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Marketing Recommendations for Wood Products From Alaska Birch, Red Alder, and Alaska Yellow-Cedar

Geoffrey H. Donovan, David L. Nicholls, and Joseph Roos



Authors

Geoffrey H. Donovan is a research forester, Forestry Sciences Laboratory, 620 SW Main St., Suite 400, Portland, OR 97205; **David L. Nicholls** is a forest products technologist, and **Joseph Roos** is a marketing specialist, Alaska Wood Utilization Research and Development Center, 204 Siginaka Way, Sitka, AK 99835.

Abstract

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Several factors have contributed to a recent decline in Alaska's wood products industry, including reduced exports to Japan and the closure of two pulp mills in southeast Alaska. However, higher value niche markets are a potential growth area for the industry. In this paper, we consider niche markets for three species that have historically been harvested in low volumes—Alaska birch (*Betula papyrifera* var. *humilis* (Reg.) Fern. & Raup), red alder (*Alnus rubra* Bong.), and Alaska yellow-cedar (*Chamaecyparis nootkatensis* (D. Don) Spach). The extent of the resource, current utilization, and an overview of recent research efforts are examined. Specific marketing recommendations are then provided for each species, based on these evaluations. Wide-ranging opportunities for a variety of primary and secondary wood products exist that utilize character-marked lumber, lower grades of lumber, and material from standing-dead sources. This report concludes with a framework for future research, identifying key opportunities to differentiate Alaska wood products in the marketplace.

Keywords: Secondary wood products manufacturing, consumer preferences, Alaska birch, red alder, Alaska yellow-cedar, marketing, Alaska, character markings.

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Introduction

The Alaska forest products industry has declined significantly since 1990 owing to a number of factors. Japan, Alaska's principal export market, has been in an economic downturn since the early 1990s, reducing Japan's demand for lumber (Eastin and Braden 2000). Alaska also has been losing market share in Japan to European and Canadian producers (Eastin and Braden 2000). As a result of the downturn in Japan's economy, and increased competition, Alaska's total solid wood product exports to Japan fell 71 percent between 1989 and 1998. Similarly, although markets are smaller, there have been significant decreases in exports to South Korea (44 percent) and China (90 percent) over the same period. In addition to steep declines in solid wood exports, Alaska's two pulp mills in Sitka and Ketchikan closed in 1993 and 1997, respectively. Consequently, average annual employment by logging companies, sawmills, and pulp mills declined from approximately 4,000 in 1990 to approximately 800 in 2002 (Alaska Department of Labor and Workforce Development 2003). Although the hardwood lumber industry is considerably smaller than the softwood industry, it too has faced competitive pressures within Alaska and export markets. There is a relatively small industry for birch products such as kitchen cabinets, custom woodworking, and retail lumber. There is currently little, if any, commercial harvest of red alder (*Alnus rubra* Bong.) in southeast Alaska.

Timberland ownership patterns also present problems for the Alaska forest products industry. Sixty-five percent of all land in Alaska is federally owned, 24.5 percent is state owned, 10 percent is owned by regional and village native corporations, and less than 1 percent is in private ownership (McDowell Group 1998). Timber supply is, therefore, particularly sensitive to changes in government management practices. An increasing number of legal challenges to timber sales on federal land have further increased supply uncertainty. Finally, rugged topography and limited infrastructure result in higher transportation costs in Alaska than in other competing regions such as British Columbia or the Pacific Northwest.

Declining export markets, increased competition, decreased and uncertain supply, and high transportation costs have contributed to a precipitous decline in timber harvests from national forests in Alaska, from 472 million board feet (MMBF) in 1990 to 44 MMBF in 2001 (USDA Forest Service 2001). Several sources have concluded that the Alaska industry will struggle to compete in commodity markets (Robertson and Brooks 2001). However, niche markets may allow producers to better capitalize on the competitive advantages of Alaska species. Niche markets may be especially appropriate for species that historically have been harvested in low volumes. Three such species, red alder, Alaska birch (*Betula papyrifera* var. *humilis* (Reg.) Fern & Raup), and Alaska yellow-cedar (*Chamaecyparis nootkatensis* (D. Don)) will be the focus of this paper. For each species, we will describe the extent of the resource and current utilization. We then summarize recent research and offer species-specific marketing recommendations.

