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Evaluation of the Retail Market Potential for Locally Produced Paper Birch Lumber in Alaska

David L. Nicholls



Author

David L. Nicholls is a forest products technologist, Wood Research and Development Center, 204 Siginaka Way, Sitka, AK 99835-7316.

Abstract

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An evaluation of the retail market potential for random-width paper birch (*Betula papyrifera* Marsh.) lumber in Alaska was conducted. Information from lumber manufacturers and retail managers was used to identify current barriers to customer acceptance of locally produced paper birch lumber. Major retail markets and paper birch producing regions throughout Alaska were considered in this study.

Results indicated generally favorable retail market potential for Alaska paper birch with strong interest from both lumber producers and retail store managers. Key issues that were identified included (1) the ability of lumber producers to secure dependable log supplies, (2) consistent moisture content control and dimensional stability of kiln-dried lumber, and (3) appearance features that could potentially influence purchasing decisions, such as heartwood or sapwood variations. Finding suitable selling arrangements between relatively small lumber producers and retailers also was identified as a potential barrier to successful sales programs. Recent trends in Alaska indicate that greater volumes of paper birch lumber are being kiln dried to the quality standards needed for retail market sales.

Keywords: Market potential, paper birch, lumber, wood products, Alaska.

Introduction

Much of the past research on value-added wood products markets in Alaska has focused on softwood lumber for the construction industry. The current domestic market for Alaska solid wood products, including lumber and timbers, has been estimated to be between 80 and 90 million board feet (MMBF) per year, and estimated demand for kiln-dried lumber is 65 to 70 MMBF per year (McDowell Group 1998). In recent years, several hardwood sawmills in Alaska have purchased dry kilns and have started lumber-drying programs. There seems to be strong potential for selling Alaska birch¹ in local retail markets if the lumber can be kiln dried to consistent moisture content levels. Much of the birch lumber now sold at the retail level in Alaska is imported from the Eastern United States.

This study was designed to evaluate the retail market potential of hardwood lumber produced in Alaska. Although the focus of the study was Alaska birch lumber of random width and random length for sale in retail outlets, the markets for secondary manufacturers also were considered. The geographic focus of this study was for all birch-producing regions of Alaska, including the Anchorage bowl, the Matanuska-Susitna Valley region, the Kenai Peninsula, and the Fairbanks area (fig. 1). Information for this study was accumulated from many sources, including retail lumber outlets, hardwood lumber sawmills, and secondary manufacturers (including cabinet manufacturers and fine woodworking facilities).

Objectives

The primary objective was to evaluate the retail market potential of Alaska birch lumber within the major birch-producing regions in the state. Based on this information, the potential for increasing hardwood lumber production to meet current market needs was evaluated. A secondary objective was to identify useful information and product attributes that could assist sawmill operators, lumber dryers, secondary manufacturers, and retail managers in successfully producing and selling Alaska birch lumber within local retail markets.

Literature Review

Several studies have evaluated the market potential for eastern hardwoods and have considered issues of interest to industry market sectors (Bush and Araman 1990, Bush et al. 1991b, Forbes et al. 1994). Product and supplier attributes were evaluated for four segments of the hardwood lumber industry including furniture producers, millwork producers, cabinet manufacturers, and dimension and flooring producers (Bush et al. 1991b). Several business strategies for competing successfully within hardwood manufacturing industries were presented including cost leadership, focus strategies, and product differentiation.

Focus marketing strategies were identified as a logical choice for smaller firms, which would include most of the hardwood producers in Alaska (Bush et al. 1991b). In focus strategies, a particular segment of the market is targeted, and customer loyalty is sought by gaining knowledge of those attributes that are most important in purchasing decisions. An example of a focus strategy relevant to Alaska hardwood producers might include marketing kiln-dried paper birch lumber through local retail centers to home woodworkers for specific projects, such as kitchen cabinets. In this case, lumber manufacturers would need to be aware of the product attributes most important to kitchen cabinet builders and then supply hardwood lumber to consistently meet those quality standards. A

¹ Throughout this paper, all varieties of paper birch (*Betula papyrifera* Marsh.) wood grown in Alaska will be referred to as Alaska birch.

