
New Brunswick Private Woodlot Stumpage Values

Supplementary Analyses and Observations
January 2024 to December 2024



New Brunswick
Forest Products Commission

Commission des produits forestiers
du Nouveau Brunswick

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1.0 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 2024 through December 2024 is found in the report titled 'New Brunswick Private Woodlot Stumpage Values - Stumpage Study Results - January 2024 to December 2024'. 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.

2.0 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.

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

SPECIES	PRODUCT	GROUP	SPECIES	PRODUCT	GROUP
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*	STUDWOOD	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.

3.0 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 eleven (11) surveys where stumpage agreements and price points were used as the metrics.

3.1 Table 2. Response levels: current study vs. previous eleven (11) studies completed.

Report Period	Stumpage Agreements*	Price Points*
<i>Jan 2024 to Dec 2024</i>	468	2,130
Jan 2023 to Dec 2023	374	2,015
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.*

4.0 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.

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

Species/ Product Group	Oct 2016	Oct 2017	Oct 2018	Jan 2020	Jan 2021	Jan 2022	Jan 2023	Jan 2024
	Sep 2017	Sep 2018	Dec 2019	Dec 2020	Dec 2021	Dec 2022	Dec 2023	Dec 2024
CEDSAW**	\$ 16.93	\$ 17.52	\$ 17.52	\$ 17.87	\$ 21.59	\$ 20.31	\$ 24.52	\$ 25.77
HWDPW	\$ 10.13	\$ 9.94	\$ 9.93	\$ 10.14	\$ 10.53	\$ 10.84	\$ 11.48	\$ 10.67
HWDSL	\$ 20.47	\$ 21.06	\$ 33.72	\$ 26.39	\$ 22.72	\$ 32.06	\$ 32.75	\$ 30.27
OSRWB*	\$ 5.21	\$ 2.04	\$ 3.89	\$ 1.81				
OSSL	\$ 10.61	\$ 9.93	\$ 10.25	\$ 15.48	\$ 17.62	\$ 15.97	\$ 13.88	\$ 15.33
PISL	\$ 16.77	\$ 15.68	\$ 17.92	\$ 17.18	\$ 17.11	\$ 15.50	\$ 18.07	\$ 15.34
SPFRWB*	\$ 4.51	\$ 4.07	\$ 4.29	\$ 3.44				
SPFSL	\$ 19.06	\$ 17.82	\$ 20.64	\$ 19.82	\$ 20.37	\$ 21.83	\$ 24.20	\$ 22.89
SPFST	\$ 16.77	\$ 15.42	\$ 16.89	\$ 16.51	\$ 16.84	\$ 18.40	\$ 20.44	\$ 19.69
SWDPW*					\$ 3.37	\$ 3.43	\$ 4.20	\$ 3.66

* - New grouping of all softwood species pulpwood products started in 2021 study period

** - Excluding shinglewood product

5.0 MILL-PURCHASED & 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 16% of all the stumpage purchased from private woodlots in New Brunswick and 84% 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.

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

Species/ Product Group	Mill Purchased Stumpage (\$/m ³)	Mill Purchased Volume (m ³) (=Data Volume)	Contractor Purchased Stumpage (\$/m ³)	Contractor Stumpage Data Volume (m ³)	Contractor Purchased Volume* (m ³)	Contractor Data % of Contractor Volume
CEDSAW	\$ 21.43	2,209	\$ 28.88	3,929	12,097	32%
HWDPW	\$ 10.57	85,123	\$ 12.71	95,400	318,704	30%
HWDSL	\$ 30.97	2,245	\$ 28.83	2,192	33,802	6%
OSSL	\$ 16.81	2,516	\$ 9.11	1,607	6,151	26%
PISL	\$ 13.35	4,258	\$ 17.11	4,708	16,146	29%
SPFSL	\$ 25.43	44,962	\$ 21.24	59,305	201,926	29%
SPFST	\$ 19.78	71,441	\$ 17.91	82,858	303,892	27%
SWDPW	\$ 2.96	50,064	\$ 4.16	62,645	230,831	27%
TOTAL		262,819		312,644	1,123,549	28%

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

6.0 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.