Birch The Birch Resource in Alaska

In Alaska, paper birch forests predominate in the interior and south-central regions of the state. Alaska paper birch occurs primarily in interior Alaska, whereas Kenai birch (*Betula papyrifera* var. *kenaica* (W.H. Evans) Henry) is found in south-central Alaska as well as in some interior locations (Anon. 1976) (fig. 1). The total volume of sawtimber for all commercial species in interior Alaska is estimated to be 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 about 1,640 feet (Wheeler, n.d.).

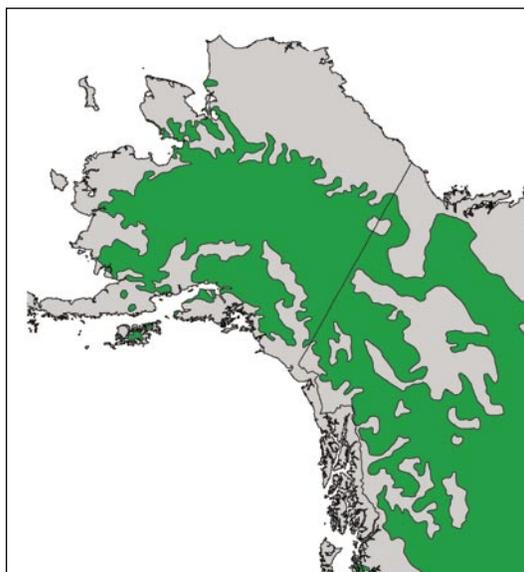


Figure 1—Geographic range of paper birch in Alaska (indicated in green).

Birch Materials and Utilization

Almost all the birch lumber produced in Alaska is used within the state. Exports data from the port of Anchorage show virtually no birch lumber was exported from the state from 1995 to 1999, and relatively little from 1987 to 1999 (table 1) (Warren 2001). There is a small secondary wood products industry in the state manufacturing products such as kitchen cabinets, office furniture, custom woodwork, and gifts and crafts.

Although the market for hardwood lumber in Alaska is much smaller in terms of board feet than the market for softwood lumber, it is nonetheless important because of its potential for adding product value during manufacturing and drying. Several dehumidification and hot water dry kilns have recently been installed in Alaska, indicating a trend toward production of high-quality kiln-dried lumber.

Eight sawmills in Alaska are currently manufacturing and drying Alaska birch lumber. Because these mills are small, and some only operate intermittently, it is difficult to establish precise estimates of lumber production.

Recent Birch Research

Character marked products—Alaska birch tends to have a high proportion of defects compared to birch from other regions. This may be a disadvantage when birch lumber from Alaska is graded under traditional lumber grading rules. However, recent research has shown that for visual applications, many consumers prefer birch lumber with some degree of defect that adds character to the material (Donovan and Nicholls n.d.). This research used kitchen cabinet doors as a representative Alaska birch product to determine what type and level of character consumers preferred and how much they were willing to pay for their favorite kitchen cabinet door (fig. 2). Three broad conclusions were reached. First, doors with moderate levels of character marking and grain variation were preferred to those with higher levels of defect, including doors having distinct markings such as spalted patterns. However, when consumers were asked to choose among doors with different levels of the same type of character marking, high levels of defect were preferred to intermediate levels. Second, doors with

Table 1—Volume and average value of hardwood lumber exports from Anchorage, Alaska, 1987–99

Year	To all countries		To Japan	
	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

— = not applicable.
Source: Warren 2001.



Figure 2—Selected birch cabinet doors used in consumer preferences study: (A) high level of character marking, (B) clear (defect-free), (C) ray fleck, (D) spalted, (E) grain variation.

higher levels of defect were more popular among men than women. Third, doors with visually striking types of defect, although generally less popular, commanded the highest price premiums. That is, although fewer people preferred doors with more striking defect (such as spalling patterns), those who did were willing to pay a high price for them. Study respondents frequently commented that they wanted all the doors in their kitchen to match. Therefore, it is critical for secondary birch manufacturers to have access to birch lumber with similar types, and levels, of defects.

