

THE REMOTE RURAL ECONOMY OF ALASKA

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The Remote Rural Economy of Alaska

Introduction

Most of the natural resource wealth of Alaska originates in the remote rural part of the state. Yet by traditional standards of economic measurement, the economy of the region lags behind the rest of Alaska.¹ This paper does not attempt to explain this apparent paradox, but rather simply to present a comprehensive description of the economy of remote rural Alaska to better understand the economic development opportunities and challenges this region faces.

Statewide descriptions of the Alaska economy are dominated by the much larger urban areas and cannot convey a sense of the unique features of the remote rural part of the state. And although there has been much written about the economy of remote Alaska, much of it is out of date² or not well-grounded in the current economic realities of the region. Without a comprehensive description of the economy, discussions of economic development strategies are not possible.³

This description is a snapshot of the region as a whole, as distinct from the rest of Alaska. At the same time it recognizes the great variations in climate, terrain, culture, economic activity, opportunity, and well-being within the region. While changing market conditions for natural resource products, cycles in government funding, economic opportunities in other parts of Alaska, and other factors are all obviously important and drive changes in the economic picture of the region over time, this paper does not include a historical perspective.⁴ Although a description of the institutional setting within which the economy of remote rural Alaska operates is also important for understanding the economy, it is also not included in this paper.⁵ Finally, theories of regional economic

¹ For example, in 2002 the combined personal income in remote rural Alaska was \$1.462 billion. Personal income in the Kenai Peninsula Borough was \$1.532 billion.

² For example, Thomas Morehouse, "Rebuilding the Political Economies of Alaska Native Villages," Institute of Social and Economic Research, Occasional Paper # 21, 1989, suggested that the economy of Alaska Native villages was headed for collapse.

³ For example, a simple question for a rural community in this region is how large the population needs to be to support local economic activities and public services while at the same time not depleting the natural resources forming the base for subsistence activities. See Patrick Dubbs, "Sustainable Development and Indigenous People: Authors and Actors in Rural Alaska," accessed on Alaska Native Knowledge Network Web site, <http://www.ankn.uaf.edu>, January 2, 2007.

⁴ See David Kresge, Susan Fison, and Anthony Gasbarro, *Bristol Bay: A Socioeconomic Study*, Institute of Social, Economic, and Government Research, 1974, for a historical perspective on one part of Remote Rural Alaska.

⁵ An interesting although somewhat dated compilation of papers describing and analyzing some of the institutions concerned with the economic development of rural Alaska as well as a variety of development theories is Peter G. Cornwall and Gerald McBeath, editors. *Alaska's Rural Development*, Westview Press, Boulder Colorado, 1982.

development, important to understanding the economic history, current condition, and future prospects for the region are also not covered in this paper.⁶

The description relies on published economic information about the region, which varies from good to sparse to non-existent, due to the vast size, small population, remote location, and complexity of the economic structure of the region. Consequently, the description is at best an approximation, constructed from all available published sources. No primary data collection was undertaken for this analysis.

General economic descriptions of the region at the census-area level can be found on the web sites of the Alaska Departments of Labor and Commerce, Community, and Economic Development.⁷ Periodically, more analytical descriptions, also generally at the level of the census area, are published in *Alaska Economic Trends*.⁸

Numerous first-hand descriptions of individual communities also exist. These have usually been done by anthropologists⁹ rather than economists, and often they contain only limited information about the economic structure of the community.¹⁰ The few detailed studies of the economic structure of remote Arctic communities done by economists have limited relevance to current conditions in the remote rural part of Alaska as they tend to be dated or are for locations outside Alaska.¹¹

⁶ A number of constructs have been used to analyze the rural economy of Alaska. For example, the “Fourth World” construct describes a “colonized economy” with three processes—exploitation, dependence, and dominance. See Patrick J. Dubbs, “Decolonizing Economics,” accessed on Alaska Native Knowledge Network Web site, <http://www.ankn.uaf.edu>, January 2, 2007.

⁷ The Alaska Department of Labor Workforce Information Regional Report Center and the Alaska Department of Commerce and Community Development, Division of Community Advocacy, Alaska Economic Information System.

⁸ Examples of these overviews based on secondary data include Alaska Department of Labor, “The Wade Hampton Census Area,” *Alaska Economic Trends*, October 2000; Alaska Department of Labor, “The Northern Region,” *Alaska Economic Trends*, March 2005; Alaska Department of Labor, “The Northwest Arctic Borough,” *Alaska Economic Trends*, January, 1999; Alaska Department of Labor, “The Bethel Census Area,” *Alaska Economic Trends*, September 2002; Alaska Department of Labor, “Bethel Census Area,” *Alaska Economic Trends*, October 1996.

⁹ Examples include the Alaska Department of Fish and Game, Division of Subsistence, Technical Paper Series, and the U.S. Department of Interior, Minerals Management Service, Alaska Outer-Continental Shelf Region, OCS Studies Program.

¹⁰ A recent example of a regional analysis with some economic content is the Survey of Living Conditions in the Arctic (SLiCA) project which collected information across communities based on the notion of the household as an economic unit. See Peter Usher, Gerard Duhaime, and Edmund Searles, “The Household as an Economic Unit in Arctic Aboriginal Communities, and its Measurement by Means of a Comprehensive Survey.” *Social Indicators Research* 61, p 175 2003.

¹¹ An early study that does provide a complete economic description is Don Foote, Victor Fischer, and George Rogers, *St. Paul Community Study*, Institute of Social, Economic, and Government Research, 1968. Also see N.C. Quigley and N.J. McBride, “The Structure of an Arctic Microeconomy: “The Traditional Sector in Community Economic Development” *Arctic*, Vol.40, 1987, p. 204.

There have been a number of broad overviews of the regional economy. They have tended to concentrate on one or more aspects of its structure, such as the relationship between the cash and subsistence components of the economy, or the importance of transfer payments.¹² These descriptions make little use of the available quantitative data beyond broad aggregates.

Remote Rural Alaska: A Definition

We define remote rural Alaska as the part of the state generally off the road and marine highway system in Northern and Western Alaska (Map 1).¹³ In 2000 only 10 percent of Alaskans were living in this part of the state, although it was home to 41 percent of Alaska Natives (Table 1). A quarter of the population lived in 5 regional centers.¹⁴ The rest were distributed among 147 smaller places¹⁵ scattered across an area larger by half than Texas.¹⁶ The median population size of these places was 211 (Figure 1) and Alaska Natives predominated in all but a handful.

¹² Lee Huskey, "The Economy of Village Alaska," Institute of Social and Economic Research, 1992, and Gunnar Knapp and Lee Huskey, "Effects of Transfers on Remote Regional Economies: The Transfer Economy in Rural Alaska," *Growth and Change*, Spring 1988, p. 25-39.

¹³ Consisting of the following 8 census divisions—Wade Hampton, Bethel, Nome, Dillingham, and Yukon-Koyukuk census areas and the North Slope, Northwest Arctic, and Lake and Peninsula boroughs. We exclude Bristol Bay Borough and the Aleutians because they have not historically been representative of the region due to a large military presence (Adak in Aleutians West and Galena in Bristol Bay Borough) or dependence on non resident commercial fishing (Aleutians East and Bristol Bay Borough). Their inclusion would not significantly alter the general description of remote rural Alaska.

The six Native Corporations within Remote Rural Alaska include Arctic Slope, Bristol Bay, Bering Straits, Calista, Doyon, and NANA.

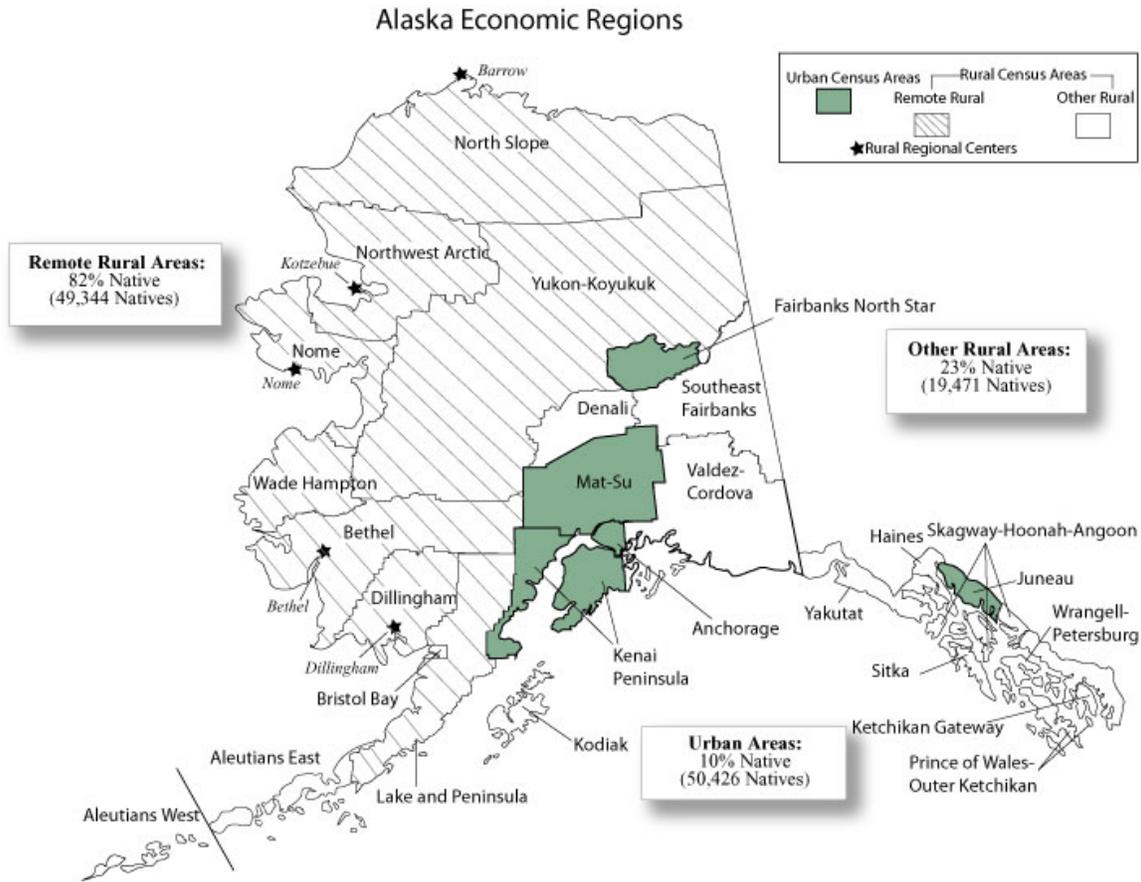
There are of course many different ways to define rural or remote in Alaska. One previous review of rural Alaska also used a census area definition, except that it included the 3 census areas we have excluded. See Alaska Department of Labor, "Rural Alaska's Different Economic Picture" Alaska Economic Trends, January 1994, p 1. Another construct divided the state population between urban and non urban components and further subdivided the non-urban population into enclaves, small towns, and rural where rural consisted of communities of less than 1,500 off-the-road system. Using this definition, most of the rural population of the state is in the census areas included in the Remote Rural Alaska definition. See Matthew Berman, "Income from Fishing, Hunting, and Trapping in Rural Alaska" ISER Working Paper 86.10, Institute of Social and Economic Research, 1986. Another construct included only land-based small communities, thus distinguishing them from those with an economy more directly linked to commercial fishing. See Patrick Dubbs, "Sustainable Development and Indigenous People: Authors and Actors in Rural Alaska," accessed on Alaska Native Knowledge Network Web site, <http://www.ankn.uaf.edu>, January 2, 2007. Still others which are purely qualitative do not define the region. See David Marshall, "The Economy of Rural-Bush Alaska: Structure, Issues, and Prospects." in *Alaska Public Policy Issues*, Clive Thomas editor, The Denali Press, 1999.

¹⁴ Nome, Kotzebue, Bethel, Dillingham, and Barrow. Fairbanks is in many ways also a regional center for the Yukon-Koyukuk Census Area.

¹⁵ Places as defined by the U.S. Census of population.

¹⁶ Texas is 267 thousand square miles. Remote Rural Alaska is 393,899 square miles. With a population of 60,119, this converts to one person for every 6.55 square miles.

Map 1. REMOTE RURAL ALASKA



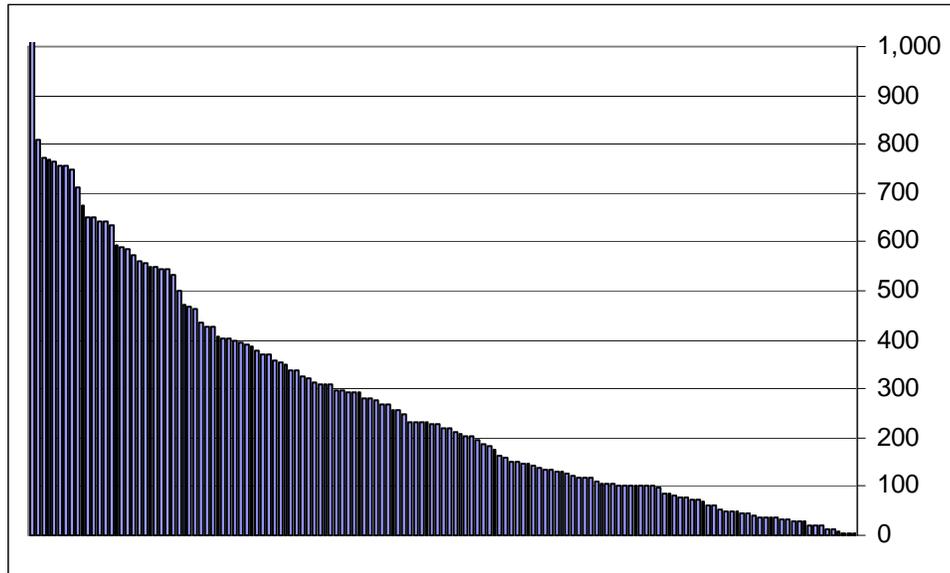
Source: U.S. Census.

Table 1. POPULATION OF REMOTE RURAL ALASKA: 2000

	TOTAL	ALASKA NATIVE*	NON-NATIVE	ALASKA NATIVE SHARE
TOTAL	60,119	49,344	10,775	82.1%
Regional Centers	19,105	12,577	6,528	65.8%
Smaller Places	41,014	36,767	4,247	89.6%

Source: U.S. Census of Population
 * Alaska Native alone or in combination with another race.

Figure 1. REMOTE RURAL COMMUNITIES RANKED IN SIZE BY POPULATION IN 2000 (EXCLUDING 5 REGIONAL CENTERS)



Source: U.S. Census of Population.

The remote rural population has been growing at about the same rate as the rest of the state, and it is becoming increasingly Alaska Native.

Population growth was slightly lower outside the regional centers, even though the region had the highest fertility and birth rates in Alaska (Table 2). The non-Native population declined and the Native population increased, resulting in an increase in the Native share of the population in these communities.¹⁷ However, these aggregate figures mask the fact that some communities increased in size while others lost population over the decade. The population growth in the regional centers was slightly more rapid, and was dominated by a Native population increase. Consequently, the Native share of the population also increased.¹⁸

¹⁷ We use the U.S. Census to track growth of the Native population. For 2000 we use the more inclusive definition of Native to include not only those who identified themselves as Native race, but also those who identified themselves as Native in combination with some other race (mixed race). Outside the regional centers, only 3 percent of the Native population reported another race. In the regional centers 10 percent indicated mixed race, and in Anchorage 30 percent reported another race. The share reporting mixed race declines with age. For example, 43 percent of the Native population in Anchorage under the age of 5 reported mixed race in the 2000 Census.

