

2021 Wood Processor Report

Including Import and Export Information

Compiled from 2021 Wood Processor Reports
pursuant to 12 M.R.S. § 8884
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Department of Agriculture, Conservation and Forestry
Maine Forest Service
Forest Policy and Management Division
#22 SHS, Augusta, ME 04333
(207) 287-2791

www.maineforestservice.gov; www.bewoodswise.org

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What is the purpose of the Wood Processor Report?

Each year, the Maine Forest Service collects information from Maine primary wood processors regarding the volume of wood processed in Maine. Information is also collected for volumes imported into Maine or exported from Maine.

This report summarizes, for 2021, the volume of wood harvested in Maine, processed by Maine mills, and imported into or exported from Maine.

Wood flow data is summarized for sawlogs, pulpwood, biomass chips, other miscellaneous products, and imports and exports.

How was this information collected?

In 2020, the Maine Forest Service received wood processor reports from 114 primary processing mills (sawmills, pulp and paper mills), 36 portable sawmills, 85 firewood dealers, 106 loggers and brokers who may have exported wood, 25 concentration yards, and 7 mills that burn some form of wood for energy. Volume information contained in these individual reports is confidential and by law shall not be made public, except that summary reports may be published using aggregated data which does not reveal the activities of an individual person or firm (12 M.R.S. §8884, sub-§3, "Forest Landowner and Wood Processor Reporting Requirements").

Interpreting Harvest, Export, Import, and Processed by the Maine Forest Products Industry

Maine wood processed

wood that is harvested in Maine and used by a Maine primary processing facility.

Exported from Maine without processing

wood that is harvested in Maine and exported out of state without processing by a Maine mill.

Imported from out of state

wood that is imported from out of state (not harvested in Maine) and processed by a Maine mill.

Total processed by Maine Forest Products Industry

total volume of wood processed in Maine, regardless of origin.

Definitions and Notes

1. Biomass Chips:

produced in the woods by chipping any or all of the following: tree limbs and tops, cull trees, and smaller trees not suitable for higher value products. Usually used as energy fuel, biomass chips may also be used for sludge composting, playground padding, and mulch.

2. Bole/Stem Pulp Chips:

produced in the woods by chipping the lower portion of the tree. These chips are not free of bark, but are suitable for use in pulp mills.

3. Cords (cDs):

a stack of fuel wood, pulpwood, or other material that measures 4 x 4 x 8 feet, or 128 cubic feet.

4. Construction and Demolition Waste (C and D Waste):

ground up wooden debris left over from construction and demolition that is burned by wood to energy facilities.

5. Firewood: roundwood that is burned for home heating.

6. Hog Fuel:

any woody residue produced from mills, such as sawdust, bark or shavings, and used as energy fuel.

7. Pellets:

wood fuel generally made from dried wood fiber compressed into uniform diameter for burning.

8. Pulpwood:

roundwood that is used for the production of wood pulp. Generally sold as tree length, 16', 8' or 4' lengths.

9. Sawlogs:

a log that meets minimum standards of diameter, length, and defect, intended for sawing into boards or lumber. Includes sawlogs, studwood, pallet logs, boltwood, and veneer logs.

10. Sawmill residues:

clean, pulp-quality chips made from debarked slabs and edgings at sawmills. Used by pulp and paper mills to produce wood pulp.

11. Thousand Board Feet (MBF):

One thousand board feet. One board foot is the amount of wood contained in an unfinished board 1" thick, 12" long, and 12" wide.

Report Highlights

🌲 Maine's forest products industry consumed 11.1 million green ton equivalents in 2021, down 7% from 11.9 million green ton equivalents in 2020. Seventy-nine percent of the processing total (8.7 million green ton equivalents) was harvested in Maine, while 21% (2.4 million green ton equivalents) was imported.

🌲 Maine landowners harvested 10.7 million green ton equivalents of wood in 2021, down 4% from 2020 (11.2 million green ton equivalents). Nineteen percent (2.0 million green ton equivalents) of the 2021 harvest was exported, down 2% from 2020 (2.1 million green ton equivalents).

