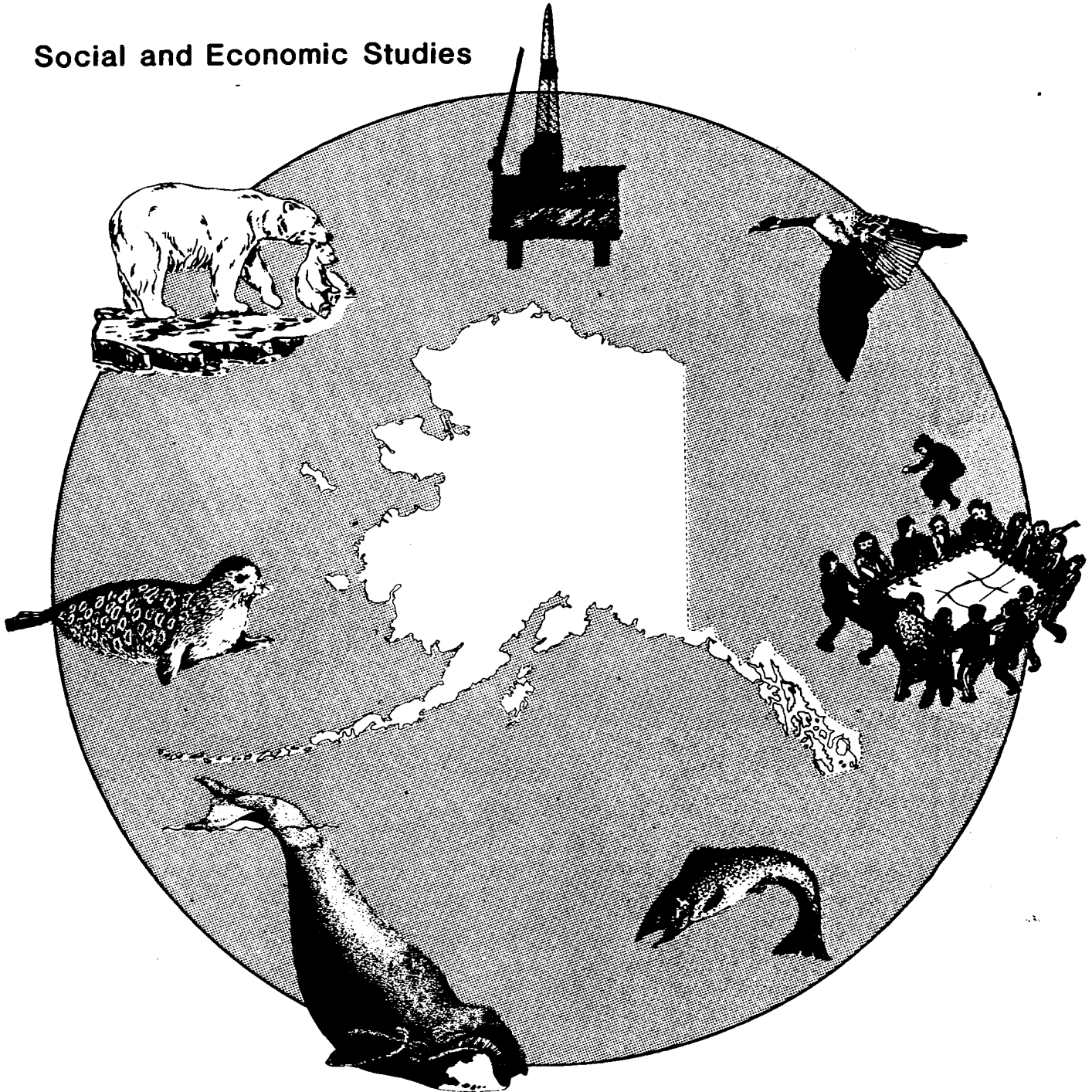


Village Economics in Rural Alaska

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Village Economics in Rural Alaska

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Alaska OCS Environmental Studies Program

Village Economics in Rural Alaska

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1.0 STUDY OBJECTIVES

1.1 Introduction

The goal of this study is to describe and analyze relationships between the subsistence and commercial use of resources in three rural Alaskan coastal villages. This study was conducted for the Environmental Studies Program (ESP) of the Department of Interior, Minerals Management Services (MMS).

The orientation of this study is significantly different from recent MMS studies of village Alaska. Earlier sociocultural studies distinguished subsistence from the market economy. Relatively minor attention was given to the linkages between subsistence and market economic activities. The MMS study design notes that these earlier studies narrowly emphasized the intrusion of outer continental shelf (OCS) development upon subsistence through disruptions of harvests or work patterns. Similarly, previous socioeconomic studies of village cash or commercial economies have used employment and income data and other conventional indicators of economic activity to develop a picture of the local cash economy, but largely ignored the interplay between subsistence and commerce.

That subsistence and commercial economic activities are separately important in rural coastal villages is now well established. However, they are understood primarily in isolation. Less well documented are the pervasive and dynamic interactions between subsistence and commercial endeavors that, together with public sector transfers, comprise the village economy. This study is a pioneering attempt to distinguish and inter-relate the subsistence, commercial, and public sector aspects of rural village economies.

The ideological orientation of this study has been to view the village economy ultimately as a single economy characterized by shifting uses of a common set of money, labor, and natural resources. This is in contrast to conventional analysis which stresses the incongruities between village subsistence and market economies rather than underlying commonalities. Our approach allows us to evaluate economic behavior and resource utilization as a whole, without creating arbitrary distinctions between types of economic activity or classes of resources.

Contemporary economic theory recognizes that the modern national economy is a mix of private and public sector economic activities. The customary definition of the term "mixed economy" stresses the respective roles of the market and governmental sectors. Thus Samuelson offers this definition of "mixed economy" in his standard textbook Economics:

an economy that relies primarily on the price system for its economic organization but uses a variety of governmental interventions to cope with macroeconomic instability and market failures. Thus, it is a mixture of market and collective (or public) choice. (Samuelson, 1985)

The concept of a "mixed economy" is central to this study of rural village economies. However, for analysis of Alaska's rural village economies, it is appropriate to reintroduce an aspect of private economic activity -- subsistence -- that has become vestigial in most modern economies but is still a vital element of village livelihood. Here, we will briefly sketch out a broadened conceptual scheme of the village "mixed economy" that we have developed as a framework for the study.

In the requirements for this study, MMS's use of the term "mixed economy" contrasts the roles of subsistence and the cash economy in rural Alaskan villages, omitting an essential distinction between the market and governmental components of the village non-subsistence economy. This imprecision in the central theme of the study tends to blur some important empirical distinctions and analytic relationships within the village economy. We have devised a simple schematic model to clarify the roles of subsistence, commerce, and government in the village economy.

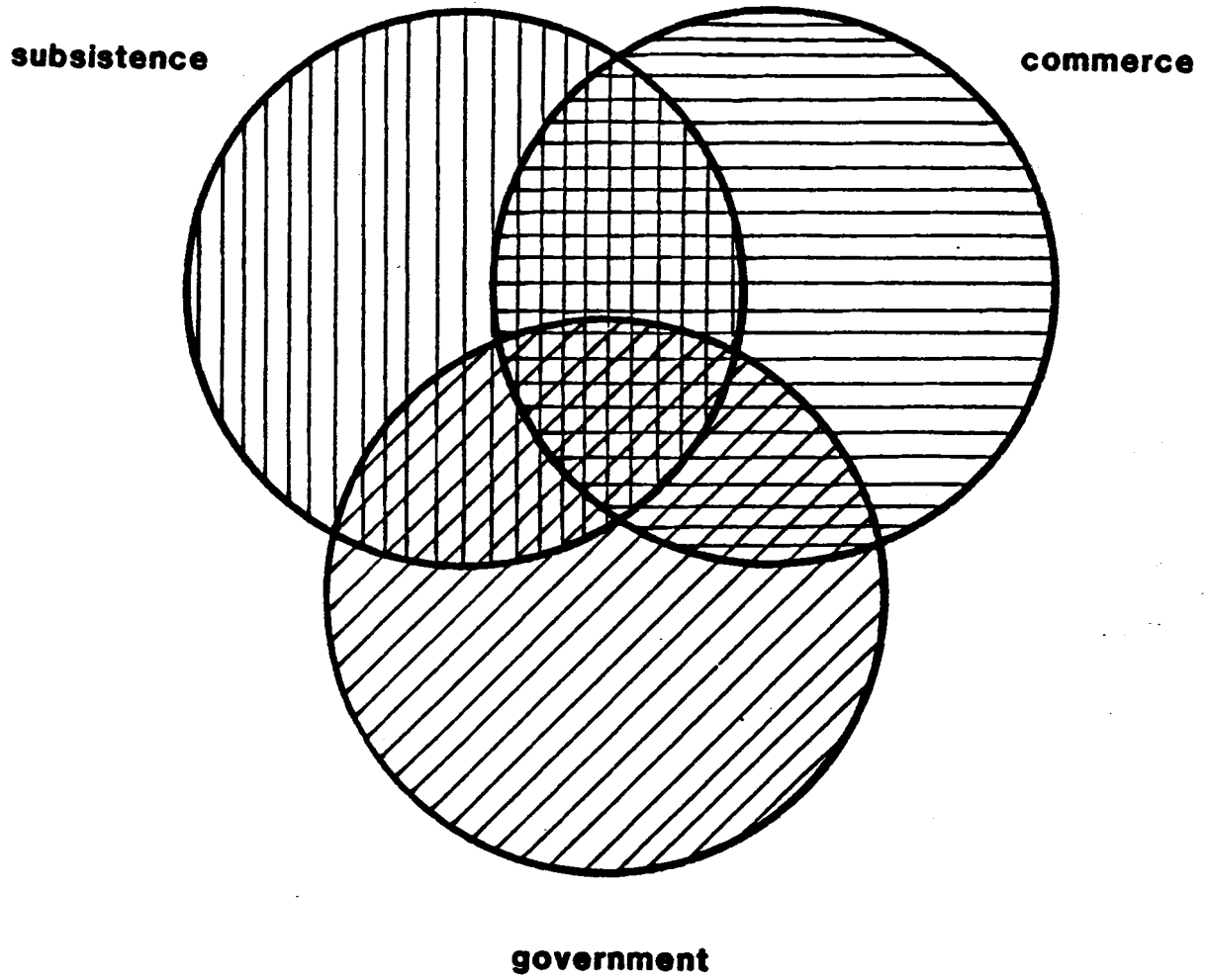
First, for working purposes, we propose the following definitions of the economic domains of subsistence, commerce, and the public sector (here simply called government).

- o **Subsistence**: household production of goods and services for domestic consumption or sharing. In its ideal form, subsistence is autarkic and precludes extra-local trade or cash markets for goods and labor services. (This definition contrasts with statutory and global definitions of the term "subsistence.")
- o **Commerce**: production of private goods and services for cash sale or exchange in the market, typically accompanied by work for cash income and commercial entrepreneurship. Basic production of goods and services for export may be distinguished from non-basic production for local consumption. The distinctive function or goal of commerce is market efficiency in the allocation of productive resources and distribution of production.
- o **Government**: production and/or redistribution of goods and services through government, typically financed by taxes, user charges, or other forms of public revenue. The distinctive economic functions of the public sector are production and allocation of collective goods; equitable distribution of production; and setting of laws and rules for the conduct of economic affairs.

Figure 1-1 portrays an abstract model of the village mixed economy. The three circles represent the three economic domains or regimes of subsistence, commerce, and government respectively. Each circle encompasses all the properties or attributes belonging to its economic domain. The hatched areas of overlap among the circles imply that the three domains may share some common attributes, while the unhatched areas imply that each domain may possess some unique properties.

Figure 1-1

Model of a Mixed Economy



This simple analytic model has three appealing features for our study. First, it focuses on their typological attributes of the MMS's central concept for this study: the "mixed economy." Second, it is logically complete. Even in this minimal form, the model exhausts the universe of possible formal relationships among the properties of these three economic domains. Third, the pictorial model is intuitively expressive and versatile. It can be configured or adapted to express graphically many static and dynamic relationships among the properties of the three economic domains. For example, different configurations can express: successive phases of progressive economic development; areas of exchange or material fungibility between domains; and relative magnitudes and distributions of particular variables among the domains.

This skeletal model of the mixed village economy is empty of preordained content. It remains to identify the empirical variables that will be employed to describe and analyze key features and relationships in the village economies.

The interactions between subsistence, commerce, and government may also be viewed at three analytic levels: (1) micro-economic, (2) macro-economic and (3) political-economic. The chief characteristics of each level are:

- o **Micro-Economic.** At the level of the individual family or household economic unit, personal decisions are continually made about the commitment of time and resources to subsistence and commercial enterprises. The outcome of these micro-economic decisions can be aggregated to comprise the village economy.
- o **Macro-Economic.** The requirements of the market economy give rise to local institutions that mediate between the village economy and society and the economic and political institutions of the outside world. At this level, the "market economy" encompasses the full array of public and private institutions that provide the framework within which the market economy operates and through which the village participates.
- o **Political-Economic.** Finally, economic and political decisions largely originate from non-local political and economic institutions. Outside circumstances frequently influence the course of the village commercial economy and, in turn, the balance between local commercial and subsistence economic activity. This political-economic level has a profound influence in the structure of the villages examined in this study.

These three analytic levels are intended as a convenient device for sorting and grouping the complex body of empirical data about the institutions to be addressed in the study. The levels do not necessarily imply any hierarchic pattern of dominance or subordination, nor do they define paths of interaction between micro-economic, macro-economic, and political-economic institutions. That is, for example, individual families and households may interact directly and freely with political-economic institutions and vice-versa.

1.2 Research Design

1.2.1 Overview

The objectives of this analysis are two fold: (1) describe how the village economies function and (2) identify the economic differences that distinguish the study communities. The micro analysis described above focuses on the internal structure of the village economy at the level of the firm and the household. The purpose of this approach is to examine the internal political and economic relationships that make up the functional setting or organization of the village economy.

The macro analysis focuses primarily on aggregate economic relationships at the village level. It also examines how the village economy functions in the context of its relationship to external political and economic forces at the regional, state, and international level. The macro-economic analysis addresses the question: what general economic forces drive the village economy?

The "political-economic" level represents the largely external political, legal, or regulatory conditions that influence regional and local economies. Placed in the context of political analysis, the macro and micro topics outlined above are useful to extend conventional economic analysis to incorporate the special role of subsistence in the villages' mixed economy.

1.2.2 Research Categories

Within the three fundamental economic tiers which compose the levels of analysis, several critical topics were analyzed in order to accomplish the project aims. The key topics are as follows:

- o Political Economy (focusing on resources)**
- o Economic Organization (focusing on the economic dimensions of institutions, village firms, demography, and kinship)**
- o Time and Productivity (including labor force participation, employment and household production)**
- o Income**
- o Consumption and Expenditures**
- o Capital Formation, Debt, and Savings**

1.2.3 Study Communities

The villages of St. Paul, Gambell, and Alakanuk were selected for study for two reasons. First, St. Paul, Gambell, and Alakanuk were among a small group of communities that held special interest for MMS. Second, the study team possesses large, systematic data bases for these communities that permit controlled cross-sectional comparisons (i.e., comparisons between communities) and longitudinal comparisons (i.e., comparisons within the same community at two points in time).

The sample sizes and dates for the existing data bases vary by community. For St. Paul, the data base is from 1985 (see Braund and Associates, 1986) and covers 121 households. The Gambell data base is from 1981-82 (see Little and Robbins, 1986) and covers thirty-nine households. The Alakanuk data base is from 1981-82 (see Fienup-Riordan, 1983; 1986) and represents seventy households.

The study communities display a range of important economic characteristics. As different as they are, they can arguably be considered Alaskan economic "prototypes" that exemplify arrangements of government programs and subsidies, natural resource harvests for both household and commercial use, and limited exports based on both raw and worked (e.g., crafts) resources similar to those patterns found in many other rural Alaskan communities. All three communities' resource base is subject to significant regulation, which provides raw material for the political-economic analysis. Even though the villages have many economic elements in common, they differ most strongly in their blends of these elements. A major task of this study is to identify key distinctions among village economies for application to other communities beyond the specified study communities.

1.2.4 Sequence of Research Activities

Literature Review

The first research phase consisted of a review of secondary sources. The review was meant to identify and evaluate theoretical and empirical literature relevant to this study, either through direct application (for instance, in terms of useful concepts or methods) or by contributing to the economic data base for the study sites. The literature review diverged somewhat from the conventional uses of a review in earlier SESP studies for two reasons. First, this study represents a novel approach to ways of thinking about rural Alaskan economies. Hence few sources of conceptual or theoretical literature address issues similar to those that are central to this study. Second, the localized empirical focus of this study narrowed the range of useful empirical literature.

Data Collection Planning

Following the literature review, a plan for primary (i.e., field) and secondary (archival) data collection was developed. This plan built on the stipulated requirements of the study and the review of existing literature. It specified the data to be collected, the means for collection, and their application to the questions that motivated the study. The field plan established data collection protocols, that is, systematic lists of data topics for field data collection. Analytic guidelines were established at this stage.

Data Collection and Analysis

Secondary data collection commenced in February 1987. Primary data collection occurred over the period between May and August 1987. The field staff spent 160 person-hours (essentially one working month) at each study site. Four modes of data collection characterized the field effort: structured discussions with key informants; collection of proprietary records from local archives (chiefly files and in-house reports from local institutions); systematic discussions with a sample of households or household representatives in each community; and unstructured observations, recorded in field journals, based on key informant and household discussions. These journal observations contributed a richer, more personal level of detail not easily recorded by other means.

Key informants in each village were selected on the basis of their formal responsibilities and our information needs. For example, institutional finance officers were contacted to discuss institutional finances and store managers were contacted in order to discuss store operations. Beyond these criteria, the key informant sample was essentially an "opportunity" sample consisting of village members who were available and willing to speak to field staff.

Households included in the study sample were selected as follows: the St. Paul and Gambell household samples were considered fixed, and attempts were made to contact all households included in the existing data base (121 and 39 respectively); the Alakanuk sample was designed as an opportunity sample of forty of the seventy households included in the earlier data base.

Household interviews were conducted using a comprehensive set of questions that addressed detailed characteristics of household market and subsistence activity. This systematic field protocol represents the major source of original primary data used for analysis in this study.

At the close of the field collection effort we achieved a sample of 100 households in St. Paul with supplementary but incomplete information on another twenty households; forty households in Gambell; and forty-three households in Alakanuk. The overlap with the earlier samples was incomplete, but exceeded 60% in each case and approached 100% in St. Paul (failing to reach 100% only because emigration eliminated some of the previous household sample).

Archival data collection at field sites provided data to fill gaps in the centralized secondary records (such as State employment or income data) and other detailed information not elsewhere available. For example, the field staff collected annual budgets from local institutions, annual financial reports, and sales records from stores.

The unstructured observations recorded community events, public meetings, hunting and fishing activities, job performance, and household dynamics that were pertinent to the objectives of the study. Since many events of this type are spontaneous, it is impossible to design a systematic protocol that will capture this information. Instead, field researchers maintained a daily log to record data that otherwise would be ignored by a systematic method that was established in advance.

The unstructured observations provided another critical source of information: free-form notes about institutions and households to aid the interpretation of data. For instance, the comings and goings of kin and neighbors through a household during a discussion, or the presence of kin from other households performing cooperative activities, provide a grounded and realistic sense of how informal productive activities at the household level are actually conducted.

1.3 Team Organization and Structure of the Report

The team that conducted this study was composed of the following professional staff:

Principal Investigator:	John Petterson
Data Analysis and Coordinator:	Steven McNabb
Secondary and Field Data Economist:	Will Nebesky
Political Economist:	Oran Young
Regional Economist:	Kevin Waring
Resource Economist:	Michael Orbach
Yukon Delta Specialist:	Ann Fienup-Riordan
St. Lawrence Specialist:	Lynn Robbins

John Petterson, of Impact Assessment Inc., was responsible for project management and report production in all phases of the study. The core technical team consultants were Ann Fienup-Riordan, Steven McNabb, Will Nebesky, Lynn Robbins, and Kevin Waring. Oran Young assisted the team as a senior advisor on political-economic trends in circumpolar regions.

McNabb and Nebesky coordinated data collection and analysis for all field sites. McNabb conducted the field research at St. Paul. Fienup-Riordan and Robbins were responsible for field research in Alakanuk and Gambell respectively. Nebesky focused on labor force participation, consumption and expenditures, capital formation, savings, and debt. Waring's area of specialization was political-economic interactions at the regional and local level, village income, and government spending. All technical team members contributed to the analysis of community and household economic organization. In addition, the initial conceptual formulation, literature review, and field planning for the study were carried out by the core team, assisted by Young. Each consultant and section author coordinated his or her work with other team members, but the results reported here represent the conclusions of designated authors (see below).

The report organization and writing responsibilities were as follows:

Chapter 1: Study Objectives. This chapter summarizes research objectives, design, and team organization. McNabb and Waring were primary authors, assisted by Nebesky.

Chapter 2: General Historical and Political-Economic Overview. This chapter introduces the most inclusive and general theme that serves to integrate the descriptions and analysis which follow it. Alaskan village economies operate as they do because of historical processes of commercial development and government intervention that have established unique arrangements of markets, regulations,

policies, subsidies, and economic opportunities whose effects are cumulative and determinate. Over the long-term, these effects can be seen as historical trends that establish the economic context within which people operate today. Today, and in the short-term future, they can be seen as limiting factors that define the range of economic options. In simpler terms, the past is preserved in the present, and the present establishes constraints on the future. This chapter describes those effects, their origins, and their ramifications for village economies. Young and Waring collaborated on this chapter.

Chapters 3, 4, and 5: The Communities. These chapters are the core of the report. They provide the principal descriptive and interpretive material on the study sites. Each chapter is devoted to a single study community. Fienup-Riordan wrote the Alakanuk chapter, Robbins prepared the Gambell chapter, and McNabb was the primary author of the St. Paul chapter. Nebesky provided contributions for each of the community descriptions.

Chapter 6: Inter-Village Analysis and Conclusions. In chapter six the descriptive and analytic emphasis shifts to a comparative perspective. In this chapter, the three study sites are compared to identify the most significant economic patterns that characterize the communities jointly and which also best distinguish between them. The organization of the chapter is thematic and is consistent with the previously identified research categories. The income treatment and political-economic sections were prepared by Waring. McNabb was the primary author of the section on economic organization. Nebesky was the author of the comparisons in the sections on time and productivity, consumption and expenditures, and capital formation and debt.

2.0 HISTORICAL AND POLITICAL-ECONOMIC OVERVIEW

2.1 The Community Setting

In general, compared to less exotic communities, most rural Alaskan villages seem superficially alike: small, remote, predominantly Alaska Native and poor, with undeveloped economies heavily reliant on subsistence and public transfers, sometimes augmented by commercial harvest of natural resources. At a first distant glance, the three study communities are, indeed, small, remote, poor, and undeveloped and mostly Alaska Native, though by no means uniformly so. Under closer examination, the veneer of similarity fades and local differences in the material foundations of traditional economic life are manifested in distinctive economic cultures and social organizations.

Ironically, it is plausible that the purported similarities among the study communities are more due to the homogenizing authority and indiscriminate sensibility of external institutions than to any inherent affinities among the communities. Arguably, suburbanites across the nation, or central city dwellers, have substantively more in common than do residents of Alakanuk, Gambell, or St. Paul with each other.

This overview highlights a few telling circumstances that define the position of the study communities in the state and national political economies. The emphasis is on the *outer-directed* aspects of the local economies, that is, the features of local economic and political institutions that enmesh them in larger networks. The overview seeks to bring into focus the study communities' comparative politico-economic status in preparation for the more detailed analysis of the inner workings of households and other local economic and political entities that follows in chapters three through six.

2.2 Location

The three study villages are far from regional, state and national centers of industry, commerce, and administration.

Even by Alaskan standards, St. Paul and Gambell are geographically remote, isolated by more than two hundred miles of open ocean from the Alaska mainland. Gambell shares St. Lawrence Island with the village of Savoonga, which is forty miles distant. St. Paul's nearest neighbor is the village of St. George, fifty miles away on St. George Island.

Neither St. Paul nor Gambell is part of a strong regional network in the traditional economic sense. St. Paul and Gambell both have functional transportation, administrative, economic, social, political, and cultural links to their own sets of settlements and regional centers and institutions. Still, the frequency and intensity of interaction between St. Paul or Gambell and their respective regions is very limited. The regional affiliation of these villages is less a matter of strong, vital ties than of historic and traditional cultural relations combined with contemporary administrative expedience.

By comparison, Alakanuk is less remote. Although it is also a long way from state and national centers of industry, commerce, and government, it belongs to a group of Lower Yukon communities that has the attributes of a more integrated region. There are fourteen settlements and nearly 6,000 persons within a 100-mile radius of Alakanuk. Six of these settlements (Emmonak, Sheldon Point, Kotlik, Mountain Village, Pitkas Point, and St. Mary's), with a combined population 2,400 persons, are within fifty miles, a couple of hours apart by boat or snowmobile. These Lower Yukon delta communities have a history of social, economic and political interaction, demonstrated in the steady flow of people, workers and goods among them.

2.3 Natural Resources

The natural resource base of the study communities, though adequate to provide food, shelter, clothing, warmth, and other necessities for a subsistence-based lifestyle, is not promising for industrial and commercial prosperity. Even so, control of important local resources has often slipped from local to external control.

In some cases, subsistence resources become valued by influential non-local groups for conservation or recreational purposes, which prompts federal or state intervention to regulate and manage subsistence harvests. The laws and regulations that now govern such important subsistence resources as fur seals, whales and other marine mammals, migratory waterfowl, and polar bears are examples of this type of intervention.

In other cases, subsistence resources in limited supply are discovered to have commercial value. This commercial opportunity often unleashes competition for preferential resource access between and among subsistence and commercial takers. The interplay of interests that governs the allocation and management of dual-utility resources in limited supply can be highly complex, pitting local traditional subsisters/commercial harvesters against themselves and each other, local harvesters against visiting takers, and subsistence and commercial harvesters against conservation interests.

Many of the subsistence species of greatest economic interest are highly mobile. This, together with the organization of the commercial fishing industry and commodities markets, tends to bring conflicts and resolutions into the national and international arenas. The management of salmon, halibut and other groundfish, fur seals, and other marine mammals are examples of this process of escalation. Finally, there is the potential of some non-traditional resource industries (e.g., oil and gas, hard-rock mining) to conflict with subsistence resources.

2.3.1 Subsistence

Saint Lawrence Island and the Yukon River Delta areas have had resources that have long supported a subsistence lifestyle. St. Paul Island, on the other hand, was unoccupied until the Russians forced a group of Aleuts to settle there to work in the fur seal industry. Thus, there is no evidence of continuous pre-contact subsistence-based settlement or interaction between humans and resources. However, post-contact subsistence continues to make a significant contribution to the livelihood of St. Paul residents. In comparative terms, St. Paul's use of subsistence resources is less diverse than Gambell's and Alakanuk's, where subsistence is a more broad-based enterprise.

The small size of the settlements, past and present, throughout the study communities' regions suggests that the capacity of their resource bases to support a subsistence lifestyle is limited.

2.3.2 Industry and Commerce

None of the study communities are endowed with known local natural resources of sufficient commercial value to spur large-scale private industrial development. In fact, the study communities have limited subsistence materials and various obstacles to industrial or commercial development. They lack arable lands for agriculture, energy and fuel resources, timber, and cheap, plentiful water; no minerals have been found there in significant quantities. In short, they lack most of the elements essential to basic industrial production processes. Beyond these material deficiencies, the study communities are also remote from markets and sources of supplies. Aspiring local industry must overcome high labor, energy, transportation and communications costs; a dearth of local markets; and scarcity of indigenous investment capital.

If the study communities' potential for traditional diversified industry is severely restricted, their prospects for participation in the growth sectors of the contemporary high-tech, service- and consumer-oriented economy (information and financial services; semiconductor, medical and bio-technologies; consumer specialty services, etc.) are virtually non-existent. In brief, the study communities confront prohibitive disadvantages for successful participation in competitive markets for basic industry and commerce.

In the broad economic analysis, there are two types of private entrepreneurial development that hold potential for competitive success: marketing of unique local resources (ivory carvings, fur seal pelts, natural scenery) that can command a small specialized market niche; and development of high-grade primary resources at a scale sufficient to overcome high entry costs and other economic handicaps.

To date, the local export industries that have succeeded have been based on harvest and minimal processing of modest volumes of surplus renewable resources, primarily fur seal pelts at St. Paul, walrus ivory at Gambell, and salmon at Alakanuk. It is noteworthy that all these products originate as marine resources, whose use has recently become regulated. Now, each of these renewable resources has become the target of intensive management under federal and state laws, regulations, and international compacts.

The study communities' land base has not yet yielded any significant exportable resources, other than raw materials for handicraft. Lately, St. Paul has also successfully capitalized upon its unique bird life and scenic attractions to develop a modest tourist industry and is searching for an economic niche in the Bering Sea fishing industry.

2.4 Population

Community demography will be examined in detail in chapters three, four and five. At this point, our attention focuses on two persistent features of the study communities that reflect the low productivity of the subsistence habitat and the debility of their commercial economies: their sparseness of settlement and their demographic insularity.

2.4.1 Population Density

Wade Hampton (0.33 persons per square mile), Nome (0.33), and Aleutian Island (0.83) Census Divisions (in which Alakanuk, Gambell, and St. Paul, respectively, are located) are among the world's most sparsely settled regions, in a lonely class with the northern outlands of Canada, Greenland, Siberia, and other parts of rural Alaska. The densities of St. Lawrence Island and St. Paul Island are 0.55 and 10.6 persons per square mile, respectively.

2.4.2 Ethnicity

As late as 1980 all three study community populations remained overwhelmingly homogeneous in ethnic composition. Not all rural Alaskan communities are. The percentage of Alaska Native residents ranged from ninety-six percent at Gambell to ninety-four percent at Alakanuk to eight-eight percent at St. Paul. Most non-Native residents are employed in education and other public services or commercial activities. This slight non-Native population (and the source of its livelihood) is consistent with the general lack of local private economic opportunities that might attract and hold newcomers. Thus, each study community retains a coherent core of longstanding residents, despite some turnover within the Native population.

The island communities of St. Paul and Gambell show relatively low net migration rates. Natural increase accounts for most population change. On the other hand, Alakanuk's growth over the past two decades has come largely from individuals and families moving in from nearby Native villages. In many cases, these individuals were drawn by Alakanuk's relatively superior infrastructure. This pattern is consistent with Alakanuk's closer ties to its numerous neighboring communities when compared to St. Paul and Gambell.

2.5 Economy

By this stage of maturity in the world economy, the continuing remoteness, ethnic homogeneity, and the light population of the study communities is arguably proof of their modest endowments of subsistence and industrial resources rather than merely lagging development. Their resource base cannot support a large indigenous population nor has it yet attracted any influx of labor or private investment to develop transportation and other industrial infrastructure.

In all three study communities, subsistence persists as a vital form of economic production. Subsistence practices are diverse and dynamic. The introduction of new tools and equipment over time has altered subsistence harvest practices so that they bear little outward resemblance to traditional procurement methods even when the same species is harvested. Also, subsistence pursuits have, by and large, become capitalized, utilizing such equipment as snowmobiles, three-wheelers, and motorized skiffs. By now, subsistence is not accurately portrayed as antithetical or even merely complementary to commercial economic involvement. Rather, subsistence and commerce are, in most respects, interactive.

As noted earlier, each study community has evolved some type of basic private entrepreneurial activity that produces for export markets. This basic industry and the cash income it injects into the communities helps, in part, to support a quasi-private commercial sector. Nevertheless, the public sector has come to provide the principal share of employment and earned cash income in each community. Unearned public transfer payments are a second, lesser source of cash income originating in the public sector. This emergence of the public sector is an outgrowth of the federal and state governments' willingness to distribute and redistribute resources to provide for the general welfare of its citizens. Technically, this inflow of public expenditures in excess of local tax receipts may be considered a peculiar case of "basic" industry, even though there is no tangible export of product in return. However, for good or for bad, economic habituation to non-local public sector expenditures has established a dependency on external political institutions. Local expenditure of these public sector earnings and transfer income accounts for the major share of support sector economic activity.

The overall level of business activity in the support sector is restricted by three circumstances. First, local marketers are hard pressed to compete with nonlocal suppliers in the variety and cost of goods and services they offer; as a result, a substantial share of local purchasing power "leaks" out to nonlocal suppliers. Second, transient public employees in education and other professional positions capture a disproportionate share of locally earned income; these employees repatriate a large part of their earnings as savings and investments maintained outside the local economy. Third, there are few non-local purchasers to boost demand for locally available goods and services. The net result is that the dollar per capita level of business volume is exceptionally low, as is the "economic multiplier."

The purchasing and savings behavior of temporary residents who are employed as educators, etc., illustrates an enduring economic and social schism in each community as well as an analytic dilemma. "Temporary" non-Native residents are often excluded from community population and economic statistics lest their numbers distort the statistical picture of the "permanent" community. However, the schism between the resident community economy and the economic orientation of temporary residents is not trivial or passing; it signifies the enduring alienation of the village economy from the mainstream market economy. The transient population may turn over but the schism persists, with a permanent loss of local purchasing power, savings and capital investment that might be exercised locally, and loss of the economic skills of transient residents as well.

Another important source of nonmonetary income or consumption for all three communities consists of the subsidized goods and services provided to residents by federal, state and local governments. This nonmonetary income comprises the value received in excess of payments by residents for such items as public housing, health care, local education, transportation, utilities and other public services and facilities. This nonmonetary income is often a tacit but critical element in the dynamic balance of aggregate and personal employment, income, and consumption.

Overall, the contemporary local economies are mixtures of subsistence, market-oriented industry and commerce, public sector earned income, transfer payments and nonmonetary income in the form of publicly provided goods and services.

2.6 The Political-Economic Context

Under Western political ideology, the dominion of the nation-state ultimately implies a loss of aboriginal control or sovereignty over land, waters, and natural resources. How this abstract erosion of sovereignty materializes into concrete loss of aboriginal economic autonomy depends upon the actual points of intersection between the traditional economy and the encroaching market and political economies and on the ensuing scope of economic and political integration.

The economies of the study settlements have become enmeshed with external institutions in a number of ways: through the political processes at state and federal levels, which may be termed reasons of state; through entrepreneurs or other nonlocal interests establishing relations based upon profit-seeking with the villages; and through villagers becoming beneficiaries of the service programs of state and federal governments and of religious groups. These forces, often in combination, have shaped the economic history of all three study communities in important ways, some of which are briefly identified below.

Reasons of state, such as national defense, protection of commerce and transportation, and international agreements to regulate valued local resources have been brought to bear upon all three communities in various forms. Some prominent examples include the relocation of the Pribilovians during World War II; passage of the Migratory Bird Treaty Act, the Fur Seal Act, and the Marine Mammal Protection Act; and establishment of the International Pacific Halibut Commission and the International Whaling Commission.

Profit-seeking enterprises penetrate remote regions in pursuit of new production and marketing opportunities. The operation of these enterprises presupposes, of course, a politico-economic regime that allots rights to natural resources and franchises to markets and also ratifies conventions and regulations for the conduct of industry and commerce. Examples of this sort of interface between the study communities and the institutions of the larger society include: the fur sealing and commercial enterprises of the Russian American Company and its American successors in the Pribilofs; the Organic Act of 1884; Lower Yukon commercial salmon salteries and fish processors; Pribilof Islands and St. Lawrence Island reserves; Wheeler-Howard and Johnson-O'Malley Acts of 1934; Alaska Native Claims Settlement Act; Alaska Limited Entry Commission; the Fishery Conservation and Management Act of 1980; and some of the entities and laws mentioned in the preceding paragraph.

Finally, the state's role in protecting and providing for the welfare of its citizens (or wards) leads to state intervention to provide education, public safety, health,

and other services and programs. For the study communities, this motive is most visibly institutionalized in the Bureau of Indian Affairs, Indian Health Service, National Marine Fisheries Service, and the Indian Claims Commission, along with a host of lesser federal and state agencies providing housing, education, and other community development services and facilities. Missionary churches have also played an important role in many aspects of community life, including the economy, particularly at St. Paul and Gambell.

The politico-economic relationships evoked by these external forces frequently take center stage in community economic life. Unfortunately for the stability of the economic base of the communities, these relationships are apt to collapse or radically expand if the external political and economic circumstances in which they originated change. For example, events such as war and peace, new international agreements, policy reversals, major cutbacks in federal and state programs and funds, or new discoveries of commercial resources can (and have) fundamentally altered existing relationships between the study communities and the larger society. The origin of these changes is unilateral in nature, and the degree to which local economic vitality is no longer under local control is a profound but common feature of all three communities.

2.7 Vulnerability to Outside Economic Forces

Though Alakanuk, Gambell, and St. Paul are remote in physical terms, economic life in these communities is by no means self-contained. One of the most striking features of these village economies, in fact, is the extent to which they are influenced by outside forces (Ross & Usher, 1986). To a remarkable degree, moreover, the resultant relationship is asymmetrical. Economic events occurring in the villages have little impact on the operations of economic or political systems at the international, national, and state levels. But when conditions in the outside world change rapidly, the mixed economies of Alakanuk, Gambell, and St. Paul are subjected to extreme fluctuations over which they have little control (Dryzek & Young, 1985). To make this proposition concrete, the implications of shifts in revenue flows, public policies, and world markets for economic life in Alakanuk, Gambell, and St. Paul are presented below.

2.7.1 Revenue Flows

Despite the critical role of the public sector in village Alaska, the ability of Alakanuk, Gambell, and St. Paul to raise revenue through local taxation is minimal. As a result, most of the revenues flowing through the public sector in these communities emanate from programs established and controlled by the state or federal government. State Revenue Sharing and Municipal Assistance accounts for a large share (often more than half) of local government budgets. The state and federal governments also contribute funds to pay for many key services in these communities. The State of Alaska provides more than 90% of the cost of public education in the study communities. The federal government covers most of the costs of local health care through the programs of the Public Health Service for Alaskan Natives. Special programs, such as the state's Power Cost Equalization Program and various job training programs, further enhance the public sector in these communities. Additionally, many residents of Alakanuk, Gambell, and St. Paul benefit from an array of state and federal programs involving transfer payments to individuals in such forms as unemployment compensation, AFDC, medicaid, food stamps, pension programs, Permanent Fund dividends, and longevity bonuses, among others.

Under the circumstances, efforts to cope with the massive budget deficits currently afflicting both the State of Alaska and the United States federal government are bound to produce sharp impacts on the public sector in Alakanuk, Gambell, and St. Paul (Alaska Review of Social & Economic Conditions, Feb. 1987). The federal government has discontinued its revenue sharing program, and a broad range of social programs are major targets for those seeking to reduce federal deficits. For its part, the state has already proposed twenty percent cuts in Revenue Sharing and Municipal Assistance Programs, in addition to reductions in a wide variety of more specific programs benefiting village Alaska. Accordingly, those responsible for administering the public sector in the study communities now face the unenviable task of adjusting to substantial cuts in revenues flowing from Juneau and Washington, with premonitions of even deeper cuts during the foreseeable future.

On the other hand, revenue flows from outside sources have generated many of the opportunities for salary and wage employment in the study villages in recent years. This is partly a function of rapid increases in local government employment made possible by outside funding (Morehouse, 1984). In considerable part, however, it is attributable to the capital construction programs funded by the state and federal governments. It follows that the marked erosion of these programs constitutes a serious threat to the limited commercial sectors of the mixed economies operating in the study communities. While state and federal governments can deeply cut their capital budgets for these communities virtually overnight, there have been planned transition periods in most of the program changes. The state is committed, for instance, to completion of the boat harbor at St. Paul, and the funds remaining in the Pribilof Islands Trust, established under the Fur Seal Act Amendments of 1983 are available for investment in enterprises that would operate in the commercial sector. The Trust originally contained \$20 million, of which \$12 million was earmarked for St. Paul. Nonetheless, both state and federal capital construction budgets are obvious targets for those seeking to control massive public deficits and appear certain to shrink during the near future. There is no basis, therefore, for expecting external revenue flows to offset the economic slack in the study communities attributable to recent and anticipated reduction in the public sector, or to stimulate new growth in the commercial sector of these villages.

2.7.2 Public Policies

Public policies, adopted at the state and federal levels, also structure the economies of these communities to a high degree. Seemingly adopted with little or no thought to the specific circumstances confronting Alaska's remote communities, such policies regularly produce unforeseen and unintended consequences that shape economic life in places like Alakanuk, Gambell, and St. Paul. The Alaska Native Claims Settlement Act of 1971 is probably the most familiar case in point. Not only did ANCSA encourage communities to embrace commercial enterprises by setting up for-profit village corporations, it also heightened pressure on community leaders to focus on investment opportunities beyond the confines of individual communities because of the paucity of attractive investments at the local level (Berger, 1985).

Under Section 19(b) of the Act, villages located on former reserves could elect to take title to the surface and subsurface estates of these reserve lands. In doing so, however, they gave up the right to participate in ANCSA's cash settlement provisions. In the case of communities such as Gambell which elected to exercise

this option, the Act left local leaders with a severe shortage of capital to deal with their new responsibilities. Yet ANCSA is by no means the only public policy that has had a profound effect on economic life in Alakanuk, Gambell, and St. Paul. A few additional examples will help to drive this point home.

The Fur Seal Act Amendments of 1983 terminated federal management of the Pribilof Islands, dismantled the Pribilof Islands Program, and called for efforts to promote "... the development of a stable, self-sufficient enduring and diversified economy not dependent on sealing" (Section 206). (Prior to the passage of the 1983 Amendments, the federal government, operating through the Pribilof Islands Program, had provided most of the municipal services in St. Paul and made fuel oil available to St. Paul residents at a heavily subsidized price.) More recently, the United States Senate has refused to ratify a Protocol extending the life of the Convention on Conservation of North Pacific Fur Seals (National Marine Fisheries Service, 1985). As a result, the commercial harvest of seals has been suspended, and the residents of St. Paul now take about 1200 fur seals a year for subsistence purposes under the terms of the Marine Mammal Protection Act of 1972. The effect of these developments has been to bring about sharp changes in the delivery of services in St. Paul and to disrupt the commercial sector of St. Paul's economy. So far, these blows have been cushioned by several *ad hoc* forms of support. These include the compensation funds paid out under the terms of the Court of Claims judgment in Aleut Community of St. Paul vs. U.S. (involving compensation for inadequate payments to Aleuts employed by the federal government), the resources placed in the Pribilof Islands Trust, and state funds allocated for the construction of the boat harbor. Congress is currently considering a bill to compensate Aleuts taken involuntarily from their homes during World War II. Under this bill, each resident of St. Paul would receive a payment of \$12,000. These windfalls are all stopgap measures, not a long-term alternative to the local economy based on commercial sealing which was extinguished by federal public policy decisions (Orbach & Holmes, 1986; Young, 1984).

The case of St. Paul is particularly dramatic, but public policies have also had far-reaching impacts on the economic life of Gambell and Alakanuk. In Gambell, for example, the sale of raw walrus ivory and of walrus meat would constitute attractive economic options during certain periods, like the present, when walrus populations are thriving. But commercial use of surplus walrus is expressly prohibited by the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973. Of course, this has not prevented development of a black market for raw walrus ivory, but this black market is economically suboptimal for the people of Gambell. Primary producers do not generally make out well in black markets because most of the economic rents and returns are captured by middle men or "fences." Worse, black market operations erode individual and civic values in the community.

In Alakanuk the salmon fishery, the principal commercial enterprise in the community, has been brought under the aegis of the State of Alaska's limited entry management system for commercial fisheries (Langdon, 1987). The economic consequences of this development for the community are profound. Because the program prohibits commercial fishing without a permit and because permits have become expensive to obtain, this management system has served to confront those desiring to fish commercially (and who under previous informal or formal management systems undoubtedly *would* have fished commercially) with daunting entry barriers. As well, the regulatory system is based on the premise that commercial fishing should be organized around the efforts of individual entrepreneurs, a concept that is hard to graft onto the cooperative or communal approaches to fishing embedded in Yup'ik culture (Young, 1983). In effect, therefore, state policy amounts to an arbitrary narrowing of the commercial sector of

Alakanuk's mixed economy by forcing it into unfamiliar and often uncongenial organizational arrangements. One of the most troubling features of Alaska's limited entry program is the tendency for rural communities, like Alakanuk, to lose fishing permits over time (Langdon, 1987; 1980).

2.7.3 World Markets

Although many observers have commented on the desirability of promoting a network of regional markets that would enhance economic interactions between or among the remote communities of Alaska, no one has produced an effective strategy for moving toward this goal (Alonso & Rust, 1976). In fact, the structural impediments to any such developments are formidable. Under the circumstances, communities like Alakanuk, Gambell, and St. Paul remain satellites in a pattern of core/periphery relationships rather than becoming equal partners in an Alaska-based regional trading network. This, too, accentuates the exposure of the mixed economies of these communities to outside forces.

Given current world market prices as well as federal policies, there is little interest among the oil companies in allocating funds to exploratory work in remote areas like the Navarin Basin and the St. George Basin. However, shifts in world market prices over which the remote communities of Alaska (or, for that matter, the oil firms) have no control could turn this situation around at any time. It is worth nothing in this context that the federal government's leasing program for mid-1987 to mid-1992 includes proposed OCS lease sales in the Navarin Basin, Norton Basin and St. George Basin (Minerals Management Service, 1987). Should the geologic structures of the Bering Sea prove to contain commercially significant quantities of oil or natural gas, locations on St. Paul Island or St. Lawrence Island could emerge as logical sites for support bases and terminal facilities. Such developments could produce, in turn, a demand for services that local enterprises might provide as well as a sizable flow of revenues in the form of property taxes (depending, of course, on the location of the facility in relation to the community, whether or not it is an enclave-style development, and so on). While developments along these lines would have impacts that could ease some local economic problems, they would undoubtedly create others. Communities like Gambell and St. Paul are no more prepared for oil development today than the communities of the North Slope where in the 1970s (Young, 1984).

If one considers economic opportunities based on renewable resources, such as fish, other sources of dependency become apparent. Not only are world markets for fish products notable for their volatility, commercial fishing has also become increasingly capital intensive in recent years (Young, 1983). This means that individuals located in places like Alakanuk and St. Paul must turn to outside capital markets in the search for venture capital required to initiate new commercial fisheries. In addition, such individuals have little or no bargaining power as participants in these capital markets. Under the circumstances, they are sometimes unable to obtain access to the necessary venture capital at all. In other cases, the terms under which venture capital is made available are such as to leave effective control in the hands of outsiders. While capital formation has been comparatively high in Alaska as a whole in recent years, access to capital on the part of those located in remote communities remains a barrier to the development of commercial enterprises in places like the study communities.

In still other cases, the items produced in communities like Alakanuk, Gambell, and St. Paul take the form of superior goods exported to outside markets. One obvious case in point involves Native artwork and handicrafts. The demand for such items fluctuates dramatically as a function of broader economic swing, and it often shifts rapidly along with fashions in cosmopolitan centers. State and federal policies regularly interact with industries of this type as well, as public officials respond to the concerns of conservationists worried about the welfare of stocks of animals important in the production of artwork or handicrafts, and the concerns of animal protectionists generally opposed to the use of animal products for such purposes (Doughty, 1975). As a result, we arrive at the same conclusion by another route. Due to the absence of an Alaska-based regional trading network, commercial enterprises in communities like Alakanuk, Gambell, and St. Paul become satellites in overarching economic and political systems which they cannot significantly affect but which can drastically restructure the opportunities available to them without even recognizing their existence.

3.0 ALAKANUK VILLAGE DESCRIPTION

3.1 Introduction

Three key features set the Yukon-Kuskokwim Delta region apart from other areas of the state. First the region is notoriously lacking in significant amounts of any of the commercially valuable resources that initially attracted non-Native entrepreneurs to other parts of the state. The shallow coastline is blessed with neither the sea otters that drew Russians to the Aleutians in the late eighteenth century nor the bowhead migrations that brought American whalers into the arctic waters further north by the mid-1800s. No gold or mineral deposits comparable to those found in either north Alaska or the upper Yukon were ever discovered in the region. Finally, while fur bearers were present, both the scattered human and animal populations served to undercut the ability of non-Natives to exploit their presence.

Second, the relative lack of commercially valuable resources has meant that the region has experienced the direct impacts associated with non-Native contact later than other regions of the state. Although Russian traders and Orthodox priests were present in the region in the 1830s, it was not until the late 1800s that the pace of economic change on the Yukon Delta accelerated due to increasing missionary efforts, contacts with vessels serving the Seward Peninsula mining towns, forays by miners into local river systems and modest demands for local services (such as the provision of furs, food, and firewood) that sprang up as a consequence of these other activities.

Third, the Yukon-Kuskokwim Delta region remains a very traditional part of the state. The Central Alaska Yup'ik language continues in use throughout the region. Extended family relations and subsistence harvesting activities continue as major foci of activity. However, within western Alaska, the Yukon Delta in general, and Alakanuk in particular, is one of the least traditional parts of the region. Its location at the mouth of a major waterway has meant that it was in contact with non-Natives much earlier than the coastal communities to the south. As a result of this early contact, Yukon Delta residents were exposed to epidemic diseases earlier than their coastal and inland neighbors. The population level of Yukon Delta communities was probably reduced by at least 50% from its aboriginal level prior to 1900 through a combination of influenza, measles, and numerous other introduced diseases. In the aftermath of the worldwide influenza epidemics of 1900 and 1919, orphans were gathered at the Akulurak Catholic mission which had been established 20 miles south of Alakanuk in 1893. At Akulurak, children were discouraged from using their Native language and traditions. Thus whereas Central Yup'ik continues to be the first language for virtually all children living in the coastal communities to the south of Alakanuk, children and young adults in Alakanuk can not speak the language.

Yup'ik Eskimos have lived in the vicinity of the modern village of Alakanuk since prehistoric times. Oral tradition recounts the settlement of a site to the west of the present village by Anguqsuar and his descendants sometime in the early nineteenth century (Chikigak, 1981). The area was chosen in part because of the diverse subsistence resources the Yukon Delta provided (see Figure 3-1).

In 1927, five households (27 people) made Alakanuk their winter home and base camp for a variety of seasonal harvesting activities. Seasonal employment connected to the commercial fishery began to play an important part in the village economy in the 1930s, as did commercial trapping. By the early 1940s, a cannery was established at the mouth of Alakanuk Slough, after which the village began to grow rapidly through immigration from outlying settlements. The cannery was moved upriver from Alakanuk in the 1960s. By that time the village had already grown large enough to include a school, a Catholic church, and a U.S. post office, all of which served to stabilize the steadily increasing village population. In terms of village facilities, it is typical of nearby Delta communities of comparable size (see Table 3-1).

The present character of Alakanuk's economy can be attributed to its unique historical mix of three elements common throughout western Alaska. These elements will be described in detail below. Their interrelationship will be given here in summary fashion.

From prehistoric times, a variety of wild resources have been harvested by and sustained the local population. The village of Alakanuk was established and grew in direct response to the commercial exploitation of one of these resources: the salmon fishery. Through the early 1970s the village enjoyed steady population growth as a result of the access it provided residents to both the commercial and subsistence sectors of the economy, which were largely viewed by residents as mutually supportive.

Two developments in the 1970s set the stage for major changes in Alakanuk's economy. First, the State of Alaska increased spending on capital projects (e.g. village high schools following the Molly Hootch decision). At the same time, both subsistence and commercial harvesting of wild resources began to steadily decline due to over hunting on the one hand and increased regulation on the other. By 1982, the public sector of Alakanuk's economy had grown in proportion to a decline in the subsistence and commercial sectors, and was the village's main support. Since that time, public sector spending has been reduced in absolute terms. As yet there has been no corresponding increase in the subsistence or commercial sectors of the economy to replace it, and public sector income remains the community's main support.

3.2 Political Economy

The political economy of Alakanuk is characterized by three major factors: (1) the underdevelopment of local commerce and industry in comparison to better endowed economic regions; (2) domination by external regulatory systems; and (3) a heavy reliance on nonlocal public sector income. Each of these relationships will be described below.

Table 3-1

**Village Facilities
Alakanuk, Alaska
1982**

<u>Education</u>	
Preschool/Head Start	1
Elementary School	1
REAA High School	Since 1975
<u>Community Hall</u>	
	1
<u>Commercial</u>	
Corporation store	1
Private Store	2
<u>National Guard Armory</u>	
	1
<u>Organized Religion</u>	
Churches	2
<u>Recreation Hall</u>	
	1
<u>Health Facilities</u>	
Clinic	1
<u>Washeteria</u>	
	1
<u>Single Family Dwellings</u>	
Subsidized since	105 1971
<u>Utility Services</u>	
Water	Rain Water Well City Delivery
Sewage	---
Electricity	AVEC since 1973
Heat	Oil/Wood
<u>Communication</u>	
TV Reception	TV since 1977+ Cablevision 1982
Phone (individual)	since 1981
Transportation	3000 ft. gravel airstrip road
Mail Service	P.O. est. 1950s

Source: Fienup-Riordan 1986:62

3.2.1 Commerce and Industry

Historical Context

Interregional trade for subsistence products predated Russian contact in western Alaska. By the 1840s, the Russians were actively vying for furs, including fox and wolverine pelts. However, their inability to supply Native products in exchange for these furs limited their ability to intervene effectively in Bering Sea traffic (Zagoskin, 1967:102). As a result, the material culture of the lower Yukon was not greatly altered prior to 1867, other than the introduction of a limited number of guns after 1850, metal tools, and caribou clothing (Whymper, 1869:179; Anderson and Eells, 1935:82).

Incorporation into the larger national economy increased dramatically after the transfer of Alaska to the United States in 1867. Numerous trading stations were established along the Yukon, and after the Yukon gold rush almost every major village possessed a trading post (Anderson and Eells, 1935:201-2). Steam shipping expanded with the discovery of gold at Forty Mile Creek in 1886 and after the Klondike gold strike in 1897, over 100 river steamers ascended the Yukon during the summer (Cantwell, 1904:125-129). Yukon Natives were employed in a limited fashion cutting cord wood, working as deck hands or guides and harvesting salmon to feed the newcomers. However their patterns of seasonal migration, village and household organization, and productive orientation remain largely unchanged.

By the late 1870s, winter trapping for commercial export was well established on the lower Yukon (Nelson, 1887:240-50), a pattern that has continued in modified form until the present. Over this hundred year period, harvest levels have continued to fluctuate with fur prices. From the 1860s through the 1930s fox was the region's staple fur, replaced by mink after 1940. From a peak in the 1920s and 1930s, trapping effort declined and was gradually replaced by commercial fishing, which was legalized along the lower Yukon River in 1932.

From the 1870s, the fur trade, steamship industry, and finally commercial fishing began to make possible the acquisition of imported goods and thereby link local residents to the larger world economy. With the use of imported technology came increased reliance on outside distributors; at the same time internal group relations were diminished. For example, hunting single belukhas from power boats replaced the driving of belukhas into shallow river mouths by organized groups of kayakers in the 1930s (Wolfe, 1979:116). Moreover, the increasing use of money to purchase goods required hunters and fishermen to participate regularly in commercial production or wage labor and made them increasingly dependent on fluctuations in world markets. In turn, this increased dependency has been an impetus behind labor being devoted to the commercial fur and salmon industries.

The establishment of Alakanuk at its present site, and its subsequent population growth, were tied in part to the commercial value of local renewable resources. The cannery that was established there in the 1940s guaranteed Alakanuk's future at the expense of other communities. Attempts to control that commercial development, however, have been continually frustrated, as in the village's unsuccessful attempt to regulate the terms of the cannery's operation as described below.

A good case can be made for the historical tendency for success in the summer salmon harvest, both commercial and subsistence, to determine to a significant extent subsequent subsistence harvesting effort. Following a lean commercial season, subsistence harvests increased, while a large salmon harvest ensured security for the remainder of the year (ibid.:131).

Into the 1950s, the greatest short-term limiting factors on commercial fishing were environmental constraints, including wind and ice conditions, escapement size of breeding stocks in prior years, and the survival of eggs and fry. Ecological factors, however, were not responsible for long term trends in the size and disposition of the Yukon salmon harvest. Although annually variable, the overall size of the Yukon river salmon stocks has remained relatively stable into the middle 1970s. Increases or decreases in salmon utilization over the long term cannot be attributed to changes in the resource base. Rather they are due to the long term trends in the structure of the salmon market, the market demand for salmon, harvest technology, and other local market demands for goods and services which change the production strategies of Yukon Delta fishermen. Factors influencing harvest strategies include the rise and fall of local markets for dried salmon from 1870 to the mid-1920s with the expansion of dog team travel along the Yukon River, the development of a commercial export fishery after 1930, the replacement of dog teams by the snowmachine in the mid-1960s, and the integration of imported food into the local diet from the late 1800s (ibid.:134).

Throughout the 1960s and 1970s, fishing remained the chief source of disposable income in Alakanuk. However, both fish processing facilities and regulatory systems continued to be controlled from outside the region. The most dramatic effort to more directly control local commerce occurred in the early 1960s, when the village of Alakanuk attempted to place restrictions on, and thereby gain control of, the local cannery. However, management frustrated this attempt and relocated the cannery ten miles upriver at Sunshine Bay.

Moreover, since the 1930s, Yukon salmon harvest levels and fishing periods have been constrained in part by legal regulations, as opposed to the system of self regulation by local production units practiced in the past. Harvest levels of the entire system have subsequently been monitored and regulated by biologists from the Alaska Department of Fish and Game (ADF&G). Over the years, the Yukon Delta fishermen have responded to market opportunities by consistently meeting commercial harvest limits at whatever level they were set. As allowable catches increased, so did production for sale (Wolfe, 1979:143). By the late 1970s, salmon production was at an all time high in the Yukon Delta, in response to an expanded export market for frozen salmon. In the 1970s the proportion of salmon previously utilized as dog food was being diverted into the commercial export market, increasing a family's yearly earned income and their ability to afford modern technology. The income was used as investment capital to support other fishing and hunting activities and to obtain consumer goods such as imported food and clothing.

By the 1970s it was clear that the Yukon salmon stocks were finite and the expansionist trend in commercial and subsistence salmon fishing would eventually have to level out. How long increasing harvest levels could continue was debated by fishing interests in the late 1970s. The debate concerned levels at which optimal sustainable yields would occur and the regulations needed to keep production within this limit. By the mid-1980s many Delta fishermen felt that the strict regulation

made it more difficult for them to rely exclusively on commercial fishing as their major source of earned income and employment. It was often overlooked that without regulation increasing harvest pressure on finite resources might have had the same or worse effect.

Contemporary Export Production

Fish Harvest

At present the commercial salmon fishery on the Yukon Delta is the single most important element in private sector employment (see Table 3-4). In fact, Wolfe (1981:90) identifies commercial salmon fishing as the chief source of income on the Yukon Delta. This generalization was not borne out by the broader sample interviewed in Alakanuk for the period from June 1981 through May 1982, indicating that Wolfe's conclusions were premature. However, commercial salmon fishing was still identified as a major income source (Fienup-Riordan 1986: 241). The total number of permit holders fishing in District 1 was 689, of which 87 were from Alakanuk. In 1982, District 1 fishermen took a total of 99,219 king salmon at a value of \$2,952,757 and 675,463 chum salmon at a value of \$2,026,389, providing an average income of \$7,226 per permit holder (Alaska Department of Fish and Game, 1982). Although profits made by local fishermen have remained at a relatively low level, even a small net harvest is significant in the context of the coastal village economy.

Fish Processing

The commercial salmon fisheries provide seasonal employment in the local processing facility as well as produce income for individual fishermen. In all, 13 commercial processing facilities are located between Emmonak and Mountain Village. One of these is owned by the Emmonak Native Corporation and another by Mountain Village. The remaining processors belong to outside operators who purchase salmon from local independent fishermen, employ people to process the catch, and then sell the product outside the region.

At present, the salaries and status of jobs in the processing industry are relatively low. Workers are drawn from local residents otherwise uninvolved in the commercial fishery, including young adults from Hooper Bay and Chevak. Whenever possible, Alakanuk residents choose to participate in fish harvesting over fish processing, as the former is much more lucrative. However, as Alakanuk's population grows and the proportion of local residents without access to commercial permits or helpers licenses grows with it, the local demand for and participation in these jobs may be expected to increase.

Table 3-2

**Permits, Catch and Value of Catch
Salmon Set Net Fishery
Alakanuk, Alaska
1976 - 1985**

<u>Year</u>	<u>Number of Permits</u>	<u>Catch (Pounds)</u>	<u>Value (Dollars)</u>
1976	112	939,800	\$358,800
1977	89	896,300	443,000
1978	94	1,306,400	593,100
1979	91	893,200	644,400
1980	90	731,100	336,000
1981	85	1,280,800	659,000
1982	81	725,400	465,200
1983	86	759,600	389,800
1984	84	717,900	419,500
1985	79	726,800	609,400
Annual Average Total	89	897,700	\$491,820
Annual Average Per Permit		10,100	\$5,526

**Source: North Pacific Fisheries Management Council, Special
Report for Minerals Management Services, 1987.**

Arts and Crafts

Although craft sales are an important source of income for the Yukon-Kuskokwim region as a whole, they are relatively unimportant on the Yukon Delta. This is partly because of the scarcity of raw materials such as seal skins and walrus ivory, products which are abundant further to the south. However, the availability of more lucrative occupations is the primary deterrent to involvement in craft production in Alakanuk. Older women are employed as babysitters for the younger women who are working at the school, stores, or city offices, rather than spending the long hours necessary to weave a lidded basket.

Although locally made articles rarely make it to outside markets, many men and women on the Yukon Delta produce hand-crafted articles for local sale as well as for gifts for family and friends. These include knitted goods such as hats, stockings and mittens, earrings, seal skin products, blackfish traps, sleds, and harpoons. Whereas in the coastal communities to the south these articles only rarely make it to local stores, in Alakanuk both the private and corporation stores regularly act as clearing houses for products of local manufacture, both edible and inedible. This marketability of local products has important ramifications in local systems of exchange and distribution, as described below. (See section 3.2.5 -- Structure of Production and Distribution.)

Trapping

Although more important as a source of earned income during the early and mid 1900s, trapping remained a significant income source for Delta residents through the early 1980s. In 1982, trapping received renewed local participation, partly due to the encouragement of local and regional organizations (e.g., Nunam Kitlutsisti) which perceive Delta fur bearers, like the coastal herring runs, as renewable resources whose commercial harvest is a potential means for solving the problem of seasonal unemployment on the Delta. Participation in trapping was high during the winter of 1981-1982, and the harvest was considered exceptional. However, an exceptional harvest does not necessarily have the financial benefits that this designation might seem to imply. Of 16 trappers interviewed in Alakanuk in the spring of 1982, representing close to 100% of the village's serious trappers, their gross income ranged between \$200 and \$1,900 for the 1981-1982 season, with a mean income from trapping of \$811.

Although net profits may continue to be relatively low, the satisfaction that individuals derive from the enterprise is high. The challenge and independence that trapping provides are perhaps more important than financial rewards and are largely responsible for continued participation in this enterprise.

Village Corporation

As fishing peaked in importance in the late 1970s, one major change occurred in Alakanuk which directly impacted local commercial development: the creation of a local village corporation. This development was the product of broader state and national political events, e.g. the Alaska Native Claims Settlement Act (ANCSA). In Alakanuk, the immediate economic effect of this legislation was the creation of the Alakanuk Native Village Corporation which increased local hire by opening a small store (see Table 3-3).

Table 3-3

**Alakanuk Native Corporation
Revenue, Expenses, and Assets
Alakanuk, Alaska
1981-1986**

	(Thousands of Dollars)					
	1981	1982	1983	1984	1985	1986
Revenue:						
Store Sales	641	703	782	614	629	575
Store Cost of Goods Sold	541	622	528	559	518	431
Store Gross Profit (Sales minus Cost)	100	81	255	54	112	144
Other Operations	253	234	221	188	177	111
Total Income	353	315	476	242	289	255
Consolidated Expenses:						
Wages and Salaries	128	108	151	122	92	119
Depreciation	48	92	122	134	125	58
Other	80	94	142	116	133	104
Taxable Income^a	97	20	61	130	61	26
Deficit	451	431	370	512	573	599
Assets Total	2,214	2,248	2,289	2,144	2,074	NA^b

Notes: ^a Before net operating loss deductions and special deductions.

^b Less than 2,000

Sources: IRS Form 1120 1981-1984; Alakanuk Native Corporation Income and balance sheet statements: 1984, 1985, 1986

Since 1982, the Alakanuk village corporation has sought to expand its investments. Its operations now include land leases to outside commercial fish processors, shipping investments, a new fuel storage system, and a new dry goods store. In 1986 the corporation employed 54 people, 10 full-time, 8 part-time, and approximately three dozen on a seasonal basis.

The Alakanuk Native Corporation's most significant attempt at commercial development was in 1986 when it paid \$140,000 for a Japanese tuna processing vessel, which they have since named the Yupik Star. They subsequently spent \$500,000 refurbishing it and turning it into a salmon processor. The Yupik Star, along with two small skiffs, is owned by the corporation and is leased as a bare boat charter to the Yupik Star Fisheries Corporation, a subsidiary of the Alakanuk Native Corporation. During the summers of 1986 and 1987, the venture did moderately well. It was not expected to make a profit at first and, in fact, has not. The failure of the Department of Fish and Game to allow a fall chum season was particularly harmful in the 1987 fishing season. Also, villagers' preferred to sell to local cash buyers, even at lower prices, rather than the Yupik Star Fisheries Corporation who were forced to defer payment due to cash flow problems.

Ironically, the availability and affordable price of the Japanese vessel was the by-product of the recent regulatory exclusion of Japan from near-shore fishing in Alaska waters. However, the transaction came at a bad time. Regulatory restrictions are increasingly impacting the profitability of the Yukon commercial salmon fishery, thereby making the likelihood of the venture's ultimate success marginal in the highly competitive fish processing industry. Furthermore, U.S. maritime restrictions on the use of foreign built vessels reduce the ability of the corporation to make full use of their asset (e.g., point-to-point offloading is disallowed). A number of as yet unexploited commercial opportunities do exist for the corporation, such as leasing their vessel.

Although members of the corporation board are hopeful that the Yupik Star can eventually increase their profitability, many villagers worry that the corporation is doomed to failure. During 1983-1986, corporate assets have declined gradually but steadily while annual net operating losses have increased from \$370,000 to \$599,000 over the same period (see Table 3-3).

Corporate losses not only reflect the corporation's inability to operate at a profit but also implicated in a deepening rift between the corporate leadership and other village shareholders. On the one hand, corporate leaders feel that the corporation cannot be successful without more active support by community members. They attribute corporate losses to such acts by some shareholders as selling fish to the corporation's competition. On the other hand, some shareholders are doubtful as to the direction of the corporate leadership and respond to the corporation's precarious situation by further withdrawing their support.

Retail Trade

As described above, trading posts were established in the vicinity of Alakanuk in the late nineteenth century, and the first local store at the old village site in the early 1940s. At the present time, the private sector economy remains relatively underdeveloped, with only three local stores. Of these, two are family owned and the

third is owned and operated by the village corporation. The two family-owned stores (Jorgenson's and Alstrom's) were established in the 1950s and 1980s respectively. While differing in scale, both display similar characteristics in the way they have been financed, organized, managed, and controlled.

Dave Jorgenson was raised in Emmonak where his father was the postmaster. He began his commercial career selling candy bars and crackers out of his house at the old village site in the late 1950s. He estimated that 30% of his store's gross sales in 1986 were made with food stamps and 5% by shoppers from outside of the village. At present his store is extremely well stocked with everything from fresh fruits and vegetables to motors and 20-foot skiffs. In 1983 he built a new store, enabling him to keep a 30-day stock on hand in the old building which he now uses as a warehouse. Most of his groceries are purchased from Gottstein's in Anchorage and air freighted into the village directly from Anchorage using by-pass mail. Mr. Jorgenson estimates that no more than 5% of purchases made by villagers are made non-locally. He attributes this dramatic increase in local spending over the last decade to his own and his competitors' ability to keep their businesses increasingly well stocked and their prices within reason.

In the mid-1970s the Alakanuk Native Corporation opened a village store at the opposite end of the village from Jorgenson's store and across from the old cannery site. Problems in management have resulted in uneven profits from year to year, and have not allowed them to equal Jorgenson's success. Even so, they were able to open an annex at the center of the community in 1982. Although not as well stocked as their competitors, the corporation store seems to be holding its own and has grossed over \$100,000 during each of the last two years (see Table 3-5).

Last to open was the Alstrom Brother's store in 1982. After what had been a particularly good fishing season, the three brother's pooled their resources to start the enterprise. One brother supplied the lumber, another bought groceries and dry goods, and the third brother contributed the labor to build and operate the store. The following year the brothers (who all have private pilot's licenses) went together to purchase a plane to beat the high cost of freight. Since that time freight prices have fallen and by-pass mail has become popular, and as a result the brothers are selling their plane. Prices at Alstrom's store are comparable to those at both Jorgenson's and the corporation store's prices. Although each enterprise is able to get some of their commodities for less than their competitors, the tendency is for one business not to undersell the other, and it is likely that all three stores will continue in business.

Parenthetically, signs stating that no more credit would be allowed were in evidence in all three stores in August 1987. A poor fishing season had meant that a number of local residents had charged groceries, running up bills between \$100 and \$900. Along with not allowing credit, another solution to the problem employed by the corporation store has been to hire out the lightering and inventory work to people who owe the store money, enabling them to pay their debts. In this way the corporation has effectively expanded their social as well as economic contribution to the community.

The Church

Although not a village firm, it is worth mentioning the non-economic character of local organized religion. Two denominations are present in Alakanuk: the Catholic Church and the Assembly of God. The Catholic Church has worked in the village since its founding, while the Assembly of God came to Alakanuk in the late 1970s. Even given the long history of Catholic activity in Alakanuk, both denominations are run as mission churches and neither are financially self supporting. The resident Catholic priest estimated that it cost \$20,000 a year to keep the church open, and cover costs such as electricity, phone, maintenance, travel, and food and lodging for the priest. Only \$5,000 is supplied by the parish, while the remainder comes from the diocese. What the community cannot supply in monetary income is in part made up for through small donations of food and services.

3.2.2 Regulatory Control

As can be seen, the heavy reliance on commercial salmon fishing and subsistence harvest activity enmeshes local residents in numerous and far reaching political and economic relationships of non-local origin, including accountability to the Alaska Department of Fish and Game, U.S. maritime legislation, and international joint venture protocol. Since 1931, quotas have regulated allowable harvests of commercial salmon for export. In 1961 the quota system was replaced by a more flexible system of scheduled weekly fishing periods. Under this system, the commercial salmon runs were opened and closed by state fish and game personnel by emergency orders broadcast over local radio stations. The present system of limited entry and a set number of discrete fishing periods has produced steadily increasing restrictions on the fishery.

