Alaska's Timber Industry Faces An Uncertain Future

by Brian N. Rae

Two years ago, times were good for Alaska's loggers. Jobs

were plentiful, and wages for an experienced logger were as high as they had ever been. The number of logging jobs had grown by more than 80% from 1984 to 1989. (See Figure 1 and Table 1.) The demand for loggers was so high that employers went out of their way to keep them around.

Employers were not hurting either. Prices for their products financed expansion and kept their operations profitable. The market allowed harvest and production levels to nearly double from 1984 to 1989. From 1985 to 1989 the value of production more than tripled. (See Table 2.)

The rapid expansion of the industry points out one thing — the Alaskan timber industry is volatile. As quickly and as easily as the market went up, it could come back down. The forces which buoyed the markets in the late 1980s were beyond the control of any of the players in Southeast. These companies did nothing to cause the bull market, and will have little ability to influence a bear market.

Any assessment of the future health of Alaska's timber industry is linked to the timber market, especially the international market. The courts have yet to decide on several lawsuits affecting the industry, while the U.S. Forest Service must decide the meaning of recent regulatory changes. The supply of raw materials, and the market for finished products are the critical factors which affect the future of the industry. Most recent changes affect either the supply of or the demand for Alaska's timber products. For example, legislated land management changes decreased the supply of timber, while a more valuable U.S. dollar would decrease demand for Alaska's products. This article will try to analyze the more important factors affecting the timber industry.

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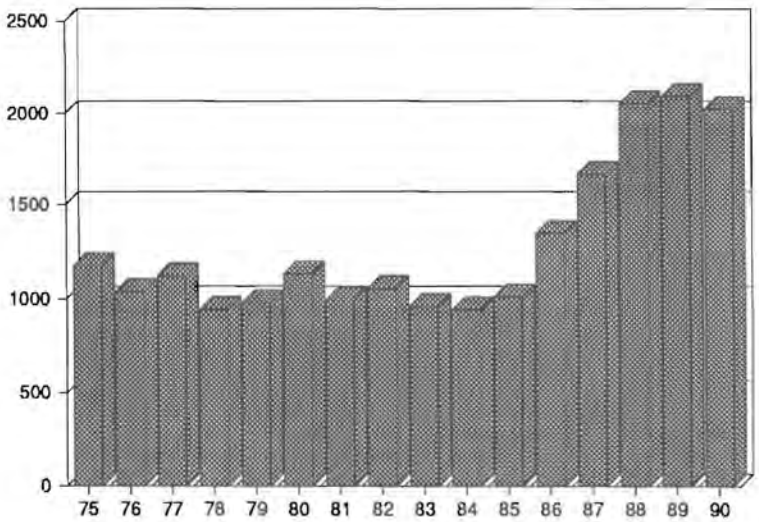
Alaska's Timber Supply Dwindles

Alaska's timber resources are both publically-owned and privately-owned. The U.S. Forest Service manages a large percentage of the marketable timber in the state. Most of the timber is in the Tongass National Forest in Southeast Alaska. While some harvestable timber exists on other federal lands in the state, such as the

Figure • 1

Southeast Logging Employment



Source: Alaska Department of Labor, Research and Analysis Section.

Table • 1

International Exports of Alaskan Forest Products
Federal Fiscal Years 1981-1990

Product/Units 1/	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Softwood Logs										
Volume (MMBF)	130.1	197.5	292.6	237.6	258.6	340.3	436.1	482.2	629.6	606.6
Value ($ millions)	68.4	95.4	128.3	97.1	99.6	137.9	179.6	261.6	310.3	350.9
Unit Value ($/MBF)	526	483	439	408	385	405	412	543	493	578
Lumber & Cants										
Volume (MMBF)	202.5	178.6	136.0	113.3	122.0	93.5	121.0	152.5	182.3	225.5
Value ($ millions)	60.3	62.5	45.5	32.2	32.5	24.7	33.9	52.1	71.0	85.3
Unit Value ($/MBF)	298	350	334	284	266	264	280	342	389	378
Woodchips										
Volume (Mton)	60.5	84.8	19.0	10.5	4.5	0.0	0.0	10.4	77.9	18.2
Value ($ millions)	5.5	6.4	1.3	0.3	0.4	0.0	0.0	0.6	3.6	1.4
Unit Value ($/ton)	90	75	66	32	98	0	0	54	46	78
Woodpulp										
Volume (Mton)	252.9	211.0	188.5	249.2	166.5	203.8	232.0	260.4	296.9	252.7
Value ($ millions)	135.7	113.3	94.8	127.3	72.0	85.4	113.9	160.4	227.7	185.4
Unit Value ($/ton)	537.0	601	503	510	433	419	492	616	767	728
TOTAL VALUE ($ millions)	269.9	277.6	269.9	256.9	204.5	248.0	327.4	474.7	612.7	622.9

