



## Wide-plank pine

Can a traditional flooring material find new purpose?



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## Wide-plank pine down, but not out

A shrinking market for wide-plank pine flooring is diverting high-value logs into lower-value products and creating new product opportunities, according to Local Wood WORKS, an educational non-profit.

Wide-plank pine flooring is a marquee product of Maine's most valuable lumber tree with a heritage story dating from the Colonial era. But it's falling out of favor as home design tastes shift away from traditional and rustic looks toward more contemporary designs.

A survey of nine flooring companies in New England indicates sales of wide-plank pine flooring have been declining for the past decade and now account for just 5-25 percent of their flooring sales, according to Local Wood WORKS.

Some promising counter trends are developing. The Wood Mill of Maine, which practices rigorous quality control in grading and finishing, reports strong sales of wide-plank pine flooring. In addition, some architects and designers are finding new uses for wide-plank pine that showcase its beauty in low-traffic areas where the pine's softness is not a liability.

Local Wood WORKS proposes a series of marketing and branding initiatives that showcase wide-plank pine as the embodiment of the best forestry as practiced by small landowners. Proposed initiatives include design awards, demonstration projects, product placement on cable TV show as well as financing for a new mill.

An ample and ready supply of large pine logs exists to meet new demand, with standing pine timber in the largest size classes estimated to be 869 million board feet in Maine, according to USDA Forest Service data. This volume dwarfs by 300 times the annual output of the nine companies, estimated to be at least 2.8 million square feet.

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Wide-plank pine has traditionally been used as flooring, paneling and table tops. Photo at left from Fort Western in Augusta, built in 1754. Photo above from a restored farmhouse in Wayne.

Photos by John Leeke and Theresa Kerchner

Wide-plank pine flooring is a handsome piece of Americana. In the lumber industry, it's the rare product with a story.

And yet, wide-plank pine is currently difficult to find for builders, architects and home remodelers. Unavailable in most retail lumber yards, it is rarely found even at specialty wood retailers. It is rarely installed beyond rustic cabins and historic renovation projects. There is even a perception that it is unavailable - a bygone relic of an earlier era.

This paper explores the many questions arising from wide-plank pine's obscurity. How scarce is wide-plank pine? Is there a shortage of logs suitable to mill into wide boards? Are there logistical, mechanical or financial obstacles to producing more wide-plank pine? Are there revised marketing pitches and new uses that could expand the market for wide-plank pine?

A conundrum initiated this market inquiry. On the one hand, Local Wood WORKS received anecdotal information from some log-home builders and timber framers of unmet demand. Their clients desire wide-plank pine yet perceive it to be unavailable. At the same time, we heard from log suppliers of a ready supply of large logs available but processed for other products. In response to these perceptions, Local Wood WORKS applied to the University of Maine's Innovate for Maine program for a summer fellow to conduct a small market research project. The research survey consisted of two parts: an online questionnaire set up through an online survey platform and more in-depth conversations by telephone. Four primary groups were surveyed, each with a separate series of questions. On the demand side, we surveyed builders and architects. On the supply side, landowners/foresters and sawmill managers were surveyed. For more particular insights, we contacted flooring companies, log brokers and others. In total, Local Wood WORKS contacted 66 people, 40 through the online survey and another 26 through telephone surveys.

## History

Eastern White Pine is the tallest tree in the eastern US. Its size has made it particularly useful through history. Wabanaki ancestors made ocean-going canoes out of hollowed out pine logs. In the

early days of Colonial America, as European colonists were forcibly displacing native people from their homelands, pine became a contested strategic resource. The British Crown valued the trees as ships’ masts for the Royal Navy and claimed ownership of all pines at least 24 inches diameter and near rivers on all ungranted lands, which the colonists had been accustomed to treating as a commons for themselves. The Pine Tree Acts were widely unpopular and the pine tree became a potent symbol of Colonial identity, resistance and eventually of independence. To this day, prideful owners of old homes point to pine flooring that invariably measures, up to but no wider than 24 inches, as evidence of Colonists’ clever defiance. Pine lumber has been important to Maine’s economy since early days and today pine remains the most commercially valuable tree on a per-acre basis.

