



Cortex Consultants

Valuation of the Bowater Mersey Woodlands:

Valuation Summary

Prepared for:
The Province of Nova Scotia

Prepared by:
Cortex Consultants Inc.
Victoria, B.C.

November 18, 2012



December 06, 2012

Ms. Gretchen Pohlkamp, LLB
Executive Director, Land Services
Department of Natural Resources
Founders Square, 5th Floor
1701 Hollis Street
PO Box 698
Halifax, NS B3J 2T9

Re: Valuation of Bowater Mersey Forestlands

Dear Gretchen Pohlkamp:

I am pleased to submit this report estimating the value of the forestlands assets of Bowater Mersey Paper Company in Nova Scotia, Canada. The Province of Nova Scotia (NS) is the client for this report. This valuation report is in brief narrative format but draws from analyses and supporting documents developed in the course of this study.

The value that we have determined is the property's value-in-use, i.e., the net present value (NPV) of cash flow that the asset might generate for a private sector owner under plausible scenarios of future management and product market levels. The highest and best use of the majority of the lands is commercial timberland, but other land uses have been investigated and accounted for in our study.

The following report outlines our methods and assumptions, limiting conditions, and the reasoning leading to our conclusions. We are grateful for the assistance of the staff of the Department of Natural Resources (NS DNR), who worked closely with Cortex to obtain key data, clarify management assumptions, and frame scenarios of plausible future management activities, harvest levels, price and demand conditions in the region.

Sincerely yours,

Douglas H. Williams, PhD.
Partner and CEO
Cortex Consultants Inc.

Assumptions and Limiting Conditions

This report on the value of the Bowater Mersey forest estate was prepared by Cortex Consultants Inc., Victoria, B.C., Canada (CORTEX) for use by the Province of Nova Scotia, as represented by the Department of Natural Resources (NS DNR).

Using methods described in this report, CORTEX has estimated the value-in-use of the forest estate as the net present value (NPV) of the cash flow that the asset might generate for a private sector owner under plausible scenarios of future management and product market levels. No other valuation methodologies are employed.

In the preparation of this report, CORTEX relied entirely on information provided by the seller, Resolute Forest Products (RESOLUTE), NS DNR, and publicly available data. CORTEX verified the model, yield tables, historical harvesting and costs. CORTEX did not ground truth any of the data used in the report.

This report contains certain statements, estimates and projections with respect to the future development of the forest estate. Readers of this document are cautioned that these projections were generated based on the synthesis of the data supplied by the RESOLUTE and NS DNR, and publicly available information. There is absolutely no representation that the statements, projections or estimates contained herein will be realized in whole or in part. Nothing in the report is, or should be relied upon as, a promise by CORTEX as to the future growth, yields, costs or returns of the forests. Actual results may be different from the opinion contained in this report, as anticipated events may not occur as expected and the variation may be significant.

The purpose of the information contained herein is to provide the NS DNR with an estimate and range of the value-in-use of the forest estate and potential business risks associated with acquisition of the Bowater Mersey forest estate. It is provided to NS DNR to use as it sees fit. Under no circumstances is this material to be used by others for any other purpose or reproduced, whole or in part, without the expressed written consent of CORTEX. CORTEX will not assume any responsibility or liability for losses incurred by the reader or any other party as a result of the circulation, publication, reproduction or use of this material contrary to the provisions of this notice.

CORTEX recognizes the possibility that any valuation can eventually become the subject of audit or court testimony. If such audit or testimony becomes necessary as a result of this valuation, it will be a new assignment subject to fees then in effect.

CORTEX has no responsibility to update this report for events and circumstances occurring after the date of this report. Any liability on the part of CORTEX is limited to the amount of fee actually collected for work conducted by CORTEX.

Matters pertaining to legal due diligence are the responsibility of NS DNR. This report assumes that the subject property is free of liens and encumbrances, in responsible ownership, and under competent management, with free and clear title. CORTEX assumes no responsibility for matters legal in nature, and infers no opinion of title. The owner's claim to the property is assumed to be legal and valid. No examination of title to the property has been made by CORTEX.

This study assumes that there are no hidden, unapparent, or undisclosed conditions of the property, including the property site, soils, ground, buildings, or other improvements. CORTEX assumes no responsibility for such hidden, unapparent, or undisclosed conditions.