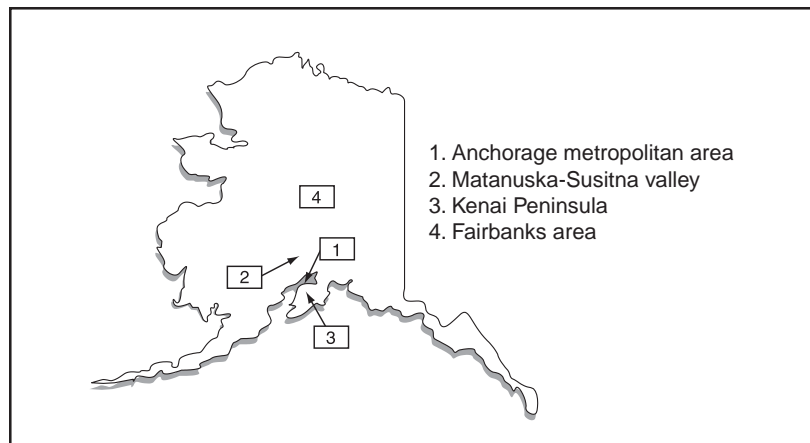


Figure 1—Major paper birch (*Betula papyrifera* var. *humilis*) producing regions and major retail markets in Alaska.

drawback of focus strategies is that to be successful, producers must be able to correctly identify key product attributes, something that could be difficult to achieve for small firms with limited marketing resources.

Product differentiation strategies based on unique or distinguishing attributes would position products away from competing products (Forbes et al. 1994). For example, the distinguishing attributes of paper birch lumber, including color, grain patterns, and heart-wood-sapwood variations, could be emphasized to distinguish it from leading hardwoods, such as red oak. Differentiation or niche market strategies may be most viable for larger firms that can provide adequate product promotion, advertising, and customer service support (Bush et al. 1991b). For Alaska's relatively small hardwood lumber producers, product differentiation would not be an effective strategy unless producers could combine resources into a cooperative structure.

A third marketing strategy, cost leadership, would most likely not apply to Alaska's hardwood producers because it is typically associated with large-scale producers of commodity products (Bush et al. 1991b). Interestingly, at least one of the Nation's largest wood products producers does seem to be producing and marketing hardwood lumber at this level and does have a presence in retail home supply centers in Alaska (Weyerhaeuser Company, n.d.).

Attributes that were critical (i.e., determinant) in hardwood lumber purchasing decisions were evaluated through a mailed survey to large hardwood producers (Bush et al. 1991b). A total of 33 attributes was rated, and the most important attribute identified was accurate grading practices. Lumber-drying attributes, including moisture content accuracy, straightness, absence of surface checks, and absence of end splits, were consistently given high importance ratings.

In a related study, Forbes et al. (1994) ranked product and supplier attributes for purchasing decisions in the furniture industry. The leading four attributes evaluated were (1) load-to-load consistency; (2) accurate grading; (3) no warp, crook, and bow; and (4) accurate moisture content. All four of these could be either directly or indirectly related to lumber drying quality. It is interesting that the fifth most important attribute (quote competitive prices) was the highest ranking related to price. Based on this study, it seems that drying-related attributes and lumber-quality issues are often considered more important than lumber price.

The importance of consistent lumber-drying practices for paper birch lumber in the Great Lakes region was evaluated for several drying methods including high temperature drying, dehumidification drying, and conventional temperature drying (Larson et al. 1986). An important quality consideration when drying paper birch lumber was the presence of darkwood, discolored streaks of high-moisture-content wood centered near the pith. Because this type of wood was less permeable than wood not containing these features, it was necessary to equalize lumber samples containing darkwood to ensure consistent moisture content and lumber quality (Larson et al. 1986). Lumber that is not dried to uniform moisture contents is at increased risk of warp and other dimensional stability problems. It is not known how prevalent darkwood and other moisture content variations are within Alaska birch, but it is important to recognize its potential as well as the need to equalize and condition lumber properly.

Bush et al. (1991a) evaluated competition in the United States hardwood industry in terms of competitive strategies used by companies ranging from small to large in size. Smaller firms often do not have the resources to maintain a sales staff and, therefore, rely on lumber wholesalers to market their lumber. Most, if not all, of Alaska's hardwood producers would fit into this category. A disadvantage of selling through wholesalers is that producers often have only limited contact with lumber users (i.e., the retail customers). Consequently, many of the smaller firms may tend to be production oriented with only limited relations with end users and, therefore, might not be fully aware of consumer preferences (Bush et al. 1991a). Alternatively, the product requirements of the wholesaler could reflect consumer preferences and provide a feedback mechanism to the smaller firms. Selling through wholesalers also would most likely result in lower net lumber prices because of commissions and other fees not associated with direct-to-consumer sales.

Product and service attributes also have been evaluated for Pacific Northwest hardwoods, including red alder, a species that has been gaining strong market acceptance (CINTRAFOR, n.d.). Marketing variables that received high importance ratings included company reputation, high-quality control standards, and on-time delivery. A favorable company reputation may be difficult for small producers or new startup ventures to achieve, and many of Alaska's hardwood producers could be faced with this challenge.

