

ALASKA RESOURCES
**PLANNING AREA
ANALYSIS**



SOUTHWEST PLANNING AREA



**ANCHORAGE DISTRICT OFFICE
ANCHORAGE, ALASKA**

AUGUST 1981

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Prepared by

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I I N T R O D U C T I O N

The Planning Area Analysis serves as a method of analyzing and displaying the relationship between social and economic facts developed in the Unit Resource Analysis for the Planning Area.

Each resource activity was analyzed for significance in terms of production employment, and income generated from local and regional communities.

The document should be viewed as part of a total planning process. The final goal is a Management Framework Plan (MFP).

The Planning Area Analysis should serve as an indicator of the present impact of management, provide a basis for estimating impact due to changes, and specify future demand and public felt-needs. Finally the PAA should serve as a transition from the URA to the MFP, especially Steps 1 and 2, which display objectives, rationale and management decisions.

The boundaries of the Southwest Planning Area essentially match those of the McGrath Resource Area. There are approximately 72,000,000 acres in the Planning Area, of which 12,272,000 acres are expected to remain under BLM management. For a description of boundaries, see the Lands section of the URA; for a breakdown of land ownership in the Planning Area, see table 10-1 of the URA.

There are six planning blocks within the Planning Area: Goodnews, NYAC, Anvik River, Sleetmute, Lime Village, and Minchumina.

The major issues of concern are (1) management of resource use for subsistence, mineral development, grazing for wildlife and domestic livestock, and recreation; (2) fire management.

As land ownership is still in a state of flux, there are issues of land transfer and access that will need to be addressed in the future after these issues are resolved in compliance with federal legislative action.

II ECONOMIC OVERVIEW

REGIONAL ECONOMY

The basic industries in the southwest region (not counting the service sector) are fishing and government.

Fishing

Commercial fishing efforts have increased sharply since 1961. License registration for set gill nets has more than doubled while drift gill net gear has tripled during the period 1961-1977 in the Yukon area. Subsistence requirements are declining, allowing for expansion of the commercial fishing industry. All species of Pacific salmon are harvested and processed. In 1980, there were 152,788 kings; 8,741 Cohos; and 1,355,884 chums, totaling 1,517,413 salmon taken commercially. This was the largest harvest recorded for king and chum salmon combined. Yukon area commercial fishermen received \$6,703,100 due to low prices, although there was a record catch. A minimum estimate of \$1,475,000 wages was earned by processing plant employees and tenderboat operators. The first wholesale value of the 1980 pack was estimated at \$16,757,000.

Economic benefits to the Kuskokwin area of Southwest Alaska for salmon from 1960-1980 are presented in tables 1 and 2.

The Kuskokwim salmon catch in 1980 of 1,010,152 fish was also the largest ever recorded and was 31 percent above the previous record 1978 harvest. This catch also exceeds the previous five year average of 693,093 fish. The average for king salmon was four percent less than the previous five year average of 693,093 fish. Species composition was 48,242 kings; 42,213 reds; 327,908 cohos; 30,306 pinks; and 561,483 chum salmon.

Commercial fishermen received approximately \$2,725,134 for their catch in 1980 while a minimum of \$275,000 in wages was estimated to have been earned by processing plant employees and tenderboat operators.

There are 12 villages and at least 15 temporary fish camps within a 108-mile area on the Kuskokwim River. Commercial fishing is allowed only below Bethel (the lower 86 miles of the river).

Detailed breakdown by area and species is listed in the Alaska Department of Fish and Game, Division of Commercial Fisheries Annual Management Report 1980, Yukon Area.

Government

The influx of 150,000 military personnel at the peak of World War II and the related construction, transportation and communications activities have had a permanent impact in Alaska's economy.

Table 1. Dollar Value Estimates of Yukon Fishery, 1961-1980. ^{1/}

Year	Gross value of catch to fishermen				Wages earned ^{2/}	Total income to area	Wholesale value of pack ^{3/}	Tax revenues to state ^{4/}
	King	Coho	Chum	Total				
1961	420,900	1,400	14,700	437,000			1,292,300	37,500
1962	330,300	11,500	20,100	361,900			1,275,250	50,400
1963	409,500	2,800	-	412,300			1,550,400	42,000
1964	351,000	1,200	2,200	354,400			1,203,800	35,000
1965	531,400	200	10,700	542,300			1,412,700	42,000
1966	419,900	9,600	25,000	454,500			1,308,100	37,000
1967	583,700	5,500	17,200	606,400	250,000	356,400	1,364,300	41,700
1968	494,300	6,700	34,000	535,000	264,000	799,000	1,655,200	47,000
1969	415,000	8,200	96,000	519,200	234,000	753,000	1,976,200	40,000
1970	401,300	10,300	211,500	623,100	185,800	308,900	2,113,100	45,000
1971	590,100	10,000	182,900	783,000	357,700	1,140,700	2,106,600	42,000
1972	547,300	20,400	215,300	784,000	445,400	1,229,400	2,405,200	45,300
1973	561,400	46,500	609,100	1,217,000	585,800	1,802,900	4,453,900	62,300
1974	881,300	28,400	1,011,300	1,921,000	500,100	2,421,100	6,035,900	84,100
1975	539,000	3,500	1,201,400	1,743,900	596,600	2,390,500	4,939,700	87,100
1976	983,500	8,600	1,758,900	2,751,000	687,600	2,838,600	6,815,500	96,900
1977	1,928,400	143,000	1,997,300	4,068,700	850,000	4,918,700	10,499,400	151,000
1978	2,133,700	79,200	3,101,800	5,314,700	1,085,700	6,400,400	14,194,800	179,400
1979	3,008,000	84,400	4,527,100	7,619,500	1,210,000	8,829,500	19,048,800	248,600
1980	3,639,300	21,800	2,676,800	6,703,100 ^{5/}	1,475,000	8,178,100	16,757,700	205,400

^{1/} Information not available for wages earned during 1961-1966.

^{2/} Includes wages paid to tender boat operators and resident processing plant employees in district.

^{3/} Based on type of processing when fish were shipped out of the district.

^{4/} Processors tax and vessel and crewmember licenses fees. Does not include CFEC permit fee.

^{5/} Includes \$365,200 in roe sales Upper Yukon area.

Year	Gross Value of catch to fishermen	Wages earned ^{2/}	Total income to district	Wholesale value of pack ^{3/}	Tax revenue to state
1964	\$ 83,030.00	\$	\$	\$ 409,700.00	\$ 6,100.
1965	90,950.00			370,000.00	8,200.
1966	87,466.00			406,500.00	8,100.
1967	138,647.00	20,000.00	158,647.00	727,000.00	
1968	290,370.00	40,000.00+	330,370.00+	1,135,000.00	17,000.
1969	297,233.00	60,435.00+	357,668.00		
1970	362,470.00	127,327.00	489,797.00	1,300,000.00	20,000.
1971	371,220.00	80,510.00	451,730.00	672,180.00	16,770.
1972	360,727.00	85,895.00	447,622.00		
1973	827,735.00	150,000.00+	977,735.00	3,600,000.00	32,000.
1974	1,056,042.00	150,000.00+	1,206,042.00		
1975	899,178.00	165,000.00+	1,064,178.00	2,000,000.00	25,000.
1976	1,380,229.00	175,000.00+	1,555,229.00		
1977	3,891,950.00	200,000.00+	4,091,950.00		
1978	2,337,470.00	250,000.00+	2,587,470.00		
1979	3,678,000.00	275,000.00+	3,953,000.00+		
1980	2,725,134.00	300,000.00	3,025,134.00		

1/ Information not available for wages earned during 1964-1966.
 2/ Includes wages paid to tenderboat operators, processing plant employees in district.
 3/ Based on type of processing when fish were shipped out of the district.

From 1940 until 1959, military activities were the main source of Alaska's economic growth. In 1979, one of every six wage and salary workers in Alaska was either an active duty military person or a defense-related civilian employee of the Federal government.

Oil and Gas

The discovery of oil and gas has led Alaska into a "boom and bust" type of economy.

With the "boom and bust" economy, Alaskan employment has fluctuated considerably in the past decade. Recent employment growth is attributable to higher state and local government employment and service industry employment. Local and regional government have had the largest increase as these governments take over more responsibilities formerly held by Federal and State governments.

Tables 3 and 4 indicate that the largest employers for the Bethel and Kuskokwim divisions are Federal, State and local government; finance; insurance and real estate; transportation; communications and utilities. Table 5, Wage and Salary Employment and Wage Totals by Industry, gives a comparison for the State.

Exports

Alaska's natural resources (such as fish and minerals) are being utilized by other countries not only because of their present abundance but also because of Alaska's strategic location in relation to world markets. Table 6 lists Alaska's foreign trade for a nine-year period. Alaskan trade with Japan is by far the largest (80.9 percent of 1979 total). Exports to Canada have decreased as have those of Thailand, Egypt, and West Germany in that order. Others have increased. Table 7 gives a reference of the dollar value of salable natural resources.

Forecast

Based on reported economic factors for the past decade the following assumptions are reasonable.

Adjusted for inflation, the following is forecast by the Alaska Division of Budget and Management: Combined state and local government will increase by 4.0 percent per year through 1983; by 2.9 percent in 1984; 1.6 percent in 1985; 3.1 percent in 1986; by 1.6 percent in 1987 and then hold constant from 1988 through 1990. Construction spending is favored and growing at a rate of approximately 50 percent faster than overall spending. For the decade 1980-1990 on an industry-by-industry basis, projected rates of employment growth are: oil and gas 9.1 percent; other mining 15.3 percent; construction 1.4 percent; manufacturing 1.7 percent; transportation 3.6 percent; communications 1.8 percent;

Table 3. Area Non-Agriculture Employment Industry Series, Alaska, Bethel Division*

Industries Insured by	Number of Employees By Quarter				1979 Average	Average Monthly Wage By Quarter				1979 Average
	1	2	3	4		1	2	3	4	
Total Non-Agricultural Industries Insured by State Law	3,694	3,628	3,271	3,241	3,459	789	907	1,061	1,149	977
	3,130	3,095	2,748	2,706	291,975	735	857	1,041	1,130	94,075
Mining	NA	NA	NA	NA	----	NA	NA	NA	NA	----
Construction	60	88	147	121	104	1,508	1,596	2,239	2,603	1,987
Manufacturing	26	96	205	37	91	480	572	626	1,174	713
Wholesale Trade	NA	195	56	5	85	NA	1,601	784	891	1,092
Retail Trade	278	351	425	347	350	815	865	869	931	870
Finance, Insurance, and Real Estate	80	54	125	121	95	649	568	499	701	604
Services	1,698	1,429	890	947	1,241	338	444	767	689	560
Federal Government	435	405	396	406	411	1,325	1,488	1,423	1,573	1,452
State and Local Government	943	895	820	1,083	935	1,197	1,292	1,136	1,249	1,218
Miscellaneous	NA	NA	NA	NA	----	NA	NA	NA	----	----
Transportation, Communication, and Utilities	165	195	202	168	183	1,494	1,601	1,741	1,273	1,652

NA = Not Available

*Source: State of Alaska, Department of Labor Quarterly Report

Table 3 (cont inued)

		Total Payroll by Quarter				1979 Average	Reporting Units			
1	2	3	4							
8,741,472	9,875,472	16,408,522	11,172,900	10,049,514	202	204	218	226		
6,908,081	7,962,717	8,584,382	9,179,752	8,158,983	171	174	188	188		
NA	NA	NA	NA	-----	1	1	2	2		
273,114	419,903	987,669	947,589	658,319	13	17	20	18		
37,014	164,773	385,529	131,589	179,726	8	8	8	8		
	935,497	131,796	13,375	360,223		3	3	3		
679,584	911,863	1,107,282	969,860	917,147	36	38	41	39		
155,264	92,597	186,654	255,264	172,445	21	20	21	22		
1,721,838	162,294	2,047,959	1,957,574	1,472,416	36	35	36	38		
1,730,942	1,902,510	1,689,236	1,914,619	2,344,630	23	22	22	24		
3,385,827	1,807,433	2,795,231	4,055,833	2,382,154	40	3	41	41		
NA	NA	NA	-----	-----	2	38	3	4		
739,763	935,497	1,057,348	893,672	906,570	19	19	21	21		

Table 3 (continued)

	Total Payroll by Quarter				1979 Average	Reporting Units			
	1	2	3	4					
8,741,472	9,875,472	16,408,522	11,172,900	10,049,514	202	204	218	226	
6,908,081	7,962,717	8,584,382	9,179,752	8,153,983	171	174	188	188	
NA	NA	NA	NA	-----	1	1	2	2	
273,114	419,903	987,669	947,589	653,319	13	17	20	18	
37,014	164,773	385,529	131,589	179,726	8	8	8	8	
	935,497	131,796	13,375	360,223	3	3	3	3	
679,584	911,863	1,107,282	969,860	917,147	36	38	41	39	
155,264	92,597	186,654	255,264	177,445	21	20	21	22	
1,721,838	162,294	2,047,959	1,957,574	1,472,416	36	35	36	38	
1,730,942	1,902,510	1,689,236	1,914,619	2,344,630	23	22	22	24	
3,385,827	1,807,433	2,795,231	4,055,833	2,382,154	40	3	41	41	
NA	NA	NA	-----	-----	2	38	3	4	
739,763	935,497	1,057,348	893,672	906,570	19	19	21	21	

Table 4. Area Non-Agriculture Employment Industry Series, Alaska, Kuskoquim Division*

	Number of Employees By Quarter				1979 Average	Average Monthly Wage By Quarter				1979 Average
	1	2	3	4		1	2	3	4	
Total Non-Agricultural Industries Insured by State Law	483	604	392	538	504	1,216	1,135	1,337	1,373	1,265
	356	469	253	404	371	1,322	1,155	1,508	1,492	1,369
Mining	0	0	0	NA	---	0	0	2,597	NA	---
Construction	0	0	NA	NA	---	0	0	0	NA	---
Manufacturing	NA	NA	NA	NA	---	NA	NA	NA	NA	---
Wholesale Trade	0	0	0	NA	---	0	0	0	NA	---
Retail Trade	32	32	39	36	35	685	895	859	967	851
Finance	15	17	NA	12	15	1,156	1,110	NA	1,415	1,226
Services	28	32	23	22	26	857	960	1,050	1,123	998
Federal Government	73	80	81	79	78	1,533	1,652	1,652	1,654	1,623
State and Local Government	298	396	189	328	303	1,173	1,049	1,259	1,283	1,191
Miscellaneous	0	NA	NA	0	---	0	NA	NA	0	---
Transportation, Communication, and Utilities	38	43	45	41	42	1,664	1,261	1,513	1,582	1,505

NA = Not Available

*Source: State of Alaska, Department of Labor, Quarterly Report

Table 4 (continued)

	Total Payroll by Quarter				1979 Average	Reporting Units			
	1	2	3	4					
1,762,946	2,055,822	1,573,299	2,218,052	1,902,530	68	70	70	83	
1,412,532	1,624,378	1,143,753	1,807,394	1,497,014	51	53	53	66	
0	0	25,973	NA	----	3	4	4	4	
0	NA	NA	NA	----	2	2	2	2	
NA	NA	NA	NA	----	0	0	0	12	
0	0	0	NA	----	13	11	11	1	
65,145	86,872	101,404	104,459	89,470	3	4	4	12	
50,898	55,516	71,415	52,301	57,533	9	13	8	4	
71,118	93,081	71,415	74,128	77,435	13	8	13	13	
337,304	396,505	400,007	392,032	381,462	16	16	15	13	
1,048,443	1,246,585	713,766	1,264,100	1,068,224	0	1	1	20	
0	NA	NA	NA	NA					
188,077	164,007	205,879	194,659	188,156	8	1	1	2	

Table 5. WAGE & SALARY EMPLOYMENT, AND WAGE TOTALS, BY INDUSTRY

ALASKA

	1975					1979				1979 Annual Average
	1975	1976	1977	1978	1Q	2Q	3Q	4Q		
TOTAL WAGE & SALARY EMPLOYMENT (place of work basis)	187,556	197,269	189,229	188,091	179,807P	193,350P	200,274P	189,817P	190,813P	
Military & Related Federal Civilian Employees	n.a.	n.a.	n.a.	32,001	31,657P	31,520P	31,382P	31,245P	31,451P	
Military Personnel (active duty only)	25,667	25,354	24,958	24,658	24,370P	24,255P	24,140P	24,025P	24,198P	
Military-related Federal Civilian Employees	n.a.	n.a.	n.a.	7,343	7,287P	7,265P	7,242P	7,220P	7,253P	
PX & NAF (largely part-time workers) ^a	n.a.	n.a.	n.a.	2,424	2,380P	2,363P	2,345P	2,328P	2,354P	
Other Military-related Federal Employees	n.a.	n.a.	n.a.	4,919	4,907P	4,902P	4,897P	4,892P	4,899P	
Federal Govt (except military-related in 1978 & 1979)	18,288	17,944	17,734	10,742	10,229P	10,551P	11,487P	10,468P	10,684P	
State & Local Government	29,247	29,941	31,061	34,122	37,368	37,997	32,187	38,915	36,617	
Mining	3,790	3,965	4,959	5,562	5,642	5,903	5,919	5,626	5,773	
Construction	25,735	30,233	19,545	12,240	7,461	9,846	12,806	10,253	10,092	
Manufacturing	9,639	10,331	10,845	11,481	7,800	13,139	18,821	11,511	12,818	
Transportation-Communications-Utilities	16,473	15,754	16,028	16,369	15,609	16,726	17,831	16,650	16,704	
Wholesale Trade	5,908	6,098	5,900	5,721	5,289	5,679	5,735	5,340	5,511	
Retail Trade	20,300	21,465	22,553	23,128	22,479	24,098	24,901	24,030	23,877	
Finance-Insurance-Real Estate	6,030	7,102	7,774	8,228	8,093	8,208	8,021	7,819	8,035	
Services	25,136	27,670	26,981	27,564	27,558	28,657	29,807	27,358	28,345	
Farm Workers	200	200	200	255	140P	278P	402P	200P	255P	
Miscellaneous	1,143	1,212	691	678	482	748	975	402	652	
WAGE & SALARY EMPLOYMENT INDEX (Number of Jobs in 1975 = 1.00)	1.00	1.05	1.01	1.00	0.96	1.03	1.07	1.01	1.02	
UNEMPLOYMENT RATE	6.9%	8.4%	9.2%	11.0%	11.1%	9.2%	7.2%	8.3%	8.9%	

P = Preliminary estimate.

(continued next page)

ALASKA
(wage totals in thousands)

	1975	1976	1977	1978	1Q	2Q	3Q	4Q	1979 Annual Totals
TOTAL WAGE PAYMENTS (place of work basis)	3,426,281	4,237,481	3,781,063	3,596,138	849,366P	940,406P	1,010,280P	974,969P	3,775,021P
Military & Related Federal Civilian Wages	n.a.	n.a.	n.a.	405,702	103,472P	106,551P	109,544P	109,736P	429,303P
Military Personnel Wages (active duty only)	251,239	255,672	263,933	277,928	71,654P	72,523P	73,391P	74,260P	291,828P
Military-related Federal Civilian Wages	n.a.	n.a.	n.a.	127,774	31,818P	34,028P	36,153P	35,476P	137,475P
PX & NAF (largely part-time workers) ^a	n.a.	n.a.	n.a.	17,909	4,460P	4,769P	4,970P	4,877P	19,076P
Other Military-related Federal Wages	n.a.	n.a.	n.a.	109,865	27,358P	29,259P	31,183P	30,599P	118,399P
Federal Govt (except military-related in 1978 & 1979)	277,957	292,146	318,113	216,632	53,945P	57,693P	61,295P	60,147P	233,080P
State & Local Government	444,750	522,713	581,995	679,648	187,490	211,006	174,706	201,504	774,706
Mining	108,754	128,720	182,205	217,963	57,943	59,072	56,122	60,330	233,467
Construction	1,017,617	1,465,999	836,208	432,714	60,154	81,895	116,749	93,577	352,375
Manufacturing	143,703	174,658	194,703	217,151	38,258	63,805	100,998	65,296	268,357
Transportation-Communications-Utilities	359,065	382,519	398,706	425,969	105,304	107,827	122,286	118,317	453,734
Wholesale Trade	114,032	132,875	130,669	128,612	31,178	32,300	33,547	33,970	130,995
Retail Trade	216,383	247,232	268,151	288,050	71,027	74,667	79,359	80,953	306,006
Finance-Insurance-Real Estate	77,377	102,051	119,687	135,602	34,783	34,211	34,389	35,390	138,773
Services	390,440	497,817	463,207	424,109	102,544	105,458	113,412	111,106	432,520
Farm Workers	1,200	1,400	1,700	2,300	357P	709P	1,025P	509P	2,600P
Miscellaneous	23,765	33,679	21,786	21,687	2,910	5,214	6,848	4,133	19,105
TOTAL WAGE PAYMENTS INDEX (Annual Rate in 1975 = 1.00)	1.00	1.24	1.10	1.05	0.99	1.10	1.18	1.14	1.10
AVERAGE MONTHLY WAGE PER WORKER (dollars)	1,522	1,790	1,665	1,593	1,575	1,621	1,682	1,712	1,649

P - Preliminary Estimate
n.a. - Not available

^a - PX & NAF (Post Exchange, and Non-Appropriated Fund activities, including officers' clubs and enlisted men's clubs)

Source: The Alaska Department of Labor is the source of all employment and wage figures except those for military personnel and farm workers for 1975 through 1978 are those provided by the U.S. Bureau of Economic Analysis, with projections for 1979 produced by the Division of Economic Enterprise, Alaska Department of Commerce and Economic Development.