Executive Summary

The Bowater Mersey Woodlands are currently owned in fee simple by the Bowater Mersey Paper Company Limited (BMPCL) in Nova Scotia (NS).

The purpose of this project is to estimate the value-in-use of the woodlands (forest estate) as the net present value (NPV) of the cash flow that the asset might generate for a private sector owner under plausible scenarios of future management (including realizing HBU) and product market levels. The mill sites and associated industrial lands were not included in this valuation.

To accomplish this, we

- developed a discounted cash flow model of the forest estate (DCF/Forest Estate model)
- identified and analyzed risks that could affect the value of the property, including environmental, social/political, market and data risks
- held weekly status meetings with DNR to clarify data and management assumptions and review findings
- documented our findings in a series of reports that contribute to this present report

The most informative scenarios with respect to the value of the BMPCL lands are:

Base Case (pessimistic) forecasts of the demand for pulpwood to be zero for the next 5 years, with price and demand recovering partially in years 6-10.

Base Case (optimistic) reflects current management assumptions (including harvest rate) and “normal” price cycle expectations for all components of the wood supply.

Super Cycle is a scenario developed from the Base Case scenario but with a large amplitude price cycle.

TIMO Cut differs from the base case (optimistic) scenario by allowing an aggressive harvest schedule, typically implemented by Timber Investment Management Organizations (TIMOs) who need to maximize their returns to investors.

Analysis of these scenarios presents a wide range of asset values (Table E-1) due to the uncertainty in the near-term configuration of the forest products sector in Nova Scotia, plus the prospect of recovering (and perhaps spiking) lumber prices.

Table E-1. Scenarios and indicated values.

Value Component	Base Case		Super Cycle	TIMO Cut
	Pessimistic	Optimistic		
	\$ million			
Timber Harvesting DNR	52.8	75.9	82.4	92.0
Non-Timber Revenue	31.1	31.1	31.1	31.1
Bare Land Value at 2012	19.0	19.0	19.0	19.0
Total Value	102.9	126.0	132.4	142.1

Based on our analysis of the current situation in the forestry sector in Nova Scotia and on the eastern sea board, we have determined that the value of the Bowater Mersey Nova Scotia woodlands (approximately 555,000 acres) lies between the Pessimistic Base Case and the Super Cycle scenarios: the fair market value is the average of the Pessimistic Base Case and the Super Cycle scenarios.

Based on these considerations, we find that fair market value for the Bowater Mersey Nova Scotia woodlands is: **\$117.65 million** or \$212 per acre (\$523.80 per hectare).

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1. Introduction

1.1 Identification of the Property

The Bowater Mersey Woodlands are currently owned in fee simple by the Bowater Mersey Paper Company Limited (BMPCL) in Nova Scotia (NS). The BMPCL woodlands parcels include Medway, Rossignol, and St. Margaret's Bay Districts, and also includes the North Mountain Lots facing the Bay of Fundy (see map following this page). The property is commercial timberland with some opportunities for increasing value of lands by realizing highest and best use (HBU). The mill sites and associated industrial lands were not included in this valuation.