1/ Volumes reported in millions of board feet (MMBF) or thousands of metric tons (Mton). Values are free along ship (FAS) in millions of nominal dollars. Unit values are dollars per thousand board feet ($/MBF) or dollars per metric ton ($/ton).

Source: U.S.D.A. Forest Service, compiled from official statistics of the U.S. Department of Commerce, preliminary estimates for 1990.

Chugach National Forest, harvests from these areas have been small. The state and local governments own some property with harvestable timber, but they have been minor players in this industry to date. Private individuals and corporations own most of the remaining timber base, with the majority owned by Alaska Native regional and village corporations.

Management of the private (Native) timber differs from that of the U.S. Forest Service (Tongass) holdings. In Southeast Alaska, the government conveyed over 600,000 acres of land to Native village corporations and the Sealaska regional corporation under the Alaska Native Claims Settlement Act. The corporations needed cash to help finance their corporate undertakings. Each began selling and harvesting the timber resources from their approximately 23,000 acre conveyance. Unlike the Tongass harvests, which provide a long-term sustained yield (more on this later), the need for cash led village corporations to more quickly harvest their timber.

At first, timber harvests on Native-owned lands started slowly. (See Figure 2.) Harvests on these lands soon outpaced that from the national forests. The harvest rate made it clear that supplies of Native timber in Southeast would run out by the mid-1990s. It is difficult to pinpoint the exact amount of marketable timber conveyed to the Native corporations, or even how much remains. The marketable timber changes as prices fluctuate; higher prices turn marginal stands of timber into viable harvest areas. The good market for lumber in the late 1980s helped increase the quantity of marketable timber in Southeast. Still, the Native village corporations will have harvested most of their timber by the middle of the decade if current harvest rates continue.

There are significant tracts of uncut timber on the regional corporation's land. Sealaska's marketable timber might last for several years, depending on the rate of harvest and price fluctuations. A report by the Institute for Social and Economic Research at the University of Alaska-Anchorage estimates Sealaska's remaining inventory could last for 12 to 20 years.[1]/ Other Native corpora-

tions outside Southeast also own large tracts of timber land. One company set up by four village corporations, Koncor Forest Products, has holdings from Southeast to the Interior of the state. While areas outside of Southeast Alaska are just being tapped for harvest, village corporations in the Southeast region have harvested most of their timber.

The U.S. Forest Service managed the Tongass National Forest timber harvests much differently. The Forest Service uses a technique known as long-term sustained yield management. Forest managers find the volume of timber available for harvest in the forest, calculate the number of years required for regrowth of the timber after harvesting, and then determine the amount which could be harvested in perpetuity. For example, assume a forest is capable of producing 100 million board feet of timber when fully mature. After cutting, the forest would take 100 years to regrow to marketable size. This forest could have an annual harvest of one million board feet using the long-term sustained yield management technique. After harvesting the last portion of the original forest, the first harvest area would have had 100 years to grow and would then be of marketable size.

The large amount of harvestable timber in the Tongass allows a viable wood products industry to exist using the long-term sustained yield management plan. For that reason, timber supply in the Tongass remained a constant, mandated by law to be as high as 4.5 billion board feet per decade. Timber supply would, in theory, only vary if the size of the timber base changed. That is exactly what happened when the Tongass Timber Reform Act passed in late October, 1990.

