

Economics

Goal: Provide a diversity of opportunities that contribute to the local and regional economics of Southeast Alaska (2008 Tongass Land and Resource Management Plan, [2008 Forest Plan], p.2-4).

Objectives: Work with local communities to identify rural community assistance opportunities and provide technical assistance in their implementation. Support a wide range of natural resource employment opportunities within Southeast Alaska's communities (2008 Forest Plan, p. 2-4).

Background: The Tongass National Forest comprises approximately 90 percent of Southeast Alaska's total land base. Approximately 70,000 people live in thirty-two communities within Southeast Alaska. These communities use and depend on Tongass resources for economic opportunities (such as commercial fishing and processing, recreation, tourism, wood products, and mining), quality of life (having a sense of place), traditional and cultural uses (subsistence activities), and recreation activities. Forest management decisions can have significant impacts, positive and negative, on these communities.

Economics Question: Are the effects on employment and income similar to those estimated in the Forest Plan?

The 2008 Tongass Land and Resource Management Plan Final Environmental Impact Statement (2008 FEIS) lists projected employment figures for the timber and recreation/tourism sectors in Southeast Alaska (2008 FEIS, p. 2-6). Employment estimates for these two sectors are collected annually from the Alaska Department of Labor and other sources. The actual employment estimates are then compared to the projected figures from the 2008 FEIS. Additionally, employment estimates from related sectors, mining and fishing, are collected and evaluated. The 2008 FEIS also estimates effects to employment in these sectors (2008 FEIS, p. 2-59, 61).

Evaluation Criteria

The effects of the 2008 Forest Plan on the following employment sectors are used as the evaluation criteria for this monitoring question. Note, while the monitoring question addresses employment and income, the 2008 FEIS effects matrix only includes employment projections (2008 FEIS, p. 2-61). Therefore, this monitoring report will only examine employment figures, and will not address income.

- **Lumber and Wood Products** – Actual annual employment estimates for the lumber and wood products industry are compared to the 2008 FEIS projected average annual direct employment in logging (801 jobs) and sawmills (542 jobs), (2008 FEIS, p. 2-61). Note that employment figures are for maximum harvest levels listed in the 2008 FEIS; currently harvest levels are much lower than the maximum allowable. If employment estimates for this sector are similar to the projections in the 2008 FEIS, then effects on employment for this sector are consistent to those estimated.
- **Recreation and Tourism** – Estimated direct employment jobs based on the non-resident share of recreation and tourism are compared with the 2008 FEIS projected direct employment jobs based on the non-resident share of the recreation and tourism (4,319 jobs), (2008 FEIS, p. 2-61, 3-54). If employment estimates for this sector are similar to the projections in the 2008 FEIS then effects on employment for this sector are consistent to those estimated.

- Mining – In reference to possible economic effects of the 2008 FEIS, the plan states that Alternative 6 (the selected alternative) represents “little or no change from the allocations [of non-development Land Use Designations] under the current Forest Plan [1997 Forest Plan.]. The effects on future mining employment and income would depend on whether the potentially effected locatable deposits are economically viable in the future.” (2008 FEIS, p. 3-542). Annual employment estimates in Southeast Alaska for the mining sector will be examined to determine employment trends. If employment trends are stable or improving, the effects on employment for this sector are consistent to those estimated.
- Salmon Harvesting and Processing – The 2008 FEIS states that “There is not expected to be any significant change to the commercial fishing or fish processing industries over the next decade [2008-2018] as a result of the National Forest activities” (2008 FEIS, p. 3-542). Annual employment estimates for the fishing industry will be reviewed to determine the overall trend in employment. If no significant change exists, then the effects on employment for this sector are consistent to those estimated.
- Federal Government - The report for FY 2012 additionally lists employment provided by the Federal government for reference, because in some Southeast communities, government employees are an important source of revenue for local communities.

