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2019 Wood Processor Report, Including Import and Export Information

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2019 Wood Processor Report

Including Import and Export Information

Compiled from 2019 Wood Processor Reports
pursuant to 12 M.R.S. § 8884
Published: March 29, 2021



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Published under appropriation 010-01A-5440-52

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 2019, 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 2019, the Maine Forest Service received wood processor reports from 112 primary processing mills (sawmills, pulp and paper mills), 39 portable sawmills, 87 firewood dealers, 112 loggers and brokers who may have exported wood, 25 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' length

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 14.2 million green ton equivalents in 2019, up from 13.3 million green ton equivalents in 2018. Seventy five percent of the processing total (10.7 million green ton equivalents) was harvested in Maine, while 25% (3.5 million green ton equivalents) was imported.

 Maine landowners harvested 13 million green ton equivalents of wood in 2019, up from 2018 (12.5 million green ton equivalents). Eighteen percent (2.3 million green ton equivalents) of the 2019 harvest was exported, up from 2018 (2.1 million green ton equivalents).

 Maine's pulp and paper producers processed 8.7 million green tons of pulpwood, up from 2018 (6.8 million green tons). Seventy-three percent of the pulpwood originated from Maine's forests; 27% was imported.

 Biomass harvesting volume was 1.6 million tons in 2019, down from 2018 (2.2 million tons). Biomass energy facilities consumed 1.4 million tons in 2019, down 35% from 2018 (2.2 million tons). Ninety percent originated from Maine's forests; 10% was imported.

 Maine's sawlog processing in 2019 was 0.87 billion board feet, down from 2018 (0.93 billion board feet).

 Maine's forest products industry imported 3.5 million green tons during 2019, compared to 2.9 million tons in 2018. 2.3 million green tons were exported in 2019, up from 2018 (2.1 million tons).

SAWLOGS

2019 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	237	9,682	504	2	0	10,425	92	151	54	116	255	2,166	298	65	74	3,271	13,696
AROOSTOOK	159,218	2,440	122	11,603	63	173,446	604	3,934	4,517	10,283	4,918	16	582	50,091	400	75,345	248,791
CUMBERLAND	191	13,593	1,004	0	0	14,788	204	58	20	101	198	807	79	28	278	1,773	16,561
FRANKLIN	11,714	8,623	504	84	13	20,938	7	2,061	486	1,623	349	391	468	203	5,627	11,215	32,153
HANCOCK	12,226	3,301	241	208	5	15,981	2	397	147	370	153	22	246	98	897	2,332	18,313
KENNEBEC	146	12,507	1,131	13	46	13,843	103	499	45	140	272	1,009	333	138	214	2,753	16,596
KNOX	49	2,294	132	1	0	2,476	0	76	9	2	20	138	9	45	1	300	2,776
LINCOLN	330	8,008	939	3	0	9,280	0	57	3	30	12	350	115	36	18	621	9,901
OXFORD	12,200	37,018	2,593	0	0	51,811	514	841	580	1,512	916	3,019	507	224	1,913	10,026	61,837
PENOBSCOT	30,580	8,600	12,763	1,396	4	53,343	8	1,672	1,233	2,257	559	434	1,094	3,720	1,468	12,445	65,788
PISCATAQUIS	30,057	4,931	514	139	0	35,641	2	1,119	1,781	4,394	697	372	863	121	1,331	10,680	46,321
SAGADAHOC	112	2,770	209	0	0	3,091	2	31	1	2	4	101	7	11	0	159	3,250
SOMERSET	23,428	12,362	609	408	35	36,842	20	1,900	1,593	4,233	158	1,841	801	516	1,837	12,899	49,741
WALDO	3,445	6,864	226	236	1	10,772	1	350	12	105	56	389	11	33	16	973	11,745
WASHINGTON	13,601	1,315	126	47	0	15,089	0	162	154	327	124	34	201	2,301	734	4,037	19,126
YORK	41	22,065	1,017	0	0	23,123	241	69	74	87	475	365	124	6	14	1,455	24,578
Maine wood processed:	297,575	156,373	22,634	14,140	167	490,889	1,800	13,377	10,709	25,582	9,166	11,454	5,738	57,636	14,822	150,284	641,173
Exported from Maine without processing:	168,652	20,451	811	16,376	60	206,350	63	1,645	9,802	19,287	5,604	9,767	5,020	6,691	17,122	75,001	281,351
Total harvested from Maine forests:	466,227	176,824	23,445	30,516	227	697,239	1,863	15,022	20,511	44,869	14,770	21,221	10,758	64,327	31,944	225,285	922,524
Imported from out of state:	74,788	74,194	671	191	0	149,844	256	8,090	892	1,816	1,048	340	43	53,635	10,158	76,278	226,122
Total processed by Maine Forest Products Industry:	372,363	230,567	23,305	14,331	167	640,733	2,056	21,467	11,601	27,398	10,214	11,794	5,781	111,271	24,980	226,562	867,295

