

2017 Wood Processor Report

Including Import and Export Information

Compiled from 2017 Wood Processor Reports
pursuant to 12 M.R.S. § 8884
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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 2017, 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 2017, the Maine Forest Service received wood processor reports from 126 primary processing mills (sawmills, pulp and paper mills), 44 portable sawmills, 86 firewood dealers, 121 loggers and brokers who may have exported wood, 27 concentration yards, and 8 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' len

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 12.8 million green ton equivalents in 2017, down from 13.1 million green ton equivalents in 2016. Seventy eight percent of the processing total (10.0 million green ton equivalents) was harvested in Maine, while 22% (2.8 million green ton equivalents) was imported.

 Maine landowners harvested 12.3 million green ton equivalents of wood in 2017, down from 2016 (12.8 million green ton equivalents). Nineteen percent (2.3 million green ton equivalents) of the 2017 harvest was exported, same as 2016 (2.3 million green ton equivalents).

 Maine's pulp and paper producers processed 6.5 million green tons of pulpwood, down .7 million tons (10%) from 2016 consumption. Seventy-five percent of the pulpwood originated from Maine's forests; 25% was imported.

 Biomass harvesting volume was 2.4 million tons in 2017, up from 2016 (2.2 million tons). Biomass energy facilities consumed 2.3 million tons in 2017, up 11% from 2016 (2.0 million tons). Eighty-seven percent originated from Maine's forests; 13% was imported.

 Maine's sawlog processing in 2017 was 0.86 billion board feet, same as 2016 (0.86 billion board feet).

 Maine's forest products industry imported 2.8 million green tons during 2017, compared to 2.6 million tons in 2016. 2.3 million green tons were exported in 2017, same as 2016 (2.3 million tons).

SAWLOGS

2017 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	2,202	8,197	442	1	0	10,842	100	120	389	475	357	759	425	186	0	2,811	13,653
AROOSTOOK	133,340	1,572	2	12,834	112	147,860	1,014	4,100	3,899	11,757	7,830	15	801	55,121	371	84,908	232,768
CUMBERLAND	254	16,055	1,300	0	0	17,609	161	235	213	109	402	860	446	255	0	2,681	20,290
FRANKLIN	6,601	7,539	442	416	13	15,011	322	1,613	480	1,482	637	1,069	744	312	49	6,708	21,719
HANCOCK	10,353	10,424	489	93	0	21,359	2	483	254	702	264	332	382	9	832	3,260	24,619
KENNEBEC	912	14,104	2,484	71	17	17,588	341	993	1,440	852	625	1,394	490	462	2	6,599	24,187
KNOX	416	2,819	234	0	0	3,469	0	76	1	1	3	62	8	1	0	152	3,621
LINCOLN	536	5,964	1,108	14	0	7,622	7	96	29	54	45	110	52	2	0	395	8,017
OXFORD	27,185	29,556	2,180	0	0	58,921	753	1,391	1,143	2,086	699	2,647	836	120	23	9,698	68,619
PENOBSCOT	36,316	14,375	10,370	1,874	0	62,935	60	1,960	1,471	2,860	576	628	866	5,642	631	14,694	77,629
PISCATAQUIS	23,471	4,537	244	149	22	28,423	702	1,777	2,588	7,649	1,460	855	1,414	11	468	16,924	45,347
SAGADAHOC	22	2,509	103	0	0	2,634	15	16	24	13	14	81	2	0	0	165	2,799
SOMERSET	28,674	13,275	688	355	58	43,050	1,222	2,981	2,190	1,945	1,371	2,453	1,082	289	107	13,640	56,690
WALDO	2,278	8,288	439	253	3	11,261	47	418	26	106	530	1,609	166	87	0	2,989	14,250
WASHINGTON	20,664	3,538	103	42	4	24,351	52	141	210	477	178	84	240	1,868	680	3,930	28,281
YORK	149	18,878	1,039	6	0	20,072	145	79	39	30	259	1,627	107	95	0	2,381	22,453
Maine wood processed:	293,373	161,630	21,667	16,108	229	493,007	4,943	16,479	14,396	30,598	15,250	14,585	8,061	64,460	3,163	171,935	664,942
Exported from Maine without processing:	169,385	23,344	3,021	19,028	70	214,848	467	2,061	11,266	11,680	4,326	13,923	7,058	100	23,624	74,505	289,353
Total harvested from Maine forests:	462,758	184,974	24,688	35,136	299	707,855	5,410	18,540	25,662	42,278	19,576	28,508	15,119	64,560	26,787	246,440	954,295
Imported from out of state:	49,900	77,203	528	624	0	128,255	231	7,069	952	2,417	2,481	215	395	46,420	8,475	68,655	196,910
Total processed by Maine Forest Products Industry:	343,273	238,833	22,195	16,732	229	621,262	5,174	23,548	15,348	33,015	17,731	14,800	8,456	110,880	11,638	240,590	861,852