The precision and reliability of employment data is limited by the type and accuracy of data collected by the Alaska Department of Labor and Workforce Development (Alaska DOL). For example, regional industry sector employment statistics exclude self-employed workers, fishers, domestics, and unpaid family workers (State of Alaska 2013). This will affect some employment sector data used in this report, notably, the salmon harvesting and processing, where available employment information is limited to the seafood processing sector and excludes fishers. Additional industry sector employment information is gathered from the 2011 Alaska National Interest Lands Conservation Act (ANILCA) 706(a) Timber Supply and Demand Report to Congress, Statistical Appendix. Some of the ANILCA report data is sourced from Alaska DOL labor statistics. The report mentions that sawmill employment figures are adjusted based on regional mill studies, which take into account self-employed mill owners, starting in 2001 (USDA Forest Service 2011).

Sampling/Reporting Period

Annual sampling and five year evaluation (2008 Forest Plan, p. 6-20)

Monitoring Results

Table 1 shows the employment figures for the four industry sectors examined in this report from 2008 through 2012. Data sources and any additional information are listed in the table footnotes.

Economics Table 1. SE Alaska region reported annual average employment statistics

Industry Sector	2008	2009	2010	2011	2012	Average *
Logging and Sawmills ¹	265	216	247	262	-----	248
Recreation and Tourism ²	14,550	13,800	13,600	13,700	13,900	13,910
Salmon Harvesting and Processing ³	1350	1400	1450	1600	1,600	1,480
Mining ⁴	433	415	536	647	-----	508
Federal Government ⁵	1,800	1,750	1,750	1,700	1,650	1,730

1 Logging and Sawmills: Data source - Statistical Appendix 2011 ANILCA 706(a) Timber Supply and Demand Report to Congress, Tongass National Forest. Includes only direct employment with the logging and sawmill industries. Note sawmill employment figures are adjusted based on regional mill studies, which take into account self-employed mill owners (USDA Forest Service 2011) and (State of Alaska 2012b).

2 Recreation and Tourism: Data source - Alaska DOL Current Employee Statistics (State of Alaska 2012b). Note this data includes all employment from recreation and tourism related industry sectors see Evaluation of Results for Recreation and Tourism (p.6) of this report for a full explanation. Data includes the following industry sectors: trade/transportation/utilities, information services, professional and business services, leisure and hospitality, and other services.

3 Salmon Harvesting and Processing: Data source – Alaska DOL, Fishery Employee Statistics (State of Alaska 2012a). Note most commercial fishers are self- employed so their earnings are not counted by the Alaska DOL. The figures in table 1 represent employment in the salmon processing only.

4 Mining: Data source – Alaska DOL, Current Employee Statistics (State of Alaska 2012b). This data is presented to highlight general trends of employment in the mining industry.

5 Federal Government: Data Source - Alaska Department of Labor and Workforce Development, Current Employee Statistics (State of Alaska 2012b).

*Since not all data is available for 2012, the average is based on the number of years of available data. For example, Logging and Sawmills data is not available for 2012 so the average is based on 4 years. Recreation and Tourism data is available for 2012 so the average is based on 5 years.

Evaluation of Results

The evaluation of monitoring results is listed by employment sector. Reported annual average employment data is compared to projected employment figures (if applicable) in the 2008 FEIS.

Logging and Sawmills

As mentioned previously, actual annual employment estimates for the lumber and wood products industry are compared to the 2008 FEIS projected average annual direct employment in the industry. It should be noted, in the 2008 Tongass Land and Resource Management Plan Record of Decision (2008 ROD), an adaptive management strategy was employed basing available supply on volume harvested. The Forest is currently at the Phase 1 performance level. Harvest (and employment) is expected to be far below the Allowable Sale Quantity (ASQ) volume and estimated employment in the 2008 FEIS.

Table 2 shows the 2008 FEIS maximum allowable sale quantity (ASQ), estimated non-Forest Service (FS) harvest, estimated maximum total harvest and projected annual average employment in the logging and sawmill industry sector. Note that the ASQ figure is based on the non-interchangeable component (NIC) I volume only.

Economics Table 2. Maximum annual harvest and projected logging sawmill employment¹

Tongass Allowable Sale Quantity (ASQ)	238 MMBF ²
Estimated Non-FS Harvest (State, Private Etc.)	109 MMBF
Estimated Total SE Alaska Timber Harvest (FS ASQ + estimated non-FS)	347MMBF
Projected annual average direct employment at 376 MMBF harvest levels – Logging and Sawmills	1,343 Employees

¹ Source 2008 FEIS, p. 3-527,537

² MMBF = Million Board Feet

Table 3 compares estimated industry employment with actual employment. The 2008 FEIS employment projections were based on historic harvest quantities and logging/sawmill sector employment from 2000-2005.