🌲 Maine's pulp and paper producers processed 5.5 million green tons of pulpwood, down (13%) from 2020 (6.3 million green tons). Seventy-five percent of the pulpwood originated from Maine's forests; 25% was imported.

🌲 Biomass harvesting volume was 1.7 million tons in 2021, up 15% from 2020 (1.5 million tons). Biomass energy facilities consumed 1.6 million tons in 2021, up 6% from 2020 (1.5 million tons). Ninety-one percent originated from Maine's forests; 9% was imported.

🌲 Maine's sawlog processing in 2021 remained stable at 0.86 billion board feet, a small change from 0.88 billion board feet in 2020.

🌲 Maine's forest products industry imported 2.4 million green tons during 2021, down 16% from 2020 (2.8 million tons). 2.0 million green tons were exported in 2021, down 2% from 2020 (2.1 million tons).

SAWLOGS

2021 Wood flow in Maine as reported to the Maine Forest Service (in MBF)

County	Spruce and Fir	White and Red Pine	Hemlock	Cedar	Other Softwood	Total Softwood	Beech	White Birch	Yellow Birch	Sugar Maple	Red Maple	Oak	Ash	Aspen	Other Hardwood	Total Hardwood	Total Sawlogs
ANDROSCOGGIN	94	7,511	726	23	0	8,354	98	88	44	115	210	739	238	103	872	2,507	10,861
AROOSTOOK	161,297	3,682	250	11,049	80	176,358	698	5,183	3,361	9,407	5,796	7	353	44,253	319	69,377	245,735
CUMBERLAND	112	14,546	1,088	0	0	15,746	224	57	42	120	266	1,170	114	19	0	2,012	17,758
FRANKLIN	1,777	7,828	676	58	0	10,339	12	2,269	499	2,764	373	764	404	366	2,402	9,853	20,192
HANCOCK	11,015	10,535	814	384	0	22,748	3	385	152	394	268	360	297	26	606	2,491	25,239
KENNEBEC	44	10,760	1,418	8	0	12,230	98	101	32	152	244	1,000	290	137	637	2,691	14,921
KNOX	56	1,998	271	76	0	2,401	54	49	31	54	108	1,026	94	53	3	1,472	3,873
LINCOLN	146	4,933	972	26	0	6,077	43	44	24	153	29	721	67	60	0	1,141	7,218
OXFORD	14,026	36,041	2,463	3	0	52,533	512	893	834	2,320	796	2,715	561	841	3,636	13,108	65,641
PENOBSCOT	36,309	14,090	12,261	1,241	0	63,901	108	2,346	898	3,004	715	305	438	6,638	1,657	16,109	80,010
PISCATAQUIS	33,652	3,872	496	323	0	38,343	49	1,117	1,511	4,546	848	437	429	929	1,743	11,609	49,952
SAGADAHOC	101	2,483	448	1	0	3,033	11	10	3	16	22	200	11	3	0	276	3,309
SOMERSET	23,933	12,813	492	335	0	37,573	24	1,984	1,069	3,820	686	1,094	759	246	2,947	12,629	50,202
WALDO	1,181	6,910	593	20	0	8,704	18	171	55	94	217	589	156	24	497	1,821	10,525
WASHINGTON	24,166	4,879	1,399	949	1	31,394	1	118	122	275	121	24	208	4,919	0	5,788	37,182
YORK	32	20,437	822	0	0	21,291	186	61	60	80	312	316	72	46	81	1,214	22,505
Maine wood processed:	307,941	163,318	25,189	14,496	81	511,025	2,139	14,876	8,737	27,314	11,011	11,467	4,491	58,663	15,400	154,098	665,123
Exported from Maine without processing:	146,972	8,630	1,386	10,136	0	167,124	3	2,386	5,696	14,931	4,431	3,433	10,659	1,618	39,276	82,433	249,557
Total harvested from Maine forests:	454,913	171,948	26,575	24,632	81	678,149	2,142	17,262	14,433	42,245	15,442	14,900	15,150	60,281	54,676	236,531	914,680
Imported from out of state:	31,304	76,987	2,070	0	0	110,361	244	5,322	297	1,960	629	5,562	6,823	56,128	4,808	81,773	192,134
Total processed by Maine Forest Products Industry:	339,245	240,305	27,259	14,496	81	621,386	2,383	20,198	9,034	29,274	11,640	17,029	11,314	114,791	20,208	235,871	857,257