The act removed about 1,600 square miles of the forest previously slated for harvest from the timber base. This reduced the sustainable harvest to about 4 billion board feet per decade. Proponents of the reform bill argued that the reduced harvests will not cause any companies now operating in the forest to close. They point out that harvests in weak market years were much lower than the 450 million board feet per year allowed. Others disagree, saying that companies continued to operate during the weak markets so they could take advantage of the strong market years, when they were able to make a profit. If companies are forced to reduce harvest levels during the good market years, their profits will decline. In the end, these companies may not be able to survive.

Revisiting the arguments for and against the Tongass Timber Reform Act provides little insight into the industry's future. The outcome, however, did affect the industry's future. There is now less timber available for the industry to harvest. Long-term sustained yield management is still a part of the plan.

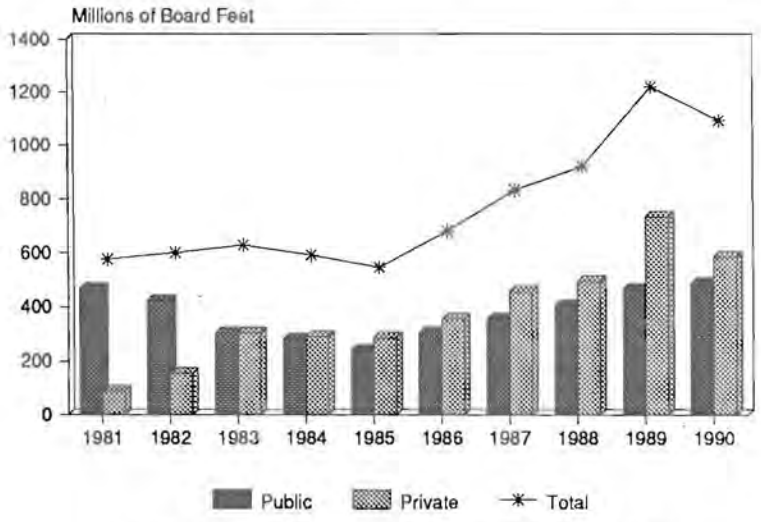
Up to this point, the supply of timber looks like this: privately owned holdings are decreasing rapidly, while Tongass timber harvests will be at a reduced but constant level into the future. Other factors could, however, change this supply scenario.

Timber Supply Could Face Further Reductions

A constant supply of Tongass timber is not a given, even after the Tongass Timber Reform Act. Lawsuits are now working their way through the court system trying to halt timber sales on certain tracts of the forest. These lawsuits point out that subsistence is the primary designated use for national forest lands under the Alaska National Interest Lands Conservation Act (ANILCA). Litigants contend timber harvest areas cannot include areas traditionally used for subsistence hunting or gathering. If these lawsuits succeed, the supply of Tongass timber available for harvest will be further reduced.

Figure • 2

Timber Harvest by Ownership
FFY 1981-1990



Source: Alaska Department of Labor, Research and Analysis Section.

A second factor affects the supply of timber in the Tongass. A provision in the reform act concerns the harvesting of different size classes of trees. In the past, critics have accused the industry of harvesting only the largest and most profitable stands of timber. If this practice continued, near the end of the harvest rotation only marginal timber stands would remain. This would make profitable operations in those areas difficult.

The current act requires that larger classes of timber (the old growth timber) cannot be harvested at a rate greater than their proportion in the overall harvest area Simply put, if 10% of the timber in a harvest area is in old growth trees, then only 10% of the timber harvested can come from those trees. This will help even out the harvest and keep the industry economically viable into the future. This clause might cause less efficient companies to shut down if they are limited in their harvest of this more profitable timber.

The Tongass Timber Reform Act also eliminated the Tongass Timber Supply Fund. The elimination of the $40 million annual appropriation will affect the supply of available timber. Whether this money was a subsidy to the industry, as some contend, or compensation for restrictive harvest regulations, one thing is certain. The Timber Supply Fund lowered the cost of harvesting Tongass timber. Its elimination will both increase costs for a timber company and, at least in weak market times, reduce the amount of marketable timber in the Tongass.