Marketing strategies for birch lumber—Random-width birch lumber for sale through outlets such as Home Depot¹ and other retail centers represents a potentially large market for Alaska producers. Given the small size of most birch lumber manufacturing companies in Alaska, focus strategies may be an appropriate marketing approach to use. A focus strategy entails identifying potential types of consumers, allowing marketing efforts to be directed at satisfying the specific needs of these market segments (Bush et al. 1991). For example, if local woodworkers prefer birch for kitchen cabinet projects, then manufacturers should identify the product attributes most important to this group of consumers. One disadvantage of focus strategies is that the investment in market research required may be too high for some smaller manufacturers (Bush and Araman 1990).

An alternative to focus strategies is a product differentiation, or niche market strategy, which focuses on developing a product image that is perceived as being unique on an industry-wide basis. Unique character markings, color variations, and grain patterns are all characteristics of Alaska birch that could help distinguish it from competing species. However, 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. 1991).

Birch craft distribution—Alaska's birch craft producers have a tremendous opportunity to capitalize on new product distribution trends. The "new world distribution diamond" is a conceptual model of new distribution trends (Roos, n.d.) (fig. 3). The diamond encompasses four points. First, recent advancements in express package delivery services, such as UPS, FedEx, and Emery, have reduced product delivery times from weeks to days while maintaining affordable rates. Second, despite the dot-com "melt down" of 2000, Internet sales in the fourth quarter of 2002 were up 28.2 percent over fourth-quarter 2001, reaching \$14.3 billion (USDC Bureau of the Census 2003). EBay alone sells over 90,000 craft items per week, establishing itself as a major craft distribution channel.

Third, direct distribution is increasingly being used to bypass traditional retail outlets. Direct distribution has been perfected by Dell Computer, which created a business model based on three principles: no inventory, no middlepersons, and tailor products to individual customer needs (Jones 2003). Fourth, globalization has opened up export markets more than ever before. United States exports increased 25 percent from \$584 billion in 1995 to \$729 billion in 2001 (International Trade Administration 2002).

Alaska birch craft producers can leverage all four of these distribution trends. They can reach consumers directly via the internet, take orders, and have the product arrive to the end consumer within days. In addition to U.S. markets, global markets offer strong growth opportunity. Firms that embrace the trends of the new world distribution diamond will have a tremendous advantage over their competitors who do not.

Recent data have shown that many Alaska birch craft producers are successfully adapting to new marketing trends. Over a 3-year period (1999 to 2001), average sales increased by approximately 56 percent, while raw material use during the same period

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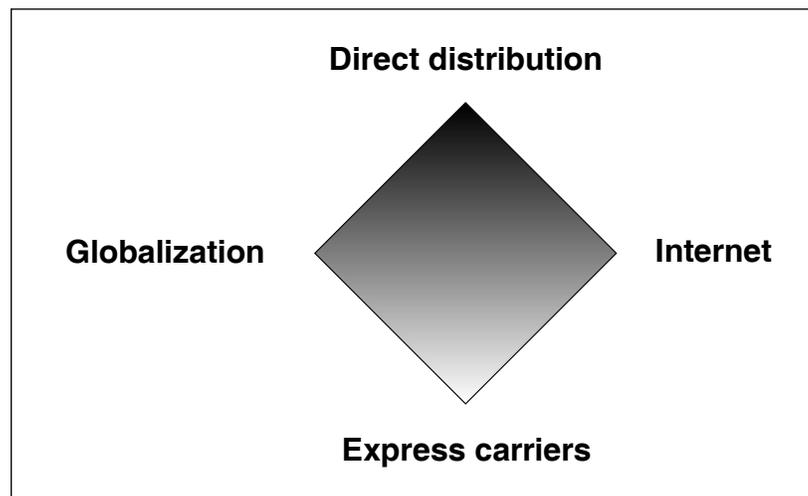


Figure 3—New world distribution diamond (Roos, n.d.).

increased by over 42 percent (Braden and Nicholls 2003). In-state markets account for over 90 percent of total sales, with the primary outlets being craft shows and retail gift stores, many of which are oriented toward the tourist trade.