- 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

2019 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 Green Tons
ANDROSCOGGIN	8,437	*	*	0	35,830	53,530	2,064	58,997	61,061	0	114,591	4,234
AROOSTOOK	5,129	*	295	0	51,133	56,618	*	957,335	972,809	0	1,029,427	0
CUMBERLAND	1,104	*	*	0	69,394	99,965	1,755	52,519	54,274	0	154,239	2,877
FRANKLIN	77,164	7,297	14,343	0	24,567	123,371	16,793	347,953	364,746	0	488,117	34,138
HANCOCK	41,613	*	13,104	0	105,954	164,539	3,294	86,632	89,926	0	254,465	9,970
KENNEBEC	3,745	4,551	6,246	0	55,099	69,641	3,843	73,852	77,695	0	147,336	3,532
KNOX	1,295	820	585	0	*	13,457	1,877	21,308	23,185	0	36,642	5
LINCOLN	734	1,123	4,767	0	29,282	35,906	973	36,777	37,750	0	73,656	0
OXFORD	35,770	*	*	0	131,173	258,627	19,051	446,048	465,099	0	723,726	39,948
PENOBSCOT	103,420	8,934	27,363	0	345,245	484,962	39,723	439,013	478,736	0	963,698	17,796
PISCATAQUIS	88,644	8,449	25,335	0	126,525	248,953	16,590	445,591	462,181	0	711,134	17,833
SAGadahoc	44	1,093	*	0	*	18,456	1,110	11,250	12,360	0	30,816	1,603
SOMERSET	155,225	16,302	28,124	0	89,341	288,992	43,014	482,990	526,004	0	814,996	29,083
WALDO	6,611	1,162	6,161	0	30,876	44,810	4,323	51,152	55,475	0	100,285	46
WASHINGTON	18,123	*	*	0	124,506	161,962	105	312,830	312,935	0	474,897	0
YORK	*	*	*	0	77,993	97,912	1,224	81,409	82,633	0	180,545	1,192
Maine wood processed:	547,163	91,480	260,995	0	1,322,063	2,221,701	171,213	3,905,656	4,076,869	0	6,298,570	162,257
Exported from Maine without processing:	400,771	2,967	2,979	0	14,397	421,114	24,480	284,469	308,949	0	730,063	5,917
Total harvested from Maine forests:	947,934	94,447	263,974	0	1,336,460	2,642,815	195,693	4,190,125	4,385,818	0	7,028,633	168,174
Imported from out of state:	189,423	34,742	28,273	0	578,806	831,244	272,811	1,260,829	1,533,640	0	2,364,884	124,236
Total processed by Maine Forest Products Industry:	736,586	126,222	289,268	0	1,900,869	3,052,945	444,024	5,166,485	5,610,509	0	8,663,454	286,493

