

Consumer and purchasing agent response to terms used to describe forest products from southeast Alaska

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Abstract

Using information from 204 individuals with an active interest in home building and/or furnishing, this study surveys consumers and purchasing agents and reports their reaction to terms used to describe forest products from southeast Alaska. Regarding terms used to describe the trees or forest products, while 67 percent of the respondents would purchase products from old growth trees, purchasing agents were more likely to refuse to purchase products from old growth forests (negative response from 12 percent of consumers vs. 29 percent for purchasing agents). Eighty-eight percent of respondents reacted positively to purchasing products from trees grown under sustainable yield management. Twenty-eight percent of respondents reacted negatively to the term national forest, while the term Tongass received the highest level of uncertainty. When asked if they would purchase products made from trees cut from a forest of concern to either environmental or preservationist groups, respondents showed polarity with approximately equal yes (38 to 46%) and no (43 to 46%) responses. It was concluded that respondents had an overall positive view of Alaska forest products.

The southeast Alaska forest products industry and the markets for those products have experienced many changes over the years. Prior to 1997, southeast Alaska had an integrated forest industry that consisted of sawmills and pulp mills producing mostly for international markets. Today the industry is composed of small- and medium-size sawmills producing specialty products, dimension, and factory grades of lumber that are shipped primarily to the lower 48 states. During the past 2 years, increasing amounts of production are being dried and planed (Nicholls et al. 2006). Much of this material comes from the smallest mills and is sold locally in Alaska.

A recent study of Alaska forest products producers (Thomas et al. 2005) indicates that making sales and locating new markets are major concerns. These concerns suggest the need for an industry-level marketing and promotion program to stimulate demand and increase sales of products. In addition, research at the Ketchikan Wood Technology Center (KWTC) indicates the lumber products produced from the region have superior strength characteristics and relatively high yields of strong material (high E grades), making it suitable for use in engineered products such as glulam and truss applications. This research effort has resulted in new grading rules for Alaska softwood and grade-marks that brand the lumber as a product of Alaska (Western Wood Products Assoc. 2005).

Many of the properties reported by the KWTC efforts result from tested lumber being produced from old growth material. This material, produced from large, slow grown logs with a high number of growth rings per inch, is typically found in the coastal rain forests of the Pacific Northwest. The major source

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of raw material in the southeast area of Alaska is the Tongass National Forest. Old growth products are often subject to criticism by environmentalists, posing further challenges to marketing forest products from Alaska. Articles in *Sierra*, the monthly publication of the Sierra Club, are noted as examples of the concern (Hattam 2001, Gulick 2001, Snell 2002, Brewer 2003).

Some environmental groups support "forest certification" to guarantee that forest management and harvesting systems are conducted in an environmentally acceptable manner. Recent research focuses on consumer willingness to pay more for certified forest products (Vertinsky and Zhou 2000, Laroche et al. 2001, Juslin and Hansen 2002) and several major building supply and home improvement retailers have started to offer certified products. Land managers and producers in Alaska have given some consideration as to how products from National Forest lands might become certified. While researchers have tested the hypothesis that consumers will pay more for certified products, little research, however, identifies the level of knowledge that consumers have relative to certified products and their willingness to purchase such products.

Given the national level campaigns by wilderness advocating organizations and preservationists to convert remaining old growth areas on the national forests, especially the Tongass National Forest in Alaska to wilderness areas, it is logical to ask, "Do consumers of forest products have a negative view of products produced from the old growth trees in national forests, specifically from the Tongass National Forest?"

Because of these issues, marketing forest products from southeast Alaska is challenging. Alaskan producers need to know how potential consumers and purchasing agents will react to the total range of words used to describe material characteristics and the harvest location for the products produced from the timber resources of the region. This project aims to determine how purchasing agents, consumers and other informally classified groups of people react to terms that might be used to describe forest products from southeast Alaska and, in particular, from the Tongass National Forest.