**Current Uses**

Today, wide-plank pine refers to boards wider than 12 inches. This is wider than what is typically found in retail lumber yards, which sell boards in nominal widths up to 12 inches, with a dressed width of 11.25 inches. Flooring continues to be the dominant use of wide-pine. Pine’s distinctive character, warmth and workability, even in wide dimensions, lends itself to flooring. White pine is also stable enough over its lifetime to handle typical interior fluctuations in moisture and temperature. Carlisle Wide Plank Floors notes that historically, “Eastern White Pine was widely used for structural timbers, siding and interior wainscoting — but it was especially popular for wide-plank flooring since it allowed for a quick installation and minimal maintenance.” Less commonly, wide-plank pine is used in interior paneling, cabinetry and farmhouse-style tables.

Eastern white pine is readily available in New England and has long been a cost-effective building material. Perceptions of its affordability as a flooring material has changed as more flooring options have appeared, such as vinyl and laminates. Wide-plank pine flooring is still considered affordable when compared to hardwood flooring. But the widest, clearest (knot-free) pine can easily rival the cost of hardwoods at \$20 per square foot.

At least eight flooring companies in New England supply wide-plank pine as part of their product mix. The output of individual companies ranges from 12,000 square feet a year to more than 2 million square feet. Most flooring companies say wide-plank pine accounts for a small fraction of their sales and that sales are declining. Carlisle Wide Plank Floors, for example, said wide-plank orders have dropped from 50% to 5% of their orders in the past decade and a half. See Table 1 below.

	<b>Total flooring output annually <i>(in 1,000 square feet)</i></b>	<b>Wide-plank pine share of output</b>	<b>Maximum board width</b>
<b>The Wood Mill of Maine, Mercer, ME</b>	80	100 percent	20"
<b>AE Sampson, Warren, ME</b>	12	5 percent	18"
<b>Carlisle Wide Plank Floors, Stoddard, NH</b>	2,000+	5 percent	19"
<b>Vonderosa Wide Plank Flooring, Amherst, NH</b>	NA	15-18 percent	20"
<b>Bingham Lumber, Brooklin, NH</b>	NA	20-25 percent	20"
<b>Vermont Plank Flooring, Brattleboro, VT</b>	100	20 percent	19"
<b>Vermont Hardwoods, Chester, VT</b>	75	10 percent	17"
<b>E.D. Bessey Lumber Products Hinckley, ME</b>	500	5 percent	20"
<b>Feuer Lumber, Atkinson, NH</b>	100	5 percent	20"

As this information shows, wide plank pine production is on a very small scale, compared to leading high-production pine mills, which reach 25 million board feet per year and the very largest, roughly 100 million board feet per year.