In 1990 the U.S. Census respondents did not indicate mixed race, so there is no direct way to compare the size of the Alaska Native population between 1990 and 2000, and consequently the population growth rate for Natives by place must be estimated. By including Natives of mixed race in 2000, we slightly overestimate the growth rate of the Native population between 1990 and 2000.

¹⁸ With the exception of Barrow, the regional centers did not grow any faster than their surrounding communities, and the population of Nome was unchanged between 1990 and 2000. The slower growth for remote rural Alaska outside the regional centers is primarily due to the slow growth of the Yukon-Koyukuk Census Area.

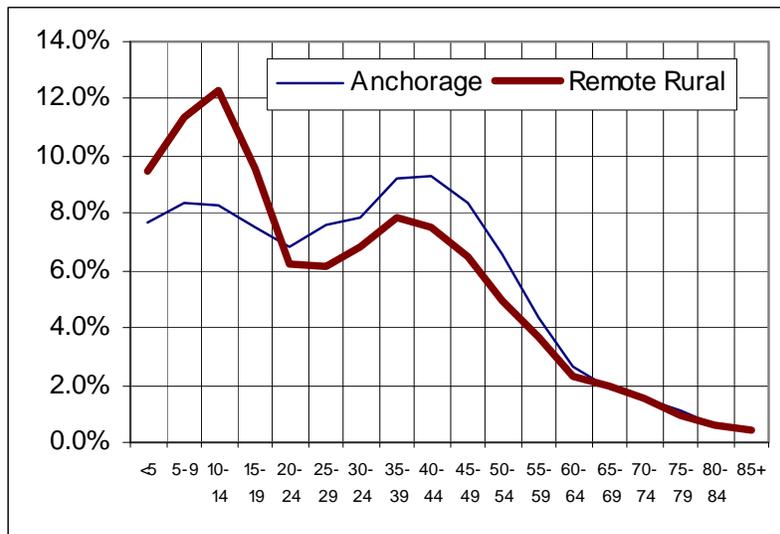
Table 2. POPULATION CHANGE IN REMOTE RURAL ALASKA: 1990-2000						
	CHANGE			PERCENT CHANGE		
	Total	Native*	Non-Native	Total	Native	Non-Native
TOTAL	7,897	8,054	- 157	15.1%	19.5%	- 1.4%
Regional Centers	2,694	2,358	336	16.4%	23.1%	5.4%
Smaller Places	5,203	5,696	- 493	14.5%	18.3%	-10.4%

Source: U.S. Census of Population
* Alaska Native alone or in combination with another race in 2000. Alaska Native in 1990.

Remote rural Alaska has more children and fewer middle-aged adults.

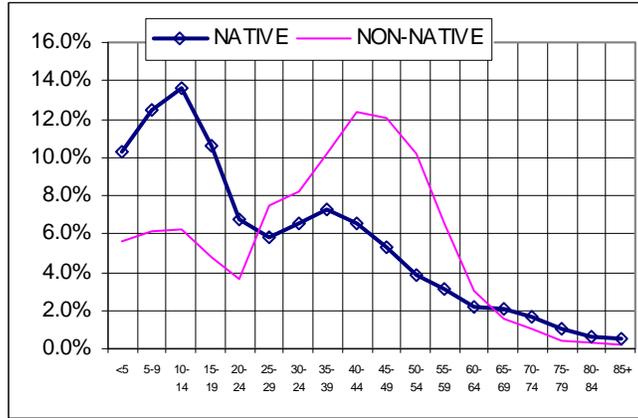
The concentration of children and absence of middle-aged adults in the remote rural population is striking if compared to Anchorage (Figure 2). This pattern becomes even more distinct if the population is divided between Natives and non-Natives (Figure 3.). The non-Native population is composed primarily of working age adults. Among Natives, 25 percent of the population in 2000 was composed of school-aged children (aged 5 to 14) and 47 percent of the population was under 20 years of age.

Figure 2. AGE DISTRIBUTION OF REMOTE RURAL ALASKA POPULATION: 2000



Source: U.S. Census of Population.

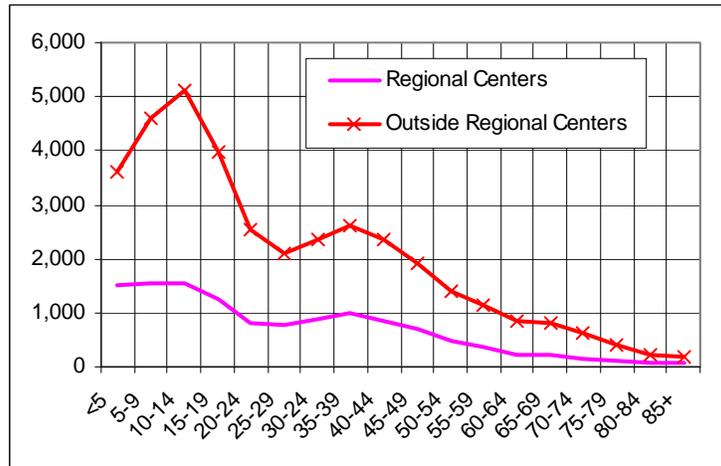
Figure 3. NATIVE AND NON-NATIVE AGE DISTRIBUTION OF REMOTE RURAL ALASKA POPULATION: 2000



Source: U.S. Census of Population.

Furthermore the concentration of the younger Native population was in the smaller communities outside the regional centers (Figure 4).

Figure 4. AGE DISTRIBUTION OF NATIVE POPULATION IN REMOTE RURAL ALASKA: 2000



Source: U.S. Census of Population.

Men outnumber women, particularly outside the regional centers (Table 3). The difference is concentrated among young adults.

	NATIVE	NON-NATIVE
Anchorage	114	96
Remote Regional Centers	100	79
Remote Region Other	88	73

Source: U.S. Census of Population.

Remote rural Alaska residents are more likely to live in families than Anchorage residents, and this is particularly the case for Natives.¹⁹ Also, children are more likely to live in married-couple families or families headed by a grandparent and less likely to be in families headed by a single parent or other adult than is the case for Anchorage.²⁰

The extraction of natural resources from remote rural Alaska, valued at billions of dollars, produces only modest direct economic benefit (jobs, household income, business purchases, and public revenues) for most residents.

The largest producing oil fields in North America are on the North Slope of Alaska to the east of Barrow. Production in 2003 of 345 million barrels had a wellhead value of about \$8.8 billion.²¹ Gas production from those fields was used primarily to add pressure to the oil fields and produce power to run the oil production facilities. Red Dog, the largest zinc mine in the world (and the largest mine in Alaska), is located north of Kotzebue. In 2003 3.5 million tons of ore were milled. At a price of 38 cents a pound, the market value of zinc production was about \$485 million.²²

A lucrative bottom-fish resource is located in the Bering Sea, and the largest salmon run in the world takes place in the rivers that flow into Bristol Bay from this region. The bottom-fish harvest by U.S. vessels was valued at nearly \$600 million in 2004 while the commercial salmon harvest in remote rural Alaska was worth about \$127 million.²³ A share of the harvest is processed on shore in the region.

In the aggregate the market value of these resources was about \$10 billion in 2003. The value fluctuates annually with production, and more dramatically with world market prices.

The region directly captures only a small share of the economic value generated by extraction of these resources before they leave the region for processing. The local

¹⁹ A family is a household that includes 2 or more persons who are related to one another.

²⁰ For more detailed demographic characteristics of the population, see Scott Goldsmith, et al. *The Status of Alaska Natives Report 2004*, Institute of Social and Economic Research, prepared for the Alaska Federation of Natives.

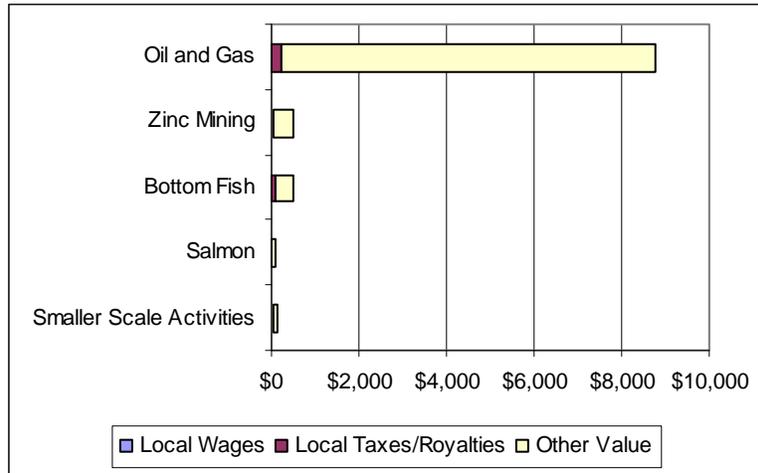
²¹ Alaska Department of Natural Resources, Division of Oil and Gas, *Alaska Oil and Gas Report, 2006*.

²² Production included lead and silver as well. Alaska Department of Commerce, Community, and Economic Development, *Alaska's Mineral Industry 2005*, Special Report 60.

²³ The bottom-fish or ground-fish fishery takes place primarily in federal waters. The statewide 2004 ex-vessel value of the harvest was \$593 million. The wholesale value, after processing, was \$1,661 million, of which \$681 million was processed on shore. The statewide ex-vessel value of the halibut fishery was \$169 million. (Halibut is regulated and counted separately from groundfish.) See National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Alaska Fisheries Science Center, Resource Ecology and Fisheries Management Division, Economic and Social Sciences Research Program, "Stock Assessment and Fishery Evaluation Report for the Ground-fish Fisheries of the Gulf of Alaska and Bering Sea/Aleutian Island Area: Economic Status of the Ground-fish Fisheries Off Alaska, 2004," 2005 (SAFE Report). The salmon fishery occurs in state-managed waters. Alaska Department of Fish and Game, Division of Commercial Fisheries. The commercial seafood harvest also includes shellfish and herring.

capture consists mostly of wages paid to local residents, and taxes and royalties collected by local governments and regional corporations (Figure 5).

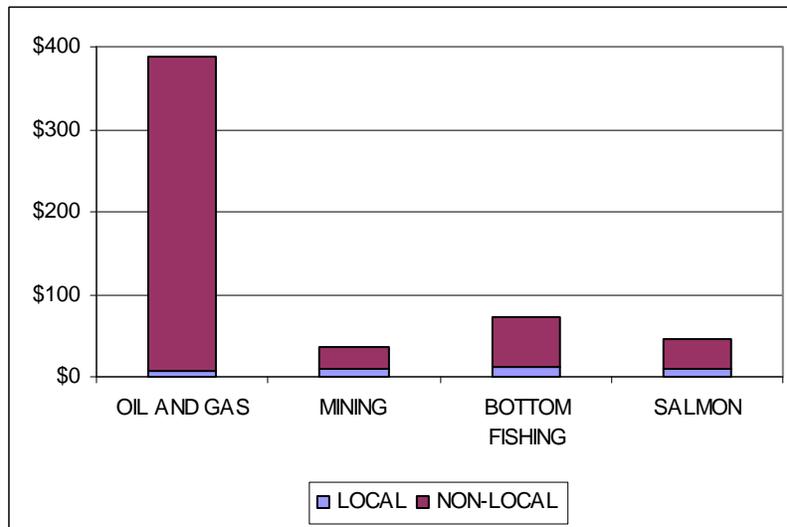
Figure 5. MARKET VALUE AND LOCAL CAPTURE OF LARGE-SCALE NATURAL RESOURCE EXTRACTION FROM REMOTE REGION ALASKA (MILLION \$): 2003



Source: Author calculations. See below for smaller-scale activity discussion.

Although the number of jobs associated with oil and gas, mining, and fishing is considerable, the share held by local residents is modest²⁴ particularly when compared to the available supply of labor. Only in mining, which is dominated by the Red Dog Mine that is owned by a local Native Corporation (NANA), is the local payroll a significant share of the total payroll (Figure. 6).

Figure 6. DISPOSITION OF PAYROLL IN LARGE-SCALE NATURAL RESOURCE EXTRACTION (MILLION \$): 2003



Source: Author calculations.

²⁴ Especially when converted to full-time equivalent jobs.

Oil and gas production occurs on the North Slope in isolated camps or “enclaves,” mostly on state lands, far from resident population centers, work schedules are demanding and often incompatible with subsistence activities practiced by most local residents, and skill requirements are high and often specific to the industry. For these reasons, most oil and gas exploration, development, and production jobs are taken by commuters from Alaska’s urban areas or non-residents.²⁵

A modest amount of economic activity has also come from the local provision of services to the oil industry, but because the activity occurs in enclaves and the local economy is small, most purchases of inputs used in exploration, development, and production are made outside the region.

Local residents have only about 1 to 2 percent of the oil company and support jobs on the North Slope²⁶ and roughly \$10 million in payroll.

However, the local economy does benefit from the property taxes imposed on the oil-related facilities within the jurisdiction of the North Slope Borough. This, combined with royalties on some production, has enabled the region to create employment opportunities for residents and to build infrastructure and services that together have created the second largest economy in remote rural Alaska (after the Bethel Census Area).²⁷ These taxes and royalties are about \$200 million.

Zinc mining also occurs in an isolated location, but in contrast to the oil fields, the deposit is on land owned by the local Native Corporation (NANA). NANA shareholders received 46 percent of the payroll in 2001, although half of that flowed outside the region to shareholders living elsewhere. The share of total payroll that stayed within the region, almost all of which was paid to shareholders, was 24 percent, or \$9.2 million.

In addition to the payroll, the local economy benefited that year from \$4.7 million in payments to local vendors, \$7.2 million in royalties to NANA, and \$4.5 million in payments in lieu of taxes (PILOT) to the Northwest Arctic Borough (65 percent of total borough revenues).²⁸

In contrast to oil and mining, where the direct economic benefits are specific to one location,²⁹ most of the coastal communities in remote rural Alaska capture a portion of

²⁵ There is interest in oil and gas exploration in Bristol Bay, but opening the region is controversial because of potential conflicts with the commercial salmon industry.

²⁶ This is based on data collected by the Alaska Department of Labor and presented in *Non-Residents Working in Alaska, 2004*.

²⁷ Oil- and gas-related property taxes paid to the North Slope Borough in 2003 were \$195 million, *Alaska Taxable, 2003*, Alaska Department of Community and Economic Development.

²⁸ Northern Economics, *An Assessment of the Contribution of Red Dog Mine Operations to the Economy of the Northwest Arctic Borough*, for the Alaska Industrial Development and Export Authority, 2002.

²⁹ Remote Rural Alaska benefits indirectly from resource extraction through the public services supported by state and federal taxes and royalties on these activities. In addition, the regional and village Native Corporations receive revenues based on the 7(i) provision of the Alaska Native Claims Settlement Act (ANCSA). The 7(i) provision requires that each ANCSA regional corporation must share 70 percent of the

the revenue from **bottom fishing** in the Bering Sea through the Community Development Quota (CDQ) program, established in 1992³⁰ after the Magnuson-Stevens Act “Americanized” the fishery. This program allocates a share of the Bering Sea and Aleutian Islands fisheries—pollock, halibut, sablefish, cod, mackerel, and crab—to 6 groups composed of western Alaska villages. Some groups own vessels and fish their allocation while others lease their harvest and collect royalties. In 2002, 55 coastal communities in remote rural Alaska were program participants.

The program generated 1,700 seasonal jobs that brought a payroll of \$12 million to these communities in 2001.³¹ An additional economic contribution comes from the local investments made with the earnings and royalties from ownership of a share of the fishery. In 2001 net income of the 6 CDQ groups was \$41 million and royalty income was \$43 million. Accumulated net income and royalties from program inception up to that time was \$401 million. The share attributable to the villages with remote rural Alaska is not known.