Economics Table 3. Logging and sawmill annual average employment - actual and projected

Projected annual average 2008 FEIS employment	1,343 employees
2008-2011 Annual Average Employment ¹	248 employees

¹ Data source - USDA Forest Service 2011 and State of Alaska 2012b



Economics Picture 1. Firewood sale on Hoonah Ranger District. *Photo by Chris Budke*

Table 4 shows annual harvest levels for National Forest and Non-FS lands from 2008 through 2012. Non-FS lands may include harvest on state or private lands. Figure 1 shows both annual harvest levels and 2008 FEIS ASQ and estimated total harvest.

Economics Table 4. National forest and non-FS annual harvest for 2008-2012 (in MMBF) ¹

Quantities in MMBF	2008	2009	2010	2011	2012*	Annual Average Harvest
National Forest (NF) Only	28	28.4	35.4	32.6	21	29
State and private lands (Non-FS)	64.2	65.3	76.7	79.4	-----	71.4
Total SE Harvest	92.2	93.7	112.3	112	-----	102.5

¹ Data sources - USDA Forest Service 2011 and USDA Forest Service 2012

* Since not all data is available for 2012, the average is based on the number of years of available data. For example, Non-FS land data is not available for 2012 so the average is based on 4 years. NF land data is available for 2012 so the average is based on 5 years.

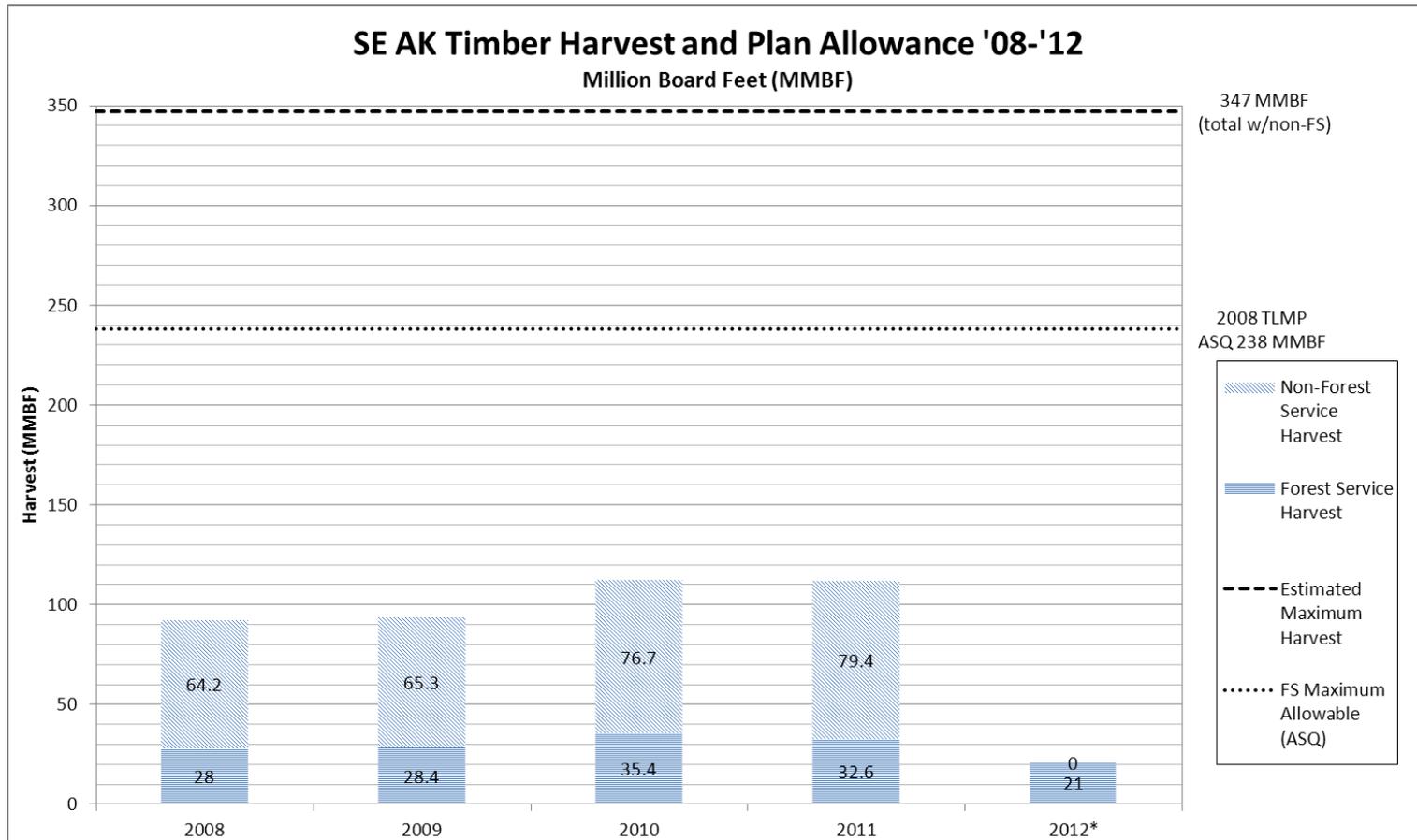
Current Forest Service harvest levels are within Phase 1 volumes outlined in the 2008 ROD adaptive management strategy. As shown in figure 1, harvest levels have increased slightly since 2008. Logging and sawmill employment levels have remained fairly stable with minor variations during the same time period. The current level of harvest and industry employment is due to a complex array of factors.