Birch marketing recommendations—

- Lumber grades. Development of proprietary grades may be a useful mechanism for marketing birch lumber with defects. Proprietary grades would have two advantages for the Alaska birch industry. First, character-marked birch lumber could be sold as a premium product, adding substantial value to the birch resource. Second, grading would enable birch producers to supply lumber with consistent levels of defect, thereby addressing a key concern among consumers.
- Character markings. For birch products such as kitchen cabinets, consumers generally prefer moderate types of defect and grain variation to more striking defect (such as spalting patterns). However, when choosing between doors with different gradations of the same character feature, consumers generally prefer high levels of defect to intermediate levels.
- Retail marketing birch lumber. When marketing random-width birch lumber for retail sales, focus strategies can be used to identify key market segments most likely to buy certain products. Alternatively, niche marketing strategies can be used to distinguish birch from competing hardwood lumber species.
- Craft products. Birch craft producers can capitalize on new distribution trends, including express package delivery, e-commerce, direct distribution, and global marketing opportunities.

**Red Alder
The Red Alder
Resource in Alaska**

Commercially viable red alder stands are found predominantly in southeast Alaska. The species commonly occurs in areas that have experienced disturbance, primarily by timber harvesting (fig. 4). Therefore, in contrast to much of the timber resource in Alaska, a high proportion of red alder is accessible from existing roadbeds. Researchers have reported that pure red alder stands can become mature in less than 50 years (Smith 1968), suggesting that stands established during the pulp mill



Figure 4—Geographic range of red alder in Alaska (indicated in green).

era (1950s–1990s) could now be reaching maturity. Smaller stems—less than 8 to 10 inches in diameter—are used primarily for pulp or fuelwood (Hibbs 1996). Larger stems, approximately 10 inches or more in diameter, are generally well suited for higher value lumber products. Reliable volume estimates for red alder in southeast Alaska are not available. However, it is estimated that the net volume of red alder growing stock within two inventory units² of the Tongass National Forest is greater than 25 million cubic feet (van Hees 2001a, 2001b).

Red Alder Materials and Utilization

The species has been used extensively for furniture manufacture in the Pacific Northwest and California, with more than 40 percent of the 1992 California hardwood consumption being alder (Cohn and Goudie 1995). Red alder in Alaska has been used primarily for niche markets, such as chips for smoking fish and wood carving, but otherwise has seen little commercial use (Wip i et al. 2002). Although red alder has properties well suited to furniture and cabinet production (including good machinability), it generally lacks the name recognition of more traditional hardwoods, such as oaks (*Quercus* spp.) and maples (*Acer* spp.).

Recent Red Alder Research

Lack of consumer awareness of red alder products prompted Nicholls et al. (n.d.) to conduct a study comparing consumer preferences for red alder to the more traditional hardwoods, oak, hickory, maple, and cherry (fig. 5). They found that when consumers based their choices entirely on visual appearance, red alder compared favorably to the other hardwoods in the study (fig. 6). However, the popularity of red alder relative

²Unreserved lands within the Ketchikan and Stikine inventory units, Tongass National Forest.

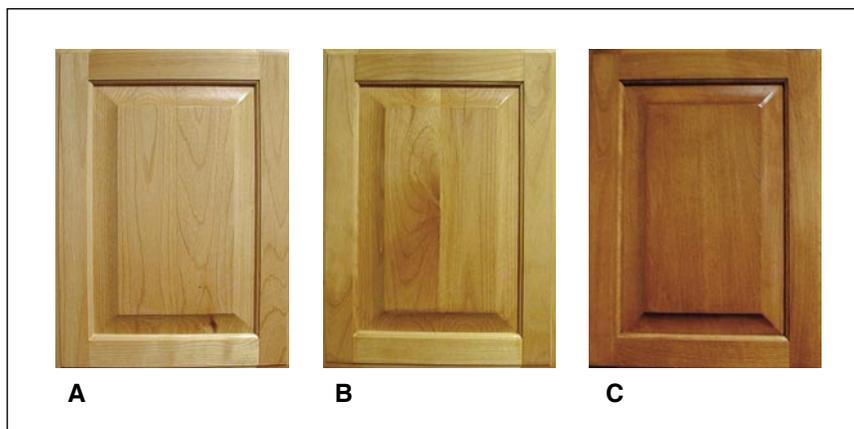


Figure 5—Red alder cabinet doors used in consumer preferences study: (A) unstained, (B) moderate stain, (C) heavy stain.