Along with the regulation of commercial fishing, reliance on a diversity of wildlife (including fish, birds, land mammals, and sea mammals) exposes the residents of Alakanuk to a broad range of state and federal regulation and resource management agencies. The 1980s, especially, have been marked by a massive amount of natural resource and land planning throughout Alaska, and like other rural Alaskans, the residents of Alakanuk have been subject to a proliferation of regulations.

Regulation has brought pronounced, if not always effective, resistance from local residents. At the same time that ADF&G is being accused of emasculating the local fishery, federal regulation in support of the International Migratory Bird Treaty severely restricts the spring and summer hunting of a number of species of geese. Given the importance of spring bird hunting in the local economy, it is not surprising that residents feel threatened by the new regulations. There is also a fair amount of confusion, as in the case of one family who took the goose restrictions to heart and hunted nothing but swans all spring.

Local residents are also anxious about oversight and control of the local fishery. Paul Phillip of Alakanuk was one among a number of plaintiffs in a recent class action lawsuit in Bethel Superior Court asking that the court bar the State Commissioner of Fish and Game from opening the Shumagin and Unimak Islands commercial salmon fishery. The lawsuit aims to protect subsistence harvests of fall chums on the Yukon River by eliminating their interception at False Pass. Fishermen throughout western Alaska are extremely dissatisfied with the Board of Fish and Game's continued unwillingness to protect their salmon stocks by reducing the harvest at False Pass, the most lucrative salmon fishery in the state. As a result, the courts have become their only recourse.

At present the mood in Alakanuk is one of intense dissatisfaction. Whether or not this is accurate, the local perception is that regulation is strangling their livelihood. Moreover, residents are increasingly apprehensive concerning the future of their relationship with their land. At the present time, a number of the board members of the Alakanuk Native Corporation are in favor of trading corporation land holdings to the federal government in exchange for land in the Arctic National Wildlife Refuge (ANWR). They argue optimistically that if their land is placed in federal hands, they would retain the use of that land for subsistence harvesting in perpetuity. The majority of village residents, however, are adamantly opposed to such an exchange. They remain deeply mistrustful of the new corporate ownership of land that makes the land vulnerable to eventual alienation. At the same time they are skeptical of federal oversight, based on the negative impact of recent regulatory restrictions.

3.2.3 Public Sector Support

Along with its undeveloped local commerce and industry and domination by external regulatory systems, the political economy of Alakanuk is characterized by a high level of dependence on public sector support. Despite the importance of commercial fishing and subsistence, transfers from state and federal government have become the foundation of the village's livelihood. These transfers are polymorphous and include: income earned in public sector employment; unearned cash payments to persons; and direct or subsidized provision of public improvements and public goods and services. Together, these governmental transfers have come to account for most local cash income, virtually all social investment, and many goods and services consumed by Alakanuk households.

There is no single comprehensive source of concurrent data that document the role of governmental transfers at Alakanuk. Still, it is feasible to compose from scattered data sources a mosaic of facts that illustrates the absolute and relative importance of public sector support.

Public Sector Employment and Earnings

Several independent data sources document the dominant role of the public sector's contribution to wage employment and earned income at Alakanuk. Two recent employment surveys found that the public sector accounted for most local full-time wage and salary employment: 83 percent in 1982 and 78 percent in 1986 and a slightly smaller share of part-time employment (Table 3-4). For comparison, government accounted for 30 percent of Alaska statewide wage and salary employment in 1986 (Alaska Department of Labor) and only 17 percent nationwide (Statistical Abstracts, 1988). These comparative employment data show the singular dominance of Alakanuk's public economy in the sphere of wage employment.

Analysis of 1986 protocol data on Alakanuk household income corroborates the paramount contribution of public sector employment to earned cash income. According to the protocol data, Alakanuk households derive about one-third of all their personal cash income, better than one-half of all their earned income and about 70 percent of their wage and salary income from governmental employment (Table 3-5). The latter figure (70 percent) fairly approximates the above finding that the public sector accounted for about 78 percent of wage and salary employment in 1986. The

share of Alakanuk household total earned income directly derived from governmental employment (52 percent) was more than triple the national norm (15 percent). (It should be noted that direct comparison of figures for Alakanuk and the nation as a whole is made somewhat problematic by the role fishing plays in the village.)

The prominence of public sector employment and earnings is not by itself full proof of this aspect of Alakanuk's politico-economic dependency on external institutions. The conclusive point is that the revenues that fund Alakanuk's governmental employment stem from non-local sources. In FY 1986, the City of Alakanuk did not levy a property tax. Its 2 percent sales tax raised \$25,862 or less than \$23 per capita (Alaska Department of Community and Regional Affairs, Alaska Taxable: 104). City income from charges, fees, etc., were negligible. For practical purposes, public sector earnings represent a net transfer of wealth from external entities into the village, whether finally dispensed by local, state or federal government.

Alakanuk's recent employment level (Table 3-4) represents a significant increase over previous decades, especially the era preceding the Molly Hootch decision and the advent of the "high-school industry" in rural Alaska. Yet this employment level is far below the number of adults seeking employment in this village of over 525 persons. High rates of chronic unemployment and underemployment are the result. Even with the rise in local employment, state and federal income assistance programs are still important to the individual household and village economy. The Bureau of Indian Affairs General Assistance (GA) program as well as state public assistance programs including General Relief Medical (GRM), Old Age Assistance (OAA), Aid to Families with Dependent Children (AFDC), and Aid to the Blind (ABL) contribute significant unearned cash income to the overall village cash economy.

Unearned Cash Income

Alakanuk households are poor by national standards. According to the protocol sample data, Alakanuk households' 1986 average incomes (\$18,977) were less than half the 1985 national average (\$40,006), and their purchasing power was further depressed by rural Alaska's high living costs. Despite Alakanuk's comparative poverty, the protocol sample data show, surprisingly, that governmental transfer payments contribute 30 percent fewer dollars to Alakanuk's average household income (\$3,982, exclusive of Alaska Permanent Fund dividends) than to the national household average (\$5,625). Thus, the protocol data suggest that Alakanuk households may receive less, not more, governmental transfer income than the national norm.

Alaska Department of Health and Social Services records provide another glimpse of the contribution of State-administered income assistance. Departmental data show that in FY 1986, the Department disbursed \$162,012 in AFDC payments to 13 cases in Alakanuk and \$183,840 in food stamp payments to 22 cases. These two programs alone contributed nearly \$346,000 in unearned income or an average of \$3,294 per household (much more, of course, to the households actually receiving AFDC or food stamp payments).

Disaggregated figures for State-administered medical assistance and longevity bonus payments to Alakanuk households are not available, but payments can be estimated by inference from departmental data for State Election District 23. Based on Alakanuk's share of district-wide AFDC and food stamp payments, its prorated share of FY 1986 medical assistance and longevity bonus payments is estimated at \$236,974 (\$100,775 plus \$136,199) or an additional \$2,257 per household.

The estimated sum of FY 1986 unearned income per Alakanuk household from these four programs (AFDC, food stamps, medical assistance, longevity bonus) amounts to \$5,551, substantially more than the per household average (\$3,982) reported by protocol interviewees for all sources of unearned transfer income, exclusive of permanent fund dividends. After allowance is made for other transfer programs (social security and supplemental social security, unemployment insurance, veterans' benefits, etc.), it appears that unearned transfer payments comprise a larger absolute and much larger relative share of Alakanuk's average household income than for the nation's average household. Too, it appears that the protocol respondents may have under-reported transfer payment income.

In-kind Goods and Services

The profile of earned and unearned cash income does not fully account for the contribution of public sector transfers to the economic welfare of Alakanuk households. Specifically, household cash accounts do not include the monetary value of the in-kind goods and services that government programs provide to Alakanuk households. Although it is difficult to assign a precise monetary value to these goods and services, it may be that their importance to the economic welfare of Alakanuk households surpasses the value of earned and unearned income accruing within the public sector.

Exclusive of the personal income they generate, governmental programs furnish Alakanuk households with an assortment of in-kind public goods, services and improvements that they would not be able to obtain from their personal resources. The monetary significance of these public improvements, goods and services is generally transparent to an analysis of household or personal cash income and expenditures. These forms of in-kind consumption of public goods are unpriced and are delivered through extra-market mechanisms. Thus, they are not logged in the ledger of personal cash income. Nor are these goods and services a visible object of Alakanuk households' cash expenditures, since they are not usually purchased through cash outlays in the form of taxes, user charges or service fees. Notwithstanding this transparency, they are a real form of income and consumption for Alakanuk households. The degree to which these in-kind transfers have become embedded in the household and village economy is next addressed. Public improvements capital grants are discussed first, then goods and services directly funded or subsidized by governmental programs.

Public Improvements Capital Grants

Public improvements have been instrumental to a higher material standard of living for rural Alaska villages. In the early 1980s, Alakanuk was remarkably successful in its efforts to obtain support for community development projects. For the four-year period FY 1981-FY 1984, Orth and Associates (1983:118) itemized a total of \$5,641,500 in federal and state capital project expenditures at Alakanuk for 14 separate projects. This represents an annual average capital expenditure of \$1,410,375 or about \$13,400 per household per year in social investment. Since these are capital projects, their initial lump-sum cost does not indicate their annual worth to household beneficiaries over their useful life. By the same token, this brief list of four years' capital projects omits the accumulated stock of capital improvements (school plant, airport, power system, local roads, health clinic, ASHA and BIA housing projects, community hall, telecommunications facilities, etc.) installed before FY 1981 or after FY 1984.

Virtually all of Alakanuk's public improvements have been wholly funded by non-local governmental agencies. Thus, they constitute a substantial in-kind donation or transfer of wealth to the village economy. Without venturing to pin an exact figure on the value of these improvements to Alakanuk households and acknowledging that capital project expenditures were at an unprecedented high during FY 1981-84, the scale of public capital investment during FY1981-84 makes it plausible that as of 1986 their annualized capital cost may range from one-third to one-half or more of Alakanuk's average household income of \$18,977.

Direct and Subsidized In-kind Goods and Services

Beyond capital improvements, governmental programs fund delivery of many vital goods and services that Alakanuk households consume at little or no personal cost. Foremost among these goods and services are local education, health care, and public utilities (water supply, power, sewage treatment, telephone, space-heating), but the full list would include such items as "head start" care, postal services, telecommunications, school lunches and numerous others.

Local education is generally the single most costly public service provided by local government. The finances of local education at Alakanuk begin to suggest the extent of Alakanuk's dependence upon in-kind transfers. Based on enrollment and budget data obtained from the Lower Yukon School District, the District's FY 1986-87 annual operating expenditures per household at Alakanuk was \$20,983, funded wholly by the State of Alaska. In other words, the annual operating cost per household of local educational services in Alakanuk exceeded the entire average household cash income from all sources.

It is less simple to pinpoint the monetary contribution of other governmental programs to Alakanuk households, since budgetary data is usually fragmented among service providers and aggregated by large geographic units. Nevertheless, the beneficial impact of these governmental service programs is vividly imprinted upon household expenditure patterns. Table 3-7 compares average consumption expenditures by type of expenditure for households in Alakanuk and in the United States in 1985. Three discrepancies stand out. The average Alakanuk household dedicated \$272 or 3.1 percent of its consumption expenditures to housing compared to a national household average of \$4,654 or 15.5%. The average Alakanuk household spent \$7 or 0.1 percent on medical care compared to a national average of \$3,755 or 12.5 percent. The average Alakanuk household spent \$1,392 or 15.8 percent on shelter-related utilities (heat, power, water, sewer, telephone, etc.) compared to a national average of \$3,795 or 12.7%. The comparatively meager outlay of Alakanuk households for housing, health care and utilities signals the degree to which the cost of these services are absorbed in public budgets. Alakanuk households do not go without housing or health care or utilities, but receive these and other goods and services provided by government as a form of in-kind income.

These consumption data underscore a key point. These governmental programs have economic value to Alakanuk households entirely separate from the employment and income they generate. This becomes obvious when we consider the economic consequences of withdrawing non-local financial support for education or health services or housing or operation and maintenance of airport and utilities, even with present income levels maintained. The loss of these programs would be calamitous for community well-being for they are irreplaceable within the current purchasing power of Alakanuk households.

When comparing the relative self-sufficiency of the villages in the 1940s with the government assisted village pattern of today, many questions arise concerning the value of the village living experience, the resolve of the people to continue as villagers, and the issue of self sufficiency versus the dole mentality. Government largess has plainly changed the composition, structure and socio-political autonomy of the village.

Rather than seeking to void this reliance, many institutions (including the Association of Village Council Presidents, Bureau of Indian Affairs, and the State of Alaska) have sought to increase the efficiency of delivery of service, as in their support of Alakanuk. As these services have grown, so too have the villages. In the last ten years, at least partly because of these improved services, regional population growth has been most acute in the villages, rather than in the regional center, as had been expected (Darbyshire and Associates, 1980). Now, with the federal administration's cutbacks and the decline in state oil revenues, the scenario begins to fall apart. The growth in services is reaching its limits. Yet movement away from the current system requires the development of a localized economy to support the demands of village residents.

In sum, the recent history of public sector support provides a case in point of Alakanuk's high level of dependence on decision making outside of the local community. At the same time that federal support has been on the decline over the last decade, the decline in state oil revenues beginning in 1983 has produced a reversal of previous state policies and programs set up to provide support for local community and household activities. While this coincident decline is seriously impacting the local economy, both the creation and alleviation of the situation are almost entirely beyond Alakanuk's control.

Moreover, the negative impact accompanying the decline in capital projects and general public sector support has served to point out the fact that, whatever the objectives, the massive funding appropriated in the late 1970s and early 1980s did not improve economic productivity or stability in the form of permanent jobs and diversification. The short-term benefit of capital projects and facility development was temporary employment and income expansion. In the aftermath of the oil boom, the down side of a decade of unchecked spending is beginning to be more clearly understood.

3.3 Village Organization

3.3.1 Changes in Village Population and Composition

Alakanuk was established as a winter camp in the early 1920s, after which it experienced steady and sustained growth. This growth was in part motivated by three interrelated factors: fisheries development, the establishment of schools, and federal housing construction. It reflects a common pattern in the Yukon-Kuskokwim Delta over the last 60 years.

Five families were using the site as a winter village by 1927. Its accessible and protected location combined with its proximity to an abundance of resources (including the Yukon River salmon fishery, tundra fishery, sea mammal hunting, numerous species of birds and land mammals) made it a preferred site.

Table 3-4
Composition of Employment
Alakanuk, Alaska
1982 & 1986

	1982				1986			
	Full-Time		Part-Time		Full-Time		Part-Time	
	#	%	#	%	#	%	#	%
Private Sector	12	17	14*	18	13	22	22	31
Public Sector	59	83	64	82	47	78	49	69
Local Govt	(24)	(34)	(19)	(24)	(13)	(22)	(13)	(18)
School Dist.	(31)	(44)	(8)	(10)	(30)	(50)	(2)	(3)
Federal Govt	(4)	(5)	(37)**	(48)**	(4)	(7)	(34)**	(48)**
TOTAL	71	100%	78	100%	60	100%	71	100%

Notes: * Actual figure ranged from 12 to 17, here converted to 14 to simplify calculations.

** Includes 34 and 30 part-time National Guard employees in 1982 and 1986 respectively.

Sources: Orth and Associates, 1983; Field Protocol, 1987.

Table 3-5

**Average Household Income by Source
Alakanuk, Alaska (1986)
and United States (1985)**

	Alakanuk		United States	
	Dollars	Percent	Dollars	Percent
<u>Earned Income</u>				
Nonwage Self-employment	\$ 3,089	16.3%	\$ 2,938	7.4%
Private Sector	2,757	14.5	18,366	46.0
Government	6,320	33.3	4,289 ^a	10.7 ^a
(Federal)	(1,109)	(5.8)	*	*
(State)	(2,188)	(11.5)	*	*
(Local)	(2,466)	(13.0)	*	*
(Institutional)	(557)	(2.9)	*	*
Other	2,271	5.7	*	*
Subtotal	12,166	64.1	27,864	69.7
<u>Unearned Income</u>				
Governmental Transfers	6,787	35.8	5,625	14.1
(exc. Perm. Fund)	(3,982)	(21.0)	(5,625)	(14.1)
Permanent Fund	(2,805)	(14.8)		
Interest/Dividends/Rent	24	.1	6,469	16.2
Subtotal	6,811	35.9	12,094	30.3
TOTAL	\$18,977	100%	\$40,006	100%

Note: ^a Combined figure for federal, state and local governments and institutional income sources.

Source: Field Protocol; U.S. Department of Commerce, Bureau of Economic Analysis.

Table 3-6

State and Federal Capital Project Expenditures
 Alakanuk, Alaska
 FY 1981 - FY 1984

State of Alaska Legislative Appropriations

FY 1981

Municipal Grant: D-8 Cat \$ 150,000

FY 1982

Department of Transportation and Public Facilities
 Dock Feasibility 300,000
 Municipal Grants: Equipment 200,000
 Gravel Stockpile 800,000

FY 1983

Municipal Grant: Erosion Control 400,000

FY 1984

Municipal Grant: Sewage Lagoon 72,000
 Street Lights 10,000
 Senate Bill 162: Water and Sewer Systems 840,000

Alaska Department of Community and Regional Affairs Grants

FY 1981, Bulk Fuel Storage Facility 70,000
 FY 1982, City Hall Expansion 100,000
 FY 1983, Fire-fighting Equipment 18,000
 FY 1984, Fire Station and Truck Vehicle 51,500

U.S. Department of Housing and Urban Development Housing Program

1981, 25 houses 2,300,000

U.S. Public Health Service Water and Sewer Projects

1981, Federal Budget Impact Funds 330,000

TOTAL \$5,641,500

Source: Orth and Associates, 1983:118.

Table 3-7

**Average Household Consumption Expenditures
Alakanuk, Alaska (1986)
and United States (1985)**

	Alakanuk		United States	
	Dollars	Percent	Dollars	Percent
Housing	272	3.1	4,654	15.5
Utilities	1,392	15.8	3,795	12.7
Heating oil	(537)	(6.1)	(523)	(1.8)
Electricity	(376)	(4.3)	(693)	(2.3)
Water/Sewer	(391)	(4.4)	(180)	(.6)
Other	(88)	(1.0)	(2,399)	(8.0)
Groceries	4,008	45.6	5,775	19.3
Transportation	2,022	23.0	4,030	13.5
Hunting/Fishing Gear	335	3.8	--	--
Insurance	20	.2	--	--
Medical	7	.1	3,755	12.5
Clothing & Accessories	780	8.3	2,214	7.4
Other	--	--	5,741	19.1
TOTAL	\$8,786	99.9	\$29,964	100.0

Sources: Field Protocol; 1987 Statistical Abstract.

In the 1930s, 1940s, and 1950s Alakanuk experienced substantial growth connected with both the opening of the Yukon River to commercial fishing and the establishment of a cannery at the site in 1940. During this period Alakanuk's population grew at the expense of other smaller tundra camps and villages. At the same time the character of the community underwent a major change. Originally Alakanuk was composed of half a dozen closely related families who were direct descendants of the area's original population and village groups. Gradually it was transformed through a combination of intermarriages and emigration into a community composed of the remnants of a number of subregional village groups drawn from as far south as the Kusilvak mountains and as far upriver as the vicinity of Old Hamilton and Mountain Village. The quality, as much as the quantity, of Alakanuk's population growth continues to impact the character of the community (see Fienup-Riordan, 1986:47ff., Figure 12).

The Alakanuk cannery changed hands in the early 1960s and was subsequently moved to Sunshine Bay, where it is still located. By that time Alakanuk was already a substantial subregional population center, consisting of approximately 30 households, and became the site of a new BIA elementary school in 1967. More families moved into Alakanuk to take advantage of the school. Population data from the U.S. Department of Commerce Bureau of the Census (U.S. Department of Commerce, 1982) indicate that Alakanuk's population increased dramatically from 265 in 1970 to 522 in 1980 (Table 3-8). However, it is likely that these statistics are in error. The most significant period of growth was prior to 1970 and was probably directly related to the establishment of the cannery in 1941 and the BIA elementary school in 1967. Village census information supports this position. Corporation statistics indicate that by 1971 Alakanuk had 468 shareholders in the local village corporation. Additionally, a 1974 ISER survey found that of 467 Alakanuk shareholders at that time, 428 lived in Alakanuk, 39 lived elsewhere, and 9 shareholders in other village corporations lived in Alakanuk, resulting in a population of 437 Alaska Natives in Alakanuk.

The community experienced substantial immigration over the period 1940 to 1970. This primarily reflects the consolidation of the region's Native population rather than large scale immigration into the community from outside the region. Beginning in the 1960s, the community also began to experience short term out-migration by young adults to attend school and obtain employment. A significant number of individuals (especially women) subsequently married non-Natives and have not returned to Alakanuk.

In recent years, Yup'ik Eskimos have remained the predominant portion of the total population (94 percent). This proportion is on the low end of the scale for coastal communities in western Alaska, which range from 94 to 98 percent Yup'ik Eskimos. Alakanuk's relatively high non-Native population is consistent with its composite character and has important social and economic repercussions which will be described below.

Median ages in Calista Region census areas are among the lowest in Alaska. According to the 1980 census, the median ages of males and females in the Wade-Hampton census area (including Alakanuk) were 20.8 and 19.4 respectively (lowest in the state) (see Table 3-8). In the nearby Bethel census area comparable figures are 22.7 and 21.1 (third lowest, behind the Kobuk census area in northwest Alaska) (U.S. Department of Commerce, 1982).

Household sizes were also large, due in part to high birth rates, improved health care, and lower mortality (among both senior citizens and infants), and traditional expectations that encouraged extended family households often including three generations and delays in the establishment of new households by young adults (see Table 3-8). Average household size in the Calista Region was the largest in the state in 1980: 4.87 in the Wade-Hampton district and 4.59 in the Bethel district (U.S. Department of Commerce, 1982).

These factors permit fairly large households headed by relatively senior household heads. For example, in 1982 in Alakanuk, the mean household size and age of household head was 5.6 and 49 years (Fienup-Riordan, 1986:222). More significant, these figures reflect the marked decline in infant mortality in the region over the last two decades, from 56 per 1,000 post natal in 1960 to 5.1 per 1,000 in 1980 (Lum et. al., 1986). At the same time, the fertility rate increased dramatically from 6.01 in the decade 1944-55 to 9.07 from 1954-65 due in large part to the transition from breast to bottle feeding. The subsequent introduction of fertility control technologies in the decade 1965-1974 has resulted only in a slight decline in the fertility rate to 8.5 (Brainard and Overfield, 1983:211-219).

3.3.2 Housing Availability and Spatial Arrangement

The substantial growth in village population in the late 1960s was accompanied by the first of four major housing projects in the community, implemented in response to the substandard and crowded character of traditional housing. The 31 houses that were built by the Alaska State Housing Authority (ASHA) in 1969 followed the pattern already apparent in the 1950s of spreading the village population out over four miles of high ground along Alakanuk Slough. As described elsewhere (Fienup-Riordan, 1986:51), the effect was a community internally divided among a number of physically separate, socially and economically independent, and self-sufficient village groups. This pattern of "villages within a village" was reinforced by subsequent housing projects, including 8 houses built by the BIA in 1977, and 35 houses built by the Association of Village Council Presidents (AVCP) Housing Authority in 1981.

To this day, houses are most often built in family groups, with the parent's home in close proximity to those of their married children. Another pattern is for young couples to take up residence in the house previously occupied by their parents. Over the years the center of Alakanuk has shifted several times, and each new housing project has chosen a different focus, moving progressively further up the slough. Thus the elderly parents may live in the new housing built up to four miles from the house they previously occupied, which is presently the residence of one or more of their children.

3.3.3 Fertility and Mortality

Perhaps the most significant development in village demography during the last five years has been the increased rate of live births and a dramatic and tragic increase in violent deaths (see Table 3-9).

Table 3-8

**Population, Household, and Family Characteristics
Alakanuk, Alaska
1939 - 1985**

Year	<u>Population</u>			<u>Households</u>		<u>Families</u>	
	Total	Native	Other	Total	Average HH Size	Total	Average Fam Size
1939	197						
1950	158						
1960	190						
1970	265	247	18	45	5.89	41	6.46
1980	522	491	31	105	4.97	95	5.49
1984	515						
1985	556						

Average Annual Rate of Growth

Year	<u>Population</u>			<u>Households</u>		<u>Families</u>	
	Total	Native	Other	Total	Average HH Size	Total	Average Fam Size
1939-1960:	-0.2%						
1960-1970:	+3.4%						
1970-1980:	+7.0%	+7.15%	+0.6%	+8.8%	-1.7%	+8.8%	-1.6%
1960-1980:	+5.2%						
1980-1985:	+1.3%						

**Household Composition: Number of Persons and
Average Annual Rate of Growth, 1970-1980**

	1970	1980	Rate of Growth
In Family Households	243	509	7.7%
In Non-Family Households	12	13	0.8%
In Group Quarters	10	0	NA

Sources: U.S. Department of Commerce, Bureau of the Census, Special Tabulations, 1980; Alaska Department of Labor, Alaska Population Overview, 1985 Estimates, April, 1987. Note: figures for 1985 are provisional.

Table 3-9

**Population Natural Increase and Migration
Alakanuk, Alaska
1970 - 1985**

Year	Total Population	Percent Male	Percent Female	Percent Native	Percent Age 15-34
1970	414	NA	NA	93.2%	25.0%
1980	522	50.6%	49.4%	94.1%	33.0%
1985	556	NA	NA	NA	NA

Period Population Change	1970-1980	1980-1985
A. Period Starting Population	414	522
B. Births over Period	150	76
C. Deaths over Period	40	24
D. Net Natural Population Change over Period (B minus C)	+110	+52
E. Expected Period Ending Population (A plus D)	524	574
F. Actual Period Ending Population	522	556
G. Net Migration over Period (E minus F)	-2	-18
F. Ratio Net Migration to Starting Population (G divided by A)	-0.4%	-3.2%

Sources: U.S. Department of Commerce, Bureau of the Census, Special Tabulations, 1970 and 1980.

Alaska Department of Health and Social Services, Vital Statistics, 1970 - 1985.

The region's disproportionately high rate of infant mortality has declined steadily since the mid-1960s. At present, the region is experiencing a minor baby boom as the young women born after 1960 enter their child bearing years, while many of their mothers are still having children. Not only is the number of live births on the increase region wide, but the number of teenage (pre-18) pregnancies has increased four fold from 1981 to 1986. During this same period, the proportion of married mothers compared to unwed mothers has remained two to one (O'Brian, 1986). Of the 30 sample households in Alakanuk interviewed in both 1982 and 1987, 11 have had a live birth during the last five years, three of which were out of wedlock.

At the same time that Alakanuk has been having a baby boom, it has also been subject to a remarkably high death rate. Over the period 1982 to 1987, an alarming number of violent deaths have occurred within the village. The majority occurred as suicides over a 16 month period in 1985 and 1986. During this period eight persons (seven men and one woman) successfully committed suicide. Another nine attempted suicides have been reported, and it is likely that a significant number of attempts have gone unreported. These suicides and attempted suicides occurred among young adult residents between the ages of 18 and 30. All of the successful suicides were believed to be alcohol and drug related.

In trying to understand this tragedy, it is important to realize that the epidemic experienced by this cohort apparently cross cut most local socioeconomic criteria. Although a number of those who died were unemployed at the time, came from relatively marginal families within the community, or came from households heavily involved in subsistence activities, none of these factors dominated. The one economic factor that does seem to distinguish those households which experienced a suicide from those which did not is income stability and predictability. All suicides and violent deaths occurred in households which had unpredictable (due to limited training or ability) and/or unstable (e.g., seasonal) incomes. Conversely, no deaths occurred in households with both a stable and predictable income. From an economic point of view, it is also noteworthy that all of the suicides clustered in the 20- to 30-year-old age range, a robust sector of the population demographically, accounting for 20 percent of the total population (Table 3-10). Also, it is the members of this cohort who are normally looked to by economists and sociologists as the cores of new households and future employment growth. However at present employment opportunity in the village is shrinking and although children are being born at a rapid rate, new households are slow to appear.

In addition to a high incidence of suicide, Alakanuk has been subject to an alarming number of accidental and violent deaths, many of which have also been alcohol related. Alakanuk's experience is not without precedent in rural Alaska in general and western Alaska in particular. The region as a whole is characterized by high rates of alcoholism, child abuse, sexual assault, violent crime, and mental health care problems. In spite of the many state funded schools and projects over the last ten years, the region has seen an over-all increase in these rates rather than a decline. While the rate of infant mortality has dramatically declined over the last 20 years, the regional suicide rate has increased from 5.5 to 55.5 per 100,000 during the same period. This rate is five times greater than the national rate and in nearly all cases alcohol was a contributing factor (Lenz, 1986:4,5). Also, it is generally true in the Delta region that the expression of personal and family problems tends to be inner directed or directed at close kinspersons, as was the case in Alakanuk. Overt conflict more often occurs in interethnic confrontation.

It is worth noting that although violent, self-inflicted death is not unprecedented in the Yukon Delta region, comparable episodes have not occurred in the more traditional and more tightly integrated communities of the lower coast or in the tundra or Kuskokwim villages that have coalesced into the Yupiit Nation. Native residents within Alakanuk as well as throughout the region have repeatedly assessed the epidemic as a consequence of the conditions under which it occurred: it is the opinion of many Native informants that while each individual is responsible for his own actions, he can not be expected to act appropriately if he is not in control of his land, language, and life. The implication is that a segment of Alakanuk's population has lost its sense of control. The current economic recession may exacerbate the situation.

The conclusion that the relatively socially fractured and non-traditional character of the region was a contributing factor in the suicide epidemic is both supported and refined by a recent study of violent deaths among young adults in southwest Alaska villages (Doak and Nachmann, 1987). This study concerns a cohort of 643 children born in western Alaska (22 in Alakanuk) between October 1960 and September 1962. Over the last 26 years these children have been the subject of continuing medical, psychological, social and developmental observations (e.g., Maynard and Hammes, 1970; Lum et al., 1986). Within this cohort, there have been a total of 24 violent deaths since 1974, 7 of which were suicides, including three of the recent 8 in Alakanuk. Doak and Nachmann attempted to determine how those who suffered violent deaths differed from a control group matched for age, sex and village of origin. They conclude that of 16 items more frequently present in suicides and all violent deaths than in controls, four items show statistically significant differences between the suicides and the controls: (1) region of origin (i.e., from villages toward the mouth of the Yukon); (2) evidence of family success; (3) evidence of personal success; and (4) alcohol use. They conclude:

It seems possible ... that in a region of disrupted cultural loyalties, bright and ambitious youth from families who have ventured most daringly into the socio-economic arena might be the ones most exposed to painful pressures which, with the help of alcohol, could tip them into disaster.

Personal success was the one item which marked the suicide group as different from other violent deaths. This lends itself to the speculation that, given the pressures which we have assumed pushed all of them toward some violent extreme, those who were most striving for excellence might be the ones most likely to take deliberate self-destructive actions rather than careless, unplanned ones (Doak and Nachmann, 1987).

3.3.4 Kinship Organization

The basic unit of analysis in this study is the household. This was considered pragmatically appropriate for data gathering. However, the choice of this unit must occur with the recognition that extensive bilateral extended family groups underlie numerous critical economic exchanges joining households within and between villages,

Table 3-10

**Population Distribution by Sex and Age
Alakanuk, Alaska
1980**

Age Group	Total Population		Male Population				Female Population			
	Number	Percent	Total	Percent	Native	Other	Total	Percent	Native	Other
Under 5 yr	70	13%	35	7%	33	2	35	7%	34	1
5 TO 14	148	28%	66	13%	64	2	82	16%	81	1
15 TO 19	67	13%	38	7%	36	2	29	6%	27	2
20 TO 34	105	20%	56	11%	52	4	49	9%	45	4
35 TO 64	119	23%	64	12%	58	6	55	10%	48	7
65+	13	2%	5	1%	5	0	8	1%	8	0
TOTAL	522	100%	264	51%	248	16	258	49%	243	15

Source: U.S. Department of Commerce, Bureau of the Census,
Special Tabulations, 1980.

providing essential support in the form of food, labor, and shared capital. The following section will attempt to describe the economic dimensions of these networks in Alakanuk, followed by a brief discussion of changes observed between 1982 and 1987, both in specific networks and in kinship organization in general.

Residence Patterns

The modern village of Alakanuk has drastically changed its appearance over the last 50 years. Along with the amalgamation of numerous extended family groups into modern village conglomerates, the biggest single change in regional social organization over the last half century has been the transformation from extended family to nuclear family households as the dominant post-nuptial residence pattern. Large-scale housing projects undertaken since the Johnson Administration's "War on Poverty" have made houses available on an unprecedented scale. Up until very recently, the percentage of nuclear families residing in single family dwellings has been steadily increasing.

In 1982 the pattern of nuclear family residence was dominant in Alakanuk. Of the 43 households interviewed in both 1982 and 1986, 29 were nuclear in 1982. The majority of those that were not nuclear were extended family households, with a small number of households being either denuded or the residence of a single individual.

In 1987, this pattern was substantially changed. First of all, only 18 of the sampled households displayed a nuclear residence pattern. Of these all but one represented households which had not changed household type over the five year interval. The remaining household comprised the single newly formed household in the sample. Of the 25 non-nuclear households, the majority represented extended family groups. Eight of these had been formed by the addition of grandchildren into the household, and typically included a married couple with their unmarried children and children's children. However, four of the households had become denuded nuclear households through the loss of one or more family members. All of these losses were through death rather than through migration away from the community.

The change in residence pattern from one dominated by nuclear family households to one in which the nuclear pattern has been distorted through either the addition or the subtraction of members is significant, and has important economic and social implications. First, both the increased number of households in which three generations reside under one roof and the fact that new households appear to be very slow to form indicates that while the birth rate has remained stable, the community may not have either the social or the economic wherewithal to support the establishment of new households. The last major housing project in Alakanuk was completed just prior to field work in 1982. Since that time, no federal or state subsidized housing has been constructed in the village. The one recently formed household in the sample was living in an older dwelling that had stood vacant since 1981. Although several more dwellings continue to be vacant, these are privately owned and tend to be reserved for use by family members. The lack of housing, combined with the limited financial resources available to young people to build their own homes, may be a factor in the low rate of new household formation. Related to this, it is also noteworthy that only four marriages have been performed over the last five years, and that even the one newly formed household mentioned above represents a couple cohabiting.

The decrease in nuclear family residence and the slow formation of new households is perhaps an indicator of economic recession. It does not represent the formation of new and unusual social constructs. Rather, it represents a reversal to the residential pattern of the 1950s and 1960s. Even during the 1970s and early 1980s when housing availability allowed residential separation and new household formation, the social importance of the nuclear unit, sometimes correlated with their residential separation, was often more apparent than real. Although they might live separately, the working relation and informal sharing between distinct households still served to connect them.

Emerging Marriage Patterns

Along with changing household configurations and residential patterns, marriage patterns are also in flux in Alakanuk. As mentioned above, relatively few formal marriages have been celebrated in the village in the last five years. At the same time, it is more and more common for couples to live together, either with their parents or on their own, before marriage. This ambiguous period may resurrect the traditional pattern of trial marriages. Traditionally, only after the birth of a couple's first child was their social and economic independence recognized. The reinstatement of this pattern at this point in time may also reflect national trends, including the general relaxing of morality, as well as the economic belt tightening and housing shortage mentioned above. In this regard it is worth mentioning that even in one of the cases where a couple was recently wed, they have continued to reside with the husband's parents until they are able to establish a home of their own.

The small number of marriages in the 1980s may also reflect the mismatch of single men and women. According to 1980 census figures the ratio of single men to women over 15 years of age was close to 2 to 1 (see Table 3-11). Like many other communities in rural Alaska, Alakanuk's sex imbalance reflects in part the exodus of marriageable females and the marriage of Native women to non-Native spouses. Of the four Native/non-Native couples residing in Alakanuk in 1986, all were between a non-Native man and a Native woman.

Other current trends in village marriage patterns include marriage between men and women more equal in age and later marriage, particularly for women. Both of these trends in the last ten years correlate with increased opportunity for and value placed on higher education, including both high school and college, and employment opportunities. This refocus is where the essential difference lies between traditional and contemporary social relations. As we shall see, the educational opportunities and career choices that have begun to reform the relationship within the married couples of a single generation also mark the key difference between the contemporary and traditional relationship between the generations.

Interregional and Intraregional Family Spread

Not only is the framework for social and economic relations changing for residents within the village, but the character of extended family networks is also changing. As described above, Alakanuk today draws members from a wide radius. In the past 30 years, marriage has been used as a means of absorbing newcomers into the extended family networks of which the village is composed. As a result, households in

Table 3-11

**Marital Status by Sex
Persons 15 Years of Age or Older
Alakanuk, Alaska
1980**

	Single	Married	Separated	Widowed	Divorced	Total
Men	73	79	5	6	--	163
Women	47	78	1	13	2	141

Source: 1980 Census

Alakanuk can be classified according to the quality of their extended family ties within the village as either focal, central, or marginal. A central household is defined as one in which at least one parent was an original village resident (e.g., the son or daughter of parents who were considered to be Alarnarmiut). A focal household is one in which both parent households were central. A marginal household is defined as one for which neither parent household was central. According to this scheme over half (52%) of households in Alakanuk can be classified as central. Of the remaining households, 28% are marginal and only 20% are focal. Village households can also be divided according to the number of closely related households to which they are attached either outside the village or outside the region. Given the overlapping areas from which present households have derived members, it is not surprising that better than half of the households in Alakanuk in 1982 had closely related family in other parts of the region. What is more striking is the number of families that had close relatives outside of the region, either living in Anchorage or beyond. Over half (55%) had close relatives living at that distance.

There is also a striking distribution in which types of households had members living in other parts of the region and beyond. As measured by closely related families within the region, focal households have the fewest members living outside of the village, while marginal households have the most. This is predictable as, by definition, marginal households draw their members from beyond the village in the first place, so that they will normally have left one or more closely related households behind. This overlapping character of individual household affiliations, with ties both within and beyond the village of residence, is at once what makes intervillage relations so strong and intravillage relations so fragmented.

This exercise provides quantification of intervillage connections (largely representing immigration and marriage exchanges). What is striking, however, is the number of extraregional household ties, largely representing emigration. Forty-four of the 80 households contacted in Alakanuk in 1982 had closely related kinsmen living outside the region. Slightly fewer than half of these households had only one such extension, but the remainder had two or more. Forty-one percent of the households with ties beyond the region did not have other ties beyond the village.

Looking at the distribution of extraregional ties by type of household, central households not only had a lower percentage of related households living beyond the region, but also a lower percentage of households without intraregional ties but with ties beyond the region. The difference is not great and may not be significant. However, it may be a reflection of Alakanuk's historic vitality and the fact that up until 1982 it was a steadily expanding community. Focal households could afford to lose members and marginal households either drew from outside the region or had nothing to keep members from leaving. However, central households have been busy building a secure social position in the village and simultaneously need and can absorb all the help they can get. Their ties to the outside are largely intraregional and reflect growth, not depletion.

At present the village as a whole is not experiencing either marked immigration or emigration. The total number of village households has increased by only three in the last five years. Of the 103 households present in 1982, five have since moved away, while three new families have moved in. During the same period, six new households were formed, two pairs of households combined, and one household divided. Thus it can be generally said of Alakanuk that people are born into the village or they marry in. Although a number of young women have married non-Natives and continue to live outside the region, the majority of individuals who leave the village for employment or education return.

3.3.5 Structure of Production and Distribution

Other aspects of social organization that have undergone quantitative change over the last five years are patterns of interhousehold exchange of goods and services. Ironically perhaps, the emerging nuclear pattern of the last half decade hid these exchanges. In Alakanuk in 1982, the pattern of nuclear family residence was the norm. At that time, however, elaborate patterns of interhousehold sharing, adoption, hunting partnerships, and work group configurations were seen to provide numerous contexts in which extended family relationships were maintained. These patterns have been described in detail elsewhere (Fienup-Riordan, 1986:169ff). Tables 3-12 and 3-13 and Figures 3-3 and 3-4 summarize that information and attempt to graphically display the extended family household interrelation.

This interrelation is especially significant in the realm of subsistence harvesting and processing activities and is a valued feature of such activity. Although many individual harvesting activities can be performed by individuals or by the members of an individual nuclear family household, the smallest unit capable of the extraction and processing of the complete range of subsistence products is the multigenerational extended family unit consisting of members of several households. Although most of the major acts of production can be performed within the nuclear family household, consisting of a husband and wife with or without children, help given to and accepted from both ends of the spectrum is practically as well as culturally required. Thus the central unit of production and consumption is the extended family unit,

consisting of one, two or more households, joined by bonds of consanguinity and affinity. Within this general pattern, there is a wide range of actual organizational configurations. The variation of the size and composition, as well as actual production, of the extended family group is tremendous, as can be seen from Figure 3-2. Not only is there a wide practical range at any one point in time, but also working alliances within an extended family can vary from year to year.

One thing that does remain constant within the extended family unit, whatever its actual contours, is its structural interdependence. As will be seen in the following section, in which detailed harvest figures are given for extended family networks, there is specialization by individual households. The result of this specialization, however, is not to make selected households more independent, but rather to make the total extended family network more interdependent and productive. Diversity in diet and distribution is the cultural ideal. Moderate specialization and diversification within the extended family unit is one means of achieving that goal.

As a further example of the interdependence and informal structure of distribution within the extended family unit, interviews with householders in both 1982 and 1987 indicated that the average household proceeds from commercial fishing and trapping were highest for those households in which the household head was neither very young nor very old. Furthermore, middle-aged householders tended to harvest a wider variety of species and to invest more money into the harvest. These are not such striking observations in themselves, but are merely the quantification of the pattern generalized in Table 3-12, in which adult married men are seen to be responsible for a greater percentage of the harvesting tasks than either their seniors or juniors.

Although the middle-aged householder may be the most productive, the right to consume the produce was given over to the ascending generation. Older residents may no longer excel in production, yet they continue to command the lion's share of the take. Conversely, the younger householder, although still fairly high in productivity, is disproportionately denied the right to consume the harvest through both formal and informal rules of distribution. Instead his surplus can be seen to support the needs of less productive elders unable to satisfy their own requirements.

In 1982, the normal manifestation of this pattern was in a common food cache for staples such as salmon and seal oil behind the parent's house. A senior female member of the extended family group was the one to decide what was to be eaten, when, and by whom. Although the cache was the product of the joint effort of the extended family unit, draws of dried fish, oil, and berries by younger householders took on the character of a request. Once the stores had been accumulated, they became the responsibility of the women of the extended family network both for processing and for distribution within and beyond that unit. In 1982, this same interdependence between households could also be seen within a single household, consisting of three generations under the same roof. There the energy of youth was harnessed to and combined with the resources of middle age and the expertise of the senior generation to achieve an effective productive configuration. With the rise in extended family households over the last half decade, this configuration is becoming more frequent. Here the stratification of the extended family unit at any one point in time can be seen to parallel the transformation of the single family household through time. The production and distribution by the extended family unit, as well as the village as a whole, was organized according to the social-structural oppositions epitomized in the cooperative relationship between husband and wife, and the donor/recipient hierarchical relationship between parent and child.

Table 3-12

The Structure of Production
Alakanuk, Alaska
1986

Category of Activity	Work Configuration (Category of Persons)	Unit of Food Sharing and Distribution
Spring Rabbit Herding	Groups of young men including both relatives and nonrelatives.	Each hunter retains the rabbits he shoots. Alternately, the entire catch may be divided in even shares among the participants.
Rabbit Snaring/ Muskrat Hunting	Men and women, either singly or in pairs.	Catch shared within the extended family. Furs given to adult female for processing.
Bird Hunting	Individual men, F-S, B-B, cousins, friends. Variable configurations. No stable partnerships.	Daily catch shared within the extended family
Seal Hunting	Both stable and unstable partnerships. Stable partnerships between B-B, F-S, WB-ZH. More temporary alliances between 1st cousins, uncles and nephews, and friends. Also occasionally a H-W team and F-D teams.	Kill is property of the successful hunter, who gives it to his wife and mother for processing. Bearded seals taken in the spring and seals harpooned in the fall may be divided between partners according to a specific hierarchy of parts.
Seal Butchering	Hunter's mother, wife, and/or unmarried sisters. Older women separate seal fat from skin (nayugluni), while younger women do preliminary butchering.	Fat and meat of young man's first kill may or may not be distributed among resident nonrelatives/distant relatives. Rest of seal kept by extended family household, with informal gifts of preferred parts or whole small seals to elderly villagers.

Table 3-12 (continued)

The Structure of Production
Alakanuk, Alaska
1986

Category of Activity	Work Configuration (Category of Persons)	Unit of Food Sharing and Distribution
Beluga Hunting	Pairs of hunters reflecting both stable partnerships of seal hunting and temporary alliances between cousins or friends.	Village wide distribution with preferred parts reserved for the successful hunter and his partner. Elderly given preferred parts.
Spring Gathering/Greens/Eggs/Grasses	Individual Woman/Mother-Child/Grandmother-Grandchild/Sisters/Cousins/Friends	Female gathering for use by extended family.
Salmon/Herring Fishing	Partnerships between F-S, B-B and cousins in that order. Also occasionally H-W and F-D.	For commercial catch money reserved for use by the individual household and/or fisherman. Subsistence catch processed for use by extended family, the unit of borrowing and informal visiting.
Salmon/Herring Processing	Fisherman and fisherman's wife, parents, in-laws sisters and brothers, and unmarried daughters and sons. Members of the extended family work together.	Catch usually processed in one smokehouse, then either divided between households for separate storage, or stored together, usually in parents' food cache.
Berry Picking	Husband-wife, accompanied by parents and small and extended family group for winter use as a feast food. Served to guests in informal and formal ritual distribution.	Preserved by oldest members of household children.

Table 3-12 (continued)

**The Structure of Production
Alakanuk, Alaska
1986**

Category of Activity	Work Configuration (Category of Persons)	Unit of Food Sharing and Distribution
Wood Rafting/ Greenwood Harvesting	Wood rafting by F-S B-B and H-W teams. M-S teams also for greenwood.	Cached wood for use by single family household and/or extended family group.
Moose Hunting	F-S, B-B, pairs of cousins or friends. Variable partnerships from year to year.	Hunter's first kill distributed widely within the village to both relatives and nonrelatives. Succeeding kills shared within the extended family with occasional gifts to friends and relatives.
Fall/Winter Trapping	Partnerships between adult males, B-B, cousins, and unrelated males. Often partner- ships of long duration established specifically for that purpose.	Sale of furs by individual hunter/ trapper. Meat consumed within extended family group.
Fall/Winter Net Fishing (Bering Cisco, Broad White- fish, Burbot)	By lone householder or by pairs or small groups of men from a single household or extended family group. Men often go with partners, helping check each others' traps.	Distribution depend- ing on variety and amount: 1) small daily catch of burbot or whitefish reserved for individual family; 2) sack of Bering cisco shared within the extended family; 3) sled full of shee- fish, broad whitefish shared within the entire village.

Source: Fienup-Riordan 1986:176-179, Table 8.

Table 3-13

**Activities Encompassed by the Extended Family*
Alakanuk, Alaska, 1986**

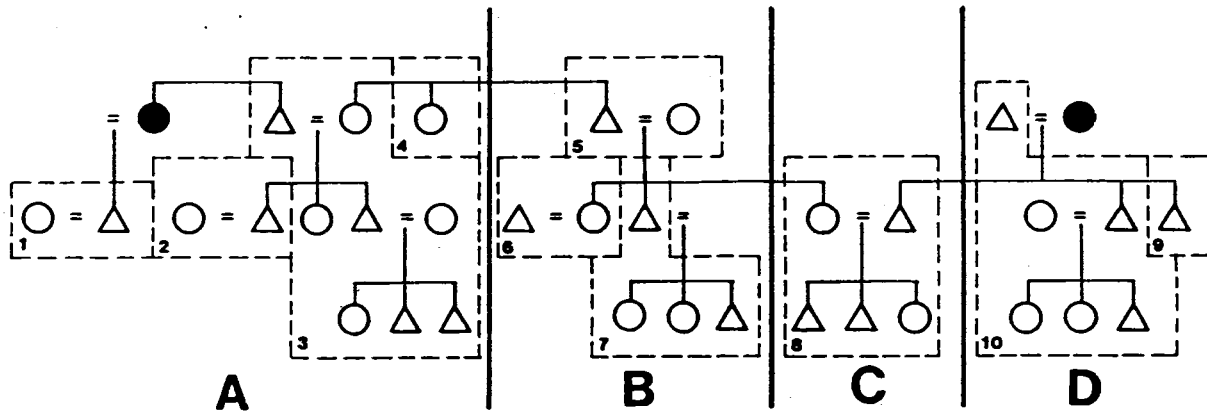
Activity	<u>Kinship Status</u>					
	G-father	G-mother	Father	Mother	Son	Daughter
Spring Rabbit Herding						X
Rabbit Snaring					X	X
Muskrat Hunting					X	X
Greenwood Harvesting			X	X	X	X
Water Fowl Hunting			X		X	
Ptarmigan Hunting			X		X	
Seal Hunting			X		X	
Seal Butchering		X		X		
Beluga Hunting			X		X	
Beluga Butchering			X		X	
Egg Hunting		X		X		X
Gathering		X		X		X
Commercial Fishing:						
Salmon			X		X	
Herring			X		X	
Subsistence Fishing:						
Salmon	X					
Herring			X		X	
Salmon/Herring Processing		X		X		
Berry Picking	X	X	X	X	X	X
Wood Rafting			X		X	
Moose Hunting			X		X	
Trapping	X		X		X	
Fall/Winter Fishing	X		X	X	X	
Hooking			X	X	X	
Herring Eggs		X		X		
Smelt		X		X		
Needlefish		X		X		
Blackfish		X		X		
Net Mending	X					
Trap Construction	X					
Boat Building	X		X			
Babysitting		X		X		X

Note: * "X" indicates participation of kin category in a particular activity.

Source: Fienup-Riordan, 1986:180, Table 9

Figure 3-2

The Structure of Distribution
Alakanuk, Alaska
1986



Key: ○ = Females
● = Females (Deceased)
△ = Males
"=" = Marriage

Horizontal lines depict sibling relationships
Vertical lines depict descent relationships

Notes: Households 1 through 10 maintain separate storehouses, fall/winter fishing sites, own boat, own snow machine, and usually one of each category of gun. Any individual's catch is shared at least within this unit.

Extended Families "A" through "D" unite for salmon fishing and processing at camp or in village; often shared smoke house; raw and cooked food regularly shared within extended family. Women join in preparation of feast food. An increasingly self sufficient unit.

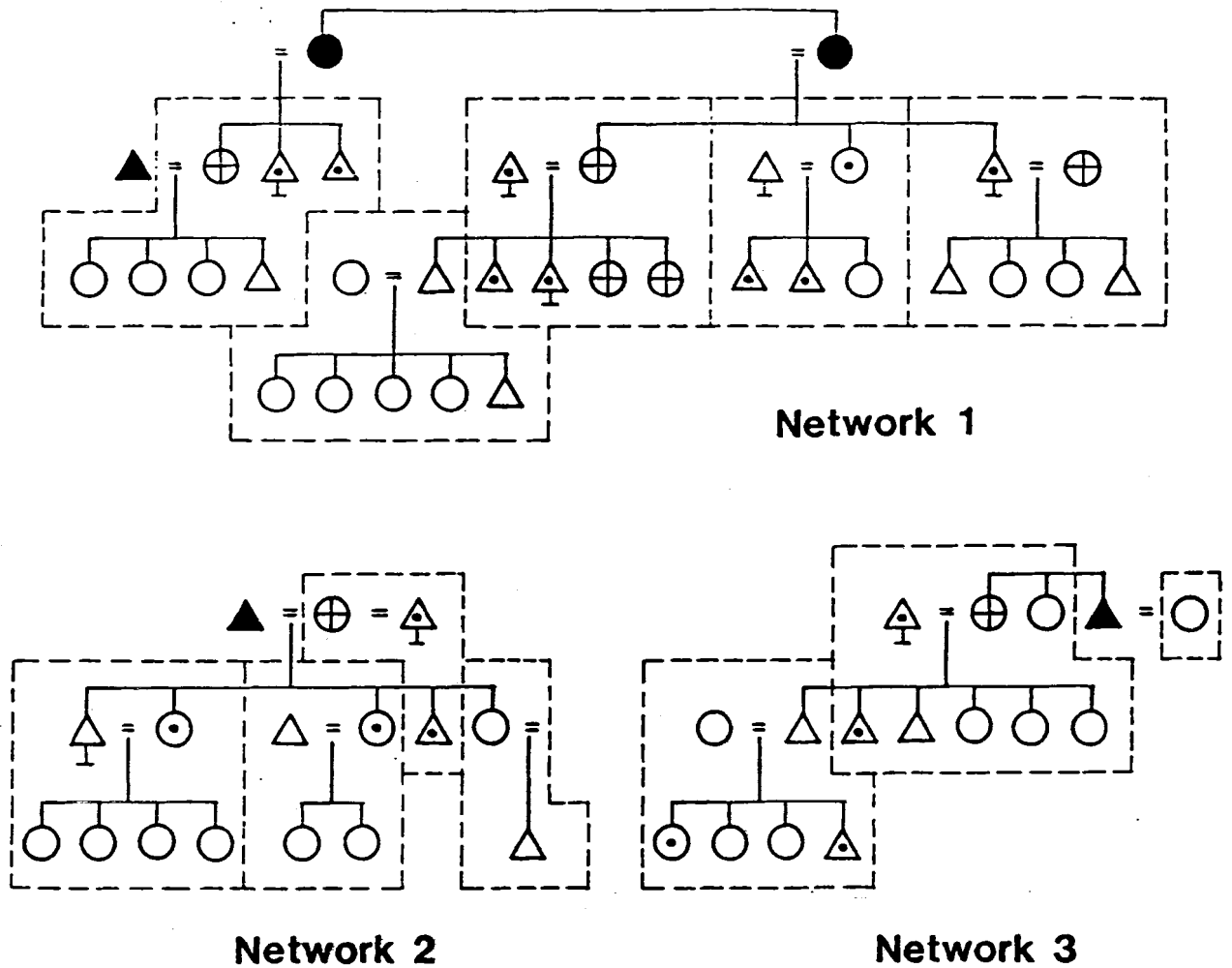
Frequent Informal Sharing between related households of "A" and "B", "B" and "C", and "C" and "D". Decline of exchange within this category of relationship is seen locally as a critical measure of change.

Formal Distribution to all households based on age of household head of portion of catch in event of beluga kill, walrus kill, or young hunter's first seal.

Source: Fienup-Riordan 1986: 183, Figure 32

Figure 3-3

The Structure of Production:
 Three Functional Salmon Processing Networks
 Alakanuk, Alaska
 1986



- Key:**
- ⊙ = Women who cut fish in village
 - ⊕ = Women who cut fish in camp
 - = Women who do not cut fish
 - △ = Men who subsistence fish from village
 - △ = Men who commercial/subsistence fish from village
 - △ = Men who commercial fish from village
 - △ = Men who do not fish

Source: Fienup-Riordan 1986: 181, Figure 31

Now that the informal structure of distribution within the extended family group has been specified, the formal and informal structure of distribution between extended family groups will be discussed. One cultural goal of the extended family is to accumulate and pool a diversity of resources for distribution beyond the extended family unit. The system of distribution and exchange by which this is accomplished is not economically motivated in the sense of having as a goal the acquisition of resources not obtainable except through trade between haves and have-nots. Nor is the system built specifically to protect against major or irregular harvest disruption, activated under the premise that gifts given in time of plenty insure a return at a later, leaner date. These are but functional side effects of the system.

The exchange of goods between extended families represents a strategy for a cultural statement. In brief, as the animal originally gives itself to the hunter, the hunter is in turn required to pass on his catch. In the distribution of his catch he is not viewed as giving up a possession, as he never owned it. Both within the family and between families this translates into the constant giving and receiving of goods and services, ranging from the informal shared meal between neighbors to the formal exchange of gifts during the annual intervillage dances.

Each individual household, as well as each extended family group, shares a broad range of people, both relatives and non-relatives, fellow villagers and visitors, friends and strangers. All manner of goods are exchanged, both the scarce and the plentiful, the valuable and the ubiquitous. The breadth and depth of the system is captured in the saying, "You are really rich if you eat only gifts, and give all you have away."

A harsher but equally accurate characterization of the Alakanuk exchange system is captured in the aphorism "Gifts make slaves as whips make dogs." Here, however, the gift becomes the mechanism for the establishment of a power hierarchy. This aspect of the ubiquitous shared meal and gift of fresh meat should never be underestimated. The contemporary village can be understood as a collection of overlapping extended family networks, wherein the most elaborate gift giving is accomplished by the most wealthy, and correspondingly powerful, networks. These extended family groups invest the largest percentage of their incomes into harvesting pursuits. Yet they are frequently difficult to distinguish from their peers in terms of material possessions (including housing, clothing, local investments), as a result of the support they supply to less well provisioned family networks. Although difficult to measure, redistribution of the harvest is a critical element in the economy as well as the social hierarchy of the village. At the same time that it valorizes social distance, it diminishes economic discrepancies, with wide ranging implications for the village economy as a whole.

In 1982, a number of distinct modes of interhousehold distribution (both formal and informal) were distinguished including: the shared meal (*neruciluni*); gifts of raw or cooked food between households (*payuggluni*); the division of game at the kill site (*nengirturtuni*); and the annual exchange dance (*kevgigluni*). Three important observations were made concerning these modes of redistribution. First it was pointed out that rather than a system in which gifts of food balanced out over time (e.g., Wolfe 1981:228), village households can be divided between hosts and guests, with powerful households hosting more than their share. Second, it was noted that these exchanges did not necessarily follow established routes laid down along the obvious lines of affinal or consanguineal relation. On the contrary, gifts of food are used in a myriad of contexts to celebrate the establishment of new and the continuity in enduring bonds of social solidarity. Third, immediate balanced

reciprocity did not characterize informal patterns of sharing and exchange. Even sale or barter of naturally occurring products could more accurately be designated an indirect rather than a direct transaction. Although the transaction might be consummated with cash, the primary motive in the harvest of resources was not strict economic gain. Only a handful of households in Alakanuk continue to harvest non-commercial resources such as seals and sheefish specifically for sale. In the event of an abundant harvest, what happens in the majority of cases is not the conversion of the excess to economic value but the extension of the effective kin group through the distribution of the catch.

In sum, in 1982 the primary goal of the exchange system was to accumulate within the extended family for distribution beyond it, both within the village and between villages, at whatever level the individual household or extended family network could maintain. As a productive unit, the typical village household was concerned with efficient production. However, in the context of the extended family, diversity was seen to rank over efficiency, variety over maximum productivity, and interdependence over independence. Inter- and intra-community distribution was seen to be a central concern. No village household or family network existed that had no obligations or was owed nothing in return.

To give a more concrete picture of the range and extent of the exchange of goods in Delta villages today, Table 3-13 lists the gifts received by and given to three unrelated households during a one month period in the spring of 1982. As can be seen, the households differ markedly in both character and the degree of their involvement in the local exchange system. Household #1 was primarily a recipient and has only limited involvement, while household #2 was much more involved overall, and more often as a donor. Finally, household #3 gave and received in relatively equal portions, but on a very small scale.

These discrepancies can be explained in part by reference to other household characteristics. For instance, household #1 was an elderly and prestigious parent household for an active and large extended family network, while household #2 represents a middle-aged couple with half a dozen teenage children, as active in the harvest of local resources as they are in their distribution. Middle-aged householders and their families are, in fact, the most active donors in the exchange system as a whole as they often have the abundant human resources necessary to harvest the natural. This is not to say, however, that all middle-aged householders are as active as household #2.

In 1987, all of these features of the exchange system continued to operate, including shared meals, gifts of food, the division of the catch, and the annual exchange dance. However, while inter-household exchange of goods and services continued as an important aspect of village life, two changes in the exchange system were observed. First, as in 1982, younger householders were markedly less involved in the exchange system than their elders. This can, in part, be accounted for by their position as donor in intrafamily production and distribution. As mentioned above, younger householders are often responsible for the informal regular provisioning of a closely related parent household. However, their subordinant position in the process of distribution and exchange was not solely responsible for their reduced involvement in intravillage exchange. Wage employment and a greater commitment to the personal household over the extended family network, competed with their involvement in intravillage exchanges, both at the informal level described above as well as at the more formal level such as the annual exchange dance. The majority are still active donors within the extended family network but not beyond it.

The second development noted in 1987 was an overall weakening of the exchange system in recent years. The common complaint is that villagers, especially young people, do not share as they used to or as they should. One woman expressed real indignation at what she perceived as the ultimate blasphemy: throwing away extra stores of fish and game in the spring instead of giving them to people who need them.

Although villagers are unanimous that the range and diversity of the goods passing between households has declined in recent years, they also contend that the occasions on which they do share take on heightened significance. For example, moose and seal are relatively expensive resources to harvest. Not all families are able to obtain them themselves and must rely on the informal and formal exchange system to supply them with meat and oil. Over the last half dozen years, fewer and fewer hunters distribute their catch beyond the bounds of their extended family network. However, in talking about moose hunting they do not fail to recall the occasions on which they did, in fact, pass out shares of their kill.

In conclusion, there appears to be a division drawn roughly along generational lines between those households more and less active in the exchange system. The older householders tend to be those which use the products of wage employment to extend effective kin ties within and between villages through continued active participation in traditional formal and informal redistribution networks. They support rather than undercut community and family cohesion, as well as providing for the equalization of both the products that money can and the products that it cannot buy. The younger generation, however, appears to be moving away from full participation in the village exchange system. This may be a function of their age and/or an indication that they eschew its fundamental importance. Thus although the economic significance of inter- and intravillage exchange may be seen to be on the decline, the cultural and social significance of those exchanges may remain. On the other hand, the decline in the economic significance of the exchanges that traditionally served to bind independent extended families into larger social groups at a time when these extended families are living in closer proximity to each other than ever before can not be easily dismissed. It may both signal and contribute to severe social fragmentation and the alienation, especially of young adults, that can be observed in the village at the present time.

3.3.6 Summary

In sum, while the extended family network is still the key unit of production, distribution beyond that network has become simultaneously more delimited in amount, broadened in range of association, and possibly heightened in significance. As mentioned in the discussion of village formation, the aggregate character of Alakanuk, and the fact that it draws from an expanded territory, makes it into something both like and unlike its traditional counterpart. Thus far, patterns of sharing and distribution have accommodated these differences. However, while the principal social exchanges have been retained, the quantity of goods exchanged has substantially decreased.

3.4 Time and Productivity

In the previous section, the structure of production and distribution was described insofar as it pertains to patterns of household interdependency. In the following section, the economic dimensions of this as well as other forms of village activity will be discussed. These forms include a comparison of employment that produces earned income and harvest activities which yield returns of food, earned income, or both. In this section activities such as skill attainment and education as well as board and committee activities will be considered. Comparative information from three household networks will also be tabulated to indicate the variety of strategies employed in coordinating competing and conflicting productive activities.

3.4.1 Harvest Activity

The preceding section on the structure of production and distribution provides a glimpse of the diversity of harvesting activity the people of Alakanuk engage in. Detailed descriptions of the harvesting process are contained in Fienup-Riordan (1986:89-168). The period from just before breakup until just prior to freeze-up is the busiest time of the year and provides the richest variety of available species. The late fall and winter months are also potentially productive periods. The least productive period is from mid-December through mid-March, when the cold and dark make extended forays away from the village less productive and less appealing (see Figure 3-1).

Field work in 1987 confirmed that most households (93%) continue to engage in subsistence activities and that most (84%) do so in combination with members of other households. However, although most households hunted, fished, and gathered with members of other households within the village, only the households that were most successful in harvesting activity regularly did so with members of other villages (64% of the cases).

For reasons discussed below, protocol questions concerning time allocated to subsistence activities must be read with care. The more successful hunters did tend to go out more often than unsuccessful hunters. However, if those households composed of elderly or disabled individuals are removed from the sample, lack of or limited employment in a household corresponded with neither a significant increase or decrease in hunting excursions (Table 3-15). Similarly, time spent hunting versus time spent engaged in wage employment did not correlate with relative activity or inactivity in subsistence pursuits as measured in number of trips taken. As we shall see, however, real conflicts do exist between wage employment and the harvesting of specific species.

Field observations made in 1987 also indicated that the majority (80%) of households engaged in fishing in 1986. Of these households, 27% fished commercially only, 23% fished only for subsistence, while the majority (50%) did both. Here again, lack of employment was associated with less effort given to commercial fishing, while households that were generally more successful in their harvesting activity and more fully employed tended to be more active in both subsistence and commercial fishing. Of those that did engage in both commercial and subsistence fishing, the majority gave more time to the former than to the latter.

The complementary relationship between employment and commercial fishing indicates that the two activities support each other rather than conflict. In fact in Alakanuk, as elsewhere on the Delta, cash derived from employment is necessary to purchase and maintain the equipment required to fish commercially. Also wage employment does not usually conflict with commercial fishing in terms of timing. Those who work at the school have the summer free for fishing, while those employed by the City and the village corporation are regularly allowed leave during fishing periods. While one might posit a conflict between full or part time employment and active participation in commercial harvesting activity, there is a positive association.

In describing activities directly related to subsistence harvesting, householders confirmed the generalization that it was largely the women of the household who were responsible for butchering and processing the catch. However, men often helped in this activity and, when women were not available to process fish and game, men did so. The mean time spent processing per week was 6.4 hours. The majority of households spent less than half as much time processing the harvest than they spent procuring it. Still a significant proportion of households (45%) spent as much or more time processing their catch than procuring it. This result suggests that while a household may not be heavily involved in harvesting activities, they still receive a substantial share of the harvesting efforts of others which they then process for themselves. However, these findings must be read with caution, as they also encompass households that both produce and process subsistence resources in very small amounts.

The same degree of caution must be employed when interpreting the response to the question concerning time spent hunting and fishing relative to time spent working for wages. Although the majority of households (48%) spent as much or more time hunting and fishing as involved in wage employment, this figure included households who might only hunt and fish a small amount but who were not employed at all (representing 20% of the 44 households sampled). In fact, households in which no one was employed spent an average of only 8 hours a week engaged in subsistence activity, as in the majority of adult members of these households were either elderly or disabled.

More important, a relatively high proportion of households (37%) spent less time engaged in harvesting activity than at their job. This figure supports the local perception of a shrinking resource base and a general decline in harvesting activity over the last half decade. However, this must also be read with caution, as 30% of those households that reported spending less time hunting than on the job still spent 40 or more hours a week hunting and fishing.

Although more time was spent in harvesting activity in the past, current harvesting activity continues to be significant. For those households in which one or more persons were employed, the mean time spent hunting per week was over 12 hours. Although wage employment may conflict with the harvest of specific resources, full or part-time employment correlates positively, not negatively, with the amount of time spent harvesting subsistence resources, as it contributes to the household's ability to purchase and maintain the equipment harvesting activity requires.

Table 3-16 summarizes the mean hours per week allocated to different activities for households divided into several job categories. The negative correlation between households in which no one is employed and time devoted to harvesting activity can be attributed to the fact that in most such households the primary occupants are elderly or disabled, as mentioned above. Even so, the positive correlation between employment and time spent engaged in harvesting activity is significant. Table 3-17 indicates that those households with the highest income allocated the most time to hunting and fishing activities.

The majority of sampled households (66%) used only their own gear for harvesting activities and 61% indicated that they repaired and maintained their own hunting and fishing gear. In those cases in which the repair was done by someone other than a household member, this was usually a friend and no terms of compensation or trade were specified. Those households in which no one was employed proved an exception here, with the majority (55%) paying for the repair of their gear. This will become understandable, however, when the relatively marginal character of lower income households is described below. An attempt to estimate how much time per week households spend repairing gear generated a mean of 4.6 hours per week. This figure indicates that although less than the time spent hunting and fishing, gear maintenance is a regular and important village activity. Low income families allocated more time to gear repair than higher income families, reflecting their dependence on older equipment in poor condition.

3.4.2 Employment

Another important measure of productive village activity is wage employment. As can be seen from Table 3-18, the level of total village employment has remained remarkably stable during the last four years. Also employment remains largely dependent on public sector funding, both state and federal. Over the period 1982 to 1987 the actual number of jobs has declined slightly. This decline is relatively modest in absolute terms, and is associated with the decline in federal and state funding. The present employment picture was accurately summed up by Alakanuk's City Manager: "When oil goes down we have one phone line. When it goes up, all kinds of fancies."

The number of persons employed has remained relatively stable. However, the steady population increase and especially the increase in the number of young men and women seeking jobs, has meant that the unemployment rate is rising rapidly. This is particularly true in the 20- to 30-year age range.

It is also noteworthy that the majority of those employed in 1986 were also employed in 1982. In four out of five cases, these individuals have changed jobs during the last five years, yet have remained employed. This indicates that while there are neither consistency nor stability in who holds what job, the pool of individuals from which employers draw has remained remarkably stable and closed. This lends support to the increase in unemployment in the population in the 20- to 30-year-range mentioned above.

Another indicator that unemployment is concentrated in the 20- to 30-year-old age range is the lopsided response elicited by the protocol question concerning reasons for nonemployment. Among older unemployed residents, only 27% answered that their employment status was due to inability to find work, while 68% cited disability, age, illness, or child care responsibilities as their primary reason for not working. The vast majority of younger respondents (those less than 30 years old) cited not being able to find work as the reason for not being employed. Conflict between a previous job and harvesting activity was cited only once as the reason for unemployment. Moreover, the majority of respondents in all age categories maintained that employment never, or only occasionally, interfered with subsistence or commercial harvesting activity.