Demand for Alaska's Products Fluctuates

In the midst of all of the timber supply issues, it is easy to forget that Alaska's timber industry exists because there is a demand for Alaskan timber products. Foreign and domestic competition and the currency fluctuations, tariffs and import restrictions associated with international trade are some of the factors that influence demand for Alaskan forest products.

In addition, demand for Alaskan forest products varies according to the product. Some are unique in the world market, while others are quite common. Unique is the old growth, fine grained Sitka spruce and hemlock logs. These are highly prized in Asian markets, and have little direct competition from other areas outside of the Pacific Northwest. This product commands a premium price. At the other end of the spectrum are softwood chips, used in pulp and pressboard products. Alaskan chips have few advantages over other sources throughout the world. For that reason, the price of Alaska chips must be very close to the price of other chips. Falling somewhere in between these two extremes is the dissolving pulp produced by Alaska's two pulp mills.

Alaska's Log and Lumber Export Markets

Japan is the major player in the market for lumber and logs. In federal fiscal year 1989 (from October 1, 1988 through September 30, 1989) 81% of the value of Alaska's log exports and 99% of the value of lumber exports went to Japan. An analysis of Japan's demand nearly covers the total demand for Alaska timber products.

Demand is lower today than it was last year. Japanese buyers began stockpiling product during the spotted owl controversy in Washington and Oregon. Japanese manufacturers and builders now are depleting this stockpile. Market analysts project prices will stabilize towards the end of this

Table • 2

Yen/Dollar Exchange Rates 1/

	Yen/ $ U.S.	Percentage Change
1986	162.13	
1987	128.25	-20.9%
1988	123.63	-3.6%
1989	143.62	16.2%
1990	133.72	-6.9%
Jan, 1991	133.65	-0.1%

1/ Rates are the closing averages on the last trading day of the period.

Source: MERI's Monthly Circular, April 1991, Number 736.

year as demand increases. When prices stabilize, however, they may be well below the high prices of 1989.

Good marketing has helped sell the state's timber products, particularly in Asian markets. Certain trends may shrink this market in the future. Wood products are still used ornamentally in construction. Traditionally, wood was also used in building houses. Now many Japanese consumers are more receptive to modern materials for home construction. Marketers are turning to other countries looking for potential buyers. Taiwan, Korea, and China are all potentially major consumers of Alaska timber products.

Unfortunately, Alaskans are not the only ones successfully marketing their timber products. British Columbian, Chilean, New Zealand and Soviet producers are targeting the Asian market. Even other Asian countries, particularly those in Southeast Asia, are looking to sell logs and lumber to their neighbors. Most countries (except Canada) do not have lumber products which can compete directly with Alaska's old growth lumber. Still, all are trying to sway buyers' preferences in their direction.

Markets for Alaska Pulp Seem to Defy Economic Analysis

The forces of supply and demand explain the market for Alaska's logs and lumber. Things are not so clear cut for the dissolving pulp market. During 1990, markets for dissolving pulp weakened. Inventories stacked up to the point which required temporary shutdowns, and prices fell. Paradoxically, the demand for products made from dissolving pulp was strong. Rayon manufacturers, major consumers of dissolving pulp, could not produce enough product to satisfy the market. Prices for rayon were increasing while dissolving pulp prices were falling. There are several reasons why this apparent backwards trend might have occurred.

First, rayon fabric competes with many synthetic petroleum based fabrics. Rayon is, however, expensive and is more of a luxury item than many other less costly fabrics. While it has certain characteristics important to some customers, they easily can substitute other fabrics for rayon. Increasing oil prices pushed up the prices for these substitute fabrics, and rayon price and demand rose in response.

Uncertainty and skepticism cast a shadow over the health of the worldwide economy. Any economic slowdown has a great effect on the consumption of luxury items. While rayon demand and prices were temporarily rising, this occurred during a period of long-term declines in demand. Some analysts think demand should stabilize later in 1991. Dissolving pulp prices should then stop their fall and could even recover some lost ground.