Much of the revenue from net income and royalties have been invested in the harvesting and processing sectors, increasing the level of local control over these fisheries. Some has also been invested in infrastructure and support services such as harbor improvements. Along with training programs, these expenditures contribute to local income and economic activity. However, it is likely that much of this investment leaks out of the local economy without having much impact. For example, vessel purchases do not directly create local jobs.

The **wild salmon commercial fishery**, the world’s largest, is a limited-entry fishery centered in Bristol Bay, but extending out along the Alaska Peninsula and along the rivers flowing into the Bering Sea. It has produced an annual harvest with an ex-vessel value (before the deduction of the cost of producing the harvest) of between \$50 and \$100 million in recent years. The average earnings varies considerably by fishery, and within fishery by the vessel. A large portion of the limited-entry permits are held by residents of other parts of Alaska and nonresidents. The share of the harvest taken by local residents is only about 20 percent of the total.

The number of local permit holders who fished in the salmon and other state managed fisheries in 2002 was 1,940, not including those only holding crew-member permits.³²

resource revenues it generates from timber and the subsurface estate conveyed to it under the act with the shareholders of all the 12 corporations.

³⁰ The Magnuson-Stevens Fishery Conservation and Management Act, passed in 1976, established the 200-mile limit and led to the “Americanization” of the Bering Sea fisheries that had previously been dominated by foreign fleets.

³¹ Northern Economics, *An Assessment of the Socioeconomic Impacts of the Western Alaska Community Development Quota Program*, for Alaska Department of Community and Economic Development, 2002.

³² Most commercial salmon fishermen are self employed, so their numbers are not included in the wage and salary data of the Department of Labor. Their income is reported in the personal income accounts as proprietor income by place of residence. Because of the large share of nonresident permit holders, the proprietor income estimates for harvester income within the region underestimate the income generated by the commercial fishery.

The largest shares of the resident earnings were centered in Dillingham and the Alaska Peninsula communities.³³

Much of the salmon harvest is processed in the region, with activity centered in Bristol Bay (not included in our definition of remote rural Alaska) and Dillingham.³⁴ In 2004 an estimated \$20 million in payroll was generated in remote rural Alaska from fish processing that employed an annual average of 675 and a summer peak of 1,934. Partly because of the extreme seasonality of salmon processing, this industry has the highest nonresident share of any industry in Alaska. In 2004, 76 percent of workers and 71 percent of payroll was nonresident.³⁵ Based on this published statewide figure, it is likely that much less than half of the payroll in the region goes to local residents.

The state collects about \$50 million in various taxes and assessments from the commercial fishing industry.³⁶ A portion of that total is distributed to the communities where the harvest is landed and processed.

Other small private sector economic drivers are also natural-resource based and provide more widely disbursed economic benefits across remote rural communities.

There are a number of other natural resource based private sector economic activities within the local economy including tourism and recreation, small scale mining, handicraft manufacture, resource management, timber, trapping, and agriculture. Their individual and combined contribution to the regional total is modest, but nevertheless important, because of the cash that flows into the region from sales associated with these activities (Figure 7.). The jobs associated with these activities are often held by self employed persons, are mostly seasonal, and often part time. Because of their nature, many of these jobs do not appear in the official employment statistics of the Alaska Department of Labor, and consequently it is difficult to determine the extent and importance of these activities to the local economy³⁷. However, as with the major resource extraction

³³ Alaska Department of Fish and Game, Commercial Fisheries Entry Commission, fishery statistics posted to the Web site, www.cfec.state.ak.us. Data are available in two forms. The first is information about the amount of fishing activity originating from residents of each community. This includes the number of permits held by community residents, the number fished by fishery, and the estimated gross earnings from each fishery as well as the total. The second is aggregate data for each fishery that includes permits fished and gross earnings broken out between Alaska residents and nonresidents. A count of licensed crew members by community is also available. From this data it is possible to determine the participation of each Alaska community in each fishery.

³⁴ A portion of the bottomfish harvest is also processed within Alaska, mostly in the Aleutian Islands.

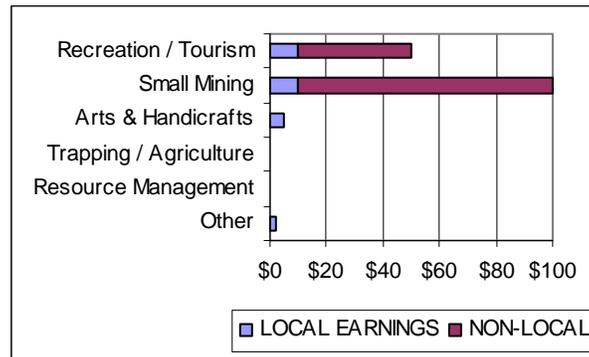
³⁵ Alaska Department of Labor, Nonresidents Working in Alaska 2004, 2006.

³⁶ Alaska Department of Revenue, Tax Division, Annual Report of Division Operations, 2005.

³⁷ The cash income associated with these activities is also likely to be underreported in the personal income estimates of the US Department of Commerce. This is due to reliance on federal income tax return information to compile information on income from self employment. Income from these sources may not be reported, or the recipients might not file a return.

industries, it is likely that a large share of the income associated with these activities accrues to nonresidents of the region, particularly in the mining and recreation sectors.

Figure 7. ECONOMIC VALUE OF SMALL-SCALE NATURAL-RESOURCE-BASED INDUSTRIES IN REMOTE RURAL ALASKA (MILLION \$): 2003



Source: Author calculations from various sources. See footnotes in text.

Recreation and tourism is dominated by sport fishing and hunting but also includes activities like wildlife viewing, bird watching, canoeing and kayaking, snow machining, and dog sledding (sometimes called non consumptive activities). Visitors from outside the region, excluding those on business-related trips, come from other parts of Alaska—whom we call recreational visitors—and from outside the state—whom we call tourists.³⁸

Because of the cost and remoteness (almost all access is by air), only a small share of tourists to Alaska include a trip to remote rural Alaska in their itinerary.³⁹ However, since the total number of tourists visiting the state is large, the number who visited remote rural Alaska could be in the range of 80 thousand.

Aggregate data on the number of Alaska residents that make recreational trips into the region are not available,⁴⁰ but certain destinations in remote rural Alaska are very

³⁸ The visitor industry includes business visitors as well as Alaskans from other parts of the state and non-resident tourists. The economic contribution of business visitors is captured in the spending of other industries. Here we try to quantify the cash that Alaskans and nonresidents bring into the region when they come to hunt, fish, and engage in other activities.

³⁹ The Alaska Visitor Industry Economic Impact Study of 1999, prepared for the State of Alaska Division of Tourism by the McDowell Group, reported that about 6 percent of nonresident visitors include Southwest Alaska in their trip. However the report does not indicate what share of time in Alaska was spent in Southwest or what the expenditures within the Southwest region were for those visitors. In addition, the Southwest region as defined in the McDowell study is not co-terminus with remote rural Alaska as defined in this study, so the 6 percent estimate must be taken as very preliminary. The most recent survey findings of fishing-, hunting-, and wildlife-associated recreation in Alaska prepared in 2001 by the U.S. Departments of Interior and Commerce, contain only statewide information on both residents and nonresidents.

⁴⁰ Much of the information on visitation numbers is site specific, for example, to a particular National Wildlife Refuge and does not differentiate between local residents and others.

attractive to Alaska resident sport fishermen, hunters, and others interested in outdoor activities.⁴¹

The average expenditure by each visitor who makes a trip to remote rural Alaska is large, although there is considerable variation across categories of visitor. A week at an exclusive fishing lodge or on a big-game-hunting trip could cost \$5 to \$10 thousand. A day trip from Anchorage for bear viewing could cost \$500. Many visitors on hunting or fishing trips use outfitters based outside the region.

In any event, a large part of these expenditures, although associated with trips to remote rural Alaska, do not occur within the region or otherwise have any link to the local economy.⁴² The modest local capture of visitor expenditures is exacerbated by the seasonality of visits, which peak during the summer when other activities like commercial fishing are also at their peak. This results in a need to bring in workers from outside the region to fill many of the jobs in the visitor industry.

Since data on the amount of visitor spending in the region, and the share that impacts the local economy is not known, it is necessary to estimate its magnitude to develop a complete picture of monetary flows in the region. The potential infusion of cash into the region from visitors' spending is substantial. If annual visitor were 100 thousand and the average expenditure while in the region were \$500, the total would be \$50 million. In fact, the amount that sticks in the local economy as wages to residents, profits to local businesses, and local tax revenues would be only a fraction of this amount—perhaps \$10 million.

Other **Mining** activity, apart from the world-scale Red Dog Mine, occurs throughout remote rural Alaska. The value of current production is in the range of \$20 million, dependent upon fluctuating world-market prices. There has been a dramatic increase in exploration activity in recent years, centered at the Donlin Creek and Pebble Mine prospects, so that total exploration and development activity in 2005 was estimated to be \$94 million, with employment of over 200.⁴³

⁴¹ For example, a survey of Alaska resident hunters found that, of those hunting in Southwestern Alaska, 69 percent were Southcentral Alaska residents and only 27 percent were Southwestern Alaska residents. D. McCullom and S. Miller, *Alaska Hunters: Their Hunting Trip Characteristics and Economics*, Alaska Department of Fish and Game, 1994.

⁴² Only 10 percent of the 300 businesses authorized to operate in the 3 National Parks in Southwestern Alaska are located within the region. Alaska Department of Community and Economic Development, Division of Community and Business Development, Western Alaska Economic Diversification Strategy, "Local Decisions About Local Economies," 2002.

⁴³ Alaska Department of Commerce, Community, Economic Development, *Alaska's Mineral Industry, 2005*. Information in this document is reported by mining regions which do not correspond to aggregations of census areas. For this study we have included the Northern, Western, Southwestern, and part of the Eastern Interior mining regions in remote rural Alaska. Excluding the Red Dog Mine, employment in metal mining reported by the Alaska Department of Labor was 35 in 2000. This excluded most exploration and development work.

The share of this mining activity accruing to the local economy is difficult to estimate, particularly exploration, since many of the companies are based in urban Alaska and operate in rural areas in camps or “enclaves” that have tenuous economic links to the region.⁴⁴

Arts and handicrafts production is widespread among Native households in remote rural Alaska. The Silver Hand program which identifies handicrafts as being produced by Alaska Natives has about 1,500 members statewide. Although some of these products are sold to retail establishments, most are sold informally and, consequently, the total value of sales must be estimated since it is not reported. Based on conversations with store personnel and rural economic development coordinators, the value of sales from all of rural Alaska may be about \$10 million, so the value from remote rural Alaska would be somewhat less than this amount.⁴⁵

The commercial value of **furs, timber, and agricultural products** (sales outside the region that bring new cash into the economy) is small, and data on its value are not readily available except for reindeer production. Statewide revenue from the sale of reindeer meat and by-products has ranged between \$200 and \$400 thousand annually during the last decade.⁴⁶ Income from the fur harvest within the region is probably less than \$1 million annually.⁴⁷

⁴⁴ The Donlin Creek gold mine prospect is located on lands owned by the Kuskokwim Corporation (TKC), a village corporation representing several Alaska Native communities. The subsurface rights are owned by the Calista Native Corporation. The Pebble copper-gold-molybdenum prospect is located on state land. The companies exploring these prospects are, of course, sensitive to the issue of local hire.

⁴⁵ Conversation with Lee Stoops, economic development director for the Northwest Arctic Borough, January 2005. Also, see McDowell Group, *Economics of Alaska's Arts Industry*, for the Alaska State Council on the Arts, 2002. This study demonstrated the difficulty in trying to determine the size and economic importance of this sector because of definitional problems and the fragmented nature of the industry. The study included a survey of rural Alaska Native artists that was used to estimate that 2,000 rural residents (Native and non Native) throughout the state earned 10 percent or more of their income from arts-related employment. One fourth of those individuals reported their primary income was from art in some form.

⁴⁶ Alaska Field Office, National Agricultural Statistics Service, U.S. Department of Agriculture, Alaska Agricultural Statistics, annual.

⁴⁷ Calista Professional Services, The Yukon-Kuskokwim Fur Industry Plan, 1984, p 20. This was the estimated harvest value in the late 1980s. The commercial value of the harvest in recent years has declined primarily due to lower prices, as reported in Ryan Scott and Jackie Kephart, *Statewide Annual Report, Trapper Questionnaire*, Alaska Department of Fish and Game, 2002. Also, see Robert J. Wolfe, *Trapping in Alaska Communities with Mixed Subsistence-Cash Economies*, Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 217, 1991, which reported 75 thousand fur pelts exported in 1990 from all of Alaska. The harvest was considerably greater since not all furs harvested are sold commercially. The export value of these furs was between \$3 and \$4 million. See David B. Anderson, *Trapping in Alaska and the European Economic Community Import Ban on Furs Taken With Leghold Traps*, Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 223, 1993. The actual number of commercial trappers is much smaller than the number of licenses as most are part of combination licenses that include hunting and fishing.

Resource management of the public-owned natural resources within the region is an important function of the federal, state, and local governments. The region contains 12 of the 16 Alaska National Wildlife Refuges; 9 of the 13 Alaska National Parks, Monuments, and Reserves; numerous National Wild and Scenic Rivers; and 2 components of the Alaska state park system.⁴⁸ The number of local residents employed in the management of these lands is not known, but limited information suggests that the share of resident Alaska Natives employed in these positions is small.⁴⁹ The local importance of resource-management jobs is included below in the compilation of federal and state funds flowing into the region.

Other private-sector economic activities bringing new money into the region have not been explicitly identified but include “footloose industries” and small-scale manufacturing or cottage industries. Footloose industries are activities that could take place anywhere because it is not necessary for them to be near the market they serve or the resource inputs they require. These industries locate where the employees prefer to live. Software development is an example of such an industry. Small-scale manufacturing includes such things as specialty foods and personal-care products.

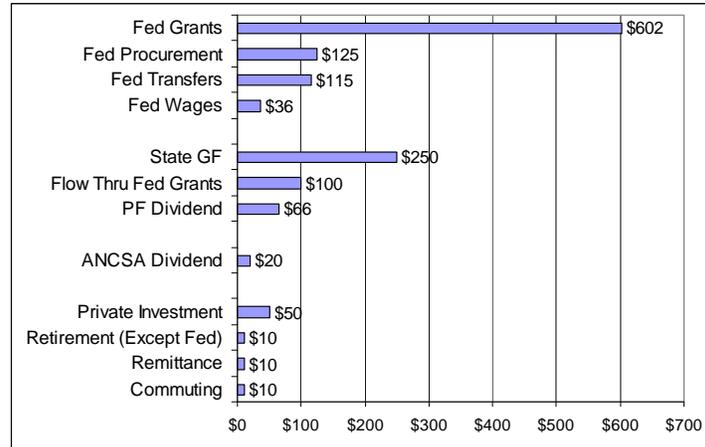
The largest source of cash that flows into remote rural Alaska comes from the federal government.

In 2003 an estimate of the total amount of cash flowing into remote rural Alaska from all economic activities, excluding natural-resource-related activities already discussed, was nearly \$1.4 billion (Figure 8). This is cash that went to individuals and households, businesses, nonprofits, and governments and roughly represents, with the cash from natural-resource production, the economic base for the region.

Figure 8. OTHER ESTIMATED CASH FLOWS INTO THE REMOTE RURAL ECONOMY (MILLION \$): 2003

⁴⁸ U.S. Department of Interior, Geological Survey, Alaska National Interest Lands Conservation Act, December 2, 1980, PL.96-487 MAP, Denver Colorado.