Table 6. DOLLAR VALUES OF ALASKAN IMPORTS AND EXPORTS BY NATION: 1970, 1977, 1978 and 1979

Destination Country	EXPORTS					IMPORTS					Percent of 1979 Total
	1970	1977	1978	1979	Total	Country of Origin	1970	1977	1978	1979	
Japan	\$100,340	\$288,164	\$471,161	\$738,446	80.9%	Singapore	\$ 100	\$ 37,849	\$ 38,821	\$ 53,214	41.5%
India	4,903	15,339	40,743	29,232	3.2%	Canada	25,530	36,748	29,726	32,220	25.1%
Republic of Korea	1,974	8,880	8,654	23,529	2.6%	Indonesia	0	20,725	19,755	10,681	8.3%
People's Republic of China	0	8,262	18,711	32,353	3.5%	Japan	42,877	43,629	19,307	16,852	13.1%
Republic of China (Taiwan)	1,480	8,574	8,091	12,097	1.3%	Italy	20	127	4,570	5,908	4.6%
Canada	10,479	29,155	7,269	7,241	0.8%	Venezuela	3,639	3,350	7,160	4,558	3.6%
United Kingdom	369	4,248	6,393	2,362	0.3%	United Kingdom	171	1,905	1,412	1,093	0.9%
Brazil	0	0	11,000	8,248	0.9%	France	59	200	875	867	0.7%
Thailand	192	3,821	4,307	3,469	0.4%	Hong Kong	48	234	272	209	0.2%
Egypt	0	4,283	3,124	2,850	0.3%	Switzerland	49	57	214	41	---
El Salvador	0	1,412	3,720	0	0.0%	West Germany	341	843	265	700	0.5%
Algeria	0	0	2,023	27	---	Republic of China	1	212	188	403	0.3%
Costa Rica	0	1,243	2,615	0	0.0%	Sweden	24	770	95	15	---
Guatemala	0	209	1,640	0	0.0%	Denmark	14	46	51	31	---
West Germany	391	3,426	1,398	1,582	0.2%	Netherlands	46	131	45	15	---
Total 15 Countries..	\$120,128	\$377,016	\$590,849	\$861,436	94.3%	Total 15 Countries...	\$72,919	\$146,826	\$122,756	\$126,807	98.9%
Total All Countries	\$129,884	\$392,157	\$611,826	\$913,047	100.0%	Total All Countries...	\$78,372	\$154,416	\$132,433	\$128,232	100.0%

Source: U.S. Department of Commerce.

Table 7. TOTAL ALASKAN EXPORTS, DOLLAR VALUES BY YEAR AND PHYSICAL QUANTITIES IN 1979

	Values (in dollars)					Quantities Exported in 1979	Price Per Unit
	1970	1976	1977	1978	1979		
MAJOR ALASKA PRODUCED ITEMS - TOTAL	106,285,029	284,926,147	353,221,066	554,904,552	825,352,708		
FOREST PRODUCTS - TOTAL	68,373,270	149,456,943	179,212,546	168,484,385	271,135,894		
LOGS	6,273,081	5,883,538	13,803,453	21,798,795	NA	NA	
Western Hemlock	1,649,522	377,876	2,498,857	5,136,037	NA	NA	
Cedar (almost 100% Red Cedar)	a	631,293	826,438	2,152,061	NA	NA	
Spruce	a	a	a	10,173,917	NA	NA	
Other	4,623,559	4,874,369	10,478,158	4,336,780	NA	NA	
ROUGH SAWN LUMBER	29,675,273	67,056,127	67,494,921	68,750,777	NA	NA	
Western Hemlock	7,967,061	27,828,838	28,734,462	31,906,210	NA	NA	
Cedar (almost 100% Red Cedar)	91,064	368,920	1,559,090	21,655	NA	NA	
Spruce	21,617,148	36,918,369	37,111,369	36,822,912	NA	NA	
Other	0	1,940,000	90,000	0	NA	NA	
PULP	31,939,341	66,919,124	91,160,623	76,749,409	NA	NA	
Chemical Dissolving	29,414,339	65,549,222	89,385,711	75,450,657	NA	NA	
Pulp Sulfite and Sulfate	2,525,002	1,369,902	1,774,912	1,298,752	NA	NA	
OTHER FOREST PRODUCTS	485,575	9,598,154	6,753,549	1,185,404	NA	NA	
Pulpwood - Chip Form	270,000	4,078,417	5,550,714	1,185,404	NA	NA	
Hoopwood, Chips and Poles	0	5,519,737	885,579	0	NA	NA	
Miscellaneous	215,575	0	317,256	0	NA	NA	
SEAFOOD PRODUCTS - TOTAL ^b	9,838,322	13,376,159	52,106,269	205,707,131	357,047,566	156,612,062 lbs	\$2.28
SALMON - FRESH AND FROZEN	3,386,129	501,530	5,303,666	39,396,446	116,152,610	58,458,392 lbs	\$1.99
KING CRAB - FROZEN	29,525	15,800	7,233,577	74,268,410	70,947,746	29,513,273 lbs	\$2.40
FISH ROE	a	a	a	52,609,528	78,124,198	12,771,498 lbs	\$6.12
SNOW CRAB - FROZEN	a	a	a	27,648,298	53,384,828	33,385,151 lbs	\$1.60
OTHER FISH AND SHELLFISH	6,422,068	12,858,829	39,569,026	11,784,419	38,438,184	22,483,748 lbs	\$1.71
NATURAL GAS	23,416,591	91,225,414	95,325,627	111,442,000	122,536,000	55,588,902 MCF	\$2.20
UREA	2,555,464	16,745,965	20,059,126	59,837,567	73,719,496	649,279 STN	\$113.54
AMMONIA	2,101,392	14,121,666	6,517,498	9,433,469	913,752	16,317 STN	\$56.00
OTHER ITEMS EXPORTED FROM ALASKA ^c	23,598,571	10,938,280	38,936,253	56,921,198	87,694,709		
TOTAL EXPORTS FROM ALASKA	129,883,600	295,864,427	392,157,319	611,825,750	913,047,417		

a/ Not reported separately.

b/ These figures do not include substantial amounts of Alaskan seafood products transhipped through U.S. West Coast ports to Japan.

c/ Most of these commodities are produced in states other than Alaska and are transhipped from the West Coast through Anchorage.

NOTE: Values and quantities of forest products exported from Alaska are shown on pages B-11 and B-12.

Source: U.S. Department of Commerce.

public utilities 3.3 percent; wholesale trade 3.1 percent; retail trade 3.3 percent; finance, insurance and real estate 7.0 percent; services 4.0 percent; federal government 2.0 percent; state government 3.1 percent; and local government 3.3 percent.

Alaska's population, though experiencing fluctuation because of the rise and fall in the oil and gas industry, is realizing a steady increase. Alaska has a segment of population that is temporary; i.e., the oil and gas industry and government. Studies are currently under way to determine the percentage of permanent and temporary residents. Alaska has the second lowest median age of all states: 26.1 years. Sixteen percent of all Alaskans listed their race as American Indians, Eskimo, or Aleut, as compared to six percent nation wide. Fifty-three percent of Alaskans are male as opposed to 48.6 percent nationally.

THE ROLE OF THE PLANNING BLOCKS IN THE REGIONAL ECONOMY

The resources of the planning blocks play only a minor role in the southwest economy. The planning block with the greatest current impact is the Minchumina, which is to be opened for public entry. Forestry, agriculture, and range do not have significant impact on regional or state economy.

SUBSISTENCE

Use of natural resources by rural Alaskan residents who have traditionally hunted, fished or gathered for food and shelter will have a great impact on public lands. As discussed in the wildlife section, moose, caribou, bear, sheep, furbearers, waterfowl, game birds, and fish habitat management will have high priority to enhance subsistence use.

BLM lands near villages, bordering Native allotments and having good fishing rivers and streams will have the greatest demand for subsistence use. These areas are identified in the URA. Studies have been conducted which list an estimated cash value for subsistence items. Native people place a high value on subsistence because of its social, cultural, and religious significance in their lifestyle and beliefs. Federal and State laws are specific in assuring the right of subsistence activities to State individuals. Subsistence does and will have an impact on BLM lands.

COMMUNITY PROFILE

Bethel

Located on the north bank of the Kuskokwim River approximately 65 miles along the river mouth, Bethel is considered the distribution center for ocean shipping to the Kuskokwim and McGrath Rivers. The only hospital in the region is located in Bethel,

and this is operated by the U.S. Department of Health and Human Services. Bethel is the trade center for goods and services in the region.

There were 1,289 housing units in 1980 compared with 717 in 1979. There also is expansion of the community's commercial services, i.e., a shopping center. Bethel is also a regional center for some State and Federal agencies.

McGrath

McGrath is located on the left bank of the Kuskokwim River. Facilities include a post office, BLM seasonal fire station, FAA maintained airfield, school, and roadhouse.

The 1980 census lists McGrath with a population of 382. It is a second-class city incorporated in 1975. There is a road connecting McGrath Ophir, the only one of that length in the Planning Area.

Other Communities in the Region

The following second-class communities have some impact on the Planning Area:

Located on the Yukon/Kuskokwim delta 59 miles southwest of Russian Mission, Aniak is one of the larger communities along the Kuskokwim River, with a population of 341.

The town has lodging facilities, a restaurant, telephone exchange, and a power system (see table 8). Wien Airlines and two charter flying services serve the town, which has a 6,000-foot gravel runway. Like most Delta communities, Aniak has no central water or sewer system, but does have police protection and a health clinic staffed by a nurse.

Located about 10 miles east of Aniak in the Kilbuck/Kuskokwim Mountains, Chuathbaluk has a population of 105. It is unincorporated, and offers no lodging or restaurant for visitors. The Kuskokwim serves as its primary transportation link to other villages (although a 2,000-foot runway under construction in 1979 may be usable now). Water and sewer lines installed in 1972 by BIA are now inoperative. The schools and some houses have electricity. A community health clinic is staffed by an aide.

A village of 59 people, Crooked Creek lies 50 miles northeast of Aniak in the Kilbuck/Kuskokwim Mountains on the north bank of the Kuskokwim River. It was a way station for gold rush mining camps in the Iditarod district.

There is no central power production, but a power line runs from the school to the lodge, serving several homes also. A gravel

Table 8. Kuskokwim Communities Affecting the Planning Blocks

	Upper Kalskag	Stony River	Sleetmute	Red Devil	Lower Kalskag	Lime Village	Crooked Creek	Chuatbaluk	Aniak
Airstrip	2200' gravel	2300' sched.	2400' gravel	4000' gravel	2200' gravel	2000' gravel	2100' gravel	*	6000' gravel
Roads	6 miles	--	--	--	5 mi	--	1.5 mi	--	8 mi
Boats	barge	barge	barge	riverboat	barge	small riverboat	barge	barge	barge
Housing Units	24	18	21	11	53	12	28	50+	91
Schools	1 (K-8) shared H.S.	1 (K-12)	1 (K-12)	1 (1-12)	3 (K-12)	1 shared H.S.	1 (H.S.)	2 (1-12)	3 (K-12)
Hotel/Lodge	--	--	lodge	lodge	--	--	lodge	--	hotel
Restaurant	--	--	--	--	--	--	--	--	1
Store	2	1	1	1	1	--	--	1	2
Churches	--	--	--	--	2	--	--	--	3
Health facilities	clinic (1 aide)	clinic (1 aide)	clinic (1 aide)	1 aide	clinic (2 aides)	clinic (1 aide)	1 aide	clinic (1 aide)	clinic (nurse,
Recreation Facilities	director	--	director	--	director & asst.	--	--	bdg.	director & asst.
Community Hall	yes	yes	yes	--	yes	yes	--	yes	yes
Generator	tie line	--	1	--	power system	2 (scheduled use)	2	2 (scheduled use)	power system

Table 8 (continued)

	Upper Kalskag	Stony River	Sleetmute	Red Devil	Lower Kalskag	Lime Village	Crooked Creek	Chuatba luk	Aniak
Phones	1	1 (winter)	1	1	1	1	1	1	100
Water System	**	--	--	--	yes	--	--	--	--
Solid Waste System	dump	--	--	dump	dump	--	dump	dump	dump
Sewage System	**	--	--	--	--	--	--	**	--
TV Reception	yes	yes	yes	yes	yes	--	yes	yes	yes
Government	2nd class city	unincor- porated	unincor- porated	unincor- porated	2nd class city	unincor- porated	unincor- porated	2nd class city	2nd class city
Police	jail, 2 police	--	yes	--	yes	--	--	yes	chief, dep.
% Native Population	87%	82%	87%	27%	97%	100%	93%	96%	82.9%

* under construction in 1979

** system was abandoned

runway accommodates regular mail/passenger service by Vanderpool Flying Service. Crooked Creek has good water access, so heavy freight is delivered by barge.

Lime Village, a community of 26 people, is on the Stony River 50 miles southeast of its junction with the Kuskokwim River. It is named for the nearby Lime Hills (so called because they are limestone).

The village is unincorporated, with only 12 residences and no lodging, store, or restaurant for visitors; no television, no police or recreation facilities, no central sewage or water systems. There is a phone in the village, as well as a State-built gravel airstrip (see table 8).

With a population of 246, Lower Kalskag is one of the more important Kuskokwim towns. It is a second-class city, with power, sewer and water systems. The town has police service, a health clinic staffed by two aides, and a general store. There is no lodge or restaurant. A 2,200-foot gravel airstrip handles most of the freight and passenger traffic except for bulk freight carried by river.

The village of Red Devil straddles the Kuskokwim River at the mouth of Red Devil Creek, 73 miles east of Aniak. The town's resident population of 81 people receives fuel oil and bulk supplies by barge and large riverboat, but most cargo, mail and passengers are transported by air. Vanderpool Flying Service operates scheduled flights.

Although Red Devil is unincorporated, there is a lodge, grocery store, health clinic staffed by one aide, and a school. There are no central utility services. Television reception is poor.

Sleetmute is located on the east bank of the Kuskokwim just 1.5 miles north of its junction with the Holitna River. Sleetmute was the site of a Russian trading post in the early 1800's. The village has a population of 109. It is unincorporated, and has no utility services. It does have police protection (see table 8), a community hall, a health clinic with one aide, and a store and lodge (across the river).

The village of Stony River has 74 people and is located about two miles north of the junction of the Kuskokwim and Stony Rivers. Since it has easy access by riverboat, its fuel and bulk supplies are delivered by major barge lines. Wien Airlines operates scheduled flights for passengers, mail, and freight. There is a store and a health clinic (see table 8), but no other facilities for visitors.

The village is unincorporated, and offers no utility or civic services. The single phone operates only during winter when the school generator is running.

Upper Kalskag is situated on the Kuskokwim River about three miles east of Lower Kalskag. It is a second-class city, with a jail and police protection, two stores, a city office building, and health and recreation services (see table 8). Electricity is supplied via a tie line to the Lower Kalskag system. Water and sewer systems were built in the early 1970's, but had to be abandoned. Upper Kalskag has good transportation, with commercial barge lines delivering fuel and bulk supplies, and with two airlines offering scheduled flights for mail, passengers, and freight.

TRANSPORTATION IN THE REGION

Roads

The only road in the Planning Area is from McGrath to Ophir. All other roads are service roads serving the local vicinity.

Marine

The port of Bethel has one berth along the steel bulkhead located at the mouth of the Kuskokwim River. The peak year for this port was 1980, in which its throughput was 43,000 tons. There is a draft limitation in the entrance channel which restricts vessels using the port to those with drafts of 12 feet or 13 feet at high tide. Tables 9 and 10 show the carriers and traffic at this facility for 1979 and 1980.

Much of the incoming dry cargo is containerized and is unstuffed on open storage space next to the wharf. This cargo is then transferred to river barges, stored in limited space, or transferred to town or airport. Recent construction activity in the Bethel area increased throughput substantially in 1980 and created congestion and excess waiting time for barges in the port. This is an indication of the pressures of future growth on port operations. Future capacity requirements call for one additional berth space, six more acres of open space, and 17,000 square feet of covered storage space. The port site can be expanded with a minimum of land acquisition, dredging and grading. The approach to Bethel is 93 miles from the Pilot Bar through a maze of sand bars, which change every year, in the Kuskokwim Bay, and through the river channel, which is better marked but still difficult to navigate. Ships are piloted through this channel.

Cargo is carried between Bethel and the villages on the Kuskokwim River and the shores of Kuskokwim Bay primarily by barges operated by United Transportation Inc. Two other carriers are also involved. The Benkley Company operates liquid fuel vessels and a barge owned by the village of Kiepnuk began operation in 1980.

Table 9. 1979 Register - Bethel Dock.

Vessel	Carrier	Length	Arrival Time	Departure Time	Elapsed Hours at The Dock
McKinley	PAL	400'	1:30 PM	5/30/79	18
Polar Trader	NSI	230'	9:30 PM	6/02/79	21
Kaisamaru #5	JAPS	245'	1:30 PM	6/06/79	20
Foss 287	FAL	285'	3:00 PM	6/09/79	67
Norton Sound	ACL	336'	10:00 AM	6/12/79	72
Arctic Challenger	APUTCO	316'	9:00 PM	6/29/79	24
Kaisamaru #5	JAPS	245'	11:30 AM	7/03/79	17
McKinley	PAL	400'	10:00 PM	7/13/79	8
Norton Sound	ACL	336'	6:00 AM	7/14/79	37
Tazlina	NSI	250'	10:00 PM	7/16/79	11
Krystal Sea	ARNDT BROS.	140'	5:00 PM	7/19/79	20
Foss 287	FAL	285'	4:30 PM	7/23/79	16
Krystal Sea	ARNDT BROS.	140'	10:00 AM	7/31/79	20
Edgecumbe	ACL	230'	2:30 PM	8/07/79	22
Krystal Sea	ARDNT BROS.	140'	5:00 PM	8/08/79	20
Kaisamaru #5	JAPS	245'	9:30 AM	8/27/79	20
Tazlina	NSI	280'	12:30 PM	8/31/79	24
McKinley	PAL	400'	3:00 PM	9/03/79	69
Norton Sound	ACL	336'	6:00 PM	9/08/79	69
Foss 287	FAL	285'	10:30 PM	9/11/79	58
McKinley	PAL*	400'	3:00 PM	9/18/79	31
Foss 287	FAL*	285'	5:00 PM	9/22/79	85
Beluga	ACL	230'	12:00 PM	9/29/79	84
Polar Trader	NSI	230'	3:00 PM	10/11/79	90
				TOTAL	953

*Indicates Barge stopped from Nome to pick up empty containers.

Source: United Transportation, Inc.

PAL = Pacific Alaska Line
 NSI = Northland Services

ACL = Alaska Cargo Line

FAL = Foss Alaska Line
 APUTCO = Alaska Puget

...Transportation Co.

Table 10. 1980 Dockage Register - Bethel Dock

Vessel	Carrier	Length	Arrival Time	Departure Time	Elastic Hours at the Dock	
McKinley	PAL	400'	5:00 PM	2:00 PM	5/28/80	21
Norton Sound	ACL	336'	4:30 PM	2:30 PM	5/30/80	22
Tazlina	NSI	250'	12:30 PM	8:00 AM	6/08/80	19
Foss 287	FAL	285'	1:00 PM	12:30 PM	6/11/80	48
Cool Barge 560	APUTCO	350'	12:00 AM	3:00 AM	6/22/80	15
Cool Barge 570	APUTCO	324'	2:30 AM	2:00 AM	7/08/80	24
Polar Trader	NSI	230'	1:00 PM	10:30 AM	7/10/80	22
McKinley	PAL	400'	2:00 PM	3:00 AM	7/12/80	13
Norton Sound	ACL	336'	2:00 PM	2:00 PM	7/27/80	18
Foss 287	FAL	285'	8:00 PM	2:00 PM	8/04/80	42
Tazlina	NSI	250'	3:00 PM	5:00 PM	8/05/80	26
Edgcombe	ACL	230'	6:00 PM	10:00 AM	8/12/80	16
Polar Trader	NSI	230'	4:00 PM	2:00 PM	9/09/80	70
McKinley	PAL	400'	7:00 PM	4:00 PM	9/13/80	49
Foss 287	FAL	285'	12:00 PM	12:00 AM	9/28/80	60
Foss 280	FAL	280'	12:00 PM	12:00 AM	2/28/80	60
McKinley	PAL*	400'	7:30 PM	6:30 AM	9/30/80	11
Tazlina	NSI	250'	2:30 PM	1:30 PM	10/07/80	119
TOTAL,					645	

*PAL stopped on return from Nome to pick up empty containers.

Source: United Transportation, Inc.

The containerization of almost all cargo to Bethel has resulted in the transshipment of more inbound traffic through Bethel to villages along the coast. Containerized service also means that some shipments destined for Yukon River villages can be more easily handled through Bethel. Once the container is unstuffed, the shipment is transferred to a skyvan.

The marine transportation sections of the Western and Arctic Alaska Transportation Study consider in detail all phases of this industry. For further data refer to the WAATS report.

Air

Air transport is the most extensively used mode of transportation in the Planning Area. Bethel is a hub for the area where fuel is available and barged cargo is transferred to skyvans and flown to the outlying villages. Unalakleet serves as a lower level subhub linking some villages to Fairbanks and Anchorage.

Eight villages have gravel airstrips: Upper Kalskag, Stony River, Sleetmute, Red Devil, Lower Kalskag, Lime Village, Crooked Creek, and Aniak (see table 8).

FAA maintains airfields with facilities at Unalakleet, Minchumina, McGrath, Farewell, Aniak, St. Mary's, Hooper Bay, and Bethel.

Bethel, Unalakleet, St. Mary's, McGrath, and Aniak are the major airports in the region. Hooper Bay, Bethel, St. Mary's, and McGrath have hardened surface runways 1,500 feet in length.

The URA lists 89 airfields (including float plane areas). These are shown on table 9-2 of the URA.

Aircraft operations in Alaska are primarily freight oriented; this situation holds true for both village air services and trunk airlines serving regional hubs.

Airlines serving regional hubs fly aircraft in the "quick change" configuration in order to exchange freight for passenger capacity when it is economic to do so. On the Boeing 737, for example, 86 of the normal 112 seats may be removed to provide additional cargo capacity. The soon-to-be-published WAATS study gives more information on freight/passenger capacities. Aviation in the Southwest Planning Area will change should there be industrial development, recreation development, and population growth. Long range population projections are not available. Detailed plans and demand projections for traffic, air mail, air freight, and passenger needs are given in the aviation section of the WAATS.

FUTURE PROJECTIONS

The Western Alaska and Arctic Transportation Study and the State of Alaska Division of Budget Management make population projections to 1990 according to (WAATS, The General Alaskan Economy). Tables 11 and 12 show population projections, low, most probable, and high expectations. The economic overview lists government spending/lending projections. The Alaska Division of Budget and Management gives the following projections for industry:

The Alaska Department of Fish and Game are predicting an increase in salmon while the State of Alaska Division of Budget and Management predicts a salmon catch decline over the decade. The ADF&G statistics show that the price of salmon is declining, which influences the size of commercial catch that ADB&M is projecting.

"The salmon catch declines in 1981 to 80 percent of the 1980 level and remains there throughout the decade. Shellfish catches improve by 10 percent in 1982 and 1983 (holding at the 1980 level in 1981), and remain at the 1983 level through 1990. The bottom-fish industry adds 100 jobs in 1981 and another 100 jobs in 1982."