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.*

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

Wood Imports and Exports

2019 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	141,225	27,391	12,294	2,208
Aroostook	89,407	120,885	10	9,234
Cumberland	95,541	21,370	0	5,033
Franklin	187,116	83,503	1,851	13,108
Hancock	15,668	1,583	0	2,512
Kennebec	95,522	3,324	0	5,367
Knox	27,348	58	0	218
Lincoln	44,384	93	0	285
Oxford	89,113	61,857	0	2,904
Penobscot	123,540	17,067	15	23,669
Piscataquis	30,916	19,051	0	20,488
SAGADAHOC	14,154	123	0	824
Somerset	79,266	51,111	0	22,862
Statewide*	0	12,796	0	10,813
Waldo	68,077	26,742	0	3,405
Washington	47,816	464	0	776
York	136,328	19,339	0	3,102
Maine wood processed:	1,285,421	466,757	14,170	126,808
Exported from Maine without processing:	333,799	195,450	0	2,342
Total harvested from Maine Forests:	1,619,220	662,207	14,170	129,150
Imported from out of state:	139,344	122,598	43,028	7,044
Total processed by Maine Forest Products Industry:	1,424,765	589,355	57,198	133,852

Import Origins

States:

Connecticut
Massachusetts
New Hampshire
New York
Pennsylvania
Rhode Island
Vermont

Provinces:

New Brunswick
Nova Scotia
Ontario
Quebec

Export Destinations

States:

Indiana
Massachusetts
Michigan
New Hampshire
New York
Vermont
Virginia

Provinces:

New Brunswick
Quebec

Countries:

China
Thailand

* This is the twelfth 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 twelfth 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