Table 3-14

**Hunting Trips by Head of Household
by Season and Employment Status
Alakanuk, Alaska
1986**

	Head of Household Median Number of Times Hunted	
	Winter/Spring	Fall/Summer
All Households	30	27
HHs with Nobody Employed	14	14
HHs with One Member Employed	18	14
HHs with One or More Employed	36	30

Source: Field Protocol

Table 3-15
Collective^a HH Time Allocated to Subsistence
By Household Employment Status
Alakanuk, Alaska
1986

Activity	Time Allocation (mean hours per week)			
	All Households Interviewed	Households with nobody employed	Households with only one employed	Households with one or more employed
Hunting	10.7	8.0	8.3	12.3
Fishing	12.2	11.4	10.4	15.3
Gathering	3.8	3.7	5.1	4.8
Gear Repair	4.6	3.4	3.5	5.1
Butchering	6.4	7.0	13.9	11.8
Board ^b	0.7	1.5	1.5	10
Total	38.4	31.6	42.7	50.3

Notes: ^a Includes all Household Members

^b Refers to service on various leadership boards

Source: Field Protocol

Table 3-16

**Harvesting Activity per Household
by Income Level
Alakanuk, Alaska
1986**

	Income Level			
	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile
Hours per Week (Mean)				
Hunting	8.3	9.7	10.1	14.6
Fishing	7.8	15.5	7.4	17.7
Gathering	4.7	3.5	3.9	3.1
Gear Repair	2.8	5.8	4.0	5.1
Butchering	4.0	10.0	4.9	5.8
Board	0.0	3.0	0.9	1.5
Dollars per Year (Mean)				
Total Utilities	500	1274	1247	2406
Total Harvest	1164	2123	1780	2742
HH Expenses	3476	8194	9455	13045
Assets and Debts (Mean)				
Cumulative Assets	8427	10650	16022	26320
Cumulative Debts	538	621	1310	1543
Members Employed (Mean)				
Total	0.88	1.00	1.24	1.60
Full Time	0.22	0.30	0.58	1.10
Part Time	0.66	0.70	0.66	0.50

Source: Field Protocol

Table 3-17

Composition of Jobs
Alakanuk, Alaska
1982 and 1986

Employer	1982			1986		
	Full-Time Jobs	Part-Time Jobs	Total Jobs	Full-Time Jobs	Part-Time Jobs	Total Jobs
Local Administration:						
City Office	5	--	5	3	1	4
Police Officers	5	--	5	3	--	3
Road Maintenance	2	--	2	2	--	2
Taxi Drivers	--	2	2	--	1	1
Pool Hall Clerk	2	1	3	--	2	2
AVEC Operators	--	2	2	--	2	2
Clinic Custodian	1	--	1	--	1	1
Sauna Operators	9	2	11	5	--	5
Librarian	--	1	1	--	1	1
Miscellaneous	--	11	11	--	5	5
Local Admin. Total:	24	19	43	13	13	26
State:						
Public Schools Classified						
Education Aides	7	1	8	8	1	9
Food Service	4	--	4	3	--	3
Maintenance Crew	2	--	2	2	--	2
Custodians	--	2	2	1	1	2
Cultural Heritage	--	2	2	1	0	1
Part-Time Misc.	--	3	3	--	--	--
Total Classified	13	8	21	15	2	17
Public Schools Certified	18	--	18	15	--	15
State Total:	31	8	39	30	2	32
Federal:						
Tribal Office	1	--	1	1	--	1
Post Office	1	1	2	1	1	2
YKHC Health Aides	2	2	4	2	3	5
National Guard	--	34	34	--	30	30
Federal Total:	4	37	41	4	34	38

Table 3-17 (continued)

Composition of Jobs
Alakanuk, Alaska
1982 and 1986

Employer	1982			1986		
	Full-Time Jobs	Part-Time Jobs	Total Jobs	Full-Time Jobs	Part-Time Jobs	Total Jobs
Private Sector:						
Alakanuk Corporation:						
Store Manager	1	--	1	1	1	2
Store Perm. Employees	6	--	6	5	6	11
Store Temp. Employees	--	5	5	--	--	--
Corp. Administration	3	3	6	3	6	9
Alstrom's Store	1	1-6	2-6	1	4	5
Jorgensen Store	2	1	3	3	2	5
United Utilities	--	1	1	--	1	1
Airlines	--	2	2	--	--	--
Private Sector Total	12	12-17	14-24	13	22	35
Grand Total	71	76-81	147-152	60	71	131

Sources: Fienup-Riordan, 1986
F. Orth & Associates, 1983
Field Protocol, 1987

3.4.3 Commercial Fishing and Trapping

Another important development in Alakanuk's current employment picture is the steady decline in the importance of both commercial fishing and trapping in the local economy. A relatively small portion (21.5%) of the aggregate local income was derived from commercial fishing and trapping in 1982, and still less in 1987 (16%) (Table 3-19). In the intervening four years, three factors have contributed to the steady decline of the importance of these activities.

First, recent regulations have limited participation in the commercial salmon fishery. The limited entry system keeps the number of commercial fishermen exploiting the fishery constant over time. Approximately the same number of Alakanuk fishermen were active in the salmon fishery in 1986 as had been active four years before (see Table 3-2). The absolute number of commercial fishermen has remained the same because the Yukon salmon fishery is considerably less lucrative than its Bristol Bay counterpart, there has been little loss of local permits to outsiders. However, as the younger generation continues to mature, the number of potential fishermen excluded from the fishery has steadily increased.

In addition to limited entry, the Yukon Delta commercial fishery has been subject to increasingly strict regulation. Fishermen complain that the periods designated by ADF&G for commercial fishing are both poorly timed and few in number, making it difficult to realize a profit. A case in point is one young man who decided not to go to college after graduation from high school in 1981; he chose instead to remain in the village where he could make a good living commercial fishing (\$12,000 to \$15,000 annually). At that time, he took a job at the school as a teacher's aid as much to fill the time as for the salary, which was not substantial. Now, seven years later, his personal income from commercial fishing has declined to \$5,000 annually and he has decided to pursue a college degree to become a certified teacher. Part of his motivation is that he can no longer support his family by commercial fishing. He is one of the fortunate minority who has an alternative.

Commercial trapping has also decreased in importance. In the last five years, the number of active trappers has been cut in half, declining from 16 to 8. This reflects both the increasing scarcity of game and the attrition of older, more knowledgeable hunters reaching retirement age. Observations suggest that few new entrants to trapping have occurred since 1982. However, even given the time and skill required to become an accomplished trapper measured against the relatively low returns, this decline may not necessarily be permanent.

3.4.4 Non-Income Activity

Two major categories of non-income activity must be considered to get a clear picture of time allocation and productivity in Alakanuk. The first is board work. The survey indicated a household mean of 0.7 hours per week spent on board or committee work (see Table 3-15). The majority of households spend no time at all on such activity, while a handful of households contribute between two and five hours a week to formal committee work. Households which spent the same amount of time hunting as they did in wage employment were more active in board work than other households. The same was true of households that were more successful in hunting and fishing activities in 1987 compared with 1986. Of those households in which more than one

person was employed, one third (8 of 24) gave two or more hours a week to board work. These results suggest that different dimensions of productive activity are not mutually exclusive and tend to support each other. Thus, households that are successful in the realm of subsistence activity and wage employment are also the most active on local boards and committees.

The second category of non-income activity is recreation. Although no attempt was made to quantify time allocated to recreation, field observations indicate many village households devote a large amount of time to a regular combination of recreational activities including: television, video games, saunas and steam baths, bingo, and during the winter months traditional dancing and sports viewing/participation. During the fieldwork period (August 1987) household heads were often unavailable for interviews during the evening, between 6 and 12 PM. At that time of year steam bathing was a time consuming nightly activity for a large percentage of the adult population.

Compared with the mean time per household spent on productive harvesting activity (37.7 hours per week) and wage employment (less than 40 hours per week), time spent on non-productive recreational activities probably accounts for an equal and often greater amount of time. When people were not engaged in productive labor, it was not because they lacked the time for it, but because they lacked either the opportunity (finite means) or the inclination (finite ends) or a combination thereof.

3.4.5 Training and Education

As employment in Alakanuk continues to decline, competition increases for those jobs that become available. One facet of this competition is the decision by more and more residents, young adults in particular, to leave Alakanuk to pursue a college education or other form of specialized training. Each of the half-dozen 1987 high school graduates had plans to leave Alakanuk to continue their education. Of the four 1986 graduates, one went to the University of Alaska in Fairbanks, one went to Hascal College in Kansas, one joined the army, and one opted to remain in town. Other avenues of education and training regularly pursued outside Alakanuk include Kuskokwim College in Bethel, the Seward Skill Center, and Job Core. Until recently Adult Basic Education (ABE) was available in Alakanuk. However, federal cut-backs have eliminated that option. Although there are several good candidates for the University of Alaska's Exceed program in the village, no one is presently enrolled.

In addition to increased interest in post-high school education and training, more individuals are looking toward village jobs traditionally held by non-Natives as avenues to economic security and advancement. Already there are two certified Native teachers resident in Alakanuk, with two more individuals leaving this fall to work toward teaching certificates. There is room for increased local employment in the school, with both positive economic and social repercussions in the village. However, the number of teaching jobs available is finite and can meet only a small percentage of the village's future employment needs.

3.5 Income

Table 3-18 summarizes annual household monetary and non-monetary income for 1982 and 1986. As can be seen, on a general level there has been significant continuity in income sources and the proportion of annual household income contributed by different sectors of the economy. No dramatic changes have occurred.

Although Alakanuk's total income picture has remained relatively stable over the last four years, in comparison with the rapid growth of the preceding decade, a closer look at Table 3-18 reveals important changes in the distribution of income by source. First, both non-wage and wage/salary income declined in absolute and relative terms between 1982 and 1986. This is consistent with observed decline in village employment over the same period, as well as annual income through both major sources of non-wage income (commercial fishing and trapping).

Although components of earned income exhibit a pattern of decline, income from transfer payments has increased by over 50 percent of levels observed in 1982. While the proportion of monetary income from transfer payments was 24% in 1982 it had jumped to 36% by 1986. Moreover, as indicated above, it is likely that the 1986 protocol information underestimated the contribution of transfer payments to household income. This is a substantial increase and reflects two major developments. First the rising dependence on transfer payments is coincident with a rising unemployment rate (Table 3-17). Although the job market has remained stable, the number of persons depending on it has continued to increase. The result has been a steady increase in the number of persons applying for and receiving transfer payments such as food stamps, AFDC, Aid for the Elderly, and unemployment. The amount of money derived from these sources has also increased (Fig. 3-5). Of total government transfers, 83% came from state rather than federal sources. This is consistent with past patterns, with one exception.

Although applications for benefits from both state and federal programs are increasing, the dramatically increased dependence on government transfers also reflects the increasing importance of one program in particular. This new source of income is the State of Alaska's Permanent Fund Dividend introduced in 1982. This one category contributes close to half of the \$6,788 per household per annum that derived from government transfers in 1986. The introduction of this program accounts for the greater part of the rise in transfer payments in the local economy. Both store keepers and villagers commented on the increased spending power associated with the annual arrival of dividend checks. At present this appears to be as significant an event in the timing of local consumer purchases as the traditionally expansive fishing season. For many families the Permanent Fund contributes more to the household than the summer fishing season. Its importance as a source of income in a perennially poor community can not be overestimated.

Not only has the composition of personal income changed over the last five years, but the source of household income has also been changing. As indicated below for the entire Wade-Hampton census district (Table 3-19), along with the rising dependence on transfer payments, the reliance on state and local government over the federal government has increased as the major source of earned household income. In fact, as a proportion of the total income, income from state and local government has risen more strongly in the Wade-Hampton census district than in any other district in rural Alaska (Table 3-20). Moreover, among Alakanuk households a strong positive correlation was observed between high household income and state and local employment.

Table 3-18
Average Household Income
Alakanuk, Alaska
1982 and 1986

Monetary Income (Dollars)	1982		1986	
	Mean	%	Mean	%
Earned:				
Non-Wage	3936	21	3059	16
Wage & Salary	9993	55	9076	48
Unearned:				
Transfer	4516	24	6788	36
Total	17,940	100	18,477	100

Non-Monetary Income (Pounds of Dressed Weight)	1982 Mean	1986 Mean
Salmon	542	808
Non-Salmon	1,131	549
Sea Mammals	90	196
Land Mammals	303	358
Birds	183	75
Total:	2,280	1,989

Number of Species per Household	16	NA
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Sources: Fienup-Riordan, 1986: 220-21, Table B; 246, Table 25
 Field Protocols, 1987

Figure 3-4

Use of AFDC, Food Stamps, and Combination Alakanuk: 1980-1987

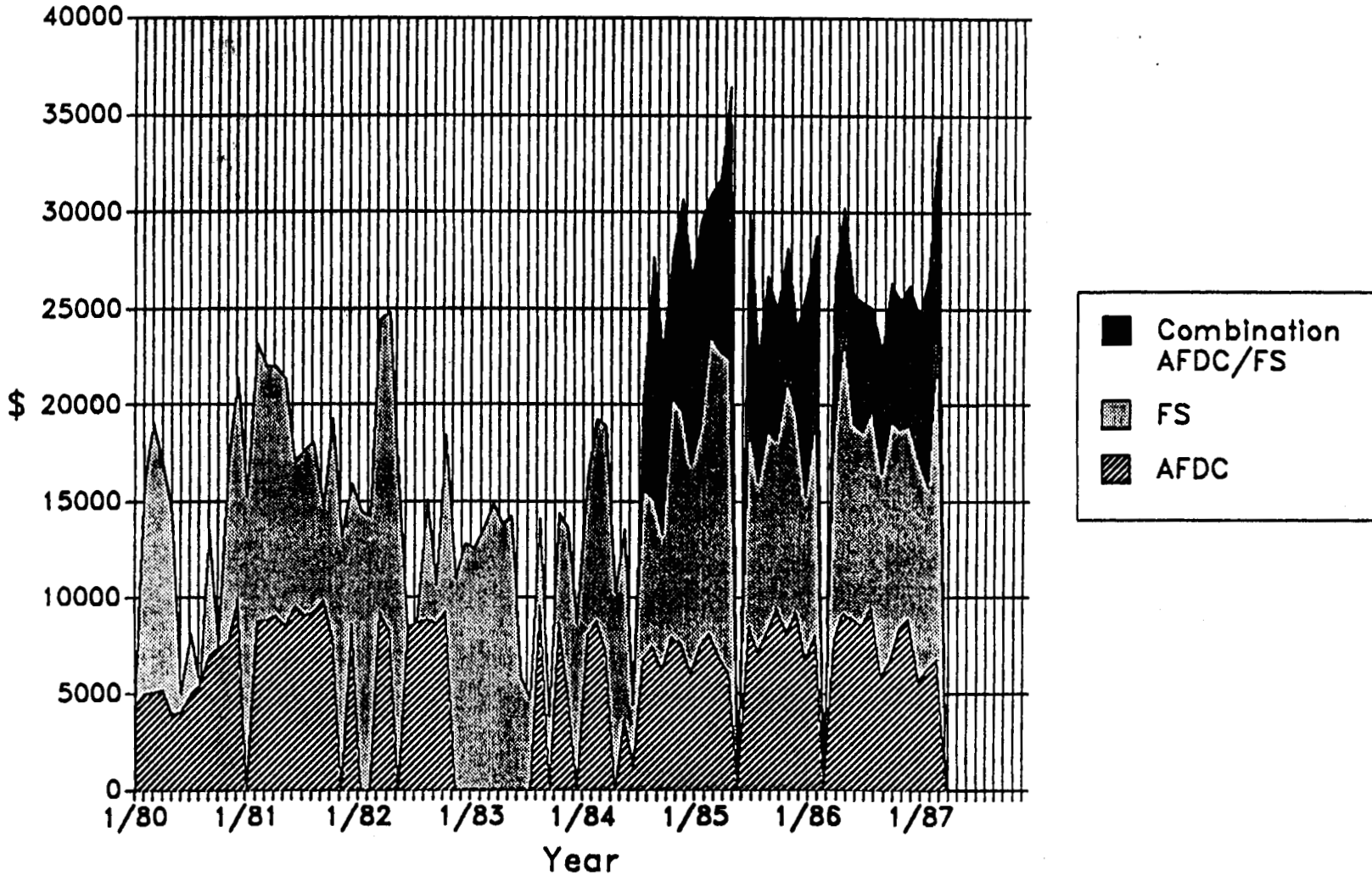


Table 3-19

**Percentage of Personal Income by Type and
Percentage of Earnings by Sector
Wade-Hampton Census District
1969, 1974, and 1979-1984**

Personal Income, by Type:	1969	1974	1979	1980	1981	1982	1983	1984
Dividends, Interest, and Rent	1	1	2	3	3	3	4	4
Transfer Payments	18	50	31	30	26	30	31	26
Earnings	81	48	67	67	71	67	65	70
Total:	100	100	100	100	100	100	100	100
Earnings, by Sector:	1969	1974	1979	1980	1981	1982	1983	1984
Transportation	3	NA	6	6	6	8	7	8
Other Private	45	NA	25	25	32	25	26	21
Federal Government	44	47	24	21	19	11	7	6
State and Local Government	8	13	46	48	43	56	61	66
Total:	100	100	100	100	100	100	100	100

Table 3-20

**Earnings in State and Local Government Employment
as a Percentage of Total Income
for Fourteen Rural Alaska Census Districts:
1969, 1974, and 1979-1984**

District	1969	1974	1979	1980	1981	1982	1983	1984
Wade-Hampton	6	6	31	32	30	38	40	46
Yukon-Koyukuk			12	13	14	14	16	18
Bethel			23	24	27	30	31	33
Dillingham			16	16	16	18	17	18
Kobuk	9	11	29	30	27	31	31	35
Kodiak	10	9	10	11	12	11	11	12
Nome	22	21	25	26	26	29	31	33
Prince of Wales/Outer Ketchikan			16	16	15	16	17	17
Wrangell-Petersburg			12	11	11	11	11	15
Skagway			15	14	14	16	16	16
Aleutians	3	4	6	7	8	9	8	10
Haines	16	16	22	19	21	18	16	14
Valdez-Cordova			22	22	20	20	22	22
Bristol Bay Borough	6	32	15	16	18	18	19	18

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

The distribution of income by source in Alakanuk also shows significant variation among households at different income levels, as shown in Table 3-21. First, a relatively small number of households capture a disproportionate amount of total village income. Second, high-income households capture the greater share of the total village income from each income source. Households in different income levels also derive their income from different sources. As can be seen from Table 3-21, the households in the highest-income quartile derive the highest proportion of their incomes from the private sector (22.8%). In all three of the lower quartiles, government transfers account for the highest percentage of household income, with nonwage self employment (e.g., commercial fishing) second in importance. Commercial fishing is, in fact, the most important in the lowest quartile relative to other income sources for that quartile. However, in the lowest quartile, the absolute value of commercial fishing income was substantially lower than the absolute value of commercial fishing for the three remaining quartiles.

3.5.1 Non-Monetary Earnings

The most striking development in Alakanuk's income picture over the last half decade has been the growth in transfer payments. Nevertheless, wage employment remains the mainstay of the village economy. However, even with wage employment a significant focus of activity and source of income, a substantial amount of that income continues to be plowed back into the harvest of local resources. In 1982 the average annual capital cost of a complete complement of hunting and fishing equipment was \$2465, exclusive of fuel and maintenance costs, and in 1986 these expenses were even higher.

While effort allocated to subsistence and commercial harvesting activities remained high, productivity was down, as measured both numerically and in terms of local perceptions. Of the 44 households interviewed in 1987, 32 reported that they were less involved in subsistence activity than in 1982. Over 50% of sampled households indicated that less than half of their hunts were successful in 1986, and 66% indicated that their harvests of fish and game were down from 1982. The reason most commonly cited (39% of the entire sample) for this decline was that fish and game were less available within a 20-mile radius of the village. The second most common reason (30%) was the aging, illness, or disability of the household's primary hunter. This is a particularly significant response, indicating that young men are not forming households of their own and are also not replacing their parents within their natal households as major providers.

Of those households (20%) that reported an increase in subsistence activity over the last four years, the majority attributed this to increased mobility and maturity on the part of the principal hunter. One hunter said that his harvest was higher because he had more mouths to feed. However, even those households in which the harvest increased agreed that game was more difficult to obtain.

As can be seen from Table 3-22, while the total household non-monetary income has declined, this decline was concentrated in several categories. The harvest totals for five of the seven categories actually increased. To understand these changes, conditions surrounding the harvest of each species group must be considered.

Table 3-21

**Personal Incomes by Major Source
Alakanuk, Alaska
1986**

	Income Quartiles									
	0-7k/%		7-15k/%		15-22k/%		22-100+k/%		Total	
Nonwage/Self-Employment	7260	28.7%	25,770	16.7%	39,305	17.7%	63,600	14.7%	135,935	16.3%
Local/City Government			19,100	12.4%	34,400	15.5%	55,000	12.7%	108,500	13%
Federal Income	5,000	19.7%	2,000	1.3%	3,300	1.5%	38,476	8.9%	48,776	5.8%
State Income	2,050	8.1%	12,000	7.8%	340	0.2%	81,879	18.9%	96,269	11.5%
Institution Income	500	2.0%			12,000	5.4%	12,000	2.8%	24,500	2.9%
Income from Private Sector Employers (Corporation, Store)			7,400	4.8%	15,200	6.8%	98,700	22.8%	121,300	14.5%
Total Government Transfers	9,620	38%	87,712	57%	117,570	52.9%	83,752	19.3%	298,654	100%
Interest/Dividend/Rent Income	900	3.6%			150	0.1%			1,050	0.1%
Total:	25,330	100%	153,982	100%	222,265	100%	433,407	100%	834,984	100%

Note: Figures reflect total for 44 households sampled in Alakanuk during 1987 field work. They do not account for total village population.

First, hunters were unanimous that small game (especially rabbits, hares, muskrats, ptarmigan, and fox) is increasingly difficult to obtain, even beyond what can be expected from the cyclical nature of their availability. They are also inhibited in the spring harvest of geese and waterfowl by increased regulation by U.S. Fish and Wildlife. As a direct result of these limitations, the harvest of small land mammals and birds has perceptibly declined since 1982. However, the cash intensive harvest of large land mammals (e.g., moose) and sea mammals has increased during this same period. As a result, there has been an overall increase in the harvest of these species while the harvest of birds has been cut in half. The summer salmon harvest as well as the berry harvest have also increased significantly. At the same time, the harvest of non-salmon fish species has decreased by half, accounting for almost the entire decline in the total annual harvest. In none of these three cases, however, do the changes observed in harvest patterns reflect changes in species availability. The berries and fish have remained a relatively constant resource. What has changed, however, is a trend away from the labor-intensive exploitation of the tundra fishery, to an increased reliance on summer harvesting activity. Like the harvest of moose and sea mammals the harvest of salmon and berries are relatively cash intensive, as all require considerable outlay for fuel as well as equipment.

Field work in 1982 indicated that Alakanuk stood out in its concentration on cash-intensive activities. For resources not easily available in the immediate vicinity of the village, the labor restraints imposed by regular full-time employment limited villagers to brief, relatively expensive forays to harvesting sites, rather than more economical extended harvesting endeavors. For example, whereas someone who worked during the week might be restricted to a number of Saturday outings to satisfy their need for berries, someone with no job could make a single four day trip to accomplish the same harvest. Also whereas residents of adjacent villages indicated an extremely high dependence on the subsistence salmon fishery, the residents of Alakanuk counted salmon as one among a number of equally important resources.

Also, in 1982 it was found that families of different income levels and time constraints employed varying combinations of wage and nonwage activities. One strategy employed by families with relatively high incomes but with limited time to spend on harvesting activities due to the constraints imposed by wage employment was to concentrate their harvesting efforts on the harvest of cash-intensive activities, such as moose hunting, rabbit herding, or king salmon fishing. Households with low incomes but more time to engage in harvesting activities tended to concentrate their efforts on labor-intensive harvesting efforts, such as setting traps for blackfish, winter net fishing for sheefish and whitefish, and setting rabbit snares. Moreover, the cash intensive harvesting activities also tended to be the most productive. Whereas it takes many successful rabbit snares to feed a family of ten, one King Salmon can provide for everyone with food to spare. This for time spent harvesting, low income households tend to be less productive than high income households.

Table 3-22 shows changes in income patterns for three family networks. It does not appear that all Alakanuk households are turning from labor- to cash-intensive activities. Rather those financially secure households that were able to engage in cash-intensive harvesting activities are continuing to do so at the same or possibly at a slightly increased rate (e.g., Network #1). Cash-poor households, however, are not maintaining their previous high harvest of labor-intensive species (primarily non-salmon fish species) (e.g., Network #3). The overall effect is that the variety of the harvest is being sacrificed for a smaller harvest drawn from fewer species. While households in all income categories continue to harvest in the labor-intensive category of non-salmon fish species, they are doing so in substantially decreased amounts.

This marked decline in the harvest of non-salmon fish species may be related to the increase in dependence on transfer payments mentioned above. Table 3-23 suggests that in 1979 over half of the families that were below the poverty level in the Wade-Hampton Census District did not receive any form of public assistance income. Subsistence hunting and gathering provided an important source of non-monetary earnings for many of these low-income families (e.g. Network #3). In the ensuing seven years these same families have increased their reliance on transfer payments. It is possible that this increase has either obviated their need or decreased their motivation to engage in labor-intensive harvesting activity. At the same time, they remain limited in their ability to engage in cash-intensive harvesting activity. While more financially secure households have maintained and in some cases even increased their harvesting efforts, the net effect is an overall decline in mean annual household harvest.

3.5.2 Income, Employment, and Harvest Levels

In 1982 no good correlation was found between income, hours spent hunting and fishing, and the percentage of subsistence protein in household diet. In 1986, this same non-correlation between income and harvested protein in diet was found in effect. Similarly, no good correlation was found between harvested protein in diet and hours spent hunting and fishing per week, or between subsistence expenses and hours spent butchering fish and game. The absence of correlations in all three cases lends support to the observation that those who accomplish the harvest do not necessarily process and consume it. Rather, households that spend little money on subsistence harvesting may in fact spend large amounts of time butchering gifts received from more productive households. Similarly, a household does not need to harvest a large quantity of fish and game to have subsistence protein regularly available in its diet. Conversely high harvest levels are associated with high transportation costs, high investment in vehicles and firearms, and high commercial salmon and trapping incomes, but not necessarily a high proportion of protein in diet. This is another indication that the products of the hunt do not necessarily belong to those who originally procure them.

Although harvested protein in household diet, income, and harvest levels failed to correlate in both 1982 and 1986, the relationship between harvest level and income was somewhat stronger. While income source and species availability continued to intrude into the relationship, total harvest of fish and game correlated with total household income at a significance level of 0.05. The correlation between total household income and harvest of both sea mammals and land mammals was even more pronounced. This is reasonable given the cash-intensive nature of both of these activities. Not only are monetary and non-monetary earnings related, but subsistence harvesting productivity is generally enhanced in proportion to the number of household members employed (see Table 3-24). Finally, as indicated in Table 3-25, income and level of household employment are directly related.

As in 1982 both time and capital were required to engage in most subsistence activities. High-income households continue to be associated with high earned proportion of income, high investment in subsistence, yet a decline in time available to engage in harvesting activities. Low household income, on the other hand, was associated with mixed support (e.g., wage employment supplemented by government transfers and commercial fishing income), lower proportion of earned income, more time available local resources, yet limited equipment. Thus households at both ends of the spectrum were hampered in the harvest of species requiring both time and money

(e.g., subsistence salmon fishing, bird hunting, and to some extent sea mammal hunting). Instead they concentrated on either capital-intensive hunting activities that occur during a relatively restricted period (e.g., moose hunting in the case of high-income households) or activities such as fishing for non-salmon fish species that can be taken within the limited time and budget restraints of high- and low-income households, respectively.

Though upper and lower income households continue to be restricted in what they can harvest by either limited time or money, middle-range income households tend to have the highest subsistence harvest. One portrayal of this this tendency is in Table 3-26. These data are, however, contaminated by the fact that the category of persons who spent more time hunting and fishing than on the job includes a number of older villagers who are simultaneously not employed in the wage economy and only minimally involved in harvesting activities.

Among the households in Alakanuk increased employment does not directly correspond with an increase increase in monetary income, investment in harvesting activity, and total pounds harvested. In fact, the greatest species diversity and the highest total harvest were accomplished by households in the middle range of the income scale. Also, in Alakanuk, while those households with the highest incomes were those who made the highest investment in subsistence, they did not necessarily accomplish the greatest harvest. On the contrary, the middle range investors were the most successful in terms of total pounds harvested. Finally, while total harvest did not correlate either positively or negatively with the level of income derived from transfer payments, high income through full-time employment had a moderately negative association with a high harvest level.

Previous work in Delta communities suggests that a causal relationship exists between expenditure for the harvest and total pounds and number of species harvested (Fienup-Riordan, 1986; Wolfe, 1981). To date, the correlation between income and expenditure is less clear. This is due, in part, to the intervention of kinship variables including household size which undercut any attempt at direct correlation between income and total pounds harvested. However, kinship variables are difficult to quantify. For example, a correlation might be expected between economic variables (e.g., percent of income invested in the harvest) and the strength of family ties within and beyond a particular community (e.g., a measurable economic advantage for in-group vs. migrants). Strong correlation has not been observed between household income and the number of closely related families in Alakanuk.

Similarly, the densest kinship networks showed only a slight increase over the community-at-large in the number of species taken per household, the total pounds harvested per household and per dependent, the money spent on the harvest, the percent of income spent on subsistence, and the percent of harvested protein in the diet. While some households in the community-at-large were totally or partially inactive in subsistence harvesting activities, all households included in the denser kinship networks were at least minimally involved in acts of production and consumption connected with the harvest of renewable resources. Households in dense kinship networks fell at neither the upper nor lower end of the spectrum, but monopolized the middle range where all of the above economic variables were concerned.

Table 3-22

Changing Income Patterns
Household Network #1
Alakanuk, Alaska
1982 and 1986

Household	1982				1986			
	1	2	3	4	1	2	3	4
Number Species	19	14	15	0				0
Total lbs. Harvest	5028	2846	1609	0				0
Total lbs. Harvest per Department	1270	712	268	0				0
Total lbs. Salmon	1280	340	260	0	860	1092	110	0
Total lbs. Non-Salmon	3210	2150	221	0	848	1780	170	0
Total lbs. Sea Mammals	140	140	184	0	846	196	0	0
Total lbs. Land Mammals	202	95	834	0	130	735	715	0
Total lbs. Birds	250	55	110	0	100	178	8	0
Total lbs. Plants	0	66	90	0				0
Household Size	4	4	6	2	3	4	7	2
Age of Household Head	43	39	43	30	47	43	47	34
Household Type	5	5	5		5	5	5	
Income (\$1000)								
Commercial Fishing	3.7	0	0	0	2	0	0	0
Transfer Payments	4.2	0	0	6.7	5	0	0	0
Full-time Employment	0	21	24	9.6	0	0	35.7	8
Part-time Employment	2.4	0	0	0	0	17	0	0
Total:	10	21	24	16	7	12	35.7	11

Table 3-22 (continued)

Changing Income Patterns
Household Network #2
Alakanuk, Alaska
1982 and 1986

Household	1982		1986
	1	2	1
Number Species	19	10	
Total lbs. Harvest	3180	589	
Total lbs. Harvest per Department	636	118	
Total lbs. Salmon	762	0	
Total lbs. Non-Salmon	1167	169	334
Total lbs. Sea Mammals	46	0	1177
Total lbs. Land Mammals	955	200	92
Total lbs. Birds	70	220	718
Total lbs. Plants	180	0	65
Household Size	5	5	
Age of Household Head	57	31	61
Household Type	6	6	5
Income (\$1000)			
Commercial Fishing	9	0	4
Transfer Payments	0	2.4	4.5
Full-time Employment	10	3.2	0
Part-time Employment	0	4	1.5
Total:	19	10	10

Table 3-22 (continued)

Changing Income Patterns
Household Network #3
Alakanuk, Alaska
1982 and 1986

Household	1982			1986		
	1	2	3	1	2	3
Number Species	7	12	12	0		
Total lbs. Harvest	565	493	1660	0		
Total lbs. Harvest per Department	141	82	277	0		
Total lbs. Salmon	0	0	150	0		64
Total lbs. Non-Salmon	565	260	1150	0		37
Total lbs. Sea Mammals	0	46	0	0		0
Total lbs. Land Mammals	0	47	170	0		0
Total lbs. Birds	0	140	130	0		0
Total lbs. Plants	0	0	60	0		0
Household Size	4	6	6			
Age of Household Head	68	37	55	72		59
Household Type		5	5	11		5
Income (\$1000)						
Commercial Fishing	0	0	0	0		1
Transfer Payments	9.3	2.4	9.2	11.4		13.5
Full-time Employment	0	6.1	0	0		0
Part-time Employment	0	10	0	0		0
Total:	9	19	9	11.4		14.5

Table 3-23

**Total Native Families and
Native Families Below Poverty Level
With And Without Public Assistance
Wade-Hampton Census District
1979**

Total Native Families, All Income Levels	764
Total With Public Assistance Income	304
Percentage With Public Assistance Income	39.8%
Total Without Public Assistance Income	460
Percentage Without Public Assistance Income	60.2%
Total, Native Families With Income Below Poverty Level	296
Percentage, Native Families With Income Below Poverty Level	38.7%
Total Below Poverty Level With Public Assistance Income	136
Percent Below Poverty Level With Public Assistance Income	45.9%
Total Below Poverty Level Without Public Assistance Income	160
Percent Below Poverty Level Without Public Assistance Income	54.1%

Source: Berman M., and K. P. Foster, Poverty and Public Assistance Among Alaska Natives: Implications for 1991. ISER for Alaska Federation of Natives, April, 1986.

Table 3-24

**Composition of Total Village Subsistence Harvest
Per Household By Job Status
Alakanuk, Alaska
1986**

Mean Subsistence Harvests Per Household

	No Members Employed	Only One Member Employed	One or More Members Employed
Salmon	735 lbs	728 lbs	850 lbs
Other Fish	357 lbs	456 lbs	637 lbs
Sea Mammals	118 lbs	234 lbs	220 lbs
Land Mammals	11 lbs	564 lbs	460 lbs
Total Fish & Game:	1,194 lbs	1,539 lbs	1,954 lbs
Birds & Eggs	48 lbs	73 lbs	82 lbs
Plants, Roots, Berries	124 lbs	113 lbs	113 lbs
Total Food	1,366 lbs	1,725 lbs	2,149 lbs
Wood	41 logs	37 logs	39 logs

Source: Field Protocol

Table 3-25

**Household Income Characteristics
and Job Status
Alakanuk, Alaska
1986**

	Household Job Status			
	All Households Interviewed	No HH Members Employed	One HH Member Employed	One or More HH Members Employed
Average Household Income	18,976	12,286	17,546	21,497
Earned Income	12,165	1,257	11,280	14,971
Unearned Income	6,811	11,029	6,266	6,526
Average Household Size	5.17	4.67	4.71	5.32
Average Per Capita Household Income	3,670	2,631	3,725	4,041
Number of Households in Sample	44	9	18	35

Table 3-26

**Composition of Total Village Subsistence Harvest
by Subsistence Status
Alakanuk, Alaska
1986**

	Household Subsistence Status			
	All Households Interviewed	Household Head Allocated MORE Time to Hunt and Fish Than to Job	Household Head Allocated LESS Time to Hunt and Fish Than to Job	Household Head Allocated SAME Time to Hunt and Fish Than to Job
Fish and Game	1,799 lbs	2,282 lbs	1,318 lbs	3,254 lbs
Birds and Eggs	75 lbs	78 lbs	83 lbs	76 lbs
Plants and Berries	115 lbs	112 lbs	132 lbs	126 lbs
Total Food Harvest	1,989 lbs	2,472 lbs	1,533 lbs	3,456 lbs
Wood	40 logs	41 logs	41 logs	52 logs

Finally, interviews suggest an association between income level, income source, and species harvested. Household data have demonstrated a correspondence between income level and the harvest of non-salmon fish species, including blackfish, sheefish, and whitefish. The proportion of the harvest devoted to non-salmon fish species, especially sheefish, is particularly great for both very high- and very low-income households, taken individually as well as in the context of an extended family group. Where the very rich and very poor households and extended family networks differ, however, is in the former's ability to supplement their winter diet with the products of brief capital-intensive expeditions during off hours, and, ironically, the commercially valuable salmon that they can afford not to sell. Finally, middle range income households, looked at in the context of their family groups, enjoyed the greatest harvest diversity.

3.6 Consumption and Expenditures

Table 3-27 summarizes the information on household consumption and expenditures for Alakanuk. The largest categories of expense in all households were utilities, groceries, and transportation. Hunting and fishing gear was a significant category of expense only in high-income, high-employment households. However, the fuel costs for hunting and fishing activities were subsumed under the transportation category, adding substantially to the relative importance of that category.

Although both transportation costs and money spent on groceries increase with employment and increased access to cash, utility costs are highest for those households in which no one is employed. This directly reflects the relationship between high utility costs and dependence on stove oil, as opposed to wood, for heat. Households with less employment and limited cash assets do not have the money to invest in the equipment necessary to harvest wood for fuel and so decrease their fuel costs. As a result, their utility costs are higher. Conversely, the decreased utility costs of high-income, high-employment households coincide with higher transportation costs incurred in part in the process of harvesting wood for fuel.

Income is also inversely related to money spent on housing. Over one third of the families in Alakanuk live in ASHA houses for which they pay no rent. Another third live in homes that they built and own outright; they also pay no rent. The final third live in new AVCP houses and pay rent in relation to their income. Most families pay \$75 a month, although a handful of the more affluent households pay \$90 a month. The low cost of housing directly reflects this situation. In fact, most households pay either \$900 a year on housing or nothing at all, excluding money spent on irregular repairs. The artificial statistic that the amount of money spent on housing is slightly higher for households in which fewer people are employed reflects the fact that more households in this category live in the newer houses for which they pay rent.

The final major category of household expenditure is groceries. Here again statistics are deceptive. In Table 3-27, it appears as though households in which fewer people are employed consume fewer groceries. In fact, although they may spend less money on groceries, on a per capita basis these households purchase and consume more food from the store than other village households. This increased purchasing power is made possible by their access to food stamps, the buying power of which is not included in the table's calculation.

The amount of money spent on hunting and fishing gear, as well as the amount of money invested in vehicles, increased with employment. High harvests of both salmon and non-salmon fish species were coincident with high fuel and transportation costs, as well as high vehicle and gear expenditures. However, none of these variables coincide with high harvested protein in household diet. This is another indicator that significant sharing of harvested resources still occurs, with the result that production and consumption are not always commensurate in this area.

Although detailed information on expenditures in 1982 is not available, Table 3-28 indicates the likelihood that local expenditures in Alakanuk have significantly increased over the last half decade. The computations for the entire Wade-Hampton census area suggest that between 1980 and 1984 local expenditures more than doubled, as a proportion of total resident personal income. However, the figures also suggest that, as of 1984, roughly two-thirds of resident personal income was spent outside of the local community. As indicated above in the discussion on village firms, this figure disagrees sharply with the perception of local storekeepers, who estimated a sharp decline in the amount of personal income spent outside of the village. Protocol information of 1987 also suggested that including money spent for air transportation (the major category of extra-local expenditure), most households spent at least 90% of their income locally.

3.7 Capital Formation, Savings, and Debt

Analysis of village household assets and debt levels by job status (see Tables 3-29 and 3-30) suggests assets and debt increase with household employment. In the case of assets, this reflects greater access to cash on the part of more fully employed households and a corresponding increase in investment power. Households that are more fully employed have more cash in the bank, as well as more money invested in vehicles, firearms, and appliances.

The higher debt service for households in which one or more persons were employed (see Table 3-30) is largely a product of vehicle loans and/or loans from the city (often used to pay outstanding fuel and transportation expenses). The debt composition of households in which no one was employed was very different. In those households, the major component of debt was money owed to one of the three local stores. During August 1987, these debts were unusually high, reflecting the poor fishing season. It is significant that although households in which one or more persons were employed owed less money to local stores than households with no one employed, their debt in this category was still significant and reflects the fact that buying on credit is an accepted procedure.

Finally, it is important to recognize that whereas ownership of assets such as vehicles, real estate, and firearms is positively correlated with access to cash in the local economy, use of these assets is not restricted by ownership. Extended family sharing of hunting and fishing equipment, including fuel, is a regular aspect of village life. Housing owned by one person is also often used rent-free by closely related family members when they require additional space. As in the case of the products of fishing and hunting activities, the tools that guarantee access to these resources are also regularly shared within and irregularly shared between extended family groups.

Table 3-27

**Household Income Characteristics
and Job Status
Alakanuk, Alaska
1986**

Consumption spending per household

	All Households Interviewed	No Members Employed	One Member Employed	One or More Members Employed	All Households Interviewed (Percentages)
Housing	272	400	250	239	3.1%
Utilities	1,392	2,328	1,839	1,984	15.7%
Groceries	4,101	2,770	4,462	4,360	46.1%
Transportation	2,022	934	1,649	2,302	22.7%
Hunting and Fishing Gear	335	67	321	405	3.8%
Insurance	27	0	29	25	0.3%
Medical	7	0	17	9	0.1%
Clothing and Accessories	730	282	72	845	8.2%
Other	0	0	0	0	0%
Total Consumption Spending Per Household	8,886	6,781	8,639	10,169	100%

Table 3-28

**Estimated Local Expenditures
Wade-Hampton Census District
1980**

Industry Group	Factor ^a	1980		1984	
		W & S ^b	Product	W & S	Product
Transportation, Communications, & Utilities	1.97	\$942	\$1,856	\$1,894	\$3,643
Trade	1.65	1,114	1,838	2,131	3,516
Finance, Insurance & Real Estate	4.69	347	1,627	902	4,230
Services	1.55	401	<u>622</u>	573	<u>888</u>
Local Expenditures			\$3,492		\$12,277
Resident Personal Income			\$21,856		\$34,862
Ratio of Local Expenditures to Resident Personal Income			27%		35%

Notes: ^a Equal to the ratio of statewide gross product to statewide wages and salary earnings by industry group.

^b W & S refers to wages and salary.

Sources: U.S. Department of Commerce, Bureau of Economic Analysis, Local Area Personal Income, 1986; University of Alaska, Institute of Social and Economic Research, Statewide gross product estimates for 1980.

Table 3-29

Composition of Village Household Assets
by Job Status
Alakanuk, Alaska
1986

	Household Job Status			
	All Households Interviewed	No HH Members Employed	One HH Member Employed	One or More HH Members Employed
Cash in Bank	\$ 586	\$ 5	\$ 709	\$ 735
Stocks and Bonds ^a	672	600	556	691
Local Investment Holdings	644	41	0	778
Home	1,639	1,349	1,940	1,709
Other Real Estate	456	18	14	566
Vehicles ^b	9,337	5,472	9,348	10,330
Firearms	934	586	1,057	1,022
Tools	492	628	371	457
Major Appliances ^c	1,298	757	1,246	1,437
Furniture and Personal Property	827	311	1,024	960
Other	4	0	10	5
Total Assets per Household	\$15,587	\$ 9,770	\$16,275	\$18,690

Notes: ^a ANCSA shares and private

^b Auto/Truck, Snow Machine, ATV, Boat, Airplane, Other

^c TV, Video, Refrigerator, Freezer, Other

Source: Field Protocol

Table 3-30
Composition of Village Household Debt
by Job Status
Alakanuk, Alaska
1986

	Household Job Status			
	All Households Interviewed	No HH Members Employed	One HH Member Employed	One or More HH Members Employed
Bank Loans	\$ 77	\$ 0	\$ 0	\$ 100
Home Mortgage	272	400	250	239
Vehicle Loans	509	39	843	642
Business Loans	0	0	0	0
Installment Accounts*	370	547	160	324
Loans from City Government	324	86	550	403
Average Debt per Household	\$1,552	\$1,072	\$1,803	\$1,707

Note: * Alimony, Medical, Charge Cards, Other

Source: Field Protocol

4.0 GAMBELL VILLAGE DESCRIPTION

4.1 Research Personnel and Techniques

Many of the generalizations in this section are based on a survey of 40 households of the 110 households in Gambell. Many others are based on knowledge about all households for some subjects. The survey was conducted by three field workers in the course of about 10 days in early July. Two of the three field workers were young Eskimo men, both fluent in English and Yup'ik Eskimo. The third field worker was Lynn Robbins. The Gambell sample was not random; household heads (those who make most of the economic decisions) were interviewed as available. Nineteen household heads interviewed in 1982 for the Harvest Disruption Study were interviewed again for the 1987 sample. There is, therefore, a nearly 50 percent repeat of cases in each sample (1982 and 1987). The 1987 sample, although not random, was checked against complete samples taken for certain kinds of information (population, household structure and others as will be noted) and the sample compared closely with them.

Interviews were also conducted of key informants in local government, business and subsistence activities.

4.2 Political Economy

Gambell has about 520 people and all of about 2 percent of these are Eskimos. Most of the non-Eskimos are in the village during school months and are not part of the indigenous kinship and subsistence networks of the village.

The Eskimo people of St. Lawrence Island who reside in the two island villages, Gambell and Savoonga, own the land fee simple. They have certain rights to govern themselves and to use the natural resources of the island within certain limits. The Eskimos are constrained by United States federal law, international treaties and they must seek and receive permission from the federal government to conduct business economic enterprises and use wild resources; they are also subject to the laws of the State of Alaska in business, commercial and subsistence pursuits.

Similarly, the Eskimos do not have market control over the resources which earn them important sums of money: the fresh walrus ivory, from which artifacts are fashioned by local artisans, and the fossilized ivory pieces and artifacts taken by the people from ancient, abandoned Eskimo villages on the island. Prices for these items are determined by myriad buyers, and non-Native consumers off the island. Prices of goods and services used by the islanders are also determined by individuals and institutions, private and public, off the island.

4.2.1 Formal Native Political Institutions

Gambell has three governments. The first is an Indian Reorganization Act council which formed in 1939 under the provisions of the Indian Reorganization Act (IRA) and which has the broad powers of Indian tribal councils (business development, taxation, contracting, land governance, etc.). The second is a City council chartered under the laws of the State of Alaska and possessing powers of taxation, business development, provision of services, and other powers. Third is the Sivuqaq Native Corporation which has the powers of land governance and resource control under the terms of the Alaska Native Claims Settlement Act (ANCSA) of 1971.

The IRA government was altered to become the non-profit corporation of the village; it depends largely on grants, contracts and awards from federal sources. Some of these monies are received in Gambell through Kawerak, the regional non-profit corporation in Nome, Alaska, and several of whose leaders are from St. Lawrence Island. Kawerak conducts subsistence studies, programs for elders and has been important in guiding regional affairs.

When ANCSA became law, the Eskimo residents of Gambell and Savoonga complied with the requirements of the Act to receive ANCSA monies. This action included establishment of the Gambell Native Corporation (now called the Sivuqaq Native Corporation). St. Lawrence Island was at this time a reindeer station under federal designation and was accorded reservation status. This status empowered the Eskimos to create its IRA government in 1939.

Reservation status was, of course, revoked under ANCSA provisions and the Natives lost title to their land. The Eskimos acted swiftly to regain control of their lands. They did this at cost to themselves in the short-term by use of ANCSA's provisions that allowed villagers to take patent-in-fee title to the surface and sub-surface rights to the land. They rejected participation in the profit-making Bering Straits Regional Corporation along with the cash and conveyance of about one-tenth of the land surface of the island. This action took courage, and it was taken to preserve a way of life vitally important to most of the Native people. The Sivuqaq Native Corporation jointly governs the island's 1.1 million acres with the Savoonga Native Corporation and each government has equal powers with the other.

The Eskimos on the island fear the 1991 date when shareholders of Native corporate stock will be allowed to sell stock, allowing alienation of lands and taxation by the State of Alaska. A majority of the residents of the island want to avoid this possibility and, like many Native people, have campaigned with the Alaska Federal of Natives to change ANCSA. The residents of the island talk constantly about the impending 1991 date as a great danger to their way of life. Alienation of land would to them, spell the end of control of their land. (Some of the recently passed amendments to ANCSA might solve the problem of land alienation).

Many village residents would like to see the IRA Council become the major governing body in the belief that such a government would maintain a trust relationship with the federal government and would also prevent alienation of land.

Each of the three governments in Gambell has seven elected officials whose terms of service are staggered to maintain continuity in governance. Savoonga has a parallel governing system the six governing bodies in the two villages meet at least once a year and more frequently if necessary to coordinate their actions. Elected officers in the two villages are often related and they frequently share similar philosophies of government, although there are occasional frictions among some of the governments.

4.2.2 Local Intergovernmental Cooperation in Land Use and Hiring

The three governments in Gambell are attempting to create an arrangement whereby land use will be coordinated. The City Government has the right to lease sites from the Sivuqaq Native Corporation for a period of 20 years and at low cost. There were several such leases in force in 1987. All of the governments have rights for preferential hiring of local persons; for some specialty jobs for which locals might not qualify, there is a provision for hiring Alaskans over non-Alaskans.

In 1986 the Sivuqaq Native Corporation received a \$40,000 grant from the Administration for Native Americans under sponsorship of the Gambell Indian Reorganization Act government. The Corporation added \$10,000 of its own funds to the \$40,000 to prepare a land-use plan for the Gambell half of the island with cooperation with the governments of Savoonga. The funding period for the project expired before the plan was completed in 1987. The aim was to plot sites for which Eskimo clans have usufruct rights, to acknowledge formally the de facto uses of hunting, fishing and collecting places and to establish a system whereby elders would work with young people to protect use sites from abuse.

The IRA Council has recently made efforts to establish laws prohibiting outsiders from disturbing prehistoric Eskimo archaeological remains.

Trash disposal is a growing problem in Gambell. The City operates a solid waste site on the outskirts of the village. The capacity of the present site is reaching the limits of its capacity and residents fear beach contamination and other problems associated with the use of the site. An alternative site near a freshwater lake south of the village was considered but the City Council and the population generally preferred to spare the site from contamination. Meanwhile, the present dump was fenced, as much waste burned as possible and the remains bulldozed.

The City government has sought funds for a permanent water supply but the likely source of water is regarded as too far from the village to make expenditures for a water system feasible.

4.2.3 Gambell's Conduct Toward Private Corporations Off the Island

In 1982 the Eskimos rejected an offer from corporations to set up facilities on the island for fear that an outside corporate presence would undermine local control of the land. The first rejection was of Marinav's (a ship navigation company) attempt to install a navigation tower near Gambell in 1982. The company offered to pay \$800 per month for use of land for the tower and expected to pay the Sivuqaq Corporation \$500 each month for rent for use of a Native corporate-owned residence. The offer was refused by Board of the Sivuqaq Native Corporation, an act that meant a significant financial sacrifice as the Corporation was and continues to be short of funds. This act seems to continue to typify Eskimo attitudes toward outside economic forces over which the island people have some control.

The Eskimos in Gambell have been equally opposed to the possibility of oil development off the island but in its vicinity. The people went on record as formally opposing oil exploration in the waters surrounding the island when they brought a lawsuit against the federal government's off-shore oil exploration leasing program. The suit ultimately went to the Supreme Court; the Court ruled against Gambell and its co-plaintiff Stebbins, a mainland Eskimo village.

Based on key informant interviews in 1982 and 1987, there seems to be general disaffection about federal responsibilities to the Eskimos in health care, protection of offshore waters and protection of native resources. In general, the Native relationship with the State of Alaska is characterized by an uneasy truce in game management. The Natives believe that sports hunters have considerable influence in State policies and they fear that present laws and regulations might soon be altered to cater to non-Native interests. Eskimos in Gambell believe that they are capable of managing game resources in their region of the Bering Sea.

Attitude surveys have also shown general opposition to oil development in the Navarin Basin and the Norton Sound. In 1983 of 55 persons contacted about oil development all 55 registered opposition on the grounds that Native sources of foods would be threatened and with them the Native culture. In 1987 an Minerals Management Service study (Social Indicators) polled 20 randomly selected persons; most of these voiced rejection of such developments and claimed such economic activity would bring no benefits to the Eskimos in employment, training or revenues for Native governments.

4.2.4 The Bering Straits School District and the Bureau of Indian Affairs School

These institutions have considerable influence in Gambell in educational policies. Some of the village residents have a voice in the policies and functions of the district, but for the most part, the local residents seem to prefer local controls over hiring of teachers, classroom operation and curriculum development in both of these institutions.

St. Lawrence Island Eskimos are also represented on the International Whaling Commission (IWC) and the Eskimo Walrus Commission. The IWC does not operate under force of law. The Eskimo Walrus Commission was established by Natives to influence federal policies on walrus harvests. Alaskan Natives have also created the Eskimo Whaling Commission to protect their interests in taking bowhead whales.

4.3 Village Economic Organization

The Eskimo people are supported by a mixture of hunting, fishing, collecting wild foods, wages earned from employment in federal, state and local public and private institutions, transfer payments, sales of carved walrus ivory figures and other contemporary artifacts and fossilized ivory fragments and artifacts extracted from ancient Eskimo settlements located on the island.

Public subsidies from the federal government, the State of Alaska and Native non-profit cooperatives are essential to the people in housing, health care, household energy, food and child care. Indeed, these forms of support are part of the bedrock of the village economy and they make life which is historically unparalleled.

To extract wild resources the people of Gambell are organized into 10 patrilineal clans in accordance with distinct hierarchical rules; statuses, roles and functions are clearly defined for each role and status. Males are dominant within the clans and their authority is derived from their age, experience, as hunters and fishermen, their access to hunting and fishing equipment and weapons and their intelligence and resourcefulness. Women assume authority when, if they become widows of male clan leaders they replace their deceased husbands in the clan hierarchy.

The clan system is maintained by hunting, fishing, collecting, processing, distributing and consuming wild foods by networks of largely clan-related persons who conduct these activities together year-round.

4.3.1 Governmental Capital Improvements

State, federal and local governmental capital improvements projects were of great importance to the people of Gambell and constituted a small boom in the economy from 1983 to the end of 1985. The projects are summarized in Table 4-1.

These projects were completed in a relatively brief period having come on the heels of the heyday of Alaska's economic fortunes and planned several years before their completion. Local residents, especially those in the building trades, stated that about two-thirds of the cost of the projects were paid out in wages to construction workers, most of whom were local hires. (As mentioned, State and local governments have local hire rules with which they comply. Although there are no local hire rules for federal entities, federal agencies in effect do comply with the state rules when employment figures are examined; the very few private builders seem less inclined to follow these rules).

These projects have also created higher expectations among construction workers than existed before the building boom. Most of the local construction workers now expect hourly wages of at least \$20 to \$25 per hour.

4.3.2 The Sivuqaq Corporation

The Sivuqaq Native Corporation operates within Gambell in cooperation with the Reorganization Act (IRA) government of Gambell. It possesses broad powers granted it and other Native corporations of Alaska under charter with the Alaska Department of Commerce including management of resources and all activities related to resource use and protection. It is not yet clear how far these powers extend.

The Corporation's financial fortunes have improved somewhat since 1982 when it had very little money. The Corporation has about \$80,000 in money market funds from the sale of shares of telephone services of Unicom, Inc.; it also owns an undisclosed portion of the television services of the same company. The Company earns some money from the sale of gravel for construction projects within or near the village of Gambell, and rents a house to mainland visitors for \$40 per day person and an all-terrain vehicle for \$65 per day.

The Corporation also established in 1983 the Kukulek, Incorporated, an ivory cooperative managed by a board of directors whose membership includes a representative from Savoonga. The co-op purchases carved fresh ivory and carved and uncarved fossil ivory. It was originally funded by a grant from the State of Alaska. It is now self-sufficient and has, through consolidation of effort by carvers and the co-op, to effect an increase in prices for local producers in Gambell, and secondarily, Savoonga. Co-op sales in 1986 were approximately \$200,000, but in the summer of 1987 the co-op was having difficulties with its outlet in Anchorage because of declining sales in the state caused by the state-wide economic slump from reduced revenues. In 1986 the Sivuqaq Corporation had three people in its employ: a buyer for Kukulek, Inc., a full-time secretary and a maintenance man for the Corporation-owned house.

Table 4-1
Capital Improvement Projects
Gambell, Alaska
1983-85

Capital Improvements	Estimated Cost	Source of Funding
City Garage	\$100,000	State of Alaska
Medical Clinic	\$250,000	Public Health Service (Federal)
Municipal Building	\$300,000	State of Alaska
6 New Houses	\$780,000	Bering Straits Housing Authority - Grant through Kawerak non-profit Native Corporation
Hotel	\$250,000	Private (not in operation as of 1987)
Remodeling ANICA Store	\$100,000	Alaska Native Industrial Cooperative Association
Electrical Generators and Diesel Engines	\$500,000	Alaska Village Electrical Cooperative
Total	\$2,280,000	

4.3.3 The Indian Reorganization Act Government

The IRA government has, like its counterparts in Native communities, broad powers and functions granted to it by the Congressional Acts of 1936 and 1939. It can regulate business, establish cultural programs, manage lands, enter into agreements with other governments, regulate harvests of game, and conduct many other activities.

The Gambell IRA government has come into difficult financial times because of federal budget cuts. The 1987 fiscal year budget was just over \$71,000, and the 1988 budget is expected to be only about \$45,000. The IRA government is caught between federal self-determination policies and a serious shortage of funds. The IRA government's annual budget is divided into five categories based on the functions and roles of the government: higher education, adult basic education, housing improvement program, direct employment and adult vocational training. All of these funds are provided by the Bureau of Indian Affairs of the United States Department of the Interior.

Higher education is funded for scholarships and grants for persons who have been decided to enter post-secondary schools. These monies are not used every year for lack of qualified persons. In 1986 there were four applicants, all of whom received grants.

Adult basic education provides opportunities provided for school drop-outs and for those who do not have a high school education. The goal to help the recipients achieve at least high school diploma, the basic requirement for Gambell City jobs. The amount of money allocated to this purpose is not large. Adult vocational education provides funds for those who want training from professional organizations (food preparation, carpentry, etc.). In the past three years five persons used this fund for instruction in flight training, food preparation and heavy equipment operation. Two of the five returned to Gambell, having lost interest in urban living and desiring to return to their home community.

The housing improvement program is for remodeling houses. Much of the housing stock in Gambell is in need of repair and this budget item is used fully every years. This budget item will reduced by about \$14,000 in 1988. As one administrator for the IRA Council said, "Reduction in this line item will hurt the people of Gambell more than any other in 1988."

There is some dissatisfaction with the character and remodeling of houses. Some of the residents point out the poor workmanship in housing and what they consider to be generally inappropriate designs for the local climate. There are complaints from local carpenters and builders about safety of occupants from fire and the high risk of fire. Fortunately none of the houses built in 1976 and 1978 has caught fire, but it is clear that exiting houses would be impossible to protect in some emergencies.

The condition of housing is, in part, a symptom of the difficulty Gambell residents experience in their efforts to receive high-quality services and facilities. These difficulties are partially the result of the isolation of the village from the mainland and the standardized federal and state programs which often do not take into account local tastes, preferences and circumstances. All of the local governments suffer from these deficiencies and liabilities.

Direct employment refers to assistance to people who have gotten jobs in urban areas: they receive a sum equal to their first pay check to help them adjust to city living. Very few use this fund because very few Gambell persons leave to work in urban areas. Only one person in 1986 who applied for some of this money, a Nome resident.

Bingo games are played three to four times each week under IRA government sponsorship. The income from the games is used to pay for community activities (feasts and prizes) during the Fourth of July, Thanksgiving, Christmas and potlucks. Attendance at these gatherings is very high. Bingo monies are also used for the annual city clean-up which usually takes about \$10,000 and employs about 20 people at \$8 per hour for two weeks.

IRA officials envision the role of the IRA government to include a Tribal court, management of fish and game on and near the island with the Savoonga IRA government and identification of traditional land use areas (present subsistence uses and ancient use sites). These responsibilities are speculative pending consultations with the Sivuqaq Corporation Board and discussions with all island governments as well as the final outcome of the Alaska Native Claims Settlement Act.

Some IRA officials acknowledge the following needs for the City of Gambell: a large increase in the number of jobs for women and men in the work force and to give young people hope for the future, a playground for children, new recreational facilities and activities for teenagers (the existing teen center is considered inadequate), more and better trained law enforcement personnel, more small businesses, especially retail outlets which could provide all sorts of necessities especially in winter, and one or more restaurants. Some of the IRA officials also believe many people in Gambell would take jobs at oil developments in their region, but there is a common conviction that outsiders with the training and experience would get the jobs.

4.3.4 Gambell City Government

The City government is the most active and perhaps the most prestigious government in Gambell largely because it is the most visible and the most frequently involved in daily activities. It employs many more persons than the Sivuqaq Corporation and the IRA government. It collects business taxes (three percent), is responsible for law enforcement, sanitation, water supplies, maintaining most of the public buildings, the airstrip (with the State Department of Transportation), issues business licenses and has the largest budget of the three governments. Like all Alaskan villages, Gambell's city budget is threatened by state budget cuts. The City seems reasonably secure financially for the next one or two years, but beyond that time it seems there will be cuts, some of which could be very difficult for the community to bear.

The City budget is largely state-supported and the pervasive nature of its operations and finances illustrates the degree to which Gambell is dependent on external funds. The City, like the Sivuqaq Native Corporation, sells ivory by taking carvings on consignment and marketing it with brochures, exhibitions and other contacts with prospective buyers. Sales were about \$50,000 in 1983, the first year of City carving sales; in 1986 they had dropped to about \$25,000 largely because of the slump in the Alaska state economy.

The City of Gambell has about 20 employees and total expenditures of \$500,000 projected for 1988 (about the same as the 1986 and 1987 expenditures). In addition to standard budget items for a Second Class City, the budget includes \$200,000 for water and sewer. The City Council has attempted to eventually build a water system for the residents of Gambell, a project that might cost as much \$5 million. The snag in this project is the location of a suitable supply of safe water, which is

apparently at least two miles from the City and whose use would entail great cost. The City Council is now considering whether to go ahead with an effort to create a water system. There would also have to be, according to some informants, an annual household levy of about \$80 to pay back part or all of the \$5 million. This household levy could be more than most households could afford.

4.3.5 The National Guard

The Alaska Army National Guard, First Scout Battalion, 297th Infantry, has training facilities in Gambell and there are about 40 recruits from the communities who engage in training exercises. There are three full-time Eskimo members of the Guard in Gambell. Information obtained from the Headquarters in Nome, Alaska, records a figure of about \$160,000 annually spent by the Guard on salaries and income from training exercises (Wortman, 1987). This is an important source of income for many households since recruits earn at least \$2,000 per year and the three full-time employees earn over \$20,000 each. For a community whose members are chronically short of cash and where prices of basic goods are high, income from the National Guard is a welcome addition.

4.3.6 Retail Outlets, Services, and Utilities

There are seven private businesses operating in Gambell, the largest of which is the local outlet for the Alaska Native Cooperative Industries Association (ANICA). Headquartered in Seattle, ANICA operates 37 stores throughout Alaska. The Gambell Native Store had annual sales in 1986 of about \$1.74 million, up from 1983-1985 average of about \$1.55 million (during the peak of local construction on capital improvement projects), and considerably above 1982 sales figure of about \$1.31 million. Credit sales increased slowly and steadily over the period, from approximately \$0.3 million in 1982 to just over \$0.4 million in 1986. According to store managers, the pattern of rising sales over the period 1982 to 1986 reflects the influence of capital projects, increases in the number of visitors to Gambell, price increases (a modest increase in for many items), a small increase in the village population and an increase in employment since 1982 (a condition partly accounted for by capital projects).

Total Gambell Native Store receipts in 1986 also represented about 72 percent of total personal income estimated from field data collected in 1987 (average household income about \$22,500 multiplied by the 110 households). This relatively high rate of local spending is consistent with estimated local expenditures as a proportion of resident income in 1980 (68 percent) and 1984 (57 percent), based on secondary data for the Nome Census Area. However, only a small fraction of resident income spent in Gambell remains in the local economy. Approximately 10 percent of Gambell Native Store receipts were allocated to wage and salary payments. Except for net earnings, which would also be retained in the local economy, the remaining store receipts cover the cost of imported goods and, thus, flow outside the village. In spite of the relatively high share of personal income spent locally, most consumption goods were imported. A very small portion of that income represents value-added that was recirculated in the village economy. Table 4-2 shows the types of goods sold at the ANICA store by percentage of total volume.

Table 4-2

**Distribution of Gambell, Alaska, Native Store Receipts
by Major Category of Goods
1986**

Category of Goods	Proportion of Total Sales
Groceries	51%
Fuel	20%
Dry goods	13%
Tobacco	8%
Hardware	7%
Drugs	1%
Total	100%

Per capita spending at the Gambell Native Store was \$3,350 in 1986. This compares with \$2,620 in per capita spending, based on household data collected in 1987. The \$730 gap reflected in the figures (\$3,350 - \$2,620) may reflect the portion of per capita total consumption spending allocated to discretionary goods such as telephone and TV hookups, entertainment, alcohol, and education. In part, this discrepancy reflects different definitions of spending. Data for the Gambell Native Store cover all major spending categories, as shown in Table 4-2. The definition of household spending used in conjunction with field work conducted in 1987 was primarily non-discretionary spending for essential needs (i.e., housing, utilities, groceries, transportation, hunting and fishing gear, insurance, medical care, and clothing). Also, field data collection focused on Native families. About six percent of Gambell's 520 persons were non-Native inhabitants such as government employees and educators. This group was not targeted in 1987 field work. Whereas this group's consumption spending would be reflected in Gambell Native Store receipts, their consumption behavior was not reflected in the per capita estimate of \$2,620.

The discrepancy may also reflect the influence of non-resident consumption spending. Although less significant than in earlier years, non-resident, capital project construction workers probably account for a portion of Gambell Native Store receipts in 1986.

ANICA has a policy of keeping salaries at about 10 percent of gross sales, and this policy has been strictly followed by the local management. Thus wages in 1986 totaled about \$170,000 for 12 employees, with an average of about \$14,000; there is considerable range in salaries because several employees are part-time or seasonal and others have been with ANICA up to 15 years and are in the managerial salary range.

In a certain sense ANICA is not a private business. It now has 37 stores and was established to provide goods and services to outlying Native communities and to return profits to the central organization for improvements in services and the quality and range of goods. These goals have been pursued since the founding of the Cooperative in the 1940s. Nonetheless, local managers are expected to be efficient and to return a profit to the central organization. The store also returns one percent of purchases to customers as a method of returning profits directly to local people, provided the store is operating in the black, which is consistently done.

The ANICA store once purchased, or rather kept on credit, raw and cared ivory as credit against household and vehicle fuels, but this practice was too cumbersome and expensive for the store's finances. In 1982 the store stopped this form of credit. It now accepts only cash for large purchases for weapons, vehicles, fuels, as well as small items. The exception to this rule is one-month credit allowed for groceries and dry-goods, with 6-week probation periods for delinquents.

The IRA Council plays a role in ANICA operations, as indeed many IRA councils do with ANICA stores in Native villages. The Council has review powers over ANICA and it receives a three percent payment from net store profit each year, used to assist the needy with food and fuel purchases. In 1986 this fund amounted to \$25,000.

The other retail store is owned and operated by a local Eskimo family. It was started in 1972 in a small house in the old section of Gambell. Capitalized by a small bank loan, it has since flourished into a business whose gross receipts from sales of food, machines, dry-goods, tools, and other items range from between \$200,000 to \$300,000. Profits run about 10 percent of gross receipts and costs are kept down by using family labor for much, but not all, of the clerking, stocking and ordering. Two to three local teen-agers are routinely hired as clerks. The family lives above the relatively new business building which also serves to defray costs. However, the business is not as prosperous as it was, its sales having dropped about 50% since its peak in 1982. It has remained about even in sales in the past two years and seems to have good prospects as the owner is reorganizing his operations.

The only other private businesses are represented by Ryan Airlines Company which has a full-time agent in Gambell, Aviation Weather, Inc., a weather reporting company with one employee in Gambell, and a local, family-owned bird watchers guide service which is very small in dollar volume, although it has been in operation for at least seven years.

The Alaska Village Electrical Cooperative (AVEC), which works with the City of Gambell, is, like ANICA, a village cooperative and is not technically a private or public-owned business set up to make profits. AVEC has two employees in Gambell, both of whom operate the electric generating facilities. Technical work on the facilities is done by engineers from off the island. AVEC returns about 10 percent of its gross income from electrical sales to the City.

There are several tiny business operations in Gambell that are more in the nature of bartering services than anything else. One man does welding for others and he charges \$5 or \$6 dollars an hour when he needs fuel or spare parts for his machines. Another man repairs snowmachines and all-terrain cycles to gain experience because he plans to open a repair shop in conjunction with the ANICA store. He has received training in repair and maintenance of 4-wheel land vehicles and snowmachines from Honda in Seattle, Washington. He presently does some vehicle repairs for some of the customers of the ANICA store at about \$35 per hour. Several women receive about \$50 for each walrus hide they prepare (split) for whaling boats. They receive money from kin and non-kin alike for this important service. There is one very small video rental business which does a very modest volume of business. This is also a family-owned, local business. Another party attempted to acquire a truck and haul goods from the local airstrip to the village. This business was discouraged by the Sivuqaq Native Corporation on the grounds that there would be unwarranted damage to the land.

In addition to these, there are many people who trade in old ivory and carvings but there is only person to our knowledge who trades in ivory as a middleman. We do not know the extent of this business, but it seems small in scope.

4.3.7 Future of Business Development

The preceding section of this report records efforts to establish businesses. The following describes the prospects of business development and the community's perceived business needs. The City of Gambell encourages the development of businesses because it receives a three percent tax on gross sales. It prefers that local people establish new businesses and the three governments, as mentioned, generally much prefer local control of business and other resources to protect the cultural integrity of the community and to insure as much as possible that all future development does not get out of their control.

Several persons in business and in other important positions in Gambell were asked about what kinds of businesses are needed and might succeed and what are the obstacles that stand in their way. We have already included comments by some of the IRA officials. Here we summarize the views of other officials and some business persons.

One informant cited three kinds of businesses which are needed and which might succeed: a hardwood store, clothing store and a coffee shop which would serve some fast foods. There was a small restaurant in Gambell which operated a few months but it was closed by the City of Gambell for failure to maintain safe standards of sanitation. No one has attempted the other two businesses mentioned here.

One man aspires to start a construction company. He has extensive experience in construction, although he is unsure that loans would be available and he was uncertain about entering into a business in his early 40s.

A local investor put up money with a party in Nome, Alaska, to build and operate a motel in Gambell, and construction was under way in 1987. The owners intend to provide services and facilities for the growing number of visitors to the village. The facility is designed to have eight separate rooms a kitchen and dining room. The project was suspended in summer of 1987 because the Sivuqaq Corporate Board expected fire insurance coverage of \$1 million, a sum investors are reluctant to provide in insurance payments. This subject was expected to be resolved.

Table 4-3

**Private Businesses
Gambell, Alaska
1986**

Type of Business	Source of Funds	Location of Owner
Retail Stores, Large <i>(over \$200,000 annual sales)</i>		
Alaska Native Industrial Cooperative	Private and Federal	Non-local
Store (family)	Private	Local
Retail Stores, Very Small <i>(less than \$5,000 annual sales)</i>		
Video cassette sales	Private	Local
Welding	Private	Local
Restaurant/Lodge		
Lodging (family)	Private	Local
Production <i>(Usually Very Small)</i>		
Ivory carvers (about 70)	Private	Local
Skin sewers (about 30)	Private	Local
Walrus Hide Preparation (3 or 4 persons)	Private	Local

Some erstwhile business people assert that bank loans are very difficult to obtain for a small business. They cited the need for fire insurance as one of the most serious obstacles. Banks do not want to take chances with property that cannot readily be protected against fire, and in the past five years at least five old houses and the electric generating facility burned without effective fire-fighting. There is a fire-fighting crew with equipment in Gambell but water supplies are short and transporting water is very difficult. The one local, private retail store owner paid \$5,000 in 1986 for fire insurance.

Those who have ambitions to establish a small business can seek assistance from the State of Alaska's Community Enterprise Development Corporation and from the Bureau of Indian Affairs. There seems to be a need for wider publicity in the village for these two programs.

4.3.8 Education, Job Training, and Job Placement

A village-wide survey revealed that twenty-seven residents of Gambell had received one or more years of college education; one of these had finished a four-year program in an Alaskan college. All but one of the 27 had attended Alaskan colleges. Nearly all of them were employed. A few planned to leave the island to work on the mainland and several would leave the island for more university or college education if they could find the means to do so (Booshu, 1987).