- 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. Mill overrun (the ability to produce more lumber than scaled due to technological advances) generally results in output figures significantly higher than reported here. (Spruce Fir sawlog mill overrun volume calculated at 405,761 MBF)

PULPWOOD

2017 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	Other Softwood	Total Softwood	Aspen	Other Hardwood	Total Hardwood	Mixed Wood	Total Pulpwood	SAWMILL RESIDUE <i>Green Tons</i>
ANDROSCOGGIN	137	3,648	5,671	0	14,516	23,972	2,441	63,562	66,003	0	89,975	17,514
AROOSTOOK	*	*	*	0	2,366	7,289	966	713,530	714,496	0	721,785	22,000
CUMBERLAND	890	30,020	12,919	0	15,284	59,113	2,313	41,014	43,327	0	102,440	10,791
FRANKLIN	58,665	5,722	13,801	0	12,398	90,586	17,475	375,140	392,615	0	483,201	27,362
HANCOCK	15,384	960	4,223	0	24,540	45,107	8,729	137,443	146,172	0	191,279	12,451
KENNEBEC	2,666	7,721	5,840	0	33,128	49,355	5,903	100,418	106,321	0	155,676	6,211
KNOX	1,608	438	969	0	5,494	8,509	658	24,468	25,126	0	33,635	0
LINCOLN	445	8,445	4,629	0	15,394	28,913	741	37,369	38,110	0	67,023	0
OXFORD	24,618	86,174	44,752	0	27,722	183,266	16,518	436,956	453,474	0	636,740	28,993
PENOBSCOT	32,300	1,236	22,283	0	18,732	74,551	24,229	406,858	431,087	0	505,638	13,776
PISCATAQUIS	62,105	1,624	11,615	0	12,728	88,072	13,265	488,969	502,234	0	590,306	38,381
SAGadahoc	234	842	1,785	0	9,290	12,151	1,434	16,697	18,131	0	30,282	0
SOMERSET	145,669	20,740	6,977	0	21,127	194,513	32,078	530,862	562,940	0	757,453	31,084
WALDO	6,743	24,291	3,740	0	8,482	43,256	5,089	89,918	95,007	0	138,263	49
WASHINGTON	8,662	*	1,521	0	6,180	18,204	5,212	227,811	233,023	0	251,227	0
YORK	*	13,075	16,750	0	12,345	42,877	2,871	71,219	74,090	0	116,967	11,247
Maine wood processed:	365,727	206,806	157,475	0	239,726	969,734	139,922	3,762,234	3,902,156	0	4,871,890	219,859
Exported from Maine without processing:	231,293	220	793	0	49,840	282,146	28,628	302,637	331,265	0	613,411	17,825
Total harvested from Maine forests:	597,020	207,026	158,268	0	289,566	1,251,880	168,550	4,064,871	4,233,421	0	5,485,301	237,684
Imported from out of state:	201,835	46,291	33,032	0	22,650	303,808	106,549	1,200,922	1,307,471	0	1,611,279	133,690
Total processed by Maine Forest Products Industry:	567,562	253,097	190,507	0	262,376	1,273,542	246,471	4,963,156	5,209,627	0	6,483,169	353,549

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.