Several product and service attributes have been identified as being important for many industry sectors including hardwood furniture manufacturers (Sinclair et al. 1989). The highest rated responses were usually related to product quality and company reputation. In addition, accuracy in lumber grading was often rated as important. Although price is important, it should not become the most important marketing consideration, and in many of the studies, price was ranked after several other quality-related attributes.



Figure 2—Geographic range of paper birch (*Betula papyrifera* Marsh.) in North America (species range is indicated in white).

Because few hardwood lumber producers in Alaska have become established and, therefore, cannot rely on strong company reputations as a measure of credibility, product quality becomes important. The best opportunity for improving and maintaining lumber quality may be through consistent lumber-drying practices. Indeed, in recent years, there has been a strong trend among Alaska lumber manufacturers to incorporate lumber drying into their manufacturing practices.

Other west coast hardwoods also have strong potential for utilization including Pacific Northwest oaks for flooring markets (Green et al. 1995). In California alone, about 29 percent of the state's 12.5-billion-cubic-foot hardwood resource inventory is of commercial timber size (Shelley 1997). Niche markets were identified as having the most potential for California hardwood producers to be successful. Shelly (1997) recommended that producers focus on defining product quality in terms of key attributes, such as moisture content, size tolerances, and surface quality.

North American Birch Resources

Paper birch (*Betula papyrifera* Marsh.) occurs naturally from interior and western Alaska east to the Atlantic provinces of Canada, and extends south to the Great Lakes region (fig. 2). Paper birch is one of several birch species found in North America and has lower specific gravity and side hardness than the other eastern birches, including yellow birch (*B. alleghaniensis* Britt.) and sweet birch (*B. lenta* L.) (table 1). Because of this, paper birch may be considered less desirable than its eastern counterparts for some fine woodworking applications and flooring where higher hardness properties are important. Paper birch, however, has been used extensively for applications such as dowel products, custom turnings, cabinets, bowls, and other specialty products. Paper birch also is the preferred species for products requiring a smooth finish with little or no taste including tongue depressors, popsicle sticks, chopsticks, salad utensils, and other kitchen products.

Table 1—A comparison of specific gravity and hardness of commercial North American birch species

Species		Wood property at 12-percent moisture content	
Common name	Scientific name	Specific gravity	Side hardness (lbf)
Paper birch	<i>Betula papyrifera</i> Marsh.	.55	910
Yellow birch	<i>Betula alleghaniensis</i> Britt.	.62	1,260
Sweet birch	<i>Betula lenta</i> L.	.65	1,470

Source: U.S. Department of Agriculture, Forest Service 1999.

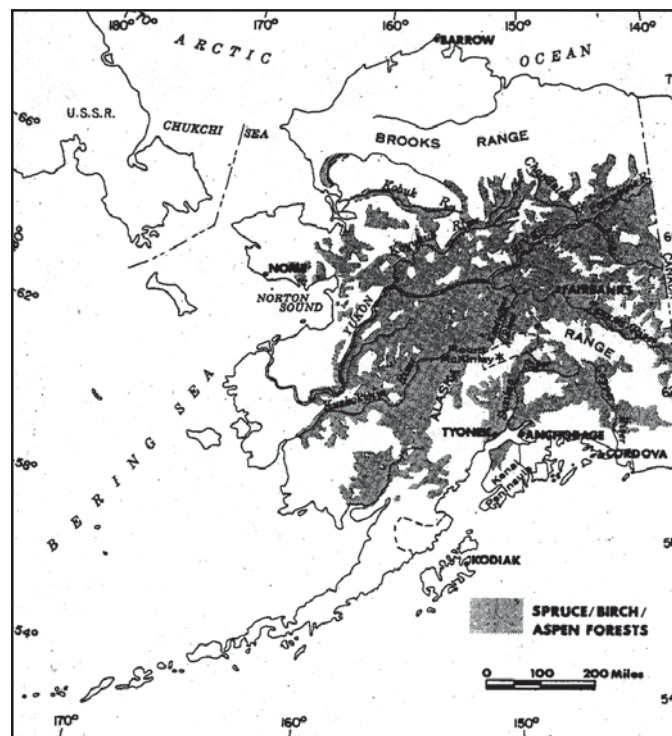


Figure 3—Geographic range of paper birch (*Betula papyrifera* var. *humilis*) in Alaska (species range is indicated in black).

Birch species are often favored for use in veneers and plywood, and a recent evaluation of hardwood plywood purchases ranked birch as one of the leading species for face veneer use in plywood, representing 10 percent of total purchases by architectural woodworkers in 1997 (Forbes et al. 2001). Rodman and Mahoney (1999) studied paper birch resources and markets in the inland Pacific Northwest along with other native inland hardwood species. They found that current inventory summaries are inadequate to accurately estimate both the quantity and quality of birch and other hardwood resources and that current use and characteristics of local manufacturers are much the same as in Alaska.