Thirteen people under the age of 40 had received job-training in subjects such as building maintenance, carpentry, heavy equipment operation, electrician, food service, airline pilot training, small vehicle mechanics, health aid, administration and boiler maintenance. (No information was collected on older residents). These people, some of whom recently left Gambell in search of employment related to their training, were trained in the following locations: Nome, Seward, Anchorage and Unalakleet. Nine of these people were working at jobs for which they were trained; one moved to Anchorage to look for work as a commercial pilot, two were looking for work in Gambell (building maintenance and electrician's training) and one quit his job (heavy equipment handling).

This distribution reveals that training is certainly an aid to those who want to stay in Gambell and who are able to receive training pertinent to available jobs in the village. There are many people who left Gambell for military service, college, better opportunities. At least 40 people of various ages were recorded as having left Gambell more or less permanently over the past 5 to 10 years.

The array of people with college and job-training experience shows that the village economy puts experienced people to work, for the most part, but training and experience are clearly for jobs in the public rather than the private sector. Therefore the training program and much of the work experience of persons employed in Gambell are direct reflections of the structure of the local economy, one which is heavily dependent on federal and state funds for cash income. There is also a persistent preference for subsistence pursuits by adult males, which inhibits encouragement and development of the certain management skills. Furthermore, jobs are occasionally given to those in need rather than those who are best able to do the work. This informal system of job distribution is compassionate, but it does not always cultivate the potential of the most talented.

Data from the 1987 field research show, despite some of the earlier observations, that most of the household heads and other adults in their households (36 persons, over half), looked for and are unable to find jobs. There is, therefore, a general willingness to work at full-time wage jobs. About one-fourth (16) of the individuals contacted in 1987 were not working and they did not want to work at wage jobs. These were persons very intensively engaged in subsistence pursuits.

There is a great perceived need for skills in business and business management and training in machine maintenance and repair, restaurant operation. Some young people are getting training and experience in word-processing, social science research, retail management and secretarial skills with the City government, the Sivuqaq Native Corporation and with the IRA government, among others. More funds are needed for more training and more jobs. Each government and the entrepreneurial sector of the economy need additional skilled people, a condition readily recognized by most of the residents, and especially by those in positions to best appreciate these needs.

In addition to the conditions described above that impose limits on business development, there is also a limit on the number of special occupations and skills a small community such as Gambell can support. Gambell's population size and its isolation from other communities greatly limit the need for many kinds of occupation and business development.

4.3.9 Employment

The types, numbers and availability of jobs described and analyzed here refer only to Eskimo residents of Gambell. Non-Eskimo job-holders are few in number and are found almost exclusively in the public schools.

Employment in Gambell is largely in the public sector. Three-fourths (61) of the 83 jobs of various kinds are public (Table 4-6). The 22 private sector jobs make up only one in four jobs. There is an average of only .76 of a full-time job per household in Gambell, and many of the jobs, as will be explained, are seasonal, temporary and low-paying. A closer look at employment patterns shows that 52 of the 110 households recorded in 1987 had no one employed. Many of these people are hunters, but some of them are unable to hunt or fish often because of the scarcity of money for fuel, ammunition and other necessities for subsistence activities.

Households with employed persons average 1.36 jobs (full- or part-time) (Table 4-4). As the figures in Table 4-4 show, households with more than two job-holders (19 households, or 17 percent of all households) have a total of 44 jobs, which is 53 percent of all jobs. (Income distribution and sources will be given in another section of this report).

Of the 83 jobs of various kinds recorded in 1987, 77 were permanent (41 full-time, 13 part-time, 23 full-time seasonal) (Table 4-5). The balance of the jobs were full-time temporary (4), part-time seasonal (1) or part-time temporary (1) (Table 4-5). Most of the persons who had permanent jobs were men who averaged about 43 years of age; women who held permanent jobs fall into two age groups. Women with full-time, permanent jobs average 33 years of age. These are women with children for the most part, and they have more formal education on average than women who are about ten or more years their seniors. Women with full-time jobs are in nuclear family households (83%) and half of them are in their 20s. Women with part-time permanent work average 49 years of age. Their work generally requires less formal education than the full-time, permanent jobs held by women.

Men who have full-time, permanent employment vary considerably in age. Three are in their 20s, nine in their thirties, seven in their 40s, six in their 50s and one in his 60s. There is age-bias in jobs requiring hard labor, but generally men 30 and up in age seem to have about an equal chance of being fully-employed. These are data from the entire village sample of 110 households. Furthermore, formal education is not a principal requirement for most of these. Jobs held by men generally do not require formal education, and this fact accounts to some extent for the average of about 43 of age years for men who hold full-time, permanent or part-time, permanent jobs.

Full-time permanently employed men are from a greater mix of household types than women who are similarly employed. About half of these men reside in nuclear family households; about one-fourth are from households with married or unmarried offspring who have one or more children. In a sense these are nuclear family households because many of them have young women with children and no spouses. Three men who live alone have full-time jobs. There were 21 men living alone in Gambell, most of whom did not have full-time or part-time jobs; some of them hunt, some do not depending available kinsmen or friends with whom they could hunt. Several single men provided on average subsistence goods to ten households, but a few are too poor and have no one to underwrite their hunting, and they lack other skills to obtain jobs.

Statistical analysis of relationships between household type and total household income shows no significant associations. Income, low, average or high, does not correlate with particular household types. Significance level is .81 in this case, a degree of relationship far below the requirement of .05 (39 households). As one would expect, there is a strong relationship between the number of full-time employees in a household and total household income. The level of significance is reporting).

Table 4-5 presents the number of women and men who held full- or part-time jobs.

A third cross-tabulation showed no significant relationship between total household income and whether households gave subsistence goods exclusively within one's household (1 case), within Gambell only (28 cases) or outside of Gambell (9 cases). (Kendall's Tau B coefficient was .24, with a level of statistical significance of causal relationship among variables). The generalization is: magnitude of total household income has little influence on distribution of subsistence goods.

Total household income also has little distinct effect on the level of subsistence protein in the diet of household members. Most (26) of the 39 households contacted depend on subsistence protein for 50 percent or more of their protein and 16 households use subsistence goods for 75 percent or more for their protein.

There is also no significant relationship between total household income and the percentage of income spent on subsistence. Thirty-one of the 39 sampled households spent more than 20 percent of income on subsistence and they represent all levels of income (the level of significance of the Kendall's Tau B correlation of -.04 was only .41).

Table 4-4

**Employment by Household
Gambell, Alaska
1987**

Number of Households with	NO	jobs each	52
Number of Households with	ONE	job each	39
Number of Households with	TWO	jobs each	14
Number of Households with	THREE	jobs each	4
Number of Households with	FOUR	jobs each	1

Source: Field Protocol

There were 24 permanent public sector employees in the 40 households comprising the Gambell sample*. These persons averaged six years at their jobs, but 18 of them had had their jobs 5 or fewer years; the others seven averaged over 10 years. Those with jobs of long duration are the U.S. Postmaster and several maintenance men and teachers who worked for the Bering Straits School District. Judging from these figures, public sector employment is usually of short duration. There is no lack of interest in such jobs and people usually keep them jobs as long as possible.

The private sector is small compared with the public sector, as Table 4-6 shows. The 40-household survey recorded information about 12 employees. These represented four private businesses: a retail grocery and dry goods store, the Native co-op store, a guide service for bird watchers and a weather service. The employees averaged 6 years of employment, but only three had worked more than 5 years at their jobs and there were three with 15 years of service each. Most of the jobs in this sector are for clerks and the turnover is high as young people move from clerking to other, better-paying employment in the public sector on the island or move away in search of more promising opportunities, or marry and stop working to raise a family. It is clear that most of the private and public sector jobs are generally of short duration.

* The household sample of 40 to which protocols were administered, differs from knowledge of the total households in Gambell about which information was collected by field workers. Sixty percent of the jobs held by persons in the 40 households were in public sector; public sector jobs account for 55 percent all jobs in Gambell. Private sector jobs accounted for 20 percent of jobs in the 40 households and 30 percent in the total of 110 Gambell households.

Table 4-5

**Types of Jobs by Duration, Gender
and Age of Job-Holders
Gambell, Alaska
1986**

Job Type, Duration	Gender of Employees		Average Age of Employees	
Full-Time, Permanent 41 jobs	Males 26 jobs	Females 15 jobs	Males 42 years	Females 33 years
Part-time Permanent 13 jobs	Males 8 jobs	Females 5 jobs	Males 36 years	Females 49 years
Full-Time, Seasonal 23 jobs	Males 14 jobs	Females 9 jobs	Males 45 years	Females 44 years
Part-Time, Seasonal 1 job	Males 1 job	Females 0 jobs	Males 40 years	Females -- years
Full-Time, Temporary 4 jobs	Males 3 jobs	Females 1 job	Males 40 years	Females 22 years
Part-Time, Temporary 1 job	Males 0 jobs	Females 1 job	Males -- years	Females 22 years
Total All Job Types	Male Total	Female Total		
83 jobs	52 jobs	31 jobs		

Table 4-6

**Sources of Employment
Gambell, Alaska
1986**

Public Sector Employment	Jobs	Private Sector Employment	Jobs
Bureau of Indian Affairs (School)	20	Retail Stores (Owner, Operator, 3 clerks)	4
State Government (High School)	2	Airlines	1
State Government (Dept. of Transportation)	1	Alaska Industrial Coop. Association (ANICA)	12
Public Health Service	6	Weather Reporter	1
IRA Council	3	Guide and lodge owner	1
Sivuqaq Native Corporation	3	United Utilities	1
National Guard (full-time)	3	Alaska Village Electrical Co-operative (AVEC)	2
Gambell City	20		
U.S. Government (Postal Service)	2		
Minister (Presbyterian, Native incumbent)	1		
Total Public Sector Jobs	61	Total Private Sector Jobs	22

Grand Total Employment, Public and Private Sectors = 83 Jobs

4.4 Household Demography and Economy

4.4.1 Household Size

There were 40 households in the sample which accounted for 207 people in Gambell, and an average household size of 5.18. As mentioned, fieldworkers canvassed all households in Gambell and came up with 110 occupied dwellings in the summer of 1987, with a total of 501 people, and an average household size of 4.6. The 1987 40-household sample is therefore off the over-all average by .58 persons. In 1982 Native field workers counted 455 people in Gambell in 110 households and an average household size of 4.1 (Little and Robbins, 1984).

To add to the complexity of keeping track of population changes, the City of Gambell conducted a census in 1987 and the count was 493 Eskimo people living in 106 households. The fieldworkers reviewed the census and found that since the census the number of occupied dwellings had increased to 110 with an addition of 8 persons to raise the total of Eskimo people to 501. (There were, during the school months, 27 non-Native persons living in 12 households. This addition puts Gambell across the 500 mark in population most of the year). One-hundred and three households were headed by men and seven by women. The household pattern is clearly male-dominant in decision-making and governance, although women have many important functions in day-to-day matters in their homes.

The 110 households in Gambell is the same as the 1982 sample taken by the Harvest Disruption Project field workers. The average household population has increased the Eskimo people had risen from 455 to 501, at total of 46, or, like the household population, an increase of 10 percent. This amounts to an average annual increase in the Native population of two percent, which is roughly equivalent to the total fertility rate of women 15 to 44 of 3.17. (The United States average is about 1.7). Permanent out-migration is not high. This rate of population increase nonetheless reveals a decrease of 13 percent in the average annual increase in the 1960s and 1970s. This decrease is largely a result of a decrease in birth rates.

Gambell lost five old houses to fire and gained six new houses from a Kawerak grant, so the housing stock has not increased but the quality had improved somewhat while the quantity has remained the same.

Population increased has been a concern of the residents; they fear increasing adverse impacts on wildlife and camping sites. This source of apprehension prompted the survey by the Sivuqaq Native Corporation to identify clan use sites to insure reasonable use with the least adverse environmental impacts.

4.4.2 Household Type

The 40-household sample is described in Table 4-7 by type and frequency. As in 1982, nuclear family and conjugal pairs households were the dominant types. The distribution is about the same for the remaining basic types - stem and extended, single persons and denuded households. As was discovered in 1982 by Robbins and Little (1984) and restudied in 1987, household composition and frequency of types, Gambell households are linked by clan membership and sharing of wild foods, equipment and labor. The 1987 sample showed that 38 of 40 households shared wild foods with other households. Table 4-8 shows direct comparisons with the 1982 household types, frequencies and population.

Table 4-7

**Type and Frequency of Households
Gambell, Alaska
1987**

Code	Household Type	Frequency
1.	Single individual (male or female) no temporary members.	5
3.	Conjugal pair, no temporary members.	2
5.	Nuclear, no temporary members.	18
6.	Nuclear, plus temporary member(s).	2
7.	Single parent (either sex), plus child(ren), no temporary members.	2
15.	Stem. Grandparents and grandchildren, no temporary members.	1
17.	Extended. Grandparents, married children and grandchildren, no temporary members.	6
19.	Stem remnant. Grandparent, married child and grandchildren, no temporary members.	1
23.	Denuded stem. Grandparent, unmarried child and grandchildren, no temporary members.	2
24.	Denuded stem. Grandparent, unmarried child and grandchildren and temporary resident(s)	1
	Total Households, All Types*	40

***Note:** We compared the frequencies of these household types in the 40-household survey with a complete sample of Gambell to check for representativeness of the sample of 40. Nuclear family households are almost identical (45 and 41 percent respectively; the 40-household sample had only a 10 percent representation of single-person households, while they account for 19 percent of the complete sample; the extended and stem household types were close at about 20 percent in each sample).

Table 4-8

**Household Types
Frequencies and Mean Size
Gambell, Alaska
1982 and 1986**

Household Type	Frequency		Percent		Mean Size	
	1982	1987	1982	1987	1982	1987
Nuclear	61	52	55%	47%	4.9	5.8
Single Person	23	21	21%	19%	1.0	1.0
Extended	16	25	15%	23%	6.9	6.8
Joint	5	5	4%	5%	3.0	4.0
Grandparent-Grandchild	2	0	2%	0%	4.0	--
Avuncular	2	1	2%	1%	3.0	2.0
Conjugal Pair	1	5	1%	5%	2.0	2.0
Totals	110	110	100%	100%	4.2	4.6

These comparisons show a rise in mean household size of .4, as mentioned earlier, and there has not been a change in the number of households in the five-period. There has been a eight percent increase in the number of extended and nuclear family households, a result perhaps of a shortage of housing suited to young families or young mothers who have no spouses. The only other change worth noting is a 4 percent increase in the number of conjugal pairs, but this is a minor difference from the 1982 figures. The data given above perhaps show a trend toward a pressing need for more housing.

In general, household types (composition) are determined by available housing, births rates, age of marriage, income, affective ties among kin and non-kin and, to some extent, the need for persons to engage in economic enterprises (wage labor, hunting, collecting, processing and distributing subsistence goods).

Gambell has enough housing to provided for the 19 men (most of whom are young) to live alone, and these people generally had the economic means through their own efforts, or their efforts combined with assistance from kin and friends, to maintain separate dwellings. Some of these men did not want to live with others, some had no opportunities to join others under a common roof. Most of these persons lived in the old part of the village where no rents were charged them or where they paid small amounts for housing and electricity. Most of them were frugal in incurring fuel and other expenses.

Nuclear families generally had little difficulty obtaining housing. They pay rents based on ability and this usually runs around \$95 per month. This information applied to stem, extended and variants of them as well.

As Tables 4-7 and 4-8 show, seventy-percent of all households were nuclear family or extended in some form or another, and these, added to single-person households, accounted for nearly 90 percent of the households. In 1982 these two types accounted for 91 percent of all households. The drop of eight percent in nuclear family households and an increase of eight percent in extended family households from 1982 to 1987 are accounted for by a rise in population of 10 percent between 1982 and 1987 and no increase in the number of dwellings.

4.4.3 Age and Sex of Household Heads

The average age of household heads is 49 years, the same as the 1982 sample of households. Table 4-9 gives ages of household heads and population of households.

There were only three female-headed households among the 40 sampled households, a rate of eight percent. There were 9 female-headed households among the total of 110 households in Gambell, a rate also of 8 percent. This is further evidence that the 40-household sample is representative, or nearly so.

The female household heads in the sample of 40-household sample are all in their 70s, are widows and all of them have children or grandchildren living with them and they live near married children. Two of them are visited weekly by a woman who works for the City of Gambell to look after them. Among the total of nine female-headed households in Gambell, six heads were widows, two were divorced and one had had no marriage. Seven headed denuded nuclear family households (one or more children present, males absent because of death or divorce; two headed extended family households).

Table 4-9
Age of Household Heads
and Household Size
Gambell, Alaska
1987

Age of Household Heads*	Number of Households	Household Size (Average)
less than 30 years	0	-- members
30-39 years	15	3.9 members
40-49 years	7	6.0 members
50-59 years	11	6.8 members
60-69 years	3	5.7 members
over 70 years	4	4.3 members
Total	40	5.18 members

***Note:** Household head refers to the adult in a household who is identified by the household as the head; this usually means, according to field observations, the person who makes most of the major economic decisions and exerts the greatest ethical force in her or his household. In some cases designation of headship by household members was the determinant.

Table 4-10

**Mean Household Income and
Per Capita Income (All Sources)
By Age of Household Head
Gambell, Alaska
1987**

Age of Household Heads	Mean Household Income	Per Capita Income	Income +/- the Mean	Number of Households
30-39 years	\$19,454	\$4,958	+\$337	14
40-49 years	\$30,570	\$5,103	+\$482	7
50-59 years	\$28,031	\$4,111	-\$510	11
60-69 years	\$22,693	\$4,000	-\$621	3
over 70 years	\$ 8,975	\$2,215	-\$2,406	4
Average Age All Household Heads	Average Income All Households	Average Income Per Capita		Total Households
49 years	\$23,938 ^a	\$4,621 ^a	NA	39 ^b

Notes: ^a These figures should be increased to \$26,256 and \$5,118 based on the estimated total village income of \$150,000 per year from old ivory and ancient artifacts (Carpenter, 1987) and \$160,000 in Alaska Army National Guard wages (Wortman, 1987). These sources of income were not studied systematically and are therefore averaged for each household. These revised household and per capita income figures further separate households above and below the mean income. See discussion which follows.

^b One household reported in Table 4-9 is not included here.

In 1982 there were 13 female-headed households, or 11 percent of the total of 110 households. The percent of female-headed households dropped from 11 to eight percent between 1982 and 1987.

The distribution of ages of household heads and population of households in Table 4-9 shows that the majority of household heads are in the 30 to 39 and 50 to 59 age intervals. These ages are strongly associated with either nuclear family households (heads 30 to 39 years of age), or extended or stem households (50 to 59 years of age of household heads). No heads were under 30 years of age.

An examination of mean income of households and per capita income by age of heads (Table 4-10) adds an important dimension to an understanding of the cycle of families and households.

We see then that the mean household income, for the 39 households is \$23,938, and the per capita income for 202 people is \$4,621. It must be noted that one household missing for total income figure.

These figures show that the households whose heads are 40-49 have the highest per capita income. These are also the households with the second greatest number of persons (6.0). This high income by comparison is a partial result of extended work experience and seniority of the heads and the presence of offspring who have jobs (many of which do not pay high wages, but the sums add significantly to per household income).

The households with heads 30-39 also have per capita incomes above the mean and this can in part be accounted for by relative youth of the heads and a low per household population (3.9). Households whose heads are 50 to 59 are on average \$510 below the mean and nearly \$1,000 per capita below households with heads 40-49 years of age. This is an important difference and it is a result of decline in earnings (or a chronic lack) of the heads, some persons who are disabled and a household population of 6.8, the highest of any other age interval of household heads.

Households with heads ages 60 to 69 are in a similar, but worse financial circumstance and for comparable reasons. These households are also large in size, averaging 5.7 persons.

There is one important point to make about the latter two types of households: although mean per capita income declines, nearly all of these households are supported by younger, related families (usually patri-clans members) with wild foods. Many elders, including those in their 50s, provide subsistence equipment accumulated over many years, for younger male patri-clanspersons. Thus capital is collected over the years, made available to younger persons, and serve as a means of subsistence support for elders. So, though per capita cash income drops for those 50 and older who head households, there is continued access to wild foods, a circumstance which does not readily reveal itself in per capita income.

Households with conspicuously low per capita incomes are those headed by elders 70 or more years old. The income is only \$2,215 per capita, nearly \$3,000 below households headed by persons in their 40s. These elder households are slightly larger in population than those headed by persons 30 to 39 by nearly one-half of a person. There are adult offspring and adult grandchildren with these elders; patri-clan members, unrelated neighbors and friends and youngsters give wild and commercial foods, money and labor assistance to these elders and their co-residents and many of

them use resources very sparingly, depending on wild foods for the most part, and spending as little as possible on processed store goods. (Boys and girls give their first kills or collected foods to elders in the village; it does not matter that some of the elders are not related to the younger hunters and collectors). There is also a lower level of consumer needs for transportation, subsistence equipment, clothing and other goods.

There is no strong relationship between the proportion of earned income and household type (structure) as Table 4-11 shows.

The family and household cycles begin with newly married couples living with the parents of the male spouse, as is the custom of the Yupik Eskimos whose patrilineal clan system requires patrilocality after the bridegroom serves his wife's father's family for about one year. There were several young couples living with the male spouse's patrilineal kinsmen. One young man of 22 was remodeling a house for himself and his bride and he was to move into it soon after our departure from Gambell.

4.4.4 The Family Economic Cycle

The Gambell family economic life cycle consists of four stages: an early period of dependence upon the parents of female and male spouses; a second stage is featured by independence and a nuclear family household form with, if there are any, earnings from wages, some income from carving or other crafts, and digging for ancient ivory, and a substantial amount (in most cases) of wild foods; the third stages sees persons in their 40s and 50s frequently hosting married or unmarried offspring with children; earnings are still close to their peak and mutual assistance in harvesting and consumption of wild foods continues among married males of two generations, occasionally three; and, finally, the last stage characterized by elders who are likely to have married or unmarried offspring and grandchildren with them: the elders are dependent on pensions or other retirement funds, longevity funds, disability funds, and the income of younger persons in their patrilineages. Widow and widowers and elderly conjugal pairs end their family cycle with married or unmarried children or grandchildren.

Some continue to harvest and process wild foods, others retire from these activities because of poor health or otherwise diminished physical capacities and depend on sons, younger brothers or grandsons for wild foods, labor, and transportation.

As mentioned earlier, these elders have, in many cases, considerable capital (boats, motors, all-terrain cycles, weapons, nets, camp sites and camp buildings which they make available to their younger male kin and for this the elders are given shares of wild foods).

The 40-household sample revealed that there was no significance between household type and amount of subsistence protein in the diet. Nearly all households (38) depended on subsistence protein to a 50 level of protein ingestion or greater. The Kendall's Tau B coefficient is only .04 for a level of significance of only .72.

Table 4-11
Relationship Between Proportion of
Earned Income and Household Structure
Gambell, Alaska
1987

Earned Income as a Percentage of Total Income	Household Structure Type^{a,b}		
	Extended	Co-Residential	Nuclear or Other
0% Earned Income	1	0	3
1%-49% Earned Income	4	0	5
50% or more Earned Income	7	2	18
Total	12	2	26

Notes: ^a Kendall's Tau B = .05, Significance level = .74.

^b N = 40 Households.

The family economic cycle integrates capture and consumption of wild foods, cash from wages, carvings, old ivory, sewn skins, transfer payments, energy assistance, permanent fund payments, use of commercial manufactured goods and materials and foods, government pension programs and kin-based reciprocity in labor, affection, devotion and material support. Capital flows through families from elder to elder as the generations come and go, and the machines and tools weapons and goods used by families depend on new technologies, and State and Federal programs, policies and projects and the ingenuity of the Eskimo people.

4.5 Subsistence Harvest Activities

This section of the report is about participation in hunting, fishing and collecting wild foods, whether respondents participated with people outside of their households in subsistence activities, home repair of equipment, success in the hunt compared with 1982, time spent repairing equipment and the quantities of harvested wild foods, among other subjects that are part of the economics of the village.

Gambell hunters and collectors harvest very large quantities of wild foods. All 40 respondents to the 40-household survey hunted or collected wild foods in 1986, 38 of them hunted or collected or both with persons from other households, and eight of them conducted subsistence activities with persons from other villages and three-fourths of them gave subsistence goods to persons outside of Gambell. In informal surveys of Gambell in 1982 and 1987 fieldworkers recorded at least 10 households which gave subsistence goods to at least 300 people in at least 60 other households in Gambell, Savoonga, Nome, Anchorage, other mainland Alaskan towns and several of the lower 48 states. Those receiving these goods were relatives in the male head's patrilineal kin and the female spouse's patrilineal kin. It seems that those who do not share outside of the village and who shared little or none at all within Gambell are those who were hard pressed to meet the needs their nuclear family or single person households. There are some elder males who could not hunt and whose patrilineal kin gave them food. Some of these elders supply boats and other equipment, as we have mentioned, for their sons, paternal nephews or grandsons for hunting and fishing.

Of 37 households for which detailed were collected on extent of sharing outside of individual households, the following results were obtained. The households which shared extensively within Gambell, Savoonga and to mainland communities, 17 were nuclear, seven extended and two were conjugal pair households. These are either higher income households and, or households embedded in large patrilineages. The obverse of these households, those which did not share or give extensively consisted of five single-person households, four nuclear family households and two extended family households. These households lacked patrilineal kin and income for intensive subsistence pursuits. They received subsistence goods from friends or kin. One person earned a high income but had no time for subsistence activities and he received occasional goods from kinsmen who did hunt often. This household did not pass on much of its received goods.

Twenty-three household heads of the 40 surveyed in 1987 used only their own hunting and fishing equipment. The household incomes of these persons ranged from \$6,000 to \$50,000 per year. The poorer hunters with aluminum and skin boats, motors and other expensive equipment paid for these items with money from many sources: Permanent Fund

income, carving, old ivory and occasional wage work. The cost of maintaining the equipment is paid for from the same sources. Persons in more prosperous households generally used only their own equipment which was paid for by wage income from one or more wage earner or carver in their households.

Those who use others' equipment do so as subordinate members of hunting and collecting crews. These persons also vary greatly in income. In all sixteen cases, those who use other's equipment did so only occasionally, and it was equipment of patrilineal kinsmen whose equipment was used. In only one instance did some one record using a friend's equipment. In three cases a male household head's in-laws were sources of borrowed equipment, a break from the more conventional St. Lawrence Island practice of depending and joining with patrilineal kin. Several persons reported that sharing and interdependencies are steadily extending beyond patrilineal and patrilian boundaries and that gifting has become more general in nature. It appears that the influence of Christian ethics and the democratization of hunting technology have played important roles in effecting this change. We were not able to fully confirm or deny this generalization. The general rule as to whether one used one's or another's equipment seemed to depend on one's position within crews in age and experience.

Another important condition was presence or absence of male kinsmen or friends with whom one can either join as a crew captain or crew member. Very few persons used others' equipment who did not belong to a crew of the persons who lent equipment.

There is a strong relationship between the percentage of subsistence protein in household diet and the percentage of income used for subsistence pursuits. (The Kendall's Tau B coefficient is .50 and the level of significance is .0001).

Most of the hunters, fishermen and collectors repair their own gear (33 of 39 respondents); this pattern of response reflects a very high degree of self-sufficiency and one must also recognize that some of the respondents were elders who could no longer make home repairs to equipment.

A majority of the respondents spent less than half as much of their time working on their equipment as they did hunting and fishing. About two-thirds of the respondents use gear kept or owned by other persons; this fact is in keeping with earlier findings about the kin networks which stress pooling of equipment and frequent borrowing and lending. Most of those who used another's gear used equipment owned or kept by a relative rather than a friend. (We use the term "kept" to denote pooling of equipment. Frequently an elder male kin will serve as the steward of equipment paid for and maintained by male kinsmen, usually brothers).

Thirty-one of the respondents fished for subsistence only, six did not fish in 1986 and two persons did not respond to this question. This result corresponds to the information collected by Gambell field workers for the John Muir Institute about the level of participation in summer camps, the places where most of the fishing takes place for Gambell residents.

There were 18 persons who said their 1986 hunts were more successful than 1982 hunts and they reported that the reason for this difference is greater availability of game; 15 answered opposite to this, claiming their hunts were less successful in 1986 than in 1987 because of less availability of game. A few persons cited bad weather in 1986 as the cause of less success.

The respondents butchered their own game of one kind or another and just over half spent less time butchering than pursuing game; 16 of the 37 who replied to questions about time allocation said they spent half as much up to twice as much time butchering as pursuing wild food sources. These replies certainly suggest that a considerable amount of time is spent processing wild foods, an allocation of time which has not gotten enough attention from researchers in their analyses of subsistence.

There is an even split among the 37 employed persons in 31 of the 40 households about how much time is spent hunting comparing with time spent on the job. About half spent less time on the job than hunting and another half spent half or more than half harvesting and processing wild foods. One must remember that one's age plays a role in this distribution, and as we have seen, there were 13 men in their 40 and 50s in the 40-household sample who held permanent jobs employed. This is a time in the lives of many Gambell hunters of yielding more and more hunting and fishing tasks to younger male kinsmen, and in a few instances to females.

Heads of 20 households spent at least 40 hours each week hunting, fishing for and processing wild foods and repairing equipment. Half of these persons are unemployed, but eight of these have one or more employed persons in their households and two of these are carvers who earn more than \$20,000 per year from this craft. There are only two heads who spent 40-plus hours per week harvesting wild foods and who have no employed persons in their households. These were young men who live alone and who work with kinsmen at subsistence and who did not want to have wage jobs.

Ten household heads who worked full-time and average 40 hours per week at subsistence work often had jobs at schools which were seasonal in character and which allowed job-holders to spend many hours fishing, collecting and hunting during summer months. Many people hunted, repaired gear and processed wild foods on weekends.

The generalizations here are: those who were employed and who were able-bodied usually spent 25 or more hours per week on average harvesting wild foods.

The people of Gambell continue to be very dependent on them. We have seen that considerable time was spent in the pursuit of wild foods, at least as much as time as working at wage jobs.

Gambell hunters and collectors harvest large quantities of wild foods. Estimates of tons or pounds, dressed or undressed weights are not well calculated in our judgment. Burgess (1974) made an effort to assess total harvest, which he did with reasonable care. His figures are very high, as they are based on undressed weights and total number of animals reported or estimated. Our estimates are also very high; they are based on estimated gross weights of animals, fish, birds and birds' eggs. We depended on the estimated undressed weights given by a local hunter, a man in his 40s who has hunted most of his life, is a whaling captain and whose experience and reading background qualify him as a very dependable source for this information.

The 40 households surveyed reported a total of 1,353,944 pounds of undressed harvested wild foods (Table 4-12).

Table 4-12

**Quantities of Harvested Wild Foods
Gambell, Alaska
1987**

Wild Food	Quantity Harvested	Households Reporting
Walrus*	627 walrus	34
Bowhead Whales	3 whales	(Entire village)
Seals (all species)	232 seals	32
Fish (all species)	3,146 fish	29
Birds (all species)	4,728 birds	33
Birds' Eggs (Murre)	6,030 eggs	33
Green Plants	1,428 lbs	33
Berries	610 lbs	27

Note: * Walrus harvests for Gambell and Savoonga are reported by the U.S. Fish and Wildlife Service in the following quantities:

Year	Gambell (Frequencies)	Savoonga (Frequencies)
1981	961	662
1982	942	167
1983	642	624
1984	1,499	1,011
1985	949	580
1986	816	607
1987	1,241	233

**Numbers refer to observed retrieved kill, Spring.
(Loss rate is approximately 67%).**

Source: Wohl, 1987

These figures show that walrus hunting continues in Gambell undiminished over the years. Gambell had, in 1982, 105 hunting and collecting parties of various types for harvesting whales, walrus, bearded seals, various birds and bird eggs. Total membership in the various subsistence parties (crews) numbered 157 persons in 41 walrus-hunting parties to 89 in 18 bird-egg collecting parties. In addition to these figures, 93 percent of the population of Gambell had one or more persons set up patrilineage-and patriclan-based summer camps where fishing, seal-hunting and fossil ivory digging were conducted. Harvest figures for households in 1982 were similar to the 1986 per household. Little and Robbins and their Gambell field workers plotted all of the numerous and geographically extensive patri-clan camping sites on the western half of St. Lawrence Island.

The 40 households harvested a total of 1,353,944 pounds of undressed wild foods. This harvest yields a per household figure of 37,270 and a per capita poundage of 6,590, and a daily per capita figure of 18 pounds. The figures must be qualified with the following comments and assumptions which will result in a reduction in the harvest estimates.

Based on the estimated weights of wild species (Table 4-13) and the reported numbers harvested, however, the total harvest was 1,300,331 pounds of undressed wild foods, or a per household figure of 32,508 pounds (per capita figures of 6,281 and a daily per capita total of 17 pounds). The total must be qualified by some comments and assumptions which will result in a further reduction of the figures.

In 1986 the Gambell whaling crews harvested three bowhead whales, averaging about 40 feet in length and 40 tons in weight. We used a figure of 120 tons, 264,000 pounds for this harvest and we add that our informant stated that about one-half of the bowhead is consumed by people on the island. (We nonetheless used the undressed to remain consistent in our criterion for harvests). The Gambell people give their Savoonga kin and friends about one-half of their bowhead harvests and, about one-fourth of the Gambell households give wild foods to people living outside of Gambell. Thus the figures given above do not accurately show the actual quantities of foods consumed.

Another word of caution is that there is some double counting. This happens because persons who hunt together, walruses for example, report a total crew harvest. Therefore if an interviewer contacts persons belonging to the same hunting crew and the crew harvested 20 walruses in 1986, the interviewer will record 20 for each hunter's household, when, in fact, each hunter received a crew share of perhaps 5 walruses. Walrus crews averaged nearly 4 persons in Gambell in 1981 and crew sizes were the same size in 1986, according to a Native informant (Apangalook, 1987). Adjustments have been made for crew harvests and harvests made by individual hunters.

Table 4-14 shows harvests by animals, fish, birds, birds' eggs, green plants and berries. Estimates are given for per capita consumption based on the number of households which reported quantities and calculations for undressed weights of resources. Wild foods are ranked by quantities harvested. Ratios of harvested are based on 1981 figures contained in Little and Robbins and the harvest figures collected in 1987, some of which are not as precise as the Harvest Disruption Study data (Ibid.)

Table 4-13

**Weights of Various Wild Foods
Gambell, Alaska
1986**

Wild Food	Approximate Weight in Pounds (Undressed)	
MAMMALS		
Bowhead Whale	2,200 lbs	per foot of length per animal
Walrus	2,000 lbs	per animal for adult males
	1,500 lbs	per animal for adult females
Polar Bears	800 lbs	per animal (average for male and female adults combined)
Bearded Seal	750 lbs	per animal (average for male and female adults combined)
Spotted Seal	200 lbs	per animal (average for male and female adults combined)
Ribbon Seal	150 lbs	per animal (average for male and female adults combined)
Ringed Seal	60 lbs	per animal (average for male and female adults combined)
FISH		
King Salmon	35 lbs	per fish (average for male and female adults combined)
Chum Salmon	6 lbs	per fish (average for male and female adults combined)
Silver Salmon	6 lbs	per fish (average for male and female adults combined)
Char	3 lbs	per fish (average for male and female adults combined)
Dolly Varden	3 lbs	per fish (average for male and female adults combined)
Sculpin	3 lbs	per fish (average for male and female adults combined)
Cod (Blue)	0.10 lb	per fish (average for male and female adults combined)
BIRDS		
Geese	5 lbs	per bird (average for male and female adults combined)
Cormorants	4 lbs	per bird (average for male and female adults combined)
Ducks	4 lbs	per bird (average for male and female adults combined)
Murres	2 lbs	per bird (average for male and female adults combined)
Auklets	1 lbs	per bird (average for male and female adults combined)
Eggs (Murre)	0.25 lbs	per egg

Table 4-14

**Wild Food Harvested
Undressed Pounds Per Capita Per Year
Gambell, Alaska
1986**

Wild Food	Undressed Pounds Per Capita
Walrus	1,644 lbs
Bowhead Whale	154 lbs
Fish	106 lbs
Spotted Seal	78 lbs
Bearded Seal	63 lbs
Birds	33 lbs
Ringed Seal	24 lbs
Green Plants	8 lbs
Berries	4 lbs
Ribbon Seal	<1 lb
Total Wild Food Harvest Per Capita Per Year	2,114 lbs

Based on these figures, each person has on average access to 12.5 pounds of undressed wild foods per day. If one discounts for loss during butchering and the 32 percent foodstuffs purchased in stores, the figure is a plausible one. It does not include Polar and Gray Whale meat, but these are not large in quantity most years, and it accounts for a 67 percent rate of loss of walrus during the hunt (Wohl, 1987).

Gambell hunters must search for fresh ivory from which they can fashion art objects for sale to earn money to pay for daily expenses and for equipment for subsistence pursuits. Their strategy is to collect walrus from which they not only lawfully obtain badly-needed ivory, but to harvest the muscle meat, brains, intestines, livers, skins and mammary glands. Some of the bulk of these animals is discarded but a sizable portion of those safely retrieved is used.

The distribution of responses about levels of dependence is shown in Table 4-15.

This level of dependence is similar to the figures given by respondents in the 1982 John Muir Institute Harvest Disruption Study (75% to 80%). There is every indication that harvests have remained about the same for most of the years between 1982 and 1986, according to hunters' reports. The figures given above are, of course, from the 1986 survey of 40 households.

There is another, although indirect measure of estimating changes in the levels of dependence on wild foods. Retail sales at the two stores in Gambell rose from a total of \$1.6 million in 1982 to \$1.9 in 1986. This difference has been partly accounted for in the section on businesses in Gambell. We add that the \$300,000 difference in gross receipts is partly accounted for by inflation (although per unit fuel costs have actually decreased). However, there is also a common observation made by merchants and many householders that there is a steady increase in the number of purchases of foods and other goods made off the island by Native residents. There are no solid figures to support this observation, but this trend could, in part, account for a possible decline in the level of dependence on wild foods (if, indeed, this is a trend). Our best evidence suggests that dependence on wild foods is holding even.

4.6 Income

Previous parts of this report on Gambell contain information sources of employment, types of employment by duration, the age and sex of those who hold jobs, the number of wage jobs, amounts of income from the Alaska Army National Guard and sales of ancient ivory fragments and artifacts, income related to age of household heads and an approximate relationship between amount of time spent pursuing and processing wild foods and employment. This section will provide specific income figures and their sources.

The 40 households received a total of \$1,243,620 according to the evidence we have on hand. The mean household cash income from all sources is \$26,256 and a per capita income of \$5,118. The 1982 Harvest Disruption Study recorded an average income of \$13,350 in a sample of 37 households. The 1982 study was flawed by some limitations in the way inquiries were made about income. In retrospect, it seems that 1981 income, the base year for the Harvest Disruption Study, was closer to \$16,500 per

Table 4-15

**Dependence on Wild Foods
Gambell, Alaska
1986**

Dependence on Wild Foods as a Percentage of Total Food	Number of Households
50% or less	1
51% - 60%	11
61% - 70%	8
71% - 80%	12
More than 80%	10

Average Dependence on Wild Foods	Household Sample Size
68%	40

household if one includes estimated total National Guard income, income from sales of ancient ivory and from carving. The latter two would have added about \$150,000 to Gambell household income and the National Guard income was probably \$120,000 or thereabouts. Despite these corrections, real income has risen since 1981, considering modest total price increases in the 5-year period and a modest general rate of inflation.

We do not have precise comparisons between the 1981 household cash income and 1986 for all of the sources shown in the following figures. The 1986 study is much more detailed.

The distribution and sums (Table 4-16) show the overwhelming importance of public sources of cash income over other sources, although most sources are very important to families which are strapped for money in a community where goods and energy costs exceed other regions of the United States by a factor of from 2.5 to 10.

Public-sector income comprises about 90 percent of all annual cash income and private-sector income comprises ten percent. The State of Alaska is the single largest public-sector source of income. Private-sector income includes sales of ancient ivory and artifacts made from fresh ivory. Patriclans have usufruct rights to digging places and this source of income, although very small for the amount of time people expend, is in their control to some extent; they do not, however, have control over the ivory market. They dig because there is hope of finding an artifact which could earn as much as \$20,000 or more from buyers who visit the Gambell and Savoonga every summer.

The people are certainly aware of their dependence on public subsidies and some of them have considered schemes to gain control of market in ivory, fresh and fossilized, to establish a bottom-and-salmon fishing industry and to assay the mineral resources of the island. These proposals are difficult to debate and even more difficult to establish as integrated parts of long-term plans for the Gambell and Savoonga Native peoples. They are doing well to obtain jobs, seasonal, part-time and permanent, of any kind. They must juggle sources of income and calculate the best way to meet their bills, have a household income upon which they can depend and continue hunting, fishing and collecting. Our observations show a persistent desire among the people to get out-of-doors, get away from the confines of the village and experience a sense of autonomy.

The desires for harvesting wild foods and to be outdoors are not the cause of meager internal self-generating sources of revenue. The isolation of the island from major markets, the small amount and extent of skills in the local Native population, dependence of inconstant federal and state funding and limits on credit, are among the most serious limits on the prospects of economic development.

4.7 Consumption and Expenditures

Consumption refers to finished goods and commodities purchased in the market economy for household needs. We have already presented gross sales at local retail stores and will therefore not repeat these figures.

Distribution of subsistence costs, which includes fuels, ammunition, fishing gear, boats, etc., is shown in Table 4-16, and the distribution is almost identical to the 1981 figures.

Table 4-16

Average Household Income
by Source
Gambell, Alaska
1987

Source of Income	Amount of Income	Percent of Income
State of Alaska	\$6,970	32%
Local City Government	\$3,900	18%
Permanent Fund Income (State of Alaska)	\$2,858	13%
Federal Income	\$2,400	11%
Non-Wage, Self-Employment (Crafts)	\$1,640	7%
Institutional* (Combines Federal, State and Local government income)	\$1,037	5%
Public Assistance (Federal and State)	\$ 874	4%
Private Sector Employment	\$ 620	3%
Energy Assistance (State of Alaska)	\$ 618	3%
Social Security	\$ 478	2%
Other Government Transfers	\$ 312	1%
Longevity Bonus	\$ 165	0.5%
Rents, Interest, Dividends	\$ 15	--
Misc. Health and Social Services	\$ 7	--
Total	\$21,894	100%

* Note: This category is not, unfortunately, explicitly separate from state, federal and local institutional sources of income. It is best to regard this inexplicit category as merely a catch-all for one or more of the three institutions mentioned here.

Table 4-17

**Percentage of Income Devoted
to Subsistence Expenses
by Household
Gambell, Alaska
1986**

Percent of Income Devoted to Subsistence Expenses	Number of Households
9% or Less	4
10-19%	4
20% or More	32

These figures are based responses to a single question, "What percent of your total household income went for subsistence expenses last year?" It is a self-reported figure and one which is supported by other information on fuel costs, rate of replacements of snowmachines (every 4 years), all-terrain cycles (2.5 year), ammunition, weapons, etc.

Monthly household expenditures are presented in Table 4-18. The greatest expense is the purchase of new and used snowmachines and all-terrain cycles. These are paid in cash in nearly all instances. The State of Alaska Permanent Fund is the major source income for this cash purchase.

Groceries, utilities and home mortgages are the other major expenses. Eight of the 40 households paid no rent or mortgage (because of a recent court case on poor construction and government responsibility to renters) and of those who paid mortgages (very few pay rent) the most frequent sum is \$98 per month.

Other expenses singly comprise only a small part of the total monthly outlay of cash. The figures for hunting and fishing gear are misleading, and we have already pointed out that for most households, pursuing and processing wild foods takes more than 20% of annual household income.

There are some expenses which were not recorded in the household survey - telephone and television hook-ups and use and the monthly payments to the City of Gambell for freeze space.

There were 62 telephone hook-ups in Gambell and our impression is that bills averaged between \$70 and \$100 per month. There were 31 television cable subscriptions; installment charges are \$176 and monthly rates are \$51.

Nearly all families have a locker at the City of Gambell freezer plant. Monthly charge is \$15; a few people are in behind in their payments and they are carried by the City. (A few are behind in house payments and they are carried by the Bering Straits Housing Authority).

There are items which are integral to the earnings of many households but do not require large monthly expenses -- weapons and tools. Weapons, of course, are indispensable in hunting; tools are essential to carvers and at least 70 household in Gambell have carving tools purchases over the years and which last a long time.

The distribution and percentages of expenses show that cash is used to provide essentials for the most part and that very items are purchases that are not meant for these purposes. There were some price comparisons between 1981 and 1987 standard consumer items. Table 4-19 gives these.

Nine of the items in the table rose in price, five dropped and one remained the same. The drop in fuel costs was a major boon to the people of Gambell as was the drop in per kilowatt hour charges of from .47 cents in 1981 to .375 cents in 1986.

Gambell now has five regular commercial flights each day, one more than in 1981, one cargo flight (4-engine commercial transport) from Anchorage each Thursday, and 3 barge deliveries each year. The cargo flights bring fresh vegetables to local stores, a marked improvement in the range and freshness of available foods.

Freight charges from Anchorage are 99 cents per pound for cargos ranging from a required minimum of 100 pounds to 500 pounds, 30 cents per pound for deliveries of 500 to 1,000 pounds and 20 cents or orders over 1,000. There is also a rate of 12 cents per pound for a special of items which fall into the category of by-pass mail.

4.8 Capital Formation, Debt and Savings

Houses are the most important capital asset to the people of Gambell. Most of the people do not own the houses in which they live but approximately one-third do. Other assets of importance are weapons and other equipment used for pursuit of wild foods. This capital is kept in constant use and is a vital resource. Nearly all households have four to six weapons (rifles and shotguns), there are at least 40 aluminum boats (average life is about 4 years, with a replacement cost of \$2,200 or more) and 22 wooden frame, walrus-skin whaling boats. Nearly every household has at least one all-terrain-cycle, new or used (replacement costs are from \$3,000 to \$4,400).

Debts and savings are small. Average household debt is \$140 and this consists of a few instances of credit loans, two bank loans.

Average amount of cash in banks is \$162, a sum which is confined to two or three households. Money moves fast in Gambell and it is always in short supply.

Table 4-18

**Monthly Source of Expenses, Amounts and Percentage
Gambell, Alaska
1986**

<u>Source of Expense</u>	<u>Amount of Expense</u>	<u>Percentage of Total Expenses</u>
Vehicles (purchases)	\$623	42%
Groceries	\$350	23%
Heating Oil	\$171	12%
Electricity	\$ 88	6%
Home Mortgage	\$ 75	5%
Transportation	\$ 26	2%
Furniture and other Personal Property	\$ 25	2%
Hunting and Fishing Gear	\$ 24	2%
Major Appliances	\$ 22	1%
Installment Accounts	\$ 19	1%
Firearms	\$ 17	1%
Tools	\$ 15	1%
Clothing and Accessories	\$ 10	0.5%
Medical	\$ 9	0.5%
Business Loans (Annual payment, one case)	\$ 4	--
Vehicle Loans	\$ 4	--
Insurance	\$ 2	--
Other Expenses	\$ 2	--
Total	\$1,486	100%

Table 4-19**Comparisons of Prices of Consumer Items
Gambell, Alaska
1981 and 1987**

Consumer Item	1981 Price	1987 Price	Percent Change
Sailor Boy Pilot Bread, 2 lb.	\$ 2.35	\$ 3.10	+32%
C & H Sugar, 10 lb. bag	\$ 5.50	\$ 7.10	+29%
AA medium eggs, dozen	\$ 1.25	\$ 1.59	+27%
Pine Sol, 40 oz.	\$ 7.55	\$ 5.59	+26%
Hill Brothers Coffee, 48 oz	\$10.19	\$12.37	+21%
Lipton Tea Bags, 48	\$ 2.56	\$ 3.02	+18%
Iodized Salt, 10 oz.	\$ 1.05	\$ 1.23	+17%
Lysol disinfectant, 12 oz.	\$ 2.75	\$ 3.15	+13%
Spam, 7 oz.	\$ 1.89	\$ 1.99	+11%
Propane, bottle	\$127.00	\$127.00	0%
.308 ammunition, one box	\$14.73	\$14.50	-2%
Maxwell House, reg. 48 oz.	\$15.46	\$13.85	-10%
Borax hand soap, 12 oz. can	\$ 1.58	\$ 1.43	-10%
Heating fuel, gallon	\$ 1.85	\$ 1.55	-16%
Gasoline, gallon	\$ 2.25	\$ 1.80	-25%

Source: Field Data Collection, 1987.

4.9 Summary

The economy of Gambell is a mixture of subsistence production, processing, distribution and consumption, state and federal spending programs (largely the former) in capital improvements, maintenance, service jobs, income transfers and a modest amount of market exchange. Nearly all households engage directly in subsistence activities, craft production for cash, and about three-fourths of the households have wage laborers, permanent or otherwise. Subsistence is impossible without a sizable influx of cash and cash income cannot be separated from subsistence ideologically or practically.

The people of Gambell know their economy is greatly dependent on government monies. They also know that locally-generated production and marketing and control of lands and natural resources are in their best interest and they are trying to achieve some of these goals, recognizing that a steadily-growing population and considerable limitation on local economic diversification greatly restrict opportunities for long-term planning to protect a way of life they value while adjusting to self-created and imposed change.

The people are also attempting to reduce their adverse effects on natural systems and wildlife. These efforts are only beginning.

5.0 ST. PAUL VILLAGE DESCRIPTION

5.1 St. Paul Historical and Political-Economic Overview

5.1.1 Introduction

St. Paul shares with other Aleut communities of Southwestern Alaska common bonds based on ethnic identity, kinship, subsistence exchange, and common values. Unlike these other communities, St. Paul's economic system has historically had a commercial orientation. Initially managed by Russian and, since the late 18th century, American commercial business interests, St. Paul's economic activities have traditionally revolved around the commercial harvesting and processing of fur seals. Throughout the 20th century this economy has been directed by the federal government under the auspices of the National Marine Fisheries Service. Consequently, the entire community has been involved in wage labor economic activities for almost two centuries. The subsistence activities that do occur have been incidental to St. Paul's commercial harvest. Subsistence activities have been a less important component of the community's economic system than is the case of the region's other Aleut communities.

The dependence of the local economy on the commercial harvest of fur seals has made St. Paul subject to external political and economic factors beyond its controls. Until recently, these factors included world markets which determined the price of seal skins; international treaties governing the harvest of fur seals; federal laws (such as the Marine Mammal Protection Act which prohibited the commercial harvest of fur seals once the international treaties no longer remained in effect); the prohibition of sales of seal skins under current subsistence regulations; and the policies and procedures of federal agencies such as the National Marine Fisheries Service. Many of these factors were altered, radically, by the withdrawal of the National Marine Fisheries Service (NMFS) from St. Paul on October 13, 1983. In general, this event had two major impacts on the local economy. First, it created a struggle for the control of economic resources by local institutions. The responsibility for administration of the island and its economic system was transferred to local institutions but revenues remained subject to control by the external political-economic system. This has led to competition for these resources and revenues by the local institutions. Second, the NMFS withdrawal encouraged the emergence of widespread feelings of uncertainty. Such feelings preceded a brief but intense period of economic growth and expanded employment opportunities and has recently resurfaced with the termination of projects that gave rise to this economic growth.

This brief introduction underlines two facets of historical and political-economic change that warrant attention before considering specific economic interactions. These are, first, the general political-economic milieu that establishes the context within which economic interactions take place, and second, the consequences of the most prominent political-economic event of the century for St. Paul: the NMFS withdrawal and the economic transition which followed (and which is still underway). The first subsections of this chapter address those facets as a means for introducing

the economic setting that has evolved at St. Paul. Specific topics pertinent to the transition are discussed in greater detail in the remaining subsections, and the roles of these political-economic trends are highlighted throughout the remainder of the report where the data permit us to underscore linkages between economic interactions at St. Paul and the political economy that encapsulates and, to a significant extent, controls them today.

5.1.2 General Features of the Pribilof Political Economy

Despite the many features common to other predominantly Native Alaskan rural villages the political economy of the Aleutian and Pribilof Islands communities is unique. Several examples help to illustrate the extraordinary position of Aleutian communities, and St. Paul in particular (see Dryzek and Young 1986 and Young 1986 for good introductory analyses of the St. Paul political economy).

The history of impressed labor is well documented, as are the wartime relocations and federally sponsored fur seal harvests (see Jones 1980, 1981). These islands have experienced what is arguably the most erratic boom-bust fisheries cycle anywhere in the State since the beginning of the cod industry early in this century (see Combs 1981; McNabb 1983). Until recently, the region possessed the only Indian reservation in the U.S. intended exclusively for the protection of indigenous Native fishing rights (Case 1984:98; note however that the Amaknak reservation has since been terminated). Also, it is the only Indian Health Service (IHS) Service Unit headquartered outside the region itself. This deprives the region of finances and staff that have typically been important sources of income and acculturation elsewhere in the State, especially prior to the military build-ups subsequent to World War II. Perhaps most important for the purposes of this study, the region in general and St. Paul in particular have been recipients of a variety of enormous reparations and other funds that, in concert with other federal and state transfers and new laws, are transforming local economies.

To the extent that federal policy dominates the Pribilof Island economy, the broad outlines of political economic trends there are naturally similar to those evident in all Native American communities. For example, Native Americans have encountered substantial reductions in federal support for programs over the course of the Reagan administration, and St. Paul residents are no different in that regard. The executive policy has swung around to the interpretation of Native programs as privileges rather than rights. This dichotomy characterizes common shifts in Indian policy in general over the last century. However, by the 1980's this dichotomy was rendered obsolete by codified statutory entitlements and due process restrictions that assured the continuation of federal services to Natives. Recent federal executive decisions have successfully sidestepped these guarantees by eliminating important sources of funding necessary for the programs. Alaskan programs are more easily targeted for declines than many others, possibly because no federal treaties were ever negotiated with Alaskan Natives (see Case 1984).

This trend is partly counterbalanced by several important Acts that provide crucial health, education, and social services. Notable in this regard are the Indian Self-Determination and Education Assistance Act of 1975, the Indian Financing Act of 1974, the Indian Child Welfare Act of 1978, and the Indian Health Care Improvement Act of 1976. (ANCSA, passed in late 1971, also deserves mention as one of several significant pieces of Indian law passed during the decade of the 1970's, but of course it does not represent a services entitlement.) The Self-Determination Act requires (not permits) Bureau of Indian Affairs (BIA) and IHS contracts to tribal

organizations, and these Acts together establish the main federal services to Natives in Alaska. Most of the funding received for services carried out by the Aleut Community of St. Paul (the IRA tribal organization), for example, is authorized by one or more of these Acts (see Economic Organization below). It is also noteworthy that other federal policy decisions outside the arena of services *per se* have also introduced an important source of money to St. Paul. For instance, under the terms of tax code revisions instated during the Reagan administration Alaska Native corporations are permitted to sell their net operating losses and tax credits for cash. Tanadgusix Corporation (TDX) sold over \$3.5 million dollars of credits (i.e. losses) to Dell Webb Corporation for about \$1.25 million in late 1986 (TDX 1987:20). In addition, TDX recently negotiated a settlement of about \$1 million for federal nonpayment of rent on TDX lands after 1971 (TDX 1987a:4).

In addition to these general trends that influence all Alaskan Natives, albeit unevenly, federal precedents on behalf of Pribilof Aleuts draw attention to their unique status. To our knowledge, the Pribilof Aleuts are the only specific ethnic population ever mentioned in an international treaty adopted by the United States. The Fur Seal Convention of 1957, implemented by the Fur Seal Act of 1966 and amended several times, seeks (especially in the amendments) to protect Aleut subsistence and promote a stable and diversified economy "...for the Aleut residents of the Pribilof Islands"(see Case 1984:282). Numerous Aleut residents argue that the Convention and Act as they are now interpreted prohibit rather than protect subsistence and discourage economic diversification by eliminating commercial sales of seal products.

The most significant policy decisions with an enduring impact on the St. Paul economy during the current decade are identified here and described in greater detail in the following sections. These are the Pribilof Trust, of which \$12 million is designated for St. Paul, and the Indian Claims Commission (ICC) "Corned Beef Money" which, though of smaller scope than the Trust, is no less important as a reparations precedent (note, however, that personal "Corned Beef" payments are essentially exhausted, having been spent rapidly after disbursements began). The ICC settlement provided \$8.5 million, of which 80 percent was paid directly to residents and the remainder was set aside as a community development fund administered by the IRA (see Braund and Associates 1986:5-145).

Reparations *per se* are not likely to provide economic opportunities for St. Paul on a scale similar to the ICC and Trust programs. Reparations for internment of about 900 Aleuts in Southeast Alaska during World War II have been delayed due to their removal from the House version of the 1987 Civil Liberties Act. The removal does not necessarily portend difficulties with passage of another version. Since one proposal for reparations would have involved a land exchange, the Aleut reparations would have stalled the main bill since a bill involving such an exchange would have required review by other subcommittees outside the House Judiciary Committee, thereby threatening the entire bill. Proposals now on the table include cash payments of \$12,000 to Aleut internee survivors, a land exchange that would transfer possession of Attu Island from the federal government (Alaska National Maritime Wildlife Refuge) to Aleut Corporation, and payments totaling \$15 million to Aleut Corporation (Anchorage Daily News 1987). If passed and signed into law, these reparations would provide substantial federal resources to Aleuts and once again draw attention to the unique political economic regime. Note however that the beneficiaries are Aleut survivors and the Aleut Corporation. The scope of an eventual reparations settlement for St. Paul itself (by indirect means through survivors and Aleut Corporation) is uncertain but would undoubtedly comprise only a fraction of the entire settlement. (A revised version of the measure was passed by the House in July, 1988 and signed into law October, 1988.)

St. Paul has been no less successful in securing State funds, and here again St. Paul stands in contrast to most rural communities. The economic vulnerability of the Island, in conjunction with its isolation and unique history of federal domination, has tended to make St. Paul a very good candidate for numerous State discretionary grants since its needs are clear and easily documented. Naturally, the municipal government also receives standard State entitlements. Hence the volume of government support for St. Paul services, capital improvements, and development programs is enormous. Secondary data on State appropriations and funding show that St. Paul received in excess of \$16 million for capital improvements alone over FY84 and FY85 due to a combination of factors, including the unique status of St. Paul, adroit leadership, and superior lobbying efforts (see Braund and Associates 1986:A-11).

5.1.3 NMFS Withdrawal and Economic Transition

Prior to 1983, the NMFS was the major employer in St. Paul, accounting for approximately 60 percent of all wage-earning jobs in the community. In 1982, the NMFS employed 15 full-time and 158 part-time positions. Other major employers included the City of St. Paul, Pribilof School District, and Aleut Community of St. Paul, but individually these institutions were responsible for no more than one-tenth of the jobs managed by the NMFS. Most of the NMFS positions were associated with the harvesting and processing of fur seals. Consequently, under the tenure of the NMFS, there was a dramatic peak in levels of wage-earning employment during the summer months, corresponding to the fur seal harvest. Other NMFS positions were devoted to the administration and maintenance of the community's utilities and other components of its infrastructure.

With its responsibility for the majority of wage-labor jobs, the NMFS also accounted for approximately 64 percent of the total earned income in 1979. By 1982, however, this share had declined to 57 percent. Part of the decline can be attributed to the drop in proceeds from the fur seal harvest. This harvest had not been a successful enterprise for the previous two decades. Total proceeds from skin sales declined from a high of \$3.7 million in 1977 to a low of \$647,300 in 1983. In part, this was because the average sale price per skin had declined from \$111.81 in 1980 to \$67.63 in 1983.

Despite this decline, however, involvement in a commercial economy managed by the federal government continued to have a major impact on local residents. Non-wage income derived from retirement benefits accrued at a rapid rate since federal (i.e. NMFS) employees earned a substantial share of total income in the 1970s and 1980s. In 1979, earned income among St. Paul residents totaled \$2.2 million; non-wage income totaled \$535,000. Non-wage income, therefore, accounted for approximately 20 percent of the community's total income. Of this amount, \$325,800 was derived from civil service retirement benefits. By 1982, estimated non-wage income had climbed to \$700,000, increasing at a faster pace than the earned income (31 percent vs. 23 percent) between 1979 and 1982 (see Impact Assessment 1987).

However, a shift in federal policy ended the NMFS management of the fur seal harvest and the community's economic infrastructure and turned control of the St. Paul economy over to local institutions. This decision was, in part, a response to the pressure exerted by Alaska Natives in general and St. Paul Aleuts in particular for political as well as economic autonomy. The decision also reflected the federal government's commitment to reduce federal spending and to transfer responsibilities to the state and local levels of government. The prospect of an end to NMFS control

prompted contradictory and ambiguous reactions among St. Paul residents, however. On the one hand, local residents were glad to have a greater measure of control over their destiny and economic resources. On the other hand, many felt that the job security and economic stability provided by this agency was being eliminated.

The transition from federal to local control involved several different steps. The first step was the transfer of responsibility of the fur seal harvest to the Tanadgusix Corporation, the local Native Corporation created under the conditions of the Alaska Native Claims Settlement Act of 1971, and responsibility for the community infrastructure to the City of St. Paul.

The second step was to provide for funding to enable these institutions to manage these activities and to provide employment opportunities for former NMFS employees. The major source of funding for this transition was provided by the Fur Seal Act Amendments passed by Congress, which allocated \$20 million (\$12 million for St. Paul and \$8 million for St. George) for the "orderly transition" to local control. A second important source of federal funds during this period was the Indian Claims Commission settlement of July 1979 which provided \$8.5 million (known as "Corned Beef" money after the corned beef provided to local residents by federal agencies in the late 19th and early 20th centuries) to the Aleut Communities of St. Paul and St. George in 1983 as partial payment for the harsh treatment of local residents under federal administration since the 19th century (section 5.1.2. above briefly describes the ICC and Trust funds). A third source of funds was provided by the federal government to upgrade local utilities before transferring them to local institutions. National Oceanic and Atmospheric Administration (NOAA) funding for the Pribilof Islands in 1985 was \$2.6 million which included \$2 million in supplemental funding for upgrading federal facilities before transfer to island residents, obligations to retirement and schools (\$406,000) and fur seal harvest oversight (\$150,000).

The third step involved in the transition from federal to local control was the creation of a transitional labor force. This step made the City of St. Paul, Tanadgusix Corporation, and Aleut Community of St. Paul responsible for the employment of many former NMFS employees. The federal government also agreed to count employment in this transitional labor force as direct government employment for purposes of pensions and retirement benefits.

The fourth step in the transition period was the formation of strategies for the development of a diversified economy. The St. Paul Economic Strategies Plan prepared by Dames and Moore in 1983 targeted four areas of potential long-term economic development in St. Paul: fisheries, tourism, fur sealing, and OCS support activities. Each of these topics is examined in section 5.1.4 below.

At the local level, coordination of economic development among the chief political entities is characterized by opposition and polarization, despite some noteworthy collaborative efforts. The issues that apparently motivate the main political disagreements are described sufficiently in Impact Assessment (1987) and Brelsford in HRAF (1987). Here our intention is to summarize the issues that are offered by agency staff and leaders as the sources of contention and point out some of their concrete economic ramifications, our assumption being that the issues that have generated divisiveness and alarm are among the most significant ones from a political economic perspective.

The key issues are:

- o access to and application of funds authorized by the St. Paul Trust;
- o 14(c)(3) reconveyance of land under the terms of ANCSA;
- o agreement among Island entities over the allocation of real and personal property which is to be conveyed under the Fur Seal Amendments Act (PL 98-129), referred to as the Transfer of Properties Agreement (TOPA).

Other issues have surfaced between 1985 and 1987 that warrant some consideration since they involve more than one entity. Current litigation over title to POSS camp assets is an example. Under the terms of the landlord's (TDX) abandonment clause, POSS camp assets would become TDX property. However, Aleut Corporation, the former POSS owner, sold some assets to the City of St. Paul at the time of abandonment. Both local entities lay claim to those assets. The litigation initiated by TDX names Aleut Corporation but, if successful, would inevitably involve the City (see TDX 1987b:9). The three issues identified here are in our estimation the items that provoke the greatest inter-organizational disputes and have the greatest economic ramifications for Island entities.

These three issues are facets of a more general disagreement over who will manage what capital, and under what terms. For example, during negotiations between TDX and the City that occurred during field research, compromises over one issue were offered in return for concessions on other issues, which underscores the joint interpretation and cooperative resolution of the issues that most institutional participants seem to have adopted.

In order to accommodate future municipal growth the City of St. Paul seeks prompt agreement on and conveyance of Corporation lands which, under the 14(c)(3) terms of ANCSA, must be conveyed to the municipal reserve. The City requests lands in the main "downtown," harbor, and road corridor areas since these are lands best suited for municipal expansion. On the other hand, TDX seeks to limit conveyance of such lands since they are also best suited for business development. To date, both the City and TDX have used 14(c)(3) land proposals as bargaining chips in the joint negotiations, and we are not aware of any formal 14(c)(3) agreement that has yet taken shape.

The TOPA and Trust issues may loom larger for the institutional participants since we interpret various 14(c)(3) concessionary proposals as strategic offerings that are, to some extent, secondary to TOPA and the Trust. TOPA is separate from ANCSA although both stipulate reconveyances. TOPA is established by PL 98-129 and is considered a "phase-out" provision. At stake are lucrative, well situated properties in the vicinity of the harbor that could provide sites for warehousing, marine services including fuel, water and ice sales, and miscellaneous light industrial applications. Other acreage is involved, but the lands identified here are subject to the most dispute.

At present the City is engaged in developing a new tank farm on lands adjacent to the harbor and, upon completion, will service the Bering Sea fleet that can dock at St. Paul when the harbor is completed. TDX desires title to these and other properties so as to carry out its business plans, which include the warehousing, sales and service, and industrial activities for which those properties are suited. Under the terms of the loan received by the City for the tank farm, title will transfer to TDX upon repayment or forgiveness of the loan; but the duration of City use of a lucrative venture is unknown. Numerous properties in those areas desired by both the City and TDX (i.e., along the road corridors, in the vicinity of the airport, and in the harbor and downtown areas) are affected by TOPA.

Despite the existence of TOPA, a formal transfer agreement, these transfers have been delayed by many factors, not the least of which are disputes over specific conveyance clauses. TOPA lands must be surveyed and appraised and their value, naturally subject to dispute, must be settled prior to conveyance. Current owners have an incentive to support high valuations while future owners have an incentive to support low valuations (see TDX 1987a:21 for details on current TOPA surveys carried out by the U.S. Department of Commerce).

Access to Trust funds may represent the source of the most bitter contention. The Trust is specifically designed to provide funds, mainly in the form of loan guarantees and collateral, for the development of infrastructure and a diversified economy. NOAA and the Trustee have considerable flexibility in granting funds for proposed purposes, but to date the City has used the majority of disbursed funds. TDX and, to a lesser extent, the IRA view the use of Trust funds by the City as an infringement of their fundamental objective, which is business development (and for the IRA, social services). The City is, by this view, a business competitor with unfair advantages (i.e., a public subsidy).

The City, however, argues that it was the only organization positioned to administer Trust funds at and subsequent to the NMFS phase-out; furthermore, it views itself as an essential employer whose programs (and hiring) provide critical services and essential wages, both of which are necessary in order to prevent outmigration and provide a decent standard of living. By this contrary view, the City provides key "life-boat" programs that will sustain the community until the advent of economic development of sufficient scale and diversity to replace its temporary stewardship of the Island economy. Key informants within City government stated repeatedly that the harbor and breakwater must be finished quickly if the Island is to have any chance whatsoever, and that the dominant role of the City could not be eliminated until those accomplishments are in place.

The Trust, TOPA, and 14(c)(3) issues are perceived as a single "package" of related concerns that tend not to be addressed in isolation. This point is expressed by one participant, TDX:

At one point last June we met with the IRA and the City Mayor and developed a written agreement that expressed the basic understandings of the Transfer of Property Agreement and phaseout, and formed a simple basis for transferring of lands. TDX would develop the business, City would develop the infrastructure and provide the public services, and IRA would receive its entitlements [i.e., real and personal property; insertion ours].

However, the City backed out of this agreement signed by the Mayor. Instead of supporting TDX business development, we find that the City is supporting its own business development somewhat like a business competitor to TDX (TDX 1987a:5).

Three lawsuits have been filed by TDX seeking redress as a consequence of alleged misapplication of Trust funds, failure to abide by TOPA, and related matters. The City of St. Paul, NOAA/NMFS, and Dr. Anthony Calio of NOAA are named in the suits (one suit names POSS Camp, an Aleut Corporation subsidiary, in the abandonment matter mentioned earlier).

The City alleges that it has operated in good faith in all Trust-related business, and key officials point out that many City activities are funded by grants only available to municipal organizations that serve the entire population, hence unavailable to a private ANCSA Corporation. The City is acutely aware of the fact that Port and support infrastructure must be completed rapidly, before Trust funds are exhausted and other discretionary funds disappear. For instance, in two recent public documents the City position was illustrated in very certain terms. One attempted to counter the all too common perception among many St. Paul residents that State or federal government will provide additional funding when the Trust is depleted (City of St. Paul 1987a:2). The same document encouraged residents to develop job skills quickly, adding "Don't wait until the money runs out"(City of St. Paul 1987a:3; see also City of St. Paul 1987b for a formal position statement on City support of private business development).

As of May 1987, delegates representing the City and TDX were involved in very candid, honest negotiations designed to circumvent expensive, protracted, adversarial litigation. The IRA was slated to participate in the negotiations with regard to TOPA conveyances. These negotiations indicated constructive postures on the part of the main Island entities. The political and economic stakes are great indeed. The height of the controversy and the filing of lawsuits comes at a crucial time: several important grants, including a \$6.5 million loan for the new tank farm, \$11.8 million for a breakwater extension, and a \$3 million grant from the State to supplement the breakwater development, may now be in jeopardy due in part to disputes which have made project lenders and sponsors wary about the unity and commitment of St. Paul institutions.

St. Paul advocates are doubtful that their enormously successful lobbying and fund-raising efforts will continue. They see two strikes against them: first, their history of success makes St. Paul appear "rich" in comparison to other rural communities and, second, few communities will escape the current economic downturn unscathed. On the positive side, the grants mentioned above will accomplish several of the last and most critical developments necessary to complete the major share of the Port and associated infrastructure (final State funding for the completion of the breakwater is identified in the Governor's FY 1989 budget). If and when these projects are completed their value to the Bering Sea fleet and to future OCS development, rather than the funding policies of State and federal agencies, may assume the dominant role in the St. Paul economy.

5.1.4 Diversification and Transition: Economic Change and Future Prospects

Commercial Fisheries

In recent years the commercial fishing industry has provided one of the most attractive but unprecedented development options for the community. The waters surrounding St. Paul contain one of the richest fisheries in the world, traditionally dominated by foreign commercial ventures. However, over the past five years, the annual tonnage of bottomfish harvested in the Bering Sea by domestic vessels has dramatically increased. This shift resulted from the terms of the Magnuson Act requiring foreign catcher-processors operating in U.S. extended territorial waters to involve U.S. partners in joint ventures (see for example Braund and Associates 1986; Impact Assessment 1987).