Pulpwood Notes:

** Due to a limited number of reports, data could not be displayed but is included in the totals.*

1. Other Softwood is comprised of bole chips of which specific species information was not collected.
2. Aspen volumes are based upon pure loads.
3. Other Hardwood is comprised of all hardwood species except aspen sold in pure loads.

Wood Imports and Exports

2017 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	69,807	18,411	8,850	4,285
Aroostook	457,746	219,122	0	5,935
Cumberland	153,242	18,401	0	2,048
Franklin	237,410	47,864	2,654	6,145
Hancock	32,519	15,170	0	263
Kennebec	112,001	15,698	0	4,266
Knox	14,378	1,611	0	288
Lincoln	34,712	4,080	0	685
Oxford	152,420	193,510	0	5,390
Penobscot	215,070	8,225	0	12,115
Piscataquis	39,714	52,670	0	13,677
SAGADAHOC	11,242	1,784	0	477
Somerset	127,665	33,687	418	33,361
Statewide*	0	0	0	4,957
Waldo	64,488	18,128	0	2,552
Washington	74,386	4,611	0	678
York	160,646	8,343	0	2,973
Maine wood processed:	1,957,446	661,315	11,922	100,095
Exported from Maine without processing:	393,022	349,097	0	1,171
Total harvested from Maine Forests:	2,350,468	1,010,412	11,922	101,266
Imported from out of state:	299,112	191,869	38,224	5,136
Total processed by Maine Forest Products Industry:	2,256,558	853,184	50,146	105,231

<u>Import Origins</u>	<u>Export Destinations</u>
States:	States:
Connecticut	Indiana
Massachusetts	Massachusetts
New Hampshire	Michigan
New York	New Hampshire
Rhode Island	New York
Vermont	Vermont
Provinces:	Provinces:
New Brunswick	New Brunswick
Nova Scotia	Quebec
Quebec	Countries:
Countries:	China
Estonia	Thailand

* This is the tenth 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 tenth 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