In 2010, the Forest Service enlisted the Juneau Economic Development Council to create a cluster-based economic plan for promoting regional growth in certain key industries, including logging and sawmills. The cluster working group approach was used because it is effective in bringing together private sector industry with federal, state and local agencies as well as other stakeholders. The process resulted in a set of industry specific action initiatives based on shared economic vision (JEDC 2011). Some of the action initiatives have begun to be implemented including second growth recreation cabins and biomass heating systems utilizing local wood product waste.



Economics Picture 2. Middle Ridge Cabin, on Wrangell Ranger District, is made out of second growth logs.

Economics Figure 1. National forest and non-FS annual harvest levels (in MMBF)¹



¹ Data sources - USDA Forest Service 2011 and USDA Forest Service 2012

* Data does not include Non-FS because it was not available at time of printing

Recreation and Tourism

The projected number of recreation and tourism jobs related to the non-resident share of recreation is indicated in the 2008 FEIS page 2-61, table 2-20, Alt 6. It estimates 4,319 recreation and tourism direct employment jobs. This employment projection was calculated using historical Recreation Visitor Day data and a regional economic model used in the 1997 Tongass Land and Resource Management Plan Final Environmental Impact Statement (1997 FEIS). The following language was included in the 1997 FEIS regarding the linear projection approach used to calculate recreation and tourism employment, “Although these assumptions may not accurately reflect underlying economic realities, they were necessary to produce a quantified estimate of the relation between recreation activity and employment” (1997 FEIS, p. 3-460).

In short, the assumptions and methods used in the 2008 FEIS (based on the assumptions and methods used in the 1997 FEIS) to calculate recreation and tourism employment figures may not, and likely do not, accurately represent recreation and tourism employment related to the Tongass National Forest. Rather, the employment projections are intended to provide a quantified estimate between recreation activity and employment for use in comparing FEIS alternatives.

Additionally, Alaska DOL employment statistics are compiled by industry sector and there is no single sector representing recreation and tourism. Employment in the recreation and tourism sector is a component of a number of related sectors such as leisure and hospitality and other services. No Alaska DOL labor statistic exists to accurately evaluate the levels of employment related to recreation and tourism.

With these limitations in mind, the total employment for related industry sectors, which may include recreation and tourism jobs, can be examined for trends in overall employment. This may serve as a general indicator of employment trends in recreation and tourism; though, the specific reasons for growth or decline are complex and are dependent on many factors outside the effects of the 2008 Forest Plan.

Table 5 shows the Alaska DOL reported annual average employment for industry sectors which may include recreation and tourism employment. These include trade/transportation/utilities, information services, professional and business services, leisure and hospitality, and other services. The data indicates that employment in these sectors has declined slightly but has remained relatively stable over the past five years.