Finally, Alaska wood products contend with currency fluctuations since most are sold on the international market. Using the Japanese yen for comparison, Alaska products are now nearly 18% cheaper than they were in 1986. In 1986, it took 162.13 yen to buy one U.S. dollar. In January 1991, it took only 136.65 yen to buy a dollar. (See Table 2.) If the dollar loses value compared to other currencies, Alaska products become cheaper and demand for them will go up. On the other hand, a strengthening dollar can make other countries' products more competitive.

Supplies of Finished Products Also Influenced by Markets

The strong market of the late 1980s enticed producers to invest in additional facilities. Companies either constructed new or refurbished existing sawmills to better meet the demand for Alaskan lumber. The two pulp mills incorporated new processes to increase their output of dissolving pulp.

As rising prices can cause industry expansion, falling prices can lead to contractions. When competition becomes too great, the least efficient (and usually least profitable) companies back out of the market. This applies not only to Alaska, but world wide.

Modern facilities respond faster to markets by changing the products they produce. For example, some newer pulp mills can produce more dissolving pulp when paper pulp markets are depressed. When the paper pulp market rebounds, these mills can quickly convert back to paper pulp production. Older facilities in Ketchikan and Sitka do not have this flexibility. This handicaps the mills during market downturns.

Given weak markets, their options might be either to operate at low profits or a loss, or shut down entirely.

Pulp Mills Major Producers, But They Cannot Control Markets

The two Alaska pulp mills produced about 28% of the total U.S. volume of dissolving pulp and 6% of world volume in 1989. This makes these two mills major producers, but does not insulate them from market trends.

There is a large amount of unutilized production capacity in Eastern Europe, where many dissolving pulp mills shut down in the 1980s. Some mills change between producing dissolving pulp and a type of pulp used to make paper. The Alaska mills must remain in the dissolving pulp market.

When prices for dissolving pulp are low, competition may decline. This helps push prices up. When prices are high, however, closed or convertible pulp mills can reenter the market for dissolving pulp. This increases competition and lowers prices. The conversion of competing mills to paper pulp production helped Alaska's mills in the past. This trend has now reversed itself as the price of paper pulp has plummeted.

The two Alaska pulp mills are somewhat unique among the state's manufacturers. The mills have little capacity to vary their production — they either produce at a near constant rate or they shut down. This presents a problem for the mills. As dissolving pulp markets softened last year, inventory accumulation forced the Sitka mill to shut down. If demand again dips, either mill might experience a similar problem.

The Tongass Timber Reform Act modified the long-term timber contracts between the U.S. Forest Service and the mills. The two mills need about 315 million board feet of timber per year to operate full time. Unless the mills find alternate sources for raw materials, any amount less than this would force one or both to shut down for some period, depending on the allowed level of harvest. In the long run, the mills need a steady timber supply which permits full operation. If supply falls below this level then one or both mills would have to close. Employment and the supply of dissolving pulp from Alaska would decline accordingly.

Lumber Output Continues to Increase as Facilities Expand

Many companies used the strong market of the late 1980s to expand their operations, predominantly through the construction or expansion of sawmills. This created more jobs for each unit of raw material. The mills allowed for value-added processing within the state, instead of transporting logs out as a raw material.

New technology employed in these mills helps keep them competitive in a changing world market. These sawmills can convert from inch-based to metric-based dimensional lumber, depending on the customers' requirements.

Retrofitting established sawmills throughout Southeast has kept them in business, but the new sawmills at Seward and Ketchikan are somewhat unique. The Ketchikan mill is a computerized, automated mill located next to the pulp mill. All the logs bought by the mill could be turned into pulp. Many of the logs, however, were of sawlog quality. The company could realize higher profits by cutting these logs into lumber. The Ketchikan Pulp Company built the new mill for that purpose – to get the greatest value from smaller saw logs. It is now easy and profitable for the company to segregate the logs it buys. The higher value logs become lumber while the lower value logs become pulp.

The Seward sawmill takes advantage of a nearly untapped source of timber. In addition, its capacity allows for more extensive timber harvests throughout the Southcentral area. Expanded harvests will be necessary for the mill to continue operations. Construction of the mill could, however, mark the first step towards an integrated timber industry in the region. (For more on the Southcentral timber industry, see the article beginning on page 9.)