1.2 Scope of work

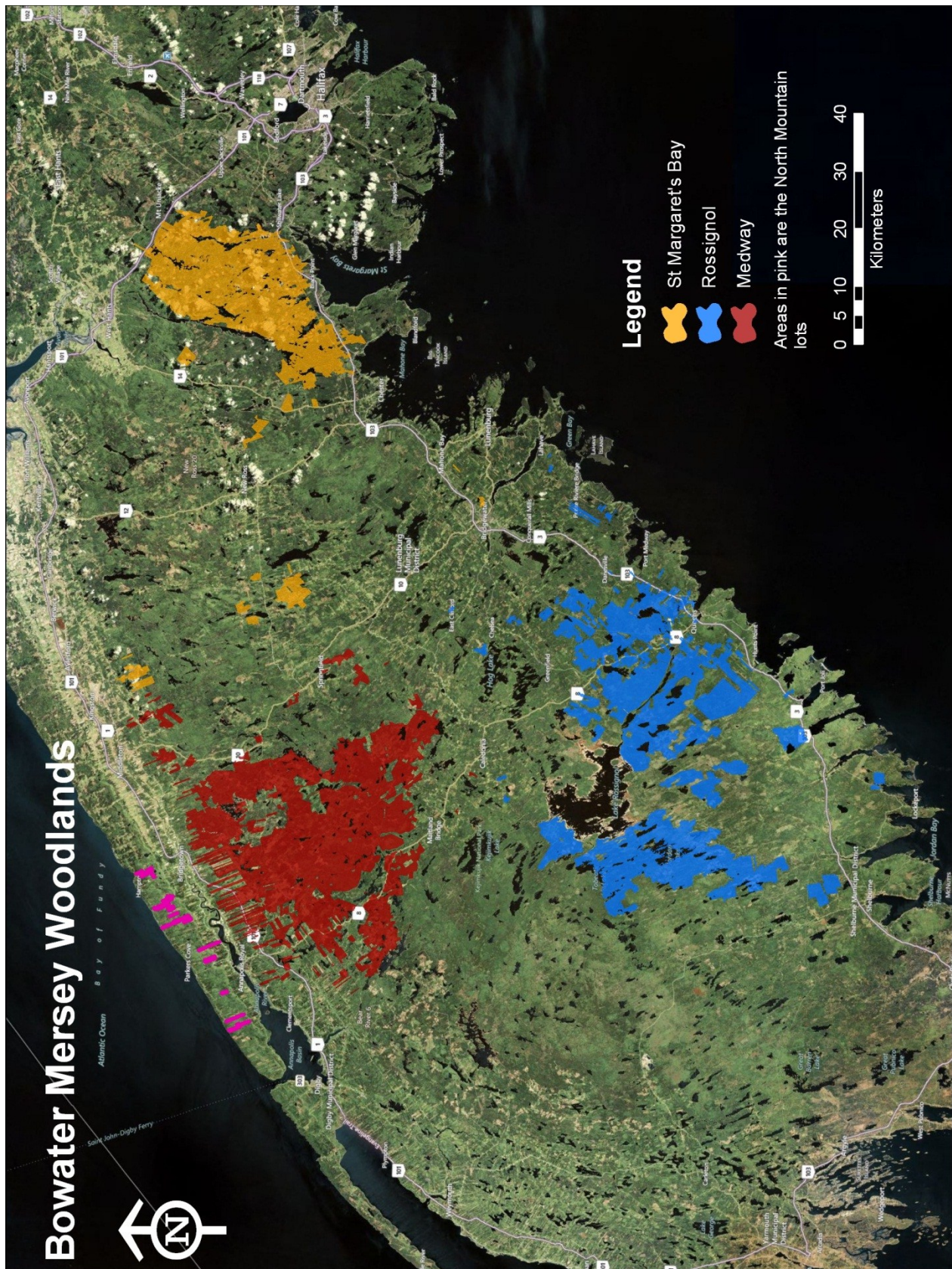
The purpose of this project is to estimate the value-in-use of the woodlands (forest estate) as the net present value (NPV) of the cash flow that the asset might generate for a private sector owner under plausible scenarios of future management (including realizing HBU) and product market levels.

To accomplish this, we

- developed a discounted cash flow model of the forest estate (DCF/Forest Estate model)
- identified and analyzed risks that could affect the value of the property, including environmental, social/political, market and data risks
- held weekly status meetings with DNR to clarify data and management assumptions and review findings
- documented our findings in a series of reports that contribute to this present report

1.3 Context

On June 16, 2012, Resolute Forest Products closed its newsprint mill, Bowater Mersey Paper Company in Brooklyn. The company is selling all of its assets in the province, including the sawmill and private woodlands associated with the mill. The future structure of the processing industry in Western Nova Scotia, and the future demand for pulpwood (and lower-end log sorts in general) is uncertain.



2. Issues and Risks

This section reports on our studies to identify risks that may materially affect the value of the asset and to specify methods to minimize (or quantify) their impact on value. Note that data risk – the risk of using incorrect data or management assumptions – is covered in section 3.2.

2.1 Access Management

The risks associated with public access include:

- illegal dumping
- equipment vandalism and theft
- risk of recreational-user caused wildfires
- road and forest worker safety

Without specific permission, public access to the gated BMPCL lands is currently restricted to foot and non-motorized vehicle use. Gate infrastructure is currently in place and should not be abandoned. Once such access controls are abandoned they become very difficult to re-establish.