Economics Table 5. Industry sector employment related to recreation and tourism¹

	2008	2009	2010	2011	2012
Total Employment	14,550	13,800	13,600	13,700	13,900

¹ Recreation and Tourism: Data source - Alaska DOL Current Employee Statistics (State of Alaska. 2010b). Note this data includes all employment from recreation and tourism related industry sectors. Data includes the following industry sectors: trade/transportation/utilities, information services, professional and business services, leisure and hospitality, and other services.

Forest Service National Visitor Use Monitoring (NVUM) is a national monitoring program with a goal of assessing levels of Forest recreation use, demographics of users and economic contributions of Forest visitors. NVUM data was not used in the 2008 FEIS recreation and tourism economic analysis because, at that point, the available data was limited to one year (2008 FEIS, p. 3-541). Since then, a second round of NVUM monitoring has been completed (2005-2009) and the data is available for analysis.

NVUM survey data reveals that every 10,000 visitors to the Tongass National Forest (NF) supports 13.7 direct jobs and 17.6 total jobs in Southeast Alaska. By these calculations, recreation visitation on the Tongass NF, numbering 2,337,981 visits annually supports 3,210 direct jobs and 4,113 total jobs in Southeast Alaska. The NVUM direct employment figures are less than that estimated in the 2008 FEIS

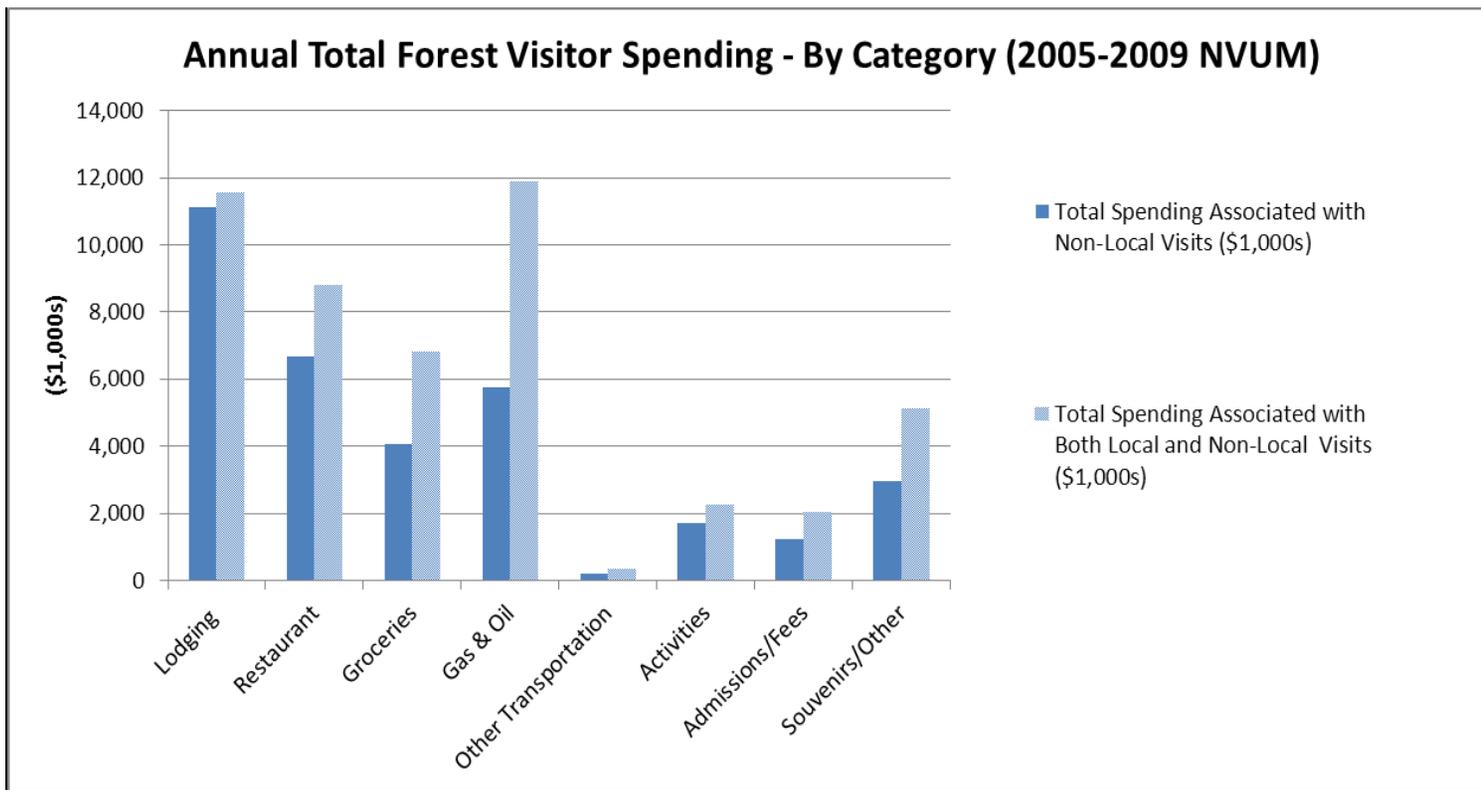
(4,319 jobs); however, it should be noted that the methods used to derive these figures are significantly different than those from the 2008 FEIS and the data should not be compared (Alexander 2012).