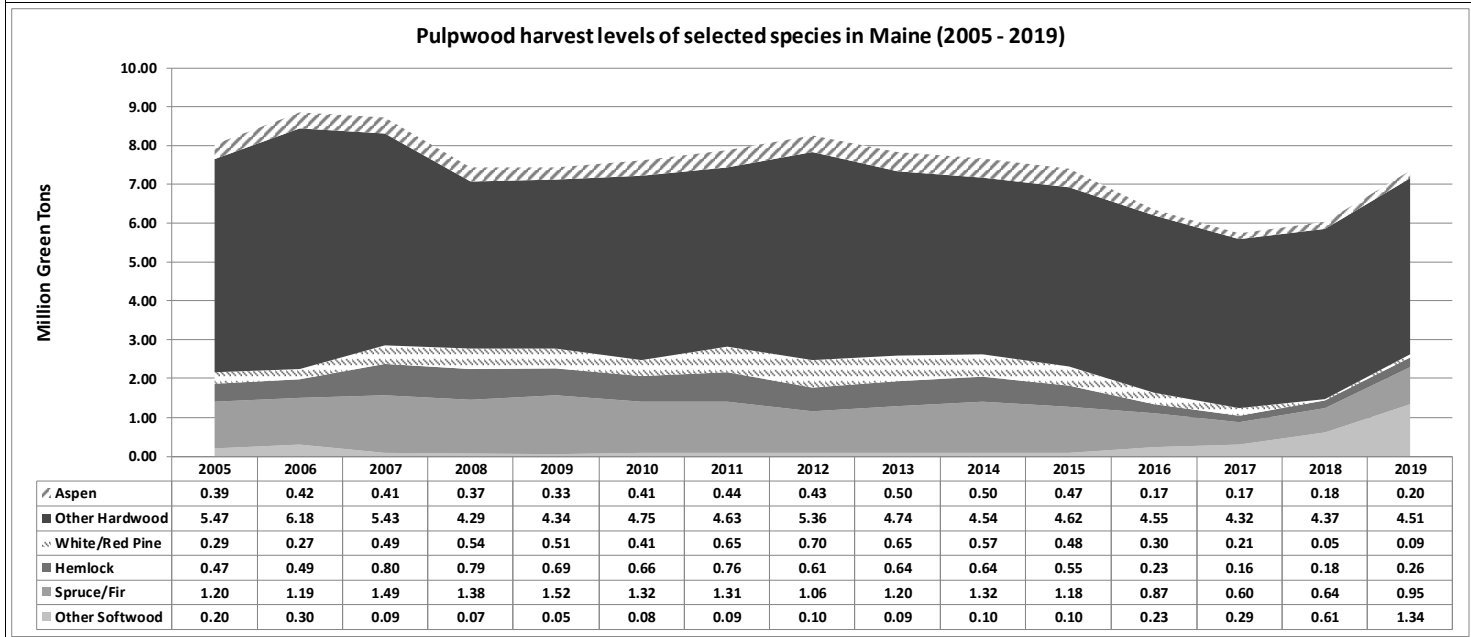
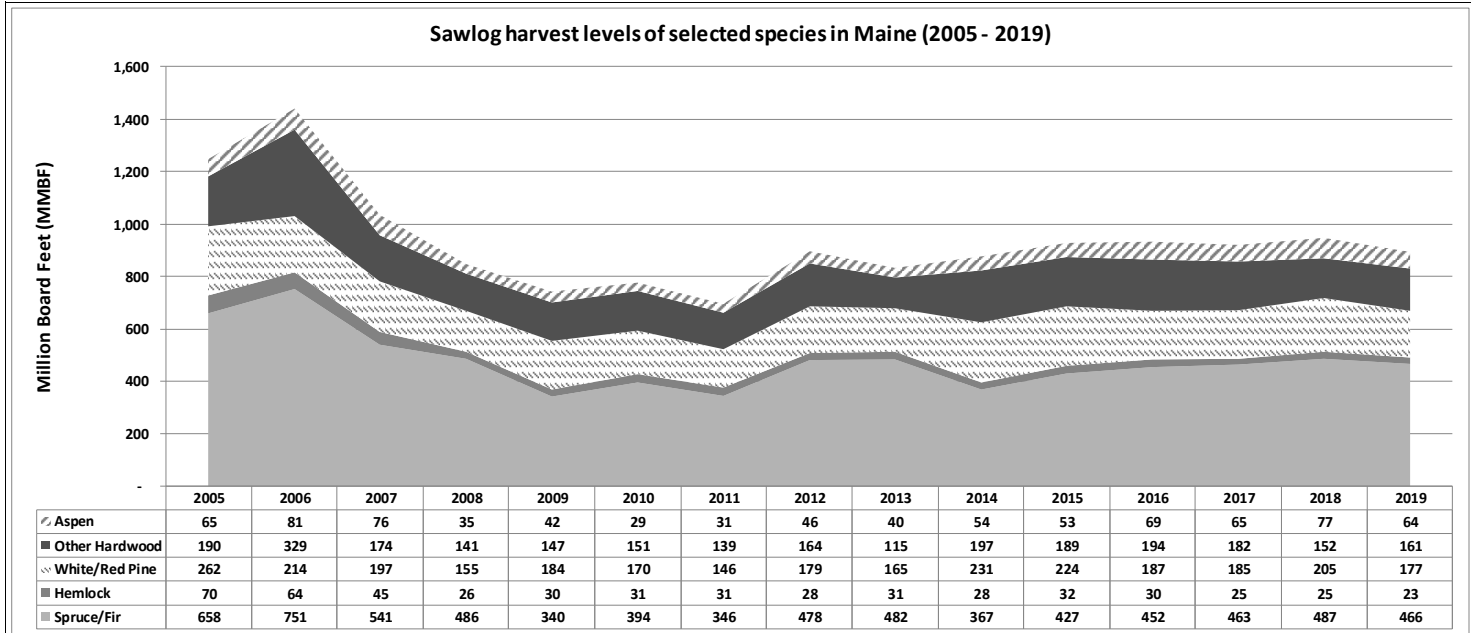
2019 Wood flow in Maine as reported to the Maine Forest Service