⁴⁹ William McDairmid, et al., *Expanding Job Opportunities for Alaska Natives*, for Alaska Federation of Natives, Institute of Social and Economic Research, 1998. Also, see Scott Goldsmith, Alexandra Hill, and Teresa Hull, *Economic Assessment of Bristol Bay Area National Wildlife Refuges*, for U.S. Fish and Wildlife Service, Institute of Social and Economic Research, 1998.



Source: Author calculations.

The largest flows were from the federal government which totaled \$878 million in 2003 (Table 4). They consisting of grants, payments to individuals, procurement payments of federal agencies, and wages paid to federal employees.⁵⁰

Federal grants were \$602 million, or about 70 percent of total federal flows. They consisted of grants to local governments, nonprofits, and tribal entities for health care, education, housing, transportation, economic development, and other activities (Table 4). Operating grants provide the base funding for many of the largest employers in the region and primary support for many others—such as the Yukon-Kuskokwim Health Corporation, Maniilaq, and AVCP Housing Authority.⁵¹ Capital construction grants⁵² pay for new and upgraded facilities for health care, transportation, and other services.

A large share of the regional service-sector jobs are funded by federal grants. As is the case with resource production, many of these jobs supported by federal spending—both in operations and construction—are taken by non local residents.

Federal agencies located in the region reported purchases from businesses (**procurement**) of \$125 million. Although no breakdown is available showing the types of purchases included in this category, it is likely that much of it was actually purchased outside the region due to the limited number of local businesses.

Payments directly to individuals were \$115 million. One portion of these payments was retirement and disability payments like veteran pensions, social security, and Medicare. The other category of payments to individuals was food stamps and other assistance programs.

⁵⁰ Consolidated Federal Funds Report, U.S. Department of Commerce. On a per-capita basis this was \$14,456 compared to the state average of \$12,244. The composition of funds is different from the state average in that a much larger share of the total in remote rural Alaska consists of grants while wages is a much smaller share of the total.

⁵¹ Compacting shifted many jobs from government to the private sector in the late 1990s. This gave more autonomy and control to rural Alaskans over services such as mental health and health care.

⁵² Loans and insurance are excluded from this total.

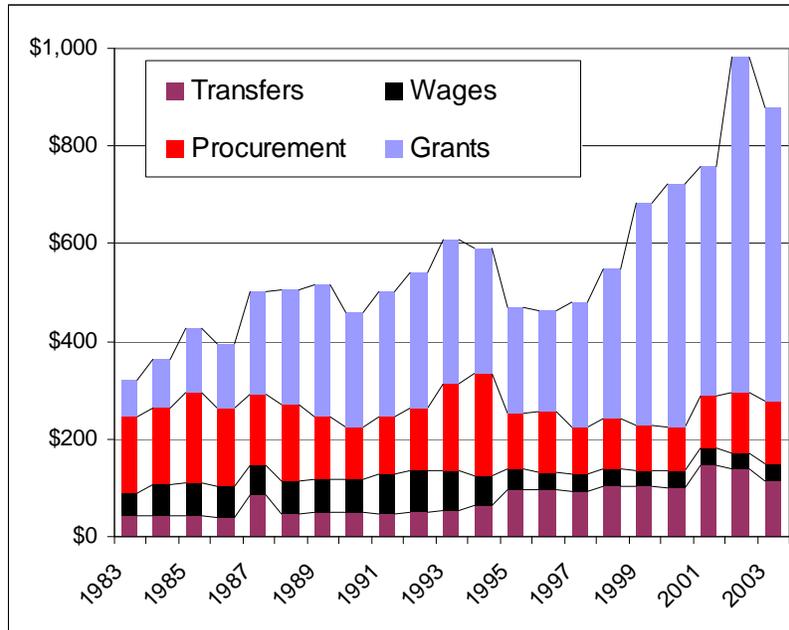
Wages of federal employees were \$36 million, divided about evenly between the U.S. Postal Service and all other military and civilian wages.

Table 4. FEDERAL GRANTS FLOWING DIRECTLY TO REMOTE RURAL ALASKA IN 2003 (million \$)	
Department and Program	Amount
TOTAL	\$602
HEALTH AND SOCIAL SERVICES	\$387
Medicare and Medicaid	\$189
Indian Health Service	\$150
TANF (temporary assistance for needy families)	\$13
CHIP (state children's assistance program)	\$9
Community Health Centers	\$7
Head Start	\$6
Other	\$13
EDUCATION	\$96
Impact Aid	\$63
Alaska Native Education	\$9
Title 1 Grants	\$6
Other	\$18
HOUSING AND URBAN DEVELOPMENT	\$46
Indian Housing Block Grants	\$42
Indian Community Development Block Grant	\$4
Other	-
TRANSPORTATION	\$35
Highway Planning and Construction	\$24
Airport Improvement Program	\$10
Other	\$1
AGRICULTURE	\$12
National School Lunch Program	\$6
Other	\$6
ENVIRONMENTAL PROTECTION AGENCY	\$7
Indian Environmental General Assistance	\$7
COMMERCE	\$7
Economic Adjustment Assistance	\$5
Other	\$2
ALL OTHER DEPARTMENTS AND AGENCIES	\$11
Source: Consolidated Federal Funds, U.S. Department of Commerce. Excludes grants that flow through state government.	

Growth in federal flows has been the dominant factor in the regional economy in recent years.

Federal spending has been a driver for the whole Alaska economy in recent years and remote rural Alaska is no exception. Between 1998 and 2002 the flow of federal funds into remote rural Alaska doubled. A tripling of the level of grants accounted for all of that increase.⁵³

Figure 9. FLOW OF FEDERAL FUNDS TO REMOTE RURAL ALASKA (MILLION 2003 \$)



Source: Consolidated Federal Funds Report.

State Government spending, particularly for education, is an important source of jobs and income for the region.

The state general fund budget, funded mostly from oil revenues, was \$2,473 million in 2003. The share that went to remote rural Alaska can only be estimated. Some spending, like primary and secondary education, tends to be concentrated in remote rural Alaska both because of the large number of school-aged children there and the higher cost of service delivery. Spending on other programs, like running the legislature and the various government departments, largely bypasses remote rural Alaska. Without a detailed analysis of spending by program,⁵⁴ we can only estimate that the share of spending that

⁵³ Alaska Department of Labor, “The Federal Government in Alaska,” *Alaska Economic Trends*, February 2002, p 3.

⁵⁴ The Alaska Department of Commerce, Community, and Economic Development, Division of Community Advocacy, maintains a database accessible on the Web that contains not only economic and demographic information by community but also state and federally funded capital projects, grants, and revenue sharing. The Web site is www.commerce.state.ak.us/dca/commdb. However, it does not allow one to calculate actual spending from the state general fund in any year. The State of Alaska Office of

goes to remote rural Alaska is equal to the share of state population within the region. On that basis, in 2003 state general fund spending in the region was about \$250 million.⁵⁵

In addition to spending out of the general fund⁵⁶, some of the money the state government receives from the federal government each year is passed through to local governments, nonprofits, and individuals.⁵⁷ We estimate that such flow-through spending of federal funds to remote rural Alaska was about \$100 million in 2003.⁵⁸ This included unemployment insurance, funds for highway, airport, and water and wastewater construction, and a variety of smaller operating and capital grants and transfers.⁵⁹

The Permanent Fund Dividend provides a floor to household income.

The Permanent Fund Dividend was \$1,108 in 2003, resulting in an infusion of \$66 million in cash into the region. The Dividend has the attractive feature that it goes in equal measure to each person and provides a floor on the cash income of every household. It directly accounted for 4 percent of the personal income in remote rural Alaska in that year.

Cash from other sources is modest.

Management and Budget generates reports that show capital expenditures by Election District. Their Web site is www.gov.state.ak.us/omb/. Remote rural Alaska consists of most of Election Districts 6, 36, 37, 38, 39, and 40.

⁵⁵ Two important programs of state government were recently eliminated from the budget. The Longevity Bonus program, an annual cash payment of up to \$3,000 to most residents over the age of 65, was eliminated with the FY 2004 budget. A temporary program for low-income seniors replaced it, but the cash flowing to rural Alaska fell marginally as a result of that change. Revenue Sharing and Municipal Assistance, programs that provided local governments with revenues to support basic local services, were also eliminated at that time. Since many small remote rural communities have a very limited tax base, the loss of these revenues has been particularly hard on local governments.

⁵⁶ We exclude any state spending that is not financed either by the general fund or federal funds from this analysis.

⁵⁷ These federal funds are reported by the Consolidated Federal Funds Report as being spent in Juneau, the state capital. They are in addition to the federal funds reported as being spent in the census areas of remote rural Alaska.

⁵⁸ The Fiscal Summary from Legislative Finance Division, 4/23/03, reported \$2.438 billion of federal funds authorized for spending in FY 2003. Not all of that was actually appropriated and spent. Large components of actual spending were for programs such as Medicaid and Medicare which are allocated to each Census Area in the Consolidated Federal Funds Report (CFFR) information on grants. We estimate \$1,062 million to be the amount not reflected in the CFFR. This appears in the CFFR as unallocated, or as an extraordinary allocation to Juneau, the state capital. We estimate that remote rural Alaska receives the same per-capita share of this total as the rest of the state.

⁵⁹ A more detailed analysis would identify and distinguish all the external sources of revenue for all the different economic enterprises operating in remote rural Alaska. These entities would include local governments, school districts, utilities, and the various nonprofit organizations.

ANCSA regional and village corporation dividends provide another source of cash income that goes directly to individuals and households.⁶⁰ Although some corporations have paid very large dividends in some years, the average, particularly for the corporations with shareholders in remote rural Alaska (with the exception of the Arctic Slope Regional Corporation and the village corporations within its region), have been modest.⁶¹ The historical average has been about \$20 million per year.

Investment income, flowing both to households and business enterprises (including nonprofits) was about \$50 million. This included dividends, interest, and rental payments.⁶²

State and local government **retirement payments**, as well as private pensions, bring some cash into the region as well. In the absence of data on the amount of such payments, I estimate a value of \$10 million to this category of cash flow.⁶³

Remittances, cash sent to family, relatives, and friends from people living outside the region, is an additional unquantifiable source of cash coming into the region. I arbitrarily assume this amounted to \$10 million in 2003.

Finally, **commuters or itinerant workers**—individuals who leave the region to work, either on a daily basis or for longer intervals—bring wages back when they return home. These workers are most likely to be employed in construction, fire suppression activities of both the federal and state governments, and other heavy industries.⁶⁴ Data to quantify

⁶⁰ Remote rural Alaska contains the following ANCSA regional corporations: Arctic Slope, Nana, Doyon, Bering Straits, Calista, and Bristol Bay.

⁶¹ The Association of ANCSA Regional Corporation Presidents/CEOs reported that the 6 regional corporations in this part of the state paid dividends of \$21 million in 2001 to shareholders throughout Alaska and beyond. About half of this total went to shareholders of Arctic Slope regional corporation.

⁶² The personal income accounts of the Bureau of Economic Analysis reported \$143 million in dividend, interest, and rental payments in Remote Rural Alaska in 2002. Using the national proportions of these categories, we estimate \$43 million was imputed. This is the share which did not represent a flow of cash to households. For example, one component of personal income is the imputed rental value of owner-occupied housing. Of the remaining \$100 million, we estimate that 50 percent accrued in retirement and pension accounts that was not paid out to individuals. That left \$50 million distributed to individuals as cash.

⁶³ Public and private retirement and pension payments appear in the personal income accounts of the U.S. Department of Commerce Bureau of Economic Analysis during the working life of employees when they are contributing to their accounts. They do not appear in the personal income accounts after those individuals reach retirement age and begin to draw on those retirement accounts and pensions. Thus, there is no straightforward method for determining the amount of cash that flows into the region from retirement and pension checks each month. Federal retirement payments, however, are included in the CFFR data for each region as a part of payments to individuals. State and local retirement payments are available from the State of Alaska Department of Administration, but there is no source for private retirement payments. The U.S. Census of Population contains household income by type, but the categories are too aggregated to be useful in identifying private pension income.

⁶⁴ Local workers in construction (mostly funded by government grants), mining (mostly exploration), and other heavy industries may have their jobs and payroll reported in urban areas where the firms they work for are located. Since most capital spending in remote rural Alaska is funded by federal and state grants, the

the income of itinerant workers are not available. Because the amount is nowhere quantified, it is likely that it is modest. Until better information becomes available we fill in this component of the flow of cash into the region by assuming commuter payroll amounted to \$10 million in 2003.

The scope of illegal activities is impossible to estimate.

Although a description of the rural economy would, like any other, be incomplete without mention of illegal activities⁶⁵, the scope of such activities has not been studied or estimated.⁶⁶ Illegal activities that bring cash into the region would include the illegal sale of animal parts, subsistence-caught fish sold into the commercial market, and illegal guiding. In the aggregate these activities are modest in their contribution to regional income. Bootlegging and the illegal sale of drugs such as marijuana do not bring new money into the region but rather compete with other goods and services for the limited supplies of available cash.

Personal income data confirms that only a small share of the cash generated within and flowing into remote rural Alaska “sticks” in the local economy.

Remote rural Alaska personal income in 2002 was \$1.452 billion (Table 5). It was only a small fraction of the total value of natural-resource production from the region and was about equal to the cash flowing into the region from all sources, excluding natural-resource production (Figure 8).

Table 5. PERSONAL INCOME IN REMOTE RURAL ALASKA (MILLION \$): 2002	
Earnings by Place of Work	\$1,654
Minus: Social Security Contributions	-\$172
Minus: Residence Adjustment	-\$585
Net Payroll (earnings by place of residence)	\$897
Government	\$448
Private	\$449
Plus: Dividends, Interest, Rent	\$143
Plus: Government Transfers	\$412

local payroll from this activity is already included in the accounting of those grants. Including it here would amount to double counting. The same is true for mining.

⁶⁵ Non reported income (not reported on personal income tax returns) from legal self employment activities is not included in this category.

⁶⁶ Matthew Berman identified the sale of products from the harvesting of marine mammals as part of a “second economy,” which is a sector where the activity is conducted for private gain and it knowingly contravenes the intent, but not necessarily the letter of the law. The Marine Mammal Protection Act prohibits the sale of the products of all marine mammals. He estimated the value of the sales of walrus ivory, baleen, and polar bear pelts at \$7 million. Matthew Berman, “Income from Fishing, Hunting, and Trapping in Rural Alaska,” ISER Working Paper 86.10, Institute of Social and Economic Research, 1986.

Equals: Personal Income	\$1,452
Source: U.S. Department of Commerce, Bureau of Economic Analysis, and author's calculation.	

Workers in the region earned \$1.654 billion (before netting out deductions from wages for social security). However, a large share—39 percent or \$585 million—leaked out (the residence adjustment) mostly due to nonresident private sector workers who held 53 percent of the private-sector jobs and collected 66 percent of the private payroll (Table 6).⁶⁷

Table 6. RESIDENCE OF WORKERS AND DISPOSITION OF PAYROLL IN REMOTE RURAL ALASKA: 2004				
	Amount	Shares		
		Local Resident	Other Alaska	Nonresident
Workers				
Local Govt.	924	69%	25%	7%
State Govt.	15,140	86%	7%	8%
Private	26,691	47%	31%	22%
Payroll (million \$)				
Local Govt.	\$45.3	77%	21%	3%
State Govt.	\$288.8	87%	7%	6%
Private	\$921.1	34%	44%	23%
Source: Alaska Department of Labor				

Resident workers took home only \$897 million,⁶⁸ roughly divided between public and private (including nonprofit) payrolls.⁶⁹ These earnings together accounted for about 62 percent of total personal income⁷⁰ (Table 7).