High Development Assumptions

Under the high development assumptions, there will be increased demands for public lands for rights-of-way, homesteads, headquarter sites, and for the management of wildlife habitat for recreation (i.e., backpacking, hiking, camping, hunting, and fishing). Management of the headwaters for commercial fishing, and management of habitat for subsistence activities will occur.

Based on the URA and the economic outlook (research conducted by the State of Alaska) population predictions made by WAATS the following assumptions are made:

Development of major oil and gas fields offshore in the Norton Sound and onshore in the Holitna and Minchumina basins.

Development of oil and gas support facilities including port facilities and tank storage at Norton Sound, pipelines from onshore fields to Norton Sound or to TAPS.

Developing of major mining operations and processing plant for strategic or precious minerals and of overland or water transportation routes to get processed materials to market.

Development of electrical power generating plants powered by locally available fossil fuels; i.e., natural gas and coal, and construction of hydroelectric dams.

Table 11. Population Forecasts for Selected Communities*

Name	Low			Most Probable			High		
	1985	1990	2000	1985	1990	2000	1985	1990	2000
Nightmute	138	139	142	146	153	161	154	168	201
Chefornak	230	233	237	243	256	269	257	281	336
Kipnuk	385	389	397	407	427	449	431	471	563
Kwigillingok	213	215	219	225	237	249	238	260	311
Tuntatuliak	236	239	243	249	263	276	264	289	345
Atnautluak	200	202	206	211	222	233	223	244	292
Akiachak	398	402	410	420	442	464	444	486	580
Bethel	3736	3831	4026	3922	4163	4419	4202	4685	5824
EEK	311	314	321	329	346	364	348	380	455
Goodnews Bay	251	254	259	266	279	294	281	307	367
Platinum	49	49	50	51	54	57	54	59	71
Mekoryuk	187	188	192	197	207	218	208	228	272
Napakiak	311	314	321	329	346	364	348	380	455
Napaskiak	218	220	225	231	242	255	244	266	318
Kwethluk	450	455	464	476	500	526	503	550	657
Akiak	195	197	201	206	216	227	218	238	284

Table 11 (continued)

Name	Low			Most Probable			High			
	1985	1990	1995	1985	1990	1995	1985	1990	1995	2000
Emonak	553	558	564	584	614	645	617	675	738	807
Alakanuk	541	546	551	571	601	631	604	660	722	789
Sheldon Point	145	146	148	153	161	169	162	177	194	212
Mountain Village	585	591	597	619	650	683	654	715	781	854
Saint Marys	537	543	548	576	612	649	617	688	767	855
Pilot Station	316	320	323	335	352	370	353	386	423	462
Newtok	162	164	166	172	180	189	181	198	217	237
Toksook Bay	351	354	358	371	390	410	392	429	469	512
Tununak	305	308	311	323	339	356	341	373	408	446
Elim	223	228	230	231	242	248	239	257	264	270
Unalakleet	659	679	686	687	729	748	701	756	775	791
St. Michael	229	235	237	237	249	255	245	264	271	278

*Source: Western and Arctic Alaska Transportation Study

Table 12. MAP MODEL POPULATION AND EMPLOYMENT PROJECTIONS FOR NORTHWEST REGION
HIGH FLOW SCENARIO

Year	Population	Employment	Mining and Exogenous Construction	Manufacturing and Agriculture, Fisheries and Forestry	Local Construction and Transportation	Trade, Service and F.I.R.E.	Government	Wages and Salaries	Real Disposable Personal Income	Per Capita Real Disposable Personal Income
1983	283	140	64	0	69	7	0	2,731	2,687	93,848
1984	578	295	136	0	133	14	-0	5,168	5,146	158,277
1985	1,206	601	248	0	322	26	1	9,840	9,822	251,535
1986	1,536	877	492	0	341	39	-3	17,084	16,999	624,094
1987	2,000	1,342	965	0	304	64	-14	31,651	31,377	1,399,900
1988	2,708	1,599	923	0	581	79	1	34,518	34,095	1,216,030
1989	3,504	2,051	1,124	0	791	105	13	40,239	39,660	1,170,090
1990	7,015	4,773	3,328	0	1,147	250	6	98,831	97,185	2,735,090
1991	8,597	5,964	4,102	0	1,381	326	27	126,091	123,645	3,223,850
1992	8,874	6,198	4,295	0	1,459	351	42	133,534	130,580	3,320,630
1993	7,916	5,553	3,776	0	1,355	323	48	121,578	118,574	3,099,210
1994	7,140	5,027	3,338	0	1,296	294	45	110,943	107,916	2,862,120
1995	6,961	4,961	3,282	0	1,293	289	43	111,073	107,787	2,855,670
1996	6,847	4,938	3,249	0	1,300	290	45	112,824	109,171	2,885,930
1997	6,857	5,006	3,280	0	1,337	297	49	117,074	112,985	2,965,180
1998	6,816	5,036	3,280	0	1,347	302	52	120,314	115,762	3,017,680
1999	6,811	5,100	3,310	0	1,372	308	52	123,655	118,681	3,063,330
2000	6,747	5,121	3,310	0	1,386	312	56	126,382	120,930	3,104,930

Table 12 (continued) MAP MODEL POPULATION AND EMPLOYMENT PROJECTIONS FOR NORTHWEST REGION
MEDIUM FIRM SCENARIO

Year	Population	Employment	Mining and Exogenous Construction	Manufacturing and Agriculture, Fisheries and Forestry	Local Construction and Transportation	Trade, Service and F.I.R.E.	Government	Wages and Salaries	Real Disposable Personal Income	Per Capita Real Disposable Personal Income
1983	289	144	67	0	64	7	0	2,812	2,766	97,977
1984	673	343	158	0	167	16	-0	5,991	5,967	181,121
1985	1,048	508	194	0	287	22	2	8,094	8,080	187,645
1986	942	542	311	0	207	24	-2	10,624	10,572	410,594
1987	998	694	524	0	133	33	-9	16,662	16,520	813,695
1988	1,832	998	487	0	454	47	4	19,500	19,269	610,758
1989	1,534	978	627	0	281	53	4	19,424	19,152	706,301
1990	4,473	3,094	2,207	0	701	159	-9	64,243	63,191	2,065,480
1991	5,310	3,731	2,659	0	822	204	4	78,692	77,191	2,387,360
1992	5,018	3,539	2,475	0	806	201	14	75,908	74,258	2,291,520
1993	4,146	2,927	1,987	0	713	171	18	63,685	62,135	1,968,480
1994	3,729	2,659	1,776	0	674	155	15	58,492	56,915	1,814,960
1995	3,683	2,664	1,777	0	679	154	13	59,490	57,749	1,829,780
1996	2,756	2,754	1,837	0	701	160	14	62,869	60,854	1,907,990
1997	3,785	2,811	1,867	0	720	166	17	65,681	63,407	1,968,98
1998	3,761	2,828	1,867	0	731	169	19	67,515	64,981	2,000,390
1999	3,726	2,842	1,867	0	741	171	19	68,808	66,062	2,013,250
2000	3,688	2,853	1,867	0	748	173	21	70,308	67,297	2,036,660

University of Alaska, Institute of Social and Economic Research, 1979b

Table 12 (continued) MAP MODEL POPULATION AND EMPLOYMENT PROJECTIONS FOR NORTHWEST REGION
LOW FIND SCENARIO

Year	Population	Employment	Manufacturing and			Local Construction and Transportation	Trade, Service and F.I.R.E.	Government	Wages and Salaries	Real Disposable Personal Income	Per Capita Real Disposable Personal Income
			Mining and Exogenous Construction	Agriculture, Fisheries and Forestry	Manufacturing and						
1983	189	94	43	0	46	5	0	1,820	1,791	63,027	
1984	294	152	72	0	71	7	-0	2,690	2,678	87,293	
1985	524	259	105	0	141	11	1	4,204	4,197	109,715	
1986	759	377	149	0	208	16	2	6,100	6,073	150,926	
1987	308	180	103	0	064	09	1	3,529	3,501	140,434	
1988	700	389	199	0	170	17	0	7,729	7,641	274,059	
1989	926	506	373	0	180	28	-3	12,546	12,367	503,500	
1990	2,265	1,558	1,102	0	361	81	-10	31,696	31,185	1,143,430	
1991	2,211	1,557	1,110	0	338	86	-3	32,398	31,794	1,170,330	
1992	1,718	1,206	828	0	285	7	2	25,440	24,898	920,367	
1993	1,337	941	621	0	243	55	4	20,092	19,611	725,086	
1994	1,262	902	592	0	239	52	2	19,530	19,010	697,602	
1995	1,402	1,021	682	0	261	58	-1	22,569	21,916	794,918	
1996	1,392	1,028	682	0	265	60	1	23,195	22,459	807,793	
1997	1,382	1,034	682	0	269	61	2	23,891	23,071	822,727	
1998	1,371	1,040	682	0	274	62	3	24,562	23,648	835,086	
1999	1,356	1,045	682	0	277	63	2	25,038	24,047	839,379	
2000	1,341	1,049	682	0	280	63	3	25,591	24,503	848,262	

University of Alaska, Institute of Social and Economic Research, 1979b

Table 12 (continued) MAP MODEL POPULATION AND EMPLOYMENT PROJECTIONS FOR NORTHWEST REGION
EXPLORATION CASE

Year	Population	Employment	Mining and Exogenous Construction	Manufacturing and Agriculture, Fisheries and Forestry	Local Construction and Transportation	Trade, Service and F.I.R.C.	Government	Wages and Salaries	Real Disposable Personal Income	Per Capita Real Disposable Personal Income
1983	95	47	21	0	23	2	0	91	895	31,730
1984	198	104	51	0	47	5	-0	1,856	1,848	62,520
1985	108	58	3	0	21	3	0	1,017	1,015	35,324
1986	6	1	0	0	0	0	0	27	27	-199
1987	4	1	0	0	0	0	0	11	11	-727
1988	3	0	0	0	0	0	0	6	6	-836
1989	3	0	0	0	0	0	0	5	4	-891
1990	2	0	0	0	0	0	0	4	4	-875
1991	2	0	0	0	0	0	0	4	3	-879
1992	2	0	0	0	0	0	0	4	3	-855
1993	2	0	0	0	0	0	0	4	3	-824
1994	2	0	0	0	0	0	0	3	3	-832
1995	2	0	0	0	0	0	0	3	3	-832
1996	2	0	0	0	0	0	0	3	3	-836
1997	2	0	0	0	0	0	0	3	3	-801
1998	2	0	0	0	0	0	0	3	2	-813
1999	2	0	0	0	0	0	0	3	3	-739
2000	2	0	0	0	0	0	0	2	2	-801

University of Alaska, Institute of Social and Economic Research 1979b

Development of forestry resources for export of logs and for local construction needs.

Expansion of fishing industry. Commercial harvest and processing increasing demand for air and water transportation.

Timber Harvest: The harvest rises to 608 million board feet per year by 1982, then remains at essentially that level throughout the remainder of the decade.

Tourism: The number of tourists visiting Alaska increases by five percent in 1981 and by nine percent per year thereafter.

Hard Rock Minerals: The borax molybdenum find at Quartz Hill is developed and will provide an annual average of 700 jobs beginning in 1984. Exploration and placer mining increases steadily throughout the decade. In total, mining employment other than oil and gas increases from 527 jobs in 1980 to 2,179 jobs in 1990 for an annual average rate of increase of 15.3 percent.

Oil and Gas: An average of three lease sales (State and Federal together) are held each year with attendant exploration. A single 200-million-barrel oil field in the Beaufort Sea begins production in 1987.

Intermediate Development Assumptions

Intermediate assumptions include the development of Norton Sound offshore and one onshore oil and gas basin. Shipment of Norton Sound production is from offshore facilities. Onshore wells are capped to await sufficient production potential to warrant development of a pipeline to TAPS.

This projection assumes development of mining operations with on-site small scale processing facilities; transportation of products will be mostly by water.

Forestry production is assumed to be mostly for local houselogs and firewood, increase of the fish harvest, limited expansion of processing and shipping capacity.

There would be some demand for public land for minor rights-of-way, few homesteads, with the largest demand for headquarter sites. Intermediate development assumes management of habitat for recreation, hunting, fishing, hiking and backpacking.

Low Development Assumptions

Under a low development projection, there would be oil and gas development offshore with offshore facilities. Exploration would be conducted onshore but with insufficient production to warrant development.

No increase would occur in locatable minerals development.

Demand for local-use houselogs and firewood would be on State and Native lands.

Fish harvest would increase, utilizing present processing plants and transportation facilities. There is a possibility of some increase in processing ships.

There would be a demand for public lands to include management of habitat for hunting and fishing with no headquarters on public lands.

III RESOURCE VALUES ANALYSIS

LANDS

Present Situation

There are approximately 72,000,000 acres in the Southwest Planning Area.

There will be approximately 12 million acres under BLM management when Federal, State, and Native land transactions are completed (see table 10-1 Lands section of the URA).

Lands with the highest mineral, forestry or recreation potential have been selected or identified by the State or Native corporations. The State has received tentative approval to about 11,773,000 acres of land and has filed selections for about 9,585,000 more for a total of 21,385,000. The three Native corporations, Doyon Ltd., Bering Straits, and Calista have identified selected lands, some of which have been conveyed. Also there are additional lands to be conveyed. Some 110,000 acres have been overselected and may return to BLM management. For a complete breakdown of land ownership refer to table 10-1 of the Lands section of the URA.

There are 85,000 acres of "in-lieu" lands. These are broken down by planning blocks as shown below.

Goodnews	34,000
NYAC	26,000
Sleetmute	16,000
Anvik River	9,000

Some of this acreage may return to BLM management.

The six planning blocks are described in detail in the URA, describing boundaries of BLM lands as well as ongoing activities and perceived future needs.

BLM lands border Togiak National Wildlife Reserve, Yukon Delta National Wildlife Reserve, Innoko National Wildlife Reserve, and Nowitna National Wildlife Reserve. Denali National Park and Preserve and Lake Clark National Park and Preserve are within close proximity to BLM, and some activities may overlap. These would include hunting, fishing, backpacking and hiking utilizing existing trails and airstrips.

There are mining claims in the Goodnews and Sleetmute planning blocks. There is active mining in Goodnews and NYAC. These mines have their own roads or airstrips.

There is commercial fishing, mostly for salmon, in the Goodnews block, with some on a smaller scale in the Anvik River planning block around the mouth of the Unalakleet River.

Recreation activities include sport hunting, fishing, and backpacking. There are a few commercial guides in the Planning Area; Unalakleet, Farewell Lake Lodge, and Farewell airstrip.

State lands border BLM lands in the Sleetmute, Lime Village, and Minchumina planning blocks. There are no known plans for these lands at this time.

Future Demand

There will be continued and expanded demands for subsistence use in the six planning blocks. There is no attempt to place a dollar cost on this activity as the measure of worth of this activity is weighed from a social and cultural value placed upon it. The demand will remain adjacent to villages which are located in areas which have access to traditional food sources (see URA for a list of subsistence foods). There may be an increased demand for subsistence hunting in Minchumina for caribou.

There will be demands made for access across public lands to Native allotments, parks, preserves, refuges, and state lands. Anvik River and Sleetmute will have more impact than the other planning blocks due to discontinuous blocks of land in the same general vicinity.

There will be an increased demand for platinum. The demand for land will depend on legal restrictions; i.e., agreement before ANILCA. There will be more discussion in the Minerals section.

The tourism industry brings \$260,000,000 into Alaska annually. The impacts on land use will be discussed in the Wildlife and Recreation sections.

SUBSISTENCE

At this time no firm definition of subsistence has been established; however, it is generally agreed that subsistence activities are reserved to rural residents who have traditionally hunted, fished, and gathered for food sources. At present, subsistence activities are ongoing in all six planning blocks. The concentrated areas of subsistence use are along the coastline and rivers, particularly the Yukon, Anvik, and Kuskokwim Rivers. Subsistence activities, though more intense near the villages, have expanded since the introduction of snow machines and motor boats, increasing land use for this activity onto BLM lands. Goodnews, Sleetmute, and Anvik River planning blocks have more total area used for subsistence than the remaining three blocks, because rivers run through public lands and because Native villages and settlements are located adjacent to or bordering public lands.

MINERALS

Present Situation

Minerals constitute one of Alaska's most valuable assets. There is limited opportunity for full development of mineral potential in the McGrath Resource Area. The limiting factors are: accessibility, marketability, and in some cases availability. The land with the most potential for mineral development has been selected by Native corporations, groups or the State of Alaska. The land that has remained under BLM management has substantial quantities of sand and gravel. At this time it is not possible to put a market value on this commodity. There has not been a study to determine the quality of material or cost of transportation to projects other than those in the immediate vicinity. The villages in the vicinity of Bethel and Aniak are expanding, which means that there needs to be gravel close by for service roads within the village, and public facilities adjacent to the village. With expansion, improvement and maintenance of airports and roads within the village and bush communities, the need is definitely present and a market will have to be developed. Gravel is being barged into Bethel from Seattle at \$600/yard as the Yukon-Kuskokwim delta is lacking in good sources near the villages. There is use of sand and gravel for local roads, airfields and domestic construction; however, the use has not been measured.

Minerals in known quantity with undetermined or fluctuating market value other than gas and oil are: placer gold, silver, mercury, zinc, copper, tungsten, antimony, uranium, lead, tin, iron, and titanium. The northern portion of the resource area is open to metalliferous minerals. At this time these metals are abundant in more accessible areas on the world market and will be utilized first. The total platinum production from Goodnews Bay district is estimated to be over 20,000kg. Although this area is closed to mining and mineral leasing, the mine may operate under the agreement prior to ANILCA. The June 17, 1981, federal register lists rules and regulations for National Wildlife Refuges. The recreation activities include recreational gold panning, as long as it does not involve surface disturbance. The use of sluice boxes, shovels, pick axes and dredges is prohibited. Togiak National Wildlife Refuge is north and west of this area.

Specific location of minerals and ongoing activity is detailed in the URA. Mine models are given in the Western and Arctic Alaska Transportation Study - Draft Working Paper on Economic Parameters of Possible Mineral Developments in Western and Arctic Alaska, July, 1980.

Future Demand

Transportation systems need to be improved to find an economically feasible way to get the gravel to where it is needed. This could mean access across BLM lands as well as accessing this resource when available on BLM lands. As mining develops and as the population increases, so will the need for expansion of surface transportation systems. Because the market fluctuates rapidly it is impossible to put a dollar value on this resource at this time.

Mineral mining production is limited by accessibility and marketability. The current mining activity will expand at a slower rate until the demand depletes more economically obtained resource minerals.

COAL

Coal as a more economical fuel source will increase in demand in areas where it is available - again marketability of this resource is limited by access. The cost of various modes of transportation is stated in detail in the Western Arctic and Alaska Transportation Study (WAATS) by the Alaska Department of Transportation. In the Lime Hills quadrangle, coal has been reported along the Cheeneetnuk River and to the northeast (URA). This basin is an extension which flanks the Denali Park. The WAATS has done a preliminary cash flow analysis using a prototype small coal mine based on the Chicago Creek deposit located in Northwest Alaska. The analysis is as follows: number two diesel fuel at \$1.50/gallon costs about \$10.71 per million BTU's as compared to \$1.21 per gallon BTU's from 94,000 BTU/pound coal at \$23.00 per ton. Considering the variables in cost effectiveness, the development of the mine and transportation of the coal to the individual villages where it will be consumed, a power generating plant could be built near mine site - there would be cost of transmission lines to the area to be utilized. The minimum generator capacity at which coal fired plants become practical and cost effective is estimated to be 1000kw. Another alternative use would be a small scale subsistence type operation.

OIL AND GAS

The URA states that there are five onshore and offshore oil and gas basins within the Southwest Planning Area. Those that are expected to have some impact on BLM lands in the near future are the Minchumina basin, which is rated high potential and the Holitna basin, which is rated low potential. It includes about 115,200 acres (five townships) of BLM-administered land in the southern part of the Lime Village planning block. Along with problems of accessibility and marketability, land status policies constrain mineral development. The WAATS presents three mineral development projections using alternative land status and land use policies as the variables.

Scenario 1: Present (January 1980) land use controls as dictated by federal and state policies are to remain in effect over the next twenty years.

Scenario 2: Present land use controls remain in effect, but transportation corridors are provided to allow for development of claims acquired, located or patented prior to 1980.

Scenario 3: All restrictions on land use are withdrawn, allowing open access.

Mineral development is in its early stages within the study area; mine models are used to provide an analysis of exploration, development, and mine construction, investment levels, employment requirements, concentrate volumes, annual inbound freight volumes, and production values. Types of minerals and general location of possible mine development are based on information that is currently available. The analysis does not consider possible oil and gas development. A computer program developed by Whitney and Whitney, Inc. was used to perform the economic analysis of the mine models.

Table 13 presents a summary of some of the technical and economic characteristics of selected commodity groups. Additional metals, industrial materials, precious metals and coal are particularly amenable to small and medium-sized mine operation. Table 14 lists value-to-weight ratios of the mineral commodities found in Alaska. The value to weight is based on the market price per ton or pound of material.

Scenario 1 makes the following assumptions:

1. The current land status situation will continue with only gradual resolution of questions that currently exist.

Table 13. Characteristics of Major Mineral Commodity Groups Formed in Alaska¹

	Additive Metals ²	Base Metals ³	Ferrous Metals ⁴	Industrial Materials ⁵	Precious Metals ⁶	Energy Minerals ⁷
Type Of Product Shipped	Impure Concentrates	Impure Concentrates	Relatively Pure Concentrates	Relatively Pure Concentrates Or Final Product	Impure Concentrates, Unrefined Metal, Bullion	Pure Product Or Concentrate
Transportation Required For Shipment	Truck, Rail, Barge, Ship, Air In Special Cases	Truck, Rail, Barge, Ship	Rail, Barge, Ship	Truck, Rail, Barge, Ship	Air, Truck	Truck, Rail, Barge, Ship
Size Of Mines	Small To Medium Occasionally Large	Small To Large	Medium To Large	Small To Medium Occasionally Large	Small To Medium Occasionally Large	Small To Large
Probable Operators	Individuals, Small, Medium And Large Companies	Medium And Large Companies	Medium And Large Companies	Individuals, Small, Medium And Large Companies	Individuals, Small And Medium Companies	Individuals, Small, Medium And Large Companies
Location Of Market	National And International	National And International	National And International	National And International	National And International	Local, Regional, National, And International
Size Of Market	Small To Moderate	Large	Large	Small To Moderate	Moderate To Large	Large
U.S. Import Dependence	High	Moderate	High	High	Moderate	High

1. The characteristics listed here are very general and there are exceptions in every commodity group.

2. Antimony, Bismuth, Mercury, Tungsten, Tin, Rare Earths, Molybdenum

3. Copper, Lead, Zinc

4. Chrome, Iron, Nickel

5. Asbestos, Barite, Fluorspar, Prossiate

6. Gold, Silver, Platinum

7. Coal, Uranium

Source: John W. Whitney, based on research into the characteristics of deposits, mine operators, transportation requirements, etc., for commodities in each group.