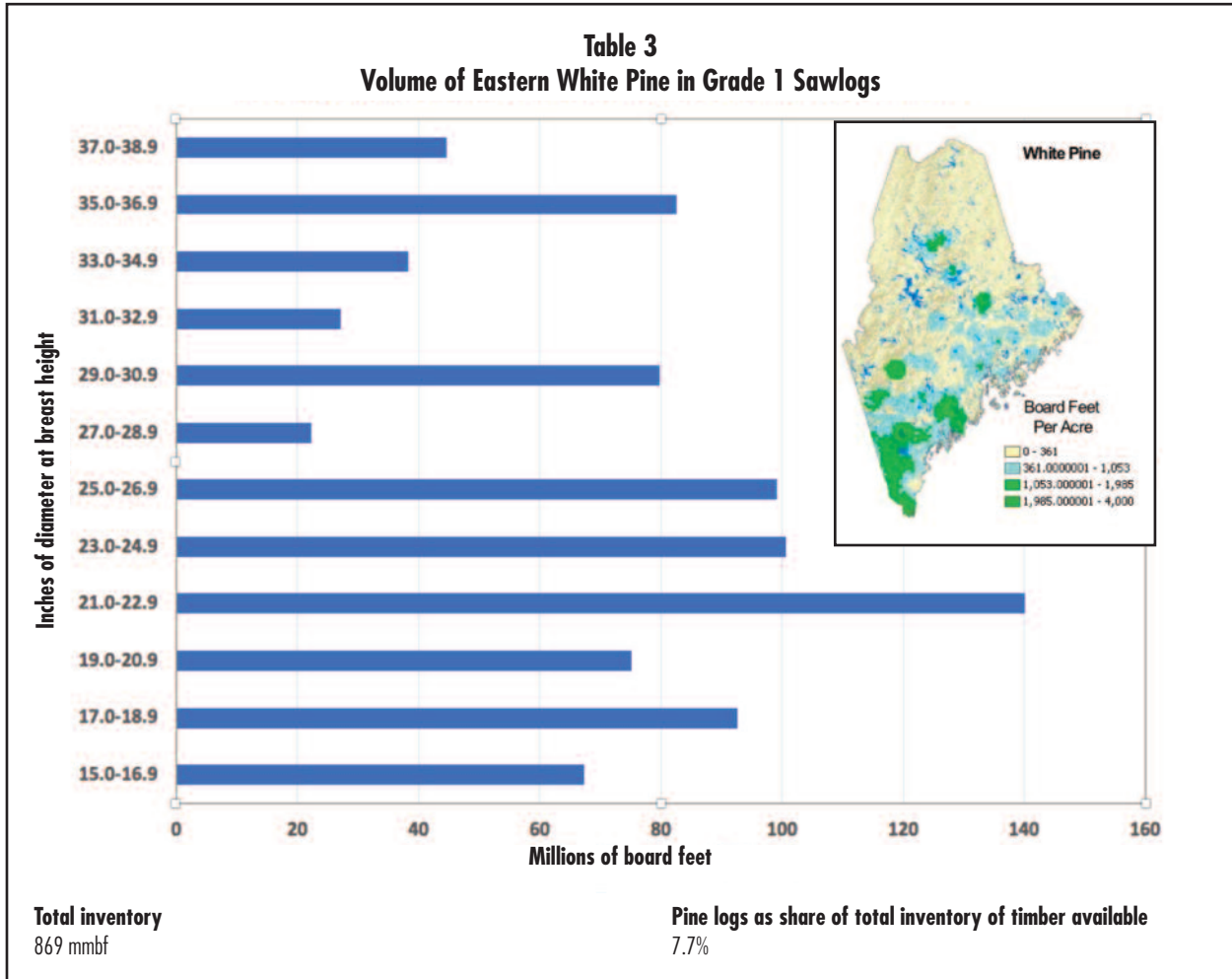


Planing operation at The Wood Mill of Maine. Photo by Lee Burnett

Standing apart from the general decline in demand for wide pine is a small planing mill in western Maine that specializes in wide-pine flooring. The Wood Mill of Maine in Mercer advertises “high quality Eastern White Pine” and says it cannot keep up with demand. The Wood Mill has a different business model, starting with materials acquisition. Most companies source rough-sawn lumber from sawmills. The Wood Mill buys logs directly from loggers and contracts for saw milling services. Owner Bjarki Gunnarsson employs his own grading standard, which he says is more stringent than the industry standard employed by members of Northeast Lumber Manufacturers Association (NeLMA), the softwood lumber trade group in New England. He buys “veneer grade” logs, a term usually reserved for the highest grade of hardwood logs and a term foreign to the eastern softwood lumber industry. Gunnarsson pays \$800 per thousand board feet, a price that is more than twice as much as average stumpage rates paid for standing timber. He publishes his log specifications on the company’s website, as follows.