Table 7. REMOTE RURAL ALASKA PERSONAL INCOME SHARES: 2002			
	Remote Rural Alaska	Remote Rural Net of NSB	Anchorage

⁶⁷ The information in Table 6 is compiled from census area data. Consequently, local resident is narrowly defined to be in the census area. Some “other Alaska” might be regional residents as well.

⁶⁸ Earnings by place of work in remote rural Alaska, on a per capita basis, was 85 percent as high as Anchorage. This underscores the fact that the total payroll in the region is substantial and the fact that a large share of it does not benefit local residents.

⁶⁹ This analysis makes the simplifying assumption that all the residence adjustment is attributable to private-sector workers.

⁷⁰ Excluding the North Slope Borough, which has a large public sector funded by local petroleum taxes, the share is only slightly less.

Earnings Total	62%	59%	71%
Public Payroll	31%	29%	Na
Private Payroll	31%	30%	Na
Government Transfers	28%	32%	14%
Dividends, Interest, Rent	10%	9%	15%
Source: U.S. Department of Commerce, Bureau of Economic Analysis, and author's calculation. Earnings are net of worker and employer payments into social security as well as payments to into public employee retirement accounts.			

Government transfers accounted for 28 percent of personal income, \$412 million.⁷¹ A portion of transfers is “means tested,” but transfers also include categories that are not.

The largest share (Table 8) was Medicaid and Medicare payments paid to health-care vendors on behalf of residents.⁷² This portion of transfers represents the value of services provided to individuals from these programs but not a cash payment to individuals.

The second largest category is Other Transfers, consisting mostly of the Permanent Fund Dividend. Income-maintenance transfers—consisting primarily of food stamps, temporary assistance for needy families, and supplementary Social Security payments—accounted for 15 percent of government transfers, \$62 million. Retirement payments consisted mostly of Social Security payments. Unemployment Insurance payments were 5 percent of the total. The remainder consisted mostly of payments that actually went to businesses and nonprofits rather than to individuals.

⁷¹ Although government transfers were twice as important as a share of personal income in remote rural Alaska compared to urban areas, because per-capita personal income in remote rural Alaska is less, the difference is not as pronounced as the percentages would suggest. Per-capita government transfers in remote rural Alaska were \$6,830, 21 percent above the \$5,623 figure for Anchorage.

⁷² Medicaid is means tested. Medicare provides coverage to the senior population. The Indian Health Service budget does not appear in the personal income accounts.

Table 8. COMPOSITION OF GOVERNMENT TRANSFERS IN PERSONAL INCOME; 2002			
	Remote Rural		Anchorage
	(Million \$)	Share	Share
TOTAL	\$412.0	100%	100%
Medical (Medicaid and Medicare)	\$180.9	44%	33%
Other (Including the Permanent Fund Dividend)	\$94.0	23%	29%
Income Maintenance	\$62.3	15%	9%
Retirement	\$36.8	9%	17%
Unemployment	\$22.1	5%	4%
Nonprofits/business	\$11.3	3%	4%
Veterans	\$4.2	1%	4%
Education	\$0.3	0%	1%
Source: U.S. Department of Commerce, Bureau of Economic Analysis			

Medical payments and income maintenance account for a larger share of government transfers in remote rural Alaska than in urban areas like Anchorage.

The category of dividends, interest, and rent was \$143 million. However, we have already estimated that only about \$50 million of this total was actually cash payments to households.⁷³

Most of the cash income of residents can be traced to government spending.

Together the government payroll and government transfers directly accounted for about 59 percent of resident personal income (Table 5.). To get the total contribution of government to personal income in the region, we need to also include that portion of the private payroll associated with nonprofit firms that are themselves supported by government grants and contracts.

Of total federal grants flowing into the region in 2003, \$433 million—or 72 percent—were for health, social services, and housing. Most of this money went to support the operations of the large Native health care and housing authority nonprofits operating in the region. The payrolls of these organizations should be included with government payrolls and transfers to get the total share of personal income that comes from government spending. Since payroll accounts for about 42 percent of the expenditures of the charitable nonprofit sector on operations,⁷⁴ a rough estimate of the private-sector payroll directly supported by these federal grants would be \$182 million, or 40 percent.

⁷³ The remainder was imputed income as well as income that did not accrue to households.

⁷⁴ Scott Goldsmith, *The Foraker Group Report on the Alaska Nonprofit Sector*, Institute of Social and Economic Research, 2006.

Combining the cash income from government employment, transfers, and private sector jobs directly financed by government grants yields a total of the 72 percent of personal income directly flowing from government spending.

Cash from outside that does stick in the local economy has a very small “bang per buck” (economic multiplier)—it generates very little additional economic benefit (income and employment) within the region.

The regional economic multiplier is measured by the small amount of cash captured within the local economy that circulates within the economy before it leaks out again. The cash that originates outside the region includes not only the government spending but also a portion of the rest of private earnings and dividends, interest, and rent. Together these three sources of cash account for roughly 90 percent of total measured regional personal income. That leaves about 10 percent, or about \$145 million, that can be attributable to local businesses providing goods and services to other local businesses and households.

The small size of most places in remote rural Alaska means that most cash purchases by local businesses and households must come from outside the community and region. Local markets, measured by purchasing power, are smaller than the necessary threshold size for all but a few types of businesses. In the hierarchy of trade centers, most remote rural communities are at the bottom. This means that each new dollar that is captured in the region has a very modest “multiplier” effect on job creation to provide goods and services to local businesses and households.⁷⁵

Of the limited number of locally supported jobs, most are in trade (like general stores) and in infrastructure (like air transport). The ratio of jobs in trade, compared with total personal income, declines as one moves from urban to rural parts of the state, a reflection of this reality (Figure 10).⁷⁶ In Anchorage one finds 3.4 trade jobs for each \$1 million of household income. In the remote rural region census areas that have regional centers, there are 1.9 trade jobs per \$1 million of personal income. But in those without a regional center, there are only 0.6 trade jobs for every \$1 million of personal income.

Local government spending is also a component of the multiplier, to the extent it is supported by locally generated taxes and other revenues. However locally generated taxes are modest.⁷⁷

Another way to characterize the small multiplier in remote rural Alaska is to calculate the cash flowing into the economy required to generate \$1 of local support sector wages.

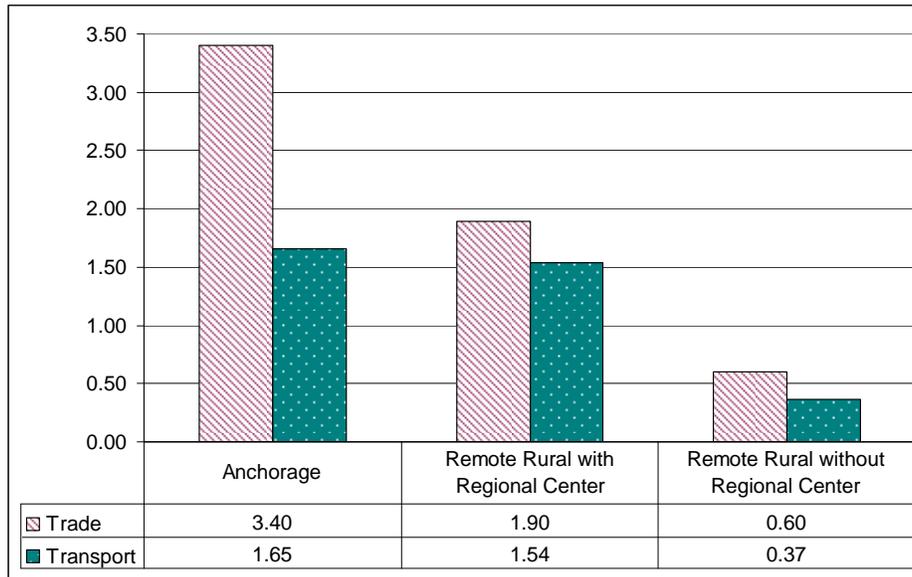
⁷⁵ For example, an early study of the St. Paul economy estimated that of total household income in the community of \$760 thousand, only \$30 thousand was the result of earnings within the community that came from recirculation of the \$730 thousand that originated outside the region. See Don Foote, Victor Fischer, and George Rogers, *St. Paul Community Study*, Institute of Social, Economic, and Government Research, 1968.

⁷⁶ This is equivalent to saying that the economic multiplier in remote rural Alaska is small.

⁷⁷ Alaska Department of Community and Economic Development, *Alaska Taxable*, annual.

This has been estimated to be between \$15 and \$20 for some rural parts of Alaska, but less than \$5 for urban areas.⁷⁸

**Figure 10. SUPPORT JOB CREATION BY SIZE OF PLACE:
JOBS PER MILLION \$ OF PERSONAL INCOME**



Source: Author calculations.

More than half of all wage employment was in government and services.

According to official estimates, the region supported 34,850 cash-paying jobs in 2000. Most, 81 percent, were wage and salary employment. Self-employment accounted for the rest, except for a small number of active duty military (Figure 11).⁷⁹

The estimate of wage and salary employment is a calculation of the annual average, based on monthly records of employers located in the region. Because of seasonality of many of the economic sectors, the number of people working in the summer is more than this while in the winter it is less. Employment peaks in the summer in commercial fishing, mining, recreation and tourism, oil and gas, and construction. Education is the only industry in which employment peaks in the winter. Partly as a result of this, a person who is fully employed during the year could work at two or more seasonal jobs.

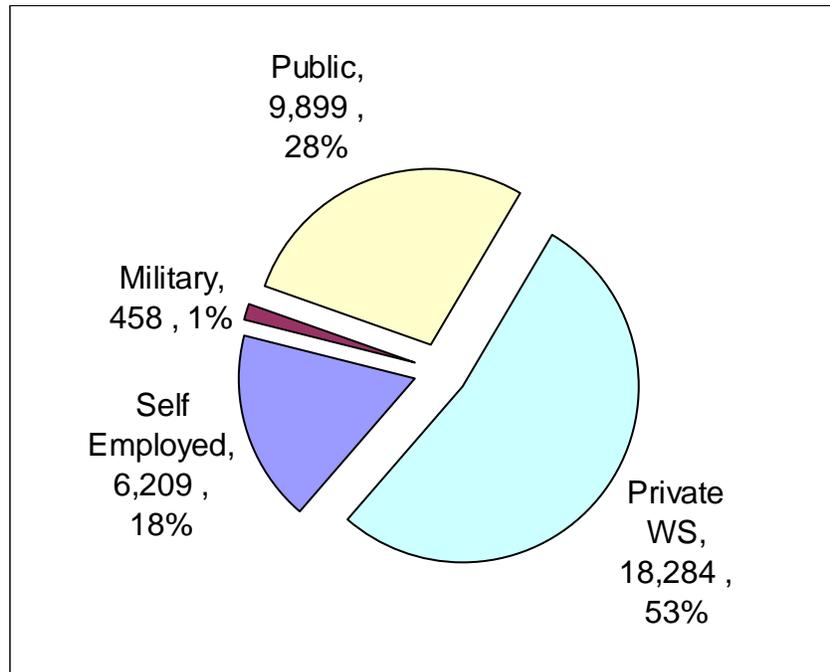
The estimate of self-employment, on the other hand, is a count of persons who are working for themselves, independent of the amount of time spent on the job. A large share consists of commercial fishermen who typically do not spend the entire year fishing. Consequently the self-employment figures overestimate the annual average

⁷⁸ G. Williamson McDairmid et. al., *Expanding Job Opportunities for Alaska Natives*, Institute of Social and Economic Research, for Alaska Federation of Natives, 1998.

⁷⁹ These percentages exclude the North Slope Borough where nonresident oil patch jobs distort the picture of local employment.

number of people working for themselves and so cannot be directly compared to wage and salary employment. On the other hand, the self-employed count is largely based on where people live rather than where they work. Since many of the self-employed who work in the commercial fishing and recreational sectors are not local residents, the self-employment numbers in this regard underestimate the number of people actually engaged in self-employment activities in the region.

Figure 11. JOBS IN REMOTE RURAL ALASKA: 2000



Source: Alaska Department of Labor and U.S. Department of Commerce, Bureau of Economic Analysis.

Public-sector employment is dominated by local government—86 percent—followed by state government—9 percent. Some of the largest employers in the region include the school districts and borough governments (Table 9). Their employees are located throughout their respective regions, but tend to be concentrated in the regional centers.

Table 9. EXAMPLES OF LARGE PUBLIC AND NONPROFIT ENTERPRISES IN REMOTE RURAL ALASKA (2005)	
	EMPLOYMENT
Public Sector	
Northwest Arctic Borough School District	1,173
Lower Kuskokwim School District	1,062
North Slope Borough	718
Lower Yukon School District	581
Bering Strait School District	556
Nonprofits	
Yukon Kuskokwim Health Corporation	1,372

Maniilag	557
Norton Sound Health Corporation	458
Bristol Bay Area Health Corporation	347
Source: Alaska Department of Labor and <i>Foraker Group Report on the Alaska Nonprofit Economy</i> , ISER.	

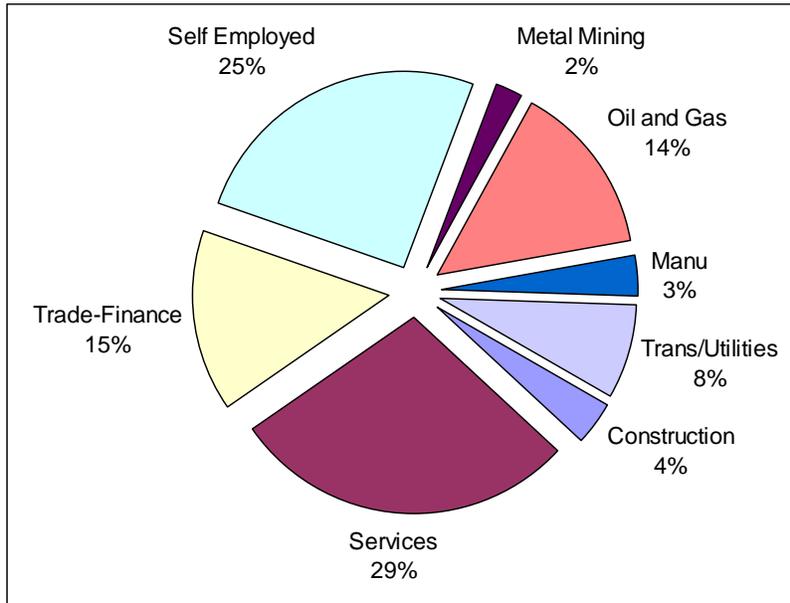
Somewhat less than half of the private-sector jobs (Figure 12) are in the resource-extraction industries of oil and gas, mining, and fish processing and harvesting (mostly self-employed). The largest share of jobs in sectors selling to local businesses and households in the region is services, followed by trade, transportation, utilities, and finance. The service sector includes many of the largest employers in the region providing health care and social services to the resident Alaska Native population. These tend to be concentrated in the regional centers as well (Table 9.).

