OVERVIEW OF OAK MARKETS AND MARKETING

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Abstract—The height of oak popularity in the U.S. marketplace came in the early 1990s as the furniture and cabinet industries made use of large quantities of oak in their designs, especially red oak. This familiarity has led to a consumer awareness for oak that surpasses other commercial hardwood species. More recently, however, oak's position in many U.S. fashion-based markets has waned (flooring being an exception), and oak log and lumber exports have surged. Exports of U.S. red oak lumber alone surpassed 520 million board feet in 2017, which was a record for any species exported from the United States. Over 70 percent of current U.S. red oak lumber exports go to China while export markets for white oak are more diverse. Industrial markets such as pallets and railway ties also have been critical for oak utilization, especially after the Great Recession and associated housing market decline.

INTRODUCTION

Red oak (*Quercus* spp. subgenus *Erythrobalanus* but primarily northern red oak or *Q. rubra*) is the leading species of hardwood lumber derived from eastern hardwood forests on a volume basis, and white oak (subgenus *Leucobalanus* but primarily *Q. alba*) is close to yellow-poplar (*Liriodendron tulipifera*) as the next most important species produced in the United States (U.S. Census Bureau 2009). However, there have been changes in oak markets in recent years, and the users of oak products also have changed. The objective of this paper is to provide an overview of these changes in oak markets and discuss some of the implications for oak management and use in the future. The focus will be on lumber and the secondary products manufactured from oak lumber.

OAKS IN THE U.S. MARKETPLACE

The height of oak popularity in the U.S. marketplace came in the early 1990s as the furniture and cabinet industries made use of large quantities of oak in their designs, especially red oak. For example, showings of oak at the High Point Furniture Market peaked around 1990 when 30 percent of the furniture groups shown were oak (Luppold and Bumgardner 2007). This percentage had declined to 15 percent by 2005 as other species increased in popularity. Oak also has been shown to comprise a relatively small percentage of showings at more recent High Point Furniture Markets, with red oak constituting <5 percent of dining room showings and white oak <7 percent of the bedroom showings in the spring of 2014 (Appalachian Hardwood Manufacturers, Inc. 2014).

The relatively recent widespread use of and exposure to oak seem to have led to familiarity among consumers, as awareness of oak seems to surpass other hardwood species. For example, research has shown that consumers are most able to identify oak among several other commonly used species. In a study of consumers interviewed at two home shows in the Pacific Northwest (Seattle and Portland), 60 percent correctly identified a red oak wood sample. However, species knowledge dropped sharply after oak with just 18 percent correctly identifying cherry (*Prunus serotina*) and 15 percent correctly identifying hard maple (*Acer saccahrum*) (Bumgardner and others 2007). In another study of consumers interviewed at several furniture stores and trade shows in Wisconsin (Madison and Milwaukee), it was similarly found that red oak was correctly identified nearly 50 percent of the time, which was just higher than walnut (*Juglans nigra*) and nearly 30 percentage points higher than both cherry and hard maple (Bowe and Bumgardner 2004). Others also have found that oak was relatively more easy for consumers to identify than other hardwoods (Swearingen and others 1998).

Oak also holds a distinct perceptional space. Blomgren (1965) noted that oak had the most specific-species image among the consumers he studied in a perception-based study. More recently, consumers have been shown to perceive oak as warm, expensive, durable, sustainable, and stately (Bowe and Bumgardner 2004). However, a study based on a different population, college students, revealed slightly different results. In that study (Bumgardner and Bowe 2002), word-based perceptions of oak were formal, warm, expensive,

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and stately. However, appearance-based perceptions were casual, cold, inexpensive, and modest. Thus, it was concluded that oak held a positive "reputation" that outweighed its actual appearance among college students.