- Notes:**
1. Sawlogs include logs, veneer, boltwood, studwood, palletwood, etc. Green tons converted to MBF @ 5 green tons = 1 MBF.
 2. Other Softwood includes larch, pitch pine, and others.
 3. Sawlog volumes reported here are log volumes as scaled when delivered to the mill.

PULPWOOD

2021 Wood flow in Maine as reported to the Maine Forest Service (in Green Tons), including both solid wood and bole/stem pulp chips (Totals do not add up due to rounding)

County	Spruce and Fir	White and Red Pine	Hemlock	Cedar	Mixed / Other Softwood	Total Softwood	Aspen	Mixed / Other Hardwood	Total Hardwood	Mixed Wood	Total Pulpwood	SAWMILL RESIDUE <i>Green Tons</i>
ANDROSCOGGIN	72	1,956	6,836	0	0	8,864	*	23,673	24,258	0	33,122	31,705
AROOSTOOK	5,486	273	*	0	*	19,846	4,517	721,626	726,143	0	745,989	12,287
CUMBERLAND	207	4,033	14,479	0	0	18,719	*	29,954	29,973	0	48,692	25,529
FRANKLIN	45,331	4,547	10,684	0	0	60,562	*	330,953	332,395	0	392,957	62,947
HANCOCK	19,001	12,258	24,111	0	29,660	85,030	6,514	167,071	173,585	0	258,615	9,432
KENNEBEC	*	4,981	12,166	0	0	18,637	*	47,737	50,394	0	69,031	8,351
KNOX	*	59	*	0	0	135	*	5,053	5,423	0	5,558	18
LINCOLN	390	965	1,663	0	0	3,018	*	11,462	11,958	0	14,976	0
OXFORD	4,696	11,759	31,892	0	*	48,394	*	346,889	347,169	0	395,563	88,052
PENOBSCOT	37,957	13,752	95,747	0	12,208	159,664	11,820	426,842	438,662	0	598,326	62,226
PISCATAQUIS	54,170	8,142	39,325	0	1,229	102,866	*	256,528	263,292	0	366,158	38,668
SAGadahoc	*	503	2,086	0	0	2,660	*	9,133	9,366	0	12,026	868
SOMERSET	135,682	15,799	33,836	0	*	186,247	*	566,948	575,341	0	761,588	50,843
WALDO	6,958	2,274	*	0	0	16,227	*	55,781	58,893	0	75,120	21,541
WASHINGTON	5,296	*	56,315	0	*	138,768	4,324	161,685	166,009	0	304,777	0
YORK	0	4,306	12,058	0	0	16,364	0	40,014	40,014	0	56,378	2,627
Maine wood processed:	316,841	93,840	359,747	0	115,573	886,001	51,526	3,201,349	3,252,875	0	4,138,876	415,094
Exported from Maine without processing:	340,828	*	*	4,221	*	347,522	35,085	222,633	257,718	*	610,613	0
Total harvested from Maine forests:	657,669	95,606	360,439	4,221	115,588	1,233,523	86,611	3,423,982	3,510,593	*	4,749,489	415,094
Imported from out of state:	193,718	6,906	23,193	*	*	268,328	184,763	898,157	1,082,920	0	1,351,248	248,390
Total processed by Maine Forest Products Industry:	510,559	100,746	382,940	*	159,559	1,154,329	236,289	4,099,506	4,335,795	0	5,490,124	663,484

Sawmill residues are clean, pulp-quality wood chips made from slabs and edgings at sawmills. The volume is reported here as an additional input to the pulp and paper mills and pellet mills. Sawmill residues are a by-product of the sawing process, and are not included as additional harvest volumes from Maine's forests.

