

40. Economics

Goal: Provide a diversity of opportunities that contribute to the local and regional economies of Southeast Alaska (2008 Tongass Land and Resource Management Plan, [USDA Forest Service 2008b], p. 2-5).

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 (USDA Forest Service 2008b, p. 2-5).

Background: The Tongass National Forest comprises approximately 90 percent of Southeast Alaska's total land base. Over 74,000 people live in 32 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?*

Evaluation Criteria

The following employment sectors are used to respond to the economics monitoring question evaluation criteria, to best represent the Tongass National Forest's contribution to the resource-dependant industries of Southeast Alaska's formal economy.

Note, while the monitoring question addresses employment and income, the Economic Impact Analysis group summary in the 2008 Tongass Land and Resource Management Plan Final Environmental Impact Statement (2008 FEIS) Summary of Effects matrix (USDA Forest Service 2008a, p. 2-61) provides only projections of employment for Alternative 6 (the proposed action, and selected alternative), not for associated income. These sector employment estimates are analyzed and presented in detail in the 2008 FEIS beginning on page 3-490, the economic and social assessment. The employment data considered and analyzed within the 2008 FEIS were derived from credible secondary sources who publish data by sector annually (e.g., U.S. Census Bureau, U.S. Department of Labor and Alaska Department of Labor and Workforce Development [Alaska DOL]). 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 equivalent direct employment in logging (801 jobs) and sawmills (542 jobs) (USDA Forest Service 2008a, 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 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), (USDA Forest Service 2008a, pp. 2-61; 3-517). Note: The distinction of the non-resident share of recreation is intended to reflect jobs generated by non-resident expenditures on goods and services as comparable to an export industry which functions to bring new jobs into the region (USDA Forest Service 2008a, p. 3-541). The FEIS analysis and Alaska DOL reported data are calculated to an annual average, as seasonal variation in Southeast Alaska tourism-related industry sectors can be extreme from one month to the next, and Alaska DOL does not publish employment data by sector on a

monthly basis.

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** – 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 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.” (USDA Forest Service 2008a, 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, “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” (USDA Forest Service 2008a, 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** – Employment statistics of the federal government across Southeast Alaska is provided for reference purposes. The government sector is the main source of year round employment in all Southeast Alaska communities. In addition annual government employment can serve as an indication of regional economic health, as local government and private sector activities in Southeast Alaska are dependent on government funding to support community industries and the services they provide.

The precision and reliability of employment data is limited by the type and accuracy of data collected by the 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 as described in the 2008 Forest Plan (USDA Forest Service 2008b, p. 6-20).

Monitoring Results

Economics Table 1 shows the employment figures for the four industry sectors examined in this report from 2008 through 2014. Data sources and additional information are listed in the table footnotes.

Economics Table 1. Southeast Alaska Region reported annual average employment statistics

Industry Sector	2008	2009	2010	2011	2012	2013	2014	Average *
Logging and sawmills ¹	265	216	247	262	-----	-----	-----	248
Recreation and tourism ²	14,550	13,800	13,600	13,700	13,900	12,280	-----	13,910
Salmon harvesting and processing ³	1350	1400	1450	1600	1,600	1,274	1,276	1,480
Mining ⁴	433	415	536	647	-----	-----	-----	508
Federal government ⁵	1,800	1,750	1,750	1,700	1,650	1,500	1,500	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).

^{2a} Recreation and Tourism: Data source - Alaska DOL Current Employee Statistics (State of Alaska 2014b).

^{2b} Recreation and Tourism: Data source - Alaska DOL Current Employee Statistics, Southeast Economic Region: 2013 Workers by Industry (State of Alaska 2014b). Note these data entries include 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 2014b). 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 2014b). 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; State of Alaska 2015a).

*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 the Timber Sale Program Adaptive Management Strategy was employed basing available supply on volume harvested (USDA Forest Service 2008c, p. 64). The Tongass timber sale program 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.