There are implications to the above findings for oak promotion and marketing. Perhaps the biggest one is that oak has a more positive perception in word than in actual appearance, but this effect is greater among younger people than adults. For adults, there was less difference between word-based and appearance-based perceptions, and oak was generally viewed favorably. This could correspond to adults' observed greater ability to correctly identify oak wood samples than college students—oak has a more positive reputation among college students, but this changes when it is viewed, while adults know oak and generally view it favorably. Perhaps there is a generational component to this trend given the popularity of oak in the 1990s. It also reinforces the notion that hardwoods used in appearance-based applications ultimately are a fashion product that can go into and out of favor at different points in time. Although oak's position in many U.S. fashion-based markets has waned of late, red and white oak are leading species used in solid wood flooring production (Hardwood Market Report 2018).

Industrial markets such as pallets, railway ties, furniture framing, and board road/timber mats also are critical for oak utilization, and this was especially true after the Great Recession and associated housing market decline. In these markets, fashion and consumer income are less important than trends in the overall economy and functionality. Red oak in particular is useful in railway tie production due to its relative treatability. A recent study showed the importance of industrial markets (defined as pallets and railway ties) to the hardwood industry. In 2009, industrial uses accounted for 54 percent of domestic consumption (excluding exports), up from 43 percent in 2006 and 38 percent in 1999 (Luppold and Bumgardner 2016a). Industrial manufacturing sectors also were the first to recover from the recession in terms of employment. Employment in the pallet sector began to improve on an annual basis in 2011, while the cabinet and millwork sectors did not show an increasing trend in employment until 2013 (Luppold and Bumgardner 2016b). This suggests that industrial markets were associated more with the overall economy, while appearance-based hardwood markets were related more to housing and remodeling that lagged in recovery.

OAK EXPORTS

Although use of oak has declined in many U.S. appearance-based markets, oak log and lumber exports have surged. Overall exports of U.S. hardwood lumber (all species) reached record highs for both volume (1.9 billion board feet) and value ($2.6 billion) in 2017 (table 1). Much of this exported lumber is mid-to higher grade material destined for use in appearance-based applications, although some white oak exports are used in wine and whiskey barrels. Exports of U.S. red oak lumber alone surpassed 520 million board feet (MMBF) in 2017, which was a record for any individual hardwood species exported from the United States. The year 2017 also was a record year for U.S. red oak log exports (USDA Foreign Agricultural Service 2018). Table 1 shows the top five hardwood lumber species exported in 2017 by volume and value. The oaks accounted for 44 percent of the export volume and 48 percent of the export value. Although these percentages for oak have been larger in the past (e.g., oak as a percent of total volume was nearly 59 percent in 1990), the volume of oak lumber exported was 1.7 times higher in 2017 than in 1990 (USDA Foreign Agricultural Service 2018).

Table 1—Top five U.S. hardwood lumber export species by volume and value in 2017[a, b]

Species	Volume	Rank	Value	Rank
	million board feet		*million $*	
Red oak	521	1	757	1
Yellow-poplar	321	2	290	3
White oak	303	3	509	2
Ash	185	4	281	4
Walnut	91	5	258	5
Total of all species[c]	1,885	—	2,640	—

[a] Eastern species only; western red alder (*Alnus rubra*) was the fifth largest export species by volume in 2017 (94 MMBF).

[b] Data source: USDA Foreign Agricultural Service (2018).

[c] Including species not shown in the top five.

— = Not applicable.

Most of the red oak lumber exported from the United States goes to China, and this percentage has been increasing in recent years. As shown in table 2, over 73 percent of red oak lumber exports went to China in 2017, up from 28 percent in 2009 (USDA Foreign Agricultural Service 2018). Red oak exports to China were approaching 400 MMBF in 2017. Export markets for U.S. white oak lumber are more diverse, with 38 percent going to China in 2017, which was the leading market. However, even for white oak, China's share of the export market was 31 percent in 2016, meaning that China's share increased by 7 percentage points in just 1 year. Other major markets for U.S. white oak lumber exports include the United Kingdom, Vietnam, Canada, and Spain, which collectively accounted for over 32 percent of the volume in 2017.