Methods

Survey design

Over a period of several months, the project was discussed with forest products producers and members of the University of Alaska Forest Products Advisory Group. It was the consensus that the terms old growth, National Forest, and Tongass be included in the survey. It was generally agreed that synonyms for old growth included slow grown, strong, and dense. Given the current research and discussion relative to forest certification, several participants asked the question, "What is the level of awareness of consumers and purchasing agents with respect to the implications of forest certification efforts on product marketing?" It was also noted that certification was an effort to prove ecosystem sustainability and that both terms should be included in the survey. Some individuals were also interested in the self view of the respondents with respect to being environmentalists and preservationists and their participation in organizations advocating additional wilderness areas.

Once basic demographic information was collected, the survey questions included a series of very direct questions that included a key word or term prefaced by the phrase, "Would

you purchase forest products produced from trees harvested from . . . or grown under a management system defined as . . ."

For the purposes of this study, the following were described as key descriptive terms: Alaska, National Forest, Tongass National Forest, sustainable yield, old growth, certified forest product, green forest product, environmentalists, and preservationists. The data collection process also included questions to establish respondents' views about the state of Alaska and wood as a building material. We asked questions to establish if the respondent was involved with making purchases for his/her employer (herein referred to as a purchasing agent) or simply an interested user or consumer of lumber products (herein referred to as a consumer). We also established if the respondent was a member of an environmental organization and the level of knowledge they possessed relative to the process of forest products certification.

Questions were divided into three groups. Group 1 questions focused on describing the trees and/or forest products (lumber, veneer, etc.) that resulted from the milling process. Group 2 questions were concerned with method of management (sustained yield) and description of the forest area of origin (place). Group 3 questions tested response to the terms environmental or preservationist.

It was anticipated in the initial planning that the survey would be administered by asking respondents to complete a written survey. Two problems were rapidly identified during testing of the paper form. First, allowed responses were, "Yes" (I would purchase) or "No" (I would not purchase). Test respondents indicated that they did not recognize the key word and as a result, could not answer the question. A review of the Marketing Scales Handbook (Bruner and Hensel 1992) identified a three-point scale for testing consumer satisfaction. The problem was solved by converting to the three-point scale and adding a possible response to each question (uncertain or don't know). This change improved the respondent acceptance of the form. Second, it was observed that respondents would reach a question where they were uncertain of the desired response they would immediately scan the remaining questions to obtain some idea as to how they should answer the question. Upon scanning the form they would start asking questions to determine the desired response. Additional tests were conducted where the questions were asked orally. In the oral administration process the respondent was told that this was a survey to determine if the consumer recognized certain key words and the impact of the key words on their decision to purchase. It was stated that the administrator would explain the study in more detail after completion of the questions. It was also noted that an answer of uncertainty due to failure to recognize the key word was a strong indication of lack of knowledge. Given these changes the survey instrument was reduced to a one-page form to be administered orally within approximately 3 minutes. People were informed that any discussion during administration would prolong the process.

With questions provided in a Microsoft Access™ database format and displayed on a computer screen, answers were preloaded into drop-down list boxes. Given the ability to apply logic to answers, interviewers could automatically activate windows to collect related data items. This procedure created a structured database that required minimal data cleanup and editing.

In addition to summarizing response information, the Access database query system allowed creation of datasets that

Table 1. — Respondent characteristics, demographics, home ownership, and furnishing preference.

	Response	Number	Percent
Gender	Female	52	25
	Male	152	75
	Total	204	100
Average age by gender	Female	44	
	Male	45	
Employment	Forestry or forest products related	33	16
	Other	171	84
	Total	204	100
Purchasing agent	Yes	56	27
	No	148	73
	Total	204	100
Neighborhood	Urban	58	28
	Suburban	61	30
	Rural	85	42
	Total	204	100
U.S. Census Bureau region	Midwest	53	26
	Northeast	14	7
	South	47	23
	West	83	41
	Other (Canada and Mexico)	7	3
	Total	204	100
Highest level of education attended	High school	31	15
	Technical school	22	11
	Univ. undergraduate	118	58
	Univ. graduate	33	16
	Total	204	100
Home ownership	Yes	190	93
	No	14	7
	Total	204	100
Primary construction material on home	Brick	13	7
	Other	1	1
	Steel	2	1
	Wood	174	92
	Total	190	100*
Furnishing preference	Fabric	4	2
	Other	1	0
	Wood	160	78
	Wood and fabric	37	18
	Wood and metal	1	0
	Wood and plastic	1	0
Total	204	100*	

*Due to rounding, areas may not total 100 percent.

included demographic information and related responses for all questions. Statistical testing was conducted by importing the Access database into the Statistical Package for the Social Sciences (SPSS version 12.0.1). The specific feature of SPSS used in the analyses was the chi-square test in the crosstabs program, which tested for independence of respondents grouped by various demographic characteristics.