2.2 Camp Leases

An estimated forty to fifty legacy camp leases exist on the BMPCL lands. BMPCL leases have annual rents of approximately \$575/year. The revenue from these leases is estimated at \$25,000-\$30,000/year. The liabilities associated with the leases are generally the same as those created by allowing public access. A prime liability would be wildfires caused by recreational use of the lease. This risk would arise from both campfires and structural fires.

The existing leases provide minimal revenue at minimal short-term risk and an annual revenue (\$23,000) has been included in the DCF/Forest Estate Model.

2.3 Infrastructure Maintenance

The objective of this study of infrastructure was to identify expected road and bridge infrastructure costs (including maintenance) over the next 5-10 years. Cortex reviewed existing data to assess the current condition of access infrastructure, and reviewed past, current, and planned expenditures. In the end, specific data on the access infrastructure was incomplete, making it impossible to produce a comprehensive review at this scale. Therefore, our assessment relies solely on the budget numbers provided by Resolute and conversations with Resolute staff. Our conclusion from these data sources is that maintenance and replacement costs of access will remain similar to recent costs from past years. No large scale maintenance or replacement activities are expected within the next 5-10 years. Road maintenance and construction costs (including bridges and culverts) were included in the model as the average of the seller's cost 2009-2011 (\$1.82 million).

2.4 Market Risk

Market uncertainty presents a substantial risk to the value of the Bowater Mersey woodland. Sources of uncertainty are:

- the configuration of the wood processing sector in Nova Scotia is in transition, and the future demand for pulpwood, and lower-end log sorts in general, is likely to be low in the short term
- the product prices experienced by the seller in 2011 (and which were supplied to this project) are likely bottom-of-the-cycle prices, and sawlog prices will most likely increase. However, future levels are speculative
- the isolated location of the BMPCL lands, which have few mills of scale to consume the wood supply, and limited export opportunities

To explore these issues, we have undertaken extensive scenario analysis to examine the value of the lands under alternative plausible future management regimes and price schedules.

2.5 Environmental Risk

Cortex reviewed environmental issues and risks (known or potential) on the Bowater Mersey woodlands including endangered or threatened species, riparian, mass wasting, slope stability, hazardous and waste chemicals, climate change impacts, potential for failures of water control structures (dams); impact of withdrawal from the land mass of additional land for protection; and environmental liabilities. The methodology included:

- consultations with local experts in DNR and BMPCL, documents, data files, and (where available) pertinent spatial data
- developing a contextual understanding of the ecological conditions locally, provincially, or nationally that may leverage risks on one or more environmental issues
- limited examination of spatial data made available for the BMPCL lands were undertaken in ArcGIS

Thirteen issues were identified but all were determined to be negligible or low-to-moderate risk to the asset value.

2.6 Other land values

NS DNR provided Cortex with a schedule of land sales likely to occur on the woodlands over the next 10 years. These future revenues were discounted back to 2012 (present value). Other land values identified by NS DNR included conservation lands, potential quarry, and other miscellaneous lands. The sum of the “other” land values in 2012 is \$31.1 million. These lands were removed from the harvesting land base of the forest estate.

3. Analytical Framework – The DCF/Forest Estate Model

3.1 Development of the DCF/Forest Estate Model

Cortex developed a DCF/Forest Estate model of the Bowater Mersey forest lands that is capable of emulating current management practices and objectives, but can also be driven by typical private sector financial objectives.

The forest estate model for the analysis is developed in Remsoft's Spatial Planning System (RSPS). The Remsoft system represents the forest estate as a linear programming model which allows efficient and repeatable modeling. The model determines a schedule of management actions (including harvesting) that optimizes some management objective, subject to a set of constraints or side conditions.

3.2 Data Quality Review

Two aspects of data quality were investigated: the spatial data that represents the state of the forest and yield curves.

Cortex prepared maps covering the entire study area to check the alignment between harvest history spatial data obtained from the asset Data Room, the resultant used by Cortex for Woodstock modeling, and freely available aerial imagery. No significant issues were detected.