CONCLUSION

In the early 1990s, oak was the leading species for use in the domestic furniture and related industries, and oak maintains a positive perception among many consumers today. The popularity of oak in appearance-based applications in the United States has declined in recent years, however, while oak log and lumber exports have increased. One implication is that consumer perceptions and acceptance of oak in other global economies is becoming increasingly important to oak marketing. In the United States, industrial and flooring markets for oak remain strong, as well as specialty uses such as barrels. Additionally, the fashion aspect of the furniture and related industries suggests that oak could cycle into increased popularity again in the United States in the future. For example, the popularity of solid oak flooring keeps oak in view in many homes. Red and white oak are leading lumber species produced from U.S. hardwood forests. Thus it remains critical to industry and forest managers alike to develop silvicultural systems that encourage oak regeneration and survival.

LITERATURE CITED

Appalachian Hardwood Manufacturers, Inc. 2014. Walnut dominates spring furniture market survey. High Point, NC: Appalachian Hardwood Manufacturers, Inc. 4p.

Blomgren, G.W. 1965. The psychological image of wood. Forest Products Journal. 15(4): 149-151.

Bowe, S.A.; Bumgardner, M.S. 2004. Species selection in secondary wood products: perspectives from different consumers. Wood and Fiber Science. 36(3): 319-328.

Bumgardner, M.S.; Bowe, S.A. 2002. Species selection in secondary wood products: implications for product design and promotion. Wood and Fiber Science. 34(3): 408-418.

Bumgardner, M.; Nicholls, D.; Donovan, G. 2007. Effects of species information and furniture price on consumer preferences for selected woods. Wood and Fiber Science. 39(1): 71-81.

Hardwood Market Report. 2018. Appalachian comments. Hardwood Market Report, Memphis, TN. XCVI (13): 7.

Luppold, W.G.; Bumgardner, M.S. 2007. Examination of lumber price trends for major hardwood species. Wood and Fiber Science. 39(3): 404-413.

Luppold, W.G.; Bumgardner, M.S. 2016a. U.S. hardwood lumber consumption and international trade from 1991 to 2014. Wood and Fiber Science. 48(3): 162-170.

Luppold, W.G.; Bumgardner, M.S. 2016b. Employment changes in U.S. hardwood lumber consuming industries during economic expansions and contractions since 1991. BioResources. 11(2): 3123-3135.

Swearingen, K.A.; Hansen, E.N.; Reeb, J.E. 1998. Customer preferences for Pacific Northwest hardwoods. Forest Products Journal. 48(2): 29-33.

U.S. Census Bureau. 2009. Lumber Production and Mill Stocks – 2008. Current industrial reports MA321T(08)-1. [Not paged]. https://academicarchive.snhu.edu/bitstream/handle/10474/1062/ma321t08.pdf?sequence=1. [Date accessed: April 9, 2018].

USDA Foreign Agricultural Service. 2018. Global Agricultural Trade System. https://apps.fas.usda.gov/gats/default.aspx. [Date accessed: April 5, 2018].

Table 2—Red oak lumber exports to major trading partners and China's share of the total, 2009–2017[a]

Year	China	Canada	Mexico	Rest of world	China share
	---------- *MMBF* ----------				*percent*
2009	40.5	65.7	14.3	21.5	28.5
2010	63.5	81.7	14.5	29.4	33.6
2011	106.5	69.1	16.8	34.3	47.0
2012	126.2	75.6	18.4	29.2	50.6
2013	190.6	69.3	25.3	30.9	60.3
2014	227.0	79.2	22.7	35.8	62.2
2015	244.2	69.5	22.6	39.3	65.0
2016	310.0	70.7	21.7	40.0	70.1
2017	383.9	72.9	20.0	44.7	73.6

[a] Data source: USDA Foreign Agricultural Service (2018).