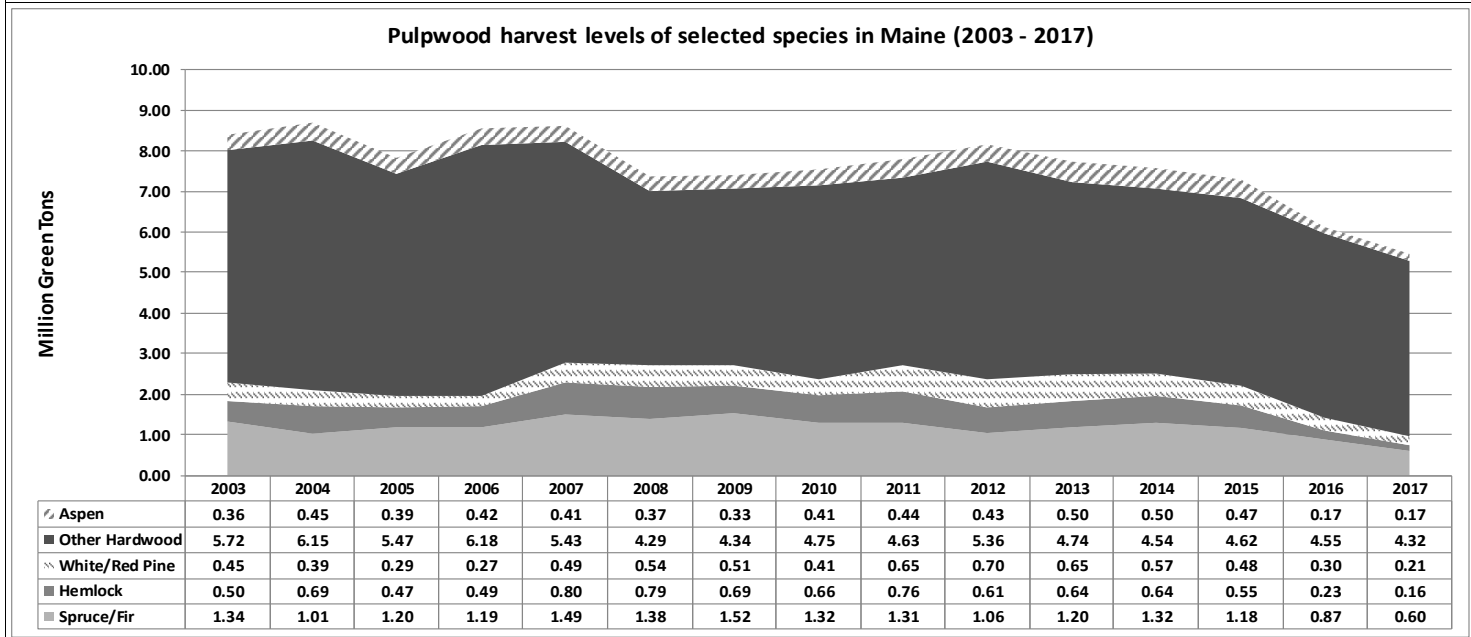
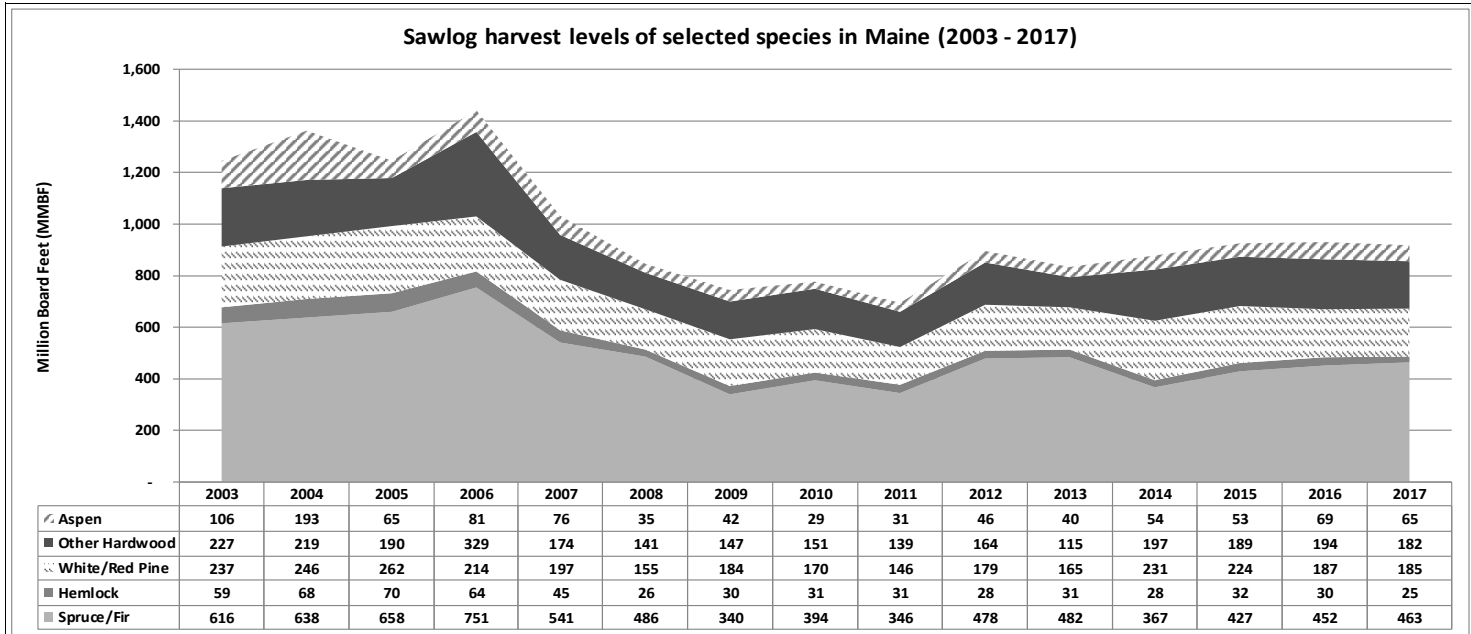
2017 Wood flow in Maine as reported to the Maine Forest Service