This increase in fishing lured the community into efforts to develop a local harvesting and processing sector of the commercial Bering Sea fishery. However, the community had little experience in this area. Development was initiated by the Tanadgusix Corporation in 1979 with the purchase of a few day-boats for halibut fishing and the establishment of a small-scale halibut processing operation on the island. In addition, of the \$8.5 million settlement with the federal government (the "corned beef" monies), \$1.7 million was retained by the Aleut Community of St. Paul with the express intent of assisting in the development of a self-sustaining local fishery. Approximately \$500,000 has been used to provide direct loans to purchase fishing boats while some has been placed in a bank account as collateral for bank loans.

One of the chief obstacles to the development of this fishery, however, has been the lack of port and harbor facilities on the island. Efforts were therefore directed toward the development of a harbor at Village Cove. The first phase of a planned four phase project began in the spring of 1984 with the construction of an 800 foot rubble mound breakwater. Phase II of the project was to involve the completion of the breakwater/wharf by extension to 1,700 foot and provide additional berthing and improved shelter. Funds for both of these phases were obtained from the state. However, construction was brought to an abrupt halt when storm waves in November and December 1984 caused extensive damage to the breakwater. Phase II was delayed until September 1986 with the arrival of a cement caisson dock.

In the past two years, emphasis in fisheries development has shifted from the development of the community's own harvesting and processing sector to providing support services for the existing fishery. This change in strategy has been due, in part, to the mixed results of the initial efforts in the harvesting and onshore processing of halibut by local residents and to the realization that a local fishery might never compete effectively with existing offshore operations. It is problematic whether onshore facilities could compete with offshore floating processors because of the lower wages paid by the latter and the tax advantages of processing outside the city limits. The return on the investment of developing the dock, haul-out facilities, warehouses, and associated services would also take several years, assuming that the necessary return is even likely. Finally, lightering and reshipment costs might also make a local industry inefficient in comparison to existing offshore operations.

Details on fishing returns at the household level are reported later in this chapter, but it is important to expand briefly on the low to modest success of local fishery activity at the outset. Few St. Paul fishing households obtain returns sufficient to recover their investments and support other household costs. The immense financial

leverage of large off-Island operations place local fishermen in a deficit position since the latter are unable to weather short-term losses. They are undercapitalized, cannot obtain ample credit, and lack sufficient cash flow to underwrite their operations on a steady basis. Despite sporadic and superficially innovative changes in CFEC regulations controlling quotas and fishing periods that are designed to expand local opportunity, off-Island operations have consistently captured the majority of the quotas, often exhausting those quotas before the local fleet is fully mobilized. Hence, onshore services and support activities have assumed a more promising and lucrative status in recent years, despite the risks associated with such ventures.

Tourism

A second potential area of economic development is tourism. According to the 1983 St. Paul Economic Strategies Plan, "the island provides an excellent habitat for a variety of arctic birds and marine mammals; these and other environmental and social attributes have facilitated a modest tourist industry that has some potential for growth"(1983:1-1). This industry has provided local employment at the King Eider Hotel and a restaurant, both managed by the Tanadgusix Corporation, as well as in other small sales and services businesses. Despite efforts to promote this industry, little growth has occurred in the past six years and the annual number of tourists visiting the island has fluctuated between 1,000 and 1,100. Plans exist for a new, expanded hotel overlooking Village Cove, but the consensus among institutional spokespersons is that the market stability makes such expansions premature. Tanadgusix Corporation has boosted its lodging and catering revenues on an intermittent basis, but those revenues -- mainly from lodging shipwrecked crews -- are sporadic and unpredictable windfalls.

Fur Seal Harvesting

The NMFS withdrew from St. Paul in 1983 with the expectation that the commercial harvesting and processing of fur seals would continue, but not necessarily as the dominant feature of the local economy. A 1984 commercial harvest, jointly managed by the federal government and the Tanadgusix Corporation, resulted in losses to both institutions. In 1984, the U.S. Senate refused to ratify the protocol extending the Interim Convention on Conservation of North Pacific Fur Seals which provided for the commercial harvest of a specified number of seals each year. This removed the fur seal from eligibility for commercial harvest. In its place, the Marine Mammal Protection Act of 1972 took effect, making it illegal to harvest or import any marine mammal within the jurisdiction of the United States except for subsistence purposes. While the community was allowed to harvest fur seals for subsistence purposes, they were prohibited from selling the skins. Consequently, future commercial harvests of fur seals are unlikely. Moreover, as noted above, the fur seal has not been a successful enterprise in decades. The total actual labor costs have run between \$400,000 and \$450,000 while returned from the sale have yielded something below \$400,000. Just as no economic incentive for the commercial harvests exists, incentives for managing the subsistence harvest are low since there is no cash return to offset expenses. Tanadgusix Corporation is currently investigating means to market finished craft and garment goods produced from pelts; however, no program is now in place and it is unclear if such goods would be exempt from regulatory controls, as is the case with traditional crafts using parts of protected marine mammals.

This example again illustrates political and economic constraints on economic transactions at St. Paul. On the one hand, low demand and high wage expectations in the "market" sphere depress opportunities for the use of a local commodity that is a central element of the Pribilof resource endowment. On the other hand, legal definitions of "traditional crafts" may close the door on an alternative arrangement for market exchange of local resources. (This is not a minor point; dolls crafted of parts of protected species are occasionally considered "non-traditional" and therefore not exempt. Stereotypic definitions of "traditional" are more likely to succeed in an administrative review than not, hence Native carvings and mukluks are seldom challenged. Improved whaling guns and harpoon designs are prohibited among Bowhead whaling crews further to the north for much the same reason.)

Oil Development Activities

The St. Paul Economic Strategies Plan stated that "limited opportunity exists for the islands to serve as support bases for the oil and gas activity in the Bering Sea"(Dames and Moore 1983:1-1). A support base for exploratory activities in the Navarin Basin was constructed in St. Paul in the summer of 1985. Known as the Pribilof Offshore Support Services (POSS) facility, it was constructed at an estimated cost of between \$8.5 and \$10 million and operated by a consortium of oil companies which including EXXON, ARCO and AMOCO. The facility was constructed on land leased to the regional Aleut Corporation by the Tanadgusix Corporation. The project employed as many as 28 St. Paul residents during the construction and initial operation phases. However, a federal injunction halted exploration in the Navarin Basin making the future of the facility uncertain. Rather than continue to pay high insurance and maintenance costs, the consortium signed over its interest in the facility to the Aleut Corporation which, in turn, sold the property improvements and equipment to local agencies and residents. Although St. Paul is favorably situated to Bering Sea offshore lease sale areas, the current uncertainty regarding the commercial potential of these areas has put the prospect of this development option on hold.

Employment Patterns

The steps involved in the transition from federal to local control has left its mark on the character of the St. Paul economy. One such legacy was the increase in the number of full-time equivalent (FTE) positions created by the formation of the "transitional labor force." The shift of part-time and temporary NMFS employees to other wage-earning positions was marked by an aggregate increase of 25 FTE positions, an increase of approximately 33 percent literally overnight. The transition also made the City of St. Paul the largest employer in the community. Through numerous grants, construction projects, and funds obtained from the St. Paul Trust, the city administration has managed to generate more full-time and higher paying jobs than had existed under the NMFS administration. The City government accounted for over 62 percent of all full-time employment in the community in 1985. In order to pay for this increase, City expenditures rose from \$350,000 in 1982 to nearly \$2.4 million in 1985. The bulk of this increase was spent on public works, city services, and city administration which accounted for 70 percent of the increase.

Another legacy left by the transition from federal to local responsibility was the expansion of opportunities for wage-labor employment. During the past few years, City employees have been allowed to take a leave of absence during the summer months

to participate in the fur seal harvest or work on construction projects. Resulting in only a minor curtailment of city services, this option enabled city employees to increase their aggregate income by as much as two or three times the average of previous years. With the availability of construction jobs during a wave of construction activity between 1984 and 1986, the incentive for participating in the fur seal harvest declined. Employment in fur seal activities declined dramatically between 1983 and 1984 because a number of local residents chose to work on construction projects for \$24 an hour rather than harvest fur seals at \$9 an hour (Impact Assessment 1987).

These new employment opportunities were not available to all local residents, however. Although the rate of employment during the summer of 1984 exceeded by at least five percent the traditional full-time employment rate under the NMFS, the skills required for construction and construction-related employment were very different from those needed for fur seal harvest employment. For some, this was a period of high job mobility with some individuals holding as many as five different jobs during the course of a year. Those with skills in particular demand commanded very high wages, frequent job offers, and relatively constant employment while those lacking such skills were frequently unemployed or underemployed. While the community has traditionally been characterized by differences in socioeconomic status resulting from the hierarchy of positions in the fur seal industry, the dramatic increase in wages available to those with the requisite skills has exacerbated these differences.

Among the other major employers of St. Paul, the Tanadgusix Corporation saw an increase from 19 positions in 1982 to 47 positions in 1985. In 1986, however, the number of positions declined to 19. A similar trend was experienced by the Pribilof School District and the construction trades. In 1982, the former employed 18 full-time and part-time positions. By 1985, this had increased to 32 positions, but had declined to 22 positions in 1986. Construction employment fell from 50 positions (accounting for 19 FTE positions) in 1985 to 24 positions (10 FTE in 1986) (Impact Assessment 1987:267).

As noted above, the increase in employment during this period was financed through a variety of different sources, all external to the community itself. The chief source of operating revenues for the St. Paul economy during the past few years had been the St. Paul Trust. Approximately half of the full-time employees in the community derived their income directly from the Trust. In January 1984, the Trust balance was about \$12 million. However, in 1985 over \$2.1 million was disbursed to the City of St. Paul while the net gain from investments was \$1.1 million. By March 31, 1985 the Trust had declined to \$10.3 million. By March 31, 1986, the Trust had declined even more to \$8.1 million. Approximately \$2.8 million had been disbursed to the City of St. Paul during fiscal year 1986 and the net gain from investments was \$1.2 million. Thus, the City's draws on the Trust appear to be increasing while the revenue derived from investments appears to be holding steady (Impact Assessment 1987). The current Trust fund balance is less than 50 percent of its 1984 level, as shown in Table 5-1.

The community has been substantially and consistently dependent on external sources of revenue ever since the first deficits in sealing operations emerged (as noted above, the St. Paul Trust and the Indian Claims Commission Settlement are the most prominent and important examples of this trend). State and federal revenue sharing have remained relatively constant during the past six years. Grants represented approximately 25 percent of the total non-Trust revenues were received by the community in 1985. The City participates in a number of federal and state grants

Table 5-1

**Saint Paul Island Trust
St. Paul, Alaska
1985-1987**

Balance Statement: 1985-1987 (March)

Consolidated Statement of Assets, Liabilities and Fund Balance

	<u>1985</u>	<u>1986</u>	<u>1987</u>
Assets			
Investments	\$10,151,890	\$7,829,999	\$5,084,512
Cash	15,906	28,400	9,092
Restricted cash	77,000	77,000	77,000
Interest receivable	51,354	81,170	59,708
Note receivable	---	107,404	378,830
Prepaid insurance	8,805	11,139	11,439
Deposits	1,778	1,778	1,778
Total Assets	10,306,733	8,136,890	5,622,349
Liabilities and Fund Balance			
Accounts Payable	13,029	16,931	7,875
Fund Balance	10,293,704	8,119,959	5,614,474

Source: St. Paul Island Trust 1986 and City of St. Paul 1987.

including general revenue sharing, an Economic Development Administration dock grant, and the Transfer of Responsibility Agreement with the state which provided funds for harbor construction. These underline the growing importance of grantsmanship to the continued operation of the community's wage-labor economy. In addition, transfers from external federal and state sources paid directly to households accounted for an estimated \$838,086 in 1985 (Impact Assessment 1987:271). Anecdotal information and field observations suggest that the dependence of the wage-labor economy of St. Paul on sources of unearned transfers has created a considerable amount of uncertainty. Even during the boom period following the NMFS withdrawal, many St. Paul residents expressed some anxiety about the temporary nature of existing employment opportunities. As of the summer of 1986, the number of capital improvement projects on the agenda for the City of St. Paul diminished and no new major projects were anticipated. The sense of stability which existed during the period of NMFS administration is felt by some residents to be absent in today's economy.

5.2 Economic Organization

5.2.1 Introduction

In this section the institutional and household organizations that provide the structures for economic activity are described and analyzed. In conventional terms, this section comprises a brief review of both "macro-economic" topics (which establish a bridge between the political-economic discussion above and the following sections) and "micro-economic" interactions, mainly at the household level, that are treated more fully in the remainder of the chapter. This section begins by examining institutions and businesses, and moves to a discussion of households, kin groups, and cooperative networks in the second portion.

5.2.2 Institutional Organization

The institutional and business organization of St. Paul has been described in several recent MMS documents, including Braund and Associates (1986), Impact Assessment (1987), and HRAF (1987). Some organizational factors pertinent to this section appear in the previous discussion. Material in the cited reports that is sufficiently current will not be repeated here. The institutional coverage to follow will provide a brief summary of institutional programs and business activities, and then turn to the subject of small businesses and entrepreneurs who were insufficiently described in the cited documents.

Tanadgusix Corporation (TDX)

TDX operations are tabulated below:

- o fur seal harvest and processing
- o tourism
- o joint venture construction and catering
- o land leasing

- o facility upgrading
- o a portfolio of investments
- o majority ownership of the Anchorage International Inn

The St. Paul auto shop was transferred to a private citizen as a small business venture early in 1987, hence this is the one notable change in TDX operations. The auto shop still provides fleet service for TDX vehicles as a term of payment for stock inherited by the new owner. This venture is illustrative of several others now being considered by both TDX and the City as a means to diversify small business ownership in the community and reduce the dominance of institutions in the provision of services. TDX has been involved in construction and catering operations in the past, however they are almost exclusively dependent on capital improvements appropriations that arrive at irregular intervals, hence they are not stable elements of the TDX arena of operations.

Since the onset of the noncommercial fur seal harvest in 1985, the harvest has been in jeopardy for two intertwined reasons. First, several sources of administrative and public criticism (ranging from controls exercised by NMFS to public advocacy efforts by special interest environmental groups) have restrained the harvest in terms of volume, technique, and disposition of by-products (the Fur Seal Act prohibits commercial uses of fur seals). Second, these restraints demand a considerable financial investment on the part of the harvest sponsor (TDX in 1987) which cannot be recovered due to those same restraints. One TDX official explains:

Harvests cost us between \$70,000 and \$150,000 per year to do according to the regulations, but there are no means to recoup the expenses . . . the regs enforce commercial techniques for the harvest, we must use what are called "skilled stunners" and so on, and modern techniques, yet all of this costs money.

Ironically, the main source of finance that is targeted specifically for economic stabilization in the Pribilofs, the Trust, cannot be used to support fur seal harvest activities.

TDX has not abandoned the seal harvest as a potential business venture despite these considerable obstacles. TDX is now negotiating with Sheila Furs, a Canadian firm, to provide prime seal pelts for the production of custom apparel if amendments to the Fur Seal Act permit these uses in the future.

TDX is investigating the feasibility of expansion and diversification of their business interests, and key informants at TDX identified these possibilities:

- o joint venture fish processing of crab and halibut
- o central cold storage for Bering Sea fleet services
- o fuel services for the fleet as well as St. Paul customers

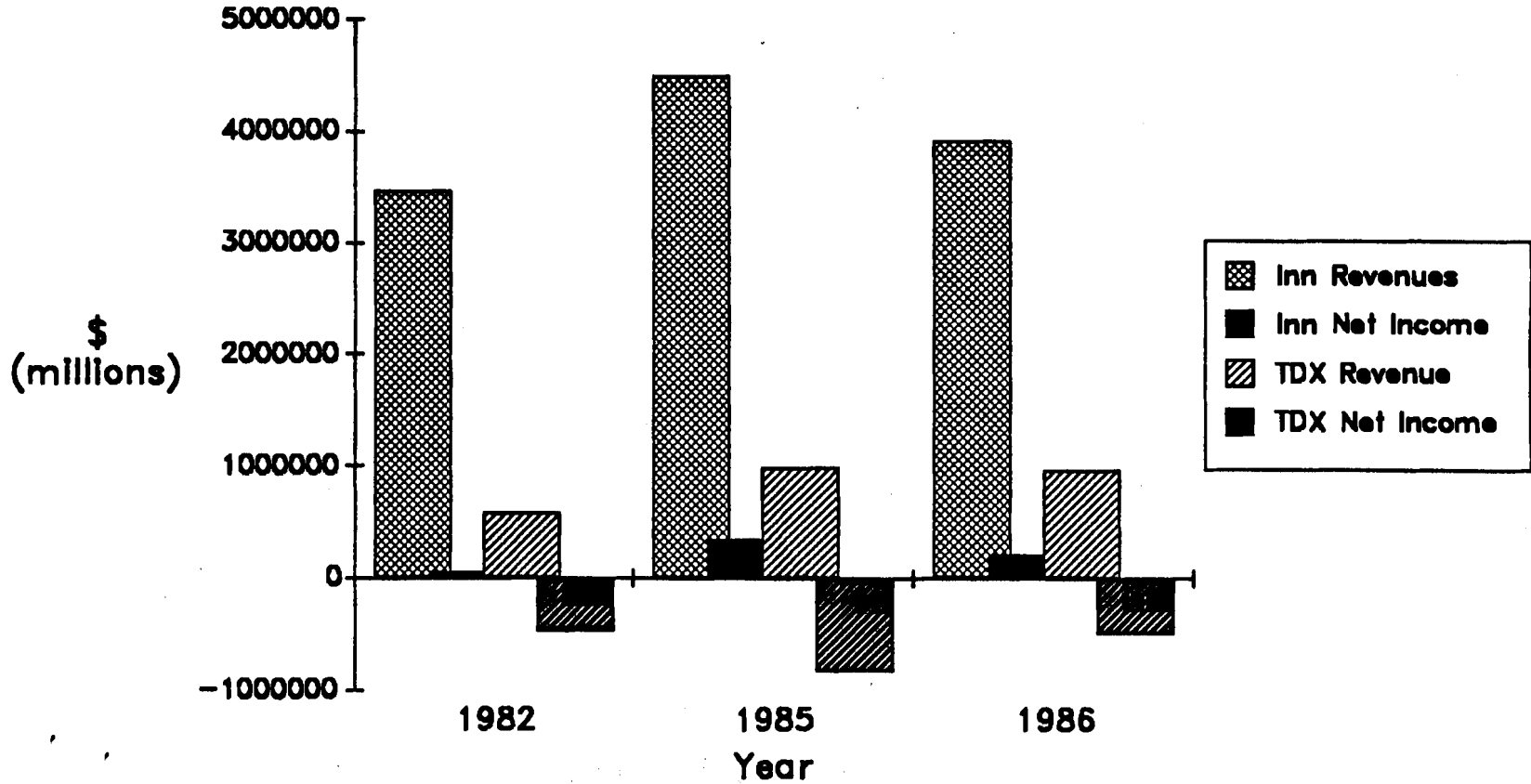
- o water and food sales to the fleet
- o housing
- o OCS oil support services
- o crab pot storage
- o warehousing
- o stevedoring
- o fox farming
- o pollution control services
- o expanded land leasing
- o reindeer herding and product sales at Umnak, possibly in conjunction with Tanaq Corporation (the St. George ANCSA village corporation)

The financial and organizational impacts of these potential operations are unknown at present. TDX has not experienced any fundamental changes in structure or fiscal organization since the recent MMS documents cited above, although TDX leadership and the asset and debt balance have undergone shifts over the last two years. For example, recent declines in capital improvements budgets have eliminated some customary sources of income, and opportunities such as the sale of ANCSA net operating losses have generated novel changes in their business arrangements; note also that the results of pending litigation may introduce still other shifts. We do not consider these changes to be fundamental, however, in the sense that finalization of 14(c)(3) and TOPA agreements would engender truly fundamental shifts in the status quo. As one TDX key official indicated, "Tourism and the International Inn have been our bread and butter for the last ten years" (McNabb 1987: field notes).

A summary of business operations for the Tanadgusix Corporation is shown in Figure 5-1 for 1982, 1985, and 1986. Figure 5-1 depicts separately annual total revenue and net income or loss for the corporation (TDX) and its 75-percent owned subsidiary, International Inn, Inc. As shown in Figure 5-1, Inn revenues dominate revenues from all other TDX operations, including a hotel and restaurant on St. Paul Island, fur seal processing and marketing, and property management. Furthermore, while net income from the International Inn, Inc. was positive for all three periods, it was not sufficient to offset losses incurred from the other TDX business activities. In 1982 and 1985, TDX business operations (excluding International Inn, Inc.) generated annual expenses at a level nearly double the corresponding level of gross revenues. By 1986, net losses declined as a proportion of total revenues. As a consequence of accumulated operating deficits, stock holder equity for the entire corporation has declined from \$6.3 million in 1982 to \$3.6 million in 1986.

FIGURE 5-1

Tanadgusix Corporation and Subsidiary
Financial Summary: 1982, 1985-1986



Alcut Community of St. Paul (IRA)

The St. Paul IRA controls what is arguably the most stable and predictable financial base at St. Paul; however, it is vulnerable to considerable debts stemming from loan guarantees secured by one key fiscal source. This financial base includes the following activities.

- o administration of the community development portion of the ICC ("Corned Beef") settlement
- o operation of the St. Paul grocery and dry goods store
- o operation of the community tavern
- o operation of the gasoline sales outlet

Other operations or sources of funding include U.S. Department of Commerce EDA and ANA grants, pull-tab bingo games, management of the marine chandlery, and management of the fish sliming and icing plant.

The IRA store, tavern, and gas sales operations provide a very stable financial base. While sales are made primarily to local residents hence are subject to the financial well-being of the community, because they cater to basic local consumption habits, these sales are only indirectly influenced by unpredictable shifts in State or federal policies and programs. But the economic consequences of nongovernmental influences should not be underestimated; insufficient management and planning, for instance, may doom even those enterprises that are insulated from dependencies on erratic government funds. Fortunately, IRA business management in 1986 and 1987 has been enhanced by computerized stock and sales record storage and strict management controls in their sales operations. We have not been able to determine if these enhancements have yet been adopted by other IRA operations.

Unfortunately, the IRA financial base is exposed to grave vulnerability as a consequence of guaranteeing day fishery boat loans to St. Paul residents.* This day fishery has never been a success. During field research in 1985, some residents who received loans expressed a lack of confidence in the fishery; in 1987, a larger number of commercial fishermen indicated that they might not even fish.

The most significant factor causing this skepticism is the realization that few fishermen can break even when competing against the heavily capitalized fleets. Our field investigations indicate that many fishermen experience consistent losses and that some cannot repay their loans. This situation is perceived as humiliating and causes profound resentment among many residents.**

* See Braund and Associates 1986:5-145; \$500,000 of ICC settlement earnings were pledged for this purpose, and other funds were allocated to the development and operation of the fish plant that in turn depends on a viable day fishery.

** Fishermen in this situation are naturally reluctant to reveal specific financial details, hence we are unable to present good statistical evidence to support our inferences.

Table 5-2 below enumerates the numbers of vessels, catch, and catch values for a recent three year period in the St. Paul halibut fishery. Note that the number of vessels fishing has declined from thirty two in 1983 to sixteen in 1985. The long line catch value has increased; however, this value is distributed to a limited number of the fishermen (\$20,208 for nine vessels and thirteen permit holders in 1983 to \$95,996 for ten vessels and fourteen permit holders in 1985). That increase is balanced against a jig decline from twenty two vessels and thirty permit holders to six vessels and six permit holders, hence a net decline overall of sixteen vessels and twenty four permit holders.

Jig catch values have declined in absolute and per capita terms (e.g., value per vessel or per permit fished). These data, in addition to anecdotal and informant data that indicate fisheries success for a diminishing group of fishermen, may indicate incipient economic stratification of the St. Paul fishery and increasing debt for a substantial portion of permit and loan holders.

The City of St. Paul

St. Paul City incorporated in 1971 as a second class city. The City assesses no property taxes at present, but does collect a 3 percent sales tax which partially underwrites City services. Trust funds comprise the main source of support for operations and maintenance, but in recent years State and federal loans and grants have contributed the largest share of the capital improvements budget. Municipal utilities and operations include airport management, public works, water and sewer management, public safety, refuse collection, electricity, and bulk fuel distribution. There have been no fundamental shifts in City operations or organization since the baseline documents cited above were prepared (see Braund and Associates 1986; Impact Assessment 1987; Brelsford in HRAF 1987).

The most significant changes in City operations that were projected at the time of our field investigations are enumerated below:

- o transition to Bering Sea fleet services upon completion of Port infrastructure, including the potential for fish and other taxes in place of residential property taxes to underwrite City services
- o gradual but consistent reductions in the City workforce
- o privatization of City services

Table 5-2

Vessels, Permits, and Value of Catch
 St. Paul Halibut Fishery
 St. Paul, Alaska
 1981 - 1985

	Vessels (Number)			Permits (Number)			Catch (Pounds)			Value (Dollars)		
	J	LL	HT	J	LL	HT	J	LL	HT	J	LL	HT
1981	9	2	-	16	5	-	8,165	NA	--	\$7,551	NA	--
1982	-	-	-	-	-	-	--	--	--	--	--	--
1983	22	9	1	30	13	1	38,220	19,914	NA	26,818	20,208	NA
1984	11	9	3	14	16	1	9,018	132,353	NA	7,661	92,637	NA
1985	6	10	-	6	14	-	6,213	137,137	--	4,349	95,996	--
Average Total, 1983-1985:							17,817	96,468	--	12,943	69,614	--
Average Per Permit Fished, 1983-1985:							1,069	6,730	--	777	4,857	--

Notes: J = Jigs
 LL = Long Line
 HT = Hand Troll

Source: North Pacific Fisheries Management Council, Special Report for Minerals Management Services, 1987.

City officials are quick to point out that the fleet services noted in the first item do not conflict with private business services that could be offered by local firms. Vessels calling at St. Paul would presumably require access to traditional municipal services such as utilities and refuse collection.

Workforce reduction targets are predicated on two factors: synchronization of job opportunities in conjunction with fisheries, construction, and other private sector jobs; and a reduction in available monies to support the City workforce. Workforce targets for 1988-1990 are tabulated below:

Mid-winter period:	60 positions
March-May:	50 positions
June:	40 positions
July-September:	30 positions
October:	40 positions
November:	50 positions

Upon completion of Port infrastructure and depletion of Trust funds, the City anticipates substituting other revenues, possibly vessel or fish taxes, for public subsidies and reducing the workforce and rate of pay. At present, most City jobs vacated by retirement, resignation, or discharge are not refilled.

Privatization of some City services is slated to begin in 1988. Furnace repair services, other general household repair services, and elimination of City-subsidized auto repair services through the Public Works operation were identified as privatization objectives. The aim is to provide technical support for small business entrepreneurs who would be drawn from the ranks of current City employees, buy them their inventory at cost, and provide billing assistance and customer referrals once the business is established. Essentially, the goal is to establish current City staff in private businesses doing what they do now.

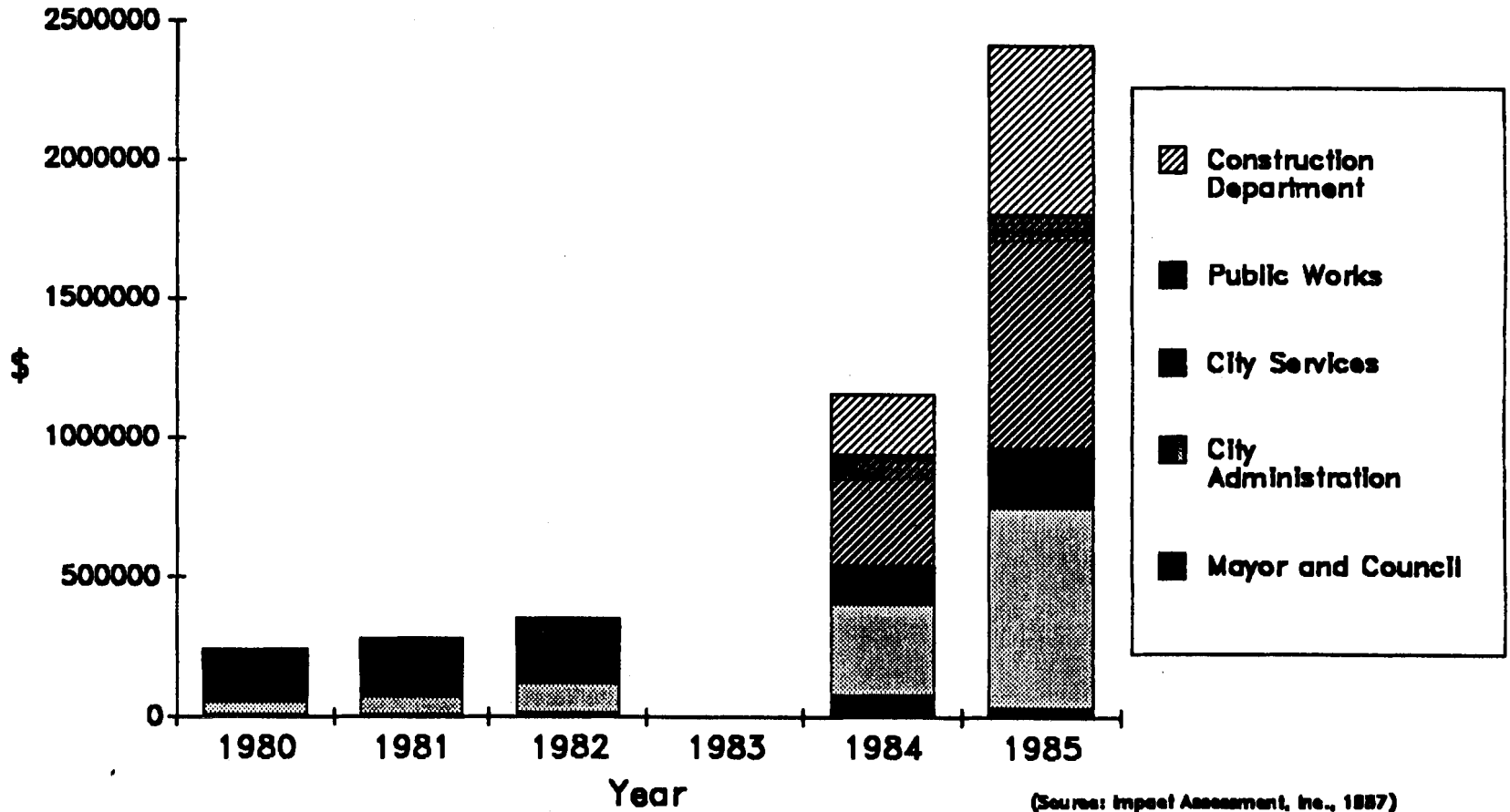
Figure 5-2 depicts the City of St. Paul expenditure history over the last five years (note that the year 1983 is unavailable since the city budget for that period was never completed). City expenditures rose from about \$350,000 in 1982 to nearly \$2,400,000 in 1985. The graph makes clear that this increase was not simply a result of capital project construction, special projects, or other unique situations. The bulk of the increase was expended on (1) public works, (2) city services, and (3) city administration which accounted for seventy percent of the increase (\$1.45 of \$2.05 million).

Two related graphs are presented in figures 5-3 and 5-4 in order to describe the revenue sources employed to fuel this employment activity. Figure 5-3 provides a picture of the sources and revenue derived from all major income sources of the community, by year. What is striking about this graph is the prominence of "revenue" derived from the St. Paul Trust. Such revenue dwarfs by a factor of two the total income derived from all other revenue sources.

FIGURE 5-2

St. Paul City Budget Expenditures: 1980-1985

162



(Source: Impact Assessment, Inc., 1987)

FIGURE 5-3

St. Paul Total Budget Revenues:
1980-1986

163

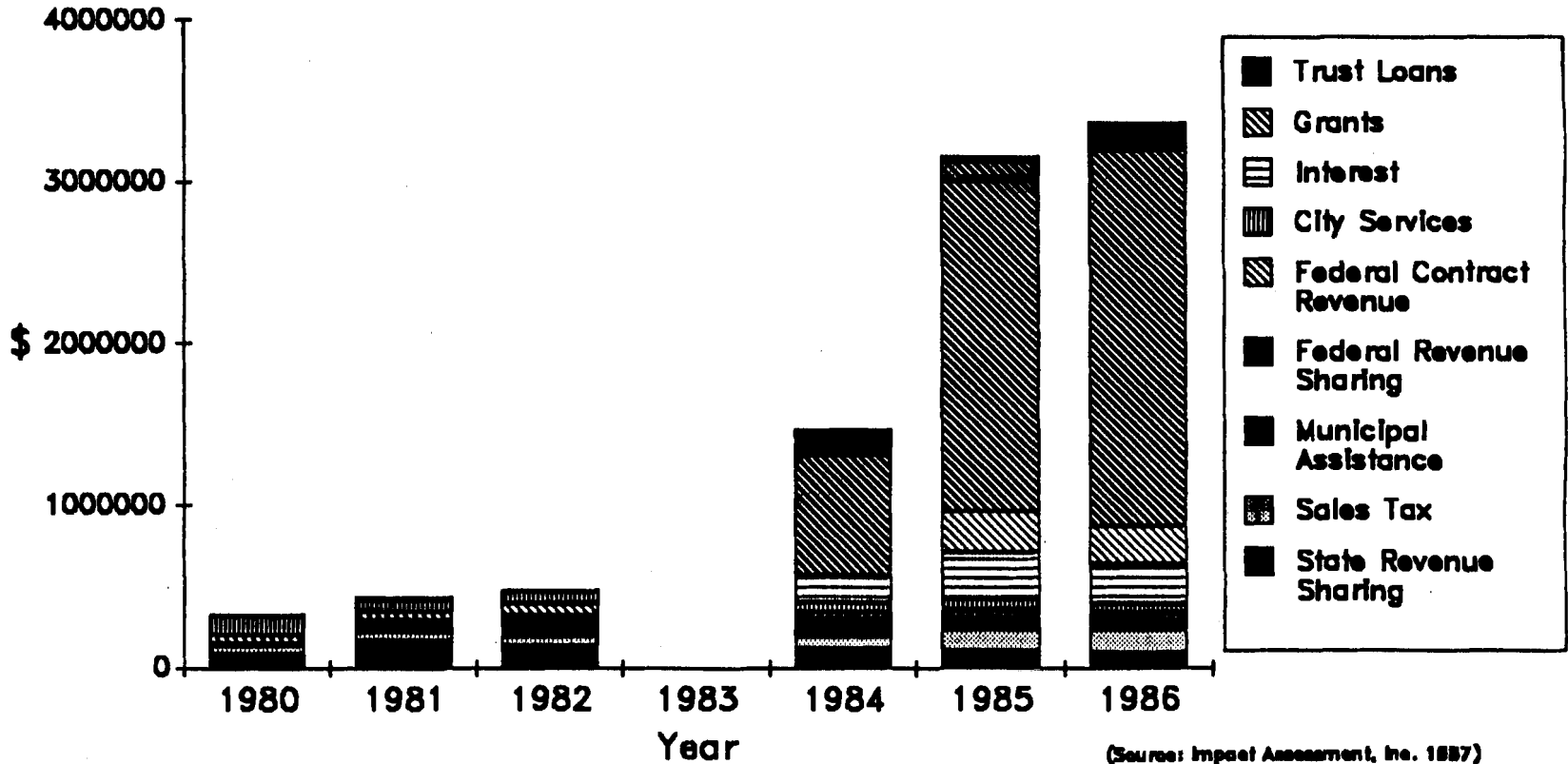
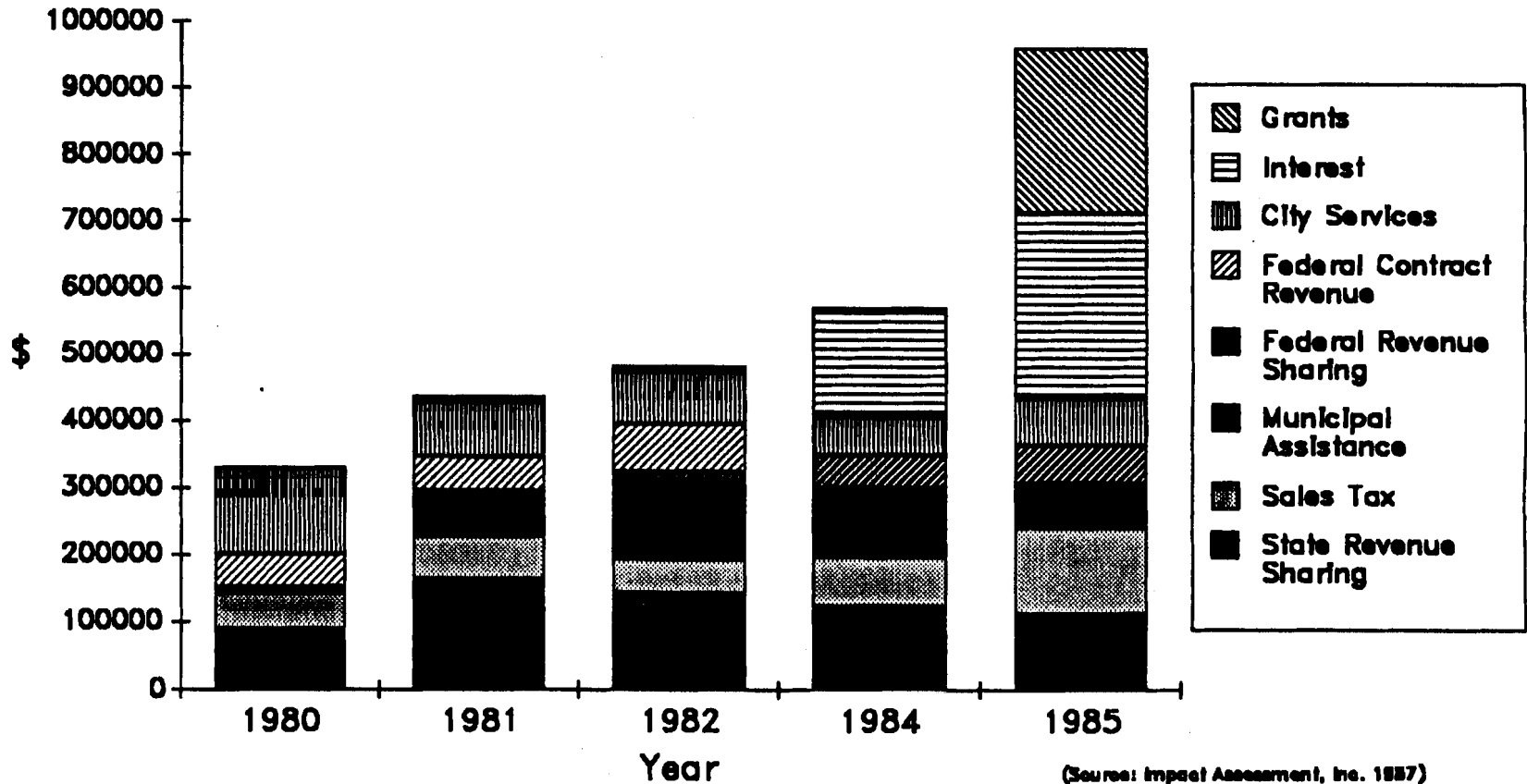


FIGURE 5-4
St. Paul City Revenue Sources:
1980-1985
(excluding Trust revenues)



(Source: Impact Assessment, Inc. 1987)

Pribilof School District

As shown in Table 5-3, school district expenditures declined 48 percent over the period 1982 to 1986. Over the same period student enrollment fell about 6 percent from 172 to 161 students. School budget expenditures per student declined from about \$19,200 in 1982 to \$13,900 in 1986.

School District revenue also fell, but at a less rapid rate than budget expenditures. State support of total School District revenue still represents the dominant funding source in spite of a decline from 86 to 81 percent of the four year period from 1982 to 1986. Nevertheless, the ending fund balance nearly doubled as a result of the steeper decline in expenditures over revenues. Employment remained steady over this period.

Federal Government Agencies

Together, the Federal Aviation Administration (FAA), U.S. Coast Guard, NMFS, and U.S. Fish and Wildlife Service employ four permanent (local) residents on a regular basis. These enclave institutions make only a negligible contribution to St. Paul's economy in other ways. Quantitative data on their expenditures in St. Paul are not available, but anecdotal and key informant reports suggest that their local purchases are highly restricted. They provide no goods or services that are directly purchased and consumed.

Small Business Entrepreneurs*

Small St. Paul businesses, especially the smallest and those of most recent origin, are chronically undercapitalized and suffer severe cash-flow problems due mainly to slow and erratic collection of receivables. These problems typify many small rural businesses and thus are not unique to St. Paul. Many residents, however, do not perceive these dynamics at work and therefore do not understand some of the most important causes of business stagnation and demise in their own community.

For example, some small businesses have come and gone, or experience a cycle of operations such that they operate for a few weeks or months and then become dormant, only to become active again later. Many residents commented on the fact that several viable and appealing businesses with desired services or products have emerged, only to disappear. Some residents spoke wistfully of the products these businesses offered and, invoking a common-sense supply and demand model, expressed mystification at the (sometimes temporary) demise of the business or businesses in question.

* We are unable to disclose specific details about the small business entrepreneurs in St. Paul since our field approach guarantees anonymity and even guarded generalizations about individual businesses will reveal their identity. Here we describe the general characteristics of small St. Paul businesses in an aggregate and comparative manner (small businesses and small business employment are described below in the section entitled "Time and Productivity").

Table 5-3

Pribilof School District
 Budget, Employment, and Enrollment
 St. George and St. Paul, Alaska
 1982 and 1986

	Year Ending	
	1982	1986
Revenues:		
State of Alaska	2360	2109
Federal Sources	155	261
Rentals	36	--
Interest Income	148	--
Other	9	104
Total Revenues	2707	2474
Other Financing Sources:		
Transfers from other funds	27	128
Total Revenues plus Other Financing Sources	2734	2602
Expenditures:		
Current:		
Regular Instruction	748	806
Vocational Education Instruction	111	19
Special Education Instruction	259	234
Bilingual/Bicultural Instruction	37	20
Other Special Programs	21	79
Supporting Services:		
Pupils	13	4
Instruction	175	204
General	462	333
Operation and Maintenance of Plant	304	347
Other	--	--
Capital Outlay	1112	10
Total Expenditures	3242	2056
Other Uses - transfers to other funds	66	185
Total Expenditures and Other Uses	3308	2241
Revenues and Other Financing Sources		
Over (Under) Expenditures and Other Uses	(574)	361
Beginning Fund Balance	1211	732
Ending Fund Balance	637	1093
<hr/>		
Employment	37	38
Enrollment	172	161

Our investigations revealed a simple answer for at least some of these perplexing instances. Undercapitalization and nonpayment of receivables was at fault. For example, one business showed a five figure profit in 1984 and 1985 but then experienced a net loss in 1986, simply because the business needed to restock. Fortunately this business had available liquid assets to underwrite the purchases (accepting a loss in order to do so), but other businesses were clearly unable to finance periodic restocking, maintenance, insurance, or other costs that required a large outlay at irregular intervals. Since business loans are notoriously difficult to secure in rural Alaskan communities, these entrepreneurs do not have access to the full range of conventional financing vehicles.

This problem is exacerbated by nonpayment of receivables. Key informants noted on several occasions that most delinquent receivables were due to entrepreneurs bending to traditional pressures and extending credit to kin or friends, who were then slow to pay their bills. One new St. Paul business in particular is extremely liquid "on paper" due to numerous receivables, but is cash poor since some of the clients do not pay their bills. Given businesses that are already undercapitalized and vulnerable to the demands of sudden, unforeseen, or predictable but very large bills (for example, quarterly tax payments), the receivables dilemma adds a second threat to their financial stability. For instance, in one case a local business' total unpaid receivables exceed the total value of stock on hand, a very vulnerable position indeed.

Because of these circumstances, only about one third of the small St. Paul businesses are able or willing to offer their products or services on a steady basis. Here we exclude the noncapitalized or marginally capitalized businesses in St. Paul that can operate independently of these factors, although often on an erratic, as-needed basis. These include hair cutting services; baby sitting; house cleaning; and odd jobs, such as painting, janitorial, and repair services. The success of small businesses in St. Paul appears to depend on an inflow of additional sources of money to the household, mainly from a wage job held by a family member, that assists the business in weathering cash flow crises and provides money that can be banked so as to underwrite recapitalization expenses in the short term. Note however that these remedies work only over the short term: the underlying problems remain unsolved.

5.2.3 Domestic Organization

The household-level primary data collected for this study will be the main source of data for this section. Secondary aggregate demographic data will be summarized when and where it is appropriate.

Household Composition: 1985

According to the June, 1985 St. Paul City census, the population was 550 persons distributed in 123 households, yielding an average household size of 4.47. The total disregards some permanent residents who were not present in June, and probably includes some temporary residents who would not have been enumerated in May or July of the same year. Households range in size from one to fourteen.

Anecdotal evidence indicates that household composition is subject to rapid change at frequent intervals. Incomplete spot checks of enumerated households between June and December 1985 suggest that many of the larger households may have dissolved and

reconstituted during the six months after the enumeration. Since this process effectively separates wage earners or transfer recipients and situates them in new living arrangements, it is apparent that both composition and income characteristics may undergo rearrangement at a very rapid rate.

In combination with the well documented pattern of short and long term job turnover (at the domestic level) and staff restructuring (at the institutional level) in rural Alaska, even comprehensive single-point analyses may become obsolete in a matter of months. Due to the rapid ongoing economic transition, these problems are magnified in St. Paul even though householders evidence some residence stability *per se*; the average length of residence at St. Paul is 41.5 years for household heads.

The average age of household heads is 46.2 with a range of fifty-eight (nineteen to seventy-seven). Nineteen of the 123 households (15.4 percent) are headed by females. The standard deviation is about fifteen, hence about two thirds of the household heads span the thirty-one to sixty-one age interval which encompasses a very large portion of the range. It is impossible to determine now why the distribution is so flat, but in view of the skewed distribution of household sizes, an obvious question emerges: do young adults postpone new household formation? If so, this factor could account for some of the skewness in household sizes and flatness of the household head age distribution. Since economic conditions (such as housing availability and income opportunities) and demographic features (such as sex ratios) may contribute to delays in household fissioning and favor compound, joint, or extended family households (notably among Native Americans), these issues warrant further analysis with 1986-1987 data.

Households and Kinship: 1986-1987

Household composition has undergone substantial changes during the 1985-1987 interval, which confirms observations about internal population change that were first made in 1985. Based on the 1987 sample of 120 households (100 logged during this study added to the Social Indicators sample of 20), the sample population is 464. Our complete canvas of the community indicates a total household (occupied) count of 131. Assuming that our sample adequately represents typical household sizes (see below), our calculations place the entire St. Paul population at 507. This represents a decline of 43 persons (8 percent) since 1985.

Mean household size in 1987 was 3.87 persons, a decline of 0.6 persons per household over two years. The completion of housing in the new east subdivision subsequent to 1985 undoubtedly accounts for a portion of this decline in average household size. The drop in overall population suggests that outmigration is also an important factor in this reduction. Additional evidence of outmigration and relocation to new housing may be found in the range of household sizes in 1987 (one to eight compared to one to fourteen in 1985) and age of household heads: mean age was 46.2 in 1985 compared to 42.3 in 1987.

Household size has declined and a larger proportion of households is headed by younger adults. This suggests that new households headed by younger adults have fissioned off from established households and that a portion of the population has left the Island. Judging by the characteristics of household size and age distributions, these changes are distributed evenly over the entire population.

We interpret this to mean that general factors affecting all population segments are responsible for much of the change in population characteristics, rather than particular factors that are likely to affect only identifiable population cross-sections (such as young adults and large versus small families). In order to account for the 1985 distributions, we offered the hypothesis that young adults postponed new household formation. We now conclude that, despite new household formation by some young adults, other, broader influences on household composition play a prominent role. Outmigration may be the chief influence at this time.

The secondary aggregate data portray population changes that are consistent with the data and interpretations already provided. The post-1985 period, for which no secondary data are available, reveals accelerated trends that are apparent in the secondary data for 1980 and 1985: increased outmigration, declining household size, increasing number of households, and net population decline.

St. Paul population grew at a steady rate of 1.9 percent per year over the 20-year period, 1960 to 1980. Over this period, absolute population increased about 50 percent above its based level of 378 persons in 1960. After 1980, Alaska Department of Labor estimates suggest that population declined at an average annual rate of -3.4 percent. By 1985, the St. Paul population dropped to a level comparable to what it was in 1970. The data in Table 5-4 suggest that the St. Paul population experienced two phases of growth: a period of relatively moderate but constant expansion between 1960 and 1980, followed by an abrupt accelerated decline between 1980 and 1985.

According to the U.S. Census, the number of households increased at twice the rate of population growth between 1970 and 1980. Although not as extreme, growth in the number of St. Paul households follows a pattern exhibited in both Alakanuk and Gambell over the same period. The number of families also grew more rapidly than population. Average household size and average family size declined between 1970 and 1980, although this decline was far less rapid than patterns exhibited in Alakanuk and Gambell. St. Paul household compositions are displayed in Table 5-5.

According to these data, net migration over the period 1970 to 1985 was negative. Population expansion during the 1970s was fueled by natural population increase. Net migration over the entire 10-year period was a modest -2.3 percent of 1970 base-year population. Notably, the data show that net out-migration continued into the mid 1980s, yet at a pace about ten times as strong as that of the previous 10-year period. The rate of natural increase remained relatively constant at about 7 persons per year between 1970 and 1985. Further analysis of both secondary and primary data is required to uncover the reasons for accelerated out-migration in the early 1980s, however some hypotheses are offered in the primary data analysis above. It is likely that the withdrawal of the National Marine Fisheries Service in October 1983 and its subsequent impacts on employment conditions underlies part of the dramatic population trends observed in the Tables. However, substantial federal funding to aid in the transition to local political and economic control plus a wave of construction projects brought a surge of activity to St. Paul's economy during the early 1980s.

The secondary age and sex data are not entirely consistent with the primary record; however, the secondary statistics are available only through 1980. Recall that the secondary household data displayed an abrupt shift and an accelerated decline in several indicators after 1980. We infer that the population segments exhibiting the most growth before 1980 reversed their growth trend after 1980. If true, this would complement the picture of rapid change and instability in the post-1980 (and especially post-1985) period that has clearly emerged by now in the other data.

Table 5-4

**Population, Household, and Family Characteristics
St. Paul, Alaska
1950 - 1985**

Year	Population			Households		Families	
	Total	Native	Other	Total	Average HH Size	Total	Average Fam Size
1950	359						
1960	378						
1970	450	423	27	85	5.29	82	5.49
1980	551	483	68	126	4.37	113	4.88
1984	491						
1985	466	122	4.46				

Average Annual Rate of Growth

1950-1960:	+0.5%						
1960-1970:	+1.8%						
1970-1980:	+2.0%	+1.39%	+0.7%	+4.0%	-1.9%	+3.3%	-1.2%
1960-1980:	+1.9%						
1980-1985:	-3.4%						

**Household Composition: Number of Persons and
Average Annual Rate of Growth, 1970-1980**

	<u>1970</u>	<u>1980</u>	<u>Rate of Growth</u>
In Family Households	419	505	+1.9%
In Non-Family Households	24	22	-0.9%
In Group Quarters	7	27	+14.5%

Sources: U.S. Department of Commerce, Bureau of the Census, Special Tabulations, 1980.

Alaska Department of Labor, Alaska Population Overview, 1985 Estimates, April, 1987. Note, figures for 1985 are provisional.

Braund, et al., MMS Technical Report 118, 1986, (Household data for 1985).

Table 5-5

**Population Natural Increase and Migration
St. Paul, Alaska
1970 - 1985**

Year	Total Population	Percent Male	Percent Female	Percent Native	Percent Age 15-34
1970	478	53.9%	46.1%	95.1%	16.4%
1980	551	57.2%	42.8%	88.4%	39.4%
1985	466	NA	NA	NA	NA

Period Population Change	1970-1980	1980-1985
A. Period Starting Population	478	551
B. Births over Period	124	76
C. Deaths over Period	40	37
D. Net Natural Population Change over Period (B minus C)	+84	+39
E. Expected Period Ending Population (A plus D)	562	590
F. Actual Period Ending Population	551	466
G. Net Migration over Period (E minus F)	-11	-124
F. Ratio Net Migration to Starting Population (G divided by A)	-2.3%	-22.5%

Sources: U.S. Department of Commerce, Bureau of the
Census, Special Tabulations, 1970 and 1980.

Alaska Department of Health and Social
Services, Vital Statistics, 1970 - 1985.

The age and sex distribution of St. Paul population is shown in Table 5-6 for 1980 and 1970. As with Alakanuk and Gambell, the 20-to-34 age cohort experience the largest gains in population between 1970 and 1980. The number of persons aged 20-to-34 increased 77 percent (from 86 to 152) over this 10-year period. As a proportion of total population, this age cohort increased from 19 percent in 1970 to 28 percent in 1980. Growth was concentrated among men. Absolute population aged 14 and under stayed constant between 1970 and 1980. Thus, as a proportion of total population, persons under 14 years of age declined from 29 percent in 1970 to 22 percent in 1980. Absolute population in the 35-to-64 age cohort also remained fairly constant between 1970 and 1980, reducing its share of total population over this period. The ethnic distribution of the St. Paul population also experienced a major shift between 1970 and 1980, as compared with Alakanuk and Gambell. Native population as a proportion of the total decreased from 94 percent in 1970 to 88 percent in 1980.

We are unable to determine if or how household living arrangements differ in 1987 since the 1985 data base does not clearly distinguish among a sufficiently large number of household types. The main 1987 sample of 100 households was classified in accordance with a typology developed for the Navajo Aging Project. The classification is presented in Table 5-7.

Nuclear households (types 5 and 6) comprise 44 percent of the sample and represent the most frequent household type. The large number of single person, conjugal, remnant and denuded, and single parent households are also significant despite their small individual frequencies. A review of the type frequencies shows that a large number of households appear "de-nuclearized" in the sense that the central procreative core at any generational level is incomplete. Although the conjugal pairs obviously possess the potential (depending on age and placement in an overall family cycle) for social reproduction, the distribution of frequencies overall suggests that numerous households are not in the process of cyclic growth, but rather decline. Furthermore, a large portion of this decline is not a function of the conventional family cycle curve; instead, at least 18 percent of the households are distinguished by the absence of "core" members.

These facts must be cast in a functional perspective for the composition patterns to make full sense. Granting first that these types are often developmental stages, it is necessary to examine the consequences of growth and decomposition. With advancing age and demise in the apical generation, for example, an extended household becomes an extended remnant. But since household members have numerous social and economic roles that are coordinated and specialized on the basis of age and sex, and since households often compose themselves so as to take advantage of these roles, it is clear that changes in household type have concrete social and economic ramifications.

The high frequencies of incomplete household cores indicate the absence of many persons who customarily play significant social and economic roles, ranging from income and food production to socialization and child care. This is evident in many Native American societies, including the indigenous Aleut social system. But these persons may be present in other households, such that the functions of the extended group may be preserved despite nuclearization or fragmentation in terms of residence (this persistence has been noted in other settings such as in North Slope communities; see Smythe and Worl 1986 and McNabb in HRAF 1987).

Table 5-6

Age Distribution by Sex, 1970
Age Distribution by Sex and Ethnicity, 1980
St. Paul, Alaska

Age Distribution by Sex
1970

Age Group	Total Population		Male Population		Female Population	
	Number	Percent	Total	Percent	Total	Percent
Under 5	60	13%	35	8%	25	5%
5 to 14	116	26%	55	12%	61	14%
15 to 19	47	11%	25	6%	22	5%
20 to 34	86	19%	41	9%	45	10%
35 to 64	131	29%	77	17%	54	12%
65 and Over	10	2%	6	1%	4	1%
Total	450	100%	239	53%	211	47%

Age Distribution by Sex and Ethnicity
1980

Age Group	Total Population		Male Population				Female Population			
	Number	Percent	Total	Percent	Native	Other	Total	Percent	Native	Other
Under 5	63	11%	35	6%	33	2	28	5%	22	6
5 to 14	117	21%	66	12%	63	3	51	9%	48	3
15 to 19	65	12%	36	6%	30	6	29	5%	29	0
20 to 34	152	28%	87	16%	64	23	65	12%	52	13
35 to 64	135	25%	81	15%	72	9	54	10%	51	3
65 and Over	19	3%	10	2%	10	0	9	2%	9	0
Total	551	100%	315	57%	272	43	236	43%	211	25

Source: U.S. Department of Commerce, Bureau of the Census, Special Tabulations, 1970 and 1980.

Table 5-7

**Household Composition Classification
St. Paul, Alaska
1986-1987**

Type	Description	%*
1	Single individual, no temp. members	13
2	Single individual, w/ temp. members	2
3	Conjugal pair, no temp. members	11
5	Nuclear, no temp. members	40
6	Nuclear, w/ temp. members	4
7	Single parent, plus child(ren), no temp.	11
9	Conjugal pair, divorced child and grandchild(ren), no temp. members	3
11	Conjugal pair and grandchild(ren), no temp.	1
13	Remnant-grandparent and grandchild(ren), no temp. members	2
15	Stem-grandparents, married child and grandchildren, no temp. members	2
19	Stem remnant-grandparent, married child and grandchildren, no temp. members	1
21	Extended remnant-grandparent, married child and grandchildren, no temp. members	1
23	Denuded stem-grandparent, unmarried child and grandchildren, no temp. members	1
30	Sibling set, no temp. members	3
31	Sibling set, w/ temp. members	3
32	Complex sibling set in ascending generation with stem or extended elements	2

Notes: "denuded" = missing spouses in all generations.
 "remnant" = portion of primary household type missing a spouse in apical generation, normally late in the family developmental cycle.
 "stem" = portion of extended household missing married children, often late in developmental cycle.

* For the St. Paul sample, N=100. This being the case, actual numbers and percentages are the same value.

Source: St. Paul field notes, 1987.

Our evidence suggests that the coordination of productive activity and other normally kinship-based cooperation across households in St. Paul is relatively constrained. We do not imply that it does not occur, only that residential households are generally self-contained. We interpret the data to mean that residential units are highly independent despite obvious instances of cooperation and coordination across their boundaries, but also that this independence brings with it a reduced reliance on the kin who under previous circumstances played essential economic and social roles.

For instance, only 50 percent of the St. Paul sample carried out subsistence activities with members of other households. Only 8 percent of the sample households received assistance from other households in repairing and maintaining subsistence gear; 24 percent borrowed subsistence equipment from other households on any occasion, and half of them borrowed from friends rather than kin. The persons who customarily butchered and prepared game or fish harvests were never family members or friends who live in other households; 84 percent of the respondents who engage in subsistence activity butcher and prepare their own harvests, whereas other members of the residence normally do this work in only 3 percent of the cases (17 percent of the subsistence households did not respond to this item in the protocol).

These comments should not be construed to mean that cooperation is rare; rather, sharing of labor and capital is not characteristic of all households, whereas sharing of food is apparently far more widespread. Our calculations indicate that about one third of all harvested foods are distributed within and beyond the community, and the proportions are extremely high among some population segments (see following sections and Chapter 6, Intervillage Analysis). Table 5-8 depicts average household harvests and distributions in three major categories for the entire sample (N=100):

Wide distributions of foods despite highly constrained sharing of labor and capital are illustrated in one household case example in particular (below).

If residential households are relatively insular and productive activity is generally individualized, what gives rise to the high frequency of "depleted" or non-procreative household types (here we include the relatively numerous sibling sets that, although they may contain conjugal pairs, are essentially based on consanguinity)? We speculate that the instability of economic opportunities noted above may encourage opportunistic household arrangements, giving rise to novel combinations, in addition to selective outmigration. Since prime candidates for outmigration are generally young adults in the child-bearing years, it is possible that some of the decomposition effects we see are due to outmigration of members of those "depleted" cores.

Three brief case examples are presented below that illustrate instances of both persistence and absence of cooperative activity across residential households.

Table 5-8
Average Harvests and Distributions
St. Paul, Alaska
1986

Harvest Category	Average Household Harvest in Pounds	Average Number of Pounds Shared
All fish and game	454.11	136.46
Birds and eggs	24.57	11.70
Plants and berries	2.12	0.00
Total	480.80	148.16

Source: Field Protocols, 1987

Case One: Mutual Assistance Within a Sibling Set

Two male siblings share this household. One, the permanent resident, maintains the home, works occasionally for wages, and conducts all of the household subsistence activities including butchering, division and distribution. Household income is extremely modest, however half to three quarters of the subsistence harvests are distributed outside the household, primarily to kin. A virtual absence of long term storage facilities for the subsistence products is undoubtedly one incentive for these distributions; distributed foods are occasionally retrieved from recipients as the need arises.

The second brother is present at irregular intervals, however this household is identified as his home. His contribution to the household in terms of productive activity is minimal. In this case the household members are generally isolated from other community members and members of the larger kin group aside from the harvest distributions (see tabulation of harvest distributions and associated text above). The household is in a sense a secure and stable "pied-a-terre" for the second brother, whose roots in the community are shallow despite his long-term residence at St. Paul. This case might be classified as a "lodger" arrangement if it were not so permanent and lacking in the obvious sympathetic symbiosis between the siblings. The case is noteworthy as one type of sibling-set household, given the fact that varieties of sibling-set arrangements are relatively common at St. Paul.

Case Two: Self-Contained Sibling/Nuclear Household

Case two was classified as a "complex sibling set" despite its multigenerational composition, since important functional roles centered on the sibling set. The classification is also a way to signify the (relatively) ubiquitous sibling arrangements that distinguish St. Paul from many other communities.

Here we have a household that would be classified as type 9 (conjugal pair, single child and grandchildren) were it not for the presence of another unmarried child and a sibling in the apical generation. As is true of many Aleut networks, virtually all subsistence activity was carried out by a team of siblings (another common formula would be teams of uncles and nephews); in this case, both siblings who formed such a team lived under the same roof. Two of the three adults in the apical generation worked for wages. As such, two adults (one in the apical and one in the first descending generation) were available at nearly all times for activities centered in the home, such as child care and routine maintenance. Distributions of food and labor might occasionally pass to or from the household, but these were generally rare.

Case Three: Links Between Nuclear and Conjugal Households

In case three, the main cooperative link lay between two households that, if housed under a single roof, would comprise a stem household. The senior conjugal pair engaged in most of their cooperative activity with the household of an offspring. On occasion, the offspring would also engage in cooperative activity (chiefly hunting and fishing) with the father of the offspring's spouse (an affine and thus a generally uncommon subsistence partner today, although less so in the historic past).

One adult in each household worked for wages. Daily cooperative activity such as child care, companionship during chores and meal preparation, and shared meals were common. Visiting for companionship between the households was common, which in itself is somewhat uncommon since most companionship networks at St. Paul tend to extend laterally along one generation. Despite the uncommon qualities noted above (or perhaps because of them), both households were identified as "traditional" by some community observers in view of the strength and endurance of family ties.

None of these cases should be construed as representative or typical in the sense that their features permit valid generalizations to the community at large. Rather, they were selected so as to convey some of the observations made in the analytic portion of this section by providing a more human element and practical details. The cases illustrate the following: some depletion of core procreative units; some nuclearization occurring alongside persistent functional networks that span residential households; insularity and independence of residential households; and, finally, continuation of cooperative activities despite clear trends toward independence.

5.3 Time and Productivity

5.3.1 Introduction

Empirical studies of rural Alaskan communities have repeatedly underscored the complementary but occasionally countervailing roles of productive activities that are necessary to sustain local economies. In particular, the balance between harvest activities and activities that generate money (some of which may overlap or even comprise a joint set of activities) represents a key concern that has motivated a large body of research. To an important degree this concern motivated the current study. Pertinent citations include Burch (1985), Fienup-Riordan (1986), Jorgensen (1986), Jorgensen, McCleary and McNabb (1986), Langdon (1986), Little and Robbins (1986), Luton (1986), Spencer (1959), VanStone (1960), and a substantial share of the technical reports produced under the auspices of the MMS SESP program and the Subsistence Division, Alaska Department of Fish and Game.

But the issue is not merely one of pragmatic constraints or complementarity among productive activities *per se*. The values of resources, their permitted and customary uses, means and timing of harvest, and market opportunities are determined to a significant extent by laws and regulations, legal definitions, and other institutional agreements that are external to the immediate economic environment but which nonetheless control that environment. The example of St. Paul is particularly apt in this connection, since no "free market" exists here by any stretch of the imagination. There are three key elements of the local resource endowment: sea mammals, bottom fish, and location amidst rich fishing grounds and the catchers and processors that work the fisheries. A modest market exists for the sea mammals and local entrepreneurs seek to exploit that resource, yet are effectively prevented from doing so under terms of law. Similarly, local entrepreneurs seek to break into bottom fishery operations but lack sufficient financial leverage to do so and cannot compete with larger operations under the terms of current regulatory regimes (which, for largely unintended reasons, encourage excessive capitalization and favor very large, vertically consolidated operations). Finally, the Bering Sea location is potentially valuable to both fishery and OCS operations, but attempts to market that location will necessarily pit St. Paul against well financed competitors who seek to provide the same fleet services.

The realities of the North Pacific political economy introduce structural contradictions that make realistic economic planning among both institutions and households very difficult. In this section we address the sum of all productive activities in order to determine how St. Paul residents allocate their limited time among such activities, and what the ramifications of that allocation are. Here we emphasize the alternatives and varied strategies that are devised by households to cope with intermittent, unstable and seasonal resources as well as the contradictions established by courts and commissions far from St. Paul.

5.3.2 Employment: Labor Participation and Its Ramifications

Table 5-9 enumerates the wage jobs in St. Paul as of June, 1987 with a column reserved for comparable 1985 figures. Employment categories that have been customarily used in previous studies are employed here (see Braund and Associates . 1986:5-21; Gorsuch and Hull 1984; Impact Assessment 1987:267; Kirkwood and Associates n.d.). Anticipated new hires are included in the 1987 figures.

Prior to and during 1985, Coast Guard personnel were eliminated from job counts on the assumption that they were in an enclave situation and hence non-participants in the St. Paul economy. This argument is legitimate as far as it goes, however we have included the full count for the sake of completeness. Civilian employees are broken out separately; these persons would have been listed in the Coast Guard category in pre-1987 estimates. Also, TDX has developed a new administrative division called Operations; jobs in that category would have been listed as Administration or central office staff before. Pribilof School District was aggregated prior to 1987; the 1987 figures are broken out by job status. Airlines jobs were also aggregated prior to 1987, and we have classified them by employer here. Finally, Public Safety was treated as a separate category before 1987. Since these jobs are administered by the City, they are so classed in the 1987 columns. The City figure for 1985 was 72, hence adding the Public Safety count (four) we arrive at 76.

Overall, the composition of St. Paul labor force participation is only marginally different than it was in 1985. Unfortunately, we do not possess a breakdown of full- and part-time positions for 1985 and the published FTE calculations based on 1985 data are probably imprecise (cf. Braund and Associates 1986 and Impact Assessment 1987). Despite these factors, it is fair to say that the composition has not undergone a significant shift; non-TDX private sector employment is slightly higher, TDX and IRA employment is slightly lower, and other changes, though measurable, appear unimportant. Our analysis of labor force participation and income (see section 5.4., Income) below will demonstrate that the stable aggregate pattern evident here is not evident at the level of individual households.

Table 5-10 tabulates the frequencies of numbers of employed persons in households based on the 1987 sample of 100. Three tabulations are presented: number of employed persons per household (part- or full-time); number of part-time employees; and number of full-time employees. The average number of employed persons per household is 1.58; the average number of employed persons in households that contain one or more employed persons (thus the average number of employees in working households) is 1.82.

Thus 13 percent of the households have no employed members at all, yielding an absolute household unemployment rate of 13 percent for the sample. Most of these non-working households (54 percent) are small single person or conjugal pair residences, however the remaining proportion is divided among nuclear, stem, and extended remnant types. Households with one or two working members comprise the largest portion of the sample (70 percent); the distribution is somewhat skewed toward high-density employment households, however only 5 percent of the sample contains households with four or five working members. The highest-density households with five working members are nuclear households. Household size correlates well with employment density (treating the variables as both ordinal and interval measures: $\tau c=0.46$, $r=0.59$, significant at better than 0.001). These data lend some support to the earlier observation that non-depleted and moderately large households may be able to combine independence and self-containment with a fairly secure economic status.

Labor force participation averaged about 32 percent in St. Paul in 1980 (Table 5-11). Since the NMFS withdrawal (and subsequent employment expansion) had not yet occurred at this point, this participation rate is probably as accurate as any census calculation. Labor force participation rates were highest among men. The difference

Table 5-9
Employment, St. Paul, Alaska
1985 and 1987

Employer:	Full-time 1987	Part-time 1987	Total 1987	Total 1985
NMFS	2	0	2	3
U.S. Post Office	1	1	2	2
NOAA	1	0	1	3
Court System	0	1	1	1
FWS	1	0	1	3
FAA	3	0	3	3
Coast Guard/LORAN	24 (3 civil.)	0	24	2
Pribilof SD (Sum)	25	2	27	32
Admin.	2	0	2	
Certified (teachers)	11	0	11	
Aides	12	0	12	
Radio operators	0	2	2	
Substitutes		3 (as needed)		
City of St. Paul	68	9	77	72/76
IRA (Sum)	22	1	23	54
Admin.	6	0	6	8
Gas Station	1	0	1	1
Store/Tavern	15	1	15	15
Seal Harvest	0	0	0	30
TDX (Sum)	25	24	49	56
Operations	2	1	3	0
Administration	10	0	10	20
Hotel	5	0	5	7
Restaurant	8	3	11	9
Seal Harvest	0	20*	20	20
Tourism	2	0	2	2
APIA	1	1	2	1
State (DHSS)	0	1	1	0
IHS/Clinic	4	2	6	6
Airlines (Sum)	4	0	4	5
Reeve	3	0	3	5
NAC	1	0	1	0
Other Private Sector (Sum)	5	17	22	13
Auto shop	2	0	2	0
Video shops	0	3	3	**
sales	0	3	3	**
restaurant	3	0	3	7
cycle rental	0	1	1	**
other self-empl. in services	0	10	10	0
Total Employment	188	59	247	261

Notes: * final confirmed count is unavailable.

** these categories were not enumerated in 1985, however the category "Other" captured these jobs (5 in 1985).

Source: Field notes (1985, 1987)

Table 5-10

**Employment Density in Households
St. Paul, Alaska
1987**

Employment Class	Value	Frequency	Percent
Employed Persons (all)	0	13	13.0
	1	41	41.0
	2	29	29.0
	3	12	12.0
	4	2	2.0
	5	3	3.0
Total		100	100.0
Full-Time Employees	0	19	19.0
	1	54	54.0
	2	21	21.0
	3	6	6.0
Total		100	100.0
Part-Time Employees	0	68	68.0
	1	23	23.0
	2	6	6.0
	3	3	3.0
Total		100	100.0

Source: Protocols

between labor force participation among men and women was slightly more pronounced for St. Paul's Native population. Note that as with the other study villages, labor force participation in St. Paul was roughly half the rate observed for total Alaska working age population in 1980 (67 percent).