Wood Imports and Exports

2021 Wood Flow in Maine as reported to the Maine Forest Service (in Green Tons)

County	BIOMASS CHIPS	Further utilization of wood already tallied.	C AND D WASTE	FIREWOOD / PELLET* CORDS
		HOG FUEL		
Androscoggin	189,039	11,411	173	1,959
Aroostook	30,061	97,318	6	5,430
Cumberland	66,362	18,290	0	1,259
Franklin	191,633	101,836	2,625	4,488
Hancock	23,613	316	0	1,612
Kennebec	130,780	540	0	2,964
Knox	28,273	36	0	1,361
Lincoln	43,666	32,060	4,879	432
Oxford	213,096	33,104	0	3,692
Penobscot	137,094	10,621	0	14,313
Piscataquis	60,486	21,912	0	14,862
Sagadahoc	25,815	0	0	777
Somerset	94,154	46,834	0	19,049
Statewide*	0	0	0	8,878
Waldo	62,633	27,888	0	1,577
Washington	46,533	68	0	803
York	108,725	8,473	0	3,127
Maine wood processed:	1,451,963	410,707	7,683	86,583
Exported from Maine without processing:	264,887	162,659	0	13,248
Total harvested from Maine Forests:	1,716,850	573,366	7,683	99,831
Imported from out of state:	137,534	88,038	25,826	17,849
Total processed by Maine Forest Products Industry:	1,589,497	498,745	33,509	104,432

Import Origins

States:

Connecticut
Massachusetts
New Hampshire
New York
Rhode Island
Vermont

Provinces:

New Brunswick
Nova Scotia
Quebec

Export Destinations

States:

Connecticut
Indiana
Massachusetts
Michigan
New Hampshire
New York

Ohio

Pennsylvania
Rhode Island
Vermont
Washington

Provinces:

New Brunswick
Quebec

Countries:

China
Thailand

* This is the thirteenth Wood Processor Report to separately report firewood as a new product. Report forms were sent to known firewood dealers. In the past some firewood was uniquely identified and reported to MFS as an export, and MFS grouped these minor volumes into the pulpwood product. This by no means a complete accounting of the volume of processed firewood merchandized, sold, or distributed within Maine, or as an export or import. The only previous estimation of annual firewood consumption is a survey conducted by the State Planning Office in the early 1990's. That survey estimated an annual processing, sale, distribution and consumption of 400,000 cords. MFS will continue to improve its survey methods in order to obtain a consistent and reliable estimate of annual firewood processing.

In addition, this is the thirteenth year we have received reports from Maine's pellet mills. We have included reported volumes for pellet production under this section also.

*Volumes reported with no indication of originating county were identified as Statewide volume.