Economics Photo 1. Tonka sort yard

Economics Table 2 shows the 2008 FEIS maximum allowable sale quantity (ASQ), estimated non-Forest Service System (non-NFS) land harvest, estimated maximum total harvest and projected (first decade) average annual average employment in the logging and sawmill industry sector.

Note that the ASQ and employment figures represent the maximum non-interchangeable component (NIC) I volume that could be harvested under the selected alternative (Alternative 6); figures are not intended to serve as projected harvest levels.

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

Tongass allowable sale quantity (ASQ)	236 MMBF ²
Estimated non-NFS harvest (state, private, etc.)	109 MMBF
Estimated total Southeast Alaska timber harvest (NFS ASQ + estimated non-NFS)	345 MMBF
Projected average annual equivalent direct employment at 376 MMBF harvest levels – logging and sawmills	1,343 employees

¹ Data source: USDA Forest Service 2008a, pp. 3-527, 3-537

² MMBF = million board feet

Economics 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 ¹
2008-2011 annual average employment	248 employees ²

¹ Data source: USDA Forest Service 2013b

² Data source: State of Alaska 2012b

Table 4 shows annual harvest levels for National Forest System (NFS) and non-NFS lands from 2008 through 2014. Non-NFS 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. NFS and non-NFS annual harvest for 2008-2012 (in MMBF)¹

Quantities in MMBF	2008	2009	2010	2011	2012*	2013	2014	Annual average harvest
NFS only	28	28.4	35.4	32.6	22	26	39	30.2
State and private lands (non-NFS)	64.2	65.3	76.7	79.4	-----	-----	-----	71.4
Total Southeast harvest	92.2	93.7	112.3	112	-----	-----	-----	102.6

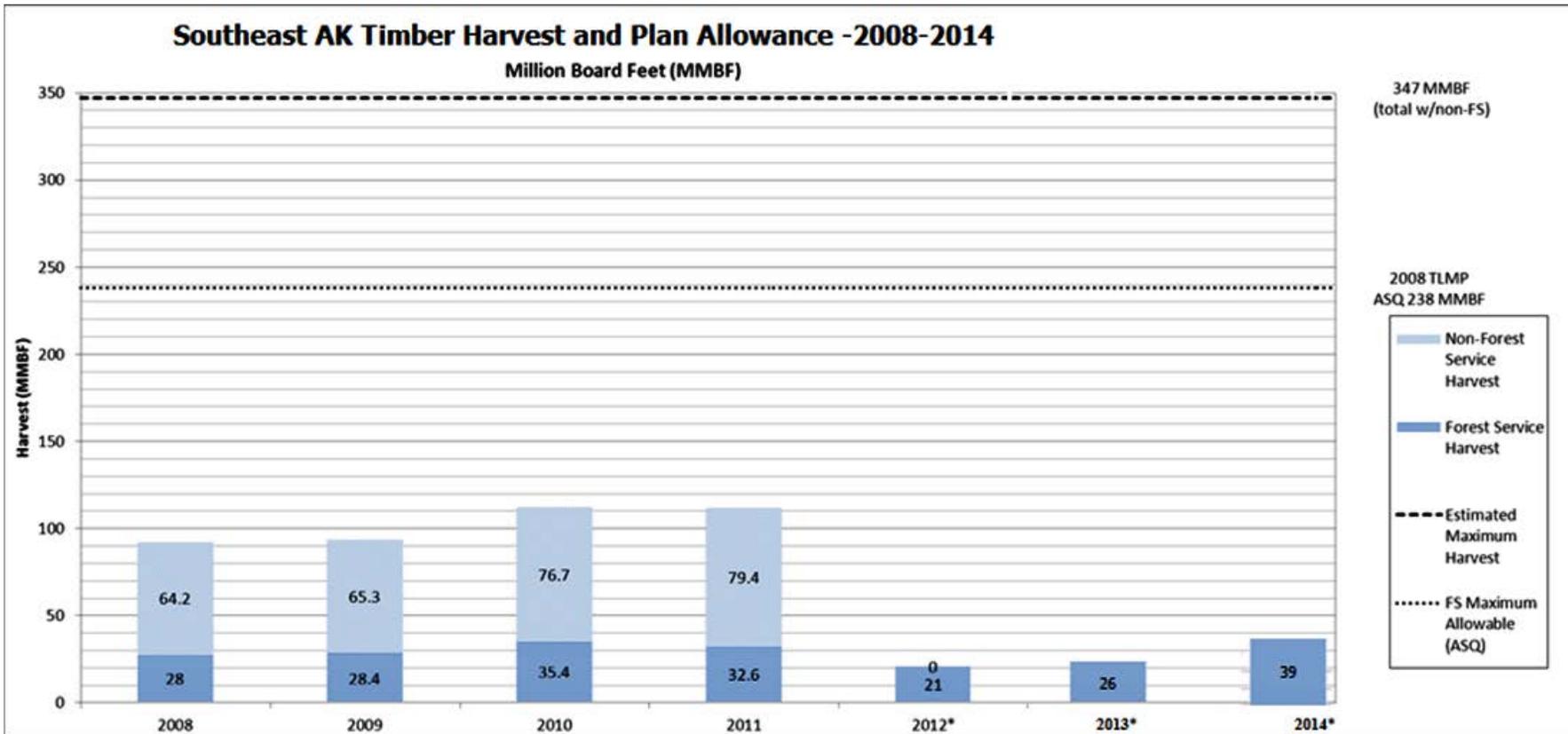
¹ Data sources: USDA Forest Service 2011 and USDA Forest Service 2014