Table 2—Volume and average value of hardwood lumber exports

Year	To all countries		To Japan only	
	Lumber volume	Average value	Lumber volume	Average value
	<i>Thousand board feet</i>	<i>Dollars per thousand board feet</i>	<i>Thousand board feet</i>	<i>Dollars per thousand board feet</i>
1987	3,316	699.94	361	761.77
1988	8,767	767.31	2,045	709.54
1989	64	656.25	25	760.00
1990	0	—	0	—
1991	0	—	0	—
1992	210	209.52	0	—
1993	301	548.17	92	1,369.57
1994	11	1,133.14	0	—
1995	0	—	0	—
1996	0	—	0	—
1997	0	—	0	—
1998	26	1,373.03	0	—
1999	51	1,201.04	25	864.12

Source: U.S. Department of Commerce 1999.

Paper Birch in Alaska

Within Alaska, paper birch forests predominate in the interior and south-central regions of the state (fig. 3). Alaska paper birch (*B. papyrifera* var. *humilis*) occurs primarily in interior Alaska, whereas Kenai birch (*B. papyrifera* var. *kenaica*) is found in south-central Alaska as well as some interior locations (Anon. 1976). The total volume of sawtimber for all commercial species in interior Alaska is estimated to be about 31 billion board feet (Wheeler, n.d.). Alaska birch accounts for about 8 percent of this total, a volume of about 2.5 billion board feet. The most extensive forests of paper birch occur in the upper Cook Inlet region at elevations of less than 500 meters (Wheeler, n.d.).

Almost all the birch lumber produced in Alaska is used within the state. Past uses for locally produced Alaska birch have included kitchen cabinets, office furniture, fine wood-working applications, and gifts and crafts. Statistics for hardwood lumber exports from Anchorage, Alaska, indicate almost no shipments within the past 5 years and relatively few during the last 13 years (table 2).

Although hardwood lumber for home woodworking in Alaska represents a much smaller market in terms of board feet than does softwood construction lumber, it is nonetheless important because of its potential for adding product value during manufacturing and drying. Kiln-dried hardwood lumber sold through local hardware and homecare centers can often carry a retail price of more than \$2.00 per board foot. Kiln drying can considerably increase the value of hardwood lumber, which is especially important in markets where there is little demand for undried hardwood lumber.

About eight sawmill facilities in Alaska are currently manufacturing and drying Alaska birch lumber. Because of the small size of many of the producers, as well as the seasonal and intermittent production of some facilities, it is difficult to establish precise estimates of lumber production. Several dehumidification and hot water dry kilns have recently been installed, thus demonstrating a trend toward high-quality lumber products under carefully controlled environmental conditions.

Procedures

Market information and sales potential of Alaska birch lumber were evaluated for retail sale directly to consumers and also for secondary manufacturers producing fine wood-working products. Information from retail managers and dry kiln owners was evaluated during site visits conducted between January and May 2001. A limited number of dry kiln manufacturers also were contacted about quality lumber drying practices, with a primary interest in lumber conditioning procedures used in dehumidification drying.

Retail lumber sales outlets within the interior and south-central regions of Alaska were contacted to discuss their hardwood lumber sales programs and whether or not locally produced Alaska birch was part of their product inventory. The primary markets studied were (1) the Anchorage metropolitan area, (2) the Kenai-Soldotna area, and (3) the Fairbanks area. The main objective of this component of the study was to assess current hardwood product offerings as well as the market potential for Alaska birch lumber for sale directly to consumers in retail centers.

Specific questions were on topics such as current prices and volumes of hardwood lumber being sold, lumber quality and sizes desired, and current lumber marketing practices. Also of interest were the perspectives of store managers on whether consumers would be willing to substitute locally produced Alaska birch lumber for other imported species, such as the oaks and maples. Product pricing issues were not emphasized but were still given consideration. Businesses were contacted primarily through onsite interviews and phone calls.

Owners of birch-producing sawmills also were contacted through phone conversations and site visits. Questions focused on their current marketing practices and also on desirable attributes for Alaska birch lumber. Lumber drying practices, secondary manufacturing practices, and plans for expansion of facilities also were discussed. Information from a limited number of secondary processors and fine woodworking centers was evaluated. Questions again considered the market potential of Alaska birch products, but in this case, the primary market was professional woodworkers and cabinet producers. Discussions focused on the product attributes and appearance features that were most important to consumers. Information from several dry kiln manufacturers focused on quality drying practices that would be relevant to manufacturers of Alaska birch lumber. A specific topic included the conditioning practices needed to produce dimensionally stable lumber in dehumidification kilns that do not have traditional (steam-based) conditioning systems.