SUMMARY

2021 Wood flow in Maine as reported to the Maine Forest Service

Product	Harvest, Export, Import, Instate Processing	Total Volume in 2021	Total Volume in Green Tons
Sawlogs (in MBF) 1 MBF = 1,000 board feet <i>Note on conversions: see conversion table at the end of report</i>	a. Maine wood processed	665,123	2,904,520
	b. Exported from Maine without processing	249,557	1,123,134
	c. Total harvested from Maine forests (a+b=c)	914,680	4,027,654
	d. Imported from out of state	192,134	840,574
	f. Total processed by Maine Forest Products Industry (a+d=e)	857,257	3,745,095
Pulpwood (in green tons)	a. Maine wood processed	4,138,876	4,138,876
	b. Exported from Maine without processing	610,613	610,613
	c. Total harvested from Maine forests (a+b=c)	4,749,489	4,749,489
	d. Imported from out of state	1,351,248	1,351,248
	f. Total processed by Maine Forest Products Industry (a+d=e)	5,490,124	5,490,124
Biomass Chips (in green tons)	a. Maine wood processed	1,451,963	1,451,963
	b. Exported from Maine without processing	264,887	264,887
	c. Total harvested from Maine forests (a+b=c)	1,716,850	1,716,850
	d. Imported from out of state	137,534	137,534
	f. Total processed by Maine Forest Products Industry (a+d=e)	1,589,497	1,589,497
Firewood / Pellets (in cords) <i>Note on conversion: 1 cord = 2.5 green tons</i>	a. Maine wood processed	86,583	216,458
	b. Exported from Maine without processing	13,248	33,120
	c. Total harvested from Maine forests (a+b=c)	99,831	249,578
	d. Imported from out of state	17,849	44,623
	f. Total processed by Maine Forest Products Industry (a+d=e)	104,432	261,080
Totals (in green tons)	a. Maine wood processed		8,711,817
	b. Exported from Maine without processing		2,031,754
	c. Total harvested from Maine forests (a+b=c)		10,743,571
	d. Imported from out of state		2,373,979
	f. Total processed by Maine Forest Products Industry (a+d=e)		11,085,796

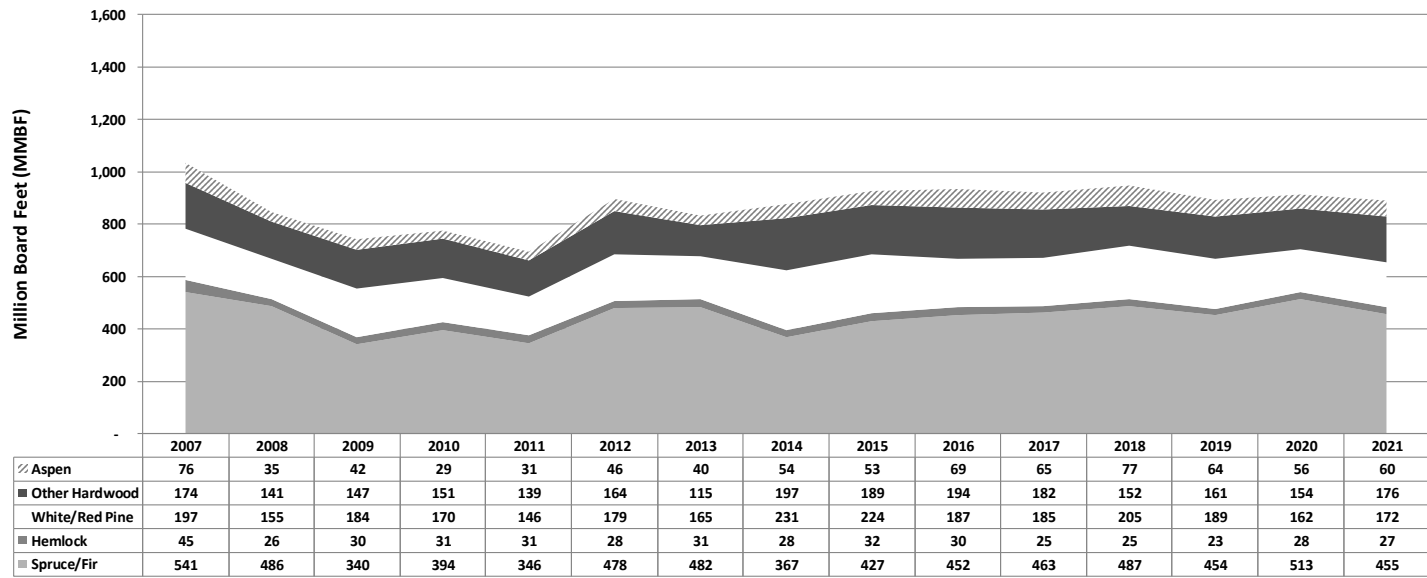
Wood Harvesting Trends (2007-2021)

The Maine Forest Service has been collecting data on volume of wood harvested since the late 1940's. The following three charts illustrate wood harvesting trends over the past 15 years.

