
		474,625		838,710
Expenses				
Administration		330,530		312,815
Fire Protection		11,000		5,303
Security		15,000		4,520
Five year Development Plan		5,000		0
Watershed Analysis		4,000		3,600
Tours		500		0
Integrated Resource Mgmt		3,000		12,216
Community Wild Fire Protection		-		0
Forestry contractor		4,000		10,027
Juvenile Spacing		-		0
Recreation Roads Maintenance		3,000		2,880
Scholarships		2,400		1,200
Grants in Aid		7,300		4,934
Invasive Species Control		10,000		11,810
Vehicles		32,000		29,365
Fire Truck		<u>4,000</u>		<u>4,429</u>
		<u>431,730</u>		<u>403,099</u>
Net Income		42,895		435,611
Reserve Fund End of year 2012		821,299	As of Dec 31	834,321
Interest				9,206
*Capital Expenditures		-		0
**Forest Legacy Projects		N/A		N/A
Scholarship / Bursary		<u>2,400</u>		<u>0</u>
Total		<u>866,594</u>		<u>1,279,138</u>

*Note: Capital Expenditure

**Note : Forest legacy fund interest is to cover the cost of the Scholarship and Bursary, this was not used in 2013