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# New Brunswick Private Woodlot Stumpage Values

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Supplementary Analyses and Observations  
January 2022 to December 2022

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New Brunswick  
**Forest Products Commission**

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**Commission des produits forestiers**  
du Nouveau Brunswick

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## **INTRODUCTION**

The value of standing timber is typically referred to as stumpage, which is the value offered to a landowner by another party interested in harvesting the landowner's timber. Since 2016, the New Brunswick Forest Products Commission (the Commission) has conducted annual stumpage studies to provide guidance to the Department of Natural Resources and Energy Development as to the fair market values for standing timber originating on private woodlots in New Brunswick. The methodology and results of the stumpage study for the reporting period from January 2022 through December 2022 is found in the report titled 'New Brunswick Private Woodlot Stumpage Values - Stumpage Study Results - January 2022 to December 2022'. The purpose of this report is to provide supplementary analyses and observations made by the Commission based on the data collected in the process of the annual stumpage study.

## **SPECIES / PRODUCTS GROUPS USED**

The Commission grouped species and/or products commonly applied in stumpage agreements between a woodlot owner and the person purchasing an owner's trees. Table 1 is a summary of the various species and products grouped and used to analyze stumpage values in the study and in the supplementary analyses.

Table 1. Species and Products groups used in the study.

<b>SPECIES</b>	<b>PRODUCT</b>	<b>GROUP</b>	<b>SPECIES</b>	<b>PRODUCT</b>	<b>GROUP</b>
CEDAR	SAWLOG	CEDSAW	RED PINE	SAWLOG	OSSL
CEDAR	STUD		TAMARACK	SAWLOG	
CEDAR	SHINGLEWOOD		HEMLOCK	SAWLOG	
CEDAR	TREELENGTH		WHITE PINE	SAWLOG	PISL
POPLAR	CHIPS	HWDPW	SPF*	ROUNDWOOD BIOMASS	SPFRWB**
HARDWOOD	CHIPS		SPF*	CHIPS	
HARDWOOD	PULPWOOD		SPF*	PULPWOOD	
POPLAR	PULPWOOD		SPF*	SAWLOG	SPFSL
HARDWOOD	SAWLOG	HWDSL	SPF*	STUD	SPFST
RED PINE	PULPWOOD	OSRWB**	SPF*	TREELENGTH	SPFTL
HEMLOCK	PULPWOOD		OSRWB & SPFRWB GROUPS***	PULPWOOD & ROUNDWOOD BIOMASS	SWDPW
WHITE PINE	PULPWOOD				
TAMARACK	PULPWOOD				

\* SPF = Spruce, Fir, Jack Pine, \*\* RWB = Round wood biomass, including pulpwood and chips produced at the harvest site. \*\*\* - New category in 2021

## **VOLUME OF DATA CURRENT STUDY VS. PREVIOUS STUDIES**

The level of detail in the current submitted data was such that the Commission was able to determine prices paid for the species/product groups within each woodlot. By assuming that each woodlot represents a stumpage agreement, combined with the species/product pricing associated within each agreement, the Commission was able to align the study data with metrics that were used in past surveys. This enabled the Commission to conduct a direct comparison between the current study response level and those of previous surveys. Table 2 provides a comparison of the response level from the current study to the previous eight (8) surveys where stumpage agreements and price points were used as the metrics.

Table 2. Response levels: current study vs. previous eight (8) studies completed.

Report Period	Stumpage Agreements	Price Points
Jan 2022 to Dec 2022	463	3,509*
Jan 2021 to Dec 2021	454	3,255
Jan 2020 to Dec 2020	531	2,528
Oct 2018 to Dec 2019 (15 mo.)	677	3,160
Oct 2017 to Sept 2018	567	3,872
Oct 2016 to Sept 2017	509	3,383
Oct 2015 to Sept 2016	655	5,167
Oct 2014 to Sept 2015	461	2,650
December 2013	102	741
June 2011	156	716

\* Number of stumpage agreements and price points are affected by the size of harvest jobs, number of participants who purchased or administered stumpage agreements, and overall production levels.