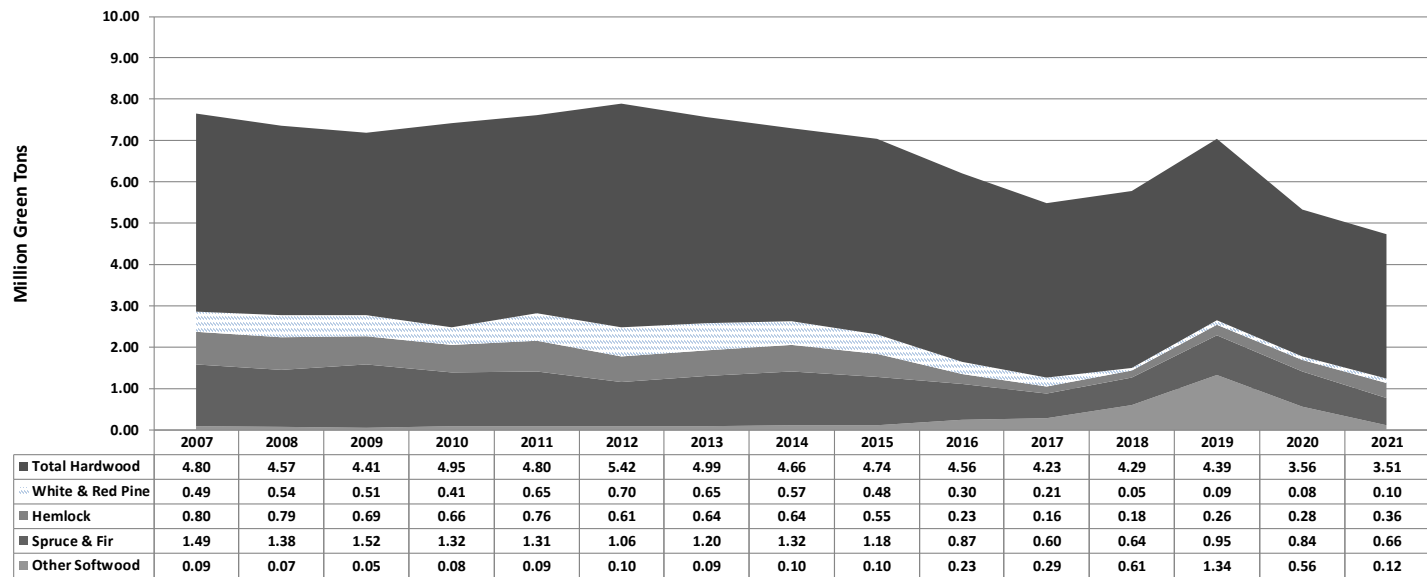
The two graphs to the right show the harvest volumes for selected species for sawlogs and pulpwood. These volumes include exported volumes.



Sawlog harvest levels of selected species in Maine (2007 - 2021)