Table 14. Value to Weight Ratios of Mineral Commodities Found in Alaska

	Very High Value	High Value	Moderate Value	Low Value
Additive Metals				
Tin		X		
Tungsten		X		
Rare Earths		X		
Mercury		X		
Molybdenum			X	
Antimony		X		
Bismuth		X		
Base Metals				
Copper			X	
Lead			X	
Zinc			X	
Ferrous Metals				
Iron				X
Chromium				X
Nickel			X	
Industrial Materials				
Asbestos			X	
Barite				X
Fluorspar				X
Phosphate				X
Precious Metals				
Gold	X			
Silver	X			
Platinum	X			
Energy Minerals				
Uranium		X		
Coal				X
Oil & Gas			X	

2. Environmental restraints will also continue to be very severe.
3. The only mine developments that will be able to realistically proceed in the timeframe being examined will be the placer deposits in existing and historical mining districts, and small underground and gold mines.
4. There will be five operating gold placers, two tin/tungsten placers, and one underground gold mine in 1985.
5. Three additional placer mines and one underground gold mine will be brought into production in the 1985-1990 period.
6. Existing transportation will be adequate.
7. Economic benefits at the state and federal level will be nominal; local effects may be significant and quite positive.
8. Mines will provide local employment for people currently under-employed.

Scenario 2, limited access, makes the following assumptions:

1. Transportation corridors will be provided where necessary to support mine development on lands located, patented or acquired prior to 1980.
2. Additional mines will be constructed where reserves are now partially or completely defined, but surface transportation access is necessary to support development and to provide for product shipments.
3. There will be small, base-metal mine development on the Seward Peninsula and the large arctic deposit will be developed.
4. The number of mines will remain about the same in the post 1990 period, but as existing reserves are depleted, new reserves will be developed or new mines built to replace depleted ones.
5. Although the levels of economic activity might continue to grow, the rate of growth will be sharply constrained by the provisions for surface transportation access that are made.

Scenario 3, open access, makes the following assumptions:

1. All surface provisions which constrain development will be removed.

2. Due to lead time necessary to initiate major mine developments, there will not be much change from Scenario 1 in the 1980-1985 period.
3. The most significant benefits from the open access scenario will begin to be seen in the 1985-1990 period in terms of new and increased levels of exploration and development activities.
4. Post 1990 period additional growth will be stimulated.
5. Additional small coal mines, placer mines, and underground gold mines are also possible.

The mines listed in Scenario 1, 2, and 3, have an excellent probability for development under defined conditions; however, the base-metal mines have the potential for producing the most economic benefits per mine. A comparison of these mines with others in Canada is detailed in the WAATS.

There are no known socioeconomic studies being conducted which research the impact of inland oil and gas exploration and development in the Planning Area. Since there are high and low finds being reported, the possible implications need to be addressed. The low, medium, and high find scenarios were developed by the Institute for Social and Economic Research (ISER) and taken from OCS Technical Reports Numbers 49 and 53. This is provided as a reference as there are considerable differences to be reckoned with when applying this information to local geographic areas; i.e., the two basins mentioned earlier. The local culture and infrastructure need to be considered on an individual basis. This material should be appended to this PAA as it becomes available. The gaps and differences in methodology are explained in considerable detail in the two OCS reports mentioned above. The entire reports need to be reviewed by the reader to understand these differences. The ISER map model is attached as it considers a wider general area and is more applicable in this situation. We can make the following assumptions:

High Development

1. There will be an influx of people into the area to supply labor for industry as there will not be enough laborers or technical personnel from among local residents.
2. Public facilities will need to be developed, as most of the present facilities can accommodate local residents with natural expected increases only. Examples are churches, schools, hospitals, community buildings, sewer, water treatment plants, new generator facilities, sources of fuel, homes, expansions of transportation facilities, i.e., roads, airports, and in some cases, ports.

3. There would be a profound impact on subsistence use areas.

Medium Development

1. Influx of technical personnel, some laborers and dependents.
2. Public facilities will need to be developed the same as assumption two of the high development scenario.
3. There would be some impact on subsistence use areas directly related to population - community growth.

Low Development

1. There would be an influx of technical personnel with some immigration of laborers. Most laborers could be supplied by local villages.
2. Possible expansion of present facilities without construction of new facilities.
3. There could be little impact on subsistence use areas.

For the following reasons, no specific, accurate scenarios can be developed at this time:

1. There has been no substantial oil and gas exploration so that capabilities can be measured.
2. There is no available research data to assess community real and felt needs.
3. Transportation structure is limited.
4. Data on the land's resources itself is not complete at this time as present demand on the land is not great. The land is, for the most part, isolated and unknown.

FOREST PRODUCTS

Current Activities

There have not been intensive inventories of forest products. Known species, quantities, and quality are stated in the URA. Land more suitable for commercial timber harvest is located on State or Native land. Most of the timber harvested from BLM lands is used for fuel and house logs. It is used close to villages, as BLM lands have limited accessibility. Permits have not been substantial; in four years, 169 cords of wood; 1,700 house logs; and 350,000 board feet of lumber have been permitted. The actual amount of timber harvested is unknown.

Future Demand

In the immediate future the most likely demand will be for fuel, house logs, fish drying racks, and in some cases, fish wheels. As fuel oil increases in cost, more wood will be consumed as fuel. Table 15 lists relative cost per BTU in 1979 of spruce, birch, coal, and oil. The figure has changed since then and fuel oil, as of July 1981, is approximately \$1.21 a gallon. The authors are using a basic assumption that most households would burn seven cords per year; this is based on species of wood, the heat value, and the household heating requirements. There would be as much as 56 acres needed per household to sustain the annual demand for wood in areas where 10 cubic Feet of growth per acre per year occurs.

Table 15. Relative Fuel Costs Per BTU in 1979¹

<u>Fuel Type</u>	<u>Cost</u>	<u>Available BTU's</u>	<u>\$/1000 BTU's</u>
Spruce	\$70/cord	5.9 million	\$.012
Birch	\$90/cord	10.8 million ₂	\$.008
Coal (lump bituminous)	\$52.90/ton	26.4 million ²	\$.003
Oil	\$.75/gal	138,000	\$.007

¹ T. Gasbarros University of Alaska, Fairbanks, 1979.

¹ WAATS - appendix 2, 3-5, fuel subsistence.

² Burning wood - Cooperative Extension - Northwest Regional Agricultural Engineering Service.

The following table makes a comparison between the cost for species of wood by the cord and cost of other fuels. This table assumes the BTU value. There will be a selection of species only if there is an abundance of desirable species available and accessible - these are detailed in the URA.

Amount of Other Fuels Equivalent to a Cord of Air-Dry Wood.

<u>A Cord of Air-Dry Wood equals</u>	<u>Tons of Coal</u>	<u>Gallons of Fuel Oil</u>	<u>Therms of Natural Gas</u>	<u>Kilowatt Hours of Electricity</u>
Yellow Birch	0.8	133	160	3,500
Paper Birch	0.7	114	136	3,000
Poplar, Cottonwood Aspen, Spruce	0.5	86	102	2,200

Assumptions

Wood: 1 cord = 128 cubic feet of wood and air or 80 cubic feet of solid wood at 20 percent moisture content. Net or low heating value of one pound of dry wood is 7,950 Btu. Efficiency of the burning unit is 50 percent.

Coal: Heating value is 12,500 Btu per pound. Efficiency of the burning unit is 60 percent.

Fuel Oil: Heating value is 138,000 Btu per gallon burned at an efficiency of 65 percent.

Natural Gas: One therm = 100,000 Btu = 100 cubic feet. Efficiency of burning 75 percent.

Electricity: One KWH = 3,412 Btu. Efficiency is 100 percent.

The following table shows the amount of petroleum that is now being consumed instead of wood, and the amount projected to be used in 1985 and 1995.

Total Fuel Consumption Substituted

	Petroleum Fuel Substituted in 1978 figures (1,000 gallons)		Total Petroleum Fuel Consumed in 1978 figures (1,000 gallons)	Percent of Total Fuel Substituted	
	1985	1995	1978	1985	1995
Bethel	150	2,731	7,236	2.0	37.3

RANGE

Current Activity

The URA states that livestock grazing is impractical, there are no grazing permits for domestic livestock and no applications for grazing permits. Less than 20 percent of the areas in the Unalakleet, NYAC, Anvik, and Sleetmute planning blocks have soils suitable for cattle and sheep grazing. Lime Hills planning block contains 23,000 acres of potential cattle and sheep grazing lands. Most planning blocks have units suitable for reindeer grazing. Caribou range is identified in the URA. There are conflicts between caribou and reindeer using the same range; e.g., competition for forage, reindeer straying off with the caribou, and the possibility of disease transmission. Reindeer ownership is restricted by law to Alaska Natives.

Future Demand

No impact.

WATERSHED

No impact.

WILDLIFE

The southwest planning blocks consist of parts of the Alaska Department of Fish and Game Management Units 18, 19, 20, 21, and 22. The following table shows the number of animals taken in each of these game management units during 1980, and gives a breakdown of the numbers of resident and non-resident hunters for each species.

	Game Management Units				
	18	19	20	21	22
Sheep	0	R 25 N 43	R 71 U 7 N 36	0	0
Black bear		Ceiling 120			
Grizzly bear	0	R 3 N 52	R 34 N 15	R 11 N 0	R 12 N 19
Moose	R 228 U 16 N 125	R 41 U 3 N 4	R 436 U 30 N 33	R 276 U 18 N 34	R 198 U 6 N 8
Caribou	0	234	140	8	5

Statewide Totals

Grizzly bear	880
Black bear	NA
Moose	4,540
Sheep	681
Caribou	2,047

R - Resident N - Non-resident U - Unspecified

Source: Mr. Buchholtz, Big Game Biologist, Alaska Department of Fish Game, Fairbanks, Alaska.

In the Southwest Planning Area subsistence is a necessary consideration as well as sport hunting. Fishing in the Planning Area consists of sport, commercial, and subsistence fishing.

Future Demand

Wildlife habitat management on public lands is correlated with Alaska Department of Fish and Game Wildlife Management policies.

HUNTING

Current Activity

Hunting in Alaska is a lucrative business. Besides actual expenditures for the hunt, tags, licenses, permits, and stamps are issued. Other related considerations are shelter cabins, guides, hunting equipment, airstrip and transportation to the area. The U.S. Fish and Wildlife Service conducts and publishes a national survey of hunting, fishing and wildlife-associated recreation in the United States. The date of the last available publication is 1975. The profile of the "American hunter" in 1975 is: 92 percent men, 8 percent women, 21 percent of the male population hunted, 2 percent of the female population hunted, the average age was 33, average household income \$14,700, 73 percent also fished, 44 percent also observed wildlife, 41 percent also shot firearms for recreation, 16 percent also went clamming, crabbing and shell collecting, 14 percent also photographed wildlife, 13 percent also engaged in archery, 11 percent engaged in none of those wildlife-related activities. In Alaska 100 percent of the population reside in non-metropolitan areas opposed to 56 percent of hunters of all United States reside in metropolitan areas. A profile specifically formulated for the Alaskan hunter is not available. The national profile does, however, give an indication of those who will be engaged in this type of activity. One obvious difference would be the average household income, which would be considerably higher, at least double the national average, due to the Alaskan economy and the inaccessibility of the hunting areas causing higher transportation costs. Detailed descriptions can be found in the survey report.

Future Demand

There is a need for inventory of animals in some of the Game Management Units. Generally throughout the Planning Area the ADF&G would like to maximize the opportunities for trophy hunters and specified other big game animals, e.g., moose. This is to be controlled in part by management of habitat improvement or status quo of accessibility to the area depending upon the number of animals to be harvested and influence on adjacent lands. BLM lands border Togiak and Yukon Delta National Wildlife Refuges. The building of shelter cabins and unimproved airfields in inaccessible areas would increase hunter use as well as releasing the pressure in present areas of intense use. Demand will also depend on ceiling limits established by ADF&G.

TRAPPING

Current Activity

The demand for furbearers is for subsistence and commercial use. Actual harvest figures are not available at this time. Statistics about wolves and wolverines will become available at a later date from the Alaska Department of Fish and Game.

Fur harvest fluctuates yearly. The following table shows the 1981 harvest of furbearers in the Game Management Units for the Planning Area.

Furbearer Harvest

Game Management Unit	18	19	20	21	22	Statewide
Beaver	2,396	1,504	1,008	1,262	15	--
Wolf	--	46	101	50	06	668
Wolverines	6	37	71	33	15	516
Lynx	46	171	362	118	86	3,001
Otter	596	58	31	72	3	2,272
Trappers	258	164	144	143	3	

Wild mink, muskrat, marten, white fox, red fox, and cross fox statistics are expected to become available November 1981. Harvest data is updated annually by the Alaska Department of Fish and Game. The value of furs fluctuates between sales: this is shown in the appendix table "Alaskan and Northern Canadian Wild Furs Prevailing Market Prices" using the Seattle Fur Exchange as an example. This table illustrates what was expected in demand and value for the upcoming year. The projected value and the prices received at auction in some species was measurably different. The value of furs is determined by many factors: the trapper, the buyer (skin or fur dealer) (a company or individual), the market (domestic and foreign) quality (this includes where the animal was caught), and transportation costs. Most of the demand for fur comes from Europe; thus Alaska competes on a world market. In an informal interview the following averages were given. These are given as a sample only and are not to be considered indicative of the market. These figures for selected species are: otter \$100,000; ermine \$500; timber wolf \$250-\$300; wolverine \$250; beaver \$40-\$100; wild mink \$50-\$75; lynx \$300-\$500; red fox \$70-\$150; cross fox \$100-\$150; and marten \$40-\$100. These averages were taken from random sampling of literature and informal interviews. The cash flow is usually in currency and therefore written accurate records are impossible. Harvest and availability do not necessarily correlate. If enough cash is obtained from other sources (fire season, north slope, fishing, etc.) trapping income may not be needed or desired and therefore the harvest may be down. Demand obviously does correlate with price paid. Although an accurate stable cash value for furs cannot be established at this time, it is apparent from available data that the market is lucrative.

In addition to the economic value of this enterprise the social value is very important for many rural Alaskans. This is an ideal lifestyle for them, and they would like to see the opportunity to continue this activity preserved: trappers expressed concern for this lifestyle at a public meeting conducted by BLM on August 1981.

Future Impact

BLM lands will receive demand from trappers for management of habitat and accessibility to public lands for traplines.

Future Demand

In the future the use for furs will continue to be subsistence and commercial. The URA states that that trapping industry is growing. The actual demand for furs will depend on social conditions of the time, peer pressure for use of furs as a status symbol, impact of environmental groups for preserving furbearing animals, and availability of man-made fabrics used for the same purpose. Use of BLM lands for trapping also depends on ADF&G policies and ceilings. Commercial demand will fluctuate. Statistics for revenue from fur-trapping are shown in the appendix. The price for furs will also continue to fluctuate seasonally. The world market as well as domestic interest rates will continue to count heavily in this demand. Availability is not expected to vary drastically in the immediate future.

FISHING

Current Activity

Fish harvest statistics for Yukon are available and for Kuskokwim will be available later. Both will be appended to this document for reference. The 1980 ADF&G report is available in this office and the Fairbanks office of ADF&G.

Historical information on fish in the Planning Area is limited. Information concerning indigenous species other than salmon is also limited.

The major demands for fish are for subsistence and commercial fishing and, to a lesser extent, sport fishing.

The 1978 Alaska State legislature passed subsistence hunting and fishing as the highest priority use.

Future Demand

Commercial fish will continue to be harvested at the allowable rate. ADF&G has liberalized commercial fishing regulations where subsistence fishing decreased. Transition from a subsistence

economy to a cash economy will be slow, as subsistence is an integral part of Alaskan Native culture. Sport fisheries are not developed now because of limited access. As areas are opened for industrialization, there will be more access and demand for sport fishing. This will increase along with demand for commercial fishing as subsistence use decreases. The Kuskokwim is an important salmon producing river with all five species present and found in varying abundance throughout its 850 miles. Five species of whitefish are found ranging from 30-pound sheefish to the least cisco which weighs less than one pound. Both grayling and rainbow trout are found in the streams of the Kuskokwim area. This is the northern limit of their range. Northern pike and lake trout occupy the lakes. Actual harvest figures will be available later. The following information has been obtained from the WAATS.

	Participating Numbers of villages	Pounds of Salmon	
		1977	1978
Tuluksak	14	1,789,000	1,290,800
Quinhagak	60	78,535	103,500
Goodnews Bay	26	21,313	21,313

According to WAATS, the only sport fishing is done by the residents of Bethel. Good populations of species of interest to sportsmen exist. K.T. Alt inventoried the sport fish waters of the lower Kuskokwim and found rainbow trout, arctic char, grayling, and whitefish to be abundant in most of the streams in addition to salmon, with the high lakes holding lake trout, arctic char, and whitefish. As stated previously, this area will expand as demand increases.

Tables appended to this document show in addition to catch methods, the catch and use over an extended period of time, species, permits issued, a dollar value for fish and projections of use to the year 2000. Impact on BLM lands by fisheries will be indirect. Streams affected are the Unalakleet River drainage and the Anvik River drainage.

RECREATION

Southwest Alaska is not developed to utilize or promote the booming tourism industry that some other areas of the state enjoy. Most of the area is isolated and accessible only by water or by air.

The area does, however, hold potential for recreational activities; e.g., hunting, fishing, floatboating, wildlife and photographic safaris, backpacking, and camping.

Current Activity

In Alaska during the summer of 1980, there were 566,000 pleasure visitors. Monies generated were \$260 million; salaries relating to the tourist industry totaled \$70 million; and 7,200 jobs were associated with tourism.

In Western and Arctic Alaska there are 11 guides. In 1978-1979 they accounted for a total of 2,200 person-days during the season. Average cost of a hunt was \$3,000. Gross expenditures related to guiding activities equaled \$660,000 during that same period (see tables 16 to 20). Fishing camps drew direct expenditures of \$598,000 with a net economic value equal to \$371,010,000. In the activities related to hiking and backpacking, expenditures by independent travelers ranged from \$400 to \$1,200 for 6 to 12 days depending on what is brought opposed to what is furnished by the operator; e.g., food, sleeping bags, etc. Assuming that the average expenditure is \$650 for an eight-day trip, sizeable expenditures are generalized.

Some of the villages perceive tourism expansion a threat to their lifestyles.

At the present time there are no organized tours to Bethel. There is a 69-room hotel offering accommodations, food and beverage sales. There are a few lodges operating in the Planning Area; one is at Unalakleet.

Most of BLM lands are accessible only by helicopter which adds considerably to cost of recreational activities.

Tourism at this time is not a viable use of BLM-managed lands. Access would have to be made easier, and this would entail costs competitive to other areas of Alaska. Social and cultural conflicts would have to be resolved before this concept could be marketed.

Future Demand

Present activity is expected to remain about the same (see table 19) with the possible exception of hunting and fishing, which will correspond to allotted harvest levels. These are determined by management policies or ADF&G.

Table 16. Total Projected Economic Value of Tourism, 1980-2000
in 1978 Dollars (\$000)

Market Segment	1980	1985	1990	1995	2000
Package tours	7,383	10,697	13,077	14,128	15,647
Hunting guides	410	410	410	410	410
Wilderness lodges	409	522	618	619	619
Adventure travel	19	38	68	129	311
Ivory and baleen sales	<u>1,300</u>	<u>1,300</u>	<u>1,300</u>	<u>1,300</u>	<u>1,300</u>
Totals	<u>9,521</u>	<u>12,949</u>	<u>15,473</u>	<u>16,586</u>	<u>18,287</u>

Western and Arctic Alaska Transportation Study Phase I Draft Report,
Volume I, Appendix 3.5-3, p. 19.

Table 17. Hunting Guide Expenditures.

No. of Guides	Clients per Guide	Average Cost Per Hunt (\$)	Total Expenditures
1 Master	20	3,000	60,000
10 Registered	20	3,000	<u>600,000</u>
Total			<u>660,000</u>

Table 18. Estimated Lodge Guest Expenditures

Rooms:	920 persons days X daily rate	\$16,560.00
Food:	\$15 per person day X 920 person days	\$13,800.00
Crafts and Souvenirs:	\$10 per person X 920 per days	<u>\$ 9,200.00</u>
	Total	<u>\$39,560.00</u>

Table 19 depicts the total direct expenditures for package tours, hunting guides, fishing camps and lodges in the study area.

Table 19. Total Tourism Expenditure

<u>Category</u>	<u>Direct Expenditure (\$)</u>
Package tours	6,289,600
Hunting guides	660,000
Fishing camps	598,500
Lodges	39,560
Total	<u>7,596,660</u>

Table 20. Projected Tourism-Related Employment

	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
<u>Package tours</u>					
<u>Hotel</u>					
Year-round	15	18	18	18	18
Seasonal	58	72	72	72	72
Tour guides	17	22	24	27	30
Airlines	9	11	12	14	15
Native crafts and dancers ¹	32	37	39	42	45
Restaurants ²	8	10	11	11	11
<u>Wilderness Lodges</u>					
Full-time ³	9	9	9	9	9
Part-time ⁴	27	31	36	43	50
<u>Hunting Guides</u>	<u>11</u>	<u>11</u>	<u>11</u>	<u>11</u>	<u>11</u>
Total	186	221	232	247	261

¹Craft demonstrators and dancers are expected to increase at a much lower rate due to the part-time nature of their employment.

²Net employment growth will not occur past 1990 unless new facilities are opened.

³Full-time employment will not increase unless new construction takes place.

⁴Part-time wilderness employment will increase at a rate of 50 percent of the 1980 employment rate.

IV SOCIAL OVERVIEW

POPULATION AND FUTURE RESOURCE USE

Southwest Alaska has approximately four percent of the state's population. The 1980 census estimates the Bethel census area as having a population of 10,999. The Wade Hampton census area estimates a population of 4,665, a 19.1 percent increase over the 1970 census. McGrath-Holy Cross census sub-area, 1980, has an estimated population of 1,343. Most of the population is scattered throughout the villages in the Planning Area. The two population centers are Bethel, 3,576; and McGrath 355.