Eastern White Pine ~ \$800 per thousand board feet, delivered  
Veneer grade  
No sweep – perfectly straight  
No red heart or rot  
Blemish free – no branches or knots  
Top of log measurement: minimum 21 inches, maximum 32 inches  
Lengths: 12,14, and 16 feet (heavy on 16’)  
Butt logs only

The Wood Mill also processes its lumber to a higher standard. The differences are spelled out in Table 2 in the appendix, a chart Gunnarsson prepared in consultation with Alden Robbins of Robbins Lumber Co, a high-production saw mill that specializes in smaller milled products, and which produces some wide-pine boards sold through The Wood Mill and other flooring companies.



### Are logs available?

The decline in wide-pine flooring does not appear to be due to limited supply. A review of data collected by the USDA Forest Service suggests the existence of a healthy inventory of pine trees capable of producing wide-plank pine. There were 869 million board feet of Eastern White Pine timber (trees at least 15 inches in diameter) available for harvest in 2019, according to Forest Inventory and Analysis National Program (FIA). See Table 3. While this represents just 7.7% of the total saw log volume available, it is a volume 400 times greater than the combined annual output of flooring companies in the chart above. In short, standing inventory appears to be ample. The availability of large-diameter pine trees was corroborated by surveys of woodland owners and foresters

Mill managers' rough estimates of large logs in their yard corresponds roughly with the forest inventory data. While mill managers variously estimate logs in excess of 21 inches at three to five percent of all logs, the inventory data suggests 7.7 percent.





Large-diameter logs account for a small fraction of total harvest, as suggested by the log pile at Robbins Lumber. Photo by Lee Burnett

### **Are mechanical limitations a factor?**

The weak demand for wide-plank pine logs is reflected in stumpage prices paid landowners for standing pine timber. An issue is that the demand for large, quality logs at any one place is scattered, occasional and unpredictable. Woodland owners and foresters surveyed say saw mills typically pay a “land run” price for all logs, regardless of quality. In other words, the choicest



Many large-diameter logs are processed along with the rest into high-volume commodity products. Photo by Lee Burnett

logs fetch the same price as the worst logs. Only 15% of landowners and foresters surveyed said they received a premium for their best, largest-size pine logs. Mill managers confirm the predominance of land run pricing. At most mills, large diameter logs are run through the mill with the rest of the logs. Only Robbins Lumber segregates large logs, and then mills and planes them separately as demand warrants. They are sold through separate retail outlets.

According to mill managers, mechanical limitations do constrain the ability of high-production sawmills to efficiently process logs into wide-pine boards. But that does not appear to be the overriding obstacle. These mills are geared to produce products for the largest consumer markets, namely boards up to 12 inches and a variety of mouldings and siding with pattern edges. Mill operations could be retooled to produce wide boards. Hancock Lumber said it can comfortably handle logs up to 35 inches on the large end, but it has not sold finished boards wider than 12 inches “in a long time.” Doing so caused operating inefficiencies and waste, which “doesn’t justify producing it.” Similarly, the Pleasant River Pine mill in Sanford discontinued milling wide boards about a decade ago to focus on higher-volume products. General Manager Jamie Fall said production of wide pine sawing slowed down overall production. “It’s hard to handle,” he said. For a production mill, adding another width to its production complicates almost every operation involved, including storage of lumber for shipment. It also complicates the inventory management and space issues of retailers, whose racks of various valued-added pine items are already overstuffed.

There is successful business model that supports milling wide-plank pine, as the Wood Mill of Maine example demonstrates. Owner Bjarki Gunnarsson offers the opinion that there is room in the market for other wide-pine purveyors, although he estimates start-up costs at \$1 million to acquire the necessary planer, kiln, straight-line rip saw and other equipment. Processing additional large



White pine has many positive associations among builders that cite the wood’s workability, affordability and warmth as positive characteristics

logs would not necessarily require setting up a separate supply chain, observes Robert Seymour, forestry professor emeritus at the University of Maine. He notes that hardwood saw mills in Maine currently separate out and aggregate their best logs and sell them to Columbia Forest Products in Presque Isle as the raw material for veneer used in plywood manufacturing. An entrepreneur could incentivize pine saw mills to do the same to guarantee a supply, he said.