6.1 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 (\$/m ³)	Provincial Arithmetic Average (\$/m ³)	Regional Weighting Factor Applied
CEDSAW	\$ 25.77	\$ 26.31	0.9795
HWDPW	\$ 10.67	\$ 11.73	0.9096
SWDPW	\$ 3.66	\$ 3.67	0.9973

6.2 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 (\$/m ³)	Provincial Weighted Average (\$/m ³)
CEDSAW	CEDAR	Sawlog	\$ 29.49	\$ 25.77
	CEDAR	Studwood	\$ 17.51	
	CEDAR	Shinglewood	\$ 25.11	
	CEDAR	Treelength	\$ 28.02	
HWDPW	BIRCH	Pulpwood	\$ 9.97	\$ 10.67
	MIXED HARDWOOD	Pulpwood	\$ 11.28	
	POPLAR	Pulpwood	\$ 10.01	
SWDPW	Spruce / Fir, J. Pine	Pulpwood	\$ 3.65	\$ 3.66
	Spruce / Fir, J. Pine	Full-tree chips	N/A	
	Other softwoods	Pulpwood	\$ 7.53	

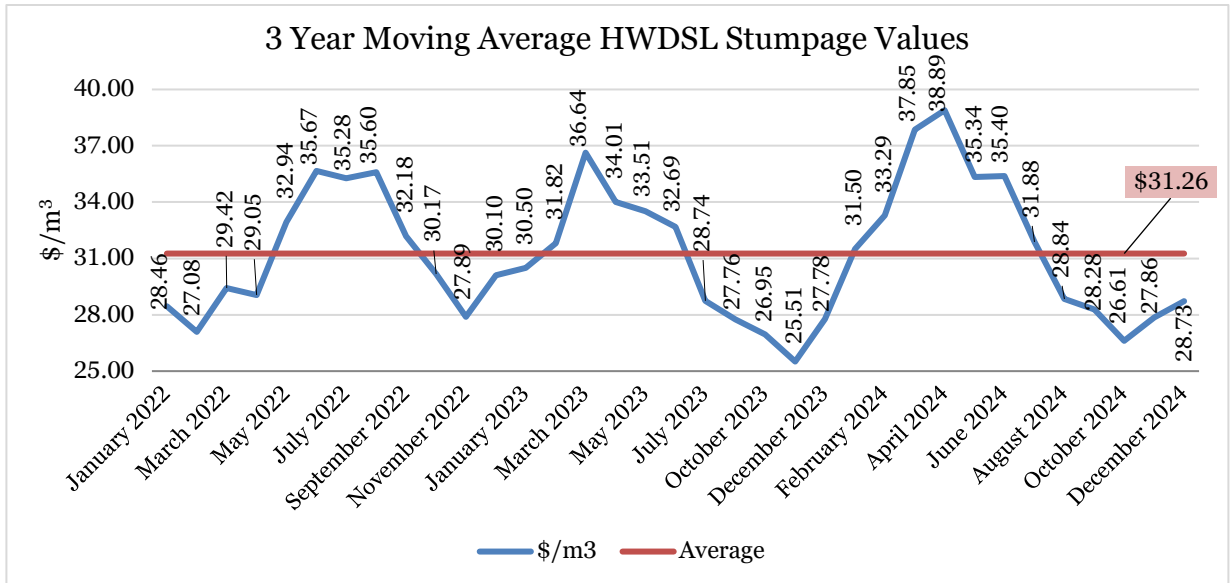
7.0 HARDWOOD SAWLOG / VENEER ANALYSIS

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 2022 to December 2024 inclusive. 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.