The impact of the present population on public land is minimal. The BLM-administered land is isolated, with limited access, and therefore is not utilized as much as the more desirable productive land in the area or the land in the Planning Area that immediately surrounds populated areas.

Population projections used as an indicator in forecasting the increasing rate of resource use in an area are of little value here. The area is far from major population centers, and any significant population growth will depend on specific developments such as mining and oil and gas exploration.

Mining and oil and gas exploration and related activities; that is, the building of roads, pipelines, and some processing plants will increase in Alaska. The expansion of these industries will bring an influx of people to the population centers in the state. These people will be looking for recreational opportunities such as hiking, camping, hunting, and fishing. These people will have the financial resources to hire guides and planes to reach the otherwise isolated areas. The BLM lands will need to be maintained to complement ADF&G wildlife management policies. Expansion of these industries will also cause population pockets with the expansion of transportation systems in what now is an isolated area.

SOCIO-CULTURAL VALUES

Values are beliefs that cause an emotional response for or against a person, feeling or thing; i.e., ideas, customs or institutions. To determine what values people have, one can look for general patterns in their statements and actions. There are two standard ways to identify the socio-cultural values in an area. One method draws on social studies done in the area and works from survey data or other information through an analysis by a trained observer and analyst. Another method gets its information from public participation in the planning process and studies that information.

A comprehensive study of the Norton Sound area has been completed by BLM/OCS and is published in Technical Report No. 53. This publication is a thorough analysis of the Native communities and relationships with white institutions. Also, a study has just been completed of the Nelson Island Natives. This will be published by OCS.

Recreational Values

There are no known surveys on recreation values in the Planning Area. There are guides operating in the area, and there is a lodge near Unalakleet, which is a good indication that there is a demand for hunting and fishing activities in the area. A general survey by USF&WS (1975) indicates that people are seldom involved in just one activity; i.e., hunting or fishing, but also included activities such as photography, hiking, backpacking, camping, berrypicking, and sightseeing. The amount of money that the visitor invests in pursuit of these activities is greater than most people invest who are seeking the same recreation activity elsewhere.

Recreation in the Southwest Planning Area is more likely to be consumptive (fishing, hunting, and berrypicking) than more visited, more accessible areas of Alaska.

Natural Resource Use Values

There are no studies of the values people hold about the use of resources in the Southwest Planning Area specifically, although there are studies which show that recreation, particularly consumptive recreation, is highly valued.

As one aid to analyzing and understanding future public input, we can draw upon comments made at the public meetings conducted for the Tanana-Minchumina Fire Plan. The ethnic composition in the Planning Area is heterogeneous. Inipiaq, Uupik, Athapaskan, and caucasian people are represented. Subsistence is a major concern. This specifically means hunting, trapping, fishing, and gathering. The concerns expressed at these meetings that relate to natural resource use values are:

1. Immediate loss of game, particularly birds and furbearers.
2. "Squatters" driving out the game and mining runoff spoiling the fishing.
3. Burning up of berry patches along the Chatanika and Talorana Rivers (state land).
4. Can the plan be changed?

5. Local people can already get their moose, the plan will only increase the chances for sport hunters.

Since the Tanana-Minchumina Fire Plan was specifically related to fire management values specifically relating to land use plans were not ascertained. However, the six value questions raised in the Southcentral PAA can be addressed and analyzed.

1. No value judgements on the fire plan was expressed. There was concern that the plan could be changed if there need arose. The people feel threatened by a "permanent" plan.
2. As this was not a land use plan the question of regulated use did not arise.
3. Preservation was only addressed as where fire destroyed gathering areas - this could also be transferred to other activities that would threaten fishing, hunting, and gathering areas.
4. There were several comments made that would strong feelings that the land should be managed to benefit resident Alaskans. There is enough moose for local people, no need to increase moose population for sport hunters, outsiders are coming in and destroying subsistence resources.
5. The question of private versus public management was not specifically addressed. There was concern over the individual being able to afford the costs of fire suppression. Could the individual afford private management of the land and solve conflict between groups and individuals over land uses?

Values and Residence

There are strong ties to the land and its resources. Though the feeling to manage the resources for consumptive purposes is strong, there is also the feeling of the need for a cash income to expand and complement subsistence activities. This necessarily means some of the land will need to be managed for industrial development.

SOCIAL WELL-BEING AND QUALITY OF LIFE

Both "social well-being" and "quality of life" are terms used to describe life relative to another area or to some standard. Southwest Alaska is vastly different from most areas in the lower 48 states. Comparisons with standard economic indicators are not particularly valid.

Traditional indicators of social well-being are average income, education, unemployment levels, etc. Using these guidelines, the

Southwest Planning Area appears to be about average for Alaska. In comparing this area with urban areas with health care, retail services, advanced education, recreational facilities, artistic events, etc, Southwest Alaska could be considered to have a lower quality of life; however, the residents feel that their quality of life is higher in the qualities they hold in high esteem, i.e., low pollution levels, slow pace of life, informality and personalness, open space, etc.

SOCIAL IMPACTS OF FUTURE DEVELOPMENTS

A wide variety of man-caused events may have impact on the character of social life in the Southwest Planning Area. The impacts could be major due to the small population and limited facilities in the area. Oil and gas, and other mineral development is a real possibility for the Minchumina area. These developments, along with local and regional population growth, will singularly and collectively alter the social and economic nature of the area.

However, it is unlikely that these developments will occur on public land and BLM may have limited ability to regulate or influence those that do. Most development will occur on state or Native selected land. Programs involving regulations or enforcement will be largely nationally mandated, and may give little discretion to BLM district or state offices. Changes in the future will have an effect on public land. Population growth in the state and in the area (either temporary or permanent) will increase the demand for recreational use of public land, create more pressures for private land, intensify conflict between uses, stimulate need for transportation access for mineral and energy development, and cause greater conflict over appropriate environmental quality levels. Increased development will also increase the value of areas threatened by fire and the number of man-caused fires, and fire management programs will need to be more intensive. Increased hunting pressure will create a need for more intensive habitat management. To the extent that BLM can meet these new demands, the social well-being and quality of life in the area will be maintained. In cases where it can not because of policy decisions or budget limitations, equitable enforcement and explanation are needed.

PUBLIC POSITIONS AND EXPECTATIONS

As noted earlier there has been little public response regarding this planning process to date. As a result the various publics' positions and their expectations on specific proposals will not be expressed at this time.

The same generalizations made in the Southcentral PAA can apply now. Most people expect that there will be little change in the way the area is managed. Rural Alaskans are typically conservative in political, traditional in social matters, and do not like

interference from the government. They tend to view natural resources in consumptive terms. Urban Alaskans and non-Alaskans interested in the state's environment tend to endorse government intervention to preserve environmental quality and character at the expense of economic growth.

But what is not known is how much interest these, and other groups, will have in the Planning Area and how much time, effort and political effort they will expend to attempt to influence these planning decisions.

V B L M M A N A G E M E N T E F F E C T
O N L O C A L I N F R A S T R U C T U R E

"Infrastructure" is the facilities and activities which make social and economic life possible in a community or region. Transportation, communication, trade and service facilities, housing, and health care are all part of the infrastructure.

In the Planning Area there is not much variety in the infrastructure of cities. There is no borough government in the Planning Area. There is one first-class city and a variety of second-class cities (see URA for complete list and class rating).

BLM activities would have effects on the following segments of the local infrastructure.

An increase in BLM mineral leasing to meet national demands or priorities could impact transportation and housing facilities in the communities close to development local headquarters.

BLM administrative decisions could have a profound impact on subsistence.

BLM program changes should have minimal effect on local power and communication utilities, or education programs.

There will be impact on rivers because of increased traffic and recreation use.

V I C R I T I C A L E N V I R O N M E N T A L A R E A S

Critical environmental areas are considered those which should be protected from land uses that would cause severe damage to the resource or those which present a hazard to users. Wildlife habitat is the most prevalent factor which earmarks an area in Southwest Alaska as a critical area. For each wildlife species, a certain part of the habitat is more important to the continuation of a species than the rest of the range. This crucial habitat is usually scarce and not replaceable by other areas within the range. Within the lands to be managed by the Bureau, several species utilize areas which are considered critical.

CRITICAL BIOLOGICAL AREAS IN PLANNING BLOCKS

CRUCIAL HABITAT

Moose Habitat

Most significant drainages in the Planning Area are winter moose range. Survival of moose calves is partially dependent on the amount of forage available within those areas. Winter range is known for all planning blocks except Goodnews. The major concern is potential destruction of this habitat.

Caribou Habitat

There are no known major caribou calving areas on BLM-administered lands. However, caribou winter ranges are found in the Minchumina (north of the lake), Lime Village (Windy Fork and Stony River) and Sleetmute (East Fork and Iditarod/East Fork, Crooked Creek) planning blocks. The major concerns are disturbance of the herd and destruction of habitat.

Grizzly/Brown Bear Habitat

Denning and high use areas are important grizzly/brown bear habitat that require protection from disturbance and destruction. Bears are abundant in the Anvik River drainage, which has a large run of chum salmon, and in the Unalakleet River drainage. One denning area is just south of the Big River in the Lime Village planning block.

Fisheries Habitat

Streams in the Planning Area provide excellent habitat for salmon, char, Arctic grayling, burbot, pike, and shee fish. Subsistence, commercial, and sport fishing are dependent on protection of these habitats. The Anvik River has the largest chum salmon run in the Planning Area and is a very important subsistence and commercial fishing area. A large population of grizzly/brown bear is also dependent on this salmon run. The

Unalakleet River is an important subsistence, commercial, and sport fishing area. The Tuluksak River placer mines around NYAC are also an important fisheries area.

Raptors Habitat

Peregrine falcon and other raptors nest on high bluffs along the major rivers and streams. The Kuskokwim River area from Sleetmute to Aniak supports a large population of raptors. The Yukon River is also a nesting area. Other areas may be found as more extensive surveys are made. The hunting areas may also be important.

Plants

The Walpole poppy, Papover walpolei is found in the Goodnews planning block. It is proposed for threatened status. It is possible that this species is more widespread than known at present and then threatened status would be unnecessary.

WILD RIVER VIEWSHEDS

The Unalakleet River was designated as a wild river by ANILCA. The viewshed is virtually unimpaired and scenic quality is very important to wild river status. Protection from disturbance of vegetation within the viewshed is important.

CRITICAL PHYSICAL AREAS IN PLANNING BLOCKS

Extreme Slopes

Extreme slopes within the planning blocks are generally site-specific and require protection or specialized engineering practices for roads, construction sites, material sites, etc. Local high winds generated by downslope winds from the nearby Alaska Range can increase fire control problems in the Lime Village planning block.

Geothermal springs in the northern part of the Lime Village planning block cause local areas of thaw that are hazardous to winter cross-country travel by heavy equipment.

V I I I N T E R A G E N C Y R E L A T I O N S H I P S

The BLM Anchorage District Office has a number of formal and informal cooperative agreements with local, State, and other Federal agencies in the southwest area. Cooperation with various agencies occurs when their projects and missions involve the use of public lands. A partial listing of agencies with which BLM maintains interagency cooperation appears here.

COOPERATIVE AGREEMENTS

FEDERAL AGENCIES

U.S. Army Cold Regions Test Center (CRTC)

Semi-annual meetings are held to coordinate CRTC training exercises on public lands.

U.S. Geological Survey

A water gauging station is located near Golden Gate Falls on the Kisaralik River to gather baseline data for a proposed hydropower project. The surrounding lands are State selections.

CURRENT REGIONAL PLANNING STUDIES

Concurrently with this planning effort, other local, State, and Federal agencies are developing plans that will impact Southwest Alaska. Some of these are tied to specific areas such as parks or boroughs while others are more functionally oriented, such as fire management, transportation, and game management plans. Following is a summary of some of those plans.

Bureau of Land Management

Iditarod National Historical Trail Management Plans is in draft and is to be completed by December 31, 1981. This plan will address management related to patterns of public use, accessibility, and land ownership.

The Tanana/Minchumina Fire Plan addresses cooperative fire management planning to stress options that are ecologically sound, operationally feasible, and flexible enough to meet changing objectives and technology. Participating agencies include Department Of Interior (Bureau of Land Management); National Park Service; Bureau Of Indian Affairs; US Fish & Wildlife Service; US Department of Agriculture (Forest Service); State of Alaska (Department of Natural Resources, Division of Forest, Lands, and Water Management and the Department of Fish and Game); and Native groups (Tanana Chiefs Conference, Inc., and Doyon, Limited). Implementation of this plan is proposed for the 1982 fire season.

USF&WS

The US Fish and Wildlife Service will be formulating plans for the new refuges designated by ANILCA. These are the Togiak, Yukon Delta and Innoko Wildlife Refuges. The former Clarence Rhodes National Wildlife Range was incorporated into the Yukon Delta National Wildlife Range.

State of Alaska (DNR)

The Department of Natural Resources updates its state-wide plan each year. Southwest Alaska is a high priority for an "area plan" in FY83 (beginning July 1, 1982).

State of Alaska (DOT)

The Department of Transportation has completed the Western and Arctic Alaska Transportation Study (1979-1980) which projects transportation needs for the western part of the state.

State of Alaska (ADF&G)

The Alaska Department of Fish and Game produces plans for Game Management Units.

Native Corporations

A forestry resource plan has been prepared for the Kuskokwim Corporation by the USDA Forest Service/State and Private Forestry in Anchorage.

V I I I P R O B L E M S A N D I S S U E S S U M M A R Y

Bureau-administered land has been a major focal point of attention for the people residing in Southwest Alaska. During the past ten years, several major lands issues have received most of their attention.

In addition to ANCSA, the State of Alaska has made selections under the Statehood Act which gave the State an entitlement of 104 million acres statewide.

The result of these land selections has been to change the availability of land for general use. When finalized, all of the Native entitlement will become private, as will some of the State-selected land.

Those areas administered by the National Park Service will be managed so as to restrict many traditional Alaskan uses.

The people of Southwest Alaska area concerned about whether enough land will continue to be available to them for the pursuit of their economic and recreational interests. Therefore, they will be looking more towards the Bureau-administered lands for their chosen activities. In this plan, the Bureau must consider accommodating displaced activities, both present and future.

The public is also worried that the Bureau will add new restrictions or regulations to uses now occurring on Bureau-administered lands. Further restriction of previously unrestricted activities will be unpopular and, most likely, strongly opposed.

Because of the additional attention that is sure to be focused on Bureau land, this plan should carefully weigh the impacts of all activities from two viewpoints: further regulation of user activities, and impact on the resource base because of increased use.

Following is a summary of issues and concerns as related to specific resources:

Subsistence Issue

There appears to be general concern regarding the continued use of all resources for subsistence purposes as opposed to recreation and the commercial development of resources for economic gain. The potential for conflict lies wherever development or additional utilization is possible. Therefore, the issue regarding subsistence use of the land and resource can be restated as:

Where are the areas for potential conflict between subsistence use of land and resources and commercial use. What safeguards will be developed to ensure continued subsistence use of these lands and resources?

Fire Issue

The issues relating to fire center around the effects of fire on the resources and the suppression standards which will be prescribed. The fire issues can be restated as:

How will fire be managed to ensure that beneficial effects to the resources are realized on Bureau administered lands and adjacent lands?

Energy Development Issues

Energy development is an important issue in this region. Emphasis is focused on energy availability for local communities, impacts of energy, and transportation of energy. The energy development issues can be restated as:

How can energy sources be developed to meet local, state, and national needs while ensuring environmental protection and socio-economic consideration?

Mineral Development Issues

The mineral development issues focus around the effects of mineral development on water quality and quantity and on the environmental impacts of development. Therefore, the issues can be restated as:

How can the mineral resource be developed within environmentally acceptable limitations?

Split Interest

The issues relating to lands with split interest center around compatible management by the two parties. Therefore, the issue can be restated as:

How will land which has split interest be managed to ensure compatible programs to both parties and the general public?

Grazing Issues

The grazing issues center around the potential conflict between domestic livestock and wildlife populations. Therefore, the grazing issue can be restated as:

Will the Bureau allow domestic livestock grazing and, if so, how will the Bureau ensure the continuation of viable wildlife habitat?

Recreation Issues

The recreation issues center around two points. The first is the question of type, quantity and distribution of recreation use.

The second question concerns cultural resource interpretation and protection. Therefore, two recreation issues can be restated to:

How will the Bureau manage the type, quantity, quality and distribution of private and commercial recreation use?

What types of cultural interpretation and protection programs will be developed by the Bureau?

Lands and Land Exchange Issues

The lands issues center around private use of public land and possibilities of transfer to other governmental/private managers. Therefore, the lands issues can be restated as:

What lands, if any, should be made available for private acquisition or exchange with other public agencies?

Access Issues

The access issues center around the need for and effects of increased access. Therefore, the access issues can be restated to:

Where is additional access needed to get to public land and what effect will increased access have on the land and resources.

Wilderness Issues

The wilderness issues simply ask if it is necessary, if so, how much, and where. Therefore, the wilderness issues can be restated to:

What lands could be designated as wilderness areas and what are the ramifications to the potential user/developer of the land and resources?

Note: Wilderness will not be considered during this planning effort due to budgetary limitations. This issue will be addressed at a later date.

Issues Concerning Critical Environmental Areas

Special area issues center around the question of need and eligibility. Therefore, the issue can be restated to:

Special area designation should be used only when normal management practices will not provide adequate protection of the special resource values.

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APPENDIX

COMPARISON OF HARD MINERALS PRODUCTION VALUES AND EMPLOYMENT —
PER SQUARE MILE - ALASKA VERSUS THE ELEVEN WESTERN MINING STATES^a

		Hard Minerals Production Values/Square Mile ^b							
		1972	1973	1974	1975	1976	1977	1978	1979
(1)	Eleven Western U.S. Mining States	\$3,161	\$3,748	\$4,587	\$4,619	\$5,545	NA	NA	NA
(2)	Alaska	\$55	\$81	\$117	\$115	\$410	\$289	\$278	\$284
(3)	Ratio: Line 1/Line 2	57 to 1	46 to 1	39 to 1	40 to 1	14 to 1 ^c	NA	NA	NA

		Hard Minerals Production Values/Square Mile (Excluding Sand and Gravel) ^b							
		1972	1973	1974	1975	1976	1977	1978	1979
(4)	Eleven Western U.S. Mining States	\$2,848	\$3,406	\$4,261	\$4,301	\$5,188	NA	NA	NA
(5)	Alaska	\$29	\$47	\$45	\$71	\$63	\$61	\$31	\$30
(6)	Ratio: Line 4/Line 5	98 to 1	72 to 1	95 to 1	61 to 1	82 to 1	NA	NA	NA

		Total Number of Wage & Salary Jobs in Hard Minerals (Annual Averages)							
		1972	1973	1974	1975	1976	1977	1978	1979
(7)	Eleven Western U.S. Mining States							99,440	NA
(8)	Alaska							387	419

		Wage & Salary Jobs in Hard Minerals Per 1000 Square Miles ^b							
		1972	1973	1974	1975	1976	1977	1978	1979
(9)	Eleven Western U.S. Mining States							84	NA
(10)	Alaska							0.66	0.71
(11)	Ratio: Line 9/Line 10							127 to 1	—

Note: For the eleven Western mining states, figures for hard minerals production values and employment were obtained by subtracting oil and gas production and employment from total mining production and employment. For a few states, oil and gas production or employment figures for one or more years could not be obtained due to regulations protecting the confidentiality of proprietary information. Those cases were treated in a way which overstated the implied value of oil and gas production or employment, CAUSING THE ABOVE FIGURES FOR HARD MINERALS PRODUCTION VALUES AND EMPLOYMENT IN THE ELEVEN WESTERN MINING STATES TO BE CONSERVATIVE.

Alaska's geology is believed by most geologists to be at least as favorable for hard minerals occurrences as the geology of the eleven Western mining states — Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

The total combined area of the eleven Western mining states is 1,187,753 square miles. The area of Alaska is 589,757 square miles, or 50 percent of the total combined area of the eleven Western mining states.

The sharp rise in Alaska's hard minerals production value in 1976 was due to massive amounts of sand and gravel used for construction of the oil pipeline from the Arctic north slope to the southern coast of Alaska.

Sources: All mineral production values are those published by the U.S. Bureau of Mines. Areas of Alaska and of the eleven Western mining states are those published by the U.S. Bureau of the Census in Statistical Abstract of the United States. Wage and salary employment figures for the mining industry in the eleven Western mining states were obtained from the U.S. Bureau of Economic Analysis. Wage and salary employment figures for the mining industry in Alaska are those published by the Alaska Department of Labor.

TOTAL PHYSICAL VOLUMES OF ALASKA MINERALS EVER PRODUCED

Mineral	Period of Production	Units	Total Quantity Produced
Antimony	1928-1973	Short tons (approx. 53% Sb)	4,399
Coal	1951-1979	Short tons	28,460,000
Copper	1880-1973	Short tons	690,030
Chromite	1917-1957	Long tons (approx. 45% Cr ₂ O ₃)	29,000
Crude Petroleum	1958-1979	42-gallon bbls (thousands)	1,884,857
Gold	1880-1979	Troy ounces	30,149,537
Lead	1906-1973	Short tons	25,024
Mercury	1902-1972	76-lb flasks	29,224
Natural Gas	1948-1979	Cubic feet (millions)	1,643,250
Sand and Gravel	1958-1979	Short tons (thousands)	709,650
Silver	1906-1979	Troy ounces	19,082,510
Stone	1921-1979	Short tons	26,000,000
Tin	1902-1979	Short tons	2,460
Tungsten	1916-1958	Short-ton units (WO ₃)	7,000

Source: Alaska Department of Natural Resources historical data, adjusted by estimates of recent production. Information presented above includes estimates of production not reported. However, there may have been substantial amounts of unreported production at times other than those indicated above or in excess of the amounts indicated.