Product	Harvest, Export, Import, Instate Processing	Total Volume in 2017	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	664,942	2,904,281
	b. Exported from Maine without processing	289,353	1,281,010
	c. Total harvested from Maine forests (a+b=c)	954,295	4,185,292
	d. Imported from out of state	196,910	856,726
	f. Total processed by Maine Forest Products Industry (a+d=e)	861,852	3,761,007
Pulpwood (in green tons)	a. Maine wood processed	4,871,890	4,871,890
	b. Exported from Maine without processing	613,411	613,411
	c. Total harvested from Maine forests (a+b=c)	5,485,301	5,485,301
	d. Imported from out of state	1,611,279	1,611,279
	f. Total processed by Maine Forest Products Industry (a+d=e)	6,483,169	6,483,169
Biomass Chips (in green tons)	a. Maine wood processed	1,957,446	1,957,446
	b. Exported from Maine without processing	393,022	393,022
	c. Total harvested from Maine forests (a+b=c)	2,350,468	2,350,468
	d. Imported from out of state	299,112	299,112
	f. Total processed by Maine Forest Products Industry (a+d=e)	2,256,558	2,256,558
Firewood / Pellets (in cords) <i>Note on conversion: 1 cord = 2.5 green tons</i>	a. Maine wood processed	100,095	250,238
	b. Exported from Maine without processing	1,171	2,928
	c. Total harvested from Maine forests (a+b=c)	101,266	253,165
	d. Imported from out of state	5,136	12,840
	f. Total processed by Maine Forest Products Industry (a+d=e)	105,231	263,078
Totals (in green tons)	a. Maine wood processed		9,983,855
	b. Exported from Maine without processing		2,290,371
	c. Total harvested from Maine forests (a+b=c)		12,274,226
	d. Imported from out of state		2,779,957
	f. Total processed by Maine Forest Products Industry (a+d=e)		12,763,811

Wood Harvesting Trends (2003-2017)

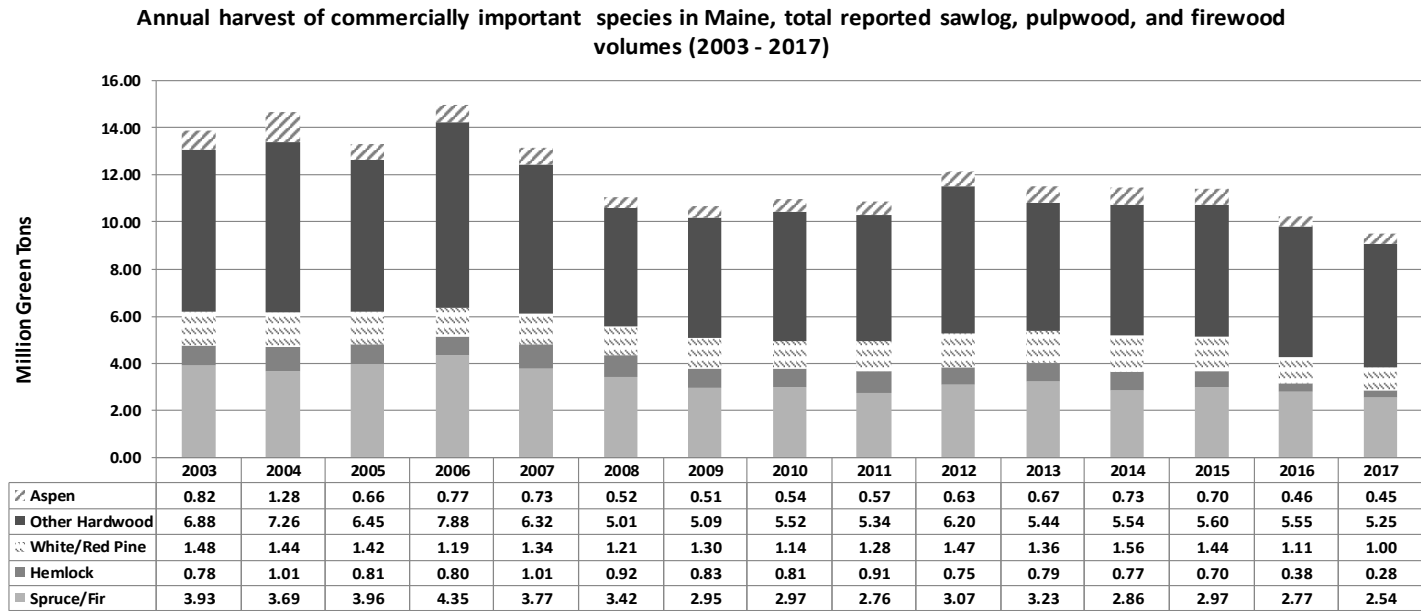
The Maine Forest Service has been collecting data on volume of wood harvested since the late 1940's. The following three charts illustrate wood harvesting trends over the past 15 years.