### **PROVINCIAL RESULTS**

For each year that the Commission has conducted the stumpage study, the provincial results have been published in its report. The following table 3 compares the Provincial Stumpage Study Results by year that the study has been conducted by the Commission.

Table 3. Comparison of Provincial average stumpage rates determined by the Commission by species/product group and year.

Species/ Product Group	Oct 2014 - Sep 2015	Oct 2015 - Sep 2016	Oct 2016 - Sep 2017	Oct 2017 - Sep 2018	Oct 2018 - Dec 2019	Jan 2020 - Dec 2020	Jan 2021 - Dec 2021	Jan 2022 - Dec 2022
CEDSAW	\$ 19.62	\$ 17.60	\$ 16.93	\$ 17.52	\$ 17.52	\$ 17.87	\$ 21.59	\$ 20.31
HWDPW	\$ 10.00	\$ 12.24	\$ 10.13	\$ 9.94	\$ 9.93	\$ 10.14	\$ 10.53	\$ 10.84
HWDSL	\$ 19.69	\$ 30.65	\$ 20.47	\$ 21.06	\$ 33.72	\$ 26.39	\$ 22.72	\$ 32.06
OSRWB**	\$ 4.40	\$ 5.33	\$ 5.21	\$ 2.04	\$ 3.89	\$ 1.81		
OSSL	\$ 9.19	\$ 8.16	\$ 10.61	\$ 9.93	\$ 10.25	\$ 15.48	\$ 17.62	\$ 15.97
PISL	\$ 15.23	\$ 16.95	\$ 16.77	\$ 15.68	\$ 17.92	\$ 17.18	\$ 17.11	\$ 15.50
SPFRWB**	\$ 5.98	\$ 5.41	\$ 4.51	\$ 4.07	\$ 4.29	\$ 3.44		
SPFSL	\$ 19.01	\$ 20.17	\$ 19.06	\$ 17.82	\$ 20.64	\$ 19.82	\$ 20.37	\$ 21.83
SPFST	\$ 15.93	\$ 16.68	\$ 16.77	\$ 15.42	\$ 16.89	\$ 16.51	\$ 16.84	\$ 18.40
SWDPW**							\$ 3.37	\$ 3.43

\* - SPFTL stumpage data is limited to data from two Board regions and reflects specialized transactions and demand during the study period. For this reason, the Commission does not recommend using this figure as a basis for SPF treelength FMV on Crown land where treelength rates are used.

\*\* - New grouping of all softwood species pulpwood products.

### **MILL-PURCHASED AND CONTRACTOR-PURCHASED STUMPAGE VALUES**

Because the Commission collects data for all (100%) of the private woodlot stumpage purchased by mills, it is known that mill-purchased stumpage represents approximately 23% of all of the stumpage purchased from private woodlots in New Brunswick and 77% is purchased from woodlot owners by independent contractors. The data allows the Commission to conduct a comparison of the two stumpage purchase

methods. Table 4 compares the arithmetic mean of stumpage values paid by mills and by independent contractors.

Table 4. Comparison of values between mill purchased and contractor purchased stumpage data.

Species/ Product Group	Mill Purchased Stumpage (\$/m3)	Mill Purchased Volume (m3) (= Data Volume)	Contractor Purchased Stumpage (\$/m3)	Contractor Stumpage Data Volume (m3)	Contractor Purchased Volume* (m3)	Contractor Data % of Contractor Volume
CEDSAW	\$ 22.28	4,608	\$ 20.29	4,901	14,844	33%
HWDPW	\$ 10.58	83,913	\$ 12.47	58,110	204,816	28%
HWDSL	\$ 33.18	1,273	\$ 31.95	1,994	28,551	7%
OSSL	\$ 14.05	4,356	\$ 15.35	1,133	2,018	56%
PISL**	\$ 17.94	4,595	\$ 15.09	19,695	19,695	100%
SPFSL	\$ 24.76	42,712	\$ 19.71	57,282	131,108	44%
SPFST	\$ 20.14	80,073	\$ 15.96	67,234	271,835	25%
SWDPW	\$ 2.98	26,817	\$ 3.82	34,346	139,430	25%
Totals		248,347		244,695	812,297	30%

\* - Calculated by subtracting mill purchased stumpage volumes from total estimated stumpage purchases.