**Results—Lumber
Producer
Perspectives**
**General Retail Sales
Potential**

Alaska birch lumber producers were generally receptive and interested in the idea of marketing lumber of random widths through local retail outlets. Several producers had previous experience in retail sales efforts, including at least one who currently sells lumber through a wholesaler who, in turn, supplies local retail centers. Another producer had been in contact with homecenters regarding retail sales efforts designed to create partnerships with local suppliers. Several producers had sold hardwood lumber to walkup customers, although this did not seem to be a significant portion of their business.

Log Supply

A frequently mentioned concern among lumber producers was the lack of steady supply of Alaska birch logs. Most producers obtained their sawlogs intermittently, responding to opportunities such as land clearings, construction activities, and road building. Some manufacturers purchased higher quality logs from distant sources rather than using locally harvested, smaller diameter logs. It seems that predictable and sustainable harvests of paper birch timber in Alaska could help create a more stable supply chain between sawmills and local retail outlets and could likely stimulate manufacturing development by stabilizing the availability of raw material.

Vertical Integration

Lumber manufacturers frequently commented that they preferred to specialize in fewer, rather than more, steps in the production and marketing process. For example, selling to a single lumber wholesaler rather than several retail outlets would simplify the marketing and sales functions. Another situation many secondary manufacturers were faced with was deciding when to become active in the production process. Wood products producers who are willing to do their own sawing and drying may be better equipped to handle supply uncertainties than those who rely on outside sources (which may be intermittent) to supply kiln-dried, surfaced lumber. An additional consideration for many producers is whether their birch lumber production is a core business for them or a relatively small part of a diversified business structure that could include other ventures. For small, family-owned businesses, the decision to expand operations could result in added administrative responsibilities and other commitments that the owners might not have the time or resources to pursue, even if greater sales potential were possible.

Appearance Features

Appearance features of birch lumber generally were considered important and, therefore, had a strong influence on customer preferences. A lot of color variation between heartwood and sapwood was often cited as a desirable attribute, especially for home hobbyists and woodworkers. A small amount of degrade, including small knots and other figure patterns, was generally not objectionable to retail customers. Spalting patterns (regions of incipient decay in birch) were mentioned as a desirable appearance feature. Because spalting is often accompanied by soft, weak wood, however, its use in fine woodworking applications could be somewhat limited. Several producers mentioned that the importance of appearance attributes was generally determined on an individual basis and that no generalizations could be made about consumer preferences. In general, lumber from smaller diameter stems such as those found in the interior Alaska region was more likely to contain knots and other growth-related defects than lumber from larger diameter trees in the Matanuska-Susitna Valley. It was noted that clear, defect-free, white sapwood could actually be less aesthetically desirable for woodworking purposes than lumber containing color variations and other character features.

Product Quality and Dimensional Stability

Dimensional stability was cited on many occasions as important for successful retail sales of hardwood lumber. Alaska birch lumber may be perceived as being dimensionally unstable in some instances, in part because of naturally occurring features such as growth stresses in trees but also because of improper drying practices. As more dry kilns in Alaska are being established with controlled temperature and relative humidity conditions, however, instability seems to be of less concern. In most regions surveyed, there was little or no market for green (unseasoned) Alaska birch lumber.

Results—Retail Sales Manager Perspectives **General Retail Sales Potential**

Retail sales managers were generally enthusiastic and receptive to the possibility of carrying Alaska birch lumber. At least two outlets displayed locally produced birch as part of their normal inventory; at least one other outlet could make it available to customers on relatively short notice. Another major retail center had programs in place that encouraged local businesses (including hardwood lumber producers) to become business partners. Almost all the retail managers contacted seemed interested in participating in marketing trials of locally produced birch. It was noted, however, that sales of niche products, such as paper birch lumber, could soon reach saturation in smaller markets if sold through several retail outlets.

Product Offerings and Supply

The primary concern of retail managers was in maintaining a consistent product supply that would be available to customers for immediate purchase. Only one of the retail managers mentioned that an unsteady supply could be acceptable but only if matched by an unsteady demand (seasonal or otherwise). One manager commented that a steady and consistent supply was particularly important during winter when many home woodworkers would be purchasing lumber for projects.

A frequent comment from retail sales managers was the need for kiln-dried lumber of consistent and uniform quality. Other concerns about product attributes of Alaska birch lumber included potential staining problems and the tendency of birch to be more easily dented than some of the other species used for fine woodworking, having higher specific gravities. Softness was particularly a concern for spalted birch, which although desired by many for its decorative qualities, is often characterized by regions of incipient decay, and therefore tends to be easily deformed under even relatively small pressure.