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



Economics Photo 2. Middle Ridge cabin is constructed from young-growth logs, Wrangell Ranger District

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.



Economics Figure 1. NFS and non-NFS annual harvest levels (in MMBF) (USDA Forest Service 2011 and USDA). Note: Data does not include Non-NFS because it was not available at time of printing

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 young-growth recreation cabins and biomass heating systems utilizing local wood product waste.

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, Alternative 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 (USDA Forest Service 1997, p. 3-439). 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” (USDA Forest Service 1997, p. 3-460).

In short, the assumptions and methods used in the 2008 FEIS (based on the assumptions, methods, and economic indicators described in detail in the 1997 FEIS) to calculate recreation and tourism employment figures may 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 recreation and tourism industry sector. Employment within this sector is distributed across various related industries such as leisure and hospitality, trade/transportation/utilities and other. No Alaska DOL labor statistic exists to accurately evaluate the identical criteria of employment presented in the 2008 Forest Plan 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; 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 Photo 3. Visitors on the Naha Bay Dock, Naha River National Recreational trail.

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

	2008	2009	2010	2011	2012	2013 ²	2014
Total employment	14,550	13,800	13,600	13,700	13,900	12,280	Not available

¹ Data source: Alaska DOL Current Employee Statistics (State of Alaska 2010b)

² Data source: Alaska DOL Current Employee Statistics, Southeast Economic Region: 2013 Workers by Industry (State of Alaska 2014b).