Data collection

Survey information was collected at three trade shows attended by people with an active interest in purchasing forest

products (primary or value-added). The selected trade shows were held by the Association of Woodworking & Furniture Suppliers (AWFS) and the International Builders Show (IBS), sponsored by the National Association of Home Builders (NAHB). Shows attended include AWFS 2003 in Anaheim, California; IBS 2004 in Las Vegas, Nevada; and AWFS 2004 in Las Vegas, Nevada. Additional data collection was planned for 2005 or early 2006. A preliminary analysis of the data indicated, however, there were no significant differences between the two trade shows visited in 2004. Given the consistency of the two samples, data from these trade shows were summarized and reported in early 2006.

All interviews were conducted from a booth with decorations and displays promoting Alaska forest products. In addition, Alaska suppliers were invited to attend the show and supply samples of their products. Individuals visiting the booth were asked if they were willing to participate in a 3 minute, orally administered survey to determine their reaction to selected terms and concepts related to forest products produced in Alaska. Given that the survey was administered orally and requirements of the University of Alaska Fairbanks, Institutional Review Board (IRB) that only willing participants be interviewed, it was not possible to conduct a secondary survey of refusing individuals to test for respondent bias.

Defining purchasers as agents procuring lumber and value-added forest products for use in a business (wholesale purchaser) or consumers (retail purchasers) with an active interest in home building and/or furnishing, information was collected from 204 individuals.

Results

Demographics

Information relative to respondents' characteristics, demographics, and home ownership is presented in **Table 1**. Seventy-five percent of the respondents were male. Average age of all respondents was between 44 and 45 years. Sixteen percent of the respondents were employed by forestry or forest products firms. Twenty-seven percent of the survey population was concerned with purchasing material for their organization. Forty-one percent of the respondents were from the western region as defined by the U.S. Census Bureau in Figure 1 (U.S. Dept of Commerce 2006). Fifty-eight percent of the population had attended college or attained a college degree. Ninety-three percent of the respondents owned their own home. Ninety-two percent of respondents lived in homes primarily constructed from wood. Fifty-eight percent of the respondents lived in urban or suburban areas. The respondents

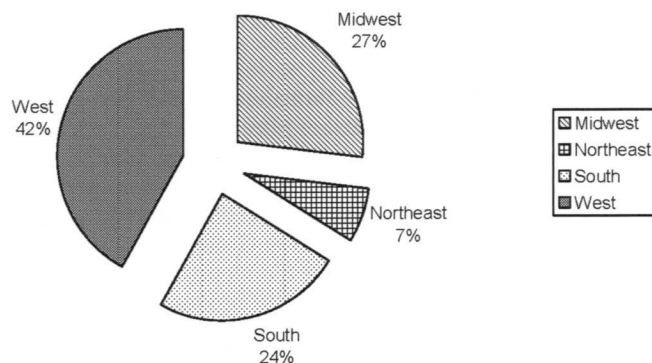


Figure 1. — Respondents by U.S. Census Bureau regions.

Table 2. — Responses to: Would you purchase forest products (lumber, furnishings) that were . . .