The trend toward automation in sawmills has a couple of different impacts. First, any additional processing of logs in the state helps create employment. The new mills might take fewer people to operate than the more traditional mills, but their introduction into the state's timber industry helps keep all phases of the industry viable.

Conclusion

There are many different factors at work which will determine the health of the state's timber industry. (See Table 3.) Combining the possible effect only leads to more uncertainty. This is particularly true looking past the immediate future. Trying to guess which particular chain of events will occur is just that — a guess. Some events will have a one time impact, others may have short term effects, but are issues which will recur many times. Still others will have long term impacts on the industry.

Factors Affecting the Timber Industry

Factor	Negative Impacts	Positive Impacts
Timber Supply	Tongass Reform Act Subsistence Lawsuits Declining Native Timber Supplies Timber Buyouts	Expansion into Southcentral Alaska
Supply of Finished Product	Weak Prices May Force Shutdowns High Transportation Costs Decrease Profits	Addition/Expansion of Facilities New Mills React Quickly to Market Demand
Demand for Finished Product	World Market Affects Common Products Prices Currently Falling Consumer Nations "Stockpiled' Products During Spotted Owl Controversy	Unique Properties of Certain AK Timber Prices Projected to Increase Late 1991 WA & OR Timber Supply Dwindling New Foreign Markets for Timber
Other Impacts	Financing Operations Becoming More Difficult	Shutdowns in WA & OR Increasing Labor Pool Cost of Labor Declining Equipment Costs Down

Source: Alaska Department of Labor, Research and Analysis Section.

In the short run, employment is expected to drop by 8.7% in the timber industry in the next two years. The largest declines should occur in logging, mainly caused by decreased harvests of Native-owned timber. A large portion of the Native-owned timber was exported before it was processed. Declines in Native logging do not necessarily mean a decline in employment in the sawmills and pulp mills.

Employment declines from the highs of the late 1980s do not necessarily mean the industry is in trouble. On the other hand, there are problems the industry must cope with to maintain current employment levels. There are also some positive trends which could more than offset any pressures to downsize the industry.

Supply and demand are the overriding determinants of the health of the industry. Declines in the early 1980s, for example, occurred because of a weak market (a lack of demand). Growth in the late 1980s occurred because of better markets and the harvesting of recently conveyed stands of Native timber (a strong demand and an increased supply).

In the future, demand will continue to fluctuate. Prices for Alaska's timber products will vary, as will companies' profits. Unfortunately, the future timber supply is open to question. If increased harvests in Southcentral and Interior Alaska can offset declines in the supply of Tongass and Southeast Native timber, timber should continue to be a major manufacturing industry in the state. If not, the fate of the industry is less certain, and less optimistic.

1/ *Native Timber Harvest In Southeast Alaska, Institute of Social and Economic Research Draft Report, May 1989.*

Table • 4

Alaska Timber Employment 1975-1990

	1975	1976	1977	1978	1979	1980	1981	1982
Statewide Total	3,375	3,350	3,475	2,925	3,150	3,525	3,300	3,025
Southeast Total	2,075	2,750	2,950	2,500	2,625	2,900	2,650	2,550
Southeast Sawmills	525	525	600	525	650	725	575	550
Southeast Pulp mills	1,200	1,175	1,225	1,025	1,000	1,025	1,075	950
Southeast Logging	1,175	1,050	1,125	950	975	1,125	1,000	1,050

	1983	1984	1985	1986	1987	1988	1989	1990
Statewide Total	2,700	2,325	2,300	2,600	3,050	3,625	3,850	3,900
Southeast Total	2,225	1,900	2,025	2,500	2,950	3,450	3,500	3,450
Southeast Sawmills	400	350	375	325	400	500	475	525
Southeast Pulp Mills	850	600	625	800	875	900	925	900
Southeast Logging	975	950	1,000	1,350	1,675	2,050	2,100	2,025

Numbers may not add due to rounding. Employment rounded to the nearest 25.

Source: Alaska Department of Labor, Research and Analysis Section.