\*\* - Total Production of PISL used for calculations.

### **SPECIES PRODUCT GROUPS VS INDIVIDUAL SPECIES PRODUCTS**

Within the more commonly produced species product groups, and where sufficient data was collected, the species product groups of CEDSAW, HWDPW, and SPFRWB can be separated. Because of the relatively small volume of production of the groups OSRWB and OSSL, there is insufficient data to provide a statistically reliable breakdown of the individual species product combinations.

Comparisons can be made between the Provincial stumpage study result for the group and individual components of the group. However, because the Provincial result is calculated using the impact of regional rates and production, the Commission calculated a regional weighting factor to be applied to the arithmetic averages of the individual species products within the groups listed below. The Commission wanted to ensure consistency between the individual species product level rates and the Provincial weighted average rate for each group. Table 5 provides the regional weighting factor that was used for each species product group and is calculated as the ratio between the Provincial weighted average and the arithmetic average of each species product. Table 6 is a summary of the arithmetic mean (adjusted with regional weighting factor) for various individual species product categories within the species product groups.

Table 5. Regional weighting factors applied to arithmetic means of individual species product categories within a species product group.

Species Product Group	Provincial Weighted Average (\$/m3)	Provincial Arithmetic Average (\$/m3)	Regional Weighting Factor Applied
CEDSAW	\$ 20.31	\$ 21.20	0.9580
HWDPW	\$ 10.84	\$ 11.40	0.9509
SWDPW	\$ 3.43	\$ 3.48	0.9856

Table 6. Summary of the arithmetic mean (adjusted with regional weighting factor) for various individual species product categories within the species product groups and comparison to Provincial stumpage study result for the group.

Species Product Group	Species	Product	Adjusted Average Stumpage (\$/m3)	Provincial Weighted Average (\$/m3)
CEDSAW	CEDAR	Sawlog	\$ 22.33	\$ 20.31
	CEDAR	Studwood	\$ 20.99	
	CEDAR	Shinglewood	\$ 17.06	
	CEDAR	Treelength	\$ 18.29	
HWDPW	BIRCH	Pulpwood	\$ 9.37	\$ 10.84
	MIXED HARDWOOD	Pulpwood	\$ 12.03	
	MIXED HARDWOOD	Full-tree chips	\$ 6.67	
	POPLAR	Pulpwood	\$ 9.85	
SPFRWB	Spruce / Fir, J. Pine	Pulpwood	\$ 3.42	\$ 3.43
	Spruce / Fir, J. Pine	Full-tree chips	\$ 3.65	
	Other softwoods	Pulpwood	\$ 4.76	