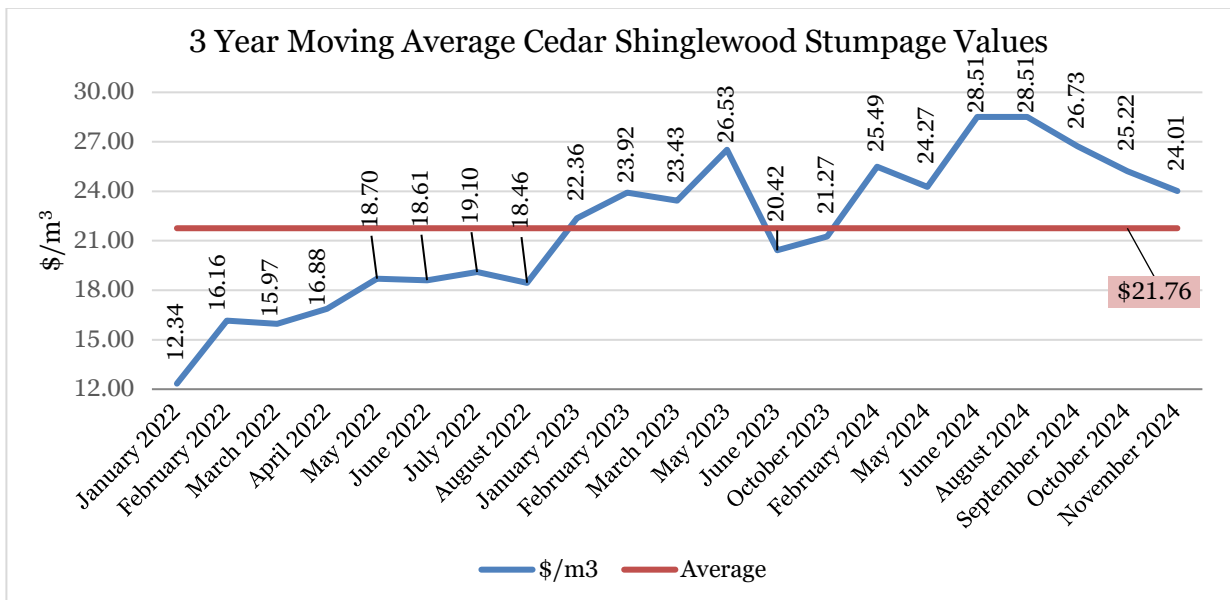
7.1 Figure 1. Moving average analysis of hardwood sawmill products over 3-year period.



8.0 CEDAR SHINGLEWOOD ANALYSIS

Cedar shinglewood products are also very limited in terms of stumpage data collected. For that reason, DNRED has also asked the Commission to conduct a similar analysis using a 3-year moving average for these products. Figure 2 below demonstrates the results of the analysis for cedar shinglewood products.

8.1 Figure 2. Moving average analysis of cedar shinglewood products over 3-year period.



9.0 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.

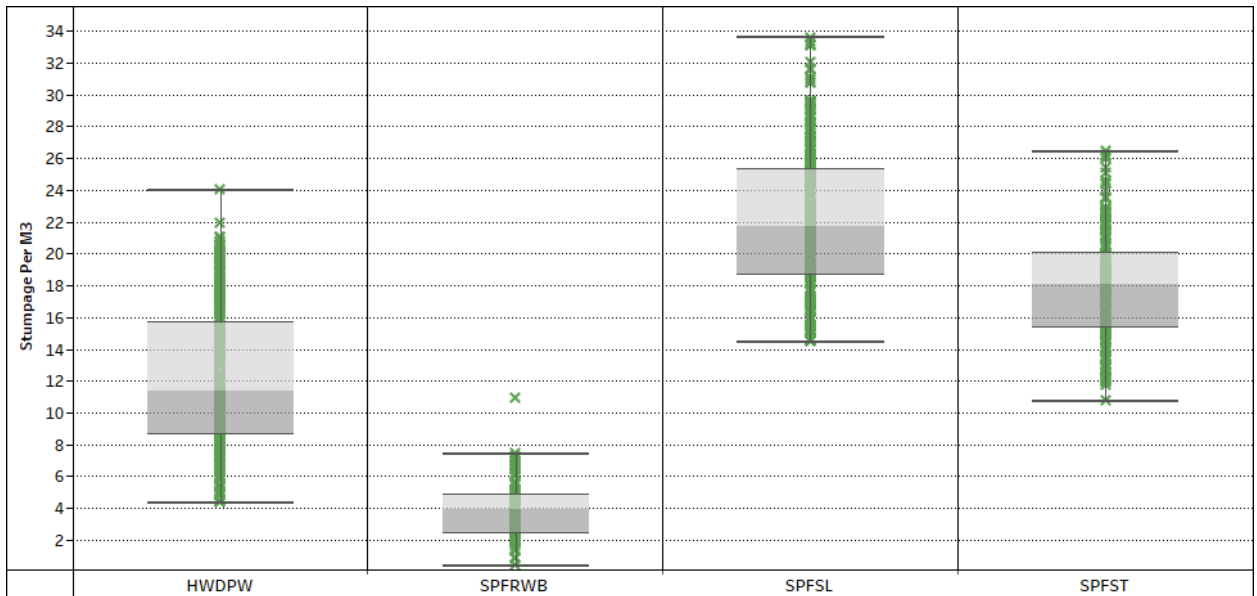
9.1 Table 7. The combination of SPFSL and SPFST products in the current study, the volumes produced on private woodlots and on Crown land, stumpage values, and the resulting combined averages.