The hardwood lumber inventory in many of the retail centers consisted mostly of red oak (*Quereus falcata* Michx.). Few stores had locally produced Alaska birch lumber as part of their displayed inventory, although several stores carried eastern yellow birch lumber and plywood products. Several stores sold small amounts of poplar (*Liriodendron* L.), maple (*Acre* L.), and alder (*Alnus* Mill.) lumber, thereby indicating a willingness to market less-used or niche species. At least one retail center had established a program to encourage local manufacturers to become lumber suppliers. Another retail center had some degree of local authority to make purchasing decisions without having to go through a corporate process. This could create a favorable environment for Alaska birch producers to work with decisionmakers at the local level and also to find out what criteria are considered most important by retail managers. In several cases, small, defect-free hardwood cuttings were sold for specialty applications (including at least one instance for Alaska birch). This product was generally less than one board foot in size and carried unit prices considerably higher than random-width lumber of the same species. At least one retail center sold moldings and other profiled products milled from local Alaska birch.

Appearance Features

In general, most of the hardwood lumber sold at large retail centers was characterized by uniform color and texture, particularly for red oak and maple. Most of the retail lumber found in the larger centers lacked heartwood-sapwood color variation, spalting patterns, or other decorative features. Two notable exceptions to this trend included the sale of yellow poplar lumber and the use of hickory (*Carya Nutt.*) for kitchen cabinets (both of which can be characterized by distinct heartwood-sapwood color variations). “Brightwoods” were a popular retail standard for many hardwood lumber products. This could be a disadvantage for Alaska birch, which is often characterized by figure patterns or heartwood-sapwood variations. Successful niche marketing, however, could take advantage of the fact that Alaska birch can be distinguished from some of the more popular eastern hardwoods based on these appearance features.

Miscellaneous Marketing Considerations

There was a general consensus that Alaska-specific marketing practices such as a “Made in Alaska” label would not significantly increase sales of retail lumber. In addition, the practice of shrink-wrapping individual lumber pieces for retail sale was generally not viewed as being beneficial.

Results—Secondary Manufacturer Perspectives

Secondary producers included businesses that purchased kiln-dried birch lumber for remanufacture into value-added products such as furniture, moldings, and crafts. These firms were not directly involved in retail lumber sales but were able to provide additional insights into marketing opportunities for primary producers. Their viewpoints were generally in close agreement with many of the primary manufacturers and retail managers contacted.

Kiln-dried, dimensionally stable lumber was indicated as an important prerequisite for primary and secondary manufacturing. Also important was the need for accurately graded lumber so that lower grades would not be included when clear lumber was required. The effect of small knots and other growth-related defects on lumber value, and also on customer preferences, was not emphasized in this study but is potentially a key consideration in successful retail marketing. Given the high incidence of minor defects and knots that are found in Alaska birch, further information to characterize the presence of these defects (including allowable size and number) could be beneficial, particularly from the lower grades.

Concerns about the limited supplies of high-quality birch sawlogs and the availability of kiln-dried lumber also were mentioned. Substituting locally produced Alaska birch for imported species such as maple was indicated as a possibility if steady supplies could be obtained locally. In general, secondary manufacturers seemed receptive to the idea of incorporating more Alaska birch into their product offerings. Many of the secondary manufacturers indicated that color variations found in birch would be a desirable marketing feature for their customers.

Results—Dry Kiln Manufacturer Perspectives

Lumber quality considerations, including uniform moisture contents and proper relief of drying stresses, were considered important by retail managers in Alaska and also through other marketing studies. Most of the smaller lumber-drying systems in Alaska do not include steam boilers and therefore would not be capable of conditioning lumber by conventional means. At least one dry kiln manufacturer has addressed this need by including small humidifying systems that can inject a water spray into the drying chamber. These systems are available at low cost and are easily operated by using conventional water supplies.

Conclusions Log Supply and Sawmill Capacity

Many of the barriers to successful Alaska birch lumber sales seem to begin with dependable log supplies. Much of the Alaska birch sawtimber is obtained from land clearing and other intermittent activities rather than being harvested on a sustainable basis from managed forests. Primary and secondary manufacturers, as well as retail managers, are all impacted by the inconsistent supply of birch logs and lumber. Compounding the problem of sawlog supply is the fact that many of the birch producers in Alaska are not large enough individually to supply major retail centers on the consistent basis that the centers require.

Competition Versus Cooperation Between Producers

Because few, if any, hardwood lumber producers in Alaska would be large enough to manage independent retail sales and marketing programs, a cooperative approach between producers might result in greater overall success. For example, if all sawmills within an economic transportation distance supplied a single drying facility with green lumber, this facility could supply kiln-dried lumber of consistent and dependable quality to one or more retail sales centers. Under this scenario, the uniformity and overall quality of retail lumber would likely be much higher than under a scenario of several producers supplying lumber dried in their own facilities under potentially different conditions.