U.S. Census data indicate that between 1970 and 1980 the rate of unemployment in St. Paul dropped significantly, from 39 to 5 percent. This decline was even more pronounced among men. Several factors may explain this dramatic shift. First, employment increased by 49 percent between 1970 and 1980 according to U.S. Census data. Over the same 10-year period, the working-age population (ages 15 to 64) increased by only 33 percent. Thus the ratio of employment to working age population increased between 1970 and 1980. Second, although data on labor force participation were not available for 1970, it is possible that St. Paul's labor force may have declined as a proportion of total working-age population over this same period.

Employment data from the Alaska Department of labor (ADOL) in Table 5-12 and Figures 5-5 and 5-6 suggest a pattern of declining non-local government participation and increased private sector involvement in St. Paul's labor market. Reductions in federal government employment are offset by increases in local government. Support services employment, while generally increasing, exhibited strong variability. The reader is reminded that the data presented in Table 5-12 correspond to ADOL subarea #568, which includes St. Paul and St. George. Although some distortion is introduced by this overlap, it is unlikely to obscure essential patterns that are valid for St. Paul since the NMFS withdrawal and subsequent transition affected both communities.

Another facet of productive activity is the relationship between employment on the one hand and harvest activity on the other. Table 5-13 summarizes the St. Paul data on employment status and subsistence harvests. Employment status has been classified four ways: all households are summarized in column one, households with no employed members appear in column two, column four represents all households with one or more employed members (i.e., "working" households as a whole), and the third column subclassifies the fourth, showing only those households with a single working member. The major harvest categories are shown on the left.

Although the non-employment households have an entry in the fish and game row, it is notable that they harvested none of those resources. All harvested food in that column represents gifts or gratis seal meat received from the fur seal harvest. (The next discussion below shows that these households allocated no time whatsoever to subsistence harvests.) In part, this Table demonstrates the danger of using aggregated totals to represent a population known to exhibit great variation in household composition and productive activity characteristics: the totals and averages in the left column are obviously an artifact of high harvests by large households with dense employment at the far right (the standard deviation of the total food harvest is almost 788, nearly double the mean).

Table 5-11

**Labor Force Participation and Unemployment
(Persons aged 16 to 64)
St. Paul, Alaska
1980**

	Total	Male	Female	Native	
				Male	Female
Civilians Aged 16-64	376	224	152	216	139
Civilians Employed	113	78	35	70	27
Civilians Unemployed	6	3	3	3	3
Total in Labor Force	119	81	38	73	30
Total Not In Labor Force	257	143	114	143	109
Labor Force Participation Rate ^a	31.6%	36.2%	25.0%	33.8%	21.6%
Unemployment Rate: ^b	5.0%	3.7%	7.9%	4.1%	10.0%
Unemployment Rate 1970:	39.2%	39.0%	37.5%	NA	NA
Armed Forces Employment	54	54	0	0	0

Notes: ^a Ratio of employed plus unemployed civilian population aged 16 to 64, to total population aged 16 to 64

^b Ratio of employed persons aged 16 to 64, to sum of persons employed plus unemployed aged 16 to 64 (i.e., the labor force).

Sources: U.S. Department of Commerce, Bureau of the Census, Special Tabulations, 1980.

Table 5-12

**Employment and Wages and Salaries
by Major Industry Group
St. Paul, Alaska^a
1980 - 1985**

Employment

<u>Year</u>	<u>Government^b</u>		<u>Support</u>	<u>Total</u>
	<u>Federal</u>	<u>Local</u>	<u>Sector</u>	
1980	122	35	128	284
1981	120	38	146	304
1982	118	62	112	291
1983	NA	NA	NA	NA
1984	77	115	189	381
1985	24	136	155	315

Wages and Salaries

<u>Year</u>	<u>Government^b</u>		<u>Support</u>	<u>Total</u>
	<u>Federal</u>	<u>Local</u>	<u>Sector</u>	
1980	2,618,000	721,000	1,934,000	5,274,000
1981	2,732,000	864,000	1,896,000	5,491,000
1982	2,757,000	1,459,000	1,791,000	6,006,000
1983	NA	NA	NA	NA
1984	1,137,000	2,985,000	3,319,000	7,441,000
1985	450,000	3,569,000	3,155,000	7,174,000

Notes: ^a Data for ADOL Subarea #568; includes St. George.

^b State government employment and wages is equal to zero and may be included in other sectors of the economy.

^c Based on estimates for first quarter.

Source: Alaska Department of Labor, Special Tabulations from ES202 Data Base, 1980 - 1985 (1983 missing).

FIGURE 5-5
St. Paul Employment by Major Industry Group
1980-1985

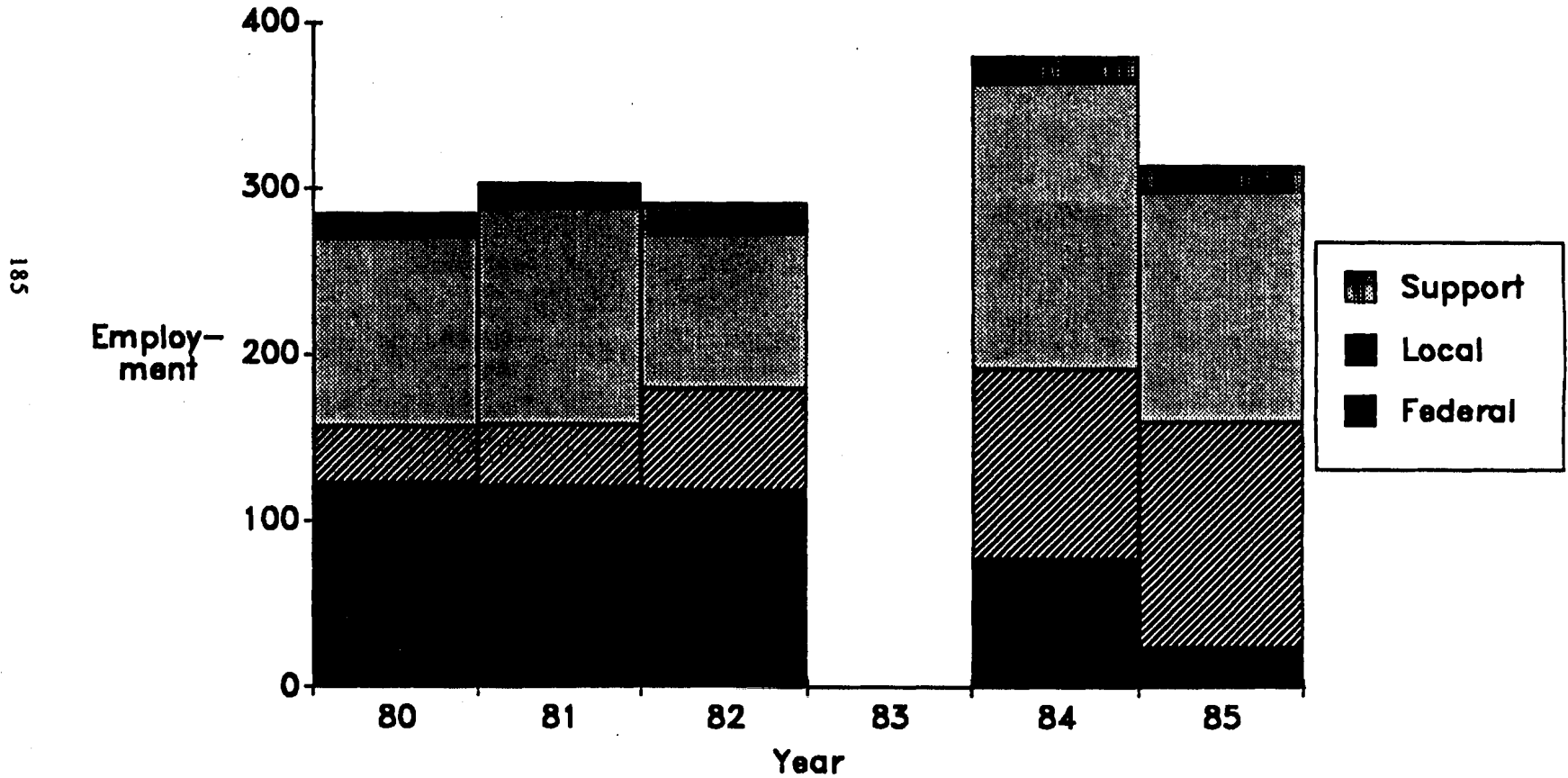


FIGURE 5-6
St. Paul Wages and Salaries by
Major Industry Group: 1980-1985

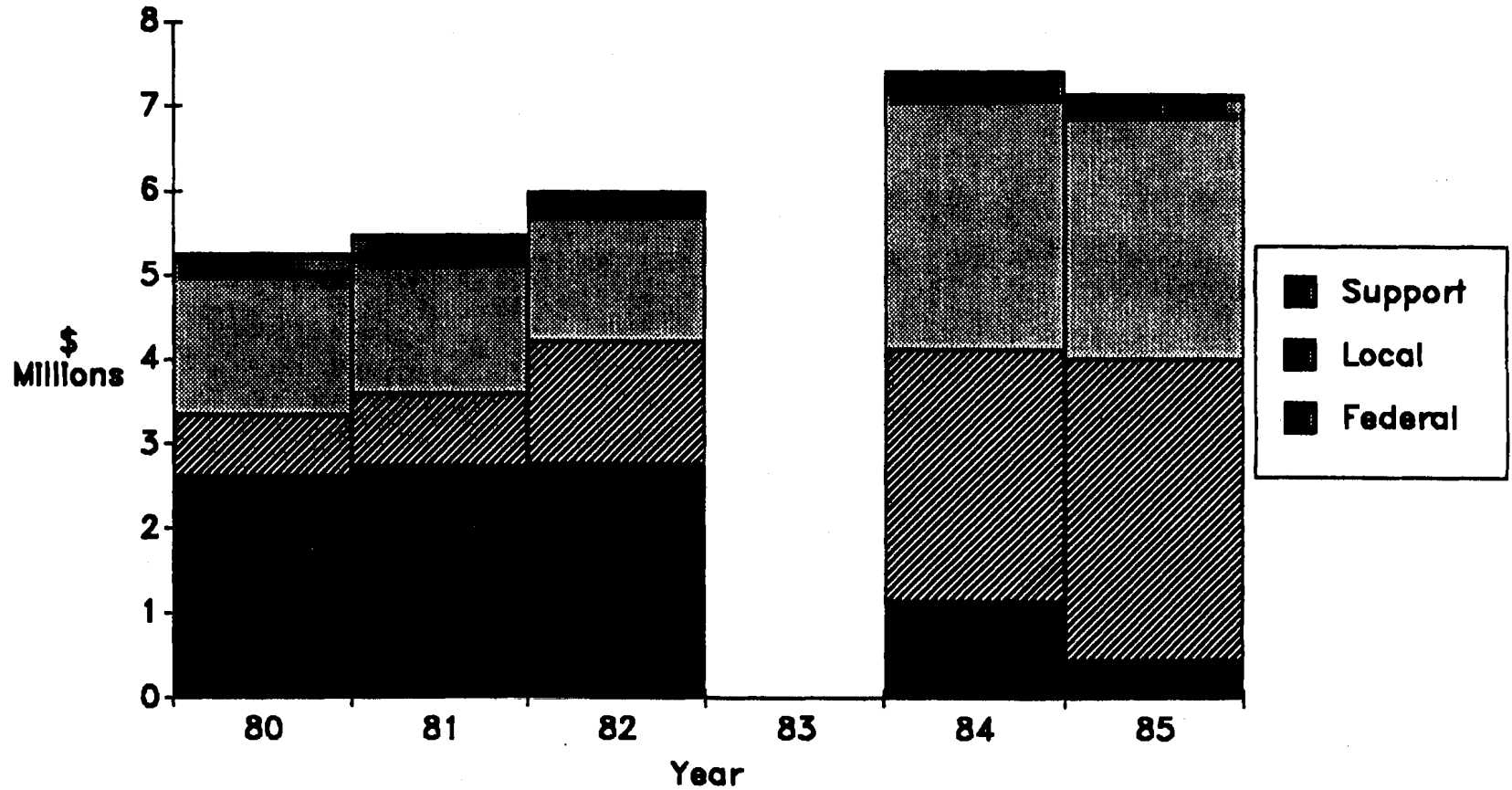


Table 5-13

**Composition of Total Village Subsistence Harvest
by Job Status
St. Paul, Alaska
1986**

Subsistence Harvests (Pounds) for Households

	All Households Interviewed	No HH Members Employed*	Only One HH Member Employed	More Than One HH Member Employed
Fish and Game mean	45411 454.1	1850 142.31	10017 244.32	43561 500.70
Birds and Eggs mean	2457 24.57	0	393 9.59	2457 28.24
Plants and Berries mean	212 2.12	0	18 0.44	212 2.44
Total Food Harvest mean	48080 480.80	1850 142.31	10428 254.34	46230 531.38
Wood mean	1100 11	0 0	100 2.44	1000 12.64
Number of Households mean household size	100 3.7	13 2.07	41 2.95	87 3.94

***Note: All harvests are gifts or free seal meat.**

5.3.3 Household Diversity in Allocations of Time, Labor, and Harvest Resources

Characteristics of Harvests in 1985

The diversity of resources harvested by St. Paul households is low by rural Alaskan standards, in part because of the scarcity of land-based resources that are desired and easily harvested. A variety of regulatory regimes, including constraints on fur seal harvests, sales of fur seal pelts, halibut quotas, and endangered and threatened species laws, also act in concert to introduce harvest limitations that are unique to the Pribilof Islands. The average number of harvested species at St. Paul in 1985 was 3.9 per household, with a range of six (one to seven).

Some reasons for limited resource harvests were noted above, but other factors may contribute to relatively undiversified harvests in terms of the range of species. In St. Paul, two key resources (halibut and fur seal meat) are freely available to virtually anyone willing to pick up the food from processing or storage points (see Braund and Associates 1986). Extensive inter-household gifting and exchange also act as conduits for the passage of these resources throughout St. Paul. Sufficiently extensive networks of this sort might eliminate some incentives to engage in diverse subsistence harvests, at least for some households.

Despite the limited diversity of St. Paul harvests, sharing and exchange of harvested foods with off-Island households is extensive. The average number of different subsistence food products sent off-Island is 1.83 per household (only forty households provided any distribution information, however). Only about 7 percent of these forty households did not send food off-Island. The foods received by St. Paul households are more limited in comparison. Received foods average 1.16 types per household, but the distribution is quite uneven, suggesting a small, rather well-defined body of customary recipients (only twenty-five respondents provided information on receipt of food gifts). Harvest volume data are not available for 1985. Veltre and Veltre (1981) reported an increase in subsistence activities between 1979 and 1981; however, existing sources do not indicate if that increase has continued to the present day and, if it has, if the increase is apparent among all segments of the community.

It is likely that there was substantial variation in harvest and sharing patterns among St. Paul population segments in 1985. Due to the construction boom fueled by capital improvements and housing programs, the opportunity costs posed by alternative economic activities would have been unevenly felt by all population segments, possibly leading to increased variance in harvest and subsequent sharing practices. Yet, the data for 1986-1987 also illustrate great variance during a period of comparatively modest construction activity, which suggests that time allocations among presumably competitive activities are not directly proportional (see below).

Productive Activity in 1986-1987

Household time allocations reveal a pattern that is very similar to the harvest and job status comparison, but one that illustrates the skewness shown above in an even more pronounced manner. Table 5-14 tabulates average (peak) hourly allocations per week by all household members to several harvest, maintenance, and civic service tasks, using the same employment categories introduced above. The non-employment households expended no time in any category. As before, the aggregate averages are

high due to the heavy contribution by some households in the large, dense employment group at the far right. Recall that the third column is a subset of the fourth; hence, its low averages are contained within the fourth column and therefore dilute the averages at the right. Nonetheless, the averages among the "employed" households are two to three times higher than those in the column reserved for households with only one working member.

Thus far the evidence shows that the modal employment class (one person per household) contributes little to the harvest volumes and productive time allocations averages, yet virtually all of the time allocation and harvest variables correlate very well with the employment status measurements. How can employment status correlate well with those variables if the households in the most common employment classification provide a relatively meager contribution to the aggregated time investments and harvests?

This situation is easily explained: unusually high measurements at the extremes ("outliers") magnify the averages and produce an apparent low contribution by the modal category, despite very good correlations. Rare or infrequent measurements may interfere with analysis, and are often eliminated for this reason. But in this case these outliers are evidence of important population segments that are atypical due to their very high time allocations in several productive categories as well as their very large harvests. These exceptional cases, taken together, therefore comprise significant and essential portions of the St. Paul economy since they represent employment status and subsistence harvest extremes. The economic picture that is emerging for St. Paul shows that the community is composed of many distinct exceptional cases that create a more uniform texture only when examined as a whole. This observation of internal diversity has been noted several times already.

The following Tables illustrate this point forcefully. Table 5-15 enumerates harvests using the categories in previous tables, and classifies households by a characteristic of time allocation: whether the head of household allocated more time to hunting and fishing than to a job, or whether more time was allocated to wage employment than to hunting and fishing. As before, the left column lists the characteristics of the entire sample.

In one sense few generalizations from these data are possible since only three household heads report a greater time allocation for harvests. Nonetheless, the Table demonstrates the extremely differentiated nature of economic activity on St. Paul. The two columns at the right represent exceptional cases: they are larger households, and their harvests are uniformly higher than the mean harvests except for the marginal case of wood collection (but only for the smallest subsample). The characteristics of the center column appear self-evident: greater time yields greater harvests. Yet the household heads who devote less time also obtain larger mean harvests. How is this possible?

The answer is based in part on observations that have already been made, but Table 5-15 also provides a crucial part of the answer. Both columns represent specialized subsets of households: those large enough and sufficiently secure with employment and combined labor potential to divert relatively high levels of time, on the part of at least one person, to one productive activity (i.e., subsistence harvests) at the expense of another (i.e., wage labor). Other household members in each case complement and balance the net expenditure of time devoted to the full variety of activities required to sustain the household. In short, we speculate that their

Table 5-14

**Time Allocation by Job Status
Hours per Week per Activity
St. Paul, Alaska
1986**

Activity	Household Job Status			
	All Households	Nobody Employed	One Employed	One or More Employed
Hunting	17.12	NA	5.56	19.02
Fishing	10.45	NA	4.42	11.54
Gathering	6.98	NA	1.94	7.73
Repairing Gear	2.23	NA	0.75	2.53
Butchering	2.91	NA	1.46	3.29
Board Work	1.67	NA	0.88	1.83
Total	41.36 hrs/wk	NA	15.01 hrs/wk	45.94 hrs/wk
Number of Households	100	13	41	87
Mean Household Size	3.7	2.07	2.95	3.94

Table 5-15

**Composition of Total Village Subsistence Harvest
by Subsistence Status
St. Paul, Alaska
1986**

Harvest (Pounds)	All HHs Interviewed	Household Subsistence Status	
		HHs in Which Head Allocated <u>More</u> Time to Hunt and Fish Than to Job	HHs in Which Head Allocated <u>Less</u> Time to Hunt and Fish Than to Job
Fish and Game mean	45411 454.1	7267 2422.33	31434 532.78
Birds and Eggs mean	2457 24.57	228 76	2073 35.14
Plants and Berries mean	212 2.12	10 3.33	200 3.39
Total Food Harvest mean	48080 480.80	7505 2501.67	33707 571.31
Wood mean	1100 11	0 0	1000 16.95
Number of Households mean household size	100 3.7	3 6.67	59 3.98

Note: Column totals will not sum due to the fact that households with heads that devoted the same amount of time to hunting and fishing and to job, or who failed to respond, are not included.

household composition and employment characteristics permit internal differentiation in their productive roles. Put another way, if sufficient "delegation of responsibilities" among household members is possible, individual opportunity costs are eliminated or reduced at the level of the household.

Relatively large average household sizes suggest that most small households are excluded from either column (and note further that the low harvest, low- or non-employment households are characteristically small; see Tables 5-12 and 5-13). Field observations and field notes suggest that the households excluded from either column are headed by members who typically allocate about the same amount of time to both jobs and harvests, and levels of both are modest. (However, we accept the possibility that responses indicating the "same" time allocations are the most convenient equivocations by respondents reluctant to disclose low levels of harvest activity.) We infer also that the households represented in these columns represent the "success stories" of self-containment, accomplished in part by sufficient size and functional diversity within the household.

This is not to say that inter-household cooperation does not occur among the households in the columns. We return to the suggestion made earlier (under the heading "Economic Organization") that cooperation is relatively constrained as a rule, and that households sufficiently robust in their composition and economic assets fare best under these circumstances. There is little doubt given the evidence in these Tables that the exceptional households do in fact harvest more, devote more time to these harvests, and possess a more dense and probably more secure employment status.

Table 5-16 uses the same column definitions, but presents the income characteristics of the households. These data depict a pattern that is consistent with the discussion immediately above: income measurements for each column exceed the means for the sample as a whole. In addition, earned income as a proportion of total income exhibits a reverse pattern when compared to the sample as a whole. Both sets of households rely on a lower proportion of unearned income. The center column is especially apt for an illustration of functional diversity within St. Paul households (despite the minute subsample size). Household heads devote more time to harvests than to jobs, yet household earned income is twice the sample mean. Obviously other household members are earning much of this income, and despite larger households (which can capture increasingly large amounts of Permanent Fund transfers, an important income source on St. Paul) the unearned income mean is lower than that of the sample.

It is useful to note in passing that the characteristics of the right column may have been even more exaggerated had we systematically excluded non-Aleut temporary residents from the sample (which we did not). Every such resident is situated in the right column since they devote less time to harvests than to jobs, but their (usually) null harvests serve only to reduce the measurements for that column. They may also raise the income mean and lower the household size mean, but we consider these distortions to be minimal (recall that some permanent Aleut households that are small and which engage in few or no harvests are also situated there).

Table 5-16

**Household Income Characteristics
and Subsistence Status
St. Paul, Alaska
1986**

	Household Subsistence Status		
	All HHs Interviewed	HHs in Which Head Allocated <u>More</u> Time to Hunt and Fish Than to Job	HHs in Which Head Allocated <u>Less</u> Time to Hunt and Fish Than to Job
Average Household Income	33249	63995	33940
Earned Income	24848	56000	26856
Unearned Income	8402	7995	7085
Average Household Size	3.7	6.67	3.98
Average Per Capita Household Income	8986	9594	8528
Number of Households in Sample	100	3	59

Earlier in this section we noted that stability in aggregate employment figures belies substantial variation at the household level. The data demonstrate poor correlations between household wage levels in 1985 and household wage levels in 1986, suggesting that job turnover is high and that incomes derived from employment vary greatly from year to year, even if household members retain employment with the same employer (which suggests substantial upward and downward mobility for those who retain jobs with the same employer). The gross rates of job turn-over by selected employers are: Federal, 29%; State/PSD, 79%; City, 50%; IRA, 38%; TDX, 42%. Income correlations are displayed below in Table 5-17. These correlations generally demonstrate a poor relationship between incomes for the same households from one year to the next, implying that incomes are unstable.

Before closing the primary data discussion in this section, it is important to comment briefly on the organizational characteristics of the households discussed above. First, a close inspection of subclassified information in the St. Paul data base shows that each of the households reporting more time for harvesting for the head is nuclear in form. These are also large households comprised of six or seven members. The households reporting less time harvesting for the head are also predominantly nuclear in form (54.2 percent, greater than the figure of 44 percent for the complete sample). The latter group (i.e., "less time") is comprised of two distinct subgroups: very small households, including the transient non-Aleut group, and larger households with varied composition configurations (however, the modal type is nuclear). These observations are verified by the fact that the distribution of sizes is bimodal (2 and 5). With no notable exceptions, this last set of observations is consistent with the main body of observations made thus far regarding: core depletion; independence and self-containment; diversity within the household; and the role of exceptional population segments in the St. Paul economy.

A discussion of time, labor and harvest activity is not complete without reference to a political-economic context that both rewards functional diversity within households and reinforces income instability, and, in the process, amplifies differences in productive capacity and yield among St. Paul population segments. The accessibility of three central resources (fur seals, halibut and Trust or transfer-generated jobs) are not predictable even though those resources are generally constant, on at least a seasonal basis. The first two resources are subject to stringent controls, and harvests cease abruptly when quotas are reached. Capital improvements and other Trust or transfer-funded jobs are frequently numerous, but at an individual level they are often intermittent or of short duration. Few St. Paul residents could make a career of those jobs, for instance. Residents must make economic choices that balance gains against assumed opportunity costs and risks; however, those risks and costs are unknowable since they may shift on an almost daily basis. In the case of the fur seal harvest, for example, residents cannot anticipate the duration of the job since they cannot anticipate when NMFS staff will decide that a sufficient number of seals has been harvested. Similarly, as noted above, the halibut quota is commonly reached before the St. Paul fleet is fully mobilized. In practical terms, this means that there are few, if any, "sure bets" from an economic standpoint. Hence, one logical strategy is to maximize potential opportunity by seeking out numerous ephemeral opportunities, thereby reducing risks associated with any single one. Internally diverse, large and robust households are well suited for such a strategy, and the existing political-economic milieu reinforces differences among those and other more impoverished households.

Table 5-17

**Income Correlations for Selected Employers
St. Paul, Alaska
1985-1986**

Selected Employers	Rank (rho)	Linear (r)	Significance
Federal, 1985 to 1986	0.35	0.42	0.24
State, 1985 to 1986	1.00	0.98	0.06 (N=3)
City, 1985 to 1986	0.10	0.14	0.31
IRA, 1985 to 1986	0.62	0.51	0.04
TDX, 1985 to 1986	0.32	0.33	0.06
Total income, 1985 to 1986	0.21	0.15	0.13

Note: Rank (rho) is Spearman's rank order correlation coefficient. Note that despite any changes in income levels from these employers, if income ranks had remained fairly stable, the Spearman's rho measurements would have been substantially higher in most cases. Pairwise deletions eliminate missing values. The linear measure is Pearson's coefficient. The column designated "Significance" lists the conventional probability estimate.

Source: McNabb (1985) field data and protocols.

5.4 Income

5.4.1 Income Patterns in 1985

The 1985 data base classifies incomes by source and amount for 111 of 123 St. Paul households. Transfer income is undoubtedly underrepresented in the data, but unpublished Food Stamp and AFDC records for 1985 indicate that the total dollar volume of both transfers was less than \$10,000 for the community as a whole over the entire year.

Total personal income for 111 households was \$3,006,460 in 1985. Average household income was \$26,843.40 with a range of \$69,000 (zero to \$69,000). Income sources are divided into nine categories: City, Tanadgusix Corporation (TDX), St. Paul Community (IRA), State, Federal, other wages (private sector), retirement, social services transfers (i.e., cash weatherization payments, etc.), and other income (self-employment, rents and royalties, etc.). Incomes from these sources are unevenly distributed to St. Paul households both in terms of numbers of recipients and amounts.

The first part of the income analysis presented here concentrates on the distribution of incomes by source. In simple terms, the question is: who tends to receive the greatest share of incomes derived from specific sources? Stated differently, the question becomes: are incomes allocated uniformly by source, or do some sources support wealthier families while poorer cohorts rely on different sources? This is a cross-sectional problem that is motivated by a general interest in stratification and the complementary political-economic dynamics that may sustain stratification.

Table 5-18 below summarizes the dollar volume and row percentages of incomes by source against the approximate dollar quartiles. This Table displays the proportions of incomes (by source) that are received by households in each quartile bracket, hence the rows sum to 100 percent. The Table is interpreted as follows: 16.4 percent of all City incomes (\$152,095) are received by households whose total incomes range between \$15,000 and \$30,000 per year. Similarly, 41.5 percent of all City incomes are received by households in the next total income bracket. The relative contributions by source can be compared by scanning a column: 9.7 percent of all TDX incomes are allocated to households in the first quartile, while 17.3 percent of all IRA incomes are allocated to households in this bracket. Note that these percentages are calibrated against different dollar totals, so there is no constant common denominator for comparing percentages across rows. Comparisons along rows indicate the proportional contribution only within a single source category.

Despite substantial differences in actual dollar amounts, it is apparent that income from State employment supports the wealthiest households to a greater degree than do any others. "Other" income, however, is most strongly represented in lower income households (even though the dollar volume is exceeded by entries in the first two quartiles for all other sources except transfers).

Table 5-19 displays the same incomes but summarizes the column percentages. The Table shows the proportions of incomes from the tabulated sources by quartile (hence, by population segment, defined by the quartile brackets, rather than by source) and so the columns sum to 100 percent. Table 5-19 is interpreted in this manner: City income comprises 27.5 percent of all income received by households in the second income bracket; TDX income comprises 8.6 percent of all income received

Table 5-18

**Cross-Breakdown of Household Incomes
by Income Source (Row Percentages)
St. Paul, Alaska
1985**

	Total Income Quartiles				Total
	0-15K	15-30K	30-45K	45-100K	
City Income Row	0 0%	152095 16.4%	384751 41.5%	390211 42.1%	927057 100%
TDX Income Row	52685 9.7%	47257 8.7%	266306 49.0%	177118 32.6%	543366 100%
IRA Income Row	40209 17.3%	54859 23.6%	22618 9.7%	115176 49.5%	232862 100%
State/PSD Income Row	13540 7.7%	20759 11.9%	33362 19.1%	107216 61.3%	174877 100%
Federal Income Row	3780 4.5%	0 0%	78914 93.3%	1889 2.2%	84583 100%
Other Wages Row	63497 13.2%	87142 18.2%	177181 36.9%	151898 31.7%	479718 100%
Retirement Income Row	49317 10.5%	153466 32.6%	195909 41.6%	72038 15.3%	470730 100%
Social Services Transfers Row	600 79.1%	159 20.9%	0 0%	0 0%	759 100%
Other Income Row	18958 20.5%	36920 39.9%	29372 31.8%	7258 7.8%	92508 100%

Source: Field Protocols

by households in the same bracket. On the other hand, City income provides 32.4 percent of the income received by households in the third income quartile. Table 5-19 matches Table 5-18 and provides allocation data keyed to total income levels. It is apparent that City incomes dominate the highest income quartile, whereas TDX, IRA, and the three non-government wage sources ("other" wages, retirement, and "other" income) sustain households in the lowest quartile. These data illustrate that the major St. Paul income sources do not provide incomes to population segments in a uniform manner, and that the earning, wage, or salary potentials of these sources are clearly different. Differences of this sort are common and predictable. However, if these differences imply differential income opportunities that persist through time, employment and income stratification may occur. Analysis of 1986 data in following sections evaluate this possibility.

The discussion so far should not suggest that all households rely on one or few sources of income, however. Households may depend on incomes from several sources, and household members may change jobs, hold more than one job, or become eligible for various unearned transfers at irregular intervals even within a single year. These factors are partly responsible for past difficulties in calculating FTE estimates and for anomalous or counterintuitive observations regarding the Pribilof Islands workforce, such as counts that yield more jobs than workers. The overlapping and diverse nature of household income dependencies is illustrated in the following Tables.

Tables 5-20 to 5-28 identify other income sources for households receiving income from each of nine sources. Each Table refers to a single source, and then proceeds to tabulate other incomes received by households who receive income from the key Table source. For instance, Table 5-20 applies to households that receive City income. There are thirty-two households in this group. Seven of them also receive TDX income; that TDX income amounts to \$59,593. Three receive IRA income that totals \$39,732. Each Table is therefore an income source profile for households that comprise the major category: City income households in Table 5-20, TDX income households in Table 5-21, and so on. The interpretation of the Tables is self-evident.

It is noteworthy that in all cases the number of additional household income sources closely approaches and often exceeds the base number of households for each Table. In general, then, households rely on one or more other income sources in addition to the key source examined in each Table. This observation is consistent with findings offered above: few households "specialize" by focusing on only one productive activity.

5.4.2 Income Patterns in 1986-1987

Table 5-29, an aggregation of household incomes by source for the 1986 sample of 100 St. Paul households, this data in gross categories used in primary data collection. Table 5-30 reorganizes the same data using broader categories (and showing the proportional contribution to total household income by source) that will be used in the description and analysis below. The categories in the latter table more closely approximate the breakdowns used for the 1985 data base in order to improve comparability across the one-year interval. City and private sector (including TDX) payrolls still retain first and second rank respectively, but federal payrolls rank

Table 5-19

**Cross-Breakdown of Household Incomes
by Income Source (Column Percentages)
St. Paul, Alaska
1985**

	Total Income Quartiles			
	0-15K	15-30K	30-45K	45-100K
City Income Column	0 0%	152095 27.5%	384751 32.4%	390211 38.2%
TDX Income Column	52685 21.7%	47257 8.6%	266306 22.4%	177118 17.3%
IRA Income Column	40209 16.6%	54859 9.9%	22618 1.9%	115176 11.3%
State/PSD Income Column	13540 5.6%	20759 3.8%	33362 2.8%	107216 10.5%
Federal Income Column	3780 1.6%	0 0%	78914 6.6%	1889 0.2%
Other Wages Column	63497 26.2%	87142 15.8%	177181 14.9%	151898 14.9%
Retirement Income Column	49317 20.3%	153466 27.8%	195909 16.5%	72038 7.0%
Social Services Column	600 0.25%	159 0.07%	0 0%	0 0%
Other Income Column	18958 7.8%	36920 6.7%	29372 2.5%	7258 0.7%
Total Income Column	242586 100%	552657 100%	1188413 100%	1022804 100%

Table 5-20

**Other Income for
City Income Households
St. Paul, Alaska
1985**

CITY INCOME HOUSEHOLDS INCOME	32 927057
TDX Income Households Income	7 59593
IRA Income Households Income	3 39732
State/PSD Income Households Income	6 88552
Federal Income Households Income	2 9889
Other Wages Households Income	9 66209
Retirement Income Households Income	4 69458
Social Services Transfers Households Income	1 159
Other Income Households Income	7 6701

Table 5-21

**Other Income for
TDX Income Households
St. Paul, Alaska
1985**

City Income	
Households	7
Income	144696
TDX INCOME	
HOUSEHOLDS	43
INCOME	543366
IRA Income	
Households	8
Income	85609
State/PSD Income	
Households	4
Income	18356
Federal Income	
Households	4
Income	74537
Other Wages	
Households	14
Income	179731
Retirement Income	
Households	7
Income	119304
Social Services Transfers	
Households	0
Income	0
Other Income	
Households	4
Income	12943

Table 5-22

**Other Income for
IRA Income Households
St. Paul, Alaska
1985**

City Income		
Households		3
Income		51813
TDX Income		
Households		8
Income		78535
IRA INCOME		
HOUSEHOLDS		21
INCOME		232862
State/PSD Income		
Households		1
Income		1048
Federal Income		
Households		2
Income		3051
Other Wages		
Households		6
Income		52889
Retirement Income		
Households		6
Income		92752
Social Services Transfers		
Households		1
Income		159
Other Income		
Households		6
Income		18626

Table 5-23

**Other Income for
State/PSD Income Households
St. Paul, Alaska
1985**

City Income		
Households		6
Income		219142
TDX Income		
Households		4
Income		32293
IRA Income		
Households		1
Income		9806
STATE/PSD INCOME HOUSEHOLDS INCOME		14 174877
Federal Income		
Households		0
Income		0
Other Wages		
Households		4
Income		61400
Retirement Income		
Households		5
Income		106228
Social Services Transfers		
Households		0
Income		0
Other Income		
Households		2
Income		7038

Table 5-24

**Other Income for
Federal Income Households
St. Paul, Alaska
1985**

City Income		
Households		2
Income		22574
TDX Income		
Households		4
Income		25849
IRA Income		
Households		2
Income		13557
State/PSD Income		
Households		0
Income		0
FEDERAL INCOME		
HOUSEHOLDS		7
INCOME		84583
Other Wages		
Households		2
Income		12325
Retirement Income		
Households		1
Income		29928
Social Services Transfers		
Households		0
Income		0
Other Income		
Households		2
Income		9409

Table 5-25

**Other Income for
Other Wage Households
St. Paul, Alaska
1985**

City Income	
Households	9
Income	177274
TDX Income	
Households	14
Income	97471
IRA Income	
Households	6
Income	41111
State/PSD Income	
Households	4
Income	38403
Federal Income	
Households	2
Income	9889
OTHER WAGES HOUSEHOLDS INCOME	34 479718
Retirement Income	
Households	6
Income	126865
Social Services Transfers	
Households	0
Income	0
Other Income	
Households	5
Income	12204

Other Income for
Retirement Income Households
St. Paul, Alaska
1985

Table 5-26

City Income Households	4	54575
TDX Income Households	7	39208
IRA Income Households	6	58548
State/PSD Income Households	5	51334
Federal Income Households	1	1889
Other Wages Households	6	59043
RETIREMENT INCOME HOUSEHOLDS INCOME		
Social Services Transfers Households	0	0
Other Income Households	11	32864
		470730

Table 5-27

**Other Income for
Social Service Transfer Income Households
St. Paul, Alaska
1985**

City Income	
Households	1
Income	15023
TDX Income	
Households	0
Income	0
IRA Income	
Households	1
Income	150
State/PSD Income	
Households	0
Income	0
Federal Income	
Households	0
Income	0
Other Wages	
Households	0
Income	0
Retirement Income	
Households	0
Income	0
SOCIAL SERVICE TRANSFERS	
HOUSEHOLDS	2
INCOME	759
Other Income	
Households	0
Income	0

Table 5-28

**Other Income for
Other Income Households
St. Paul, Alaska
1985**

City Income		
Households		7
Income		192891
TDX Income		
Households		4
Income		20539
IRA Income		
Households		6
Income		53962
State/PSD Income		
Households		2
Income		33216
Federal Income		
Households		2
Income		3051
Other Wages		
Households		5
Income		29740
Retirement Income		
Households		11
Income		201207
Social Services Transfers		
Households		0
Income		0
OTHER INCOME		
HOUSEHOLDS		22
INCOME		92508

third, surpassing IRA incomes. Given the absolute dollar difference in federal payrolls between 1985 and 1986, we are now inclined to believe that the 1985 federal figures are deficient (low) by an unknown factor. Total incomes by category have generally increased, and the total for the sample of 100 in 1986 (\$3,324,991) exceeds the total for the entire community in 1985 (\$3,006,460). Part of the increase is undoubtedly due to incomplete tabulations of 1985 incomes (as above) and the inclusion of self-employment income in 1986, which was not tallied in 1985. Otherwise, the increases reflect real growth in household incomes over the one-year interval. A notable exception to the trend of increases is the decline in retirement income (classified in the government transfer category in Table 5-30 but treated as "Unearned" in Table 5-29) by nearly \$100,000 over one year. Key informants suggest that some payments listed for 1985 may have been paid to off-Island addresses, and that otherwise mortality and out-migration may account for much of the decline. In any event, retirement income now holds the third ranked position among all sources of income.

Detailed income breakdowns showing household income totals by source for 1985, subclassified by income quartiles (income intervals representing approximately 25 percent of the sample) were presented immediately above. The data showed that households with the highest incomes relied on City wages more than any other single source, but that the majority of State/PSD wages went to households in the highest quartile. Row and column figures were provided so that comparisons could be made among sources whose payrolls and workforce were very different, since these differences would distort a comparison along only one dimension.

Tables 5-30 and 5-31 provide equivalent information using quartiles based on characteristics of the 1986 sample. (Note that the quartile boundaries have higher upper limits, hence the sample shows a slight upward shift in income.) Table 5-31 shows that self-employment and State incomes are allocated most often to households possessing the largest quarter of income across the sample. The greatest proportion of IRA incomes is received by households in the second income quartile; TDX incomes tend to be received by households in the second and fourth quartile, as in 1985. Interest, dividend and rent incomes, although modest, are almost wholly received by households in the two high income quartiles.

Now shifting the orientation to the households rather than sources, it is evident that City incomes are the largest single contribution to households in the two high income quartiles (see Table 5-32), whereas transfers are the largest single contribution to households in the two lowest categories. Considering now the second ranked contributions to income, transfers represent 21.9 percent of all income in the fourth quartile and City incomes contribute 26.7 percent and 26.2 percent to the first and second quartiles respectively. Private sector (mainly TDX) income holds the second rank among third quartile households with a contribution of 26.4 percent. Transfers hold third rank only in that quartile, otherwise they rank first or second.

The 1985 evidence suggested that the imbalances among household earned incomes and their income sources may indicate signs of employment and income stratification in the St. Paul workforce. In other words, to the extent that certain forms or sources of employment implied higher or lower incomes, the workforce may become "layered" and partitioned into segments with separate and unequal earning power, career opportunities, and economic privileges. But these consequences can only come about if the segments are relatively impermeable and if mobility is low.

Table 5-29
Annual Household Income
St. Paul, Alaska
1986

Income Category	Total
Earned Income	
Non-Wage	168,440
Wage and Salary	
Government	
Federal	253,612
State	217,410
Local	1,101,550
Institutional	241,604
Private	502,216
Unearned Income	
Government Transfers	
State	
Permanent Fund Dividend	177,320
Longevity Bonus	63,000
Health and Social Service	48,129
Public Assistance	19,688
Energy Assistance	11,822
Federal	
Social Security	128,107
Other	379,352
Interest/Dividend/Rent	12,741
Other	0
Total Earned and Unearned Household Income	\$3,324,991

Table 5-30

**Income Proportions by Source
St. Paul, Alaska
1986**

	Total	Percent
Nonwage/Self-Employment Income	168,440	5.1%
Local/City Government Income	1,101,550	33.1%
Federal Income	253,612	7.6%
State Income	217,410	6.5%
Institutional Income	241,604	7.8%
Income from Private Sector Employers	502,216	15.1%
Total Unearned Income	840,159	25.3%
Total Household Income	3,324,991	100%

Source: Field Protocol

Table 5-31
Cross-Breakdown of Household Incomes
by Income Source (Row Percentages)
St. Paul, Alaska
1986

	Total Income Quartiles (Adjusted)				Total
	0-19K	19-28.5K	28.5-46.5K	46.5-100K	
Non-Wage and Self-Employment Income	790 .5%	16500 9.8%	27650 16.4%	123500 73.3%	168440 100.0%
Local/City Gov't. Income	74672 6.8%	142700 13.0%	298860 27.1%	585318 53.1%	1101550 100.0%
Federal Income	9800 3.9%	0 0%	104812 41.3%	139000 54.8%	253612 100.0%
State Income	800 .4%	36668 16.9%	35342 16.3%	144600 66.5%	217410 100.0%
Institutional Income	41960 17.4%	106760 44.2%	25100 10.4%	67784 28.1%	241604 100.0%
Income from Private Sector Employers	27100 5.4%	52000 10.4%	238060 47.4%	185056 36.8%	502216 100.0%
Total Government Transfers	124874 15.1%	189596 22.9%	163153 19.7%	349795 42.3%	827418 100.0%
Interest/Dividend/Rent Income	100 .8%	1210 9.5%	8031 63.0%	3400 26.7%	12741 100.0%

Source: Field Protocols

Table 5-32

**Cross-Breakdown of Household Incomes
by Income Source (Column Percentages)
St. Paul, Alaska
1986**

	Total Income Quartiles (Adjusted)			
	0-19K	19-28.5K	28.5-46.5K	46.5-100K
Non-Wage and Self-Employment Income	790 0.3%	16500 3.0%	27650 3.1%	123500 7.7%
Local/City Gov't Income	74672 26.7%	142700 26.2%	298860 33.2%	585318 36.6%
Federal Income	9800 3.5%	0 0%	104812 11.6%	139000 8.7%
State Income	800 0.3%	36668 6.7%	35342 3.9%	144600 9.0%
Institutional Income	41960 15.0%	106760 19.6%	25100 2.8%	67784 4.2%
Income from Private Sector Employers	27100 9.7%	52000 9.5%	238060 26.4%	185056 11.6%
Total Government Transfers	124874 44.6%	189596 34.8%	163153 18.1%	349795 21.9%
Interest/Dividend/Rent Income	100 0.04%	1210 0.2%	8031 0.9%	3400 0.2%
Total	280096 100%	545434 100%	901008 100%	1598453 100%

Source: Field Protocols

Evidence cited so far shows that (1) vertical and lateral mobility is high, (2) change rather than stability characterizes most productive activity, and (3) stability of income from year to year is low. These factors suggest that movement within and across income and employment categories is common. This is in one sense a positive facet of high turn-over and liberal hiring or rehiring practices in combination with numerous employment opportunities. We detect little or no evidence of stratification in 1986. The proportional contributions of various sources of income, notably City employment, are also more evenly distributed among all four quartiles, which may counteract imbalances that, if persistent, can permit stratification.

Other characteristics of household income quartiles are consistent with observations made so far concerning household size and composition, and employment density: larger intact households (most often large nuclear households) are more likely to reveal secure, robust economic statuses. Some of these characteristics are tabulated in Table 5-33.

The evidence has repeatedly suggested that a variety of economic resources must be accessible to St. Paul households in order to assure reasonable security overall in terms of income, food, labor, and other social and economic support. Some households accomplish these ends in a self-contained fashion, if internal labor, skill, employment, and financial diversity are sufficient. Larger networks of friends and kin are more common and more necessary adjuncts for smaller or depleted households. All population segments rely on numerous, diverse sources of income and, although labor and capital are less widely shared, food is widely distributed. Few households exhibited a dependence on single resources or singular, specialized opportunities for resources (here we construe "resources" to be all resources). These factors are responsible for the conspicuous change and instability in the St. Paul economy at the household level.

Based on protocol data reported here, supported by field observations and key informant reports, it is apparent that households cast a wide net in their efforts to sustain their families, and resist impulses to dedicate labor, time, and capital to one endeavor at the expense of another. Tables 5-34 through 5-44 illustrate these overlapping interdependencies.

Table 5-34 shows other income sources for households reporting self-employment income. Of 17 households reporting some self-employment income (and earning \$168,440 from self-employment), seven also received City incomes (total payroll: \$167,200), three received federal incomes (total payroll: \$42,000), and so on, down the column. Thirty-six households appear in the entries below "Nonwage/Self-Employment Income," hence the original 17 have multiple reliances among the additional income sources. To be specific, the self-employment households rely on in excess of two other sources overall.

Naturally, some households rely on more sources than others; however, these figures demonstrate how "wide" the metaphorical net is that households use to maintain access to essential resources. The household count outside the summary income category consistently exceeds the number of households in the summarized source (although the "other" income total may not), which means that the summarized households in the aggregate always have multiple reliances. Hence, it is misleading to speak of primary or principal income sources unless we constrain the meaning to income level alone.

Table 5-33

**Selected Household Characteristics
by Income Quartile
St. Paul, Alaska
1986**

Characteristics	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile
Mean Household Size	2.96	3.04	3.64	5.07
Proportion of Nuclear Forms	26.9%	30.4%	52.0%	65.3%
Household Unemployment Rate	23.1%	26.1%	4.0%	0.0%
Employees per Household (Mean)	1.42	1.13	1.48	2.23

Source: Field Protocols

Table 5-34

Other Income for
Non-Wage and Self-Employment Households
St. Paul, Alaska
1986

NON-WAGE AND SELF-EMPLOYMENT INCOME	
HOUSEHOLDS	17
TOTAL INCOME	167440
Local/City Gov't. Income	
Households	7
Total Income	167200
Federal Income	
Households	3
Total Income	42000
State Income	
Households	3
Total Income	47000
Institutional Income	
Households	5
Total Income	51800
Income from Private Sector Employers	
Households	8
Total Income	189900
Longevity Bonus Income	
Households	2
Total Income	9000
Public Assistance Income	
Households	1
Total Income	600
Social Security Income	
Households	1
Total Income	7436
Other Government Transfer Income	
Households	5
Total Income	48702
Interest/Dividend/Rent Income	
Households	1
Total Income	131

Table 5-35

**Other Income for
Local/City Government Income Households
St. Paul, Alaska
1986**

Non-Wage and Self- Employment Income	
Households	7
Total Income	33100
 LOCAL/CITY GOV'T INCOME	
HOUSEHOLDS	42
TOTAL INCOME	1101550
 Federal Income	
Households	8
Total Income	155000
 State Income	
Households	5
Total Income	58600
 Institutional Income	
Households	2
Total Income	8438
 Income from Private Sector Employers	
Households	9
Total Income	113656
 Longevity Bonus Income	
Households	4
Total Income	18000
 Public Assistance Income	
Households	1
Total Income	600
 Social Security Income	
Households	4
Total Income	32459
 Other Government Transfer Income	
Households	12
Total Income	129094
 Interest/Dividend/Rent Income	
Households	4
Total Income	10300

Table 5-36

Other Income for
Federal Income Households
St. Paul, Alaska
1986

Non-Wage and Self- Employment Income	
Households	3
Total Income	6600
Local/City Gov't. Income	
Households	8
Total Income	190712
FEDERAL INCOME	
HOUSEHOLDS	14
TOTAL INCOME	253612
State Income	
Households	2
Total Income	12800
Institutional Income	
Households	3
Total Income	45060
Income from Private Sector Employers	
Households	3
Total Income	37200
Longevity Bonus Income	
Households	1
Total Income	6000
Public Assistance Income	
Households	1
Total Income	80
Social Security Income	
Households	2
Total Income	15536
Other Government Transfer Income	
Households	8
Total Income	40800
Interest/Dividend/Rent Income	
Households	1
Total Income	100

Table 5-37

Other Income for
State Income Households
St. Paul, Alaska
1986

Non-Wage and Self- Employment Income	
Households	3
Total Income	13200
Local/City Gov't. Income	
Households	5
Total Income	116320
Federal Income	
Households	2
Total Income	23800
STATE INCOME	
HOUSEHOLDS	13
TOTAL INCOME	217410
Institutional Income	
Households	3
Total Income	33260
Income from Private Sector Employers	
Households	6
Total Income	87600
Longevity Bonus Income	
Households	2
Total Income	6000
Public Assistance Income	
Households	1
Total Income	3504
Social Security Income	
Households	2
Total Income	15116
Other Government Transfer Income	
Households	2
Total Income	25176
Interest/Dividend/Rent Income	
Households	1
Total Income	1000

Table 5-38

Other Income for
Institutional Income Households
St. Paul, Alaska
1986

Non-Wage and Self- Employment Income	
Households	5
Total Income	26540
Local/City Gov't. Income	
Households	2
Total Income	29698
Federal Income	
Households	3
Total Income	43800
State Income	
Households	3
Total Income	4100
INSTITUTIONAL INCOME	
HOUSEHOLDS	20
TOTAL INCOME	241604
Income from Private Sector Employers	
Households	7
Total Income	73704
Longevity Bonus Income	
Households	4
Total Income	15000
Public Assistance Income	
Households	1
Total Income	7800
Social Security Income	
Households	3
Total Income	31356
Other Government Transfer Income	
Households	8
Total Income	84040
Interest/Dividend/Rent Income	
Households	2
Total Income	141

Table 5-39

**Other Income for
Private Sector Employer Income Households
St. Paul, Alaska
1986**

Non-Wage and Self- Employment Income	
Households	8
Total Income	52700
Local/City Gov't. Income	
Households	9
Total Income	178798
Federal Income	
Households	3
Total Income	40800
State Income	
Households	6
Total Income	33800
Institutional Income	
Households	7
Total Income	41798
INCOME FROM PRIVATE SECTOR EMPLOYERS HOUSEHOLDS	28
TOTAL INCOME	502216
Longevity Bonus Income	
Households	2
Total Income	6000
Public Assistance Income	
Households	2
Total Income	2400
Social Security Income	
Households	3
Total Income	25704
Other Government Transfer Income	
Households	9
Total Income	40856
Interest/Dividend/Rent Income	
Households	2
Total Income	2531

Table 5-40

**Other Income for
Longevity Bonus Income Households
St. Paul, Alaska
1986**

Non-Wage and Self- Employment Income	
Households	2
Total Income	2350
Local/City Gov't. Income	
Households	4
Total Income	111360
Federal Income	
Households	1
Total Income	5000
State Income	
Households	2
Total Income	38710
Institutional Income	
Households	4
Total Income	49506
Income from Private Sector Employers	
Households	2
Total Income	16800
LONGEVITY BONUS INCOME	
HOUSEHOLDS	16
TOTAL INCOME	63000
Public Assistance Income	
Households	1
Total Income	3504
Social Security Income	
Households	8
Total Income	38423
Other Government Transfer Income	
Households	11
Total Income	225924
Interest/Dividend/Rent Income	
Households	2
Total Income	2000

Table 5-41

**Other Income for
Public Assistance Income Households
St. Paul, Alaska
1986**

Non-Wage and Self- Employment Income	
Households	1
Total Income	1000
Local/City Gov't. Income	
Households	1
Total Income	1000
Federal Income	
Households	1
Total Income	7000
State Income	
Households	1
Total Income	19342
Institutional Income	
Households	1
Total Income	5000
Income from Private Sector Employers	
Households	2
Total Income	36000
Longevity Bonus Income	
Households	1
Total Income	3000
PUBLIC ASSISTANCE INCOME	
HOUSEHOLDS	7
TOTAL INCOME	19688
Social Security Income	
Households	2
Total Income	4112
Other Government Transfer Income	
Households	2
Total Income	22560
Interest/Dividend/Rent Income	
Households	2
Total Income	1100

Table 5-42

**Other Income for
Social Security Income Households
St. Paul, Alaska
1986**

Non-Wage and Self- Employment Income	
Households	1
Total Income	1900
Local/City Gov't. Income	
Households	4
Total Income	98620
Federal Income	
Households	2
Total Income	29000
State Income	
Households	2
Total Income	21342
Institutional Income	
Households	3
Total Income	26400
Income from Private Sector Employers	
Households	3
Total Income	26400
Longevity Bonus Income	
Households	8
Total Income	30000
Public Assistance Income	
Households	2
Total Income	7008
SOCIAL SECURITY INCOME	
HOUSEHOLDS	16
TOTAL INCOME	128107
Other Government Transfer Income	
Households	6
Total Income	99600
Interest/Dividend/Rent Income	
Households	2
Total Income	2200

Table 5-43

**Other Income for
Other Government Transfer Income Households
St. Paul, Alaska
1986**

Non-Wage and Self- Employment Income	
Households	5
Total Income	21950
Local/City Gov't. Income	
Households	12
Total Income	301318
Federal Income	
Households	8
Total Income	138800
State Income	
Households	2
Total Income	7400
Institutional Income	
Households	8
Total Income	64304
Income from Private Sector Employers	
Households	9
Total Income	168076
Longevity Bonus Income	
Households	11
Total Income	48000
Public Assistance Income	
Households	2
Total Income	3584
Social Security Income	
Households	6
Total Income	35612
OTHER GOVERNMENT TRANSFER INCOME	
HOUSEHOLDS	32
TOTAL INCOME	379352
Interest/Dividend/Rent Income	
Households	4
Total Income	3631

Table 5-44

**Other Income for
Interest/Dividend/Rent Income Households
St. Paul, Alaska
1986**

Non-Wage and Self- Employment Income	
Households	1
Total Income	10500
Local/City Gov't. Income	
Households	4
Total Income	137600
Federal Income	
Households	1
Total Income	7000
State Income	
Households	1
Total Income	19342
Institutional Income	
Households	2
Total Income	25900
Income from Private Sector Employers	
Households	2
Total Income	38752
Longevity Bonus Income	
Households	2
Total Income	6000
Public Assistance Income	
Households	2
Total Income	3584
Social Security Income	
Households	2
Total Income	20600
Other Government Transfer Income	
Households	4
Total Income	34692
INTEREST/DIVIDEND/RENT INCOME	
HOUSEHOLDS	9
TOTAL INCOME	12741

Secondary aggregate data provide some historical context for the income discussion. Table 5-45 shows the income frequency distribution for St. Paul families in 1980, plus several summary measures of personal income in 1970 and 1980. Aggregate real family income increased at an average annual rate of 3 percent between 1970 and 1980. However, after adjusting for inflation, average real family income declined slightly for St. Paul families over the same period. The difference in aggregate versus average family income growth reflects the impact of growth in the number of families and a reduction in average family size. In contrast to this, average real family income for the entire Aleutian Island Census Division increased by a strong 4.5-percent yearly rate of growth. Real per capita income in St. Paul increased at a moderate average annual rate of less than one percent between 1970 and 1980.

Table 5-46 shows estimates of personal income for the Aleutian Islands Census Division over the period 1979 to 1984. The data in this Table indicate a major departure from patterns exhibited in Census Divisions pertaining to Alakanuk and Gambell. In the Aleutian Islands case, the resident adjustment is negative for all six years reported. As a proportion of total personal income, the resident adjustment varies from a high of 24 percent in 1979 to a low of 12 percent in 1984. The negative adjustment reflects the amount of income subtracted from total earnings by place of work to determine earnings by place of residence. It indicates that income earned by itinerant non-residents working in the Aleutian Islands Census Division exceeds income earned by Aleutian residents working outside of their census division boundaries. Most of the income leakage depicted in Table 5-46 is probably tied to wage and salary earnings in fish processing and military employment.

As a proportion of total personal income, transfer payments represented between 5 and 8 percent between 1979 and 1984. This represents a significantly smaller share than that recorded for census divisions corresponding to Alakanuk and Gambell. This discrepancy is also undoubtedly due to the presence of numerous fish processing and military personnel in the census division. However, public assistance transfers have indeed declined in St. Paul over the 1980-1987 period. Figure 5-7 charts Food Stamp and AFDC payments to St. Paul on a monthly basis from January 1980 through February 1987. Despite the erratic contours of the chart, it is apparent that payments plunged at the time of NMFS withdrawal and establishment of the transition economy.

The data in Table 5-47 indicate that about 10 percent of the Native families living in the Aleutian Islands Census Division received some form of public assistance income in 1980. This compares with 0.1 percent for non-Native families. However, it is a significantly smaller share than that recorded for Native families in the Wade-Hampton and Nome Census Divisions pertinent to the Alakanuk and Gambell cases respectively. Furthermore, only 14 percent of all Aleutian Islands families were below the poverty level in 1980. Nearly three-fourths of these poverty-stricken families did not receive any form of public assistance income.

Returning to the household employment status distinctions that were introduced in section 5.3 (Time and Productivity), Table 5-48 displays income and household characteristics classified by employment status. The data here corroborate observations that have been offered and discussed above (recall that households with the least employment density were situated in the lower income quartiles, as is self-evident). Households without any employed members possess earned incomes that can be disregarded for all intents and purposes (these are nonwage incomes earned from

Table 5-45

**Income Characteristics
St. Paul, Alaska
1970 and 1980**

<u>Income Range</u> (\$1,000)	<u>Number of</u> <u>Families</u> <u>in 1980</u>
< 5,000	13
5,000 - 7,499	2
7,500 - 9,999	8
10,000 - 14,999	20
15,000 - 19,999	9
20,000 - 24,999	12
25,000 - 34,999	23
35,000 - 49,999	19
50,000+	<u>12</u>
Total Families	89

	<u>1970</u>		<u>1980</u>	Average Annual Rate of Real Growth
	Current \$	Constant \$ (1980)		
Aggregate Family Income	1,078,300	\$2,245,147	3,007,060	3.0%
Average Family Income				
St. Paul	13,150	27,380	26,611	-0.3%
Aleutian Island CD	9,332	19,430	30,261	4.5%
Median Income				
Family			22,500	
Household			22,813	
Per Capita Income	2,396	4,989	5,457	0.9%

Source: U.S. Department of Commerce, Bureau of the Census, Special Tabulations, 1970 and 1980. Alaska Department of labor, Alaska Cost and Income Measures, n.d.

Table 5-46

**Personal Income
Aleutian Islands Census Division
1979 - 1984**

Derivation of Total Personal Income (x \$1,000)	1979	1980	1981	1982	1983	1984
Total Earnings by Place of Work	94,220	103,570	112,572	118,591	127,549	126,535
Less: Contribution for Social Insurance	4,588	5,073	5,806	6,347	6,764	6,680
Plus: Resident Adjustment	-18,973	-20,249	-19,579	-17,288	-18,073	-14,631
Equals: Net Earnings by Place of Residence	70,719	78,248	87,187	94,956	102,712	105,224
Plus: Interest, Dividends, and Rent	2,902	3,619	4,709	5,824	6,261	6,850
Plus: Transfers	3,891	4,445	5,010	9,137	8,904	7,203
Total	77,512	86,312	96,906	109,917	117,877	119,277
Personal Income (x \$1)	1979	1980	1981	1982	1983	1984
Per Capita	10,566	11,054	11,614	13,788	16,143	16,715

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Local Area Personal Income, Volume 9, August, 1986.

FIGURE 5-7
Use of AFDC, Food Stamps, and Combination
St. Paul: 1980-1987

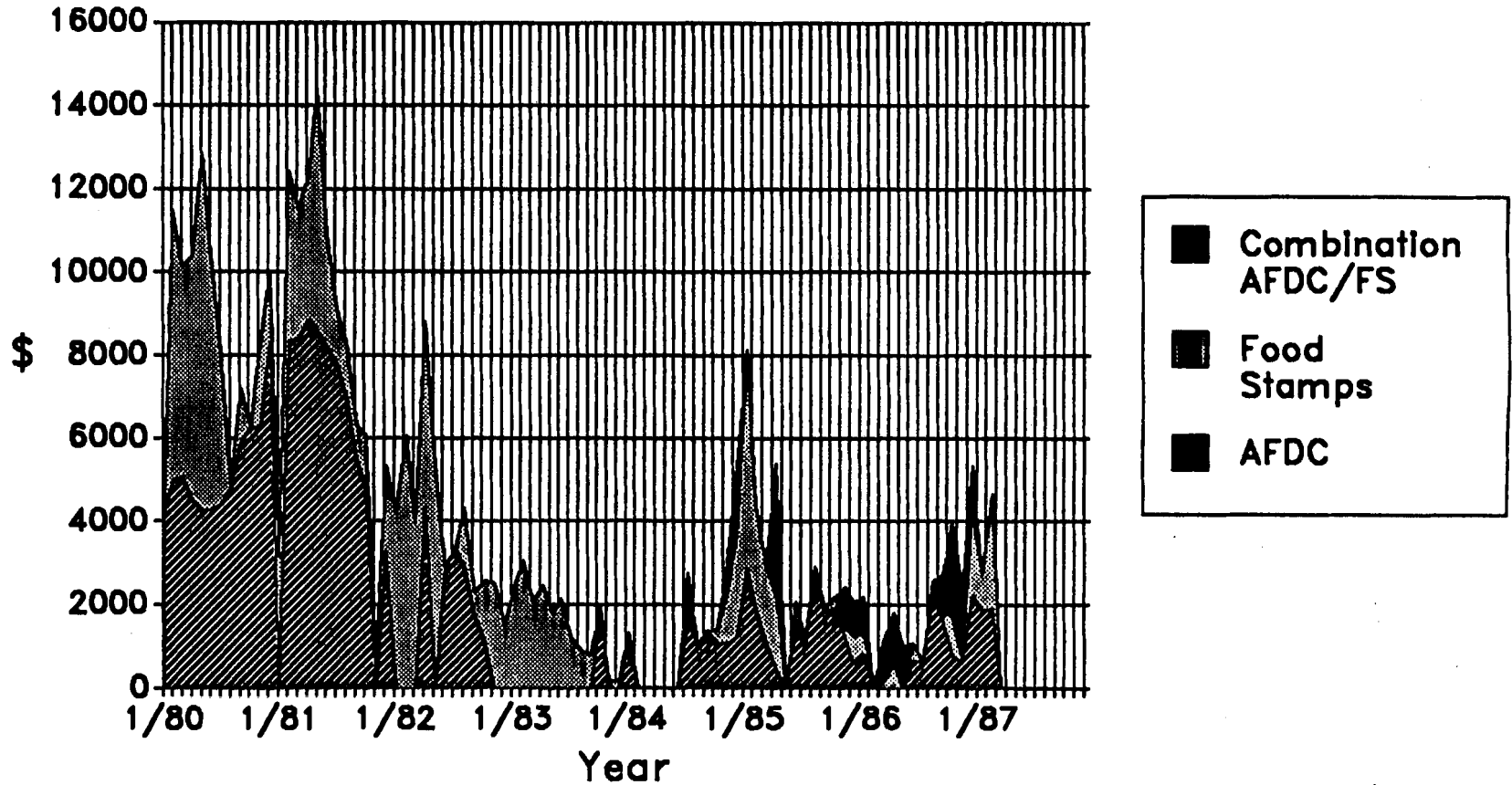


Table 5-47

**Native & Non-Native Families
With and Without Public Assistance
All Income Levels and Below Poverty Level
Aleutian Islands Census Division
1979**

	Native	Non-Native
Total Families, All Income Levels	402	883
Number of Families without Public Assistance Income	363	882
Percentage of Families without Public Assistance Income	90.3%	99.9%
Number of Families with Public Assistance Income	39	1
Percentage of Families with Public Assistance Income	9.7%	0.1%
Number of Families with Income Below Poverty Level	58	68
Percentage of Families with Income Below Poverty Level	14.4%	7.7%
Number of Families Below Poverty Level Without Public Assistance Income	43	68
Percentage of Families Below Poverty Level Without Public Assistance Income	74.1%	100.0%
Number of Families Below Poverty Level With Public Assistance Income	15	0
Percentage of Families Below Poverty Level With Public Assistance Income	25.9%	0%

Source: Berman M., and K. P. Foster, *Poverty and Public Assistance Among Alaska Natives: Implications for 1991*. ISER for Alaska Federation of Natives, April, 1986.

commercial fishing shares or other marginal forms of self-employment). The unearned averages in the center and right columns are both lower than the mean for the sample as a whole, which shows that the relatively high unearned mean for the whole sample is in part an artifact of high unearned incomes among "unemployed" households alone.

Table 5-49 returns to the topic of harvests of food resources. Here, a new distinction is employed: households reporting larger and more successful harvests in 1986 as opposed to 1985 are contrasted with households reporting the opposite, and both are in turn compared with the entire sample of 100 households. These data support the observations made earlier about households in which the heads allocated less or more time to harvest activities compared to jobs: protocol and other field data suggest that households reporting both decreases and increases are larger, more active households that are better able than most other households to sustain internally diverse productive activities. The households omitted from the contrast report no change over the one year interval, which we infer means no change from a low level of activity (yet again, the "no change" response may reflect households reluctant to disclose low or non-existent harvest activities).

Average household incomes exceed the mean for both sets of households, their proportion of unearned income is lower, and the households are larger. The per capita incomes are similar among each of the three comparison groups, suggesting that absolute income levels per se are not a determinant factor; rather, household composition (a review of raw data suggests that the center and right columns represent households with more youngsters, hence the per capita average is somewhat misleading as an indicator of productive yield) and household size (hence capacity for internal diversity in cooperative productive activity) are more important attributes for those households.

5.5 Consumption and Expenditures

5.5.1 Introduction

Household consumption expenditures reflect the specific and, to some extent, unique circumstances of life in St. Paul. The extreme isolation is evident in very high transportation costs: households with employed members spend in excess of 10 percent of their yearly incomes on transportation alone. Historic relics of federal administration are evident even today in settlement bequests that reduce expenditures: most households have no mortgage expenses due to the conveyance of homes to residents at no cost as a term of the NMFS withdrawal. Renters and owners of new homes do in fact have such expenses, but averaged over the entire sample, mean rents and mortgages represent far less than 10 percent of household incomes.

5.5.2 Expenditures and Employment Status

Table 5-50 displays average annual expenditures in the major categories in which data were collected. These figures are classified by employment status using categories that have been used in previous sections (i.e., all households; households in which no members are employed; households in which only one person is employed; and households with one or more persons employed).

Table 5-48

**Household Income Characteristics
and Job Status
St. Paul, Alaska
1986**

	Household Job Status			
	All Households Interviewed	No HH Members Employed	One HH Member Employed	One or More HH Members Employed
Average Household Income	33249	16708	29749	35721
Earned Income	24848	54	23364	28686
Unearned Income	8402	16654	6385	7036
Average Household Size	3.7	2.07	2.95	3.94
Average Per Capita Household Income	8986	8072	10084	9066
No. of Households in Sample	100	13	41	87

Table 5-49

**Household Income Characteristics
and Hunting Success
St. Paul, Alaska
1986**

Income Characteristic	All HHs Interviewed	Household Hunting Success	
		HHs Having INCREASE in Successful Hunts Between 1985 and 1986	HH Having DECREASE in Successful Hunts Between 1985 and 1986
Total Average Household Income	\$33,249	\$36,721	\$38,458
Earned Income	\$24,848	\$30,140	\$27,375
Unearned Income	\$ 8,402	\$ 6,581	\$11,083
Average Household Size (persons)	3.7	4.56	4.24
Average Per Capita Household Income	\$ 8,986	\$ 8,053	\$ 9,070
Number of Households in Sample	100	16	29

Table 5-50

**Composition of Village Annual Consumption Expenditures
by Job Status
St. Paul, 1986**

Average Annual Payments	Household Job Status			
	All HHs Interviewed	No HH Members Employed	One HH Member Employed	One or More HH Members Employed
Housing	\$1454.84	\$1065.23	\$1238.98	\$1513.06
Utilities				
heating oil	2404.75	1923.85	2496.10	2476.61
electricity	2972.40	1985.85	2707.42	3119.82
wood	0	0	0	0
water/sewer	269.56	192.62	271.46	281.06
other	870.92	348.92	633.07	948.92
Groceries	6486.93	5433.85	5474.46	6644.29
Transportation	2604.38	796.39	2176.54	2874.54
Hunting and Fishing Gear	76.87	34.00	47.56	83.28
Insurance	685.56	84.00	592.10	775.45
Medical	316.54	106.00	150.59	348.00
Clothing and Accessories	1047.50	211.54	518.05	1172.41
Other	370.91	205.54	548.78	395.62
Total Consumption Spending per Household	\$19,561.16	\$12,387.77	\$16,855.10	\$20,633.05
Number of Households	100	13	41	87
Mean Household Size	3.7	2.07	2.95	3.94

In each employment group, utilities costs account for close to one third of all household expenses. Groceries similarly account for about one third of all expenses. Mortgages and rent are also remarkably uniform, ranging from about 7 percent to 8 percent of all expenses. Transportation ranges from about 6 percent ("non-employment" households) to about 14 percent in each employment class (one person employed, as well as its parent set, one or more employees). The absolute values of other expenses and their relative differences across the employment groups are different, but they represent a relatively minor proportion of total household expenses.

Two notable differences across the employment groups warrant further attention. First, spending patterns exhibit wide variation for hunting and fishing gear, insurance, and clothing and accessories. Here households with nobody employed spend consistently less on these discretionary categories compared with households having one or more employees. These discretionary expenses vary by as much as a factor of six (for instance, 0.6 percent of expenses are allocated by non-employment households to insurance, whereas households with one or more employees devote 3.8 percent). Second, utilities expenditures also vary across household groups. These expenses range from 2.8 percent of all expenses (non-employment households) to 4.6 percent (one or more employees per household). Average household incomes for the groups in their respective order are: \$33,249.91; \$16,708.31; \$29,749.15; and \$35,721.64. Thus the proportion of expenses to income for each group is: 58.8%; 74.1%; 56.7%; and 57.8%.