Species/ Product Group	Provincial (\$/m ³)	Private Production (m ³)	Total Stumpage Value	Crown Volume for Period (m ³)	Total Stumpage Value
SPFSL	\$ 22.89	246,888	\$ 5,651,266.30	843,062	\$ 19,297,689.18
SPFST	\$ 19.69	375,333	\$ 7,390,306.70	2,210,200	\$ 43,518,838.00
TOTAL		622,221	\$ 13,041,573.00	3,053,262	\$ 62,816,527.18
Combined Average			\$ 20.96		\$ 20.57

10.0 QUARTILE ANALYSES

New in this 2024 report is the inclusion of box and whisker plots for the 4 species products groups that are the most common or highest in volume production. The box and whisker plot are a visual representation of the data that displays the five number summary (minimum, first quartile, median, third quartile, and maximum) to show the distribution and spread of a dataset, including potential outliers. The box represents the interquartile range (IQR), encompassing the middle 50% of the data, with the median (or second quartile) marked by a line within the box. Lines extending from the box, representing the minimum and maximum values within a certain range (often 1.5 times the IQR), beyond which outliers might be plotted as individual points. Data points that fall outside the whiskers are often considered outliers, indicating values that are significantly different from the rest of the data. For our purposes, we have selected data that does not include the top and bottom 5th percentiles, following our standard outlier removal methodology.

10.1 Figure 3. Box and whisker plots for the largest 4 species product groups.



10.2 Table 8. Tabular data for the Box and Whisker plots in Figure 3.

To provide additional clarity to the box and whisker plots found in Figure 3, the table below provides tabular data for the largest 4 species products groups.

Quartile Statistic	Species / Product Group			
	SPFSL	SPFST	SPFPW	HWDPW
Minimum (\$/m ³)	\$ 14.47	\$ 10.75	\$ 0.40	\$ 4.37
Average (\$/m ³)	\$ 16.80	\$ 13.86	\$ 1.90	\$ 6.99
Volume (m ³)	19,595	19,467	27,306	34,708
# Transactions	567	576	799	1,158
Lower Quartile (\$/m ³)	\$ 18.66	\$ 15.35	\$ 2.39	\$ 8.64
Average (\$/m ³)	\$ 20.31	\$ 16.61	\$ 3.05	\$ 10.12
Volume (m ³)	17,401	39,955	28,659	50,647
# Transactions	503	1,096	848	1,725
Median (\$/m ³)	\$ 21.75	\$ 18.05	\$ 3.97	\$ 11.36
Average (\$/m ³)	\$ 23.29	\$ 19.08	\$ 4.37	\$ 13.15
Volume (m ³)	22,932	37,654	35,951	55,554
# Transactions	622	980	1,083	1,824
Upper Quartile (\$/m ³)	\$ 25.24	\$ 20.01	\$ 4.88	\$ 15.70
Average (\$/m ³)	\$ 27.71	\$ 22.40	\$ 6.50	\$ 17.70
Volume (m ³)	36,033	45,905	10,829	27,313
# Transactions	951	1,255	374	940
Maximum (\$/m ³)	\$ 33.60	\$ 26.45	\$ 7.43	\$ 24.01