The retail market potential for Alaska birch might improve (versus current sales levels) once local producers can become established in a retail sales environment. That is, the ability of producers to “get their foot in the door” could be a key step in establishing successful sales programs. Alaska’s smaller manufacturers could develop marketing relations with a limited number of local customers or retail sales centers, which could consume a large portion of the company’s production. Advantages of this type of business arrangement include minimal sales force requirements, consistent cash flow, and the ability of a single large customer to protect the producer from short-term market fluctuations (Bush et al. 1991a).

Appropriate Marketing Strategies

Given the small size of most birch lumber manufacturers in Alaska, focus strategies might be the most successful marketing approach to use (Bush et al. 1991b). In this strategy, certain consumer segments would be identified, and marketing efforts would be directed at satisfying the needs of these market segments. For example, if it were determined that local woodworkers preferred birch for kitchen cabinet projects, then desirable product attributes could be identified for this group of consumers. Lumber manufacture and marketing practices could then be designed to emphasize or enhance these product attributes. Alternatively, this same focus strategy could be applied to other woodworking applications such as furniture or flooring.

One disadvantage of focus strategies is that a certain level of market research is needed to determine customer needs, and this might be difficult for Alaska’s smaller producers to achieve individually. Lumber manufacturers should communicate with retail managers and sales staff to determine the most important customer needs and important product attributes (Bush and Araman 1990). This feedback would help ensure that customer needs are being met, and lack of information in this area could be a barrier to successful focus strategies.

An alternative to focus strategies would be a differentiation, or niche market strategy, in which a given product is perceived as being unique on an industry-wide basis (Bush et al. 1991b). For example, producers of Alaska birch lumber might promote the benefits and desirable attributes of their product versus other leading hardwood species, such as red oak or maple. Heartwood-sapwood color variations and unique grain patterns are

characteristics of Alaska birch that could be used to help distinguish it from competing species. Product differentiation strategies might be difficult for Alaska's smaller producers to accomplish with limited resources for promotion, advertising, and customer support (Bush et al. 1991b).

Product Attributes Versus Service Attributes

Product attributes are related to the presence of desirable features and characteristics. Service attributes, on the other hand, are typically related to the ability of a supplier (or producer) to fulfill important customer needs (Bush et al. 1991b). Several product and service attributes have been identified as being important for various industry sectors, including furniture manufacturers (Sinclair et al. 1989). The highest rated responses were usually related to product quality and company reputation. In addition, accuracy in lumber grading was often rated as being important. Although price is important, it should not become the most important marketing consideration, and in many of the studies, price was ranked as less important than several other quality attributes (Sinclair et al. 1989). Most retail managers surveyed in Alaska did not mention price as being an overriding consideration influencing the market potential of locally produced birch lumber.

For buyers and sellers of Alaska birch, the most important product attribute identified in this market study was lumber quality. Specific lumber quality features included uniform moisture content free of residual drying stresses. The most important service attribute identified was related to product supply, for both logs and for hardwood lumber. This was especially important for retail lumber sales during the winter home-woodworking season.

In past research, the least important product attribute for hardwood products was the presence of a trademark or product logo (Bush et al. 1991b). This is consistent with the prevailing attitude of most Alaska retail lumber managers, who generally did not view a "Made in Alaska" designation as being beneficial. Many managers did feel, however, that consumers would give preference to products that were manufactured in the state.

Lumber Drying Quality

Several studies have recognized that some of the most important product attributes are related to lumber drying quality. Key attributes identified in these studies included moisture consistency from load to load, and the absence of warp, crook, and bow (Bush et al. 1991b, Forbes et al. 1994, Sinclair et al. 1989). Lumber drying quality also has been identified as an important consideration in maintaining dimensional stability of edge-glued birch panel products (Bowyer et al. 1986).

Producers of Alaska birch lumber can use these findings through increased attention to kiln-drying practices, including close control over final moisture content and the use of conditioning treatments to relieve drying stresses. Recent trends in Alaska have favored the use of controlled drying conditions in dehumidification kilns and hot water kilns. Inexpensive systems are also available to provide conditioning stress relief for dry kilns that do not have steam boilers.

Buyers are able to reduce the risks of purchasing hardwood lumber in at least two ways: (1) by dealing with established suppliers having good reputations and (2) by purchasing from suppliers that provide a product of known (and consistent) quality (Bush et al. 1991b). Alaska birch lumber producers who have not yet established strong reputations

will need to reduce purchaser risks by producing lumber with consistently high-quality standards. Examples of this could include specifying final moisture content, color characteristics, levels of heartwood and sapwood variations, and other key product attributes.