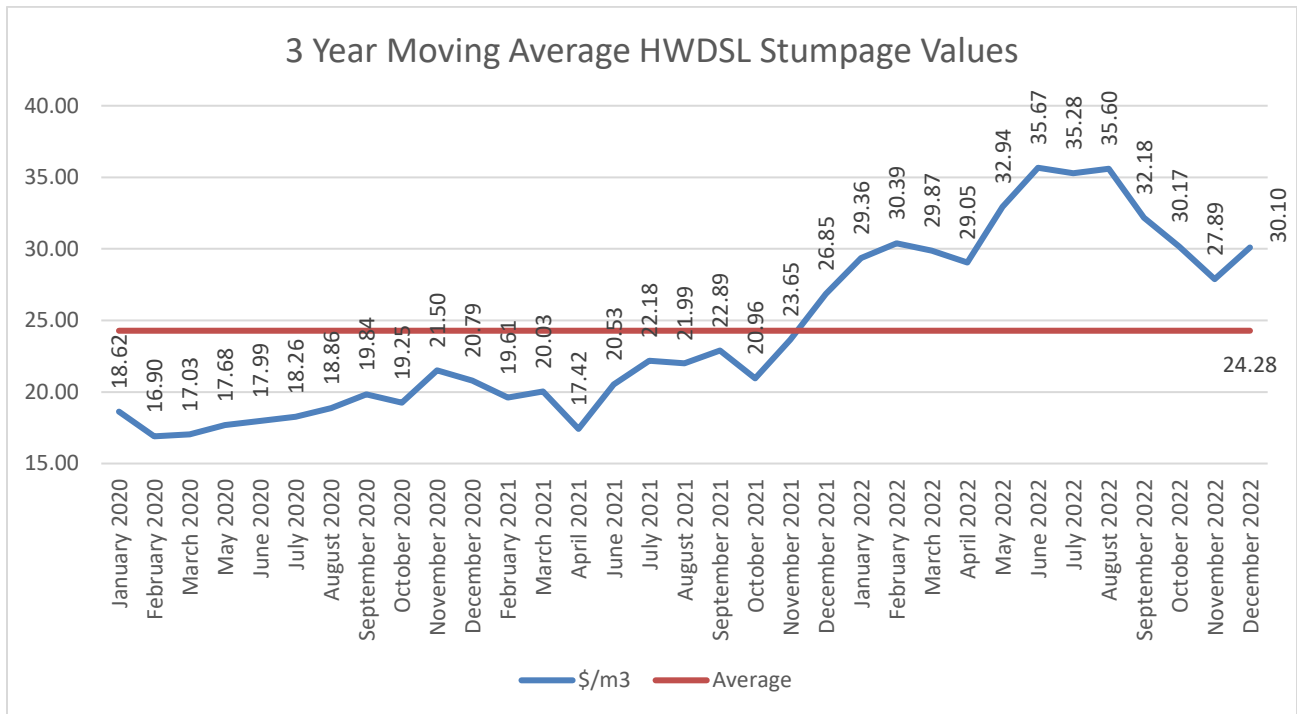
#### **HARDWOOD SAWLOG / VENEER ANALYSIS**

Since the Commission began doing this study, the practice has always been to combine all grades of hardwood sawlogs and hardwood veneer products. These products are relatively low in production volumes and as a result, generally yield limited sample sizes for analysis. In addition to the low sample sizes, there is an abundance of grade variability in both the product mill value and stumpage values, resulting in year over year variability in the stumpage value. This can be impacted by the proportion of saw material versus veneer products, in addition to the variables already mentioned.

As a result, the Department of Natural Resources and Energy Development inquired with the Commission to look at hardwood sawmill products as a stand alone and explore a different method to analyze the stumpage value of hardwood sawmill products. To do so, the Commission isolated hardwood sawmill products in its samples and conducted analysis of hardwood sawlogs over a longer period and using a moving-average.

The Commission used the period of January 2019 to December 2022 inclusive and the moving average analysis uses the previous 3 months of data for each month's average. Figure 1 below shows the results of that analysis and the 3-year average of hardwood sawlog products that resulted.

Figure 1. Moving average analysis of hardwood sawmill products over 3 year period.



**SPRUCE, FIR, JACK PINE COMBINED SAWMILL PRODUCTS**

The Department of Natural Resources and Energy Development also requested that the Commission analyze sawmill products in the Spruce, Fir, Jack Pine species group. To conduct this analysis, the Commission applied the Provincial average for each of the SPFSL and SPFST products and multiplied them by the private woodlot production of each to determine a total stumpage value and subsequently a combined average value. The same calculation was done using Crown volumes from the same period to account for the differences in proportions of the two products. Table 7 shows the results of the analysis.

Table 7. The combination of SPFSL and SPFST products in the current study, the volumes produced on private woodlots and on Crown land, stumpage values, and the resulting combined averages.

	Provincial \$/m3	Private Production (m3)	Total Stumpage Value	Crown Volume for Period (m3)	Total Stumpage Value
SPFSL	\$ 21.83	238,110	\$ 5,197,941.30	804,643	\$ 17,565,348.07
SPFST	\$ 18.40	482,066	\$ 8,870,014.40	2,115,667	\$ 38,928,275.08
Totals		720,176	\$ 14,067,955.70	2,920,310	\$ 56,493,623.15
Combined Average			\$ 19.53		\$ 19.35

**AVERAGE STUMPAGE VALUE COMPARED TO AVERAGE DELIVERED VALUE**

Mean Delivered Value (\$/m<sup>3</sup>) compared to Mean Stumpage Value (\$/m<sup>3</sup>) by Month (delivered value on top, stumpage value on bottom for each month). Shaded cells denote months with no data.