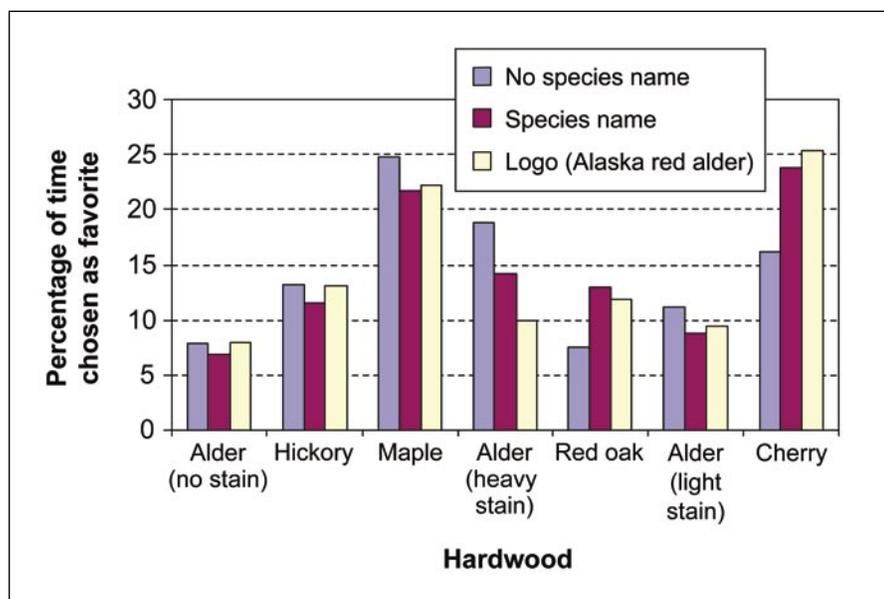


Figure 6—Consumer preferences for kitchen cabinets.

to other species was reduced when consumers were exposed to the species name “red alder.” The one exception was middle-aged, high-income consumers. The study revealed that this segment was familiar with the species name “red alder” and viewed it as desirable. These findings suggest that, generally, consumers are not familiar with the name “red alder” and, therefore, this name should not be emphasized when marketing red alder products. Alternative marketing strategies could be used such as staining red alder with a cherry stain and emphasizing attributes other than species name such as “solid hardwood” and “cherry finish.” However, to target the middle-aged, high-income market segment, emphasizing the name “red alder” should be a part of the marketing strategy.

Consumer preferences for different levels of staining also were evaluated in this study. Three levels of stain were considered (no stain, moderate or light stain, and heavy stain), and in general consumers preferred a heavier stain (fig. 6). This study also found that retail sales staff are an important resource guiding consumer decisions, listed 48 percent of the time as the most important information source (fig. 7).

Red alder marketing recommendations—

- Appearance features. Given low level of consumer awareness, red alder products should be marketed based on appearance features and not species name.
- Staining. In general, darker stains increase the popularity of red alder products.
- Point of sale marketing. Retail sales staff are an important information source for consumers when purchasing kitchen cabinets. This should be recognized when developing retail marketing strategies.
- Demographic factors. Red alder products with heavy darker stain are popular among middle-aged, higher income consumers.

Alaska Yellow-Cedar The Alaska Yellow-Cedar Resource in Alaska

Alaska yellow-cedar is found in southeast Alaska, where it constitutes 9.7 percent of the net volume of growing stock on unreserved national forest land (Wilson 2002) (fig. 8). It tends to grow on poorer sites where it faces less competition from more prevalent western hemlock (*Tsuga heterophylla* (Raf.) Sarg.) and Sitka spruce (*Picea sitchensis* (Bong.) Carr.). Alaska yellow-cedar has been in decline for over 100 years in disparate stands throughout southeast Alaska (Hennon et al. 1990). As yet, no definitive explanation has emerged for this increase in mortality, although current theories favor site, as opposed to biotic, causes (Hennon et al. 1997). This century-long decline has resulted in half a million acres of dead or dying Alaska yellow-cedar in southeast Alaska (Hennon et al. 1990).