**Overall Retail Potential of
Locally Produced Alaska
Birch Lumber**

Many lumber producers, secondary manufacturers, and sales managers expressed interest in the possibility of marketing paper birch lumber in a retail environment. Almost all the retail sales managers contacted were receptive to the idea of test marketing trials of locally produced birch lumber. Some of the retail centers had the authority to initiate sales programs for locally produced lumber rather than going through more lengthy processes involving their corporate centers. Other retail centers were interested in carrying a variety of hardwood species, not just the most popular species. Red oak and maple, however, predominated at most retail centers visited.

Some retail centers carried secondary hardwood species having little shelf space (for example, red alder lumber), thus indicating a willingness to carry niche species, which could possibly include Alaska birch. Species having heartwood-sapwood variations similar to birch were observed on several occasions. Yellow poplar lumber was common, as were kitchen cabinets manufactured from hickory. Therefore, it seems that heartwood-sapwood variations would not limit the retail potential of birch lumber products. At least one major retail center had a special program in place designed to encourage smaller local producers to participate in test marketing trials. Overall, retail centers did not seem averse to developing business relations with smaller local producers who are able to supply products of a uniform quality on a consistent and timely basis.

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Appendix A
Sample Questions for
Retail Store Managers

For retail store managers, information about the market potential of birch hardwood lumber was based primarily on the following questions.

1. What hardwood species do you currently sell for the home craftspeople and hobbyists?
2. What sizes and thicknesses are in greatest demand (random width and length versus specific sizes)?
3. What volume of each species is sold (board feet per year)?
4. What are the selling prices of each species sold (cost per board foot)?
5. What quality features are most desirable for sale of hardwood lumber?
6. What other appearance features do your customers find important when purchasing hardwood lumber? (Could include color, grain patterns, absence of knots, etc.)
7. How much degrade, in terms of small knots, minimal warping, etc., would customers not object to and still be willing to pay full retail prices?
8. Do you currently sell paper birch lumber?
9. If the answer to question 8 is yes, is the paper birch from Alaska?
10. Do you sell hardwood lumber from any Alaska species other than paper birch? (For example, cottonwood, aspen, or alder)
11. What potential is there for substituting locally produced Alaska birch for imported hardwoods received from the lower 48? (Could include oaks, maples, and birch.)
12. To the best of your knowledge, for what types of projects do your customers use birch lumber of random length and random width?
13. How receptive would you be to purchasing paper birch lumber from a local producer?
14. Do you feel that a "made in Alaska" label on lumber products could improve your sales of hardwood lumber?
15. Would shrink wrapping individual pieces improve your sales of hardwood lumber?
16. What marketing suggestions might you have for the point-of-sale area to increase sales of hardwood lumber products? (Could include displays, location of product within store, etc.)
17. What problems or obstacles might need to be overcome for acceptance of locally produced hardwood lumber by home hobbyists and craftspeople?
18. What potential is there for sale of small pieces of end trim and other miscellaneous pieces? (For example, puzzle parts, games made from hardwood pieces, etc.)
19. What other comments or suggestions do you have regarding successful sales of hardwood lumber in retail outlets?

Appendix B
Sample Questions for
Sawmill Owners

For sawmill owners, information regarding the market potential of birch hardwood lumber was based primarily on the following questions.

1. What hardwood species do you currently saw into lumber?
2. Do you currently saw paper birch lumber?
3. Do you produce hardwood lumber from any species other than paper birch? If so, what hardwood species?
4. What sizes and thicknesses of hardwood lumber do you produce (random width and length versus standard sizes)?
5. What volume of each species do you produce (board feet per year)?
6. What are the selling prices of each species sold (cost per board foot)?
7. What lumber appearance features do your customers find most important? (Could include color, grain patterns, absence of knots, etc.)
8. How much degrade, in terms of small knots, minimal warping, etc., would your customers not object to and still be willing to pay full retail prices?
9. Do you kiln dry your lumber?
10. Do you surface (plane) your lumber?
11. Do you sell your hardwood lumber directly to customers?
12. Do you sell your hardwood lumber to a local retail outlet?
13. Do you feel that selling your lumber to a local retail outlet would improve your sales potential?
14. What potential is there for sale of small pieces of end trim and other miscellaneous pieces? (For example, puzzle parts, games made from hardwood pieces, etc.)
15. What other comments or suggestions do you have regarding successful manufacturing and sales of hardwood lumber?

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Web site	http://www.fs.fed.us/pnw
Telephone	(503) 808-2592
Publication requests	(503) 808-2138
FAX	(503) 808-2130
E-mail	desmith@fs.fed.us
Mailing address	Publications Distribution Pacific Northwest Research Station P.O. Box 3890 Portland, OR 97208-3890

U.S. Department of Agriculture
Pacific Northwest Research Station
333 S.W. First Avenue
P.O. Box 3890
Portland, OR 97208-3890

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