Employment in construction is underreported. Some jobs counted in the government and real estate sectors are “force account” construction jobs administered by local governments or regional Native corporations.⁸⁰ Also, an unknown number of construction jobs are counted in urban locations, outside of remote rural Alaska, because even though local workers fill these jobs, the private contractors, headquartered in urban areas, report their employment from outside the region.⁸¹

⁸⁰ Force accounting is when local government hires construction workers from the community and directly oversees the project. See “The Wade Hampton Census Area,” in *Alaska Economic Trends*, Alaska Department of Labor, October 2000, page 3. Force accounting construction employment has increased with the size of rural construction budgets. A study in the early 1980s estimated that 85 percent of the value of rural construction projects and half of the employment opportunities went to nonlocal residents. See Richard Rainery, “Distribution of Economic Benefits of Rural Capital Construction Funding,” Rural Development Council, Alaska Department of Community and Regional Affairs, 1982.

⁸¹ Alaska Department of Labor, op. cit.

**Figure 12. COMPOSITION OF PRIVATE-SECTOR JOBS
IN REMOTE RURAL ALASKA: 2000**

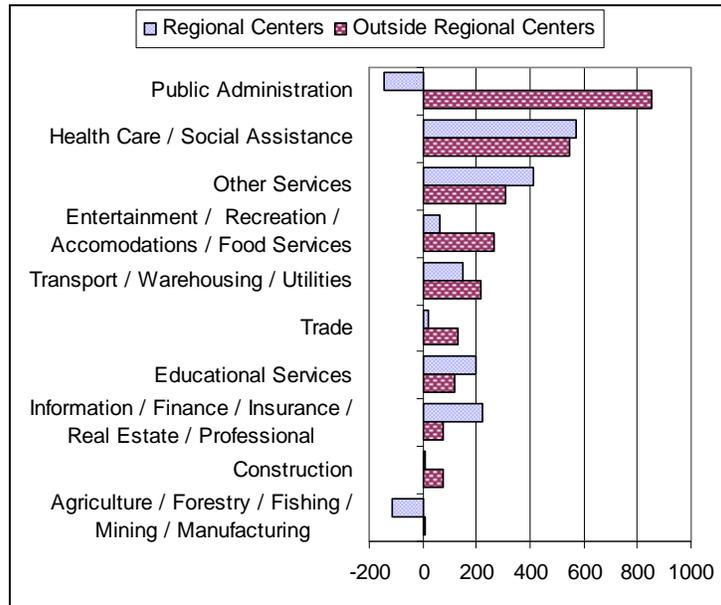


Source: Alaska Department of Labor and U.S. Department of Commerce, Bureau of Economic Analysis.

Recent job growth has been strong, particularly in services and public administration.

Job growth was strong in the decade between 1990 and 2000, judging by the increase in the number of resident workers during that time. Growth has been largely driven by the increase in federal dollars flowing into Alaska, some of which has gone into remote rural Alaska. In the regional centers job growth has been dominated by health care with education, transport and utilities, and finance also contributing (Figure 13). In the smaller communities, growth has been dominated by jobs in public administration with health care adding about the same number of jobs as in the regional centers. Other services, accommodations, and transportation were also strong contributors to job growth.

Figure 13. GROWTH IN NUMBER OF REMOTE RURAL RESIDENT WORKERS: 1990 TO 2000



Source: U.S. Dept of Commerce, Census of Population.

Most resident workers are Alaska Natives, particularly in the smaller communities, and the Native share increased between 1990 and 2000.

Of the 20,452 residents who were employed during 2000,⁸² 59 percent lived in the smaller communities outside the regional centers. Two-thirds—or 66 percent—of workers were Alaska Native (Table 10). Non-Native workers were more prevalent in the regional centers where they were in a slight majority at 52 percent.

Table 10. WORKERS IN REMOTE RURAL ALASKA: 2000

	TOTAL	ALASKA NATIVE*	NON-NATIVE	ALASKA NATIVE SHARE
TOTAL	20,452	13,534	6,918	66.2%
Regional Centers	8,366	4,026	4,340	48.1%
Smaller Places	12,086	9,508	2,578	78.7%

Source: U.S. Census of Population
 * Alaska Native alone or in combination with another race.

Between 1990 and 2000, the number of resident workers increased 20 percent in the regional centers and 27 percent in the outlying communities (Table 11). In the regional centers, the number of Native workers increased 31 percent compared to 11 percent for non-Natives. In the smaller communities, Native workers increased 48 percent while non-Native workers declined by 15 percent. As a consequence, in 2000 Natives comprised

⁸² Employment from the 2000 Census actually refers to the previous year, 1999.

48 percent of the resident work force in the regional centers and 79 percent in the smaller communities.

The increase in the number of non-Native workers in the regional centers has been primarily in health care and educational services fields.

Table 11. CHANGE IN NUMBER OF RESIDENT WORKERS IN REMOTE RURAL ALASKA: 1990-2000						
	CHANGE			PERCENT CHANGE		
	Total	Native*	Non-Native	Total	Native	Non-Native
TOTAL	3,976	4,021	-45	24.1%	42.3%	-0.6%
Regional Centers	1,380	952	428	19.8%	31.0%	10.9%
Smaller Places	2,596	3,069	-473	27.4%	47.7%	-15.5%

Source: U.S. Census of Population
 * Alaska Native alone or in combination with another race in 2000. Alaska Native in 1990.

The measured labor force participation rate is low in remote rural Alaska.

The share of the adult population in the labor force (either employed or actively looking for work) is smaller in remote rural Alaska than in urban areas, but in the regional centers the difference is modest (Table 12.). In smaller places, subsistence is more prevalent and employment opportunities are more limited. The lower rates are entirely due to the lower participation rate for Alaska Natives since the non-Native population has a higher labor force participation rate in remote rural Alaska than in urban areas. The rates for men and women are almost the same, in contrast to urban Alaska where the share of men in the labor force exceeds that of women.

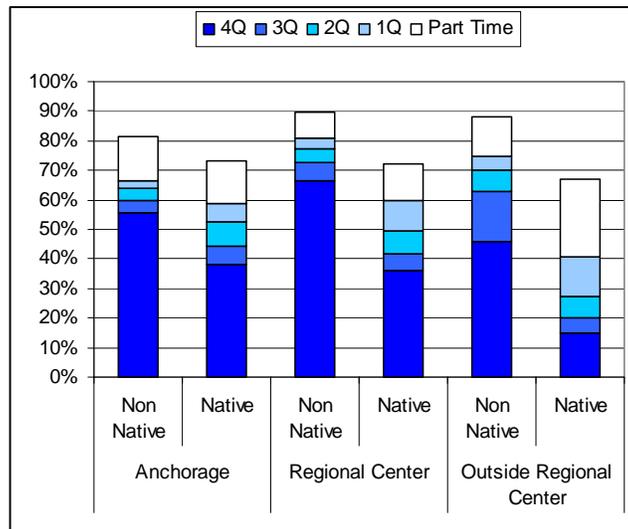
Table 12. CIVILIAN LABOR FORCE PARTICIPATION RATES IN REMOTE RURAL ALASKA:2000						
	TOTAL		ALASKA NATIVE		NON NATIVE	
	Male	Female	Male	Female	Male	Female
REMOTE RURAL	64%	62%	57%	57%	85%	81%
Regional Centers	73%	70%	63%	62%	87%	83%
Smaller Places	59%	57%	55%	55%	83%	78%
ANCHORAGE	79%	68%	68%	61%	80%	69%

Source: U.S. Census of Population.
 Labor force is calculated for the reference week during the first quarter of the year.
 * Alaska Native alone or in combination with another race.

Seasonal and part-time work are important elements of the labor market.

In contrast to urban Alaska where the majority of resident workers are employed year-round, many remote rural Alaskans are employed during only one or two-quarters of the year or in part-time jobs (Figure 14). This pattern is particularly prevalent outside the regional centers, and particularly among Alaska Natives for whom the majority of full-time work lasts for only a part of the year.

Figure 14. QUARTERS WORKED BY ADULTS IN 1999: DISTRIBUTION BY PLACE AND RACE



Source: U.S. Census of Population.

Note: Bars exclude share of adults not working in cash economy during the year.

The seasonal swings in employment over the course of the year are a partial explanation of this pattern of part-year and part-time employment. A dramatic example of these seasonal swings in employment is the increase associated with commercial fishing and recreation in Southwestern Alaska. In 2004 employment grew from 3,640 in the winter to a peak of 16,631 in the summer—a seasonal increase of 12,991. Given that the total resident population was about 7,600, it is obvious that a large share of the jobs in the summer, 10,890, were filled by non local residents. For many residents these seasonal jobs may be preferred or the only jobs they are qualified to fill.⁸³

The measured unemployment rate is high.

The official unemployment rate in remote rural Alaska, about 16 percent in 2003, is considerably higher than in urban Alaska (Figure 15).⁸⁴ However, because it excludes people willing to work but not actively looking for employment, it tends to underestimate the true unemployment situation. This is particularly the case in the smaller communities

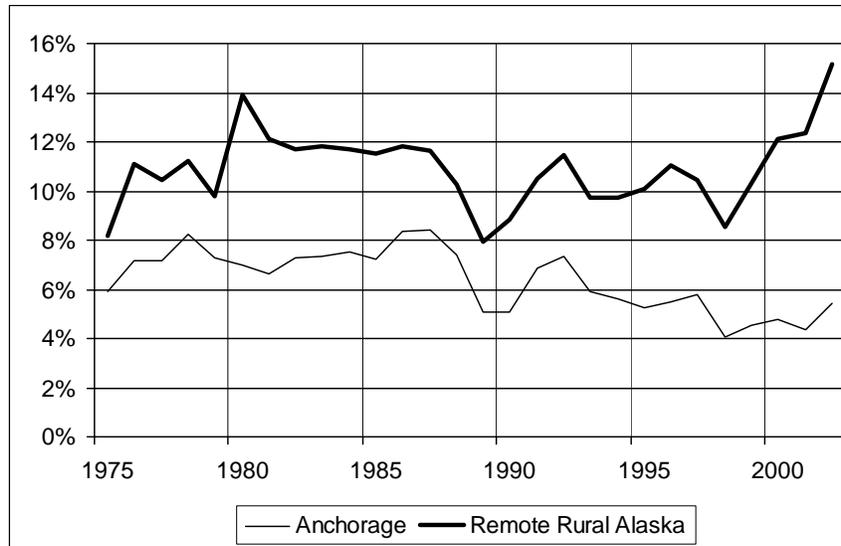
⁸³ John Duffield and David Patterson, “Economics of Wild Salmon Watersheds: Bristol Bay, Alaska,” for Trout Unlimited, 2007. That analysis encompassed the census areas of Bristol Bay Borough, Dillingham, and Lake and Peninsula Borough.

⁸⁴ An unemployment rate calculation can also be made using data from the decennial U.S. Census of Population. Unlike the Alaska Department of Labor estimate, which is an average of each month over the year, it is a point-in-time estimate for a week during the first quarter of the year when seasonal employment is at a minimum. For this and other reasons, it tends to be higher than the Department of Labor figure.

where cash-paying job opportunities are limited, many jobs are seasonal, and voluntary turnover is prevalent.⁸⁵

The shortage of wage employment is part of the explanation for the high unemployment rate among residents. However, a preference for seasonal employment as well as competition from outside the region for the high-paying jobs and unrealistic wage expectations also play a role.⁸⁶

Figure 15. REMOTE RURAL ALASKA UNEMPLOYMENT RATE



Source: Alaska Department of Labor.

⁸⁵ The Alaska Department of Labor publishes the official unemployment rate statistics, and they are required to follow federal guidelines in their preparation. The unemployment rate is the number of unemployed divided by the labor force. “Discouraged workers” are defined by the U.S. Department of Labor as the unemployed who are not actively looking for work because their search has been unsuccessful. This definition does not adequately reflect the fact that in many parts of remote rural Alaska there are no employment opportunities in the cash economy. If it is obvious that no jobs exist, it does not make sense to look. Persons willing to work but not actively searching for a job under these circumstances should be included in both the labor force and the data on the number of unemployed. In 1981 the Alaska Department of Labor conducted a study of unemployment in Southwestern Alaska that concluded that the official unemployment rate of 13.7% would have been 24.7% with better place-specific data and that the rate would have been 48.8% with the inclusion of discouraged workers in the labor force. See Alaska Department of Labor, “Lower Yukon-Kuskokwim Region Labor Market Analysis,” 1981.

⁸⁶ Theodore Lane and Cheryl Thomas, “The Labor Force Status of Alaska’s Native Population,” in *Developing America’s Northern Frontier*, edited by Theodore Lane, University Press of America, Lanham MD, 1987. They point out that, at least historically, resident males have been disadvantaged in the local labor market because they tend to prefer seasonal occupations like construction where they compete with experienced non local resident workers because of the high (union) wage rates in those jobs. Resident women on the other hand tend to prefer occupations with lower wage rates in jobs that are year-round. These characteristics minimize the outside competition for these jobs.

Limited full-time and year-round employment contributes to low average annual earnings among remote rural Alaska Natives.

Non-Native residents living in remote rural Alaska earn more than those in urban Alaska, and Native residents earn less in remote rural Alaska than in Anchorage, even without an adjustment for the higher cost of living in remote rural Alaska (Table 13).

Average earnings are higher in the regional centers because that is where more of the year-round, full-time jobs are located.

Table 13. AVERAGE ANNUAL EARNINGS FOR THE RESIDENT POPULATION AGED 16+: 2000				
	STATE	ANCHORAGE	REMOTE RURAL	
			REGIONAL CENTER	OUTSIDE REGIONAL CENTER
TOTAL	\$32,265	\$35,134	\$34,572	\$18,855
Native	\$21,999	\$24,722	\$26,877	\$15,280
Non-Native	\$34,062	\$36,097	\$43,494	\$36,425
Source: U.S. Census of Population.				

Although there is no source of data that aggregates the difference in earnings of residents vs. nonresidents working in remote rural Alaska, the indirect evidence indicates that nonresident earnings are higher (see Table 6.). Nonresident employment is concentrated in the higher wage industries requiring advanced training and education.

Most remote rural households have income from earnings.

Although the share of the adult population working for cash is lower in remote rural Alaska than in Anchorage, most households have at least one adult working (Table 14). In fact, the share of households with income from earnings is higher in rural than urban areas for both Native and non-Native households, at least partly because the average household size is larger in remote rural Alaska.

Table 14. SHARE OF HOUSEHOLDS WITH INCOME FROM WAGES AND SALARIES:2000		
	ALASKA NATIVE*	NON-NATIVE
REMOTE RURAL	85%	93%
Regional Centers	85%	93%
Smaller Places	85%	92%
ANCHORAGE	82%	89%
Source: U.S. Census of Population		
* Alaska Native alone or in combination with another race.		

The share of household income from wages and salaries in remote rural Alaska, measured by the census, is 69 percent for Alaska Natives and 83 percent for non-Natives⁸⁷. These shares are lower than in Anchorage for Alaska Natives, but higher for non-Natives (Table 15). The share is much higher for both Natives and non-Natives in the regional centers than elsewhere.

Table 15. SHARE OF HOUSEHOLD INCOME FROM WAGES AND SALARIES: 2000		
	ALASKA NATIVE*	NON-NATIVE
REMOTE RURAL	69%	83%
Regional Centers	79%	86%
Smaller Places	65%	80%
ANCHORAGE	76%	77%
Source: U.S. Census of Population		
* Alaska Native alone or in combination with another race.		

Average household income in remote rural Alaska is about three quarters as large as in urban Alaska.

Higher per capita government transfers do not compensate for lower average earnings and income from assets in remote rural households, so average household cash income is only 73 percent as high in remote rural Alaska as it is in Anchorage (Table 16).

However, when broken out by race, it becomes clear that average household income is actually higher in the regional centers than in Anchorage for both Alaska Natives and non Natives.⁸⁸ The smaller places outside the regional centers have the lower average household income.

The income of Native households is considerably lower than non-Native households in spite of the fact that the average household size is larger with potentially more members in the labor force.