The yield curves supplied to the project were reviewed by plotting the curves for selected stand types (volume x age) and then plotting on the same chart the permanent sample plot data from which these yield curves were developed. No significant issues were detected.

3.3 Model Validity

The validity of the model was demonstrated by comparing the Cortex model results to an NS DNR model output for the same management units. The Cortex model also generated cost and revenue data similar to data provided in the seller's data room.

4. Scenario Analysis

Twelve scenarios were analysed in order to build, verify and validate the DCF/Forest Estate model, and then to estimate the value of the forest estate under alternative management schedules and product price forecasts.

Of the twelve scenarios analyzed, four are the most informative with respect to the value of the BMPCL lands:

Base Case (pessimistic) differs from the optimistic version only in its forecast of future delivered wood prices and demand for pulp. It was developed with the advice of local contractors and log brokers. In this scenario the demand for pulpwood is assumed to be zero for the next 5 years, with price and demand recovering partially in years 6-10.

Base Case (optimistic) reflects current management assumptions (including harvest rate) and “normal” price cycle expectations for all components of the wood supply.

Super Cycle is a scenario developed from the Base Case scenario but with a large amplitude price cycle. Many suppliers of market information are forecasting a lumber and panels super-cycle – an increase in prices higher than would be experienced in a normal price cycle, and for a prolonged period – due to the confluence of a recovering US housing market and growing demand from Asian economies, especially China and India.

TIMO Cut differs from the base case (optimistic) scenario by allowing an aggressive harvest schedule, typically implemented by TIMOs (Timber Investment Management Organizations) who need to maximize their returns to investors.

Each of the four scenarios determines a maximum net asset value by scheduling management activities (including harvesting) to maximize the NPV of cash flows from the property, and subject to common management assumptions and operating constraints.

These scenario differences are summarized in Table 1, together with their component values.

Timber Harvesting DNR is the discounted net revenue from harvesting operations and other annual revenues such as cabin leases.

Non-timber Revenue is revenue for scheduled HBU land sale and potential conservation, quarry, and other lands sales, all valued in 2012 dollars.

Other land appraisers in the region include bare land value as component of value-in-use. Based on recent appraisal documents, a bare land value of \$83.75 per hectare was included, appreciating at 3% per year.

Table 1. Scenarios features.

Scenario Features		Base Case		TIMO Cut	Super Cycle
		Optimistic	Pessimistic		
Prices					
	Normal Cycle Recovery Prices	✓		✓	
	Super Cycle Prices				✓
	Revised Price Cycle and Reduced Demand		✓		
Harvest Constraints					
	Total harvest volume - increase by 10% per year over 30 yrs - even flow years 31+	✓	✓		✓
	Total harvest: +/- 12% per year over 30 years; years 31+: Max <=430,000 gmt, Min> 300,000			✓	

Table 2. Scenario values.

Value Component	Base Case		Super Cycle	TIMO Cut
	Pessimistic	Optimistic		
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Bare Land Value at 2012	19.0	19.0	19.0	19.0
Total Value	102.9	126.0	132.4	142.1

5. Estimate of Fair Market Value

The scenario analysis presents a wide range of asset values due to the uncertainty in the near-term configuration of the forest products sector in Nova Scotia, plus the prospect of recovering (and perhaps spiking) lumber prices.

Due to recently implemented forestry policies we are advised that a TIMO-style accelerated rate of harvest would not be tolerated in Nova Scotia, and so this scenario is not considered further in our estimation of fair market value.

The Optimistic Base Case and Super Cycle scenario have similar product price expectations but do not incorporate the current reduced demand for the pulpwood component of the harvest from the lands.

The Pessimistic Base Case captures the reduced demand for pulpwood but does not consider the possibility of higher than normal price recovery.

Based on our analysis of the current situation in the forestry sector in Nova Scotia and on the eastern sea board, we have determined that the value of the Bowater Mersey Nova Scotia woodlands (approximately 555,000 acres) lies between the Pessimistic Base Case and the Super Cycle scenarios: the fair market value is the average of the Pessimistic Base Case and the Super Cycle scenarios.

Based on these considerations, we find that fair market value for the Bowater Mersey Nova Scotia woodlands is: **\$117.65 million** or \$212 per acre (\$523.80 per hectare).