### **Continuing appeal**



Across all product lines, white pine has many positive associations among builders.

- 94 percent of builders cite its workability.
- 82 percent of builders cite its availability and relative affordability
- Character/warmth and localness were also cited as positive characteristics

The wide-plank version of white pine has continuing appeal. Some 45 percent of builders say their clients express interest in wide pine, according to survey results. Those clients expressing interest appear to be those that prefer traditional design. Maine Timber Frames, which specializes in traditional design, reports receiving frequent orders. On the other hand, Benjamin and Co. Timber Frames, which specializes in more contemporary and high-performance design, reports little or no demand for wide-plank pine.

Unsurprisingly, part of wide-pine's continuing appeal appears to be its extra-wide dimensions, which is unique among commercially-processed domestic wood. (Hardwood flooring wider than nine inches is very rare.) "People don't see anything like it. They are really fascinated by it," said Seth Bournival, co-owner of AE Sampson in Warren. The knotty character of most grades of pine make it "more informal than hardwood flooring," which is appealing to some clients, notes Ken Goodell at Carlisle Wide Plank Floors. Pine's softness as a wood means it picks up character through wear and tear much quicker than harder woods. Wood broker Ethan Bessey, says wide-plank pine is attractive because it "tells a story."

### **Drawbacks**

Despite the many positive qualities associated with wide-plank pine, several factors limit its appeal with some customers. The softness of white pine is almost universally cited as a reason some builders do not use white pine for flooring. Some homeowners do not like the worn look that quickly appears in high traffic areas. The increasingly popular wood floor with area rug, seems to be gaining in appeal, though. On the other hand, a worn, antique look appears soon and is part of the appeal of a period home. Also cited were unreliable availability and inconsistent quality. The fact that it is not widely available off-the-shelf leads many customers to pass on it.

### **Marketing pitches that resonate**

Several marketing pitches were tested with respondents to gauge wide-pine's growth potential. The strongest of these messages appears to be wide-plank pine's connection to the story of the nation's founding and to Maine identity. In fact, 65% of the respondents said that the heritage story is influential. Almost as compelling as the heritage story is wide plank pine's association with small-landowner stewardship and local economies. Maine has 86,000 small landowners. By far, the majority are in southern Maine, the source of most white pine timber. This pitch resonated with 60% of survey respondents. Several other messages also resonate. A majority of respondents found it appealing that wide-plank pine correlates with good forestry. This is different than the West Coast, where big timber carries a stigma because of its association with logging old-growth forests that still exist in unprotected status. In Maine, big timber, as a rule, is produced by long-term, patient landowners. (Old growth forest exists in tiny pockets in protected reserves.) The forestry pitch resonated with 54% of survey respondents. Finally, the wide-plank pine's contribution to mitigating climate change was found to be appealing. Pine used in furniture and construction, like other long-lived lumber products, continues the storage of carbon cycled out of the atmosphere by live trees through photosynthesis. This pitch appealed to 50% of respondents. In sum, all four marketing pitches resonated with at least half



Many architects incorporate wide-plank pine into contemporary designs. Left photo by David Kurtis. Right photo by Carlisle Wide Plank Floors.

of the respondents, which demonstrates the potential that wide-plank pine has in the marketplace. Finally, locally sourced pine is more “real” than highly-processed laminate flooring, which may use interior plywoods from imports.

### **Potential marketing ideas**

Given the strength of these marketing pitches, it appears demand for wide-plank pine could be grown with inventive efforts. Several potential initiatives could be pursued.

#### **Renew the Sustainable Versatility Design Awards**

From 2012 to 2019, Northeast Lumber Manufacturers Association (NeLMA) held an annual design contest. The idea of the Sustainable Versatility Design Award is to reintroduce wood to the next generation of architects and designers. Winning designs have pushed the boundaries of wood construction in such diverse projects as a food store - public restrooms, to a Tesla showroom, even a lunar colony. Recommendation: Partner with NeLMA to renew the Sustainable Versatility Design Awards with a design category featuring wide-plank pine.