Alaska Yellow-Cedar Materials and Utilization

Alaska yellow-cedar is Alaska's most valuable commercial species, characterized by high strength and natural decay resistance (Hennon et al. 2000). This decay resistance means that the mechanical properties of lumber sawn from trees that have been dead for up to 80 years meet or exceed those of lumber sawn from living trees (Hennon et al. 2000). The properties of Alaska yellow-cedar make it well suited to outdoor applications such as decks, play structures, and furniture. Much of the Alaska yellow-cedar harvested in Alaska is exported, primarily to Japan, where it is used for sills (dodai), marine applications, and temple construction (Eastin and Braden 2000).

Recent Alaska Yellow-Cedar Research

Two recent studies have examined consumer preferences for Alaska yellow-cedar. Donovan (2003) used a national mail survey to determine if consumers perceive harvesting standing dead Alaska yellow-cedar as more environmentally friendly than harvesting living trees. Results showed that consumers were willing to pay almost double for products sawn from standing dead as opposed to living trees.

Donovan and Hessel (n.d.) studied consumer willingness to pay for the natural decay resistance of Alaska yellow-cedar. This study was motivated by recent safety concerns in relation to the withdrawal, for nonindustrial uses, of chromated copper arsenate, the most common chemical wood preservative in the United States. Respondents were asked to choose between two superficially identical children's play structures, one made from treated southern pine, the other made from Alaska yellow-cedar at various prices. Results indicated that consumers were willing to pay more than double for the Alaska yellow-cedar play structure.

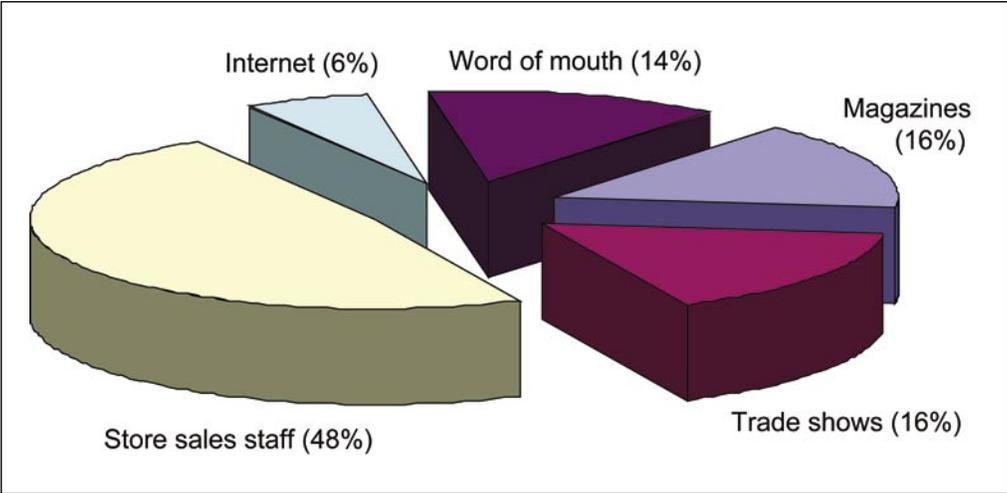


Figure 7—Primary information source for purchasing kitchen cabinets from select hardwoods, including red alder.