Product	Harvest, Export, Import, Instate Processing	Total Volume in 2019	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	641,173	2,800,767
	b. Exported from Maine without processing	281,351	1,242,671
	c. Total harvested from Maine forests (a+b=c)	922,524	4,043,439
	d. Imported from out of state	226,122	981,423
	f. Total processed by Maine Forest Products Industry (a+d=e)	867,295	3,782,191
	Pulpwood (in green tons)	a. Maine wood processed	6,298,570
b. Exported from Maine without processing		730,063	730,063
c. Total harvested from Maine forests (a+b=c)		7,028,633	7,028,633
d. Imported from out of state		2,364,884	2,364,884
f. Total processed by Maine Forest Products Industry (a+d=e)		8,663,454	8,663,454
Biomass Chips (in green tons)		a. Maine wood processed	1,285,421
	b. Exported from Maine without processing	333,799	333,799
	c. Total harvested from Maine forests (a+b=c)	1,619,220	1,619,220
	d. Imported from out of state	139,344	139,344
	f. Total processed by Maine Forest Products Industry (a+d=e)	1,424,765	1,424,765
	Firewood / Pellets (in cords) <i>Note on conversion: 1 cord = 2.5 green tons</i>	a. Maine wood processed	126,808
b. Exported from Maine without processing		2,342	5,855
c. Total harvested from Maine forests (a+b=c)		129,150	322,875
d. Imported from out of state		7,044	17,610
f. Total processed by Maine Forest Products Industry (a+d=e)		133,852	334,630
Totals (in green tons)		a. Maine wood processed	
	b. Exported from Maine without processing		2,312,388
	c. Total harvested from Maine forests (a+b=c)		13,014,167
	d. Imported from out of state		3,503,261
	f. Total processed by Maine Forest Products Industry (a+d=e)		14,205,040

Wood Harvesting Trends (2005-2019)

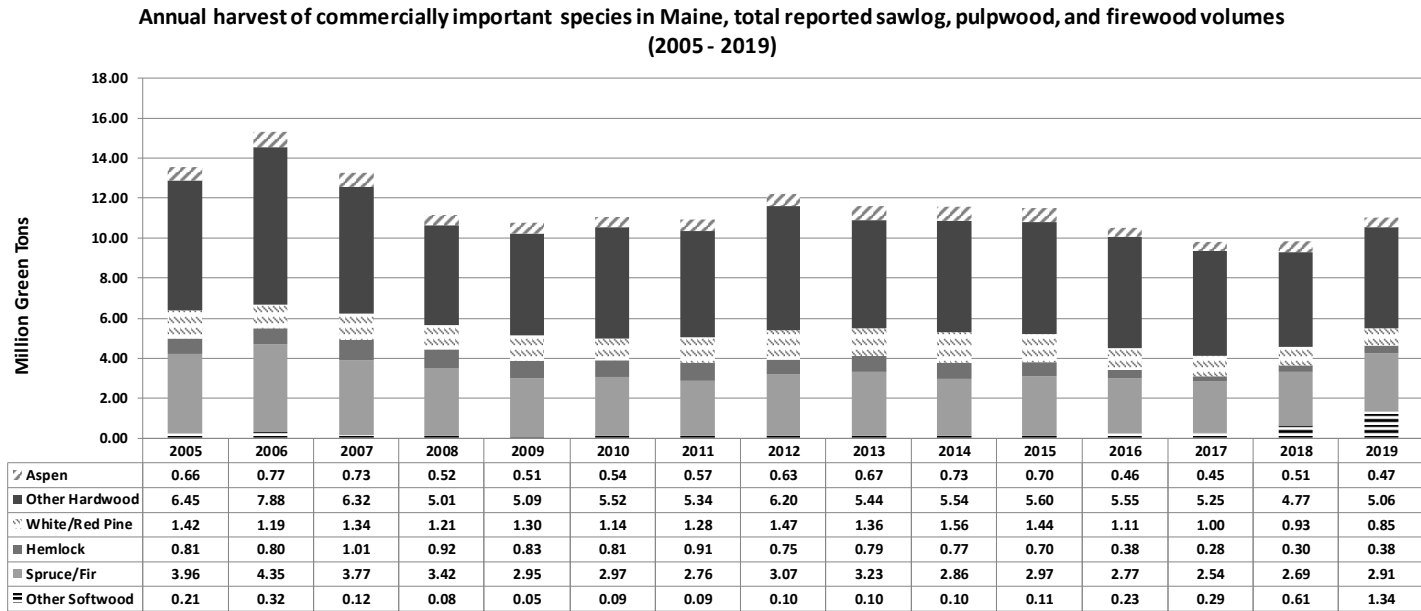
The Maine Forest Service has been collecting data on volume of wood harvested since the late 1940's. The following three charts illustrate wood harvesting trends over the past 15 years.