Additionally, Forest related economic contributions reported by NVUM include the amount of money spent during visits. Figure 2 shows a summary of 2005-2009 annual visitor spending data from the most up-to-date NVUM monitoring.

The reported annual average employment for industry sectors which may include recreation and tourism employment show a slight decline but have remained relatively stable over the past five years (2008-2012). How this relates to 2008 Forest Plan implementation cannot be ascertained because of the type of data reported. Examined employment sectors are complex and depend on many factors including local, state and national economies. The NVUM data provides estimates for economic contributions of the Tongass on the recreation and tourism industry, though employment estimates should not be compared with employment projections provided in the 2008 FEIS.



Economics Picture 3. Cruise ship in Hoonah, *Photo by Sue Jennings*



Economics Figure 2. Summary of 2005-2009 annual visitor spending data¹

¹Data Source - USDA Forest Service 2009

Mining

In reference to possible economic effects of the 2008 FEIS, the plan states that Alternative 6 (the selected alternative) represents “little or no change from the allocations [of non-development Land Use Designations] under the current Forest Plan [1997 Forest Plan]. The effects on future mining employment and income would depend on whether the potentially effected locatable deposits are economically viable in the future” (2008 FEIS, p. 3-542).

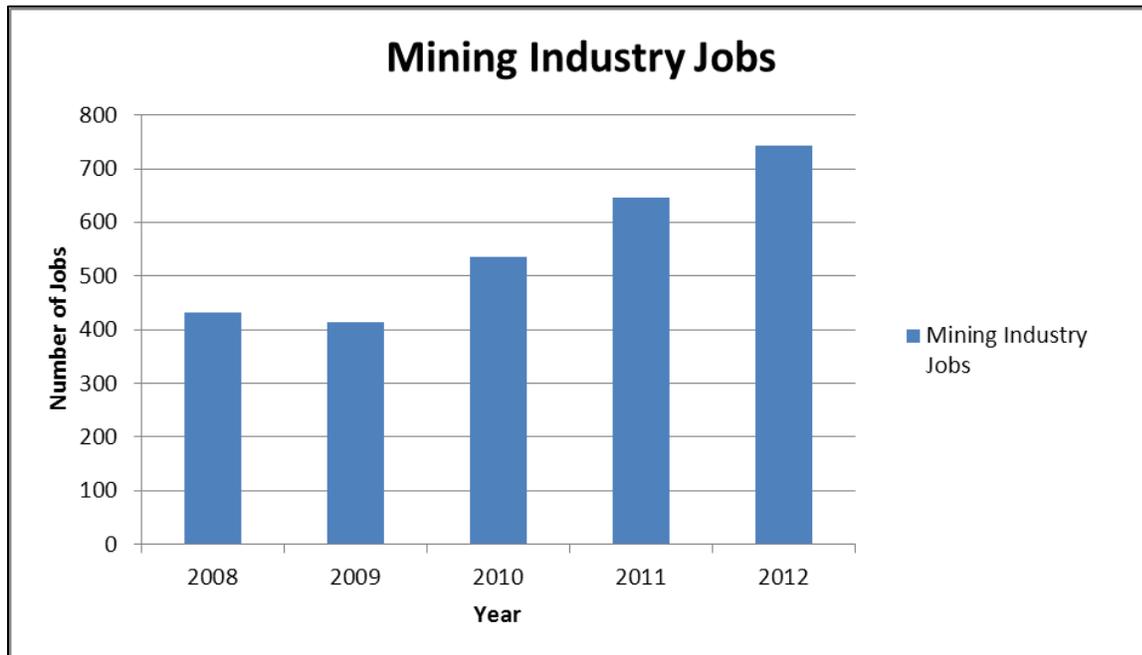
Annual Southeast Alaska employment statistics in for the mining sector are available from the Alaska DOL. The possible effects of Forest Service policy on mining employment cannot be easily ascertained. Stability or growth in mining industry employment may indicate that the 2008 Forest Plan is not having a negative effect on the mining industry in SE Alaska. Table 6 shows annual average mining employment in SE Alaska.