⁸⁷ The census bureau estimate of income differs from that of the Bureau of Economic Analysis of the U.S. Department of Commerce. Consequently the shares attributable to worker earnings will be slightly different. See Lenze, David. "State Personal Income", *Survey of Current Business*, April 2006, p. 71-107 for a discussion of differences.

⁸⁸ Average household income is higher in the regional centers than in Anchorage for Natives and non Natives, but when the two groups are combined, the average income in Anchorage is higher. This is not an error in the data but rather the result of the fact that Natives are a larger share of the work force in regional centers than in Anchorage.

Table 16. AVERAGE HOUSEHOLD INCOME IN REMOTE RURAL ALASKA:2000			
	TOTAL	ALASKA NATIVE	NON-NATIVE
REMOTE RURAL	\$49,555	\$40,609	\$71,296
Regional Centers	\$65,843	\$54,636	\$77,412
Smaller Places	\$40,391	\$35,728	\$61,821
ANCHORAGE	\$67,906	\$48,540	\$69,630
Source: U.S. Census of Population			
* Alaska Native alone or in combination with another race.			

The official poverty measure is much higher in remote rural areas than in urban.

Residents of regional centers are somewhat less likely to have incomes that place them below the poverty threshold than residents of either Anchorage or smaller places, The poverty rate in smaller places—for both Native and non-Native residents—is higher than the urban average (Table 17).⁸⁹

Table 17. POVERTY STATISTICS FOR REMOTE RURAL ALASKA: PERCENT OF POPULATION BELOW THE POVERTY THRESHOLD: 2000			
	TOTAL	ALASKA NATIVE*	NON-NATIVE
REMOTE RURAL	19.4%	22.5%	5.4%
Regional Centers	10.1%	13.6%	3.7%
Smaller Places	23.6%	25.4%	8.1%
ANCHORAGE	7.3%	15.7%	6.4%
Source: U.S. Census of Population			
* Alaska Native alone or in combination with another race.			

About 90 percent of rural households (Native and non-Native) are engaged in subsistence hunting and fishing activities.

The central place of subsistence in the culture, economy, and way of life of residents of remote rural Alaska is reflected in the fact that almost all rural households are engaged in some form of subsistence activity.⁹⁰ About 60 percent of the statewide subsistence

⁸⁹ This estimate is based on the poverty *threshold* reported by the U.S. Census Bureau. It is an income level established without regard to the cost of living or household consumption needs except that for households with more members, the *threshold* is higher. In 2005 the *threshold* for a family of 4 was \$20,144; a family with an income below that level was classified by the U.S. Census Bureau as a family in poverty. The poverty *threshold* differs from the poverty *guidelines* issued each year in the Federal Register by the U.S. Department of Health and Human Services for determining financial eligibility for certain federal programs. The poverty *guidelines* for Alaska are 25 percent higher than the poverty *thresholds* to account for the higher cost of living in Alaska compared to the contiguous states.

⁹⁰ There is a large amount of documentation demonstrating the importance of subsistence in the Arctic. Very little information has been collected in the past documenting the amount of time devoted to subsistence activities. See Peter Usher and George Wenzel, “Native Harvest Surveys and Statistics: A Critique of Their Construction and Use.” *Arctic* 40: 145, 1987. More recently some effort has been directed at obtaining that information. See Kerkvilet, Joe, and Nebesky, William. “Whaling and Wages on

harvest, measured in pounds, is attributable to remote rural Alaska. The average harvest per person in the region is estimated at 544 pounds, equivalent to 351 percent of the daily average population protein requirement and 50 percent of the average daily caloric requirement.⁹¹

Assigning an economic dollar value to the harvest is controversial because subsistence is an integral part of the culture in Alaska Native communities. Putting a price tag on an entire culture, or even one element of that culture, is viewed by many as impossible at best. One part of the value of subsistence, however, is the replacement value of the subsistence food harvest, which the Alaska Department of Fish and Game Subsistence Division has valued in some studies in the range of \$3 to \$5 per pound. On that basis the food replacement cost value of the subsistence harvest ranges between \$98 and \$164 million, or about \$2 to \$3 thousand per person.⁹²

The harvesting of fish and game is only a small part of the total subsistence network. The harvest is used not only for food but also for clothing, arts and crafts, and other products. Sharing of the subsistence harvest takes place through kinship and other networks rather than through market transactions. A considerable amount of time is required for preparation and processing the harvest, although there is little data to compare it to time spent working in the cash economy.

The amount of time required to engage in subsistence to obtain a given level of harvest depends partially on the technology used in its production. For example the substitution of a snow machine for a dog sled may reduce the time commitment. But the introduction of other goods not directly associated with subsistence harvests has also had an important influence on the allocation of time in the smaller communities of remote rural Alaska. For example the introduction of space heaters and stoves has reduced the need to gather firewood and the introduction of water systems has reduced the need to collect water. These changes have increased the amount of time available for other activities, including both subsistence and working for cash in the market economy.

Many people have been concerned whether the subsistence and market economies are compatible, complementary, or conflicting.⁹³ Studies continue to address that question

Alaska's North Slope: A Time Allocation Approach to Natural Resource Use," *Economic Development and Cultural Change*, April 1997, p. 651-665.

⁹¹ Alaska Department of Fish and Game, Division of Subsistence, *Subsistence in Alaska: A Year 2000 Update*.

⁹² Other estimates of the food value of subsistence products are much higher. An out-of-court settlement after the Exxon Valdez oil spill valued subsistence foods at \$12 per pound. See John Duffield, "Nonmarket Valuation and the Courts: The Case of the Exxon Valdez," *Contemporary Economic Policy*, 1997, no.4, p.98-109 where an estimate of \$118 per pound is also presented based on the notion of the opportunity cost of wages foregone in the decision to engage in subsistence.

⁹³ See, for example, Bradford H. Tuck, and Lee Huskey, "Economic Growth and Development Strategies for Rural Alaska: A Time to Reconsider," in *Contemporary Alaskan Native Economies*, Steve Langdon editor, University Press of America, 1986.

from various perspectives, but the evidence to date confirms a continued high participation suggesting that the cash economy has not replaced subsistence.

The methods used for subsistence have evolved and the need for cash to engage in subsistence has increased. Estimates of the annual household costs to engage in subsistence vary across households and communities but can easily be several thousand dollars.⁹⁴ This suggests that there might be a positive relationship between cash income and subsistence harvest or productivity.⁹⁵

The prevalence of subsistence is an important reason why household consumption patterns in remote rural Alaska are different from urban parts of the state. The typical equipment required to engage in subsistence may include a snowmobile, truck, 4-wheeler, boat, outboard motor, canoe, kayak, dogsled team, GPS, VHF, CB, fishnets, rifle, camping gear, gasoline, ammunition, and other items not typically found in an urban consumer market basket.

Local residents engage in economic activities outside the market economy that are not related to subsistence which contribute to the well-being of households and communities.

The small size of most communities in remote rural Alaska precludes the establishment of many types of commercial businesses found in urban areas providing services to households and businesses. Examples include personal services like beauty shops, care for elders and the disabled, home-maintenance services like plumbing, and mechanical-repair services like small engine repair. Residents are likely to obtain these services through the operation of the “informal sector.”⁹⁶ There is no information on the amount

⁹⁴ One anthropological study of subsistence patterns in Kotlik found the range to be from \$600 to \$2,400 in 1977. Robert Wolfe, “The Economic Efficiency of Food Production in a Western Eskimo Population,” in *Contemporary Alaskan Native Economies*, Steve Langdon editor, University Press of America, 1986.

⁹⁵ See John A. Kruse, “Subsistence and the North Slope Inupiat: The Effects of Energy Development,” in *Contemporary Alaskan Native Economies*, Steve Langdon editor, University Press of America, 1986. Others have found a negative relationship between cash income and subsistence. See Robert Wolfe and Robert Walker, “Subsistence Economies in Alaska: Productivity, Geography, and Development Impacts,” *Arctic Anthropology*, 24 p. 56, 1987. These results might actually be consistent with one another since the former is based on households and the latter is based on villages. A more recent analysis, conducted by economists, also reported a negative relationship on the North Slope. See Kerkvilet, Joe, and Nebesky, William. “Whaling and Wages on Alaska’s North Slope: A Time Allocation Approach to Natural Resource Use,” *Economic Development and Cultural Change*, April 1997, p. 651-665.

⁹⁶ There are many different terms used to describe the phenomenon of the informal sector including invisible, shadow, secondary, underground, clandestine, undeclared, unreported, black, irregular, submerged, etc. Defined most broadly, the “informal economy” can encompass any work that is not captured in official government statistics. The means of exchange for such work could be cash (that does not get reported to the IRS or included in personal income statistics), barter, sharing, borrowing, or other arrangements. Household production—including cooking, cleaning, childrearing, and other activities is sometimes included. Illegal activities like drug sales and prostitution may also be included. Elements of the informal economy can be found in both urban and rural areas, and they cross all socioeconomic strata. See Jan L. Losby, *Informal Economy Literature Review*, ISED Consulting and Research, 2002, and Shanna Ratner, *The Informal Economy in Rural Community Economic Development*, TVA Rural Studies, 2000.

of time rural residents spend on these activities which would otherwise be provided by a business for a cash payment if they were living in an urban area.⁹⁷

Many of these activities occur within families, but the informal economy extends beyond immediate or extended families. Exchanges may involve cash, but may also be based on the exchange of goods or services or sharing. Obviously, there is no clear distinction between where subsistence sharing ends and the informal economy begins. Exchanges among community members that do not involve cash are an important way to cement the social network of the community together.

It is important not to overlook these activities for two reasons: First, they contribute to the economic well-being of residents and their value could be included in expanded estimates of personal income.⁹⁸ Second, participation in the informal sector is a demonstration of an ability to operate successfully outside the confines of the market economy, dominated by wage and salary employment.

Household consumption patterns in remote rural Alaska differ from urban areas because of subsistence and other aspects of rural living as well as the mix of publicly provided goods and services.

Remote rural Alaskans who engage in the harvesting of subsistence goods use some of their cash income to invest in gear and supplies. In turn, the subsistence harvest partially offsets the purchase of food, clothing, and other consumer goods that require cash income.

On the other hand, some goods and services required in urban Alaska are not necessary in a rural setting. Many of the work-related expenses in urban Alaska, like a car, might not be necessary in a smaller community.

In addition, Alaska Natives have a special relationship with the federal government which sometimes allows them to obtain certain health care, housing, and other services from the federal government at low- or no-cost that are not available to other persons.

Efforts to address these and other differences from the pattern of consumer spending in urban areas through the use of surveys have been limited in number and neither comprehensive nor sophisticated enough to allow us to develop a remote rural consumer market basket. The surveys do suggest that the bulk of cash expenditures, particularly in the smaller communities, are made for food purchased in stores, utilities (including fuel), and transportation.⁹⁹ Since energy is required for utilities, transportation, subsistence, and

⁹⁷ Another aspect of the informal economy is the sharing of equipment.

⁹⁸ The precedent for the inclusion of these activities in personal income is the imputed value of agricultural production consumed on farms, which is included in the personal income statistics of the U.S. Department of Commerce.

⁹⁹ Bingo and pull tabs (“gaming” or legalized gambling) is big business in remote rural Alaska. The money associated with gaming is a form of consumption, but it does not represent new cash or purchasing power coming into the region. The reported gross receipts from gaming are misleading because they include replays. Total statewide gaming receipts in 2003 were more than \$355 million; but net proceeds were \$84

the movement of goods into remote regions, and because of its high cost, it directly and indirectly accounts for a much larger share of the household budget than in urban areas. Also in contrast to urban Alaska, housing accounts for a very small part of the typical budget.¹⁰⁰

The surveys clearly demonstrate that consumption in remote rural Alaska, including the smaller communities, is not limited to subsistence goods and the market goods necessary to pursue a subsistence lifestyle. A wide range of consumer goods like electric lights, refrigerators, televisions and computers, as well as community goods like electric power and water supplies, have become important parts of household consumption.

Goods and services supplied through the market continue to cost more in remote rural Alaska.

High transportation costs, severe climate, small local markets, absence of economies of scale, lack of competition, inefficiencies, and other structural problems keep the cost differential stubbornly high. Groceries in the regional centers cost about 50 percent more than in Anchorage (Figure 16), and the price differential is higher in the smaller communities. This is in spite of the United States Postal Service's bypass mail system that provides reduced-cost shipping of consumer goods to rural areas at a cost to the US Postal Service very roughly estimated at \$100 million per year.

Some capital-intensive services such as electricity are particularly expensive. The residential electricity rate in Bethel, a regional center, is 28 cents compared to 11 cents in Anchorage.¹⁰¹ But the average for the region is four times that of Anchorage since costs are higher in the smaller communities. Rate relief provided by the state Power Cost Equalization (PCE) program, roughly \$15 million per year, helps bring the cost of electricity down but it is still higher in remote rural Alaska. Other programs provide some relief from the high costs associated with telecommunications and space heat, but prices still remain much higher than in urban Alaska.¹⁰²

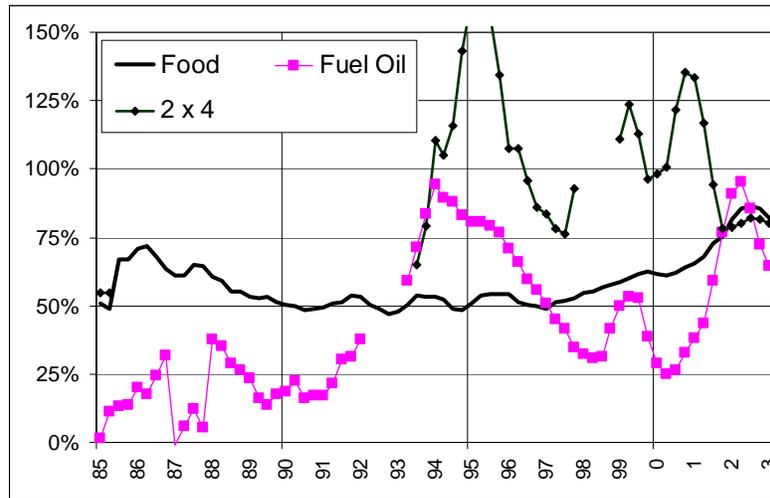
million which covered both expenses, which are a large share of net proceeds, and contributions to the charities licensed to conduct the games.

¹⁰⁰ Examples include Calista Corporation, *The Calista Region: A Gentle People, A Harsh Land*, 1989, and U.S. Department of Interior, Minerals Management Service, *Village Economics in Rural Alaska*, Social and Economic Studies, MMM 88-0079. An attempt to develop a consistent framework across communities was a series of purchasing preference surveys in different communities conducted by the UAF Cooperative Extension Service in 1991.

¹⁰¹ See Scott Goldsmith et al., *The Status of Alaska Natives Report 2004*, prepared for Alaska Federation of Natives, 2004.

¹⁰² The dollar value of these government programs (including the bypass mail system), unlike direct payments to individuals or grants to community organizations, does not appear either in the personal income data or the CFFR database, but they represent a significant economic benefit to the region.

Figure 16. PRICE PREMIUM FOR GOODS IN BETHEL COMPARED TO ANCHORAGE



Source: University of Alaska, Cooperative Extension Service, Food Cost Survey. Food index is for a family of 4.

The quantity and quality of infrastructure in remote rural communities has improved but still is inferior to the level enjoyed in urban areas.