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



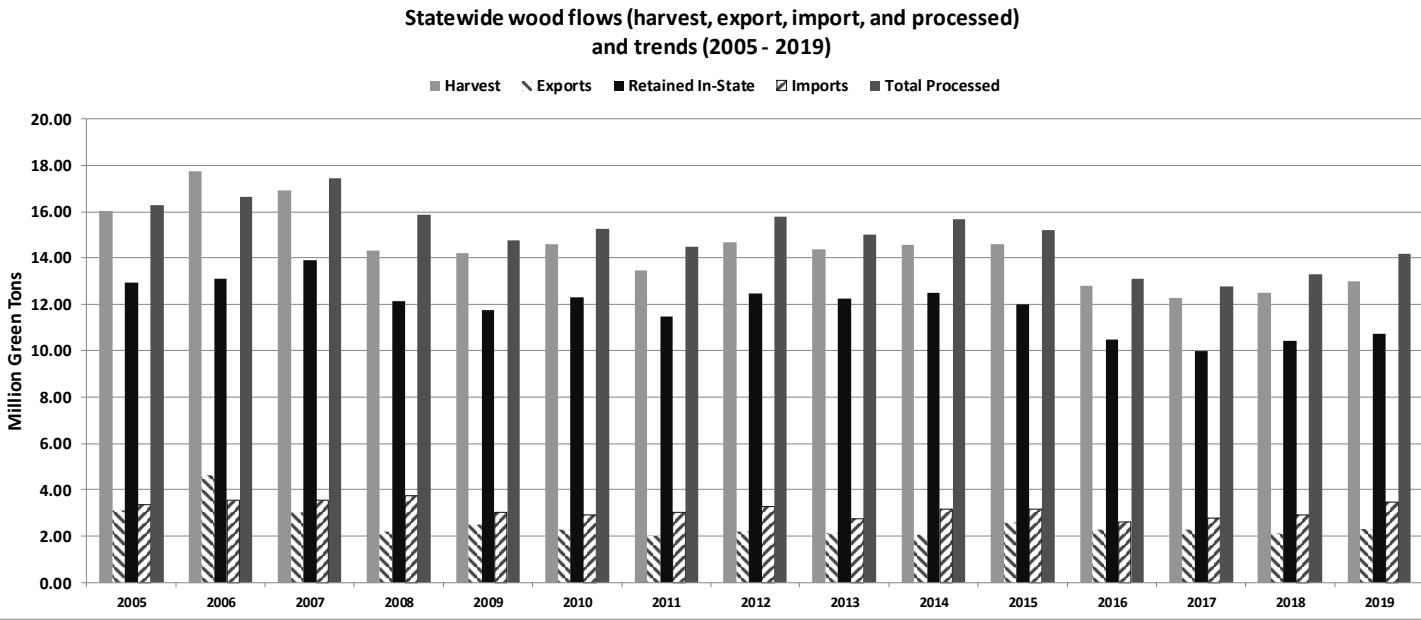
Wood Harvesting Trends (2005-2019)

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



Statewide Wood Flows (2005-2019)

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).



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