PERCENTAGE OF U.S. RELIANCE ON IMPORTS OF SELECTED MINERALS, AND POSSIBILITY OF ALASKAN CONTRIBUTION TO MEET U.S. NEEDS

Mineral or Metal	Net Import Reliance as a % of Apparent Consumption ^a	Probable or Known Occurrence in Alaska	Mineral or Metal	Net Import Reliance as a % of Apparent Consumption ^a	Probable or Known Occurrence in Alaska
Columbium	100%	No	Potassium	61%	No
Mica	100%	No	Selenium	61%	No
Strontium	100%	Yes	Mercury	57%	Yes
Manganese	98%	No	Gold	54%	Yes
Tantalum	97%	No	Tungsten	50%	Yes
Cobalt	97%	No	Antimony	48%	Yes
Bauxite & Alumina	93%	No	Silver	41%	Yes
Chromium	92%	Yes	Barium	40%	Yes
Platinum Group	91%	Yes	Titanium	39%	Yes
Asbestos	84%	Yes	Gypsum	34%	Yes
Flourine	82%	Yes	Iron Ore	29%	Yes
Tin	81%	Yes	Vanadium	27%	Yes
Nickel	77%	Yes	Copper	19%	Yes
Cadmium	66%	Yes	Lead	11%	Yes
Zinc	62%	Yes	Sulphur	10%	Yes

a/ Net Import Reliance = Imports - Exports + adjustments for government and industry inventory changes.
 Apparent Consumption = U.S. primary + secondary production + net import reliance.

Source: U.S. Bureau of Mines. (Import and export data from Bureau of the Census.)

VALUE OF ALASKA'S MINERAL PRODUCTS: 1959 - 1979
(thousands of dollars)

Year	Crude Petroleum ^a	Natural Gas ^b	Sand & Gravel	Gold	Other Minerals ^c	Total
1959.....	\$ 295	\$ 16	\$ 5,265	\$ 6,262	\$ 8,673	\$ 20,511
1960.....	1,230	30	5,483	5,887	9,230	21,860
1961.....	17,652	129	4,185	3,998	8,789	34,753
1962.....	31,187	467	5,355	5,784	11,399	54,192
1963.....	32,650	1,111	22,005	3,485	8,589	67,840
1964.....	33,627	1,719	18,488	2,045	10,068	65,947
1965.....	34,073	1,799	34,467	1,479	11,637	83,455
1966.....	44,083	6,335	21,793	956	13,133	86,300
1967.....	88,187	7,268	27,683	910	13,099	137,147
1968.....	186,695	4,388	20,366	835	9,416	221,700
1969.....	214,464	12,665	18,615	881	11,018	257,643
1970.....	232,829	18,164	41,092	1,265	16,782	310,132
1971.....	234,337	17,972	32,806	537	14,044	299,696
1972.....	221,747	17,989	15,214	506	16,293	271,749
1973.....	239,574	19,482	19,913	695	26,821	306,485
1974.....	347,408	22,505	52,788	1,461	14,861	439,022
1975.....	364,626	42,786	25,780	2,419	39,514	475,125
1976.....	318,788	60,455	204,738	2,868	34,191	621,040
1977.....	988,874	66,605	134,251	2,812	33,443	1,225,985
1978.....	2,701,522	89,626	145,300	3,610	14,752	2,954,810
1979 ^P	5,493,596	91,533	150,000	W	17,543	5,752,672

a/ Value figures for Prudhoe Bay oil are values at the point where the oil enters the trans-Alaska pipeline. Consequently, value figures shown above do not include pipeline transportation charges.

b/ All natural gas values shown above include values of both dry and liquid gas, including casing head gas.

c/ Included are values symbolized by a W (withheld).

Source: Bureau of Mines, U.S. Department of the Interior; Alaska Oil and Gas Conservation Commission, Office of the Governor.

CRUDE OIL PRODUCTION IN ALASKA BY FIELD: 1959 - 1979
(in thousands of 42-gallon barrels)

Year	Beaver Creek	Granite Point	McArthur River	Middle Ground Shoal	Prudhoe Bay	Swanson River	Trading Bay	Total-All Fields
1959.....	---	---	---	---	---	187	---	187
1960.....	---	---	---	---	---	578	---	578
1961.....	---	---	---	---	---	6,327	---	6,327
1962.....	---	---	---	---	---	10,259	---	10,259
1963.....	---	---	---	---	---	10,740	---	10,740
1964.....	---	---	---	---	---	11,054	---	11,054
1965.....	---	2	1	27	---	11,099	---	11,131
1966.....	---	0	1	2,649	---	11,711	2	14,362
1967.....	---	7,052	749	7,404	---	12,980	729	28,913
1968.....	---	13,131	21,782	14,134	---	13,619	3,477	66,144
1969.....	---	9,183	31,301	10,467	277	13,151	9,936	74,315
1970.....	---	7,522	40,165	12,719	1,199	12,408	9,600	83,614
1971.....	---	5,577	40,537	11,304	1,157	11,466	8,744	78,785
1972.....	---	4,663	40,774	9,720	922	8,896	8,585	73,561
1973.....	416	4,767	38,884	10,239	944	10,064	7,825	73,139
1974.....	375	4,237	39,137	9,001	2,165	9,765	7,587	72,267
1975.....	322	4,361	40,876	8,670	2,870	8,754	6,128	71,980
1976.....	302	4,471	35,810	8,864	4,604	7,591	5,366	67,009
1977.....	276	4,711	33,235	7,616	115,258	5,981	4,276	171,352
1978.....	223	4,862	30,223	6,382	397,679	4,870	3,567	447,805
1979.....	211	4,613	25,440	5,423	468,412	4,344	2,892	511,335

Source: Oil and Gas Conservation Commission, Office of the Governor.

VOLUME, VALUE, AND UNIT PRICES OF MINERAL PRODUCTION
IN ALASKA: 1972 - 1979

	1972	1973	1974	1975	1976	1977	1978	1979 ^P
Crude Petroleum								
Value (\$000) ^a	221,747	239,574	347,408	364,626	318,788	988,874	2,701,522	5,493,596
Volume-M42 gal. barrels	73,562	73,139	72,267	71,980	67,009	171,353	447,805	511,335
Value per barrel (\$)	3.01	3.28	4.81	5.07	4.76	5.77	6.03	10.74
Natural Gas^b								
Value (\$000)	17,989	19,482	22,505	42,786	60,445	66,605	74,243	80,721
Volume-MMCF	126,887	124,661	126,007	138,910	143,735	151,230	167,168	173,221
Value per MCF (\$)	NA	NA	NA	NA	NA	NA	0.444	0.466
Sand & Gravel								
Value (\$000)	15,214	19,913	52,788	25,780	204,738	134,251	145,300	150,000
Volume-M short tons	14,187	14,999	117,752	48,145	74,208	66,426	69,300	68,000
Value per short ton (\$)	1.07	1.33	0.45	0.54	2.76	2.02	2.10	2.21
Gold								
Value (\$000)	506	695	1,461	2,419	2,868	2,812	3,610	W
Volume-troy ounces	8,639	7,107	9,146	14,980	22,887	18,962	18,652	W
Value per troy ounce (\$)	58.57	97.79	159.74	161.48	125.31	148.30	193.54	W
Other Minerals^c								
Value (\$000)	16,511	26,821	14,861	39,514	34,191	33,443	30,135	28,355
Total Value (\$000)	271,967	306,485	439,023	475,125	621,030	1,225,985	2,954,810	5,752,672

P Preliminary.

NA Not available.

W Withheld to avoid disclosing proprietary data. Values symbolized by a W are included in "Other Minerals" value.

a/ Value figures for Prudhoe Bay oil are values at the point where the oil enters the trans-Alaska pipeline. Consequently, value figures shown above do not include pipeline transportation charges

b/ All volume figures are for dry gas only, exclusive of casing head gas. Value figures for 1978 and 1979 also are for dry gas only, exclusive of casing head gas. However, for 1972 - 1977 value figures include values of liquid gas and casing head gas, with the result that unit prices cannot be computed for those years. Values of liquid gas and casing head gas, which totaled \$15,383 thousand in 1978 and an estimated \$10,812 thousand in 1979, are included above in values of "Other Minerals" for 1978 and 1979.

c/ Included are values symbolized by a W (withheld). Also included are values of \$15,383 thousand in 1978 and an estimated \$10,812 thousand in 1979 for liquid gas and casing head gas.

Source: Bureau of Mines, U. S. Department of the Interior; Alaska Oil and Gas Conservation Commission, Office of the Governor.

**1977 PERCENTAGE OF TOTAL VALUE PRODUCED,
BY PROCESS FORM AND PROCESSOR GROUP**

Process Form	Total Value (\$) All Categories	Processor Group (Ownership Category)					
		Ownership by Canadian and/or U.S. Firms	Individual Ownership	Unidentified Ownership	Ownership by Japanese Firms		
					Under 25%	25% or More	
Frozen	Totals	396,253,000	197,210,000	33,525,000	46,703,000	15,545,000	103,270,000
	%'s of Totals	100%	50%	8%	12%	4%	26%
Canned	Totals	220,095,000	103,030,000	27,174,000	87,000	37,898,000	51,907,000
	%'s of Totals	100%	47%	12%	.04%	17%	24%
Fresh	Totals	8,422,000	3,747,000	3,495,000	377,000	470,000	333,000
	%'s of Totals	100%	44.5%	41.5%	4%	6%	4%
Salt/Pickled	Totals	18,768,000	6,537,000	3,352,000	1,289,000	0	7,590,000
	%'s of Totals	100%	35%	18%	7%	0%	40%
All Process Forms	643,000,000 (approx.)	49%	10%	8%	8%	25%	

**1977 PERCENTAGE OF TOTAL VALUE PRODUCED,
BY SPECIES AND PROCESSOR GROUP**

Species	Total Value All Categories	Processor Group % of Total Value				
		Ownership by Canadian and/or U.S. Firms	Individual Ownership	Unidentified Ownership	Ownership by Japanese Firms	
					Under 25%	25% or More
Pacific Cod	178,385	47	32	0	9	12
Herring	1,607,207	88	12	0	0	0
Herring Roe	12,119,032	16	70	10	0	4
Herring Bait	1,512,078	9	34	22	12	26
Gen. Salmon Roe	32,368,519	35	16	2	21	26
King Salmon	24,263,615	25	10	37	8	20
Red Salmon	109,540,000	48	14	4	12	22
Chino Salmon	21,133,972	29	21	21	10	19
Pink Salmon	90,477,215	33	14	1	22	30
Chum Salmon	45,118,153	37	18	3	18	24
Steelhead Trout	5,329	0	10	0	0	90
Sablefish	1,115,475	11	7	2	1	79
Bottomfish (Gen.)	42,553	0	41	0	0	59
Turbot	1,430	0	0	0	0	100
Lingcod	24,836	1	9	0	0	90
Smelt	7,825	0	97	0	0	3
Sneefish	7,472	6	0	4	0	90
Abalone	34,454	2	60	0	0	38
Dungeness Crab	580,379	27	14	12	0	47
King Crab	171,590,000	61	1	11	0	27
Tanner Crab	66,933,677	67	3	5	0	25
Shrimp	40,026,009	73	6	1	0	20
Halibut	20,002,954	28	13	9	3	47
Rockfish	92,579	4	13	0	13	70
All Salmon Species	290,511,000	38	14	7	16	25
All Species Combined	642,701,699	49	10	8	8	25

NOTE: In both of the tables above, custom processing data is included; that is, any fish that were processed for a given company by another company. If for example, Whitney-Fidelgo Seafoods has fish custom processed for them by Peter Pan Seafoods or Alaska Packers, the production would appear in the report (processor) group which included Whitney-Fidelgo. Under these circumstances the actual processing could be performed by a U.S./Canadian invested company but would be included in the Japanese invested report category (processor group). The reverse could also occur.

Source: Foreign Investment in the Alaska Seafood Industry, prepared for the House Interim Committee on Foreign Investment of the Alaska Legislature, by Frank Orth and Associates, Inc., and W. Patrick Dougherty.

Yukon River Subsistence Salmon Catch Data, 1980 (includes Canadian catch).

Village	Survey Date	Fishing Parties	Dogs	Snow Machines	Kings	Subtotal Chums	Felt Drums	Cohes	Subtotal Chums & Cohes	Total Salmon	Whitefish	Sheefish	8 1/2" Nets	6" Nets	Fishpools
Sheldons Pt.	5/28	15	21	25	427	907	1,549	389	2,545	2,972	54,227	5	5	25	0
Afakanuk	5/29	52	142	95	1,595	3,343	1,227	521	5,091	6,665	207,207	13	43	0	0
Eimonak	8/30	59	147	91	1,175	4,915	2,016	789	7,720	8,855	30,105	18	61	0	0
Kotlik	5/26	40	165	67	472	6,807	2,941	109	9,857	10,329	45,187	12	45	0	0
Subtotal		176	463	276	3,669	15,972	7,433	1,806	25,213	29,882	356,726	52	174	0	0

HI. Village	2/4	57	115	73	863	3,020	5,719	1,739	10,548	11,351	155,178	13	59	0	0
Pitkas Pt.	2/5	11	36	6	241	289	602	32	929	1,170	201,69	3	11	0	0
St. Marys	9/5	38	72	35	1,656	3,327	2,660	982	6,969	8,025	163,228	12	35	0	0
Pilot Station	2/6	38	81	40	433	2,545	1,137	1,510	5,242	5,675	497,435	11	35	0	0
Marshfield	5/7	29	168	44	1,101	4,450	2,261	338	7,229	8,350	250,119	15	35	0	0
Subtotal		185	472	202	3,674	13,661	12,435	4,601	30,917	34,551	1,267,1,030	54	174	0	0

Russian Mission	2/5	19	71	27	1,660	629	226	26	880	2,540	0,40	12	15	0	0
Fort Cross	5/2	24	113	30	3,123	4,814	2,591	65	4,773	7,696	109,185	21	16	0	0
Subtotal		43	184	57	4,783	3,442	2,220	91	5,653	10,436	108,225	39	26	0	0

Lower Yukon Totals		400	1,139	555	12,126	52,895	22,188	6,706	61,783	73,909	1,711,1,981	145	377	0	0
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Arctic	9/28	15	56	18	161	28,051	2,750	625	31,426	31,597	39,340	5	6	8	0
Gravelly	9/15	22	291	24	3,664	29,894	1,904	510	52,308	35,972	89,60	5	11	12	0
Katlay	10/20	19	239	22	694	53,470	2,111	1,750	57,359	58,035	2,936,614	6	6	13	0
Isolate	10/20	24	191	50	2,357	29,657	1,134	271	31,062	33,359	843,96	14	14	0	0
Arcticuk	10/30	15	164	19	699	14,416	2,519	710	17,445	16,144	1,084,276	5	12	2	0

Yukon River subsistence salmon catch data, 1966 (includes Canadian catch) (Cont.)

Village	Survey Date	Fishing Families	Days	Snow Machines	Days	Summer Days	Fall Days	Catch	Subtotal	Total Salmon	Whitefish/Sneefish	6-12" Nets	6" Nets	Fishweels
Gatineau	10/50	34	199	51	1,205	13,102	2,652	543	16,559	17,904	3,818/130	17	19	12
Mayo	10/50	20	127	20	1,726	15,084	4,557	1,376	21,017	22,753	4,996/205	6	5	15
Subtotal		149	1,327	164	10,456	183,674	17,427	6,193	207,290	217,752	13,724/1,721	52	75	70
Tanana	10/6	38	549	30	5,711	5,109	32,834	318	38,261	43,972	25,190/1,062	35	19	25
Rampart	10/9	10	99	6	1,169	108	5,977	15	6,101	7,270	2,143/110	5	2	4
Fuks. Fisncamp	5/47	--	--	--	1,350	1,227	6,488	36	7,751	9,101	5,813/313	21	31	7
Stevens Village	10/23	18	133	13	2,612	320	3,233	181	3,934	6,546	525/30	8	5	4
Beaver	10/17	6	26	3	506	363	190	5	458	964	56/20	4	4	0
Ft. Yukon	10/15	57	254	20	2,527	1,291	6,327	2	7,925	10,355	2,736/112	22	10	21
Circle	10/15	6	35	6	769	40	1,737	2	1,762	2,554	21/17	3	0	2
Edie	10/16	54	276	24	2,650	21	16,740	3	18,773	19,553	916/233	27	31	5
Subtotal		211	1,316	132	17,524	8,594	73,736	55	82,891	100,415	37,402/1,927	159	103	68
Yukon River Totals		764	3,644	851	49,106	225,163	113,331	13,456	211,970	392,076	52,835/5,629	366	555	138
Ustulja	11/50	16	176	26	194	15,063	1,104	633	16,800	16,954	855/347	3	15	0
Hughes	10/49	11	130	13	226	10,545	2,265	643	13,455	13,681	10,082/359	2	11	0
Alatna	10/50	1	0	1	20	300	50	20	370	395	30/5	0	1	0
Allakleet	10/50	22	137	21	197	9,134	2,829	341	12,204	12,401	1,926/452	2	23	0
Koyukuk River Totals		50	440	61	597	35,042	6,248	1,539	42,829	43,426	12,793/1,144	3	50	0
Shakuluk	5/4	4	--	--	35	2,485	0	0	2,485	2,520	260/59	--	--	--
Inuoke River Totals		4	--	--	35	2,485	0	0	2,485	2,520	260/59	--	--	--

Yukon River subsistence salmon catch data, 1980 (includes Canadian catch) (cont.)

Village	Survey District	Survey Date	Days	Kings	Summer/Chums	Fall Chums	Catch	Subtotal Chums & Cohos	Total Salmon	Whitefish/Sneefish	3-1/2" Nets	6" Nets	Fishmeals
Nanaimo	10/17	75	160		0	2,730	--	2,730	2,690	210/3	3	6	
Chandalar River Totals	6	75	160		0	2,730		2,730	2,690	210/3	3	6	
Manley	10/7	207	410	566	7,653	1,454		9,671	10,061	504/13	5	6	5
Minto	12/6	206	354	450	9,500	133		10,130	10,484	354/27	2	4	12
Reardan	10/2	491	771	4,545	25,742	2,662		37,549	38,320	1,570/11	6	16	29
Stikine	5/23-6/10	N/A	291	3,749	3,423	667		7,849	8,140	171/17	N/A	N/A	9
Tanana River Totals	307	504	1,825	9,703	50,329	5,153		65,199	67,025	2,559/11	11	30	55
Subtotals													
Upper Yukon (Alaska)	727	4,124	400	30,598	239,503	150,469	13,458	403,430	434,028	55,980/5,025	238	260	195
Yukon Territory Totals													
Old Crow	--	--	--	2,000	--	6,000	1,500	7,500	9,500	--	--	--	--
Porcupine River Totals	--	--	--	2,000	--	6,000	1,500	7,500	9,500	--	--	--	--
Danahoe	--	--	--	12,500	--	7,000	--	7,000	20,500	--	--	--	--
Fresh Territory Totals	--	--	--	12,500	--	7,000	--	7,000	20,500	--	--	--	--
Grand Total Yukon River Drainage	1,131	5,265	543	50,234	272,399	185,637	21,638	479,713	537,937	60,691/7,059	333	637	195

- 1/ Catch data expanded.
- 2/ Data from fishing families only.
- 3/ Includes small numbers of pinks in districts 1-3.
- 4/ Data from fishermen who fished between Hess Creek and Dall River.
- 5/ Survey conducted by mail, November-January.
- 6/ 70 permits issued: 54 to Fairbanks-area residents (42 of whom fished, 6 did not fish, 4 did not report); 16 permits issued to residents of Stevens Village and Kamport--their catches included under those villages.
- 7/ Data from fishermen who fished in the Tanana River between Wood River and the Salena River.
- 8/ 315 permits issued: 254 fishermen fished, 19 did not fish, 12 did not report.
- 9/ Data from Environment Canada Fisheries Service (Whitehorse)

Appendix Table Commercial salmon catches by species and districts, Yukon area, 1960-1980.