11.0 TRANSPORTATION DISTANCE ANALYSES

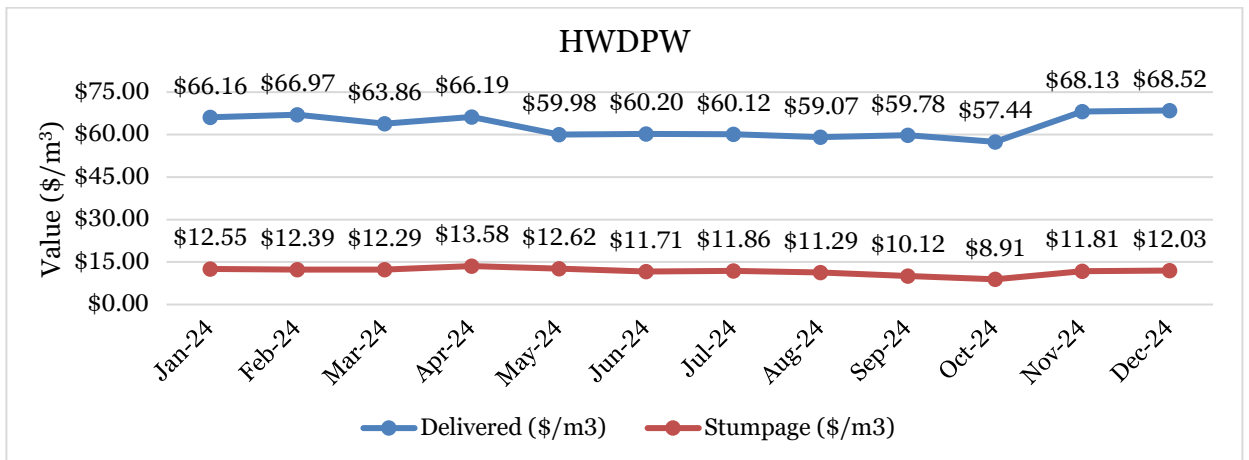
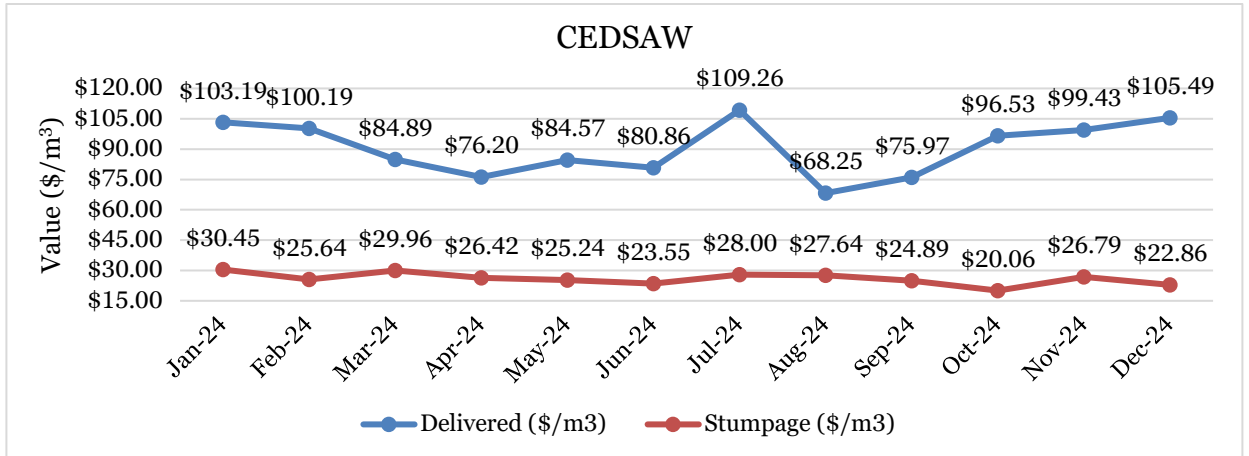
For the 2024 edition of this report, the Commission has also added analysis of transportation distance of the species products groups to assist in drawing conclusions regarding transportation distances for products from the private woodlots from which they originated to the destination to which they were hauled.

11.1 Table 9. Average transportation distances by species/product grouping for transactions in the last 5 study periods and the 5-year average.

Year	Species / Product Grouping (Distances in kilometers)							
	CEDSAW	HWDPW	HWDSL	OSSL	PISL	SPFPW	SPFSL	SPFST
2019	65.5	88.4	103.6	105.1	76.3	66.7	71.9	63.0
2020	87.5	92.8	93.9	101.1	71.2	65.2	80.8	85.5
2021	96.6	99.3	86.1	140.3	104.8	57.2	70.8	77.5
2022	78.8	79.5	74.4	105.6	106.8	56.2	104.6	97.3
2023	78.6	79.7	73.8	66.3	81.0	64.5	91.2	72.3
2024	73.2	97.3	103.6	115.9	120.4	64.4	99.7	71.9
5 Year-Avg.	80.0	89.5	89.2	105.7	93.4	62.4	86.5	77.9

12.0 AVERAGE STUMPAGE VALUE Vs. AVERAGE DELIVERED VALUE

Mean Delivered Value (\$/m³) compared to Mean Stumpage Value (\$/m³) by Month (delivered value on top, stumpage value on bottom for each month). Missing points denote months with no data.



New Brunswick Private Woodlot Stumpage Values