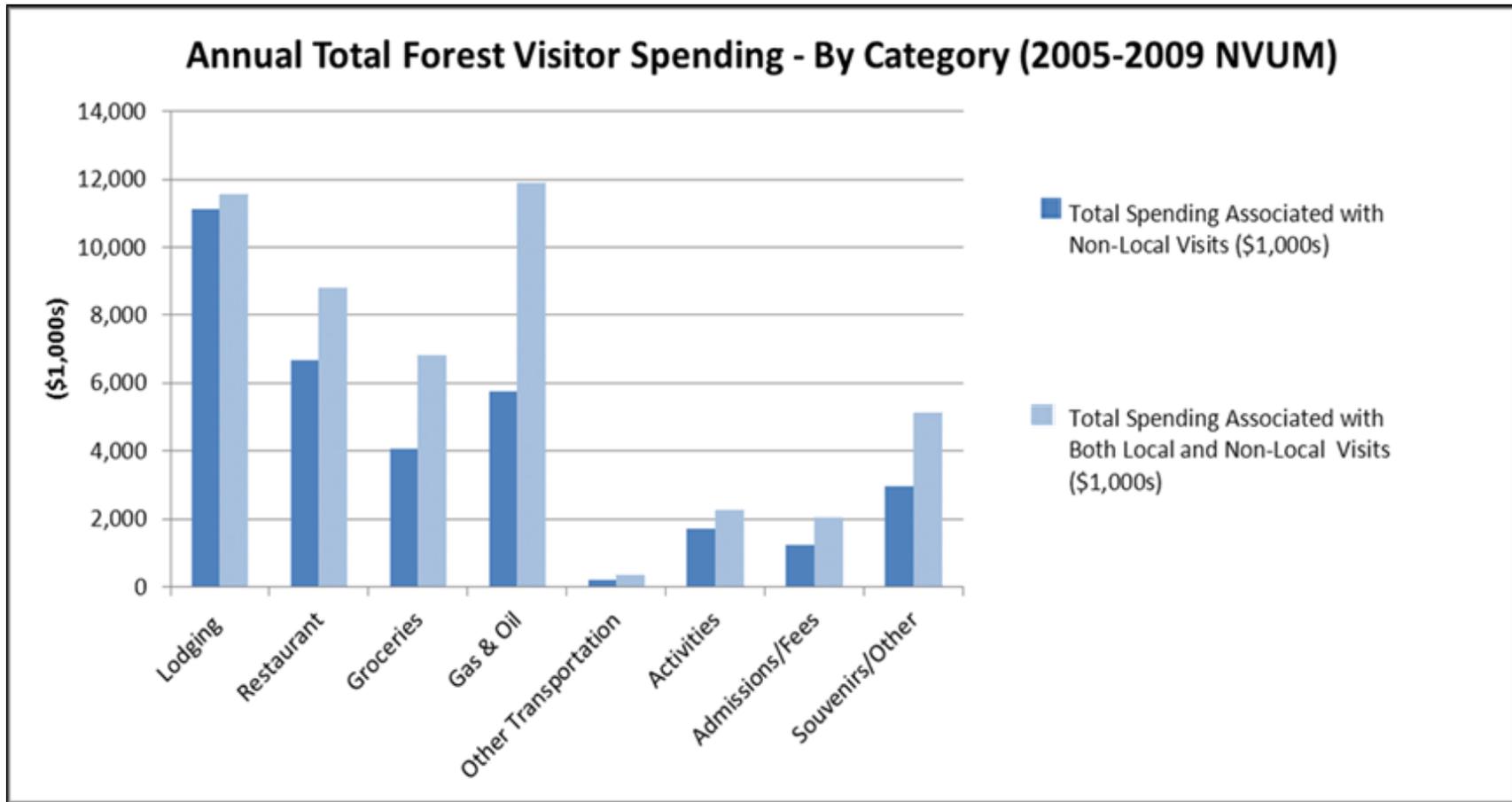
Note: this data includes all employment from recreation and tourism related industry sectors. Data includes the following industry sectors: trade/transportation/utilities, information services, professional and business services, leisure and hospitality, and other services.

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. Sampling protocols began in Alaska and other national forest, beginning with the first five-year sampling cycle, from 2004-2009, to assist forest managers in planning and budgeting for recreation use on national forests. NVUM data was not used in the 2008 FEIS recreation and tourism economic analysis because, at that point the available NVUM survey data was limited to one year (USDA Forest Service 2008a, p. 3-541). Subsequently, an Alaska-specific supplemental NVUM survey was conducted in 2008-2009 to inform relevance of future Recreation surveys by choosing specific Forest Recreation sites to include in future survey and analysis(White and Stynes 2010). Survey data from NVUM Round 2 (covering 2010-2014), combined with the Alaska Region supplemental survey data was made available shortly before publication of this report.); it does not inform Forest visitor spending as the 2005-2009 data (see Economics Figure 2), surveys for Round 3 focused on Recreation visitation, with surveys concentrated on non-visitor modes of access rather than surveying on a suite of spending habits of Forest visitors. Preliminary analysis of the visitation data revealed non-resident visitors to the Tongass arrive by cruise ship (49% of the sample), ferry (24%) and air (24%). (Alexander 2010).