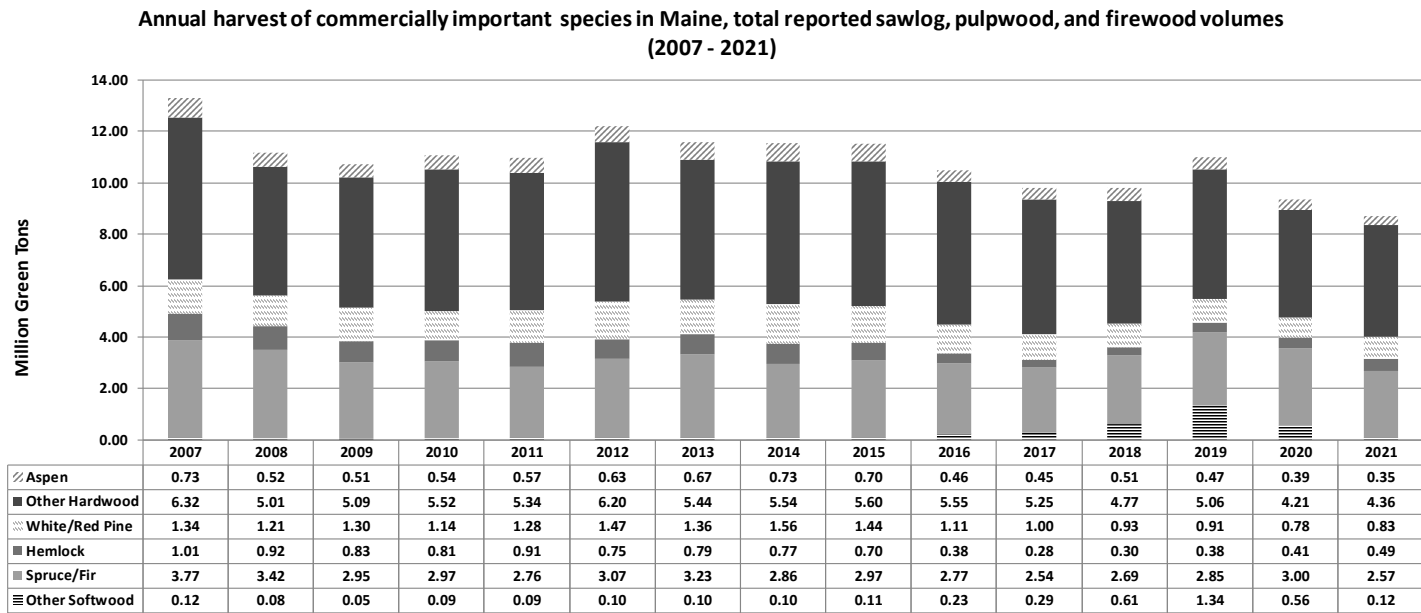


Pulpwood harvest levels of selected species in Maine (2007 - 2021)



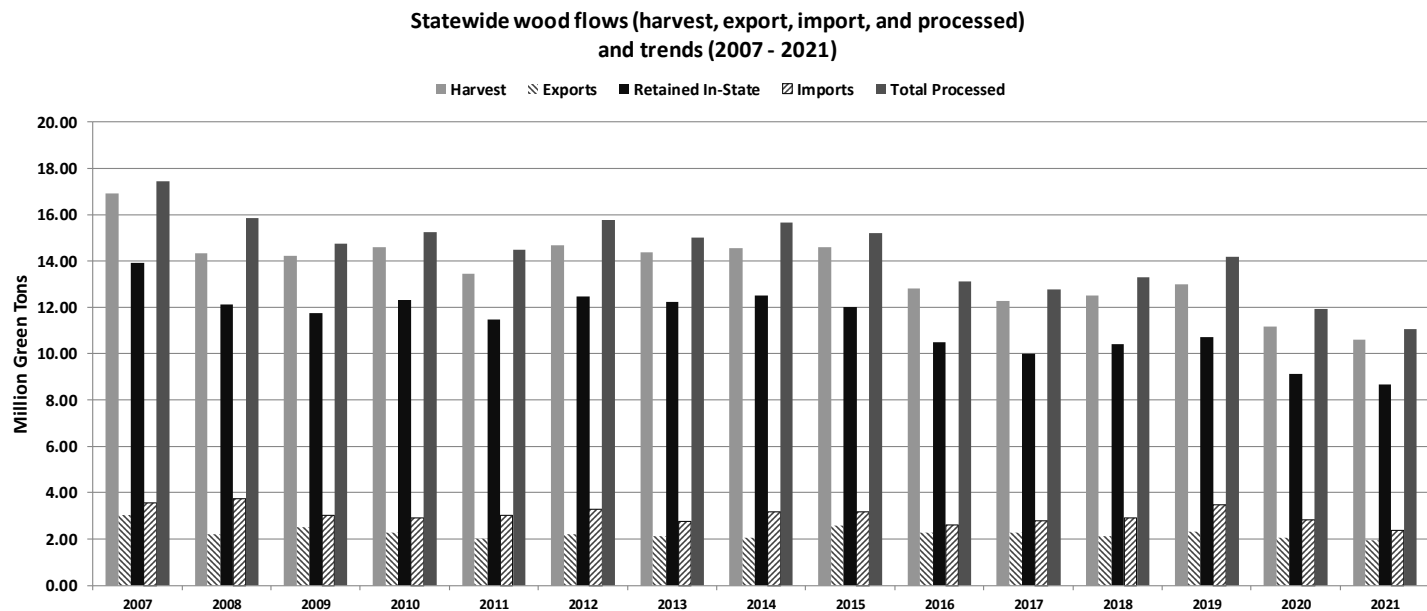
Wood Harvesting Trends (2007-2021)