Schools, health-care facilities, electric, water, sewer and solid waste utilities, airports, harbors, roads, telecommunications facilities, and other public and private infrastructure are to be found in even small, remote rural communities. The majority of this infrastructure has been put in place in the last 25 years, along with improvements in the quality of housing, and although it is not equal to the quality of infrastructure found in most of urban Alaska, it is a vast improvement over what was in place a generation ago.

The operation and maintenance of this infrastructure is a challenge for communities with limited cash resources, and replacement as it ages is beyond the current financial capabilities of almost all places.¹⁰³

Urban and rural Alaska are jointly dependent on one another.

Three important types of links create an important economic bond between remote rural and urban Alaska.

Thousands of jobs in urban Alaska can be traced directly and indirectly to natural-resource production in remote rural Alaska. These include jobs for people working in resource extraction and living in urban Alaska as well as urban jobs in engineering,

¹⁰³ The total replacement value of the public and nonprofit infrastructure in place in remote rural Alaska is not known. The Institute of Social and Economic Research is developing an Alaska Public Infrastructure Database using published government estimates of replacement costs for various categories of infrastructure such as airports, ports, water and sewer systems, buildings, schools, and roads. A preliminary estimate of the replacement cost of the public infrastructure in remote rural Alaska based on this data is nearly \$10 billion.

finance, and other occupations supporting these resource-extraction efforts. They include jobs in businesses supplying materials and services in support of production, such as transportation firms and drilling companies. Jobs are also created in businesses that sell to the families of these workers such as local retailers and restaurants. Finally, jobs are created by government spending of the statewide tax and other revenues generated by natural resource production.¹⁰⁴

Other jobs in urban Alaska owe their existence to purchases of goods and services made by remote rural businesses and households in urban areas. For example, financial services are mostly located in the urban centers, but many of their customers are businesses and households living in rural areas.

Finally, many of the jobs associated with the delivery of services and products for the benefit of remote rural residents are filled by urban Alaskans. For example, jobs associated with the construction of health and transportation facilities in rural communities are often filled by urban residents.

The remote rural Alaska economy is complex at both the household and community levels.

The picture of the economy of remote rural Alaska that emerges from this review is one of surprising complexity, vitality, and potential. The region is rich in natural resources of tremendous economic value, and the economic opportunities for residents associated with using those resources are substantial. Most rural areas of the United States would be envious of the economic base in remote rural Alaska.

But because of the unique character of the economy, including the importance of subsistence and the limited number of cash paying jobs outside of a few enclaves, many households face economic challenges unknown in urban areas.¹⁰⁵ The household, viewed as an economic unit, operates in an environment including cash, subsistence, and informal economic components in a complicated mixture. Even operating just in the cash economy can be challenging compared to the urban environment. “It is common for families to patch together several income streams during the year, such as commercial fishing, fire fighting, construction work, the Permanent Fund Dividend, local public-sector wage employment, and trapping.”¹⁰⁶

¹⁰⁴ A study of the links between the Southwestern and Southcentral Alaska economies calculated that residents of Southcentral Alaska earned \$82 million in wages from working in Southwestern Alaska, that businesses in Southcentral Alaska made \$350 million in sales to businesses and governments in Southwestern Alaska, and that statewide tax revenues of about \$45 million were generated within Southwestern Alaska. See Northern Economics, *Economic Geography of Southwest Alaska: The Role of Southwest Alaska in the State Economy*, for Southwest Alaska Municipal Conference, (SWAMC), 2004. The Southwestern economy is primarily dependent upon commercial fishing.

¹⁰⁵ For one attempt by an economist to describe activity at the individual level see Jack Stabler, “Utility Analysis of Activity Patterns of Native Males and Wage Economies at the Village Level,” *Economic Development and Cultural Change*, Vol. 39, 1990, p.47. An earlier description of the complexity of economic activity at the household level can be found in J. Van Stone, “A Successful Combination of Subsistence and Wage Economies,” *Economic Development and Cultural Change*, Vol. 8, p. 174.

¹⁰⁶ Wolfe, 1991, op. cit.

The official economic indicators have definitional and data-quality shortcomings.

The data sources typically used to describe and quantify the economy do not allow us to put together a complete and accurate description. The typical unit of analysis is the census area, many of which contain both a regional center and a number of small, more remote communities with very different economic characteristics. And because of the expense of collecting community-level data, the decennial census and occasional surveys of individual communities or across communities for a limited purpose are the only sources of information at a more detailed level. Unfortunately, they cannot fill in many of the information gaps.

Employment is a good example of the problem. The primary source is wage and salary employment from the Alaska Department of Labor (ADOL) based on employer counts each month (ES-202 employment data). However, many businesses operating in rural parts of the state are headquartered and, consequently, report their employment in urban areas. Furthermore, the ADOL employment figures do not distinguish between local residents and non local resident workers.

It is possible to get an estimate of non local resident wage and salary workers from the ADOL annual survey of the residence of workers, but this only covers larger firms. As an alternative, the residence adjustment included in the U.S. Department of Commerce Bureau of Economic Analysis (BEA) calculation of person income provides an estimate of the payroll associated with nonresident workers, but not their numbers.

There is also no adequate accounting for the self-employed. The Alaska Department of Fish and Game (ADFG) collects information on the residence of fish harvesters, but they constitute only a portion of the self-employed. The federal government, primarily using tax-return data, is the source of the count of the self-employed. The BEA estimate is a count of workers by place of residence and includes part-time work as well as people for whom self-employment is their primary or only work. Since the ADOL wage and salary count is an annual average, it cannot be compared to the self-employed, even if it were residence adjusted.

Finally, information on local residents who are itinerant workers outside the region is unavailable from any source.¹⁰⁷

The quality of the data that is collected is spotty at best, again because of the expense and the necessity of estimating some of the numbers, such as the number of self-employed.

Similar definitional and data-quality problems exist with personal and household income, the other main variable used to measure economic activity at the regional level. Studies that have tried to determine the amount and composition of cash income in particular

¹⁰⁷ An example of incorporating and adjusting all data sources on employment into a revised description of employment by season both by place of work and by place of residence can be found in John Duffield and David Patterson, "Economics of Wild Salmon Watersheds: Bristol Bay, Alaska," for Trout Unlimited, 2007.

communities also suffer from a number of problems that make them unusable for generalizing to a regional level.¹⁰⁸

Measures of labor force, unemployment, cost of living, and household consumption all suffer from these definitional and quality problems.

The existing economic indicators are inappropriate for remote rural Alaska.

Even with consistency in definitions and improvements in the quality of data currently collected, the standard indicators would not provide a complete or balanced picture of the complexity of the economy.¹⁰⁹ This is because the subsistence and informal sectors are nowhere captured by the indicators which are designed only to measure activity in the cash economy.

Because these non-market activities consume a considerable amount of the time and effort of rural residents and contribute significantly to the economic well-being of the region, they should be included for several reasons. Without them the well-being of residents is undervalued, comparisons with urban areas are misleading, and economic development strategies are not grounded in reality.¹¹⁰

Definitional shortcomings affect all the statistics we have used in this paper to describe the economy including employment, unemployment, the labor force, personal income, poverty, the cost of living, and consumer expenditures.

For example, the **employment** data ignore the time spent in subsistence activities and the informal economy. Including time spent in those activities along with work in the market economy would give us better information on the imbalance between the local labor supply and cash-paying jobs. For example, converting labor supply into hours worked and hours available, which would fluctuate dramatically over the seasons of the year, would help to understand the nature of the challenges to increasing cash-employment opportunities in the region. Research suggests that total employment measured in this

¹⁰⁸ A useful example of this method can be found in Alexandra Hill, "Lime Village Economic Profile," Institute of Social and Economic Research, prepared for Alaska Energy Authority, 1992. The difficulties with surveys that have attempted to measure income and its composition at the village level include: definitional problems about what constitutes income, inconsistent methods and instruments across communities, and the inherent large variability across small communities and over time.

¹⁰⁹ For a review of economic indicators used to measure performance in rural Alaska see Scott Goldsmith et al., *Economic Development Performance Indicators: 3 Briefing Papers*, for Denali Commission, Institute of Social and Economic Research, 2004.

¹¹⁰ An example of how an inappropriate economic indicator can be counterproductive is the concept of full employment as traditionally measured as market-based employment. The objective of full employment is exactly contradictory to the desire to preserve the village way of life. William Alonso and Edgar Rust, "The Evolving Pattern of Village Alaska," The Federal-State Land-Use Planning Commission for Alaska, Study # 17, 1976.

way would be much larger than the official data suggest but that it would have a very complex seasonal pattern.¹¹¹

Closely related to this is the notion that the official **unemployment rate** underestimates the number of unemployed, even excluding those engaged in subsistence or working in the informal economy. This problem is well-known, and suggestions to change the way unemployment is counted by including “discouraged workers” in the labor force have been made for many years.¹¹²

Personal income data likewise ignore the value of time spent engaged in subsistence activities and the informal economy. Although placing a monetary value on subsistence is politically sensitive, excluding a measure of the value of goods obtained through subsistence from personal income underestimates household well-being.¹¹³

Household consumption in remote rural Alaska is also inadequately represented by urban household budgets. Subsistence activities require significant expenditures on capital equipment like boats and snow machines as well as supplies like fuel and ammunition that are not part of the typical urban household budget. On the other hand, Native residents receive some goods and services from federal government programs without having to pay for them. Measures of the **cost of living** in the region should be based, not on an urban market basket of goods and services, but rather on the composition of cash purchases required by the typical household.

Finally, the current data do not allow us to identify the **economic base** of the region. A study conducted 30 years ago recommended that an analysis of the cash flow of villages was one of the most important research needs in rural Alaska.¹¹⁴ This description of the remote rural economy demonstrates that the analysis of cash flow into and out of the region is still difficult to accomplish.

Of course, it is easier to identify the shortcomings of the data collection methods currently used to measure and track the performance of the remote rural economy than it is to fix them. There are many challenges that make it virtually impossible to collect the types of detailed information in the form we have suggested. However, a better understanding of the shortcomings of the current data collection methodologies would be a step in the right direction. Future efforts to obtain information would also benefit from understanding of inconsistencies and the collection methods underlying currently available data.

¹¹¹ See G. Williamson McDiarmid et al., “Expanding Job Opportunities For Alaska Natives,” Institute of Social and Economic Research, for Alaska Federation of Natives, 1998, p. I-39.

¹¹² Judith Kleinfeld and John Kruse, “Native Americans in the Labor Force: Hunting for an Accurate Measure,” *Monthly Labor Review*, Vol. 105, no. 7, July 1982.

¹¹³ A somewhat dated attempt to calculate the total income for a region is contained in Alaska State Legislature, House Research Agency, “Personal Income in the Lower Yukon-Kuskokwim Region: An Overview of Income, Government Services and Transfer Payments,” House Research Agency Report 81-3, 1982.

¹¹⁴ See William Alonso and Edgar Rust, op. cit.

This description suggests a number of factors important to the economic well-being of remote rural Alaska.

Economic realities put constraints on what successful **economic development** in remote rural Alaska can be. Recognizing those constraints as well as the opportunities will result in better economic development policy and outcomes.¹¹⁵

Technological advances will continue to reduce the barriers associated with distance and remoteness, but cannot overcome the challenges associated with the movement of goods and people in remote locations.

Oil and gas as well as **hard rock mineral** exploration and development will continue to offer opportunities for high paying jobs within the region as well as the capture of other economic benefits, but these opportunities will continue to be isolated to specific sites, often in enclaves, with the labor provided by commuters. The economic benefits that do come to the region may be concentrated among a small share of the population.

Expansion of the economic base from small-scale mining activity, tourism and recreation, handicraft manufacture, timber, trapping, and agriculture can potentially provide economic benefits for some communities, but these activities are modest in scale even at the village level. For example, containment of the animal rights crusade could increase income from trapping several times over. Because these activities bring new cash into the economy and help to diversify the economic base, they should be encouraged.

The quality of the **natural environment is a resource** that will increase in value, but high costs and isolation are constraints on converting that into part of the economic base.

The recent rapid increase in **federal grants** flowing into remote rural Alaska, both directly and indirectly, through state government cannot be sustained. Some decline in the flow should be anticipated at some future date since many of those grants are earmarks or special programs rather than being formula based.

State spending will also be constrained in the future as a part of a strategy to deal with the fiscal gap.

Job growth will slow due to federal and state funding constraints, and opportunities for job seekers will probably be concentrated in the regional centers.

The **large school-aged population** in the region is moving towards young adulthood and will soon swell the labor force. Retirements and turnover of workers in health, education, and government administration will provide most of the local opportunities for these young people.

Job opportunities, particularly in the “knowledge economy,” will be in areas requiring more **education** than in the past.

¹¹⁵ An interesting perspective on the economic development challenges facing remote rural Alaska is based on a comparison to the situation faced by small and isolated island economies. See Patrick J. Dubbs, “Arctic Atolls,” accessed on Alaska Native Knowledge Network Web site, <http://www.ankn.uaf.edu>, January 2, 2007.

Cash will continue to be a scarce resource. It is necessary to buy the goods and services required to keep the infrastructure operating and to obtain the goods and services that cannot be produced locally—including those necessary for subsistence as well as other consumer goods.¹¹⁶ Activities that conserve cash in the economy are extremely valuable.

Labor will continue to be an abundant resource. Innovative ways to share employment opportunities that distribute cash, such as “village labor contracting cooperatives” might be useful.

Reducing resident **unemployment** will require a combination of commuting by residents to jobs outside the region or in enclaves, replacement by residents of jobs currently held by non residents, and out migration of adults.

The **cost of imported goods and services** will remain high, and improved access will mitigate, but not eliminate, the cost differential.

The **economic multiplier** will remain low so, except in the regional centers, few cash-paying jobs will be generated in retail trade and other support businesses (import substitution strategy to economic growth is limited, but not absent). However, if it is redefined to include subsistence and the informal economy, the multiplier is actually larger.

Official **measures of economic well-being**, including personal income and employment, are inadequate indicators for the mixed cash and subsistence economy in remote rural Alaska. They ignore the important contribution of subsistence and other nonmarket activities to economic well-being of the community and subtly undermine the validity of those activities. Furthermore, they can be counterproductive to the extent they establish an unrealistic, unattainable, or unimportant benchmark against which to measure performance. Unfortunately, the creation and propagation of better indicators is unlikely given their cost.

The small economic size of remote rural Alaska communities makes them particularly **vulnerable** to influences beyond their control, although vulnerability is a challenge for all economies. The mixed economy (cash and subsistence) should be viewed as an economic advantage since it represents diversification beyond total dependence on either the marketplace or the natural environment.

Economic viability would be enhanced by the replacement of local residents in jobs currently held by itinerant non resident workers who have no long term commitment to the region.

¹¹⁶ The recognition that cash is in short supply in rural areas leads to the notion of “cash extension” or increasing the efficacy of the existing cash supply in the community and strategies for extending its use. This is described in Patrick J. Dubbs, “Another Development in Rural Alaska,” accessed on Alaska Native Knowledge Network Web site, <http://www.ankn.uaf.edu>, January 2, 2007.

It is not obvious whether remote rural Alaska represents a **sustainable community** economy if we define that to be one where there are sufficient resources to provide for both the private economic needs of households and the publicly provided goods and services. Different analysts can probably reach different conclusions from the description in this paper. It shows that the region is rich in opportunities, but that there are very real constraints as well. Advancing the economic well being of remote rural Alaska will take work, and hopefully this paper will help to focus that effort.¹¹⁷

¹¹⁷ There are public policy reasons to keep remote rural Alaska viable independent of its economic sustainability. See Patrick J. Dubbs, "Small Alaska Native Villages: Are They Worth Saving?" paper presented at the Annual Meeting of the American Anthropological Association, San Francisco, 1992.

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