KING SALMON									
Year	Lower Yukon Area				Upper Yukon Area				Totals
	334-10	334-20	334-30	Subtotals	334-40	334-50	334-60	Subtotals	
1960	50,713	15,994	-	66,707	-	-	-	384	57,591
1961	34,463	29,028	4,965	118,456	-	-	-	1,804	120,260
1962	57,099	22,224	4,687	94,010	-	-	-	724	94,734
1963	85,004	24,211	6,976	116,191	-	-	-	303	116,994
1964	67,555	20,246	4,705	92,506	-	-	-	1,081	93,587
1965	89,268	23,763	3,204	116,235	-	-	-	1,363	118,098
1966	70,788	16,927	3,612	91,327	-	-	-	1,988	93,315
1967	104,350	20,289	3,518	128,257	-	-	-	1,449	129,706
1968	79,465	21,392	4,543	105,400	-	-	-	1,125	106,526
1969	70,862	14,799	3,577	89,238	-	-	-	985	90,223
1970	57,681	17,210	3,712	78,503	-	-	-	1,666	80,269
1971	86,042	19,225	3,490	108,758	-	-	-	1,749	110,507
1972	70,052	17,855	3,241	91,148	-	-	-	1,092	92,540
1973	56,381	13,359	3,204	74,044	-	-	-	1,309	75,353
1974	71,680	17,947	3,471	93,098	685	2,663	1,473	4,821	97,919
1975	44,585	11,187	1,207	59,979	389	2,372	500	3,261	63,240
1976	62,632	17,413	4,239	84,284	385	2,900	1,102	4,387	88,671
1977	59,456	16,781	3,943	90,180	959	4,267	1,008	6,234	96,414
1978	57,390	32,335	2,917	93,142	701	3,115	644	4,460	97,602
1979	76,259	41,357	5,108	122,734	1,969	3,520	833	6,322	129,056
1980	37,789	50,824	5,240	143,853	1,521	5,338	2,076	8,935	152,788

COHO SALMON									
Year	Lower Yukon Area				Upper Yukon Area				Totals
	334-10	334-20	334-30	Subtotals	334-40	334-50	334-60	Subtotals	
1960	-	-	-	-	-	-	-	-	-
1961	2,855	-	-	2,855	-	-	-	-	2,855
1962	22,926	-	-	22,926	-	-	-	-	22,926
1963	5,572	-	-	5,572	-	-	-	-	5,572
1964	2,446	-	-	2,446	-	-	-	-	2,446
1965	350	-	-	350	-	-	-	-	350
1966	19,254	-	-	19,254	-	-	-	-	19,254
1967	3,925	-	1,122	11,047	-	-	-	-	11,047
1968	13,153	-	150	13,303	-	-	-	-	13,303
1969	14,041	-	845	14,886	-	-	-	95	14,981
1970	12,245	-	-	12,245	-	-	-	-	12,245
1971	12,165	-	-	12,165	-	-	-	38	12,203
1972	21,705	506	-	22,211	-	-	-	22	22,233
1973	34,860	1,781	-	36,641	-	-	-	-	36,641
1974	13,728	175	-	13,904	-	909	1,427	2,336	16,240
1975	2,288	-	-	2,288	-	5	53	58	2,346
1976	4,034	17	-	4,101	-	-	1,096	1,096	5,197
1977	30,588	5,312	521	36,421	-	-	1,500	1,500	37,021
1978	16,262	5,335	758	22,355	32	7	3,066	3,105	25,960
1979	11,244	2,920	-	14,164	155	-	2,791	2,946	17,110
1980	4,328	2,660	-	7,488	-	27	1,226	1,253	8,741

Yukon River drainage commercial and subsistence salmon catches, 1903-1960

Year	Alaska			Yukon Territory			Subsistence Catches			Total		
	Commercial Catch	Subsistence Catch	Total	Commercial Catch	Subsistence Catch	Total	Commercial Catch	Subsistence Catch	Total	Commercial Catch	Subsistence Catch	Total
1903	12,239	7,066	19,305	1,400,000	1,400,000	2,800,000	12,239	7,066	19,305	1,400,000	1,400,000	2,800,000
1904	104,327	1,600	105,927	269,000	269,000	538,000	104,327	1,600	105,927	269,000	269,000	538,000
1905	52,646	1,000	53,646	860,000	860,000	1,720,000	52,646	1,000	53,646	860,000	860,000	1,720,000
1906	18,525	1,000	19,525	316,000	316,000	632,000	18,525	1,000	19,525	316,000	316,000	632,000
1907	13,395	1,000	14,395	1,130,000	1,130,000	2,260,000	13,395	1,000	14,395	1,130,000	1,130,000	2,260,000
1908	27,375	1,000	28,375	259,000	259,000	518,000	27,375	1,000	28,375	259,000	259,000	518,000
1909	112,304	7,066	119,370	1,400,000	1,400,000	2,800,000	112,304	7,066	119,370	1,400,000	1,400,000	2,800,000
1910	104,327	1,600	105,927	269,000	269,000	538,000	104,327	1,600	105,927	269,000	269,000	538,000
1911	52,646	1,000	53,646	860,000	860,000	1,720,000	52,646	1,000	53,646	860,000	860,000	1,720,000
1912	18,525	1,000	19,525	316,000	316,000	632,000	18,525	1,000	19,525	316,000	316,000	632,000
1913	13,395	1,000	14,395	1,130,000	1,130,000	2,260,000	13,395	1,000	14,395	1,130,000	1,130,000	2,260,000
1914	27,375	1,000	28,375	259,000	259,000	518,000	27,375	1,000	28,375	259,000	259,000	518,000
1915	112,304	7,066	119,370	1,400,000	1,400,000	2,800,000	112,304	7,066	119,370	1,400,000	1,400,000	2,800,000
1916	104,327	1,600	105,927	269,000	269,000	538,000	104,327	1,600	105,927	269,000	269,000	538,000
1917	52,646	1,000	53,646	860,000	860,000	1,720,000	52,646	1,000	53,646	860,000	860,000	1,720,000
1918	18,525	1,000	19,525	316,000	316,000	632,000	18,525	1,000	19,525	316,000	316,000	632,000
1919	13,395	1,000	14,395	1,130,000	1,130,000	2,260,000	13,395	1,000	14,395	1,130,000	1,130,000	2,260,000
1920	27,375	1,000	28,375	259,000	259,000	518,000	27,375	1,000	28,375	259,000	259,000	518,000
1921	112,304	7,066	119,370	1,400,000	1,400,000	2,800,000	112,304	7,066	119,370	1,400,000	1,400,000	2,800,000
1922	104,327	1,600	105,927	269,000	269,000	538,000	104,327	1,600	105,927	269,000	269,000	538,000
1923	52,646	1,000	53,646	860,000	860,000	1,720,000	52,646	1,000	53,646	860,000	860,000	1,720,000
1924	18,525	1,000	19,525	316,000	316,000	632,000	18,525	1,000	19,525	316,000	316,000	632,000
1925	13,395	1,000	14,395	1,130,000	1,130,000	2,260,000	13,395	1,000	14,395	1,130,000	1,130,000	2,260,000
1926	27,375	1,000	28,375	259,000	259,000	518,000	27,375	1,000	28,375	259,000	259,000	518,000
1927	112,304	7,066	119,370	1,400,000	1,400,000	2,800,000	112,304	7,066	119,370	1,400,000	1,400,000	2,800,000
1928	104,327	1,600	105,927	269,000	269,000	538,000	104,327	1,600	105,927	269,000	269,000	538,000
1929	52,646	1,000	53,646	860,000	860,000	1,720,000	52,646	1,000	53,646	860,000	860,000	1,720,000
1930	18,525	1,000	19,525	316,000	316,000	632,000	18,525	1,000	19,525	316,000	316,000	632,000
1931	13,395	1,000	14,395	1,130,000	1,130,000	2,260,000	13,395	1,000	14,395	1,130,000	1,130,000	2,260,000
1932	27,375	1,000	28,375	259,000	259,000	518,000	27,375	1,000	28,375	259,000	259,000	518,000
1933	112,304	7,066	119,370	1,400,000	1,400,000	2,800,000	112,304	7,066	119,370	1,400,000	1,400,000	2,800,000
1934	104,327	1,600	105,927	269,000	269,000	538,000	104,327	1,600	105,927	269,000	269,000	538,000
1935	52,646	1,000	53,646	860,000	860,000	1,720,000	52,646	1,000	53,646	860,000	860,000	1,720,000
1936	18,525	1,000	19,525	316,000	316,000	632,000	18,525	1,000	19,525	316,000	316,000	632,000
1937	13,395	1,000	14,395	1,130,000	1,130,000	2,260,000	13,395	1,000	14,395	1,130,000	1,130,000	2,260,000
1938	27,375	1,000	28,375	259,000	259,000	518,000	27,375	1,000	28,375	259,000	259,000	518,000
1939	112,304	7,066	119,370	1,400,000	1,400,000	2,800,000	112,304	7,066	119,370	1,400,000	1,400,000	2,800,000
1940	104,327	1,600	105,927	269,000	269,000	538,000	104,327	1,600	105,927	269,000	269,000	538,000
1941	52,646	1,000	53,646	860,000	860,000	1,720,000	52,646	1,000	53,646	860,000	860,000	1,720,000
1942	18,525	1,000	19,525	316,000	316,000	632,000	18,525	1,000	19,525	316,000	316,000	632,000
1943	13,395	1,000	14,395	1,130,000	1,130,000	2,260,000	13,395	1,000	14,395	1,130,000	1,130,000	2,260,000
1944	27,375	1,000	28,375	259,000	259,000	518,000	27,375	1,000	28,375	259,000	259,000	518,000
1945	112,304	7,066	119,370	1,400,000	1,400,000	2,800,000	112,304	7,066	119,370	1,400,000	1,400,000	2,800,000
1946	104,327	1,600	105,927	269,000	269,000	538,000	104,327	1,600	105,927	269,000	269,000	538,000
1947	52,646	1,000	53,646	860,000	860,000	1,720,000	52,646	1,000	53,646	860,000	860,000	1,720,000
1948	18,525	1,000	19,525	316,000	316,000	632,000	18,525	1,000	19,525	316,000	316,000	632,000
1949	13,395	1,000	14,395	1,130,000	1,130,000	2,260,000	13,395	1,000	14,395	1,130,000	1,130,000	2,260,000
1950	27,375	1,000	28,375	259,000	259,000	518,000	27,375	1,000	28,375	259,000	259,000	518,000
1951	112,304	7,066	119,370	1,400,000	1,400,000	2,800,000	112,304	7,066	119,370	1,400,000	1,400,000	2,800,000
1952	104,327	1,600	105,927	269,000	269,000	538,000	104,327	1,600	105,927	269,000	269,000	538,000
1953	52,646	1,000	53,646	860,000	860,000	1,720,000	52,646	1,000	53,646	860,000	860,000	1,720,000
1954	18,525	1,000	19,525	316,000	316,000	632,000	18,525	1,000	19,525	316,000	316,000	632,000
1955	13,395	1,000	14,395	1,130,000	1,130,000	2,260,000	13,395	1,000	14,395	1,130,000	1,130,000	2,260,000
1956	27,375	1,000	28,375	259,000	259,000	518,000	27,375	1,000	28,375	259,000	259,000	518,000
1957	112,304	7,066	119,370	1,400,000	1,400,000	2,800,000	112,304	7,066	119,370	1,400,000	1,400,000	2,800,000
1958	104,327	1,600	105,927	269,000	269,000	538,000	104,327	1,600	105,927	269,000	269,000	538,000
1959	52,646	1,000	53,646	860,000	860,000	1,720,000	52,646	1,000	53,646	860,000	860,000	1,720,000
1960	18,525	1,000	19,525	316,000	316,000	632,000	18,525	1,000	19,525	316,000	316,000	632,000

Does not include subsistence catches from the villages outside of the Yukon River basin.
 Mostly chin salmon, but includes small numbers of pink.
 Data source for Alaska commercial catches: Woods Stat. Digest No. 50 for the years 1951-59, unless otherwise indicated.
 Data source for Alaska commercial catches: Fisheries Report for 1954. 5/ Includes small numbers of pink or red salmon (less than 10%).
 Data source for Alaska subsistence catches: ADF&G Stat. Leaflets for years since 1960.
 Data source: Environment Canada, Fisheries Service (Whitehorse) since 1958.
 Catch data for years 1903-1917 obtained by estimating total percentage of wild salmon by an arbitrary weight of 15 lbs.
 Species breakdown is unknown. Figures are considered conservative (data collected by Russ Canadian Mounted Police).

Appendix Table . Commercial Fisheries Entry Commission (C.F.E.C.) permits issued by gear type, Yukon area, 1976-1980.

Year	Number of <u>GILL NET</u> Permits ^{5/}		
	Lower Yukon ^{1/ 2/}	Upper Yukon ^{3/ 4/}	Total
1976	678	118	796
1977	691	66	757
1978	694	68	762
1979	700	64	764
1980	686	78	764

Year	Number of <u>FISHWHEEL</u> Permits ^{5/}
	Upper Yukon ^{4/}
1976	169
1977	161
1978	161
1979	166
1980	164

^{1/} Information obtained from Commercial Fisheries Entry Commission Annual Reports.

^{2/} Set or drift gillnet.

^{3/} Set gillnet only.

^{4/} Includes Interim-use permits.

^{5/} Does not include transfers.

Appendix Table Actual number of commercial salmon fishing vessels by district, Yukon area, 1971-1980. 1/

KING SALMON SEASON									
Year	Lower Yukon Area				Upper Yukon Area				Total
	334-10	334-20	334-30	Subtotals	334-40	334-50	334-60	Subtotals	
1971	405	154	33	592	--	--	--	--	--
1972	426	153	35	614	--	--	--	--	--
1973	438	167	38	643	--	--	--	--	--
1974	396	154	42	592	27	31	20	78	670
1975	441	149	37	627	93	52	36	181	808
1976	453	189	42	684	80	46	29	155	839
1977	392	188	46	626	87	41	18	146	772
1978	429	204	22	655	80	45	35	160	815
1979	425	210	22	657	87	34	30	151	808
1980	407	229	21	657	79	35	33	147	804

FALL SEASON									
Year	Lower Yukon Area				Upper Yukon Area				Total
	334-10	334-20	334-30	Subtotals	334-40	334-50	334-60	Subtotals	
1971	352	--	--	352	--	--	--	--	--
1972	353	75	3	431	--	--	--	--	--
1973	445	183	--	628	--	--	--	--	--
1974	322	121	6	449	17	23	22	62	511
1975	428	185	12	625	44	33	33	110	735
1976	422	194	28	644	18	36	44	98	742
1977	337	172	37	546	28	34	32	94	640
1978	429	204	28	661	24	43	30	127	788
1979	458	220	32	710	31	44	37	112	822
1980	395	232	23	650	33	43	26	102	752

COMBINED SEASONS									
Year	Lower Yukon Area				Upper Yukon Area				Total
	334-10	334-20	334-30	Subtotals	334-40	334-50	334-60	Subtotals	
1971	473	154	33	660	--	--	--	27	687
1972	476	153	35	664	--	--	--	--	664
1973	529	205	38	772	--	--	--	47	819
1974	485	190	42	717	28	43	27	98	815
1975	491	197	39	727	95	57	46	198	925
1976	482	220	44	746	96	62	56	214	960
1977	402	208	54	664	96	53	39	188	852
1978	472	221	29	722	82	53	38	173	895
1979	461	230	33	724	90	49	40	179	903
1980	432	247	27	706	88	51	38	177	883

1/ Actual number of fishing vessels refer to those boats which made at least one delivery. Data presented shows the number of vessels that operated in each subdistrict. Some individual fishing vessels in the lower Yukon area may have operated in more than one subdistrict during the year.

Appendix Table . Commercial salmon pack by species and type of processing, Yukon area, 1960-1980. ^{1/}

Year	Cases (48#)			Fresh-Frozen (round wt. in lbs.)			Cured King Salmon		Cured Chum Salmon		Salmon Rope (1)
	King	Coho	Chum	King	Coho	Chum	Tierces	1/2 Tierce	Tierces	1/2 Tierce	
1960	13,000			^{2/}	^{2/}	^{2/}	250	180			
1961	19,474			^{2/}	^{2/}	^{2/}	504	146			
1962	15,959	512	1,760	^{2/}	^{2/}	^{2/}	464	280			
1963	16,400	1,190		^{2/}	^{2/}	^{2/}	^{2/}	^{2/}			
1964	12,041			^{2/}	17,000	56,770	537	499			
1965	18,149			275,000	2,500	150,500	570	67			
1966	14,025	336	2,312	114,000	61,355	301,240	398	60			
1967	21,503		125	475,900	56,400	366,496	527	96			
1968	19,499		816	561,690	93,154	454,409	351	170			21.1
1969	9,560	1,104	4,459	423,597	26,973 ^{3/}	829,586 ^{3/}	647	95	15		29.1
1970	6,431	1,002	6,413	716,600	12,900	1,725,000	447	191	51		26.2
1971	6,500	502	3,213	1,058,034	45,836	1,432,455	559	229	139		55.1
1972	7,413	1,005	6,249	1,002,395	33,960	1,495,322	497	147			35.2
1973	5,227	1,608	9,902	1,339,317	181,928	2,929,532	61	133		72	13.1
1974	6,660	603	21,074	1,062,566	58,816	3,379,300	381	56	57		20.3
1975	5,297	40	14,225	781,902	13,299	4,751,941	60	53	45	119	20.4
1976	3,921	80	11,375	1,398,779	29,778	4,256,679	93	92	72	10	22.5
1977	4,642	415	9,428	1,513,464	270,241	4,877,919	180	237	26	-	21.5
1978	5,711	74	9,340	1,473,354	168,241	8,369,156	222	117	7	75	26.1
1979	6,277	22	7,854	2,014,156	108,011	8,098,075	112	91	-	2	30.1
1980	8,764	130	15,783	3,341,262	56,295	8,781,052	29	18	-	37	37.9

^{1/} Pack represents type of processing when fish were stripped out of district.

^{2/} Information not available.

^{3/} Includes approximately 11,600 and 110,500 (round weight) of coho and chum salmon respectively, as salted fish for Japanese market.

Appendix Table Dollar value estimates of Yukon area commercial fishery, 1961-1980. 1/

Gross value of catch to fishermen				Wages earned ^{2/}	Total income to area	Wholesale value of pack ^{3/}	Tax revenues to state ^{4/}
King	Coho	Chum	Total				
420,900	1,400	14,700	437,000			1,292,300	37,500
330,300	11,500	20,100	361,900			1,275,250	50,400
409,500	2,800	-	412,300			1,550,400	42,000
351,000	1,200	2,200	354,400			1,203,300	35,000
531,400	200	10,700	542,300			1,412,700	42,000
419,900	9,600	25,000	454,500			1,308,100	37,000
583,700	5,500	17,200	606,400	250,000	856,400	1,864,300	41,700
494,300	5,700	34,000	535,000	264,000	799,000	1,655,200	47,000
415,000	8,200	96,000	519,200	234,000	753,000	1,976,200	40,000
401,300	10,300	211,500	623,100	185,800	808,900	2,113,100	45,000
590,100	10,000	182,900	783,000	357,700	1,140,700	2,106,500	42,000
547,800	20,400	215,200	784,000	445,400	1,229,400	2,405,200	45,300
561,400	46,500	609,100	1,217,000	585,200	1,802,900	4,453,900	62,300
881,300	28,400	1,011,300	1,921,000	500,100	2,421,100	6,035,900	84,100
539,300	3,500	1,201,400	1,793,900	596,600	2,390,500	4,939,700	97,100
983,500	8,600	1,158,900	2,151,000	687,600	2,838,600	6,815,500	96,900
1,928,400	143,000	1,997,300	4,068,700	950,000	4,918,700	10,499,400	151,000
133,700	79,200	3,101,800	5,314,700	1,085,700	6,400,400	14,194,800	179,400
3,008,000	84,400	4,527,100	7,519,500	1,210,000	8,829,500	19,048,800	248,500
639,300	21,800	2,676,800	6,703,100 ^{5/}	1,475,000	8,178,100	16,757,700	205,400

Information not available for wages earned during 1961-1966.

^{2/} Wages paid to tender boat operators and resident processing plant employees in district.

^{3/} Type of processing when fish were shipped out of the district.

^{4/} Lessors tax and vessel and crewmember licenses fees. Does not include CFEC permit fee.

^{5/} \$365,200 in roe sales Upper Yukon area.

Appendix Table Estimated average prices paid to fishermen, Yukon area, 1961-1980. 1/

PRICE PER FISH								
Lower Yukon Area					Upper Yukon Area			
Date	King	Summer Chum	Fall Chum	Coho	King	Summer Chum	Fall Chum	Coho
1961	\$3.50							
1962	3.50							
1963	3.50							
1964	3.75							
1965	4.50		.25	.50				
1966	4.50		.35					
1967	4.50	.35	.35	.50				
1968	4.64	.50	.50	.50				
1969	4.60	.50	.50	.55				
1970	5.00	.61	.61	.84				
1971	5.34	.64	.64	.82				
1972	5.90	.75	.75	.92				
1973	7.45	1.18	1.18	1.27				
1974	9.00	1.36	1.58	1.75				
1975	9.24	1.30	1.50	1.51	8.67	1.00	1.00	1.00
1976	11.17	1.56	1.80	1.78	16.25	1.12	1.12	1.12
1977	20.32	2.80	3.60	3.75	12.96	1.22	1.22	1.22
1978	21.60	3.20	3.62	4.20	24.17	1.75	1.75	1.75
1979	22.74	3.87	5.05	5.87	15.38	1.54	1.97	1.97
1980	23.41	1.38	1.93	2.32	20.20	1.65	2.24	2.24
					13.60	1.52	2.08	1.89

PRICE PER POUND								
Lower Yukon Area					Upper Yukon Area			
Date	King	Summer Chum	Fall Chum	Coho	King	Summer Chum	Fall Chum	Coho
1964	.17		.03					
1965	.20							
1966	.20							
1967	.19	.05	.05	.07				
1968	.18	.06	.06					
1969	.19	.08	.08	.08				
1970	.22	.09	.09	.12				
1971	.24	.10	.10	.12				
1972	.24	.11	.11	.13				
1973	.30	.16	.16	.18				
1974	.38	.21	.21	.25				
1975	.42	.20	.20	.21	.50	.15	.13	.15
1976	.51	.24	.24	.27	.92	.17	.14	.17
1977	.85	.40	.45	.50	.74	.19	.16	.19
1978	.90	.45	.47	.60	1.37	.27	.22	.27
1979	1.09	.52	.68	.80	.87	.24	.25	.24
1980	1.04	.20	.28	.36	1.00	.25	.29	.25
					.85	.23	.27	.29

1/ Information not available for some species.

Appendix Table

Estimated total catch in thousands of western Alaska and Canadian Yukon king salmon by the Japanese mothership fishery, foreign groundfish fisheries and U.S. commercial and subsistence fisheries. (Also presented are Japanese landbased drift gillnet king salmon catches; estimated western Alaskan interceptions unknown).^{1/}

Year	Japanese Mothership ^{2/}		Foreign Groundfish ^{3/}	Sub-Total	Western Alaska		Sub-Total	Total	(Japanese Landbased Drift gillnet)
					Commercial	Subsistence			
1956	55.4	(137)	-	-	132.7	-	-	-	(18)
1957	15.2	(31)	-	-	158.4	-	-	-	(33)
1958	5.4	(46)	-	-	181.9	-	-	-	(45)
1959	27.8	(68)	-	-	195.1	-	-	-	(42)
1960	135.0	(180)	-	-	195.7	-	-	-	(113)
1961	13.9	(31)	-	-	243.1	-	-	-	(79)
1962	29.7	(122)	-	-	213.1	-	-	-	(124)
1963	40.8	(87)	-	-	208.1	66.2	274.3	315.1	(102)
1964	252.9	(410)	-	-	260.0	50.5	310.5	563.4	(195)
1965	105.5	(185)	-	-	263.0	52.9	315.8	421.3	(93)
1966	111.5	(208)	-	-	207.5	69.5	277.0	388.5	(112)
1967	69.8	(128)	-	-	284.0	81.9	365.9	435.7	(110)
1968	226.3	(362)	-	-	259.0	54.2	313.2	539.5	(88)
1969	435.2	(554)	-	-	287.6	65.2	352.9	788.1	(83)
1970	344.8	(437)	-	-	290.8	95.1	386.0	730.8	(101)
1971	143.6	(206)	-	-	283.2	73.8	357.1	500.7	(134)
1972	169.5	(261)	-	-	224.1	66.7	290.8	460.3	(103)
1973	47.0	(119)	-	-	177.4	69.7	247.1	294.1	(162)
1974	286.8	(361)	-	-	180.2	57.3	237.6	524.4	(186)
1975	109.2	(162)	-	-	126.2	77.2	203.3	312.5	(135)
1976	^{4/} 167.7	(283)	-	-	241.5	84.0	325.6	493.3	(201)
1977	^{4/} 64.5	(93)	43.5	108.0	296.1	84.1	380.2	488.2	(146)
1978	^{4/} 31.3	(105)	39.1	70.4	380.0	74.6	454.6	525.0	(210)
1979	^{4/} 65.0	(125)	100.4	165.4	412.0	99.3	511.3	676.7	(161)
1980	^{4/} 386.0	(704)	111.6	499.6	312.0	113.3	423.3	922.9	(160)

1/ Data from I.N.P.F.C. documents.

2/ Estimates do not include dropouts; (total catch in parenthesis).

3/ Assumed 100% of the catch is of western Alaska and Canadian Yukon origin.

4/ Preliminary estimates.