The graph to the right shows the volumes for commercially important species.



Statewide Wood Flows (2007-2021)

The graph to the right shows the volumes of forest products being exported from Maine, imported into Maine, and processed within Maine.



**Conversion Table
MBF/Weight Equivalents
for various Maine Commercial Tree Species**

These conversions are used by the Maine Forest Service.

Users of this report may wish to confirm the conversion rate(s) used by individual mills and/or contractors who purchase wood.

<u>Species</u>	<u>MBF</u>	<u>Tons</u>
Spruce Fir	1	4.2
White Pine	1	4.3
Red Pine	1	4.3
Hemlock	1	4.8
Cedar	1	3.4
Tamarack (Larch)	1	4.8
Beech	1	4.5
White Birch	1	4.5
Yellow Birch	1	5.4
Sugar Maple	1	5.4
Red Maple	1	4.5
White Oak	1	5.4
Red Oak	1	5.4
Ash	1	4.5
Aspen/Poplar	1	4.3
Softwood	1	4.6
Hardwood	1	5.4
Mixed Wood	1	4.6

For purposes of comparing volumes, a rough conversion of 1 MBF = 2 cords is commonly used.

These conversions factors are handy for making estimates and for forest inventory purposes, but are advisory only. The weight of a particular volume of wood varies greatly by species, time of year and other factors.

It is illegal in Maine to convert from one system of measurement to another for the basis of payment (e.g. convert a mill payment for pulpwood in dollars per ton to a landowner payment in dollars per cord).



Maine Forest Service District Foresters

Oliver Markewicz

2281 Alfred Road
Lyman, ME 04002
Phone: (207) 441-3712
E-mail: oliver.c.markewicz@maine.gov

Allyssa Gregory

536 Waldoboro Road
Jefferson, ME 04348
Phone: (207) 441-2895
E-mail: allyssa.gregory@maine.gov

Michael Jensen

P.O. Box 130
Jonesboro, ME 04468
Phone: (207) 441-4924
E-mail: michael.p.jensen@maine.gov

Kenny Fergusson

87 Airport Rd
Old Town, ME 04468
Phone: (207) 215-9092
E-mail: kenneth.e.fergusson@maine.gov

Lauren Ouellette

2 Forestry Road
Island Falls, ME 04747
Phone: (207) 441-3817
E-mail: lauren.ouellette@maine.gov

Shane Duigan

356 Shaker Road
Gray, ME 04039
Phone: (207) 592-1251
E-mail: shane.p.duigan@maine.gov

Julie Davenport

P.O. Box 416
Norridgewock, ME 04957
Phone: (207) 592-2238
E-mail: julie.davenport@maine.gov

Jim Ferrante

P.O. Box 1107
Greenville, ME 04441
Phone: (207) 441-4308
E-mail: jim.ferrante@maine.gov

Mike Richard

131 Bethel Road
West Paris, ME 04289
Phone: (207) 441-3276
E-mail: michael.b.richard@maine.gov

Randy Lagasse

45 Radar Road
Ashland, ME 04732
Phone: (207) 557-1086
E-mail: randy.lagasse@maine.gov

Maine Forest Service - Main Office - Augusta (207) 287-2791
email: forestinfo@maine.gov