NVUM survey data reveals that every 10,000 visitors to the Tongass support 13.7 direct jobs and 17.6 total jobs in Southeast Alaska. By these calculations, recreation visitation estimates on the Tongass (2005-2009) numbering 1,628,294 visits annually supports 2,230 direct jobs and 2,865 total jobs in Southeast Alaska; and (2010-2014) numbering 1,038,000 visits annually, supports 1,422 direct jobs and 1,827 total jobs in Southeast Alaska. The NVUM direct employment figure estimates for both reporting periods, covering annual estimates from 2008-2014, 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 as of the 2010 reported data from NVUM Round 2 monitoring, as Round 3 data does not list estimated economic contributions by Forest visitor.

The reported annual average employment for industry sectors, which may include recreation and tourism employment, show a slight decline over the past eight years (2008-2014). How this relates to 2008 Forest Plan implementation cannot be ascertained by 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 Figure 2. Summary of 2005-2009 annual visitor spending data (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 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” (USDA Forest Service 2008a, p. 3-542).



Economics Photo 4. Greens Creek mine entrance

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. Southeast Alaska growth in mining in recent years was mostly from the Kensington mine near Juneau, where employment has leveled off yet exploration continues. Table 6 shows annual average mining employment in Southeast Alaska.

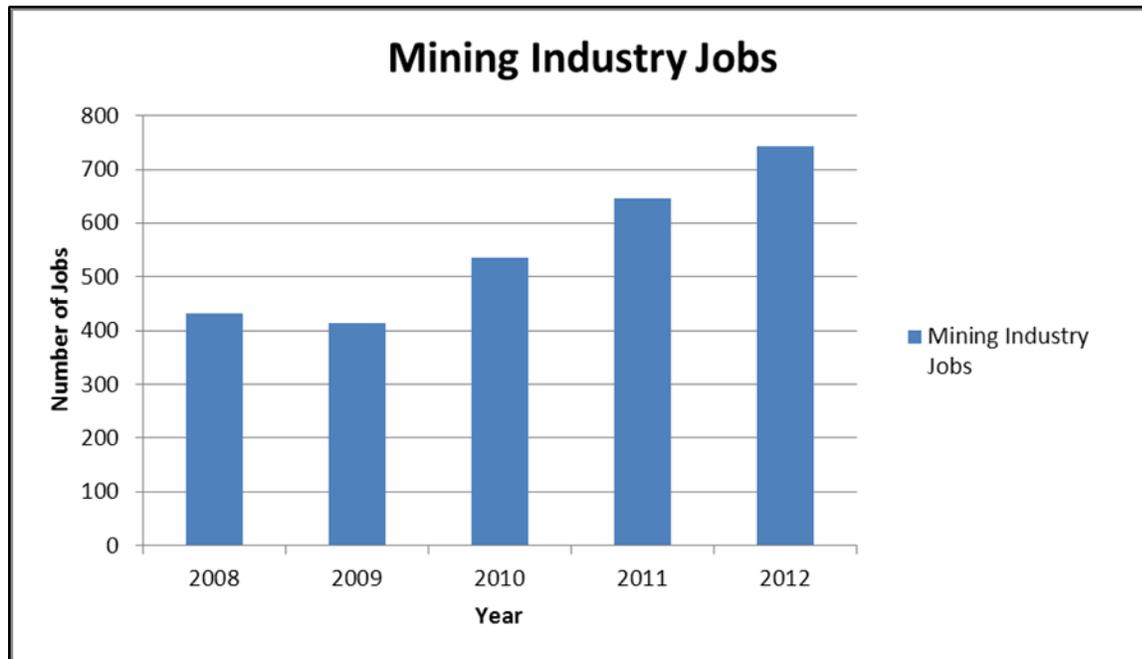
Economics Table 6. Annual average mining employment¹