The figures in Table 5-50 show that, on average, consumption expenditures sum to less than 60 percent of personal income for most households. Consumption expenditures for households with nobody employed are considerably higher (74 percent) than for households with one or more members employed. The wide gap between consumption spending and personal income may reflect several factors. First, education, entertainment, alcohol and other important consumption expenditures are not specifically identified in the field protocol. Some households provided estimates for such expenses in the "other" category, but the tabulations are undoubtedly incomplete. Second, the consumption expenditures recorded here only include annual debt service in the "transportation" category. Debt service for purchases of expensive durable goods aside from owner payments for vehicles are not included here (see section 5.6., Capital Formation for an analysis of expenses for assets and debts, but it is useful to state here that annual payments for loans do not exceed 12 percent of personal income in any employment group).

Personal and business income taxes are not included in these figures either. If we emphasize the tentative nature of personal tax estimates based on several explicit assumptions, however, we can derive plausible estimates of these taxes as a proportion of personal income. Let us assume that (1) households file jointly, (2) exemptions equal the rounded average household size in each column, (3) tax credits can be eliminated for the purposes of estimation, and (4) schedule C business tax deductions and adjustments can be eliminated for purposes of estimation, calculations from the 1986 tax schedule indicate taxes of 13 percent; 9 percent; 13 percent; and 14 percent (in column order) as a proportion of total personal income.

5.5.3 Natural Resource Harvests and Expenditure Patterns

The majority of harvest expenses are listed in the transportation category (fuel, vehicle maintenance and repair costs, owner payments), however the expenses for purchase of hunting and fishing gear *per se* (ammunition, firearms, tackle) are extremely low. The relative ease of fur seal and halibut harvests are undoubtedly a factor in minimizing these expenses. Furthermore, since all harvest sites are within a short driving, boating or walking distance of the community, extended excursions are unnecessary. In fact, not a single respondent over-nighted on an excursion during the previous year. Harvest expenditures are probably responsible for a significant but unknown portion of the transportation expenses discussed here.

This inference is supported by Table 5-51. In this Table, households are classified according to time allocation characteristics (this distinction was introduced in section 5.3., Time and Productivity). Again, only three households were represented by those whose head allocated more time to hunting and fishing than wage work. The exceptional properties of the two groups (those reporting more and less time) are distinctive here as they have been in time and productivity and income analyses. Here we see that their incomes, household sizes, and consumption expenditures exceed the average values of the sample; in earlier analysis we demonstrated that their time allocations and harvests were also higher than their cohorts in the remainder of the sample.

Mean total expenses are higher than the sample mean, and furthermore, mean total expenses for each set are higher than the means for all employment groups in Table 5-50. Their expenses in key non-discretionary categories, such as mortgages and rent, utilities, groceries, and transportation are also higher than the sample mean. Transportation and hunting and fishing costs for households in each classification exceed the sample mean for all households, and also exceed the means for each employment group in Table 5-50. Earlier analyses have shown that these households also harvest larger volumes of local foods compared to households outside those classifications.

Mean household incomes for these two groups are \$63,994.67 and \$33,940.39 respectively. These incomes also exceed the sample mean. The proportion of expenditures to income for these two sets is 63.8 percent and 61.6 percent, hence the expenses tallied in the protocol for these households comprise a somewhat larger proportion of total income compared to the overall sample and to the employment groups in Table 5-50. Discretionary expenditures (i.e., hunting and fishing gear; insurance; medical; clothing and accessories; other) by the households with heads devoting more time to harvests are disproportionately high. For example, after adjusting for differences in household sizes, the "more" households allocate twice as much in absolute dollars and 50 percent more by proportion of expenses to the "clothing and expenses" category. Since those households are larger and wealthier, these findings are not unusual.

5.5.4 Regional Observations and Conclusions

The available secondary data do not provide the level of detail necessary to investigate household consumption patterns over a longer term, but the aggregated statistics provide some support for observations offered in this section. Estimates of local spending in 1980 and 1984 are shown in Table 5-52 for the Aleutian Islands

Table 5-51

**Composition of Annual Consumption Expenditures
by Subsistence Status
St. Paul, Alaska
1986**

Average Annual Payments	All HHs Interviewed	Household Subsistence Status	
		HHs In Which Head Allocated MORE Time To Hunt and Fish Than to Job	HHs In Which Head Allocated LESS Time To Hunt and Fish Than to Job
Housing	\$1454.84	\$2400.00	\$1539.83
Utilities			
heating oil	2404.75	3700.00	2426.78
electricity	2972.40	3600.00	3292.75
wood	0.00	0.00	0.00
water/sewer	269.56	300.00	272.48
other	870.92	2800.00	953.83
Groceries	6486.93	9700.00	6904.58
Transportation	2604.38	8533.33	2934.24
Hunting and Fishing Gear	76.87	100.00	102.58
Insurance	685.56	2310.67	663.75
Medical	316.54	1000.00	397.15
Clothing and Accessories	1047.50	5733.33	1114.75
Other	370.91	0.00	303.71
Total Consumption Spending per Household	\$19,561.16	\$40,177.33	\$20,906.41
Number of Households	100	3	59
Mean Household Size	3.7	6.67	3.98

Census Division. These figures are derived using the same methodology applied in the previous cases for Alakanuk and Gambell. The data in Table 5-52 suggest that local expenditures represent a small share of total personal income for the census division as a whole. This may reflect the absence of a regional service center in the Aleutian Islands area. The estimates indicate that Aleutian residents spend the bulk of their cash income outside of the local (or regional) economy.

The tables discussed above support this observation. In addition, respondents indicated on numerous occasions that non-perishable goods and frozen meat are frequently purchased in bulk from Anchorage outlets. Without exception, however, respondents indicated that such purchases can only be made when households are well-off, since considerable initial outlays are required, rather than smaller, staggered expenses more like conventional weekly or monthly grocery bills. Another important point involves credit and access to bulk-purchase opportunities. Poorer households who can least afford high local costs cannot obtain credit for bulk purchases outside of the community. Credit is available in some cases at the St. Paul store. Wealthier households don't need credit and can afford to purchase in bulk.

The consumption and expenditure data support the concluding inferences in each section about households, their compositions, and economic means. These findings also support more general observations about the characteristics of the St. Paul economy as a whole. Data on consumption expenditures exhibit substantial uniformity across many categories. Despite some measurable differences in both relative and absolute costs for utilities, rent and mortgages, groceries, and some discretionary categories, after adjusting for household size, these differences fade. To some extent, relics of the federal period (such as the conveyance of home titles at no cost), other subsidies and transfers, and uniform factors that influence most or all households, such as high transportation, grocery, and utility costs, may act as leveling mechanisms that blur or eliminate economic distinctions among population segments. In short, differences in expenditures that distinguish among important population segments are not consistently evident.

However, spending in some discretionary categories, most notably for harvest expenses, distinguishes between population segments and draws attention to substantial variance within the overall St. Paul population. Based on previous analyses, we infer that a set of similar or common factors are responsible for some of this pronounced variance: differences in household composition configurations, evident mainly in the economic polarity between depleted types and the internally diverse large households that are typically nuclear in form; rapid movement of persons within a variety of occupational and other productive categories; and efforts by households to extend and broaden their access to numerous resources and, in doing so, reduce dependence on any single one.

In this section, the similarities noted in the second paragraph above were generally evident across all of the groups discussed here. The exceptional qualities are evident in the harvest comparisons which show that both sets of households ("more" and "less") have unique consumption habits (geared to a significant extent toward harvests) and also are situated in the higher income and employment categories. Hence, we infer that they have resisted specialization and broadened their access to opportunities while maintaining high incomes, larger harvests, more employment, and greater expenditures.

Table 5-52

Estimated Local Expenditures
Aleutian Islands Census Division
1980 and 1984

Industry Group	Factor ^a	1980 Gross		1984 Gross	
		W & S ^b	Product	W & S	Product
Transportation, Communications, and Utilities	1.97	\$ 1,996	\$ 3,932	\$ 4,201	\$ 8,276
Trade	1.65	1,816	2,996	2,125	3,506
Finance, Insurance, and Real Estate	4.69	NA	NA	NA	NA
Services	1.55	2,019	3,129	5,264	8,159
Total Local Expenditures	NA	\$ 5,831	\$10,057	\$11,590	\$19,941
Resident Personal Income			\$ 86,312		\$119,277
Ratio of Local Expenditures to Resident Personal Income			12%		17%

Notes: ^a Equal to the ratio of statewide gross product to statewide wages and salary earnings by industry group.

^b W & S refers to wages and salary.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Local Area Personal Income, 1986.

University of Alaska, Institute of Social and Economic Research, Statewide gross product estimates for 1980.

5.6 Capital Formation

5.6.1 Introduction

Whereas the patterns of routine expenditures show some uniformity across key population segments (despite notable exceptions), the distributions of assets and debt vary considerably. In general, households with less employment and lower incomes have fewer assets and lower debts in both absolute and proportional terms (i.e., in relation to income and adjusting for household size). These patterns and exceptions to those patterns are described below.

5.6.2 Capital Formation, Savings and Debt by Employment Status

Table 5-53 shows the composition of assets (defined as original purchase costs) for St. Paul households (N=100) and the three household job classifications used previously. Home values were not estimated since there was no initial cost for most residents and we were unable to obtain value estimates that exhibited sufficient variance (hence they are useless for cross-sectional comparisons; however, secondary data on housing stocks are described below). ANCSA stock values were not estimated either.

Despite the deletion of homes and stock, it is apparent that virtually all capital is invested in assets that depreciate: vehicles, appliances, and other personal property. The relatively high values in the "Other Real Estate" row are artifacts of a handful of outliers, mainly non-Aleut residents. "Productive capital," defined as real estate, cash in the bank, vehicles, firearms, and tools, exhibits strong variation across household classifications. As a proportion of personal income, productive assets represented 10 percent for households with nobody employed. In contrast, households with one or more employees have invested the equivalent of about 44 percent of their annual incomes in productive asset categories. Despite the fact of high mobility, low stability of income levels from year to year, and other indicators of frequent internal change, asset compositions seem to reveal a more persistent differentiation among households of longer duration than year-to-year fluctuations in levels and types of productive activity and household composition. This proposition rests on an assumption: if assets and debt represent a "long term" or multi-year consequence of consumption expenditures or annual income, then differences in asset and debt balances reveal longitudinal differences that extend beyond the short interval (one year) within which we have demonstrated considerable change.

Table 5-54 presents average annual debt payments for St. Paul households classified by household job status. Although the households without employed members lack debts in several important categories (bank, mortgage, vehicle and business loans), their installment debts were higher as a proportion of income, and per household member, compared to all households with employed members.

The "Other" debt row is comprised principally of debts for unpaid or underpaid utility and grocery bills due to the City or the IRA. No interest is paid on these debts. The households without employed members pay a larger proportion of their total income for these debts compared to each of the other employment categories. In

Table 5-53

**Composition of Village Household Assets
by Job Status
St. Paul
1986**

	Household Job Status			
	All HHs Interviewed	No HH Members Employed	One HH Member Employed	One or More HH Member Employed
Cash In Bank	\$ 867.72	\$ 76.92	\$1363.42	\$ 985.89
Local Investment Holdings	430.00	0.00	1048.78	494.25
Other Real Estate	4276.00	0.00	9073.17	4914.94
Vehicles	7041.26	1230.77	6378.42	7909.49
Firearms	485.22	46.15	318.42	550.83
Tools	621.74	11.54	757.32	712.92
Major Appliances	2975.19	1292.54	1894.44	3226.62
Furniture and Personal Property	3478.00	1423.07	3331.71	3785.06
Other	1322.50	38.46	315.85	1514.37
Total Assets Per Household (Mean)	\$21,497.00	\$ 4,120.00	\$24,480.00	\$24,093.00
Number of Households	100	13	41	87
Mean Household Size	3.7	2.07	2.95	3.94

Table 5-54
Composition of Household Debt
by Job Status
St. Paul, Alaska
1986

	Household Job Status			
	All HHs Interviewed	No HH Members Employed	One HH Member Employed	One or More HH Members Employed
Bank Loans	\$ 237.00	\$ 0.00	\$ 386.44	\$ 272.92
Home Mortgage	265.60	0.00	443.90	305.29
Vehicle Loans	740.90	0.00	378.83	851.61
Business Loans	510.00	0.00	365.85	586.21
Installment Accounts	837.94	742.46	485.85	852.21
Other	1045.09	761.08	1126.20	1087.53
Average Debt per Household	\$3,636.97	\$1,503.54	\$3,187.07	\$3,955.76
Number of Households	100	13	41	87
Mean Household Size	3.7	2.07	2.95	3.94

addition, the per capita debt is higher in adjusted absolute dollars and proportion of total income compared to most employed households. (The households with only one employed member pay a slightly higher per capita figure.) Although the debts as proportions of income are not immense in any household classification, these data reveal a relatively higher burden among households least able to afford it.

5.6.3 Capital Formation, Savings and Debt by Harvest Characteristics

Table 5-55 returns to the time allocation categories which distinguish between households whose head devotes more time to harvests and those who devote less time, compared to jobs. The asset distributions show that both household classifications, which exhibited exceptional productive capacities in other analyses, show a pattern of investment in productive assets that emphasizes harvest and labor-related capital and de-emphasizes "passive" investment in bank deposits and real estate. However, their investments in vehicles, firearms and tools far exceed the sample means. Their investments in the "Other" category (which represent commercial fishing vessel and supply investments in many cases, according to a review of the raw data) account almost exclusively for the moderately high sample mean. These features of their asset balance confirm previous observations about their high levels of productive activity (in terms of employment, income, and harvests) that have been offered so far.

In Table 5-56, the same time allocation classifications are used to classify average annual debt payments. Households with heads allocating more time to hunting and fishing have no bank or mortgage debts whatsoever, but their annual debt payments for vehicle (read: harvest capital) and business (read: commercial fishing and harvest capital) loans are exceptionally high compared to the St. Paul sample as a whole. (It is important to point out again that only three unusual households comprise this category.)

Per capita annual debts vary considerably across these household classifications in Table 5-56. The per capita debt service for the sample as a whole is about \$983 ($\$3,636.97/3.7$); for the households whose heads allocate more time to hunting and fishing, \$1559; and for the households whose heads devote more time to wage work, \$1067. Some caution must be exercised in interpreting these per capita calculations, since the productive capacities and consumption requirements of all household members are not equal (for instance, larger households may have a larger proportion of dependent children or senior citizens).

Average annual debt accounts for 10.9 percent of annual income for the entire sample, but for households in the center column (i.e., "more") this figure increases to 16.3 percent and for households at the right (i.e., "less"), 12.5 percent. So, although the households in these classifications are wealthier and more secure in absolute terms, and furthermore spend more on discretionary consumer goods than their cohorts excluded from the comparison, more of their incomes are obligated to routine expenses and annual debts.

The same point was made above in relation to households without working members (see Table 5-54). After examining household composition, productive activity, incomes, consumption, and now assets and debt, two exceptional population segments are apparent which share some features but which are nonetheless distinct from one

Table 5-55

**Composition of Household Assets
by Subsistence Status
St. Paul, Alaska
1986**

Household Asset	Household Subsistence Status		
	All HHs Interviewed	HHs In Which Head Allocated MORE Time To Hunt And Fish Than To Job	HHs In Which Head Allocated LESS Time To Hunt And Fish Than To Job
Cash In Bank	\$ 867.72	\$ 433.33	\$ 382.58
Local Investment Holdings	430.00	0.00	728.81
Other Real Estate	4276.00	0.00	3738.98
Vehicles	7041.26	28666.67	7190.27
Firearms	485.22	1700.00	602.93
Tools	621.74	1700.00	636.85
Major Appliances	2975.19	4750.00	1932.53
Furniture and Personal Property	3478.00	3333.33	4144.07
Other	1322.50	8666.67	1792.37
Total Assets Per Household	\$21,497.00	\$49,250.00	\$70,108.00
Number of Households	100	3	59
Mean Household Size	3.7	6.67	3.98

Table 5-56

**Composition of Household Debts
by Subsistence Status
St. Paul, Alaska
1986**

Household Debt	Household Subsistence Status		
	All HHs Interviewed	HHs In Which Head Allocated MORE Time To Hunt And Fish Than To Job	HHs In Which Head Allocated LESS Time To Hunt And Fish Than To Job
Bank Loans	\$ 237.44	\$ 0.00	\$ 388.88
Home Mortgage	265.60	0.00	212.88
Vehicle Loans	740.90	2400.00	785.12
Business Loans	510.00	2000.00	762.71
Installment Accounts	837.94	5166.67	924.27
Other	1045.09	833.33	1173.48
Average Debt Per Household	\$ 3,636.97	\$10,400.00	\$ 4,247.34
Number of Households	100	3	59
Mean Household Size	3.7	6.67	3.98

another and from other population segments. The larger, productive households with more employees share in common with the unemployed, relatively insecure households a more pronounced debt balance. It is possible then that a plausible argument could be made for higher levels of economic risk for both segments, despite the relative wealth and productivity of one of them.

5.6.4 Housing Characteristics

The available secondary data provide no clues about asset and debt at the household level, but housing stock data are available which provide general estimates of the value of housing that was conveyed *gratis* to St. Paul residents and institutions as a consequence of federal withdrawal. The total number of housing units increased from 97 in 1970 to 137 in 1980, a 41-percent increase (see Table 5-57). The average annual rate of housing-stock growth implied by this increase is 3.5 percent. This rate is slightly higher than the 3.2 percent yearly growth rate in housing stock for the entire Aleutian Islands Census Division over the same period. Nearly all St. Paul's housing units were occupied year round in 1980. The number of rental-occupied units halved from 85 in 1970 to 40 in 1980. Whereas owner-occupied units were counted as zero in 1970 U.S. Census, about two-thirds of total year round units were owner occupied in 1980. Unlike Alakanuk and Gambell, nearly all of St. Paul's housing stock contains modern plumbing facilities.

The median value of owner-occupied units in 1980 was \$45,000 according to the U.S. Census. This translates to about \$54,300 in constant 1985 dollars. The U.S. Census data in Table 5-57 indicate that the 1980 value of housing Stock in St. Paul was substantially higher than in Alakanuk and Gambell.

5.6.5 Concluding Observations

To summarize, the asset and debt data provide a new perspective on the least and most secure households. In these final passages the summary is based on primary protocol data, supported by the sum of key informant and observational records collected in St. Paul. In earlier sections, observations stressed the ideal configuration of productive activity and access to resources and labor: under the best circumstances, households operated on a broad front, maximizing their opportunities and utilizing their diverse internal labor and skill assets in numerous ways, and in doing so resisted dependencies on single, ephemeral resources.

It is now apparent that this is not a conservative strategy, but one that involves tangible risk and constant work in order to succeed. This risk is a feature the most productive households share with more impoverished neighbors, but it is obviously a risk that is voluntarily assumed and based on a premise of independence and strong commitment to productive activity throughout the household.

Table 5-57

Housing Stock Characteristics
St. Paul, Alaska
1970 and 1980

Housing Characteristic	1970	1980	Average Annual Rate of Change, 1970-1980
Total Number of Units	97	137	+3.5%
Total Year Round Units			
Occupied	85	126	+3.8%
Unoccupied	8	5	-4.8%
Rental Occupied Units	85	40	-7.8%
Owner Occupied Units	0	86	infinity
Year Round Units			
With Plumbing	93	131	+3.5%
Without Plumbing	0	0	0.0%

Value of Owner Occupied Units
1980

Range	Distribution
Less than \$10,000	2
10,000 - 14,900	6
15,000 - 19,900	7
20,000 - 24,900	11
25,000 - 29,900	2
30,000 - 34,900	5
35,000 - 39,900	3
40,000 - 49,900	8
50,000 - 79,900	25
80,000 - 99,900	13
100,000 - 149,900	2
150,000 - 199,900	1
\$200,000 and More	1
Total Number of Units	86
Median Value, 1980	\$45,000
Expressed in 1985 dollars	\$54,300

Source: U.S. Department of Commerce, Bureau of the Census, Special Tabulations, 1970 and 1980.

6.0 INTERVILLAGE ANALYSIS

6.1 Political Economy

The preceding chapters provided richly textured empirical descriptions of the socioeconomic organization and conduct of economic activities in the three individual study communities. The objective there was to present a detailed picture of each community's economic life. In this chapter, the analytic orientation shifts to a more comparative cross-community perspective, with a somewhat narrower topical scope of empirical inquiry. The method of approach focusses mainly on comparative statistical analysis of certain items in the field protocol data and other socioeconomic data sources. Specifically, the approach examines the interplay of key analytic concepts (economic organization, income, consumption and expenditures, capital formation, allocation of work effort) that transcend the conceptual distinction between subsistence, market and political economies.

In the close-up analysis provided in Chapters III, IV and V and in some aspects of the comparative empirical analysis undertaken in this chapter, it was natural to fix upon the characteristics that distinguish the communities. Substantial cultural and economic differences were to be expected among three settlements roughly as far apart as London, Paris and Copenhagen, separated by open ocean, with diverse ethnographic origins, and each with an indigenous economy rooted in unique local resource endowments. The detailed community descriptions indeed demonstrate that the three villages are distinctive in many important respects.

These differences are critical to understanding the cultural personality and economic organization that each community now exhibits. The differences among the villages, however, appear less striking once their economic circumstances are compared to the national political economy. All inter-community differences aside, there are two overriding thematic traits that unify the study communities in harmonic counterpoint to communities with "normal" local economies. These traits are (1) the local prominence of non-market economic functions, that is, extra-local public sector transfers of wealth and local subsistence production; and (2) the arrested state of private sector economic development.

These themes reverberate through the protocol data. Governmental payrolls and subsistence dominate work patterns and income production. Private capital formation and investment by households and local private enterprises is very modest, with a large part of household capital invested in subsistence production. Non-local public agencies--not households and private firms--are the main source of most capital investment, and that investment is concentrated in community infrastructure (housing, water supply, sanitary systems, power, schools, etc.), meant to improve living standards rather than to enhance private sector development and productivity.

Notwithstanding the advances in community development and household income that the past decade has brought, all three communities still display the hallmark trait of an underdeveloped economy: the first order of business is putting food on the table. Just three percent of the national workforce is employed or self-employed in food

production. Most households in the study communities, however, devote a much larger part of their productive efforts toward subsistence food production. As reported in the protocol data, in Alakanuk, 93 percent of households engaged in subsistence in 1986; in Gambell, 100 percent; and in St. Paul, 64 percent.

Despite this commitment to subsistence, study community households also reported putting a substantially larger share of their cash consumption expenditures toward purchase of groceries than the national average. Alakanuk reported 46 percent of consumption expenditures went for groceries, Gambell reported 29 percent and St. Paul reported 33 percent. This compares with the national household average of 19 percent. If further allowance were made for household expenditures for hunting and fishing gear and a due share of subsistence-related transportation expenses, then the share of cash resources devoted to sustenance would be higher yet. In sum, more than half of household work effort at Alakanuk and Gambell, and a somewhat lesser effort at St. Paul, appears to be channeled into production or purchase of foodstuffs.

That food production commands so much effort suggests that (1) the natural productivity of the environment is low; (2) superior alternatives for economic production are limited; and (3) the time and material resources required for food supply diminishes opportunities for other economic pursuits and for capital accumulation as well.

The similarities in the politico-economic organization of the three communities are largely an evocation of the homogenizing discipline of federal and state institutions. For example, federal and state governmental programs meant to bestow economic and other benefits upon the villages often end up subordinating the indigenous socio-politico-economic orders to conformity with the administrative templates of the central governments. Typically, these categorical and formula programs are uniformly administered according to national or statewide standards and without substantive regard for local and regional diversity. Thus, the three study communities have been assimilated by similar housing and community development grant programs, similar federal and state revenue sharing programs, similar income assistance and transfer programs, identical permanent fund dividend programs, similar regulatory schemes, and the like.

With some notable exceptions, the communities also face and must cope with more or less the same regime of state and federal institutional entities. The exact role and performance of these public agencies and their programs may vary from community to community. But their overall impetus is to summon the communities toward convergence rather than to amplify aboriginal differences. Speculatively, this convergence may be the logical and unavoidable outcome of the communities' integration into a system of governmental intervention largely motivated by the welfare/social equity goals of the contemporary welfare state.

In contrast to this leveling politico-economic influence of government, the private entrepreneurial sector seems more prone to seek out and exploit economic differences between localities. The operating mode of the industrial and commercial elements of the entrepreneurial economy is a discriminating search for comparative advantages in raw materials and labor costs, productivity, supply/demand ratios, etc., which are then opportunized to achieve greater economic efficiency and superior profitability. In fact, the private sector has historically focussed on the economic potential of each community' unique resource endowment: fur seal resources on St. Paul Island, the salmon fisheries of the lower Yukon River and the raw and worked ivory trade at

Gambell. In this way, the private sector, unlike the governmental institutions, has confirmed and preserved different economic features through the process of transforming surplus subsistence production and goods into market production and market commodities.

Federal and state governments and private interests are often drawn into collaborative action, especially when public policy goals and entrepreneurial or conservationist goals intersect or when government exercises its role as rule-maker and umpire over the pursuit of private interests. This ad hoc interplay between distant governmental, entrepreneurial and conservationist/recreational interests accounts for a major difference in the political economy of each community. Their different local endowments of marketable or conservable resources (fur seal pelts, salmon, ivory products), is echoed in the specialized organization of the local commercial economy and in parallel specialization in the external governmental apparatus concerned with allocation and management of that local resource endowment. Each community confronts a significantly different face of domestic (and international) government as well as a different band of private interests. Alakanuk must contend with governmental mediation of non-local claims upon "its" salmon and, to a lesser degree, waterfowl resources. Gambell must deal with regulation of its harvest of walrus and other marine mammals. And St. Paul, originally founded to supply forced labor for the commercial fur seal industry, now finds its own efforts to escape the yoke of the historic federal/industry partnership frustrated by the lapse of the Fur Seal Treaty.

It appears that more instances of this sort of economic differentiation may be on the horizon. The shifting alliances of native corporate and community interests, state and federal and international governmental entities, conservation and resource interests, energy and mineral corporations, fisheries interests, et al., continue to maneuver to determine the future proprietorship, management and development of the offshore hydrocarbons, mineral deposits, groundfish and other natural economic resources known or suspected to occur in the region.

6.2 Economic Organization

6.2.1 Institutions and Businesses

On a broad institutional scale, economic comparisons among predominantly Native villages in Alaska are complicated by two factors. First, the roles and forms of modern economic institutions in these communities are, to an important extent, products of a specific historical and political-economic genesis that is not uniform across all or even most villages, despite modern commercial and governmental influences that can be very consistent. In this sense, contrasts are more immediately apparent than similarities. This proposition is confirmed by even a cursory review of the political-economic histories of, for instance, St. Paul as opposed to Alakanuk.

Second, the unique federal status of Natives, which establishes federal economic and service obligations within the local economic context, introduces forms of economic organization and sources of revenue that are not merely "additive" in an organizational perspective. By this we mean that they are not simply additional "levels" or layers. Typically, unique Native entities such as IRA governments and businesses, cooperative associations, and ANCSA corporations carry out functions in an interdependent manner. Since they engage in activities that in other cases would

be found in the broader public sector or within public human service programs, their activity penetrates throughout the local and regional economy and establishes a qualitatively different economic regime compared to non-Native communities. One legal scholar makes this point well:

Even a casual observer will be impressed by the number of both unrelated and interrelated Native governments, corporations and associations representing modern Alaska Native interests. There are federally recognized traditional and IRA governments, state organized municipal governments, IRA and ANCSA corporations, nonprofit development corporations, and regional Native associations, as well as fish and game advisory boards and REAA school boards, to name only a few. (Case 1984:371)

The historical and political aspects of economic organization in the study communities are described in separate chapters (3, 4 and 5) and comparisons are provided in the section 6.1 of this chapter (Political Economy). This section addresses the organizational features of the economy in site communities in 1987 and concentrates on the interrelations between institutions.

Based on our research, we find that economic organizations in site communities are fundamentally uncoordinated. We use that term in a special sense: there is no pre-existing integration of organizations that sets out distinct privileges, objectives, or obligations for key institutions that is established by statute, treaty, or custom. For example, the federal government may contract with an IRA government for services in one case, but contract with a regional nonprofit organization in another case for identical or similar services. Similarly, a state government agency may grant funds to a nonprofit organization in one case but to a municipal government in another, again for identical or similar purposes. The lack of uniformity and consistency in such policies can lead to erratic and piecemeal programs at the local level (see McCarty 1987 for evidence of this problem in other areas), but may in other cases provide Native contractors and business ventures with great flexibility since control of funds earmarked for similar purposes is diffused across state and federal agencies (this exact point is made in Case 1984:372).

Since local organizations frequently have overlapping authorities, similar objectives, and common premises for their activities, the lack of coordination can lead to competition and conflict (if organizations decide not to acknowledge common goals and purposes among other institutions); compromise (if organizations achieve agreement on mutual spheres of influence and activity); or coordination (if a premise for joint collaboration and mutual assistance can be invented). Hence, coordination is entirely possible, but to the extent it occurs it is a product of organizational dynamics at the local level. The discussion of institutional conflict in St. Paul is a case in point: the key issue today in St. Paul is, who will control economic development and in what manner? Any tangible control of development and the massive transfers that now underwrite the transition must emerge locally, since those development funds are essentially uncontrolled, unintegrated, and uncoordinated between the state and federal agencies that provide them.

Several important features of economic organization at the institutional level can be described schematically. Table 6-1 depicts the distribution of major economic and service activities among key institutions (municipal governments, ANCSA corporations

and IRAs and their businesses) in each study community. This table demonstrates how similar or identical activities are placed in entirely different institutional frameworks at each study site, despite the obvious regularities in the provision of many state services through city governments.

This comparison reveals a dichotomy of institutional patterns that sets St. Paul off from both Alakanuk and Gambell. Note that the main municipal utility and public safety service patterns are identical for all three communities. The municipal governments also provide very limited health services as flow-throughs for state support (primary and ambulatory health care services are provided at clinics supported mainly by IHS funds in each case). Thereafter, however, the economic characteristics diverge. In St. Paul, key institutions share several overlapping spheres of economic activity while this is not the case at the other two sites. A review of the St. Paul, Alakanuk, and Gambell descriptive sections in Chapters 3, 4 and 5 shows that only St. Paul is distinguished by inter-organizational conflict over precisely this issue.

6.2.2 Demographic and Household Composition Comparisons

U.S. Census data show a decline in average household size over the 1970-1980 interval in each of the study sites, but most other aggregate demographic data reveal dissimilarities rather than shared features that might suggest common influences on their population dynamics. Table 6-2 summarizes several demographic observations that support this conclusion.

The aggregate data lend general support to more detailed primary data that are summarized in the descriptive sections in Chapters 3 through 5 and provide historical depth that our two-point baselines cannot achieve. Gambell data depict a robust population with an increasing annual rate of growth and very modest outmigration, whereas Alakanuk underwent rapid growth during the immediate post-ANCSA period which has since slowed, and reveals an outmigration rate intermediate between Gambell and St. Paul in the most recent recording interval. The St. Paul data suggest population decline, mainly through outmigration, despite a brief hiatus during the 1970-1980 interval.

Moving now to the primary data obtained from the field protocols, it will become possible to make more discriminating comparisons between the villages. In the St. Paul chapter, the author argued that variations in household composition coincided with variations in internal economic diversity. Diversity (evident in compositions that combined several functional -- for instance, homemaker and child-care provider -- and economic roles) was seen as a positive factor that encouraged and reinforced household economic stability in settings characterized by rapidly shifting economic opportunities. Household compositions in the three site communities will be compared here.

Table 6-3 enumerates the household types recorded in each study site.

Several observations can be offered immediately. First, nuclear households are modal types in all communities. Second, sibling-based households are generally rare, however St. Paul is distinguished by a relatively large proportion of households in these classifications. Third, multi-generational configurations of all types taken as a group (i.e., stem, extended, or mixed, whether intact, denuded or remnant) exhibit the largest share of non-nuclear types in Gambell and decline as a proportion

Table 6-1

**Selected Economic Characteristics
by Local Provider: City, Native Corporation, and IRA^a
Alakanuk, Gambell, and St. Paul, Alaska
1987**

Economic Characteristic	Alakanuk Local Provider	Gambell Local Provider	St. Paul Local Provider
Utilities	City	City	City
Public Safety	City	City	City
Health Services	City ^b	City	City ^c
Education	None	IRA	City ^c
Housing Improvements	None	IRA	City
Construction/ Capital Improvements	None	None	City and Corporation
Store	Corporation	None	IRA
Fuel sales	Corporation	None	City and IRA
Fisheries	Corporation	None	Corporation and IRA
Raw Exports	Corporation	None	IRA
Worked Exports	None	Corporation	Corporation
Tourism/Lodging	None	Corporation	City ^d and Corporation

Notes: (a) This table is not inclusive of all characteristics provided. Where "None" appears in this table, characteristic may be provided by an entity other than City, Corporation, or IRA. Characteristics may be provided by entities in addition to those noted as well.

(b) Alcoholism and clinic support

(c) Emergency Medical Training

(d) Feasibility study, some rental services

Source: Field notes

Table 6-2

**Selected Demographic Comparisons
Alakanuk, Gambell, and St. Paul, Alaska
1960-1985**

Demographic Characteristic	Year	Alakanuk	Gambell	St. Paul
Average Household Size	1970	5.89	6.53	5.29
	1980	4.97	4.32	4.37
Average Family Size	1970	6.46	6.89	5.49
	1980	5.49	5.00	4.88
Average Annual Rate of Growth (Total Population)	1960-1970	3.4%	0.4%	1.8%
	1970-1980	7.0%	1.8%	2.0%
	1980-1985	1.3%	2.1%	-3.4%
Average Annual Rate of Growth (Family Households Only)	1970-1980	7.7%	2.8%	1.9%
Outmigration: Ratio of Net Migration to Population	1980-1985	-3.2%	-1.6%	-22.5%

Sources: U.S. Department of Commerce, Bureau of the Census, Special Tabulations, 1980; Alaska Department of Labor, Alaska Population Overview, 1985 Estimates, April, 1987. Figures for 1985 are provisional; Alaska Department of Health and Social Services, Vital Statistics, 1970-1985.

of all types in Alakanuk and finally St. Paul. Fourth, "depleted" household types (i.e., types missing spouses) and non-procreative types (i.e., single persons and conjugal pairs) represent a large proportion of the St. Paul sample. These observations restate findings that were discussed in Chapter 5.

The far greater range (and diversity) of types at St. Paul may be an artifact of a larger sample, however the study team believes that three important trends are responsible for this pattern. First, either social expectations regarding "ideal" household configurations at St. Paul are muted, or "ideal" configurations are very difficult to achieve. Otherwise, such a great range would not occur. Native Americans are well known for opportunistic residence habits, but it is clear that in Alakanuk and Gambell several preferred household arrangements are evident, people know what they are and seek to maintain them, and the high-frequency types are (as a whole) more often procreative. Second, high rates of outmigration from St. Paul are undoubtedly depleting households there, and possibly the procreative units are most seriously affected (this would be a logical inference based on the data, but we cannot prove it). Third, once depletion and outmigration begin to characterize population dynamics in a community, a greater range of household living arrangements often follows. Consider for a moment: systematic additions to households (such as children born to resident spouses) are less likely to alter the household type than are unsystematic depletion or outmigration. The latter could create single parent or conjugal pair types, for instance (among others). Since we have not established that outmigration is systematic, let us assume for the moment that it is not. If it is not, we suspect that a gradual increase in the range of household types is more likely than not as a result of the patterns evident at St. Paul. Hence, attempts to create and maintain stable and economically viable living arrangements in St. Paul are often unsuccessful; residents nonetheless seek opportunistic arrangements that provide limited or short-term benefits; yet outmigration continues to displace human resources needed in these households.

6.3 Income

6.3.1 Overview

Dependence on non-local public sector expenditures is a common feature of rural Alaskan village economies. Typically, this dependence is reflected in the dominant role of state and federal employment and payrolls, transfer payments, and income patterns. For the three study communities, the comparative income data presented below confirm that the non-local public sector dominates their cash economies.

Village reliance on fiscal resources originating outside the community and distributed through the political system has implications for the political economy of the communities. Moreover, in the analysis below, we suggest that conventional measures of federal and state government employment and income yield an incomplete picture of the local importance of the public sector. They capture the cash income and employment resulting from non-local public expenditures, but ignore the economic value of the delivered goods and service themselves. They capture the earnings pocketed from local jobs in public works, the school system and health clinic, but misses the value of the shelter, utilities, educational and health services consumed by local residents at little or no out-of-pocket cost.

Table 6-3

**Household Composition Classification
Alakanuk, Gambell, and St. Paul, Alaska
1986-1987**

Type	Description	Alakanuk %	Gambell %	St. Paul %
1	Single individual, no temporary members	2.4	12.5	13
2	Single individual, with temporary members	1.2		2
3	Conjugal pair, no temporary members		5	11
5	Nuclear, no temporary members	22.6	45	40
6	Nuclear, with temporary members	4.8	5	4
7	Single parent, plus child(ren), no temp.	4.8	5	11
9	Conjugal pair, divorced child and grandchild(ren), no temp. members	2.4		3
11	Conjugal pair and grandchild(ren), no temp.	2.4		1
13	Remnant-grandparent and grandchild(ren), no temporary members			2
14	Remnant-grandparent and grandchild(ren) with temporary members	1.2		
15	Stem-grandparents, married child and grandchildren, no temporary members	2.4	10	2
17	Extended-grandparents, married children and grandchildren, no temp. members		7.5	
19	Stem remnant-grandparent, married child and grandchildren, no temp. members		2.5	1
20	Stem remnant-grandparent, married child and grandchildren, w/ temp. members	1.2		
21	Extended remnant-grandparent, married child and grandchildren, no temp. members			1
23	Denuded stem-grandparent, unmarried child and grandchildren, no temp. members	4.8	5	1
24	Denuded stem-grandparent, unmarried child and grandchildren, w/temp. members		2.5	
26	Mixed-grandparent, married and unmarried children and grandch., no temp. members	1.2		
30	Sibling set, no temp. members	1.2		3
31	Sibling set, w/ temp. members			3
32	Complex sibling set in ascending generation with stem or extended elements			2

Notes: "denuded" = missing spouses in all generations.
 "remnant" = portion of primary household type
 missing a spouse in apical generation,
 normally late in the family developmental cycle.
 "stem" = portion of extended household missing
 married children, often late in developmental cycle.

Source: Alakanuk, Gambell, and St. Paul field notes, 1987.

Insofar as governmental programs tend to cover the basic necessities -- shelter, water, power, education, health care, income assistance -- rather than discretionary items, their value to recipients ought to be visible in household expenditure patterns. Presumably, benefiting households spend less on the basic goods and services these programs deliver, and are free to spend for other purposes the cash income that would otherwise be commanded by these necessities. In fact, the empirical field data collected and summarized below on the mix of household expenditures strongly supports this premise (see section 6.4).

It was suggested above that conventional employment and income data understate the economic contribution of governmental expenditures. By same token, they mask the degree to which the local community's livelihood is dependent upon the decisions of external political institutions that govern the allocation of public resources.

6.3.2 Sources of Cash Income

In this section, the field data on household income and expenditures for the three study communities are used to describe and compare the relation between the public and private sectors of the local economies.

Comparative review of the household income data assembled for the three study communities underlines some basic differences in their internal economic structures and in their respective politico-economic situations. Even so, differences in economic structure among the communities pale when they are compared as a group to national norms.

Table 6-4 shows the distribution of 1986 average household income by source for each study community sample and for the nation in 1985. These distributions are, of course, overall averages; they do not represent a typical household. Too, the community data are for a single year (1986) and the community household samples under-represented a significant sector of local wage-earners, e.g., temporary residents. Thus, there are limitations on the usefulness of this data for longitudinal or comprehensive analysis.

Average household cash incomes in all three communities fall well below the national average (\$39,921). St. Paul (\$33,250) reaches eighty-three percent of the national average, Gambell (\$21,945) fifty-five percent and Alakanuk (\$18,977) forty-seven percent. Compared to national norms, households in the study communities are cash-poor. Higher living costs further discount the purchasing power of households in remote communities. On the other hand, subsistence augments many families' income.

All three communities draw heavily on governmental payrolls and transfers for cash income, but the composition of household income sources is decidedly different for each community.

As shown in Table 6-5, reported private sector earnings (the sum of non-wage self-employment income plus income from private-sector employers) range from as little as ten percent of total income at Gambell, twenty-one percent at St. Paul, and thirty-one percent at Alakanuk. Within the private sector, self-employed earnings are substantially higher in Alakanuk; no doubt a result of its commercial salmon fishing industry. Gambell is noteworthy for its modest private wages and salary component -- less than three percent of total cash income. (Indeed, this figure is suspiciously

Table 6-4

**Average Household Income, by Source
Alakanuk, Gambell, and St. Paul, Alaska, 1986
and United States, 1985**

Income Source	Alakanuk		Gambell		St. Paul		United States	
	\$	%	\$	%	\$	%	\$	%
Local/City Govt Income	2,466	13.0	3,915	17.8	11,016	33.1	4,289*	10.7
Federal Income	1,109	5.8	2,452	11.2	2,536	7.6	--	--
State Income	2,188	11.5	6,970	31.8	2,174	6.5	--	--
Institutional Income	557	2.9	1,038	4.7	2,416	7.3	--	--
Government Transfers exclud. Perm. Fund	3,982	21.0	2,432	11.1	6,501	19.6	5,613	14.1
Permanent Fund	2,805	14.8	2,858	13.0	1,773	5.3	--	--
Income from Private Sector Employers	2,757	14.5	625	2.8	5,022	15.1	18,366	46.0
Non-Wage/Self- Employment Income	3,089	16.3	1,640	7.5	1,684	5.1	2,932	7.3
Interest/Dividend/ Rent Income	24	0.1	15	0.1	127	0.4	6,455	16.3
Other Income	--	--	--	--	--	--	2,266	5.7
Total Average Household Income	\$18,977	100.0%	\$21,945	100.0%	\$33,250	100.0%	\$39,921	100.0%

Note: * Combined figure for local, state, federal, and institutional income sources.

Source: 1987 Statistical Abstract; field protocol data

low; possibly, some quasi-private sector earnings at the ANICA store or elsewhere were recorded as public or institutional income.) In all three communities, reported unearned income from interest, dividends and other private sources was negligible, except for permanent fund dividends.

Conversely, Gambell relied upon the public sector for the dominant share (nearly ninety percent) of its household cash income, followed by St. Paul (seventy-nine percent) and Alakanuk (sixty-nine percent). The mix of public sector earned and transfer income was significantly different for each village. At Alakanuk, which had the lowest average household income, public sector income was about evenly split between earned and transfer income; this suggests a relatively less well developed local public sector and a somewhat greater reliance overall on public transfers. On the other hand, at St. Paul, public sector earnings were more than double transfer payments, reflecting the St. Paul City government's commitment and present ability to finance "transitional" employment. At Gambell, earned income was more than double transfer income.

In absolute dollar terms, there are striking differences among the communities in public sector earnings reported by source. Combined local, state and federal payrolls averaged \$15,726 per household at St. Paul; local government alone averaged \$11,016 per household. The combined public payrolls at Gambell averaged \$13,337 of which \$6,970 accrued from state government employment. Governmental payrolls at Alakanuk averaged \$5,763, less than half the figures for St. Paul and Gambell. At Alakanuk, no single level of government dominated earnings in the manner comparable to St. Paul's local government payroll or Gambell's state payroll.

All three local governments ultimately rely on federal and state governments for most of their revenues. For example, in FY 1986, the City of St. Paul's general fund, capital project and special project expenditures totaled \$18 million, of which locally raised revenues accounted for \$340,728 -- about two percent. With those figures in mind, the prominence of St. Paul's local government as a source of earned income is hardly evidence of autonomy. More plausibly, it signals greater, not lesser, dependence upon external fiscal resources and political institutions.

There was a wide gap between the national norm and the three study communities in their overall reliance upon public sector sources of household cash income. In absolute terms, St. Paul households received an average of \$26,416 in earned and unearned income from public sector sources; Gambell, an average of \$19,665; and Alakanuk, an average of \$13,107. This compares with the national average of \$9,923 per household.

Most of this income gap can be traced to differences in earned income. St. Paul had the highest level of average household earned income (\$15,726) from public employment, including institutions, trailed by Gambell (\$13,337) and Alakanuk (\$5,763). For comparison, nationwide, public sector earnings averaged \$4,289 per household.

On the other hand, the household income data belie the notion that these rural Alaskan communities benefit disproportionately from government cash transfer programs. Regardless of their low average household incomes, two of the study communities (Gambell - \$2,432 per household; Alakanuk - \$3,982 per household) stand well below the national average (\$5,613 per household) in government transfer income (exclusive of permanent fund dividends). St. Paul (\$6,501) is slightly above the national average.

Table 6-5

**Percent Distribution of Average Household Income, by Source
Alakanuk, Gambell, and St. Paul, Alaska, 1986
and United States, 1985**

Income Source	Percent Distribution of Income			
	Alakanuk	Gambell	St. Paul	United States
Private Sector				
Self-Employment	16.3	7.5	5.1	7.3
Wages & Salary	14.5	2.8	15.1	46.0
Other	0.1	0.1	0.4	21.9
Total Private Sector	30.9	10.4	20.6	75.2
Public Sector				
Wages & Salary	33.2	65.5	54.5	10.7
Transfers	35.8	24.1	24.9	14.1
Total Public Sector	69.0	89.6	79.4	24.8
Total	100.0%	100.0%	100.0%	100.0%

Source: 1987 Statistical Abstract; field protocol data

Alaska Department of Health and Social Services records are another source of data on the contribution of state-administered income assistance programs to household cash incomes. Departmental data obtained from the Division of Public Assistance for two of the study communities (Alakanuk and Gambell) show that in FY 1986, the Department disbursed \$345,852 in AFDC and Food Stamp program payments to Alakanuk households and \$229,164 to Gambell households, for an average of \$3,294 and \$2,102 per household respectively. The average cash payment to those households actually receiving AFDC or food stamp payments was, of course, much higher.

Disaggregated figures for two other important state-administered income assistance programs, namely, medical assistance and State longevity bonuses, were not available. However, these programs' payments were estimated from departmental data for State Election District 23 within which both Alakanuk and Gambell fall. Based on Alakanuk's and Gambell's share of district-wide AFDC and food stamp payments, their prorated share of FY 1986 medical assistance and longevity bonus payments was estimated at \$2,257 and \$1,441 per household respectively. (Note that these estimates are prone to a wide margin of error).

The estimated average household income from these four state-administered income assistance programs totaled \$5,551 at Alakanuk and \$3,543 at Gambell. In each case, this amount exceeds the total amount of government transfer cash income (exclusive of permanent fund dividends) reported in the protocol data by about 40 percent. Once allowance is made for other transfer programs (social security and supplemental social security, veterans' benefits, unemployment insurance) it appears likely that unearned public transfer payment income was substantially higher than reported in the protocol interviews.

As another measure of the relative importance of income transfers, the ratio of private sector to public sector income was calculated. Nationwide, in 1985, for every \$1.00 of private sector income, there was \$.33 in public sector income; according to protocol data, at Alakanuk, for every private sector \$1.00, there was \$2.23 in public sector income; at St. Paul, \$3.85 and at Gambell, \$8.62. These ratios affirm in quantitative terms two fundamental structural traits of the local economies.

First, the local cash economies are overwhelmingly dependent upon revenue infusions originating in non-local sources.

Second, despite the infusions of public sector money, the local private market sectors remain in a state of arrested development. Underdevelopment cannot be attributed to deficient purchasing power. There is a definite income gap between the study communities and the national norm (see Table 6-4), but the gap is not wide enough to account for the inverted ratios in public/private sector payrolls just noted. The persistent stagnation of the private sector is more likely explained by such factors as the failure of the local economy to achieve significant import substitution through production of goods and services for local cash markets; and by a scarcity, heretofore, of exportable raw materials, compounded by competitive disadvantages for intensive local processing of what commodities are producible for export.

The minor scale of private sector earnings suggests that the local economic multiplier for each community's economy is extraordinarily low -- probably less than one dollar of non-basic earnings generated by every ten dollars of "basic" earnings. Virtually all public sector income and a varying share of the private sector income

from commercial fishing and fish processing (Alakanuk), tourism-related income (St. Paul), and handicrafts (Gambell) can technically be considered basic in nature, that is, originating from outside the region. As noted above, the community data exclude the income of temporary residents (e.g., school teachers) whose household incomes tend to be well above local averages. Furthermore, the portion of the total household income circulated through local merchants does not generate many added jobs or much earned income in the private sector (see discussion of Gambell Native Store in Chapter Four).

6.3.3 Sources of In-kind Income

In the introduction to this section, it was suggested that governmental wages and transfer payments represented only part of the public sector's contribution to the local material standard of living. Here, we would like to examine the importance of public sector in-kind transfers to the economies of the study communities.

In-kind transfers are defined as "goods and services furnished to persons or households by government without payment." In-kind transfers represent a form of non-monetary income. For present purposes, in-kind transfers comprise the subsidized value of public goods and services provided to and consumed by study community households. This would include the net value in excess of payments made by recipients for such goods and services as education, housing, health and social services, energy and utilities subsidies, public safety, communications and postal services, etc., plus non-local funds for capital improvements projects.

This non-monetary income is distinct from the cash income obtained through public payrolls and cash transfer payments. That this non-monetary income is genuinely income is easily seen by imagining the effect of withdrawal of these goods and services. Overall household living standards would drop sharply and the pattern of household consumption expenditures would be adjusted to compensate for the loss of these in-kind transfers.

Non-monetary income of this sort is not, of course, unique to rural Alaska. By definition, it is a pervasive trait of a modern mixed economy that allocates goods and services for consumption through both market and political mechanisms. However, there are reasons to suspect that non-monetary transfer income assumes extra importance for rural Alaskan households. First, virtually all Alaskan households, rural or urban, benefit from state and local government expenditures in excess of any taxes and charges they personally remit to government. Second, more rural households benefit disproportionately from publicly-funded community development programs, partly because of low incomes, partly because of the special obligation of the federal government to Alaska Natives.

The household expenditures shown in Table 6-9 reflect the influence of non-monetary transfers. For instance, at Alakanuk, Gambell and Saint Paul, between 3.1 and 7.6 percent of household expenditures went for housing compared to about 19.6 percent for the average urban consumer nationwide. Less than one percent of household expenditures in Alakanuk and Gambell and less than two percent in Saint Paul were spent for medical care compared to about 12.5 percent nationally (1987 Statistical Abstract). Obviously, Alakanuk and Gambell households did not go without shelter or health care. However, we must look past their household cash outlays to evaluate their consumption of these and certain other basic goods and services delivered by government.

The cost of public goods and services can be readily inferred from gross public expenditures data, particularly State of Alaska expenditures, as the State has become the main funder of rural public services. As shown in Table 6-6, the State of Alaska's per capita expenditures in 1983 were \$11,471, more than five times the national average. Assuming an average four persons per household for the three study communities, this translates into an annual State governmental expenditure of nearly \$46,000 per household for public services and improvements in that year. This is a crude measure of the cost, if not the value, of State-provided goods and services. More recently, declining State revenues have lowered State expenditures to approximately \$25,000 annually per household.

Under Alaska's unusual fiscal structure, petroleum and other resource revenues account for practically all State income. In FY 1983, resource revenues made up over ninety-five percent of all state revenues, with corporate income taxes accounting for most of the balance. Persons and households pay essentially no taxes, fees or charges for the goods and services delivered to them by the State. Thus, State-provided goods and services that benefit persons and households can generally be viewed as gratuitous transfers or distributions of wealth or income through the state political system.

The same incongruence between revenue sources and beneficiaries of expenditures is visible in data on local governmental expenditures. Table 6-7 compares the distribution of revenues by source for city governments nationwide (1983) and for the cities of Gambell (FY 1984) and St. Paul (FY 1986).

These data show that the City of Gambell city revenues per household were \$6,413 or more than four-fold the national average for cities. At \$3,744 per household, intergovernmental revenues to the city of Gambell, were almost ten times the national average. Intergovernmental revenues accounted for about fifty-eight percent of total revenues, compared to about twenty-six percent nationally.

The City of St. Paul's revenue situation in FY 1986 was a special case due to capital project funds appropriated to the city for the boat harbor project and the advance from the St. Paul Island trust fund. In any case, city government revenues in that year amounted to \$148,522 per household -- almost one hundred times the national average for city governments. It is estimated that about ninety-five percent of that revenue was transfers, including 87.8 percent in direct transfers plus a major share of enterprise fund revenues (estimated at about seven percent of total revenues) paid by governmental agencies.

Clearly, the unprecedented level of local governmental revenues in St. Paul is not sustainable, but the figures do help express the extraordinary fiscal character of its post-NMFS transitional period. By the same token, the figures convey the precarious nature of the recent period of economic prosperity.

Before progressing further, a caveat is in order. The purpose of these comparisons is not to show that the residents of the study communities enjoy a superior standard of public living. Rather, the point is that far more public funds are spent per household to enable residents to attain their present standard of living, regardless of how this standard compares with households elsewhere. If public expenditures in the study communities are relatively high, that may largely be due to rural Alaska's high costs and the historic deficits in community infrastructure.

Table 6-6
State Government Expenditures
Per Capita
State of Alaska and United States
1983

State Expenditures	State of Alaska	United States	Alaska as % of United States
General Expenditures	\$8,662	\$1,988	436%
Capital Outlays	\$2,809	\$ 291	965%
Totals	\$11,471	\$2,279	503%

Source: 1987 Statistical Abstract.

The economic importance of non-monetary transfers can be further illustrated by examining three types of in-kind transfers: education, housing and energy.

Education

Nationwide, local education is the most costly (\$1,346 per household in 1983) single local governmental function and is primarily supported through local taxes. Local education expenditures in the study communities are much higher, but do not involve local taxes.

Table 6-8 summarizes the FY 1986 operating expenditures incurred by local school districts for the three study communities. At Alakanuk, the Lower Yukon School District's FY 1986 operating expenditures per household were \$20,983; this surpassed the total average household cash income of \$18,977 for Alakanuk. The school district expenditure/average household income figures for Gambell and St. Paul are \$14,298/\$21,945 and \$11,454/\$33,250 respectively.

Local schools were funded wholly by state and federal government, with no local contribution. Thus, households may be viewed as having received non-monetary transfers in the form of educational services worth from \$11,454 to \$20,983, depending upon the community. Part of the variation stems from inter-village differences in the average number of schoolchildren per household.

Housing

Table 6-9 shows the low level of average annual household expenditures for housing reported in the study villages, ranging from \$1,455 at St. Paul, down to \$425 at Gambell to \$272 at Alakanuk. The national average expense for urban consumers was \$4,632 per household. Clearly, household expenditures in the study communities do not accurately reflect the value of housing actually consumed. This is mainly because household expenditures do not account for the housing subsidies provided by government.

In each community, a majority of the housing stock was funded and built under public auspices. The housing stock in Alakanuk includes thirty-one units that were built under the ASHA/HUD program in 1969, eight BIA units built in 1977-78, and thirty-five AVCP/HUD units built in 1981-82. In Gambell, thirty HUD/BIA units were built in 1976 and 30 BSRHA/HUD units were built in 1978-79. In St. Paul, twenty AHA/HUD units were built in 1978 and twenty-six units were under development in 1985. An additional eighty-four older units were built by the federal government and later transferred to local residents.

Specific data on the full cost or value of shelter, as opposed to the cost to the occupant household, is not available for the study communities. However, we have attempted to develop some benchmarks that may serve to indicate the comparative extent of in-kind income received by some study community households in the form of shelter subsidies.

At St. Paul, the reported median home value in the 1980 census was \$45,000, equal to \$54,300 in constant 1985 dollars. The annual amortization over twenty years at eight percent would be about \$5,450. The average housing expenditures reported in the protocol data for St. Paul was \$1,684, a figure which presumably includes both upkeep costs and any debt service. These data suggest that St. Paul households pay substantially less than one-third of the cost of the housing value consumed, with the balance being made up by subsidies.

An alternative measure of in-kind housing income was derived from financial data provided by the Bering Straits Regional Housing Authority. For accounting purposes, the 1986 financial statement of the Bering Straits Regional Housing Authority put the book value of 457 older housing units under its management, including project homes at Gambell, at \$68,646 per unit. (For comparison, the median value of occupied housing units for the nation in 1983 was \$59,700). For the same year for this set of homes, the Authority's financial statement showed average household payment receipts of \$1,104 per unit versus combined operating expenses (\$1,535) and debt service (\$4,398) totaling \$5,502, indicating a net per unit subsidy of \$4,398 for units under its management. It may be noted that the household payments do not cover Housing Authority operating expenses. By this account, the entire capital cost of these housing projects is effectively being absorbed by the federal government. Presumably, these financial data are representative of the Housing Authority's projects at Gambell.

Table 6-7

**Sources of City Revenues, per Household
Gambell, Alaska, Fiscal Year 1984
St. Paul, Alaska, Fiscal Year 1986
and National Average, U.S. Cities, 1983**

Source	City of Gambell FY 1984 Per Household		City of St. Paul FY 1986 Per Household		Nat'l Avg U.S. Cities 1983 Per Household	
	Dollars	%	Dollars	%	Dollars	%
Intergovernmental	\$ 3,744	58.4	\$130,363*	87.8	\$ 384	25.8
Own Sources	2,669	41.6	18,159	12.2	1,105	74.2
Property taxes	(--)	(--)	(--)	(--)	(248)	(16.7)
Sales taxes	(223)	(3.5)	(997)	(0.7)	(133)	(9.0)
Other taxes; misc.	(789)	(12.3)	(--)	(--)	(95)	(6.4)
Charges and fees	(1,657)	(25.8)	(17,162)	(11.5)	(695)	(42.2)
Total	\$6,413	100.0%	\$148,522	100.0%	\$1,489	100.0%

Note: * Includes advances from St. Paul Island trust fund.

Sources: 1987 Statistical Abstract; financial statements for City of Gambell and City of St. Paul.

Table 6-8

**School Operating Expenditures
Annualized Cost per Household
Alakanuk, Gambell, and St. Paul, Alaska
Fiscal Year 1986**

Village	School Operating Expenditures Annualized Cost Per Household
Alakanuk	\$20,983
Gambell	\$14,298
St. Paul	\$11,454

Sources: Lower Yukon School District; Bering Straits School District; Pribilof Islands School District.

Lacking comparable data for Alakanuk publicly-built housing units, it is nonetheless plausible that the monetary value of public housing transfers to benefiting households in that community are on a scale comparable to that indicated for Gambell.

The figures cited above compare with an average cost of \$100,000+, exclusive of land, for HUD-funded units built since 1980. The 1988 Rural Housing Needs Assessment Study recently published by the Alaska Department of Community and Regional Affairs similarly put the current cost of a 1200 square-foot new home in a rural Alaska housing project at \$115,640 per unit. (Both figures omit grants for collateral facilities--water & sewer systems, power, roads, etc.--often funded in conjunction with housing development). Again assuming amortization over twenty years at eight percent, the annual amortization cost would amount to about \$10,038 for a \$100,000 dwelling. Extrapolating from the number of publicly-assisted housing units and the average household expenditures for housing reported at Alakanuk and Gambell, it appears that federal subsidies absorb nearly all the capital cost of housing. Families living in recently-built publicly-assisted housing are receiving a non-monetary transfer in the vicinity of \$10,000 annually.

Energy

Energy subsidies are another lesser form of non-monetary transfers. Under its Power Cost Equalization Program, the State of Alaska provided subsidies in FY 1985 to lower the net cost of electric power to residents in Alakanuk by \$121,382 or \$1,156 per household, in Gambell by \$131,845 or \$1,157 per household. Alakanuk residents also received \$33,046 in federal weatherization grants in FY 1986. Gambell residents received \$59,163 in weatherization grants in FY 1985 and \$69,798 in FY 1986. St. Paul residents received grants of \$13,400 in FY 1985 and \$45,975 in FY 1986. Additionally, Alakanuk and St. Paul respectively received State grants of \$70,000 in 1982 and \$100,000 in 1983 to construct bulk fuel storage. Individually modest, the cumulative effect of these and other energy-related grants and subsidies is to lower by half or more the cost to households of electric power at Alakanuk and Gambell and to lower the cost of home heating as well.

There are many other in-kind transfers that contribute to the household economies in the study communities. Again, because of the gap between local revenue contributions to local, state and federal governments on the one hand and public expenditures on behalf of local residents, the greater share of public goods and services received are in-kind transfers. Indeed, the combined value of state government outlays for education and community infrastructure, federal grants for health services, housing and community facilities, and local government expenditure of intergovernmental revenues, exceed average village household cash incomes.

The dominance of governmental decision-making in the delivery of in-kind income further amplifies the importance of the political process in the village economy. In effect, the mix of goods and services consumed is in large part collectively determined in a political marketplace dominated by non-local forces rather than by the exercise of individual consumer choice in the private marketplace. This pattern reverses the economic culture that prevails in the dominant national society. For the long run, this imbalance may imbue the local economic culture with perceptions, attitudes and expectations that inhibit the successful emergence of a market culture and market enterprises. The unwillingness of St. Paul residents to participate in the 1985 subsistence seal harvest without wages is perhaps an example of this tendency. More broadly, unrealistic wage and work expectations created in the public sector undermine the ability of private entrepreneurs to attract local labor at competitive wage scales. Furthermore, the sustenance provided through the public sector maintains current lifestyles, but inhibits the processes of economic adjustment and workforce mobility which operate to discipline and maintain the growth and productivity of private sector enterprises.

Finally, recognition of community economic dependence upon these in-kind non-monetary goods and services provided by the public sector, in addition to public payrolls and cash transfers, underscores the double jeopardy that hangs over the economic future of the study communities in an era of slackening state revenues and program expenditures and federal funding cut-backs for social programs.

6.4 Consumption and Expenditures

6.4.1 Introduction

In this section, we compare patterns of consumption and spending among study villages. Primary data collected in the field was used to construct typical budgets for the average household in each village. Also, the composition of average household spending among the three study villages in 1986 is compared with U.S. urban consumer spending in 1984. The relationship between village household consumption and income is also explored in this section.

6.4.2 Household Consumption Spending

The composition of average household annual consumption expenditures for Alakanuk, Gambell, and St. Paul is shown in Table 6-9. Annual spending for household consumption is divided into eight major categories plus "other." The major spending categories shown in Table 6-9 are, for the most part, non-discretionary. They represent the essential elements for household consumption needs. Also shown in Table 6-9 are consumption expenditures for U.S. urban consumer units consisting of five persons for 1984.

Average 1986 household consumption expenditures for all eight non-discretionary budget items varied substantially from a low of \$8,786 (Alakanuk) to a high of \$19,190 (St. Paul). At \$13,350, household spending in Gambell was at about the mid point between Alakanuk and St. Paul. These compare with a figure of about \$21,400 for the same budget categories among 5-person, U.S. Urban consumer units in 1984. Non-discretionary spending for household consumption as a proportion of total household income varied between 46 percent in Alakanuk to 60 percent in St. Paul. In comparison, U.S. urban consumers spent about 64 percent of their personal income for non-discretionary consumption.

Alakanuk stands out both in terms of comparatively low average household income and in the smaller proportion of household income allocated to non-discretionary spending. Non-discretionary spending and income for Gambell and St. Paul compared more closely with levels observed for U.S. urban consumers. A closer look at the composition of non-discretionary spending may provided insight into these observed differences.

Annual spending for groceries captured the largest share of average household non-discretionary consumption spending in Alakanuk (46.7 percent) and in Gambell (33.1 percent). As a proportion of total non-discretionary spending, expenditures on groceries ranked number two in St. Paul (33.8 percent) after transportation. Except for St. Paul households, the absolute dollar value of grocery expenditures was less than the level observed for U.S. urban consumers (1984). Yet, all three villages allocated a far greater share of their household expenditures to groceries as compared with U.S. consumers. Transportation and utilities ranked next highest depending on the village. Collectively, groceries, utilities, and transportation accounted for between 80 and 85 percent of average yearly household spending for non-discretionary consumption.

Table 6-9

**Annual Consumption Expenditures for
Alakanuk, Gambell, and St. Paul, Alaska (1986)
and for U.S. Urban Consumers (1984)**

	Average Value per Household							
	<u>Alakanuk</u>		<u>Gambell</u>		<u>St. Paul</u>		<u>U.S. Urban</u>	
	Dollars	% ^a	Dollars	% ^a	Dollars	% ^a	Dollars	% ^a
Non-Discretionary Expenditures								
Housing	272	3.1	510	3.8	1,455	7.6	4,632	19.6
Utilities	1,392	15.8	3,166	23.7	6,518	34.0	2,390	10.1
Food	4,101	46.7	4,422	33.3	6,487	33.8	5,125	21.7
Transport	2,022	23.0	3,054	22.9	2,604	13.6	5,940	25.2
Hunt & Fish Gear	335	3.8	648	4.9	77	0.4	NA	NA
Insurance	20	0.2	274	2.1	686	3.6	1,479	6.3
Medical	7	0.1	107	0.8	317	1.7	NA	NA
Clothing & Accessories	730	8.3	1,169	8.8	1,048	5.5	1,810	7.7
Subtotal	\$8,786	100%	\$13,350	100%	\$19,190	100%	\$21,376	100%
Debt Service ^b	1,280		656		3,371		5,648	
Other ^c	1,041		2,871		1,699		NA	
Personal Taxes	1,288		1,832		4,333		2,522	
Total Non-Discretionary Expenditures	\$12,395		\$18,709		\$28,593		\$29,546	
Personal Savings Plus Discretionary Expenditures^d	\$ 6,581		\$ 3,651		\$ 4,657		\$ 3,648	
Total Average Household Income	\$18,976		\$22,360		\$33,250		\$33,194	

- Notes: a. Proportion of non-discretionary consumption spending.
b. Excludes home mortgage payments.
c. Estimates, includes discretionary expenditures for alcohol, household operations, furnishings, retirement, pensions and social security.
d. Estimates, based in part on estimated expenditures for "other" categories. See Note "c" above.

Source: Field Protocol; U.S. Department of Commerce, No. 718, 1987

Direct housing costs (rent and mortgage) were negligible from an absolute and proportional basis. This somewhat startling result reflects the influence of the special housing programs and subsidies available to many Alaska villages. (This topic is addressed in greater detail in the preceding discussion of income in Part 6.3.3 of this Chapter.) Is it dramatically lower than average housing costs at the national level. U.S. urban consumer units spent an average of \$18,087 on housing, utilities, groceries, and transportation in 1984. This represents about eighty-five percent of non-discretionary consumption spending, as shown in Table 6-10. Among study villages in 1986, the absolute level of spending for the same categories was consistently and, in the case of Alakanuk and Gambell, substantially lower the national statistics. Nevertheless, the share of total consumption spending captured by these four categories among study villages was comparable to the proportion observed at the national level. Thus, village household cost savings that arise out of housing subsidies are more than offset by higher budget allocations for utilities, groceries, and transportation.

Annual spending for hunting and fishing gear was negligible in St. Paul and small in Alakanuk and Gambell. Spending in this category would include items such as ammo, bait, tackle, nets, as well as gear repairs and replacement. At first glance, this might suggest that subsistence is relatively inexpensive. However, it is likely that a portion of transportation expenses would also fall into this camp. Further investigation is required in order to ascertain the breakdown of transportation into subsistence and non-subsistence categories.

As a proportion of average household income, consumption spending in Alakanuk was slightly less (forty-six percent) than half, while Gambell and St. Paul were somewhat greater than half (sixty and fifty-eight percent, respectively). As mentioned above, while these figures on non-discretionary village household expenditures -- spending for necessity good -- may appear low, they do not include annual debt service, income taxes, as well as several potentially important consumption categories not targeted during field investigations.

Factors that close the gap between non-discretionary spending and average household income include (1) discretionary spending for items such as tobacco, alcohol, entertainment, and higher education; (2) personal income taxes, (3) annual debt payments, and (4) savings. The protocol used in the field to ascertain information on village household spending patterns targeted only debt payments and household savings; subjects covered in greater detail in the following section entitled, "Capital Formation." It was not possible to collect field data on all aspects of household spending for items such as personal income taxes and for the discretionary categories mentioned in item (1) above. However, these items were estimated from national spending patterns and by making assumptions about important attributes of the typical village taxpayer. Specific assumptions used to estimate discretionary spending and income taxes are reviewed below and included in the notes to Table 6-9.

Income taxes were estimated from the 1986 tax tables, ignoring credits and deductions and assuming married, joint-filing status and exemptions consistent with average household size in each village. Discretionary consumption was estimated based on proportions observed at the national level. Nevertheless, the gap between average household income and the sum of total consumption spending, income taxes, and debt service was substantially larger than estimates of household saving, measured by cash in the bank. This discrepancy was especially noted in Alakanuk and suggests that field observations may understate the true level of household spending. While this discrepancy is not major, further investigation is required to resolve this issue.

Differing levels of income may also explain the difference mix of goods purchased for consumption. Field observations indicate that non-discretionary spending as a proportion of income tended to increase as income increased. The composition of spending also seems to vary with the levels of income, both monetary and subsistence.

For example, Alakanuk households spent about the same proportion of average household income on groceries as that observed in St. Paul. However, in absolute terms, St. Paul households spent roughly \$2,400 more for groceries than did the average Alakanuk household (Table 6-11). Collective expenditures for groceries, utilities, and transportation, as a proportion of average household income, are notably higher in St. Paul (forty-seven percent) as compared with forty percent in Alakanuk. In absolute terms, collective Alakanuk expenditures for these important items (\$7,515) was less than half of that in St. Paul (\$15,609).

Two important factors may explain these notable differences in household spending and consumption. First, at the time of this study, the opportunities for earning income in St. Paul was greater than that in both Alakanuk and Gambell. In spite of St. Paul's smaller average household size, its average household income exceeded that of the other study villages by a margin of between 50 and 75 percent. As higher income earners, St. Paul residents spent more and consumed more store-bought goods, compared with residents of Alakanuk and Gambell.

Second, and, perhaps equally important, participation among St. Paul households in subsistence "earning" was considerably lower than that observed in Alakanuk and Gambell. In contrast with St. Paul's income opportunities, this may reflect less diversity and abundance of subsistence resources and less opportunity for harvesting and consuming subsistence goods. The evidence depicted in Tables 6-9 and 6-10 strongly suggest that subsistence harvests represent a substitute for groceries and other consumption goods that may be purchased with cash. Furthermore, the data indicate that household patterns of earning and consumption reflect the relative opportunities, whether market or non-market, of a particular time and place.

In addition to its direct consumption value, subsistence harvests of fish, game, berries, roots, wood, and other resources enable households to reduce cash outlays for food, fuel, clothing, and other household goods. Subsistence "goods" represent income and reduce the village households' need to rely on cash. Table 6-11 compares the level of total household income, absolute expenditures on groceries, and total pounds of harvested subsistence resources for average households in Alakanuk, Gambell, and St. Paul. Compared with Alakanuk, annual spending for groceries was fifty-eight percent higher in St. Paul.