Economics Table 6. Annual average mining employment¹

	2008	2009	2010	2011	2012
Mining Industry Jobs	433	415	536	647	-----

¹Data Source - State of Alaska 2010b

Economics Figure 3. Annual average mining employment¹



¹Data Source - State of Alaska 2010b

* 2012 data is estimated based on State of Alaska monthly employment numbers

As the mining table and chart indicate the mining industry has experienced steady growth in the past five years. It is unlikely that this growth is related to 2008 Forest Plan direction but is likely tied to global market demand and prices. The 2008 FEIS indicated that it would have little effect on future mining income and employment and this appears to be the case.

Salmon Harvesting and Processing

The 2008 FEIS states that “there is not expected to be any significant change to the commercial fishing or fish processing industries over the next decade [2008-2018] as a result of the National Forest activities” (2008 FEIS, p. 3-542). A review of labor statistics related to salmon harvesting and processing will reveal economic trends; however, current trends in the salmon harvesting and processing employment are more likely a reflection of global market conditions and the related price per pound of fish, rather than a reflection of Tongass management activities. Table 7 shows average annual employment in fish processing related to the salmon harvest. As noted earlier, labor statistics for fishers is unavailable.

Economics Table 7. Southeast annual average, Alaska salmon processing employment¹

	2008	2009	2010	2011	2012
Salmon Processing Jobs	1,022	1,086	1,218	1,293	-----

¹Data Source - State of Alaska 2012

Table 7 shows slight growth in the salmon processing industry over the past five years. While it may be difficult to draw a direct correlation between processing employment and Forest management activities, the 1997 Tongass Land and Resource Management Plan Final Environmental Impact Statement (1997 FEIS) lists a series of assumption about this relationship that indicates that they may be closely related. The 1997 FEIS states, “it is assumed that 80 percent of Southeast Alaska salmon originate on the Tongass, and thus, 80 percent of the salmon fishing industry is dependent upon the National Forest. The dependence of fish processing employment on the Tongass was derived similarly with the added assumption that salmon represented 60 percent (on volume basis) of the total processed catch. Consequently, 48 percent of seafood processing employment is assumed to be dependent upon the Forest” (1997 FEIS, p. 455). If these assumptions are true, then in regards to salmon seafood processing, National Forest activities may have had a positive effect on the industry. Though, as stated earlier, trends in salmon harvesting and processing are dependent on many factors, only one of which is National Forest activities.

Action Plan

In the 2008 Forest Plan Monitoring plan for economics (p.6-20), the feedback mechanism is stated as “Evaluate management practices and change, if needed; Rural Community Assistance Standards and Guidelines.”

According to the Forest Plan, page 4-55, in “Resource Management Decisions Affecting Communities” the Forest Service should, “emphasize, where appropriate, local needs and opportunities for rural community assistance in Forest programs and budgets.” In the last few years, the Tongass has emphasized local needs and opportunities through Secure Rural Schools Act and American Recovery and Reinvestment Act (ARRA) projects. Examples of this commitment include cabins, trails, habitat restoration, and local employment.

Based on the monitoring report five year review, it is recommended that the Tongass continue to monitor economics of the 2008 Forest Plan. Additionally, better ways to monitor the economics should be explored, including using NVUM monitoring. While the Tongass is transitioning from predominately old-growth harvest to young-growth harvest, it is important to monitor the timber industry to determine changes.

Citations

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