Question	Response number				
	Y ^a	N ^b	U ^c	TR ^d	NR ^e
Group 1					
. . . from trees harvested from an old growth forest?	136	34	34	204	0
	67%	17%	17%	100%	
. . . described as from slow grown trees?	136	34	32	202	2
	67%	17%	16%	100%	
. . . described as strong and dense?	185	4	13	202	2
	92%	2%	6%	100%	
. . . certified or green?	147	30	27	204	0
	72%	15%	13%	100%	
Group 2					
. . . from trees grown under sustained yield management?	180	4	20	204	0
	88%	2%	10%	100%	
. . . produced from trees from a National Forest?	128	57	19	204	0
	63%	28%	9%	100%	
. . . produced from trees from the Tongass Forest?	110	30	64	204	0
	54%	15%	31%	100%	
Group 3					
. . . made from trees cut from a forest of concern to environmentalist groups?	94	88	22	204	0
	46%	43%	11%	100%	
. . . made from trees cut from a forest of concern to preservationist groups?	77	91	34	202	2
	38%	45%	17%	100%	

^aY = yes; ^bN = no; ^cU = uncertain, ^dTR = total responses; ^eNR = no response

Table 3. — Test for independence between consumer vs. purchasing agent responses to forest products preference questions, self view, and group membership.

Would you purchase forest products (lumber, furnishings) that were . . .	Chi-square test			
	Value	df	Asymptotic significance	Difference
. . . grown in Alaska?	2.419	2	0.298	None
. . . from an old growth forest?	8.133	2	0.017	**
. . . from slow grown trees?	0.766	2	0.682	None
. . . strong and dense?	1.096	2	0.578	None
. . . from sustained yield management?	2.312	2	0.315	None
. . . from a National Forest?	3.364	2	0.186	None
. . . from Tongass Forests?	1.594	2	0.451	None
. . . certified or green?	0.426	2	0.808	None
. . . from an environmentalist group?	0.245	2	0.885	None
. . . from a preservationist group?	0.454	2	0.797	None
Self view and group membership (consumer vs. purchasing agents)				
Do you consider yourself an environmentalist?	6.941	2	0.031	**
Are you a member of an environmental group?	0.899	2	0.638	None
Are you a member of a preservationist group?	0.698	1	0.403	None

**95% probability that response is independent (different).

also indicated a preference for furnishings of wood or wood in combination with fabric, metal or plastic.

Purchasing preferences

Responses to all purchasing preference questions are presented in **Table 2**. When considering Group 1 questions (tree descriptions), the majority of respondents stated that they would purchase lumber and/or forest products from the described tree types. The negative response to Group 1 questions (respondent would not purchase) ranged from 2 to 17 percent. Sixty-seven percent stated they would purchase lumber and/

or forest products produced from old growth trees. The levels of uncertainty associated with Group 1 questions ranged from 6 to 17 percent. The highest level of uncertainty was associated with the question regarding old growth trees.

The majority response to Group 2 questions (management and origin) was positive (yes, would purchase) with values ranging from 54 to 88 percent. Negative responses (would not purchase) ranged from 2 to 28 percent. The highest negative response (28%) was to the term *national forest*. Uncertainty responses ranged from 9 to 31 percent, with the term *Tongass* receiving the highest level of uncertainty.

Group 3 questions (environmentalist and preservationist) showed the highest degree of polarization with approximately equal yes (38 to 46%) and no (43 to 45%) responses. The uncertainty level for the environmentalist question was 11 percent. The uncertainty level for the preservationist question was 17 percent.

Difference in responses: consumers vs. purchasing agents

Chi-square analysis was used to evaluate and check for independence of response to specialized questions within Groups 1, 2, and 3 between consumers and purchasing agents (**Table 3**). With exception of the question relative to purchase of forest products produced from old growth forests, there were no significant differences between the responses at the 95 percent level of confidence. Purchasing agents were more likely to refuse to purchase forest products from old growth forests (29% of purchasing agents vs. 12% of consumers). Regardless of this increased level of sensitivity, the majority of both consumers (70%) and purchasing agents (61%) would purchase material produced from old growth.

Data collectors were instructed to avoid presenting any information that defined an organization as being environmental or preservationist. Membership in either type of organization was very low for either group. Ten percent of consumers and 13 percent of the purchasing agents reported membership in an environmentalists group. Nine percent of consumers and 5 percent of purchasing agents reported that they were members of a preservationist group. At the 95 percent level of confidence there was no significant difference in group membership when considering consumers vs. purchasing agents.