Appendix Table Commercial freshwater fishery catches, lower Yukon area, 1978-1980.

Year	Sheefish		Whitefish		Blackfish
	Number	Pounds	Number	Pounds	Pounds
1978	-	-	19	37	-
1979	5	39	23	55	-
1980 ^{1/}	261	2,123	78	250	293

^{1/} Preliminary

HERRING FISHERY PROJECTIONS FOR WESTERN ALASKA, 1978 - 2000

	Estimated Spawning Stock (Metric Tons)		Harvest (Metric Tons)		MFC Guideline Harvest Level 1980	Forecast Harvest (Metric Tons)					
	1978	1979	1978	1979		1985	1990	1995	2000		
Security Cove	1,283	16,513	2,300	259	384	611	750				
Goodnews Bay					82	407	300	1,600	2,000	2,500	3,000
Yukon-Cape Romanzof	n.a.	n.a.	n.a.	0	0	544	350				
Norton Sound	4,788	6,973	10,000	14	1,173	2,205	1,000	2,500	3,000	3,000	3,000
Kotzebue	n.a.	n.a.	n.a.	0	0	n.a.	300	300	400	500	600
	n.a.	n.a.	n.a.	273	1,639	3,767	2,700	4,400	5,400	6,000	6,600

	Forecasted Tons Harvested by Residents (Number of Resident Fishermen in Parentheses)			Forecasted Income to Resident Fishermen @ \$800/Ton		
	1985	1990	2000	1985	1990	2000
Security Cove-Yukon	800 (250)	1,000 (300)	1,250 (400)	\$ 640,000	\$ 800,000	\$1,000,000
Norton Sound	1,250 (250)	1,500 (250)	1,500 (300)	1,000,000	1,200,000	1,200,000
Kotzebue	150 (200)	200 (250)	250 (250)	120,000	160,000	200,000
	2,200	2,700	3,000	\$1,760,000	\$2,160,000	\$2,400,000

1. The 1980 spawning stock estimates are preliminary and probably minimal. Weather and water conditions prevented observations at Goodnews Bay, Cape Romanzof and Kotzebue.

2. Preliminary data, Alaska Department of Fish and Game.

Appendix Table Commercial salmon pack by species in round weight (lbs), Kuskokwim area, 1968-1980. 1/

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
<u>Fresh or frozen</u>										
king	794,682	1,032,863	1,113,890	801,628	1,400,243	1,371,685	566,941	159,845	935,652	1,326,711
red	36,480	25,351	68,116	30,635	4,319	37,816	179,768	108,216	95,761	154,711
coho	1,090,690	322,254	453,125	64,457	152,832	883,966	1,245,132	670,598	809,916	2,009,111
pink	303,270	3,413	90,703	6,442	6,442	2,092	246,134	2,809	133,911	1,609,718
chum	146,230	249,007	367,715	678,173	631,781	1,252,607	1,220,496	1,350,936	1,609,718	2,185,511
<u>Salmon roe, (lbs. of finished product.)</u>	2/	56,926	42,958	64,136	62,963	165,574	2/	43,113	120,405 ^{3/}	109,111
<u>Subsistence roe (lbs. of raw product).</u>									157,151	167,111
<u>Fresh or frozen</u>										
king	1,530,461			999,043					617,137	
red	89,489			320,541					290,251	
coho	1,758,213			2,418,186					2,234,781	
pink	241,523			2,290					107,719	
chum	2,508,123			2,059,686					3,471,378	
<u>Salmon roe, (lbs of finished product)</u>	142,496								110,806	

1/ Pack represents type of processing when fish were shipped out of district.

2/ Information not available.

3/ Raw product

Appendix Table Estimated average prices paid to fishermen, Yukon area, 1961-1980. 1/

PRICE PER FISH								
Lower Yukon Area					Upper Yukon Area			
Date	King	Summer Chum	Fall Chum	Coho	King	Summer Chum	Fall Chum	Coho
1961	\$3.50							
1962	3.50							
1963	3.50							
1964	3.75							
1965	4.50		.25	.50				
1966	4.50		.35					
1967	4.50	.35	.35	.50				
1968	4.64	.50	.50	.50				
1969	4.60	.50	.50	.55				
1970	5.00	.61	.61	.84				
1971	5.34	.64	.64	.82				
1972	5.90	.75	.75	.92				
1973	7.45	1.18	1.18	1.27				
1974	9.00	1.36	1.58	1.75				
1975	9.24	1.30	1.50	1.51	8.67	1.00	1.00	1.00
1976	11.17	1.56	1.80	1.78	16.25	1.12	1.12	1.12
1977	20.32	2.80	3.60	3.75	12.96	1.22	1.22	1.22
1978	21.60	3.20	3.62	4.20	24.17	1.75	1.75	1.75
1979	22.74	3.87	5.05	5.87	15.38	1.54	1.97	1.97
1980	23.41	1.38	1.93	2.32	20.20	1.65	2.24	2.24
					13.60	1.52	2.08	1.89

PRICE PER POUND								
Lower Yukon Area					Upper Yukon Area			
Date	King	Summer Chum	Fall Chum	Coho	King	Summer Chum	Fall Chum	Coho
1964	.17		.03					
1965	.20							
1966	.20							
1967	.19	.05	.05	.07				
1968	.18	.06	.06					
1969	.19	.08	.08	.08				
1970	.22	.09	.09	.12				
1971	.24	.10	.10	.12				
1972	.24	.11	.11	.13				
1973	.30	.16	.16	.18				
1974	.38	.21	.21	.25				
1975	.42	.20	.20	.21	.50	.15	.13	.15
1976	.51	.24	.24	.27	.92	.17	.14	.17
1977	.85	.40	.45	.50	.74	.19	.16	.19
1978	.90	.45	.47	.60	1.37	.27	.22	.27
1979	1.09	.52	.68	.80	.87	.24	.25	.24
1980	1.04	.20	.28	.36	1.00	.25	.29	.25
					.85	.23	.27	.29

1/ Information not available for some species.

Table 1. Yukon Area Commercial Fisheries Entry Commission permits issued by residence, 1980.

District	Residence	Gillnet Permits 1/	Fishwheel Permits 1/
334-10, 334-20 and 334-30	Mountain Village	103	
	Emmonak	100	
	Alakanuk	89	
	Kotlik	78	
	St. Marys	63	
	Marshall	47	
	Pilot Station	41	
	Scammon Bay	40	
	Sheldon's Point	26	
	Russian Mission	20	
	Unalakleet	14	
	Holy Cross	11	
	Anchorage	10	
	Pitkas Point	7	
	Stebbins	7	
	Bethel	4	
	Wasilla	4	
	Shaktoolik	3	
	Everett, WA	2	
	Hooper Bay	2	
	Chugiak	1	
	Chulioonawick	1	
	College	1	
	Delta Junction	1	
	Eagle River	1	
	Fairbanks	1	
	Nome	1	
Palmer	1		
Paxson	1		
Puyallup, WA	1		
Rock Hill, S.C.	1		
Sitka	1		
Spenard	1		
St. Michael	1		
Tuntutulak	1		
Total Lower Yukon		566	
334-40	Anvik	5	5
	Grayling	2	10
	Kaltaq	5	9
	Nulato	0	15
	Koyukuk	0	3
	Galena	8	22
	Ruby	5	13
	Nenana	2	2
	Flat	1	0
	Fairbanks	1	0
	Anchorage	1	1
Subtotal		30	81
334-50	Tanana	10	9
	Rampart	6	7
	Stevens Village	2	2
	Circle	2	2
	Ft. Yukon	0	1
	Eagle	1	0
	Anchorage	1	0
	Fairbanks	9	7
	Nenana	3	2
	Tok	1	1
Manley	1		
Subtotal		36	41

Appendix Table Commercial salmon pack by species and type of processing, Yukon area, 1960-1980. 1/

Year	Cases (48#)			Fresh-Frozen (round wt. in lbs.)			Cured King Salmon		Cured Chum Salmon		Salmon Roe (lb)
	King	Coho	Chum	King	Coho	Chum	Fierces	1/2 Fierce	Fierces	1/2 Fierce	
1960	13,000			2/	2/	2/	250	180			
1961	19,474			2/	2/	2/	504	146			
1962	15,959	512	1,760	2/	2/	2/	464	280			
1963	16,400	1,190		2/	2/	2/	2/	2/			
1964	12,041			2/	17,000	66,770	537	499			
1965	18,149			275,000	2,500	160,500	670	67			
1966	14,026	836	2,812	414,000	61,355	301,240	398	60			
1967	21,503		126	475,900	66,400	366,496	627	96			1,75
1968	19,499		816	561,690	93,154	454,409	351	170			21,00
1969	9,560	1,104	4,499	423,597	26,973 ^{3/}	829,586 ^{3/}	647	95	15		29,00
1970	6,431	1,002	6,413	716,600	12,900	1,725,000	447	191	51		26,30
1971	6,500	502	3,213	1,058,034	45,836	1,432,455	659	229	139		55,17
1972	7,418	1,005	6,249	1,002,395	83,960	1,495,922	497	147			85,27
1973	5,227	1,008	9,902	1,339,317	181,928	2,929,532	61	133		72	137,59
1974	6,660	603	21,074	1,062,666	58,816	3,879,300	381	56	57		208,84
1975	5,297	40	14,226	781,902	13,299	4,751,941	80	53	45	119	201,40
1976	3,921	80	11,375	1,398,779	29,778	4,256,679	93	92	72	10	226,89
1977	4,642	415	9,428	1,513,484	270,241	4,877,918	180	237	26	-	210,56
1978	5,711	74	9,340	1,473,354	163,241	8,369,156	222	117	7		
1979	6,277	22	7,854	2,014,156	108,011	8,098,075	112	91	-	75	261,42
1980	8,764	130	15,783	3,341,262	56,295	8,781,062	29	13	-	2	410,54
										37	579,92

1/ Pack represents type of processing when fish were stripped out of district. Information not available.

2/ Includes approximately 11,600 and 110,500 (round weight) of coho and chum salmon respectively, as salted fish for Japanese market.

Appendix Table . Kuskokwim area commercial and subsistence salmon catches, 1913-1980.

Year	Commercial Catch						Subsistence Catch ^{1/}		
	King	Red	Coho	Pink	Chum	Total	King	Other Salmon ^{2/}	Total
1913	7,300					7,300			
1914		2,667				2,667			
1915									
1916	949					949			
1917	7,878					7,878			
1918	3,055					3,055			
1919	4,836					4,836			
1920	34,853					34,853			
1921	9,854					9,854			
1922	8,944	6,120				15,064			180,000
1923	7,254					7,254			
1924	19,253	900	7,167		7,167	34,487	14,700	203,148	217,848
1925	1,664	5,800				7,514	10,800	230,850	241,650
1926								738,576	738,576
1927								286,254	286,254
1928								481,090	481,090
1929								560,196	560,196
1930	7,515	2,448				9,963		538,650	538,650
1931	8,541					8,541		389,367	389,367
1932	9,339					9,339		746,415	746,415
1933							6,290	433,998	440,288
1934							20,800	597,132	617,932
1935	6,448		8,296			14,744	22,930	554,040	576,970
1936	624					624	33,500	549,423	582,923
1937	480					480		537,111	537,111
1938	624		828			1,452	10,153	400,242	410,395
1939	134					134	14,000	125,425	139,425
1940	247		500			747	8,000	415,523	423,523
1941	187		674			861	8,000	415,523	423,523
1942							6,400	325,339	331,739
1943							6,400	325,300	332,200

1946	2,288		674			2,962			
1947	5,356					5,356			

1951	4,210					4,210			
1954	57					57			
1959	3,760					3,760			
1960	5,969	5,649	5,498		3	17,119	20,361	327,297	347,558
1961	23,246	2,308	5,090	91	18,864	49,599	30,910	185,447	216,357
1962	20,867	10,313	12,598	4,340	45,707	93,831	14,642	165,626	180,268
1963	18,571		15,660			34,231	37,246	141,550	178,796
1964	21,230	13,422	28,992	939	707	65,290	30,853	214,942	245,795
1965	24,965	1,886	12,191		4,242	43,284	31,143	323,002	354,145
1966	25,823	1,030	22,985	268	2,610	52,716	53,606	201,002	254,508
1967	29,986	652	58,239		8,235	97,112	61,224	252,447	313,571
1968	43,157	5,984	154,302	75,018	19,694	298,845	34,986	301,531	336,517
1969	64,777	10,362	110,473	1,251	50,377	237,240	43,732	245,299	289,031
1970	65,082	12,554	62,245	27,422	60,566	227,979	71,376	263,746	335,112
1971	44,936	6,054	10,006	13	99,423	160,432	45,465	130,329	175,794
1972	55,482	4,312	23,880	1,952	97,197	182,823	43,335	131,514	174,349
1973	51,374	5,224	152,408	634	184,207	393,847	41,697	271,468	253,165
1974	30,570	29,003	179,579	60,052	196,127	495,431	29,597	321,358	350,848
1975 ^{3/}	27,799	17,535	109,814	899	223,532	379,579	51,045	180,429	231,474
1976	49,252	14,636	112,130	39,998	231,877	447,903	60,603	239,461	300,664
1977	58,256	18,621	263,728	434	298,959	639,998	58,163	218,824	276,987
1978	63,194	13,734	247,271	61,968	282,044	668,211	38,209 ^{4/}	137,489 ^{4/}	175,698 ^{4/}
1979	53,314	39,463	308,683	574	297,167	699,201	67,233	190,582	247,865
1980	48,242	42,213	327,908	30,306	561,483	1,010,152	59,900	105,000	
Previous 5 yr. avg.	50,365	20,798	206,325	20,774	266,716	693,093	47,524	219,600	267,024

1/ Subsistence catches for 1960-1976 have been revised and corrected.

2/ Primarily chum salmon.

3/ Final catch data used.

4/ Goodnews Bay not surveyed.

Appendix Table . Utilization of Kuskokwim River king salmon, 1960-1980.

Year	Commercial Catch <u>1/</u>	Subsistence Catch <u>2/</u>	Total Utilization
1960	5,969	20,361	26,330
1961	18,918	30,910	49,828
1962	15,341	14,642	29,983
1963	12,016	37,246	49,262
1964	17,149	29,017	46,166
1965	21,989	27,143	49,132
1966	25,545	49,606	75,151
1967	29,986	57,875	87,861
1968	34,278	30,230	64,508
1969	43,997	40,138	84,135
1970	39,290	69,204	108,494
1971	40,274	42,926	83,200
1972	39,454	40,145	79,599
1973	32,838	38,526	71,365
1974	18,664	26,665	45,329
1975	21,720	47,784	69,504
1976	30,735	58,185	88,920
1977	35,830	55,577	91,407
1978	45,641	35,881	81,522
1979	38,966	55,524	94,490
1980	35,881	59,900	95,781
Previous 5 yr. average	34,578	50,590	85,169

1/ Subdistricts 335-10, 335-20 and 335-30 to the Swift River.

2/ Catches are expanded and include all villages surveyed each year.
Data includes a few villages and not included in comparative catch tables.

Appendix Table . Kuskokwim area commercial catch by drainage, 1960-1980.

Kuskokwim River ^{1/}	King	Red	Coho	Pink	Chum	Total
1960	5,969	0	2,498	0		8,467
1961	18,918	0	5,044	0		23,962
1962	15,341	0	12,432	0		27,773
1963	12,016	0	15,660	0		27,676
1964	17,149	0	28,613	0		45,762
1965	21,989	0	12,191	0		34,180
1966	25,545	0	22,985	0		48,530
1967	29,986	0	56,313	0	148	86,447
1968	34,278	0	127,306	0	187	161,771
1969	43,997	322	83,765	0	7,165	135,249
1970	39,290	117	38,601	44	1,664	79,716
1971	40,274	2,506	5,253	0	68,914	117,047
1972	39,454	102	22,579	8	78,619	140,762
1973	32,838	369	130,876	33	148,746	312,862
1974	18,664	136	147,259	37	171,887	337,984
1975 ^{4/}	21,720	23	81,945	10	181,840	285,538
1976	30,735	2,971	88,501	133	177,864	300,204
1977	35,830	9,379	241,364	203	248,721	535,451
1978	45,641	733	213,393	5,832	248,656	514,255
1979	38,966	1,054	219,060	78	261,874	521,032
1980	35,881	360	222,012	803	483,211	742,297
5 year average	37,411	2,899	196,872	1,410	284,065	522,648

Quinhagak (Kanektok River ^{2/})	King	Red	Coho	Pink	Chum	Total
1960	0	5,649	3,000	0	0	8,649
1961	4,328	2,308	46	90	18,354	25,636
1962	5,526	10,313	0	4,340	45,707	65,886
1963	6,555	0	0	0	0	6,555
1964	4,081	13,422	379	939	707	19,528
1965	2,976	1,886	0	0	4,242	9,104
1966	278	1,030	0	268	2,610	4,186
1967	0	652	1,926	0	8,087	10,665
1968	8,879	5,884	21,511	75,818	19,497	131,589
1969	16,802	3,784	15,077	953	38,206	74,822
1970	18,629	5,393	16,850	15,195	46,556	102,623
1971	4,185	3,118	2,982	13	30,208	40,506
1972	15,880	3,286	376	1,878	17,247	38,667
1973	14,993	2,783	16,515	277	19,680	54,248
1974	8,704	19,510	10,979	43,642	15,298	98,133
1975 ^{4/}	3,928	8,584	10,742	486	35,233	58,973
1976	14,110	6,090	13,777	31,412	43,659	109,048
1977	19,090	5,519	9,028	202	43,707	77,546
1978	12,335	7,589	20,114	47,033	24,798	111,869
1979	11,144	18,828	47,525	295	25,995	103,787
1980	10,387	13,221	62,610	21,671	65,984	173,973
5 year average	13,413	10,249	30,611	20,123	40,329	115,225

Goodnews Bay (Goodnews River ^{3/})	King	Red	Coho	Pink	Chum	Total
1968			5,485			5,485
1969	3,978	6,256	11,631	298	5,006	27,169
1970	7,163	7,144	6,974	12,183	12,346	45,630
1971	477	330	1,771	0	301	2,879
1972	264	924	925	66	1,331	3,510
1973	3,543	2,072	5,017	324	15,781	26,737
1974	3,302	9,357	21,340	16,373	8,942	59,314
1975 ^{4/}	2,151	8,928	17,127	403	6,459	35,068
1976	4,417	5,575	9,852	8,453	10,354	38,651
1977	3,336	3,723	13,335	29	6,531	26,954
1978	5,218	5,412	13,764	9,103	8,590	42,087
1979	3,204	19,581	42,098	201	9,298	74,382
1980	1,974	28,632	43,256	7,832	11,748	93,442
5 Year Average	3,630	12,585	24,461	5,124	9,314	55,103

^{1/} Includes subdistricts 335-10, 335-20 and 335-30. Commercial fishing in 335-30 has been prohibited since 1966.

^{2/} Subdistrict 335-40.

^{3/} Subdistrict 335-50 and includes Chagvan Bay.

^{4/} Final catch data used.

Appendix Table . Kuskokwim Area, Commercial Effort by District, 1970-1980 1/

<u>District 1</u>				
<u>Year</u>	<u>King Season</u>	<u>Chum Season</u>	<u>Coho Season</u>	<u>Total</u>
1970	361	2/	266	387
1971	418	216	83	422
1972	405	176	245	425
1973	456	341	411	530
1974	606	467	516	666
1975	472	540	533	737
1976	561	517	516	674
1977	563	522	572	653
1978	615	617	597	723
1979	591	617	613	685
1980	553	579	586	663
Previous 5 year ave.	560	563	566	694

<u>District 2</u>				
<u>Year</u>	<u>King Season</u>	<u>Chum Season</u>	<u>Coho Season</u>	<u>Total</u>
1970	10	2/	11	18
1971	22	2/	2/	22
1972	12	2/	2/	12
1973	28	2/	2/	28
1974	36	2/	16	37
1975	38	2/	2/	38
1976	55	2/	11	57
1977	83	54	24	105
1978	28	2/	16	43
1979	41	2/	20	43
1980	37	21	12	43
Previous 5 year ave.	49	15	16	58

<u>District 4</u>		<u>Subdistrict 5</u>	
<u>Year</u>	<u>Total</u>	<u>Year</u>	<u>Total</u>
1970	88	1970	35
1971	61	1971	16
1972	107	1972	14
1973	109	1973	21
1974	196	1974	49
1975	127	1975	50
1976	181	1976	40
1977	258	1977	34
1978	200	1978	35
1979	206	1979	30
1980	169	1980	48
Previous 5 year ave.	194	Previous 5 year ave.	40

1/ Number of actual fishing vessels.

2/ No commercial fishing allowed.

SALMON FISHERY PROJECTIONS FOR WESTERN AND ARCTIC ALASKA, 1978 - 2000

Year	Description	Kuskokwim		Lower Yukon		Norton Sound		Kotzebue		Total
		Value to Fishermen	Number of Fishermen							
1978	Millions of Pounds	6.1	8.3	2.8	1.1	18.3				
	Value to Fishermen	\$2.3 million	\$4.1 million	\$0.8 million	\$0.6 million	\$7.8 million				
	Number of Fishermen	1,001	693	192	208	2,094				
	Number of Employees	300	500	100	50	950				
1985	Millions of Pounds	7.0	9.0	3.3	2.0	21.3				
	Value to Fishermen	\$2.6 million	\$4.5 million	\$0.9 million	\$1.0 million	\$9.0 million				
	Number of Fishermen	\$75	700	200	220	1,995				
	Number of Employees	350	600	125	75	1,150				
1990	Millions of Pounds	8.0	9.5	3.5	2.5	23.5				
	Value to Fishermen	\$3.0 million	\$4.75 million	\$1.0 million	\$1.4 million	\$10.15 million				
	Number of Fishermen	900	725	200	230	2,055				
	Number of Employees	400	650	150	100	1,300				
1995	Millions of Pounds	8.5	10.0	3.75	2.75	24.0				
	Value to Fishermen	\$3.2 million	\$5.0 million	\$1.1 million	\$1.5 million	\$10.8 million				
	Number of Fishermen	950	750	200	240	2,140				
	Number of Employees	450	700	175	125	1,450				
2000	Millions of Pounds	9.0	10.5	4.0	3.0	26.5				
	Value to Fishermen	\$3.4 million	\$5.25 million	\$1.2 million	\$1.7 million	\$11.6 million				
	Number of Fishermen	1,000	750	200	250	2,200				
	Number of Employees	500	750	200	150	1,600				

Source: WATS Consultants' estimate.