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



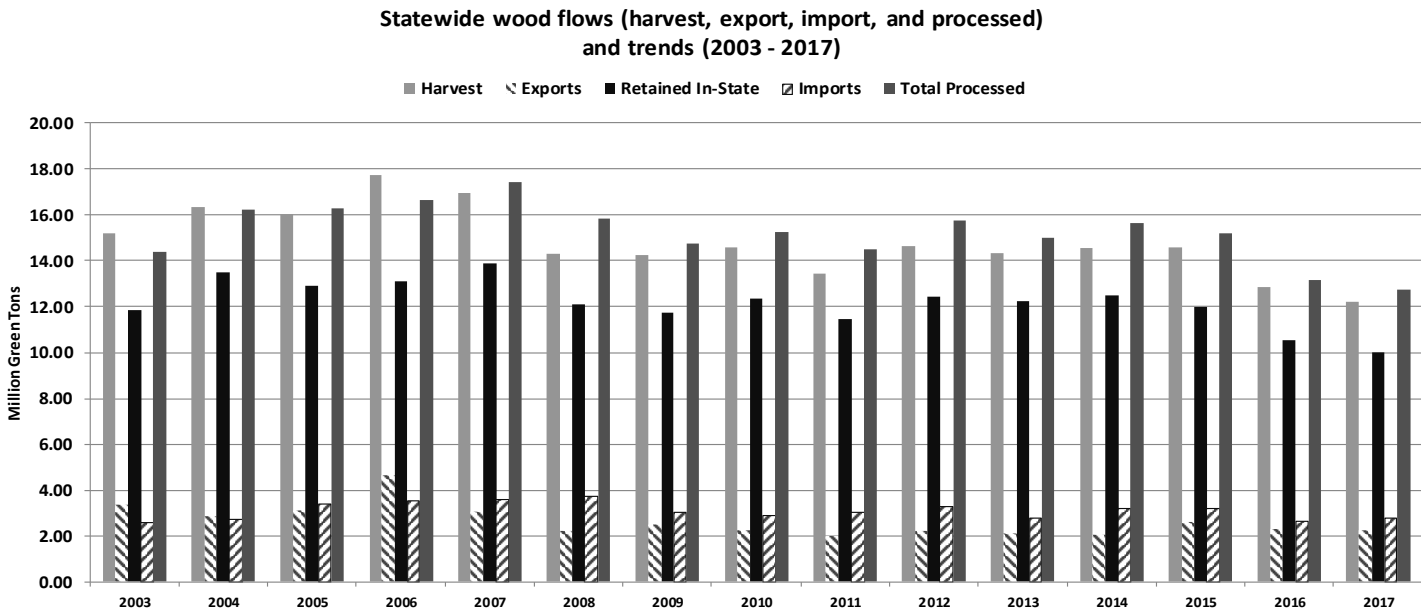
Wood Harvesting Trends (2003-2017)

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



Statewide Wood Flows (2003-2017)

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



**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).



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