	2008	2009	2010	2011	2012	2013 ²	2014
Mining industry jobs	433	415	536	647	-----	-----	-----

¹ Data source: State of Alaska 2010b

² Data source: State of Alaska 2013b

Note: Alaska DOL reported 2013 mining employment totaled 4,049 jobs statewide (no breakdown of specific Southeast Alaska jobs available)



Economics Figure 3. Annual average mining employment (State of Alaska 2010b) Note: 2012 data is estimated based on State of Alaska monthly employment numbers and no specific mining employment data available for 2012-2014.

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, “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” (USDA Forest Service 2008a, 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 employment

	2008	2009	2010	2011	2012	2013	2014
Salmon Processing Jobs	1,022	1,086	1,218	1,293	1,274	1,726 ²	-----

¹ Data source: State of Alaska 2013

² Data source: State of Alaska 2014a

Economics 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 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. About 48 percent of seafood processing employment is assumed to be dependent upon the Forest” (USDA Forest Service 1997, 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.



Economics Photo 5. Salmon processing

Federal Government

The government sector is the main source of year round employment in all Southeast Alaska communities. In addition, annual government employment can serve as an indication of regional economic health, as local government and private sector activities in Southeast Alaska are dependent on government funding to support community industries and the services they provide.

Economics Table 8. Number of federal government employees in Southeast Alaska

Industry sector	2008	2009	2010	2011	2012	2013	2014	Average *
Federal government ¹	1,800	1,750	1,750	1,700	1,650	1,500	1,500	1,730

¹ Data Source - Alaska Department of Labor and Workforce Development, Current Employee Statistics (State of Alaska 2012b; State of Alaska 2015a)

Although holding steady for the past two years, overall federal government employment has declined since 2008 (Table 8). This may be due to a number of factors including consolidation of positions, lower budgets from Congress, and a decreased number of projects (timber, recreation and road building). Due to the lower federal government employment, some smaller communities may experience difficulty attracting other services and industries (USDA Forest Service 2008a, p. 3-498).

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.” Prior to 2011, the Tongass utilized national opportunities made available from the Secure Rural Schools Act and American Recovery and Reinvestment Act to emphasize funding projects for Southeast Alaska needs, with a commitment to include cabins, trails, habitat restoration and local employment.

Beginning in 2009, the Forest Service and other USDA agencies and the U.S. Department of Commerce’s Economic Development Administration formalized the USDA Investment Strategy working with Southeast Alaska business industry leaders, tribal government, and non-governmental organizations, and local government agencies, contracted through the Juneau Economic Development Council (JEDC). The partnership analyzed economic opportunities and identified initiatives to improve economic opportunities in Southeast Alaska. This integrated plan is integral to the Tongass’ programs, which include multi-year collaborative stewardship, ecological restoration and enhancement, and the updated forest management strategy emphasizing old- and young-growth timber sales (a key component to a transition framework to transition toward young-growth timber sales in the future). To date, these initiatives have included increased watershed restoration for increasing wild salmon production, collaborative emphasis supporting renewable energy development projects and conversion of government agency administrative facilities in Southeast Alaska from oil to renewable energy sources.

In 2013, an additional focus group was created for localizing mining services and supply for Southeast Alaska’s Kensington and Greens Creek mines (USDA Forest Service 2013). In 2014, the JEDC was contracted to host the third annual economic innovation summit, where presenters and workshop participants highlighted the continued cooperative resource management and economic development work among community partner organizations, businesses, and USDA multi-agency and Forest Service staff of the Alaska Regional Office and Tongass National Forest.

Based on the monitoring report five-year review (USDA Forest Service 2013), 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.

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