Table 4. — Test for independence between respondents from various census regions to forest products preference questions, self view, and group membership.

Would you purchase forest products (lumber, furnishings) that were . . .	Chi-square test			
	Value	df	Asymptotic significance	Difference
. . . grown in Alaska?	5.109	6	0.530	None
. . . from an old growth forest?	6.265	6	0.394	None
. . . from slow grown trees?	4.027	6	0.673	None
. . . strong and dense?	5.226	6	0.515	None
. . . from sustained yield management?	3.722	6	0.714	None
. . . from a National Forest?	6.080	6	0.414	None
. . . from the Tongass Forest?	1.325	6	0.970	None
. . . certified or green?	12.034	6	0.061	None
. . . from an environmentalist group?	4.156	6	0.656	None
. . . from a preservationist group?	4.090	6	0.665	None
Self view and group membership (consumer vs. purchasing agents)				
Do you consider yourself an environmentalist?	6.197	6	0.401	None
Are you a member of an environmental group?	8.680	6	0.192	None
Are you a member of a preservationist group?	4.100	3	0.251	None

None: **95% probability that response is independent (different).

Table 5. — Comparison of response to key terms used to describe old growth, Tongass, and National Forest.

Would you purchase forest products produced from . . .	Response			Total
	No	Uncertain	Yes	
	----- (percent) -----			
. . . an old growth forest?	17	17	66	100
. . . a National Forest?	28	9	63	100
. . . the Tongass Forest?	15	31	54	100
	Value	df	Asymptotic significance	Significance
Chi-square test	40.297	4	0.000	***

*** 99 percent probability that response is independent (different).

Difference in responses: census regions

Chi-square analysis was used to determine if the respondents differed based upon their region of residence. The results of this analysis (Table 4) indicate there were no significant differences in responses of people from the represented census regions (West, Midwest, Northeast, and South).

The terms: national forest, old growth forest, Tongass Forest

It is a general observation that people living and working in southeast Alaska consider the terms national forest, old growth forest, and Tongass forest as synonyms because they are used to describe one common place or geographic area. Given that the survey does not include people from southeast Alaska, this observation cannot be statistically verified. If, however, the words are truly synonymous, a logical hypothesis would be that responses to the purchasing preference questions would be similar if tested for independence using chi-square analysis. Results of this test are presented in Table 5. In all cases the majority of respondents to these questions answered in the affirmative, indicating that they would buy lumber and forest products from the named area. It is interesting to note, however, that the highest positive response (66%) was for material from old growth forest areas. The second highest positive response was for National Forest areas

(63%), but this area also had the highest level of negative (28%) respondents. The highest level of uncertainty (31%) was in response to the question that contained Tongass Forest as the key term. There was a highly significant (99 percent level of confidence) difference between the responses to these questions. This result indicates that respondents, while expressing a positive willingness to purchase, did not view the terms as true synonyms.

Comments and conclusion

Data collection took place at a booth with displays of forest products from Alaska. The booth was decorated with posters and was designed to attract people and create a positive image of Alaska. It is possible that the creation of a positive image may introduce a bias into the response information for questions containing the term Alaska.

Other personnel at the booth answered questions relative to the availability of specific forest products (lumber by species, grade, quantities, etc.). Many people interested in obtaining leads to purchase products were logged into a "lead system" database linked to a more detailed database using the barcode on their badges. The product inquiries were made available to Alaska producers. A brief check of this lead database indicated that many of the

people visiting the booth were small independent producers of value-added forest products. It is not possible to link the lead database to the consumer response database. The researchers hold the opinion, however, that the results of this study are the responses of individual consumers and purchasing agents from small value-added forest products producers. The results do not reflect purchasing agents of large wholesale firms or retail sales outlets.

The respondents to this survey represent a limited number of people that were interested in and participants in home building and value-added production of forest products. Regardless of other advertising and education efforts to create additional wilderness areas, the respondents had a positive view of and willingness to purchase Alaska forest products. This positive view extended to material that was harvested from the Tongass National Forest and National Forest, in general. Results indicate that given a dependable supply of raw material there is a potential for expansion of the value-added wood processing industry in southeast Alaska.

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