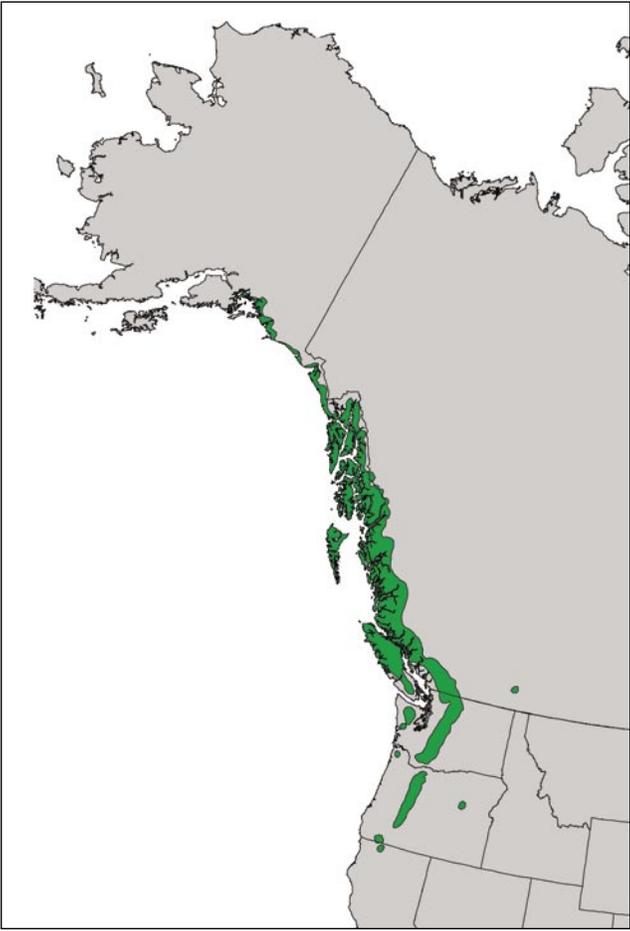


Figure 8—Geographic range of Alaska yellow-cedar in Alaska (indicated in green).

Alaska yellow-cedar marketing recommendations—

- Decay resistance. Alaska yellow-cedar should be used for products where decay resistance is important, and marketing efforts should emphasize that Alaska yellow-cedar's decay resistance is not derived from chemical treatment.
- Standing dead timber. When marketing standing dead Alaska yellow-cedar products, it should be emphasized that the lumber was sawn from standing dead as opposed to living trees.

Marketing recommendations for made-in-Alaska wood products—

- Marketing secondary wood products. Recent research has shown that Alaska consumers are willing to pay a substantial price premium for secondary wood products made in Alaska, compared to similar imported products (Donovan and Nicholls, n.d.).
- Made-in-Alaska certification program. The made-in-Alaska certification program has been widely adopted in the gifts and artwork sector. Study results suggest that the made-in-Alaska program could be profitably adopted by more traditional primary and secondary manufacturers.

Future Research

Alaska's forest products industry has been in severe decline since 1990. The competitive disadvantages that are the cause of this decline are well documented. The authors believe that research may help the forest products industry reverse this trend by identifying and capitalizing on the competitive advantages it does have. Tourism is now Alaska's second largest private sector employer. Tourists spend approximately \$1 billion (\$770 per visitor) in Alaska every year, representing a significant opportunity to reach market destinations outside of the state. There is a strong need for continued research to identify the types of products and features of Alaska woods that are most appealing to tourists, by capturing the mystique and beauty of the state. Additional work also is needed to identify the demographic segments of tourists most likely to purchase wood products made in Alaska. This is especially true when considering increased competition by foreign-made goods.

Alaska species have unique visual and mechanical properties that may help differentiate them from competing species from other regions of the country. Research would allow producers to better match these qualities with the needs of specific secondary manufacturers of hardwood and softwood products.

For example, the distinctive appearance of spalted Alaska birch is well suited to picture frames, bowls, and other decorative applications, whereas clear and character-marked cuttings can be used for a variety of secondary products including flooring, cabinets, and molding.

Alaska species are generally slower grown, with tighter growth rings, than woods from other parts of the country, making them well suited to the production of structural members such as glulam beams. Alaska yellow-cedar, in particular, could be used to fill niche markets where high strength and decay resistance are required. In southeast Alaska, red alder is an abundant, relatively fast-growing species that is easily machined, dried, and stained. Alder has strong potential for products including lumber, kitchen cabinets, and furniture.

Metric Equivalents

- 1 inch = 2.54 centimeters
- 1 foot = 0.3048 meter
- 1 cubic foot = 0.028 cubic meter
- 1 board foot = 2360 cubic centimeters

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Pacific Northwest Research Station
333 SW First Avenue
P.O. Box 3890
Portland, OR 97208-3890

Official Business
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