#### **Showcase wide-plank pine in Zero Energy Modular Homes**

Material Research in Bar Harbor is developing a factory to build zero-energy modular (ZEM) homes, made from local wood products, at One Katahdin, a multi-use industrial park on the site of the former Great Northern mill site in Millinocket. The ZEM home factory hopes to build up to 500 very-small homes a year featuring Maine wood. Recommendation: Partner with Material Research to incorporate wide-plank pine bench as window seats in the homes.

#### **Develop a wide-plank farmhouse table through a Maine furniture maker**

Thomas Moser and Chilton Furniture are furniture makers with strong brand recognition and Maine identities. They specialize in hardwood furniture. Recommendation: Partner with such a furniture maker to develop a wide-plank pine farmhouse table.



### **Showcase wide-plank options through Maine Cabin Masters**

Maine Cabin Masters is a popular reality show on the DIY cable network that features makeovers of camps and cabins. Recommendation: Partner with Maine Cabin Masters to showcase non-flooring options for wide-plank pine, such as interior barn doors, accent walls window seats.

### **Develop a home show exhibit**

A simple, modular unit of flooring, barn doors and other installation options could be assembled along with an accompanying directory for display at home shows. Recommendation: Develop a modular unit that could be made available to multiple organizations for use at home shows and other events.

### **Explore financing for a wide-pine start-up mill**

Bjarki Gunnarsson, owner of The Wood Mill, suggests that demand exists for an additional wide-plank pine producer with start-up costs in the \$1 million range. Recommendation: Develop a financing model for a niche mill specializing in wide-plank pine.

### **Conclusion**

Wide-plank pine's traditional use as a flooring material appears to be in decline for many reasons, chiefly its softness and perhaps its rustic reputation, out of favor with modern tastes. However, wide plank pine has durable appeal because of its uncommon dimensions and its heritage story. It will continue to be used as a flooring material in lodges, timberframe structures and cabins. A new market appears to be emerging. A cohort of architects and builders are incorporating wide-plank pine into contemporary designs with stunning effect – as ceiling panels, accent walls, wainscoting – where softness is not an issue. Capitalizing on this market development is The Wood Mill of Maine with its higher grading standards, its willingness to pay premium prices for the best logs, and its tight tolerances in finished products. Favorable conditions exist to grow this segment of the market, namely ample supply that could be brought to market without serious obstacles and new market pitches that resonate with modern consumers.

### **Acknowledgements**

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# Appendix

**Table 2.**

	<b>The Wood Mill of Maine</b>	<b>Robbins Lumber Co.</b>
Nominal Sizes	1 x 7, 9, 11, 12, 14, 16, 18, 20 inches	1 x 4, 6, 8, 10, 12 inches
Grading Standard Followed:	Wood Mill grading standards	Northeast Lumber Manufacturers Association
Available Grades – Flooring	Wood Mill Knotty, Wood Mill Clear	#4 Standard, #3 Premium, #2 Finish, #1 Select
Moisture Content	6-8%	12-15%
Lengths	Random Lengths 6’ to 16’ or Random Lengths 8’ to 16’	Random Lengths 6’ to 16’
Current Lead Time	Mostly sold out for the year – 2-3 months lead time on products we have remaining	6-8 weeks – 0-3 weeks during “normal” times
Acclimatization	Install immediately upon arrival	Acclimate for two weeks minimum
Movement	None, if installation guide is followed	To some degree, depending on conditions of home
Retail Price Range: See below	\$3.83- \$20/sq. ft.	Typically, half as much
Relief-cut	Not necessary	Relief cut on back
End matched	No	Possibly coming soon
End trimmed square	No	Yes – And cut to specific lengths
Thickness	3/4”	23/32”
Straightline ripped	Yes	No on < 12”, possibly on wide boards
Number of passes through planer to ensure flatness	2	1
“Touch” of board	Occasional planer marks are sanded out during installation	Very smooth, due to higher-speed planers