Similarly, St. Paul average household income was seventy-five percent higher than average household income in Alakanuk. In contrast to this, average household subsistence harvests in Alakanuk were over four times larger than those observed in St. Paul. These observations would suggest that the comparatively lower cash expenditures for groceries in Alakanuk (\$4,101 versus \$6,487 in St. Paul) were offset by considerably higher consumption of subsistence resources. Indeed, all else the same, if we assume that dietary preferences and cost of living were comparable for Alakanuk and St. Paul, then one could postulate that the difference between absolute household grocery expenditures in each village (\$2,386) would be roughly equal in value to the difference in quantity of subsistence harvests (1508 pounds). This would result in an imputed dollar (not market) value of about \$1.58 per pound of harvested subsistence resources.

Table 6-10**Summary of Key Spending Characteristics
Alakanuk, Gambell, and St. Paul, Alaska, 1986
United States Urban Consumers, 1984**

Spending Characteristic	Alakanuk	Gambell	St. Paul	U.S. Urban Consumer 1984
(1) Total Non-discretionary Spending:	\$8,786	\$13,350	\$19,190	\$21,376
(2) Utilities, Food and Transport Spending:	7,515	10,642	15,609	13,455
(3) Ratio (2)/(1):	85.5%	79.7%	81.3%	62.9%
(4) Housing, Utilities, Insurance, and Medical Spending:	\$1,691	\$4,057	\$8,976	\$8,501
(5) Ratio (4)/(1):	19.2%	30.4%	46.8%	63.2%
(6) Ave Household Income:	\$18,976	\$22,360	\$33,250	\$33,194
(7) Ratio (1)/(6):	46.3%	59.7%	57.7%	64.4%

Source: Field Protocol; US Department of Commerce,
No. 718, 1987

Table 6-11

**Average Household Money Income,
Food Expenditures, and Subsistence Food Harvest
Alakanuk, St. Paul, and Gambell, Alaska
1986**

Income/Harvest/Expenditure	<u>Alakanuk</u>	<u>Gambell</u>	<u>St. Paul</u>
Average Household Income	\$18,976	\$22,360	\$33,252
Average Household Food Expenditures	\$4,101	\$4,422	\$6,487
Ratio, Average Household Income to Food Expenditures	21.6%	19.8%	19.5%
Average Household Subsistence Food Harvest (lbs)	1,989 lbs	3,263 lbs*	481 lbs
Average Household Asset Value of Vehicles, Firearms, and Tools	\$10,762	\$9,394	\$8,184

Note: * Usable Harvest

Source: Field Protocol

However, all else is not the same. Political and institutional relationships will influence access to the resource base. Labor market opportunities will affect the level of household income and capitalization. Resource abundance will influence the opportunities and "price" of subsistence in terms of time spent hunting, as well as on gear repair and on food processing. Quite apart from considerations of relative costs, different levels of subsistence participation may also reflect different preferences for subsistence. In sum, a great number of factors influence the relative price of subsistence and thus create conditions that impede efforts to impute a monetary value to subsistence "goods."

For example, monetary value can be imputed based on income differentials. Under this interpretation, one could postulate that, "all else the same," the difference in absolute average household income (between, say, St. Paul and Alakanuk) is roughly equal in value to the difference in quantity of subsistence harvests. The equivalent value of a pound of subsistence resources would be \$9.48, or about six times greater than the imputed value calculated above (calculated by dividing the absolute difference in average household income -- \$14,276 -- by the absolute difference in subsistence resource harvest -- 1,508 pounds). Implicitly, this higher imputed value might reflect the economic security implied through less reliance on cash. It also suggests a higher rate of return on gear and equipment used for subsistence production.

These results suggest that the economic value of subsistence is substantial. Subsistence reduces household cash outlays for food and other household needs and represents an additional, in-kind source of household income.

In sum, despite transportation related cost of living premiums for nearly all goods consumed in village Alaska, non-discretionary household consumption spending was significantly lower than comparable expenditures recorded nation wide. Two factors contributed to this result. They are: (1) government subsidies; especially for housing, and (2) the availability of subsistence goods as substitute for store-bought goods.

Households in Alakanuk and Gambell exhibited higher subsistence production, lower income, and lower cash expenditures for food compared with St. Paul households. This suggests that subsistence goods are available in greater quantity in Alakanuk and Gambell, while opportunities for earning income are greater for residents of St. Paul. Furthermore, as substitutes for store-bought goods, subsistence resources reduce village household reliance on cash.

6.5 Capital Formation

6.5.1 Introduction

In this section we examine asset composition of households in our three study villages. We compare average patterns of asset composition across villages and, when possible, with patterns observed at the national level. We also explore patterns of indebtedness among village households.

6.5.2 Asset Variation and Composition

The composition of household assets in Alakanuk, Gambell, and St. Paul is shown in Table 6-12. Household assets were divided into ten major categories plus "other." The data in this table reveal several interesting patterns.

First, cash in the bank represents between four and nine percent of total assets in all villages. As a proportion of disposable personal income (i.e., income after taxes), cash in the bank varied between three percent (Alakanuk and St. Paul) and 8 percent (Gambell). For the U.S. as a whole, personal saving as a proportion of disposable personal income averaged about 6.5 percent over the period 1978 to 1985 (U.S. Department of Commerce, No. 711, 1987). These findings suggest that while village saving rates vary considerably across villages, they are reasonably close to rates observed at the national level. However, the particular time of year could strongly influence the degree of liquidity (or household saving) reflected by cash in the bank. The field protocol for this study was administered in early- to mid-summer in all three villages; a time when cash resources would not normally be at maximum levels.

Second, vehicles consistently ranked highest in terms of this category's proportion of total household assets. The absolute value of vehicle assets in all three study villages varied from \$6,200 (Gambell) to \$9,300 (Alakanuk) and was greater than that observed for the U.S. as a whole in 1984 (\$4,100). As a proportion of assets, the difference between study villages and national conditions is more striking. Nationwide, vehicle assets represent only about 6 percent of household total net worth. Among study villages, vehicles captured between thirty and fifty-seven percent of total household asset valuation. In Alakanuk, vehicles captured roughly twice the relative share captured by vehicles among Gambell and St. Paul households.

It was not possible to further subdivide vehicle assets into subsistence versus non-subsistence assets. In many cases, vehicles had multiple uses, which could not be separated quantitatively. However, as compared with national statistics, the greater relative value of vehicles in the study villages may reflect the importance of vehicles to subsistence in the contemporary village household. As mentioned above, vehicles represent the single largest asset group in the village household. As such, a substantial portion of household cash resources are tied up in vehicles. The collective value of firearms and tools represents another group of assets that are likely to be important to household subsistence activity. Indeed, the allocation of cash resources to subsistence capital (vehicles, firearms, and tools) suggests a form of direct personal investment for which the rate of return would be expressed in terms of savings in cash outlays for store-bought goods replaced by subsistence harvests.

For example, returning to Table 6-11 in the preceding discussion of consumption expenditures, we note that while exhibiting significantly lower food spending than St. Paul, both Alakanuk and Gambell households harvested more subsistence food. In addition, the average Alakanuk and Gambell household was more heavily capitalized than St. Paul in assets most likely to be used in conjunction with subsistence production (vehicles, firearms, and tools). Ignoring for a moment differences in time allocation and resource availability among study villages, the data support the proposition that capital investment in subsistence may contribute subsistence harvests and lower net cash outlays for food.

Table 6-12

Composition of Village Household Assets
Alakanuk, Gambell, and St. Paul, Alaska
Value of Average Household Assets
1986

Household Assets	<u>Alakanuk</u>		<u>Gambell</u>		<u>St. Paul</u>		<u>National</u>	
	Dollars	%*	Dollars	%*	Dollars	%*	Dollars	%*
Cash in Bank	\$ 586	4%	\$1,682	9.4%	\$ 868	4%		
Stocks and Bonds	672	4	NA	NA	580	2		
Local Investment Holdings	644	4	NA	NA	430	2		
Home	1,639	10	NA	NA	1,446	6	40,597	41.3
Other Real Estate	456	3	NA	NA	4,276	18		
Vehicles	9,336	57	6,225	34.6	7,041	30	4,104	60
Firearms	934	6	1,708	9.5	485	2		
Tools	492	3	1,461	8.1	622	3		
Major Appliances	1,298	8	2,183	12.1	2,975	13		
Furniture and Personal Property	827	5	2,465	13.7	3,478	15		
Other	4		2,256	12.5	1,323	6		
<hr/>								
Total Assets per Household	\$16,259	100%	\$17,980	100%	\$23,524	100%		
Ave Household Income	\$18,976		\$22,360		\$33,250			
Ratio: Assets to Income		86%		80%		71%		

Note: * Proportion of non-discretionary consumption spending.

Source: Field Protocol

6.5.3 Composition of Debt

Table 6-13 shows the composition of annual debt payments for average households in all three study villages in 1986. The figures in Table 6-13 reflect annual payments for servicing debt. They do not measure the total value of outstanding debt associated with each category. Due primarily to the proprietary nature of this information, it was not possible for field researchers to collect information on the value of outstanding debt among village household respondents. Furthermore, respondents may interpret the concept of household debt differently. Nevertheless, field observations suggest that debt is not a dominant element in the village household economy. As a proportion of annual average household income, annual debt service ranged between 5.2 and 14.5 percent in 1986.

The comparatively higher level of debt service exhibited in St. Paul reflects the influence of home mortgage payments, which were comparatively higher for this village. However, as a whole, the modest role of debt reflects in part the absence of a housing market and of conventional home-ownership circumstances. The preceding analysis in section 6.3 revealed the significance of government-sponsored housing in many Alaska villages. Indeed, federal programs provided subsidized housing to many residents in all three study villages over the past two decades. Although the housing programs make provision for owner equity, a conventional housing market does not exist in these study villages. Homes are rarely bought and sold. Those that were not provided through government programs were probably built by resident family members. The relatively high home mortgage payments for Gambell households suggests a lower incidence of housing program involvement compared with Alakanuk and St. Paul.

The largest category of debt among Alakanuk households was vehicle loans, which accounted for one third of total annual household debt service. Among St. Paul households vehicle loans accounted for 20 percent of household average annual debt service. In contrast, vehicle payments were negligible among Gambell households.

Installment accounts also represented a major source of debt across all study villages. As a proportion of annual debt service, installment accounts vary between 16 and 24 percent. This category of debt refers mainly to credit at the village store. To a lesser extent, it also includes alimony payments, medical payments, charge cards, and the like. It was not possible to provide a more detailed breakdown of this category.

Relatively modest levels of household debt in part reflect the limited availability of credit in the village economy. Debt expands the consumption horizon of households beyond the levels attainable under a strict policy of cash payment. Field observations suggest that consumer credit does not occur on a large scale among households in the three study villages. For the most part, villagers pay cash rather than finance purchases of consumer goods, including durable items. To the extent that credit is used, the local village store is the primary source of credit for most households.

Although debt does not represent a major element in the village household economy, it was nevertheless present in varying levels across the study villages. Annual debt service for each of the categories in Table 6-13 for St. Paul households was three to four times higher than that observed in Alakanuk and Gambell. The higher absolute level of debt in St. Paul is supported by higher income and consumption, and is consistent with a notably larger asset valuation for the average St. Paul household. These findings suggest that St. Paul households may be more strongly tied to the consumer economy than residents in either Alakanuk or Gambell.

Table 6-13

**Composition of Village Household Debts
Alakanuk, Gambell, and St. Paul, Alaska
1986**

	Alakanuk		Gambell		St. Paul	
	Dollars	%	Dollars	%	Dollars	%
Bank Loans	\$ 77	5.0%	\$ 8	1.0%	\$ 237	4.9%
Home Mortgage	\$ 272	17.5%	\$ 510	43.7%	\$1,454	30.1%
Vehicle Loans	\$ 509	32.8%	\$ 38	3.3%	\$ 741	15.4%
Business Loans	\$ 0	--	\$ 375	32.2%	\$ 510	10.6%
Installment Accounts*	\$ 370	23.8%	\$ 185	15.9%	\$ 838	17.4%
Other	<u>\$ 324</u>	<u>20.9%</u>	<u>\$ 50</u>	<u>4.3%</u>	<u>\$1,045</u>	<u>21.7%</u>
Average Household Debt Payment	\$1,552	100%	\$1,166	100%	\$4,825	100%
Average Household Income	\$18,976		\$22,360		\$33,250	
Household Debt Service as a Proportion of Household Income		8.2%		5.2%		14.5%

Notes: * Village stove, alimony, medical, charge card, other.

Source: Field Protocol

In sum, field observations taken in 1987 indicate that, as a whole, village households were under-capitalized compared with average household net worth (asset value less outstanding debt) at the national level. Government participation in village housing represents a chief factor in explaining the relatively modest level of net worth in the village household. St. Paul households exhibited higher absolute levels of asset valuation, debt, income, and consumption spending; all of which suggest a closer alliance with the market economy compared with Alakanuk and Gambell. From the standpoint of asset and debt composition, field observations suggest further that Alakanuk and Gambell households are geared more strongly to subsistence activity than St. Paul households.

The preceding analysis consumption spending in section 6.4 suggests that, on the one hand, subsistence reduces cash outlays for food, fuel, and other substitute goods and, therefore, helps lower household consumption spending. On the other hand, subsistence increases the village household's capital requirements. Thus, in deciding whether or not to engage in subsistence, villagers must choose between higher up-front capital investment versus higher ongoing consumption expenditures. Field observations indicate that in the case of Alakanuk and Gambell, additional capital investment for subsistence gear was more than offset by reduced annual cash outlays for store-bought goods.

6.6 Time and Productivity

6.6.1 Introduction

This section addresses the question of how villagers use their time. The focus of this analysis is on the allocation of productive time in the pursuit of cash income and subsistence harvest. We are interested in how village households allocate time among these competing and complimentary economic objectives. In this study, "time" is interpreted as a common denominator between household market (income) and subsistence activity.

The results for questions 1 through 13 of the field protocol are summarized and compared across study villages in this section. Table 6-14 summarizes at a glance the responses to questions 1 through 6 and 10 of the field protocol (see Appendix B). Except where specifically noted, the percentages discussed in this section refer to "households as a proportion of those that engaged in subsistence." Note also, that the term "household" refers generically to one or more members of a given household.

6.6.2 General Subsistence Patterns

Field investigations indicate that subsistence is an important element in the village economy. All forty Gambell households interviewed indicated that they engaged in subsistence in 1986. In Alakanuk, ninety-three percent of the forty-four households interviewed engaged in subsistence. At sixty-four percent, significantly fewer St. Paul households conducted some form of subsistence in 1986.

Table 6-14

**General Subsistence Characteristics
Alakanuk, Gambell, and St. Paul, Alaska
1986**

	Proportion of Household Respondents*		
	Alakanuk	Gambell	St. Paul
Q1: Engaged in Subsistence in 1986	93%	100%	64%
Q2: Subsistence with Other Household Members	90%	95%	78%
Q3: Subsistence with Other Village Households	32%	20%	9%
Q4a: Repaired Own Gear	66%	85%	81%
Q4b: Time Spent Repairing Gear Compared with Time Spent Hunting, Fishing, Gathering			
Less than Half	63%	74%	67%
Half or Less	73%	90%	80%
Q5: Use Another Person's Gear			
Never	71%	63%	55%
Occasional	17%	33%	17%
Frequent	10%	5%	20%
Q6: Absolute Number of Subsistence Trips Per Season			
Winter/Spring	30	NA	6
Summer/Fall	27	NA	4
Q10: More or Less time for Subsistence in 1986 Compared with T1			
More	27%	29%	31%
Less	78%	40%	41%

Note: * Percentages for Q2-Q6 plus Q10 refer to proportion of respondents who answered "Yes" to Q1

Source: Field Protocol

Most households that conducted subsistence participated with members of other households. Thus, ninety percent of Alakanuk respondents that conducted subsistence, participated with other households. For Gambell this share was ninety-five percent. St. Paul registered lower at seventy-eight percent. A far smaller share of households conducted subsistence with household members from other villages; between nine and thirty-two percent.

Most households repaired and maintained their own gear and equipment used for subsistence. Here percentages varied from a low of sixty-six percent (Alakanuk), to a high of eighty-five percent (Gambell). St. Paul respondents also ranked high at 81 percent. That is, eighty-one percent of St. Paul households that conducted subsistence, repaired their own gear and equipment. Alakanuk's relatively low rate of response to this question was something of a surprise. Fifteen of Alakanuk's forty-one subsistence households depended on help from outside of their immediate household for equipment repairs and maintenance. While not all of these fifteen households responded to follow-up questions, those that did indicated that only about one-third of households depending on outside help made cash payments for repairs done by others. The bulk of these fifteen households received equipment servicing under no terms or conditions. These results suggest that, while most households do their own repairs, cash does not appear to be a widely used medium of compensation for equipment repair and maintenance.

Most households employed far less time working on hunting and fishing gear compared with actual time spent hunting and fishing. Of the households that engaged in subsistence, between seventy-three percent (Alakanuk) and ninety percent (Gambell) allocated half or less time working on gear than they did hunting and fishing. On average, between two-thirds and three-fourths of subsistence households allocated less than half of actual time spent out hunting and fishing to time spent on gear and equipment repair and maintenance.

Between fifty-five percent (St. Paul) and seventy-one percent (Alakanuk) of subsistence households "never" used another person's vehicles, weapons, or equipment in the pursuit of subsistence goals. Between seventeen and thirty-three percent of subsistence households "occasionally" used someone else's gear. At twenty percent, St. Paul households recorded the highest portion of subsistence households that "frequently" used another's' gear.

The number of times members of a village household conducted some form of subsistence varied significantly. In Alakanuk, households hunted, fished, or gathered about thirty times (median) in the winter/spring of 1986 and about twenty-seven times in the summer fall. In St. Paul this median count fell to six and four for respective seasons. It was not possible to procure results from the Gambell interviews. The results for Alakanuk suggest that on average, households engage in subsistence about five times per month; perhaps once or twice a week.

Field data suggests that overall, 1986 was a less active subsistence year than that observed one or two years earlier for all three study villages. In Alakanuk, twenty-six percent of subsistence households indicated that they hunted, fished, or gathered more often in 1986, while seventy-four percent indicated a reverse pattern. Increases and decreases in subsistence activity appears to be somewhat evenly distributed across the three broad facets: hunting, fishing, and gathering. In Gambell, twenty-nine percent of the households interviewed indicated a increase in

time allocated to subsistence between 1985 and 1986, while forty percent indicated that they decreased the amount of time allocated to subsistence. A similar pattern was observed for St. Paul. In general, it appears that villagers hunted, fished, and gathered less in 1986 than they did in recent years.

In Alakanuk, the pattern of successful hunts for the summer/fall season was similar to their pattern for the winter/spring season (Table 6-14). The summer/fall pattern for St. Paul was somewhat different than that exhibited in winter/spring. However, the high number of "no responses" detracts from the reliability of observations made on this variable.

6.6.3 Subsistence Fishing

About four-fifths of both subsistence and non-subsistence households in Alakanuk and Gambell fished in 1986 (Table 6-15). Of those in Alakanuk, sixty-three percent fished both subsistence and commercial, while twenty-nine percent fished subsistence only. A considerably smaller nine percent of Alakanuk households that fished, fished only for commercial catch. The pattern in Gambell is geared even more strongly toward subsistence. There, ninety-seven percent of households that fished, did so strictly for subsistence purposes. Only three percent of Gambell households fished commercially and none of the Gambell households interviewed fished both subsistence and commercial. In St. Paul, only forty-two percent of all households interviewed (including households that did not conduct subsistence) fished in 1986. Of these, fifty-six percent fished subsistence only, while forty-two percent fished both subsistence and commercial.

One aspect of fishing activity appears somewhat uniform across study villages: a small proportion of households that fished, fished only for commercial rewards (between two and nine percent). The proportion of households that fished only for subsistence varied strongly from a low of twenty-nine percent (Alakanuk) to a high of ninety-seven percent (Gambell). On the other hand, Alakanuk households ranked highest for those that fished both subsistence and commercial at sixty-three percent. In St. Paul this share fell to forty-two percent. Among other things, these results probably reflect the local availability of processing facilities (i.e., markets). There are not any commercial fisheries in the immediate vicinity of St. Lawrence Island. Thus, the small number of Gambell residents that fished commercially in 1986, probably did so at another location, perhaps in Norton Sound. Alakanuk, situated in the Lower Yukon Delta, has the only developed commercial salmon fishery of all three study villages, even though it is modest by most other Alaska standards. There, the highest proportion of households that fished, did so either on a strict commercial basis or as a mix. St. Paul's halibut fishery is still in an early stage of development.

Questions 7b and 8 of the field protocol reveal an interesting pattern (Table 6-15). Among Alakanuk households that fished both subsistence and commercial, about sixty-three percent of collective time allocated to both types of fishing was geared to commercial purposes. The remaining thirty-seven percent of total fishing time was allocated to subsistence. The proportion of total Alakanuk fishing catch allocated to each purpose was reasonably consistent with the time allocations (seventy-six and twenty-four percent, respectively). However, a reverse pattern is exhibited in St. Paul. Where as only thirty percent of collective fishing time was allocated for

Table 6-15

**Fishing Characteristics Among
Village Households
Alakanuk, Gambell, and St. Paul, Alaska
1986**

	Proportion of Household Respondents*		
	Alakanuk	Gambell	St. Paul
Q7a: Fished in 1986:	77%	82%	42%
If 'yes', indicate type:			
Subsistence Only	29%	97%	56%
Commercial Only	9%	3%	2%
Both Sub. and Comm.	63%	0%	42%
Q7b: If 'both', distribution of fishing <u>time</u> to:			
Subsistence	37%	NA	66%
Commercial	63%	NA	30%
Q8: If 'both' in Q7a the distribution of fishing <u>harvest</u> to:			
Subsistence	24%	NA	30%
Commercial	76%	NA	70%

* Note: Including households that did not conduct subsistence.

Source: Field Protocol

Table 6-16

**Composition of Total Village Subsistence Harvest
Alakanuk, Gambell, and St. Paul, Alaska
1986**

Average Subsistence Harvests for Households				
Resource	Alakanuk Harvest	Gambell Harvest	St. Paul Harvest	St. Paul Given Away
Fish and Game	1,799 lbs	32,632 lbs	454 lbs	(136 lbs)
Birds and Eggs	75 lbs	309 lbs	25 lbs	(12 lbs)
Plants and Berries	115 lbs	87 lbs	2 lbs	(0 lbs)
Total Food Harvest	1,989 lbs	33,028 lbs	481 lbs	(148 lbs)
Proportion Given Away	NA	NA	31%	NA
Wood	40 logs	194 logs	11 logs	NA

Source: Field Protocol

commercial purposes, a much larger seventy percent of total catch was appropriated for commercial harvests. Field results in Table 6-16 indicate that Alakanuk households enjoy roughly four times the absolute quantity of fish and game harvested for subsistence (1,799 lbs.) compared with St. Paul households (454 lbs.). The substantial level of average household subsistence harvests in Gambell includes up to ninety percent unused fish and game.

6.6.4 Subsistence Hunting

The pattern of successful hunts out of the total varied somewhat across study villages, as shown in Table 6-17. In Alakanuk, sixty-three percent of subsistence households indicated that less than half of their winter/spring hunts were successful. This compares with fifty-three percent of household respondents from St. Paul. Data on this subject was not available for Gambell. A notably smaller proportion of households indicated that "most" of their winter/spring hunts were successful (twenty-four percent for Alakanuk and twenty-one percent for St. Paul). In Alakanuk, there were not any respondents that indicated "all" their winter/spring hunts were successful. However, eight percent of St. Paul respondents had very successful hunting seasons in 1986.

Question 11 of the field protocol administered in 1987 examined reasons for increases and decreases in successful subsistence forays in recent years (see Table 6-18). In Alakanuk, twenty-four percent of respondent households experienced increased subsistence success between 1982 and 1986. Of these, ten percent indicated more fish and game and fifty percent indicated increased mobility as chief factors that explain the increase in success. In contrast to this, eighty-five percent of Alakanuk respondents indicated a decrease in hunting success between 1982 and 1986. Half of these respondents indicated less fish and game as the reason for decreased success.

In Gambell, forty-five percent of the households interview recorded an increase in subsistence success between 1985 and 1986, while thirty-eight percent indicated a decrease over this period. In both cases, changes in the availability of fish and game was the stated reason for increased or decreased success.

Among St. Paul households, twenty-five percent of those engaged in subsistence indicated an increase in subsistence success between 1982 and 1986. More fish and game (nineteen percent), increase mobility (twenty-five percent) and "other" (forty-four percent) represent stated reasons for increased success. A somewhat larger forty-five percent of subsistence households experienced a decrease in subsistence success. Of these, seventeen percent (five households) indicated less fish game, seventeen percent indicated that the decrease was do to conflict with their job, while fifty-two percent indicated "other" as the primary reason for the decrease in success.

These findings tend to confirm a pattern of decreasing success in subsistence harvesting over recent time periods. Gambell was the only village to record a higher incidence of households that experienced increased success over those that did not. However this margin was not large. Changes in the availability of subsistence resources was a key reason for both increases and decreases in success. This is particularly true for Alakanuk, which experienced the sharpest decline in subsistence success between 1982 and 1986.

Table 6-17
Hunting Characteristics Among
Village Households
Alakanuk, Gambell, and St. Paul, Alaska
1986

Proportion of Household Respondents			
Question	Alakanuk	Gambell	St. Paul
Q9a: If yes on Q1 (Table 6-14) then proportion of successful hunts in 1986 Winter/Spring			
Less Than Half:	63%	NA	53%
Most:	24%	NA	21%
All:	13%	NA	8%
Q9b: Ibid for Summer/Fall			
Less Than Half:	56%	NA	5%
Most:	24%	NA	13%
All:	0%	NA	0%
Q12a: Who butchered, cleaned game			
Self (Hunter):	12%	88%	84%
Other Household Members:	78%	0%	3%
Family from other Household:	7%	0%	0%
Q12b: Time spent on food preparation Compared with time spent hunting			
Less than half:	45%	81%	72%
Equal:	23%	14%	11%
Twice or More:	28%	5%	0%

Source: Field Protocol

Table 6-18

**Reasons for Changes in Hunting Success
Alakanuk, Gambell, and St. Paul, Alaska
Between 1985 and 1986**

	Village Households					
	Alakanuk		Gambell		St. Paul	
	Number	%	Number	%	Number	%
Hunting Success Increased Between 1985 and 1986:	10	24%	18	45%	16	25%
Because - More Game:	1	2%	18	45%	3	5%
Hunter Mobility Improved:	5	12%	0	--	4	6%
Hunter Skills Improved:	0	--	0	--	1	2%
Less Regulation:	1	2%	0	--	1	2%
Other:	3	7%	0	--	7	11%
Hunting Success Decreased Between 1985 and 1986:	35	85%	15	38%	29	45%
Because - Less Game:	17	42%	15	38%	5	8%
Past Prime Age:	6	15%	0	--	2	3%
Too Much Hunting Pressure:	3	7%	0	--	0	--
Job Conflicts With Hunting:	2	5%	0	--	5	8%
Higher Cost of Hunting:	0	--	0	--	2	3%
Other:	7	17%	0	--	15	23%
Total Number of Households That Engaged In Subsistence in 1986	41	100%	40	100%	64	100%
Total Number of Households That Indicated 'No Response'	0	--	7	18%	19	30%

Source: Field Protocol

St. Paul was the only village for which a significant number (a modest seventeen percent -- five households) of respondents indicated that conflicts between subsistence activities and jobs accounted for a decline in subsistence success.

Responses to questions about who butchered game and how much time was allocated to food processing (butchering, cleaning, and preparing fish and game and other subsistence resources) generated conflicting results (see Table 6-17). In Alakanuk, "other household members" were responsible for processing food for seventy-eight percent of subsistence households. Since these interviews were presumably conducted with household heads, this would indicate that household members other than the hunter himself were chiefly responsible for food processing. Only twelve percent of Alakanuk households indicated "the hunter" as the person responsible for processing fish and game. Both Gambell and St. Paul exhibited an opposite pattern. In these villages the hunter was chiefly responsible for butchering, cleaning, and otherwise preparing fish and game.

The amount of time required for processing fish and game, as compared with time spent hunting and fishing also varied across study villages. In Alakanuk, forty-five percent of the respondents indicated half as much time or less, twenty-three percent indicated equal amount of time, and twenty-eight percent indicated twice as much time or more. Thus, summed across all Alakanuk households, collective time allocated to food processing was perhaps about equal to collective time allocated to hunting and fishing in the field. A different pattern emerges for Gambell and St. Paul, where between seventy-two and eighty-one percent of subsistence households allocated half or less time to food processing as compared with actual time spent hunting and fishing.

6.6.5 Jobs and Subsistence

Field investigations also compared the amount of time village households allocated to subsistence with time allocated to jobs. These results are summarized in Table 6-19. Among Alakanuk households, time allocated to all facets of subsistence was half or less than time spent at the job for forty-four percent of respondent households. In comparison, twenty-seven percent of Alakanuk households allocated at least twice as much time to subsistence as to their jobs, while twenty-two percent allocated about the same amount of time to each. A similar pattern was exhibited in Gambell, as shown in Table 6-19. Time allocation among St. Paul households was skewed more strongly in favor of jobs. There, seventy-three percent of household respondents allocated half (six percent) or less than half (sixty-seven percent) time to subsistence compared with wage and salary employment. A much smaller share of households -- five percent -- allocated at least twice as much time to subsistence as compared with time spent at the job.

Collectively across all three villages, these data suggest that a greater amount of time is allocated to the job (wage and salary employment) than to subsistence. However, in Gambell, and to a lesser degree Alakanuk, the proportion of households that indicated "equal or more" time allocated to subsistence was greater than those indicating "half or less." Field data also suggests a somewhat even distribution of households across the possible spectrum of response categories for Gambell and Alakanuk.

Table 6-19

**Time Spent on Subsistence
Compared With Time Spent at Job
Alakanuk, Gambell, and St. Paul, Alaska
1986**

	Proportion of Household Respondents*		
	Alakanuk	Gambell	St. Paul
Q13: Time spent on subsistence compared with time spent at job in 1986			
Less than half:	34%	25%	67%
Half:	5%	0%	6%
Equal amount:	12%	12.5%	0%
Twice:	15%	12.5%	3%
More than twice:	24%	15%	2%
No response or missing:	10%	35%	22%
Sample Size:	41	40	64

Note: * Percentages for Q13 refer to proportion of the respondents who answered "Yes" to Q1, Table 6-14.

Source: Field Protocol

In a later section of this chapter, we examine in greater detail the economic characteristics of village households falling into different categories of time allocation discussed above.

The results in Table 6-20 suggest that composition of household employment was fairly consistent across study villages. Between thirteen and twenty-three percent of household respondents did not have any members employment in 1986. The largest group of household respondents, just over forty percent for all three villages, had one household member employed. Between twenty-two and thirty-four percent had two household members employed. Thus, sixty-five to seventy-five percent of sample households in the three study villages had one or two members employed. For all village samples, a much smaller share of households had more than two members employed: four percent in Alakanuk, twelve percent in Gambell, and seventeen percent in St. Paul.

Part time employment appears to have been important in all villages, especially Alakanuk and Gambell. At least one third of sample households in these two villages had one member that was employed on a part time basis in 1986. In St. Paul only twenty-three percent of household respondents fell into this category. Furthermore, the data in Table 6-20 suggest that the incidence of part time employment in Alakanuk and Gambell is as strong as that of full time employment. In St. Paul, however, part time employment plays a notably smaller role.

Field observations on the composition of employment suggest that a substantial number of households did not have any members that were gainfully employed in 1986: over twenty percent for Alakanuk and Gambell, thirteen percent for St. Paul. The reasons given by household respondents as to why some or all household members did not work varied across villages, are shown in Table 6-21. A significant number of households from all three study villages chose not to respond to this kind of question when asked by field interviewers.

Of the five choices made available to Alakanuk respondents, slightly over half selected "other." The next highest ranking selection was "could not find job." Only one respondent chose "did not want job."

In Gambell, twenty-nine percent of the respondents chose "could not find job." As compared with Alakanuk, a considerably higher share of respondents, ten percent, indicated they "did not want a job." A small percentage indicated that they "would not work away from the village." As with Alakanuk, about half of the household respondents chose not to respond to this question.

Unfortunately results for this question were not available for St. Paul residents, due to low levels of response which would call into question any conclusions drawn from the those data. Nevertheless, several important conclusions emerge. First, a higher number of Gambell residents chose to be unemployed because they did not want a job. Thus, labor force participation may be influenced by factors other than age, health and availability of jobs. Second, taken at face value, these results indicate that conflicts between jobs and subsistence activities would not appear to be an important factor causing un- and under-employment in village Alaska. None of the respondents in Alakanuk and Gambell selected this response category. We explored this issue further in a related question that asked the respondent: Did your job interfere with hunting, fishing, or trapping in 1986? The results to this question are summarized in Table 6-22 for Alakanuk and Gambell. (Again St. Paul results were not available.)

Table 6-20

**Full and Part Time Employment Status
by Household
Alakanuk, Gambell, and St. Paul, Alaska
1986**

Proportion of Household Respondents			
	<u>Alakanuk</u>	<u>Gambell</u>	<u>St. Paul</u>
TOTAL Number of Household Members Employed:			
0	21%	23%	13%
1	41%	42%	41%
2	34%	23%	29%
3	4%	7%	12%
4	0%	5%	2%
5	0%	0%	3%
Average per Household	1.2	1.3	1.6
Number of Household Members Employed FULL TIME:			
0	52%	50%	19%
1	39%	35%	54%
2	9%	10%	21%
3	0%	2.5%	6%
4	0%	2.5%	0%
5	0%	0%	0%
Average per Household	0.6	0.7	1.1
Number of Household Members Employed PART TIME:			
0	48%	55%	68%
1	39%	33%	23%
2	13%	12%	6%
3	0%	0%	3%
4	0%	0%	0%
5	0%	0%	0%
Average per Household	0.7	0.6	0.4

Source: Field Protocol

Table 6-21

**Reasons for Not Working
Alakanuk and Gambell, Alaska
1986**

Number and Proportion of Household Respondents

	<u>Alakanuk</u>		<u>Gambell</u>	
	Number	Percent	Number	Percent
Did not want job	1	2%	4	10%
Could not find job	6	4%	12	29%
Would not work away from village	0	0%	1	2%
Previous job conflicted with subsistence	0	0%	0	0%
Other reasons	15	34%	2	5%
Missing or no response	22	60%	22	54%
	—	—	—	—
Totals*	44	100%	41	100%

Note: * The relatively low response levels indicated should be taken into account when interpreting these data.

Source: Field Protocol

Respondents were asked to evaluate this question for up to six household members. The results in Table 6-22 show that for Person #1 (the respondent and household head), their jobs "never" interfere with subsistence about one-third of the time. However, in both villages "frequent" interference occurred about 15 percent of the time. The degree of relative interference lessened for subsequent persons.

6.6.6 Time Allocation

In this section, characteristics of household income, spending, and consumption are reviewed in connection with a reclassification of households according to time allocated to subsistence versus employment. Tables 6-23 through 6-25 show the household average and per capita levels of several key economic indicators for all households and for households classified by their subsistence status: those households in which the household head spent less time hunting and fishing than at their jobs and those households in which the head allocated greater or equal time to hunting and fishing compared to their job.

The first column of each table summarizes economic characteristics for all households. The second column summarizes data for households that may be characterized as less subsistence oriented, at least in relation to the amount of time allocated to wage and salary or self employment. In contrast, summary data in the third column (labeled greater or equal) corresponds to households that were geared more strongly toward subsistence than to their jobs.

In the case of Alakanuk, the count of households in each subgroup ("less" and "greater or equal") is relatively even and sums to the sample of forty-one households. Sample characteristics are somewhat different for Gambell and St. Paul. For these villages, the count of households in each subgroup is less evenly balanced and does not sum to the total sample size for all households. The especially small number of St. Paul households classified "greater or equal" limits the reliability of corresponding summary characteristics.

Personal Income

Data on personal income characteristics for each village indicates that average and per capita household income was higher for households geared more strongly to subsistence in Alakanuk and St. Paul. Gambell households show a reverse pattern; households geared more strongly to the labor market exhibited higher levels of income.

Households geared more strongly to the labor market in Alakanuk and St. Paul tended also to capture a larger proportion of total income from unearned sources, primarily direct government transfers. Again, a reverse of this pattern occurred in Gambell, where, on average, households geared to labor market opportunities earned eighty-eight percent of their personal income. This relatively high ratio of earned to total income was also observed for St. Paul households geared more strongly to subsistence.

In sum, Alakanuk and St. Paul households that allocate more time to subsistence also earn higher incomes and rely less on government transfers. Gambell households that allocate more time to subsistence earn less income and rely more on government transfers. Closer examination of other household economic characteristics may help resolve these dissimilar results.

Table 6-22
Incidence of Conflict Between Job and Subsistence
by Village
Alakanuk and Gambell, Alaska
1986

	Number or Proportion of Household Respondents							
	Alakanuk				Gambell			
	Household Member*				Household Member*			
	#1	#2	#3	#4	#1	#2	#3	#4
Did your job interfere with hunting, fishing or trapping?								
Never	34%	24%	22%	12%	27%	22%	10%	10%
Occasionally	15%	12%	5%	0%	18%	5%	3%	0%
Frequently	15%	2%	0%	0%	15%	3%	5%	0%
Missing or no response	37%	61%	73%	88%	40%	70%	82%	90%

Note: * Table shows results for respondent (Person No. 1) and for three subsequent household members.

Source: Field Protocol.

Table 6-23

**Economic Characteristics for Households
Classified by
Time Allocated to Subsistence in Relation to Employment
Alakanuk, Alaska
1986**

Time Allocated to Subsistence in Relation to Employment

Economic Characteristic	<u>All HHs Interviewed</u>		<u>HHs in Which Head Allocated LESS Time to Hunt and Fish Than to Job</u>		<u>HHs in Which Head Allocated GREATER OR EQUAL Time to Hunt and Fish Than to Job</u>	
	HH	Per Capita	HH	Per Capita	HH	Per Capita
Personal Income	\$18,976	\$ 3,649	\$16,126	\$ 2,780	\$19,386	\$ 3,877
Earned	\$12,165	\$ 2,339	\$ 9,902	\$ 1,707	\$12,499	\$ 2,500
Unearned	\$ 6,811	\$ 1,310	\$ 6,224	\$ 1,073	\$ 6,887	\$ 1,377
Unern./P. Inc:		36%		39%		36%
Non-Discretionary Consumption	\$ 8,786	\$ 1,690	\$11,217	\$ 1,934	\$ 7,158	\$ 1,432
Consump/Income:		46%		70%		37%
Debt Service	\$ 1,203	\$ 197	\$ 836	\$ 144	\$ 1,902	\$ 380
Debt/Income:		5%		5%		10%
Household Assets	\$13,939	\$ 2,681	\$10,978	\$ 1,893	\$19,095	\$ 3,819
Subsistence Food Harvest	1,989 lbs	383 lbs	1,533 lbs	264 lbs	2,706 lbs	541 lbs
Hours per Week	38 hrs	7 hrs	46 hrs	8 hrs	49 hrs	10 hrs
Average Household Size (Persons)		5.2		5.8		5.0
Sample Size (Households)	41		20		21	

Table 6-24

**Economic Characteristics for Households
Classified by
Time Allocated to Subsistence in Relation to Employment
Gambell, Alaska
1986**

Time Allocated to Subsistence in Relation to Employment

Economic Characteristic	<u>All HHs Interviewed</u>		<u>HHs in Which Head Allocated LESS Time to Hunt and Fish Than to Job</u>		<u>HHs in Which Head Allocated GREATER OR EQUAL Time to Hunt and Fish Than to Job</u>	
	HH	Per Capita	HH	Per Capita	HH	Per Capita
Personal Income	\$22,360	\$ 4,300	\$33,530	\$ 4,931	\$19,306	\$ 5,081
Earned	\$16,918	\$ 3,250	\$29,600	\$ 4,353	\$14,300	\$ 3,763
Unearned	\$ 5,418	\$ 3,930	\$ 5,006	\$ 1,317	\$ 4,700	\$ 5,680
Unern./P. Inc:		24%		12%		26%
Non-Discretionary Consumption	\$13,574	\$ 2,610	\$17,127	\$ 2,519	\$11,042	\$ 2,906
Consp/Income:		61%		51%		57%
Debt Service	\$ 1,166	\$ 224	\$ 572	\$ 84	\$ 1,786	\$ 470
Debt/Income:		5%		2%		9%
Household Assets	\$17,980	\$ 3,458	\$19,649	\$ 2,890	\$13,761	\$ 3,621
Subsistence Food Harvest	33,028 lbs	6,376 lbs	NA	NA	NA	NA
Hours per Week	NA	NA	NA	NA	NA	NA
Average Household Size (Persons)		5.2		6.8		3.8
Sample Size (Households)	40		10		16	

Table 6-25

**Economic Characteristics for Households
Classified by
Time Allocated to Subsistence in Relation to Employment
St. Paul, Alaska
1986**

Time Allocated to Subsistence in Relation to Employment

Economic Characteristic	<u>All HHs Interviewed</u>		<u>HHs in Which Head Allocated LESS Time to Hunt and Fish Than to Job</u>		<u>HHs in Which Head Allocated GREATER OR EQUAL Time to Hunt and Fish Than to Job</u>	
	HH	Per Capita	HH	Per Capita	HH	Per Capita
Personal Income	\$33,250	\$ 8,986	\$33,940	\$ 8,485	\$63,995	\$ 9,551
Earned	\$24,848	\$ 6,716	\$26,712	\$ 6,678	\$56,050	\$ 8,366
Unearned	\$ 8,402	\$ 2,271	\$ 7,228	\$ 1,807	\$ 7,945	\$ 1,186
Unern./P. Inc.:		25%		21%		12%
Non-Discretionary Consumption	\$19,190	\$ 5,186	\$20,603	\$ 5,151	\$40,177	\$5,997
Consump/Income:		58%		61%		63%
Debt Service:	\$ 3,637	\$ 983	\$ 5,574	\$ 1,394	\$12,800	\$ 1,910
Debt/Income:		11%		16%		20%
Household Assets	\$21,498	\$ 5,810	\$21,150	\$ 5,288	\$49,250	\$ 7,351
Subsistence Food Harvest	481 lbs	130 lbs	571 lbs	143 lbs	3,677 lbs	549 lbs
Hours Per Week	39 hrs	11 hrs	42 hrs	11 hrs	82 hrs	12 hrs
Average Household Size (Persons)		3.7		4.0		6.7
Sample Size (Households)	100		59		3	

Non-Discretionary Consumption

Field observations summarized in Tables 6-23 through 6-25 indicate that total and per capita spending for non-discretionary consumption was lowest in Alakanuk and highest among St. Paul households. Consumption expenditures tended to mirror income levels; village households and household subgroups with higher incomes tended to consume greater amounts of market goods. Per capita consumption spending for all households in St. Paul were two times higher than Gambell households and three-times higher than Alakanuk households.

Non-discretionary consumption spending, as a proportion of personal income was highest (seventy percent) among Alakanuk households geared less toward subsistence. This relatively high consumption to income ratio is contrasted strongly among Alakanuk households geared more to subsistence. This latter subgroup spent about thirty-seven percent of household personal income for non-discretionary consumption. Conventional notions of consumer behavior would suggest that patterns observed for Alakanuk households with varying amounts of subsistence orientation are normal. That is, households geared more strongly to labor market opportunities tend to spend more per capita (and as a proportion of household personal income) on consumption than households geared more strongly to subsistence. However, recall from the preceding discussion of income characteristics that Alakanuk households geared more strongly to subsistence, also exhibited higher levels of personal income, compared with households geared to labor market opportunities.

Except for the dramatically higher absolute, per capita consumption spending observed among St. Paul households, the ratio of non-discretionary consumption spending with income and corresponding per capita levels were relatively stable across household subgroups in both St. Paul and Gambell.

Annual Debt Service

Annual debt service, as a proportion of household annual personal income varied from two to sixteen percent across household subgroups for all three study villages. Per capita debt service was consistently lower among households geared less to subsistence compared with those tied more strongly to subsistence for all villages. However, all households respondents in St. Paul exhibited a considerably lower per capita level of debt service (\$983) compared with St. Paul households geared less to subsistence (\$1,394).

At two percent of personal income and \$84 per person per year, annual debt service was lowest for Gambell households that allocated less time to subsistence compared with their jobs. Per capita debt service was highest among St. Paul households geared more strongly to subsistence.

One could infer from these results that higher levels of household debt is associated with stronger, more active ties to subsistence. To what extent is household debt tied to gear and equipment used for subsistence purposes? Field observations suggest that installment accounts and other unspecified obligations capture between fifty and seventy-five percent of total debt service payments for households geared more strongly to subsistence in all three villages. Installment accounts refer to alimony

payments, medical payments, charge card payments, and other obligations having little or no direct connection to hunting and fishing. A closer look at household asset characteristics may shed more light on the relationship between household debt and subsistence.

Household Assets

In general, households with lower income owned fewer, less valuable assets. Households tied more strongly to subsistence exhibited higher per capita asset valuation across all three study villages. This data suggests a strong positive association between asset value and subsistence orientation. Indeed, field data indicates that vehicles and firearms, assets most closely tied to subsistence, represent a substantial portion of total village household assets (excluding homes); between one-third and three-quarters of household asset valuation.

However, factors other than subsistence orientation may also determine patterns of household asset ownership. As observed above, households with higher income tend to have greater asset valuation. This pattern is evident in the comparison of per capita assets among St. Paul households with those in Alakanuk and Gambell, suggesting an income effect of some sort.

Subsistence Harvests

Households that allocated less time to subsistence harvested consistently less subsistence food compared with households geared more strongly to subsistence in each village. Annual per capita food harvests varied from 130 to 571 pounds across all village household classifications (ignoring Gambell).

Summary

Field observations summarized in Tables 6-23 through 6-25 both confirm and contradict normal conventions in consumer behavior. Concerning personal income, field data indicates that in Alakanuk and St. Paul, households more strongly geared to the labor market exhibit comparatively less total personal income, compared with households geared to subsistence. These same job-oriented household subgroups also procured a higher level of unearned income, as compared with households tied more strongly to subsistence. The corollary: households with strong subsistence activity are also strong income earners. These same households also exhibited greater success, as measured by per capita subsistence food harvests. Thus, with respect to Alakanuk and St. Paul, households with the greatest effort and success in subsistence, also tended to succeed in the labor market.

The results for Gambell suggest a reverse pattern. There, households geared more strongly to the labor market generated higher earned income, lower unearned income, and lower per capita food harvests compared with Gambell households tied more strongly to subsistence.

Concerning non-discretionary consumption expenditures, the results for Gambell and St. Paul go against conventional wisdom. In this case, households that allocated more time to subsistence than to jobs exhibited higher levels of per capita consumption. Alakanuk households exhibited a more normal pattern; households tied more strongly to subsistence consumed fewer market goods.

Field observations for annual debt service, the value of household assets, and per capita household food harvests indicate consistency across all three study villages. Households tied more strongly to subsistence exhibited higher per capita debt payments, higher asset valuation, and greater food harvests. These findings suggest that capital and subsistence are positively interrelated. Increased ties to subsistence go hand in hand with greater household asset valuation. In addition, the asset composition of subsistence households tended to favor vehicles and firearms.

7.0 REFERENCES

- Acheson, J.A.
1977 "Technical Skills and Fishing Success in the Maine Lobster Industry." Lechtman, H. and R. Merrill (eds.). Styles, Organization, and Dynamics of Technology. St. Paul: West Publishing Co.
- Alaska Department of Community and Regional Affairs
1988 1988 Rural Housing Needs Assessment Study. Prepared by RurALCAP, ASK* Marketing/Information Search and Alaska Public Interest Research Group. Juneau.
- Alaska Department of Fish and Game
1982 Annual Management Report, Yukon Area. Division of Commercial Fisheries, Anchorage, AK.
- Alaska Native Review Commission.
1984 St. Paul: Transcript of Proceedings - Village Meeting. Volume 53. Anchorage: ICC/Alaska Native Review Commission.
- Alaska State Legislature, House of Representatives Research Agency
1987 Memorandum dated February 27, 1987 by Brad Pierce re: The Economic Status of Western Alaska Villages, Research Request 87.143. Juneau.
- Albrecht, S.L.
1978 "Socio-Cultural Factors and Energy Resource Development in the West." Journal of Environmental Management, 7: 73-90.
- Alonso, William and Edgar Rust
1976 "The Evolving Pattern of Village Alaska," paper prepared for the Joint Federal-State Land Use Planning Commission. Anchorage, Alaska.
- Anchorage Daily News
1987 Bill would create fund for Aleuts. June 22, 1987, page A1 et. seq. Anchorage.
- Anders, Gary C.
1983 "The Role of Alaska Native Corporations in the Development of Alaska." Development and Change, 14: 555-575.
- 1982 "Alternative Perspectives on Alaska's Rural Development," 187-201 in Peter G. Cornwall and Gerald McBeath eds., Alaska's Rural Development. Boulder, Colorado.
- 1981 "The Reduction of a Self-Sufficient People to Poverty and Welfare Dependence." American Journal of Economics and Sociology, 40: 225-237.
- 1980 "Theories of Underdevelopment and the American Indian." Journal of Economic Issues, September: 681-702.
- Anders, Gary C. and Kathleen K. Anders
n.d. "Limited Means and Rising Expectations: The Politics of Alaska Native Corporations." Unpublished paper.

- Anderson, H. Dewey and Walter C. Eells
1935 Alaska Natives. Stanford, CA.: Stanford University Press.
- Anderson, R. and C. Wadel (eds.).
1972 North Atlantic Fishermen: Anthropological Essays on Modern Fishing. Toronto: University of Toronto Press.
- Apangalook, Leonard
1987 Personal Communication, September 10. (Manager, Gambell Alaska Native Industrial Cooperative Association store)
- Armstrong, Terence
1978 "Ethical Problems of Northern Development." Polar Record, 3-9.
- 1970 "Soviet Northern Development, With Some Alaskan Parallels and Contrasts." Institute for Social, Economic and Government Research Occasional Paper No. 2. Fairbanks, Alaska.
- Asch, Michael
1984 Home and Native Land. Methuen: Toronto, Ontario.
- 1977 "The Dene Economy." In Mel Watkins ed., Dene Nation: The Colony Within, pp 47-61. Toronto, Ontario.
- Averitt, R.T.
1968 The Dual Economy: The Dynamics of American Industry Structure. New York: Norton.
- Barlett, P.
1980 Agricultural Decision Making. New York: Academic Press.
- 1977 "The Structure of Decision Making in Paso." American Ethnologist, 4: 285-308.
- Baron, J. and W. Bielby.
1984 "The Organization of Work in a Segmented Economy." American Sociological Review, 49(4): 454-474.
- Beach, H.
1981 "Reindeer-Herd Management in Transition: The Case of Tuorpon Saameby in Northern Sweden." Acta Universitet Uppsala/Studies in Cultural Anthropology, No. 3. Uppsala, Sweden.
- 1980 "Swedish Rational Herd Management: Unexpressed Premises and Unforeseen Consequences." Reimer, E., E. Gaare and S. Skjenneberg (eds.). Proceedings of the Second International Reindeer/Caribou Symposium. Direk-torat for vilt og ferskvannsfisk. Trondheim, Norway.
- 1979 "The Legal Pattern Behind the Rationalization of Herding." Cramer, T. (ed.). Samiska Domstolar, Samiska Rattsfall. Samernas Vita Bok VI:5. Stockholm.
- Bean, Michael
1983 The Evolution of National Wildlife Law. Rev. ed. Praeger: New York, New York.
- Beck, E.M., P.H. Horan and C. Tolbert.
1978 "Stratification in a Dual Economy: A Sectoral Model of Earnings Determination." American Sociological Review, 43: 704-720.

- Beck, Robert J.
1986 "Midyear Forecast/Review: A Fresh Appraisal." Oil and Gas Journal, 84 (28 July 1986): 49-62.
- Bentzon, A.
1968a "Familiens organisation i de gronlandske samfund." Nyt fra Samfundsvidenskaberne, No. 10. Copenhagen: Himmelstrup.
1968b "Familiens økonomiske administration og ejendoms tilhørsforhold i de vestgronlandske samfund." Nyt fra Samfundsvidenskaberne, No. 11. Copenhagen: Himmelstrup.
1967 "Artikler om retsplejen vilkar og virke i de gronlandske samfund." Nyt fra Samfundsvidenskaberne, No. 15. Copenhagen: Himmelstrup.
- Bentzon, A. and T. Agersnap (eds.)
1969 "Samfund og politik i Gronland." Nyt fra Samfundsvidenskaberne, No. 22. Copenhagen, Himmelstrup.
- Berker, Thomas R.
1977 "Northern Frontier: Northern Homeland." Report of the MacKenzie Valley Pipeline Inquiry. Lorimer: Toronto, Ontario.
- Berger, Thomas R.
1985 Village Journey. Hill and Wang: New York, New York.
- Bering Straits CRSA
1984 Bering Straits Coastal Resource Service Area Survey. Nome: Bering Straits CRSA.
- Bering Straits Regional Housing Authority
1987 Financial Statements for Annual Contribution Contracts S-33, S-53 and S-54, prepared by Peat Marwick Main & Co. Anchorage.
- Berry, Mary Clay
1975 The Alaska Pipeline: The Politics of Oil and Native Land Claims. Indiana University Press: Bloomington, Indiana.
- Bibb, R. and W. Form
1977 "The Effects of Industrial, Occupational, and Sex Stratification on Wages in Blue Collar Markets." Social Forces, 55: 974-996.
- Bobby (v). Alaska
1984 U.S. District Court for the District of Alaska, Civil Action No. 84-544.
- Bockstoe, John R.
1986 Whales, Ice, and Men: The History of Whaling in the Western Arctic. University of Washington Press: Seattle, Washington.
- Boeri, David
1983 People of the Ice Whale: Eskimos, White Men, and the Whale. E.P. Dutton, Inc.
- Boiko, Valdimir Ivanovich
1979 The Baikal-Amur Main Line and the Peoples of the North. Institute of History, Philology and Philosophy: Novosibirsk, U.S.S.R.

- Bollen, K.
1983 "World System Position, Dependency, and Democracy." American Sociological Review, 48 (4): 468-480.
- Booshu, Clinton
1987 Personal Communication, July 7. (Administrative Officer, Gambell IRA Council)
- Bornemann, C.
1976 Greenland. Copenhagen: Ministeriet for Gronland.
- Brainard, Jean M. and Theresa Overfield.
1983 "Transformation in the Natural Fertility Regime of Western Alaskan Eskimo." In: Culture and Reproduction. W.P. Hadwerker, ed. Academic Press.
- Braund and Associates
1986 "A Description of the Social and Economic Systems of the Aleutian/Pribilof Islands Region." Anchorage: Alaska OCS Region, Minerals Management Service.
1985 "Effects of Renewable Resource Harvest Disruptions on Community Socioeconomic and Socio-cultural Systems: Aleutian-Pribilof Islands Region." Draft Final Technical Report. Anchorage: Minerals Management Service.
- Braund and Associates (with Dames and Moore)
1981 "St. Paul and St. George Harbor Feasibility Study Sociocultural Analysis." Juneau: Alaska Department of Transportation and Public Facilities.
- Brelsford, T.
1987 "The Aleutian-Pribilof Islands Region." In J. Jorgensen, S. McNabb, A. Fienup-Riordan and T. Brelsford. Technical Memorandum SI87-2: "Ethnohistory and Key Informant Summary: Schedule A Regions." Alaska OCS Region, Social and Economic Studies Program. New Haven and Anchorage: Human Relations Area Files.
- Brody, Hugh
1981 Maps and Dreams. Pantheon: New York, New York.
1975 The People's Land. Penguin: Harmondsworth, England.
- Brown, T.C.
1984 "The Concept of Value in Resource Allocation." Land Economics, 60 (3): 231-246.
- Burch, Ernest S., Jr.
1979 "Native Claims in Alaska: An Overview." Etudes/Inuit/Studies, 3: 7-30.
- Burch, Ernest S., Jr.
n.d. "Subsistence Production in Kivalina, Alaska: A Twenty Year Perspective." Technical Paper No. 128. Juneau: Alaska Department of Fish and Game, Subsistence Division.
- Bureau of Indian Affairs
1975 "Gambell, Its History, Population and Economy." Prepared by the Planning Support Group, Bureau of Indian Affairs, Department of the Interior, Billings, MT.
1975 "Savoonga, Its History, Population and Economy." Prepared by the Planning Support Group, Bureau of Indian Affairs, Department of the Interior, Billings, MT. (Report No. 242)

- Burgess, S.
1974 "The St. Lawrence Islanders of Northwest Cape." Ph.D. dissertation, University Alaska.
- Cantwell, J.C.
1904 "Report of the Operation of the U.S. Revenue Steamer Nunivak on the Yukon River Station, Alaska, 1899-1901." Washington: Government Printing Office, Senate Document No. 15, 58th Congress, 2nd Session.
- Caporaso, James A. ed.
1978 "Dependence and Dependency in the Global System." Special issue of International Organization, 32(1).
- Casanova, Pablo Gonzalez
1965 "Internal Colonialism and National Development." Studies in Comparative International Development, 1: 27-37.
- Case, David S.
1984 Alaska Natives and American Laws. University of Alaska Press: Fairbanks, Alaska.
- Cashdan, E.
1980 "Egalitarianism Among Hunters and Gatherers." American Anthropologist, 82: 116-120.
- Centaur Associates
1984 "Bering Sea Commercial Fishing Industry Impact Analysis." Technical Report No. 97. Anchorage: Alaska OCS Region, Minerals Management Service.
- Chance, Norman
1964 "The Changing Role of Government Among the North Alaskan Eskimos." Arctic Anthropology, 2(2).
- Charnov, E.L.
1976 "Optimal Foraging, the Marginal Value Theorem." Theoretical Population Biology, 9: 129-136.
- Chikigak, Thomas
1981 "The Story of Alakanuk." Unpublished manuscript. Translated by Dennis Sheldon. Alakanuk, Alaska.
- Childs, L.W.
1982 "Report on Fur Seal Harvest, Processing, and Marketing." Unpublished.
- Churchill, Ward
1986 "American Indian Lands: The Native Ethic Amid Resource Development." Environment, 28 (July/August): 12-17 and 28-34.
- CH2M Hill.
1976 "Damages Due to Inadequacy of Compensation Housing, Goods, and Services by the Aleut Communities of St. Paul Island and St. George Island." Volume 1: Economic Evaluation. Anchorage: CH2M Hill.
- Clammer, J. (ed.)
1978 The New Economic Anthropology. New York: St. Martin's Press.

- Coates, Kenneth
1985 Canada's Colonies. Lorimer: Toronto, Ontario.
- Cohn, S.
1982 "Hechter's Theory of Regional Underdevelopment." American Sociological Review, 47 (4): 477-489.
- Combs, E.R.
1981 "St. George Basin and North Aleutian Shelf Commercial Fishing Analysis." Technical Report No. 60. Anchorage: Alaska OCS Region, Minerals Management Service.
- Commercial Fisheries Entry Commission
1984 "Employment and Gross Earnings in Alaska's Commercial Fisheries, 1977-1982." Report No. 84-11. Juneau: CFEC.
- Cook, Alan
1979 "Naskapi Independence and the Caribou." Recherches Amerindiennes au Quebec, 9: 99-104.
- Cornwall, Peter G. and Gerald McBeath eds.
1982 Alaska's Rural Development. Westview: Boulder, Colorado.
- Cove, J.J.
1971 "A Comparative Approach to Decision Making by Fishing Boat Captains in Two Canadian Fleets." Doctoral Dissertation, University of British Columbia.
- Cox, Robert W.
1980 "Production, Hegemony and the Future." Paper delivered at the American Political Science Association annual meetings.
- Dacks, Gurston
1981 A Choice of Futures. Methuen: Toronto, Ontario.
- 1986 "The Case Against Dividing the Northwest Territories." Canadian Public Policy, xii: 202-213.
- Dales, J.H.
1968 Pollution, Property and Prices. University of Toronto Press: Toronto, Ontario.
- DeMan, Michael
1982 "Contemporary Rural Alaska and the Role of Village Corporations." In: Peter G. Cornwall and Gerald McBeath, Alaska's Rural Development, pp 47-62. Boulder, Colorado.
- Damas, D. (ed.)
Washington, D.C.: Smithsonian Institution.
- Darbyshire and Associates
1980 "Yukon-Kuskokwim Delta Coastal Resource Service Area Program." Department of Community and Regional Affairs.
- Demsetz, Howard
1967 "Toward a Theory of Property Rights." American Economic Review, 57: 347-359.

- Dienes, Leslie
 1982 "The Development of Siberian Regions Economic Profiles, Income Flows and Strategies for Growth." Soviet Geography, xxiii: 205-244.
- Dixon, Ronald
 1982 "Rural Alaska's Developing Economic Institutions: The Entrance of Native Corporations into International Trade." In: Peter G. Cornwall and Gerald McBeath eds. Alaska's Rural Development, pp 63-76. Boulder, Colorado.
- Doak, Barbara and Barbara Nachmann
 1987 "Violent Deaths Among Young Adults in Southwest Alaska Villages: A Subgroup of Longitudinal Cohort Study." Alaska Native Medical Center, Anchorage, Alaska.
- Dosman, Edgar J.
 1975 The National Interest: The Politics of Northern Development, 1968-1975. McClelland and Stewart: Toronto, Ontario.
- Draper, P.
 1978 "The Learning Environment for Aggression and Anti-Social Behavior Among the !Kung." In: Learning Non-Aggression. Ashley Montague (ed.). New York: Oxford University Press.
- Dryzek, John S.
 1983 Conflict and Choice in Resource Management: The Case of Alaska. Westview: Boulder, Colorado.
- 1981 "North-South Relations: Structural Constraints and the Politics of Northern Community Development," paper prepared for a conference on Community Development in the Circumpolar North and the Center for Northern Studies.
- Dryzek, John S. and Oran R. Young
 1985 "Internal Colonialism in the Circumpolar North: The Case of Alaska." Development and Change, 16: 123-145.
- 1983 "Internal Colonialism or Self-Sufficiency? Problems and Prospects in the Circumpolar North." In: Robert S. Merrill and Dorothy Willner, eds., Conflict and the Common Good, Studies in Third World Societies Publication No. 24, pp 115-134. Department of Anthropology, College of William and Mary.
- Durrenberger, E.P.
 1980 "Chayanov's Economic Analysis in Anthropology." Journal of Anthropological Research, 36: 133-148.
- Durrenberger, E.P. (ed.)
 1984 Chayanov, Peasants, and Anthropological Theory. New York: Academic Press.
- Durrenberger, E.P. and G. Palsson
 1986 "Finding Fish: The Tactics of Icelandic Skippers." American Ethnologist, 13 (2): 213-229.
- ERA (Economic Research Associates)
 1983 "Economic Development Assistance Program Strategy." St. Paul, Alaska: ERA/Aleut Community of St. Paul.
- Edwin, Reid and Associates
 1976 "Day Care Services in the Proposed New Town with Reference to the North East Region." Canada: Interdepartmental Manpower Subcommittee on North East Coal.

- Ellanna, L.
 1983a "Bering Sea Insular Eskimo: A Diachronic Study of Economy and Population Structure." Technical Paper No. 77. Juneau: Alaska Department of Fish and Game, Subsistence Division.
- 1983b "Technological and Social Change of Marine Animal Hunting Patterns in Bering Strait." Technical Paper No. 79. Juneau: Alaska Department of Fish and Game, Subsistence Division.
- Ellanna, L. and G. Sherrod
 1984 "The Role of Kinship Linkages in Subsistence Production: Some Implications for Community Organization." Technical Paper No. 100. Juneau: Alaska Department of Fish and Game, Subsistence Division.
- Ellanna, L., G. Sherrod and S. Langdon
 1986 "Subsistence Mapping: An Evaluation and Methodological Guidelines." Technical Paper No. 125. Juneau: Alaska Department of Fish and Game, Subsistence Division.
- Ellen, R.
 1982 *Environment, Subsistence and System: The Ecology of Small-Scale Social Formations.* Cambridge: Cambridge University Press.
- Erickson Associates
 1985 "Child Care Needs Associated With Hydrocarbon Development in the Beaufort Region." Dept. of Social Services, Government of the Northwest Territories.
- Fallows, James
 1984 "Nigeria of the North." The Atlantic, 254 (August): 18-22.
- Feit, H.
 1983 "Conflict Areas in the Management of Renewable Resources in the Canadian North." Paper presented at the Third National Workshop on People, Resources, and the Environment North of 60 degrees. Yellowknife.
- 1979 "Political Articulations of Hunters to the State: Means of Resisting Threats to Subsistence Production in the James Bay and Northern Quebec Agreements." Etudes/Inuit/Studies, 3(2): 37-52.
- Field, William W. (MD)
 1940 "A Journal: Journey to St. Lawrence Island, Bering Sea, July and August, 1940."
- Fienup-Riordan, A.
 1983 "The Effects of Renewable Resource Disruption on the Socioeconomic and Sociocultural Systems of the Yukon Delta." Anchorage: Alaska Council on Science and Technology.
- 1984 "Regional Groups on the Yukon-Kushkokwim Delta." In: The Central Yupik Eskimos. Ernest S. Burch, Jr., ed. Etudes/Inuit/Studies. Supplementary Issue. Vol 8: 63-93.
- 1986 "When Our Bad Time Comes: The Effects of Renewable Resource Disruptions in the Yukon Delta." Aurora Monograph Series No. 1. Anchorage: Alaska Anthropological Association.

- Focht, R. and K. Schelle
 1984 "Alaska's Subsidized Fishing Loan Program." Commercial Fisheries Entry Commission Report No. 84-2. Juneau, Alaska.
- Foote, D.C., V. Fischer and G. Rogers
 1968 "St. Paul Community Study." Fairbanks: Institute of Social and Economic Research, University of Alaska.
- Freeman, M. (ed.)
 1981a Proceedings of the First International Symposium on Renewable Resources and the Economy of the North. Ottawa: Association of Canadian Universities for Northern Studies.
 1981b "Renewable Resources and the Economy of the North." Association of Canadian Universities for Northern Studies and Canadian Arctic Resources Committee: Ottawa, Ontario.
- Gatewood, J.
 1983 "Deciding Where to Fish: The Skipper's Dilemma in Southeast Alaskan Salmon Seining." Coastal Zone Management Journal, 10 (4): 347-367.
 1984a "Cooperation, Competition, and Synergy: Information Sharing Among Alaskan Salmon Seiners." American Ethnologist, 11 (2): 347-367.
 1984b "Is the Skipper Effect Really a False Ideology?" American Ethnologist, 11 (2): 378-379.
- General Accounting Office
 1983 "Information of Alaska Native Corporations." GAO/RCED-83-173. Washington, D.C.
- Gilmore, John S.
 1976 "Boom Towns May Hinder Energy Resource Development." Science, 191 (6 February): 535-540.
- Gilmore, J.S. and M.K. Duff
 1975 Boom Town Growth Management. Westview: Boulder, Colorado.
- Goldsmith, Scott and J. Phillip Rowe
 1982 "Federal Revenues and Spending in Alaska." Alaska Review of Social and Economic Conditions, xix (2): 1-24.
- Goldsmith, Scott, Teresa Hull and Brian Reeder
 1984 "Alaska's Economy Since Statehood." Alaska Review of Social and Economic Conditions, xxi (1): 1-36.
- Gondolf, Edward
 1986 "In Search of a Viable Community-Based Economic Organization." Paper prepared for the Society of Applied Anthropology meetings.
- Gorsuch, N. and T. Hull
 1983 "The St. Paul and St. George Overall Economic Development Plan." Anchorage: Institute of Social and Economic Research/EDA.

- Graburn, Nelson H.H.
1969 Eskimos without Igloos: Social and Economic Development in Sughuk. Little, Brown: Boston, Massachusetts.
- Grusky, D.B.
1983 "Industrialization and the Status Attainment Process." American Sociological Review 48 (4): 494-505.
- Gullestrup, H.
1976 "Bygdesamfund i Gronland." Rapport om nogle udviklingsproblemer. Nyt fra Samfundsvidenskaberne No. 37. Copenhagen: Himmelstrup.
- Gullov, Hans Christian
1979 "Home Rule in Greenland." Etudes/Inuit/Studies, 3: 131-142.
- Hanemann, W.M.
1984 "Discrete/Continuous Models of Consumer Demand." Econometrika, 52 (3): 541-561.
- Hanrahan John and Peter Gruenstein
1977 Lost Frontier: The Marketing of Alaska. Norton: New York, New York.
- Hansen, S.
1974 "Oral Traditions and Starvation Sites on the Yukon-Kuskokwim Delta." Anthropology and Historic Preservation/Cooperative Park Studies Unit, University of Alaska, Fairbanks. (unpublished manuscript)
- Harpending, R. and H. Davis
1972 "Some Implications for Hunter-Gatherer Ecology Derived from the Spatial Structure of Resources." World Archaeology, 8: 275-286.
- Hechter, M.
1975 "Ethnicity and Industrialization: The Proliferation of the Cultural Division of Labor," Ethnicity, 3: 214-236.
- Hechter, Michael
1975 Internal Colonialism. University of California Press: Berkeley, California.
- Helliwell, John F.
1977 "The Distribution of Economic Benefits from a Pipeline." In: Mel Watkins ed., Dene Nation: The Colony Within, pp 75-83. Toronto, Ontario.
- Helm, June
1980 "Indian Dependency and Indian Self-Determination." In: Ernest I. Schusky ed., Political Organization of Native North Americans, pp 215-242. Washington, D.C.
- Hobart, C.W.
1982 "Industrial Employment of Rural Indigenes: The Case of Canada." Human Organization, 41: 54-63.
- 1982a "Inuit Employment at the Nanisivik Mine on Baffin Island." Etudes/Inuit/Studies, 6: 53-74.
- Hodson, R.D.
n.d. "Labor Force Participation and Earnings in the Core, Periphery, and State Sectors of Production." Ph.D. thesis, Department of Sociology, University of Wisconsin.

- Holm, Tom
1985 "The Crisis in Tribal Government." In: Vine Deloria, Jr. ed., American Indian Policy in the Twentieth Century, pp 135-154. Norman, Oklahoma.
- Homan Associates
1975 "Alaska Coastal Community Profiles." Draft report for Environmental Analysis Section and Division of Water Programs, Alaska Department of Environmental Conservation.
- Honigmann, J.
1963 "Community Organization and Patterns of Change Among West Canadian and Alaskan Indians and Eskimos." Anthropologica, 5(1).
- Honigmann, J. and I. Honigmann
1970 Arctic Townsmen: Ethnic Backgrounds and Modernization. Ottawa: St. Paul University.
1965 Eskimo Townsmen. Ottawa: University of Ottawa.
- Hopkins, T.K. and I. Wallerstein
1982 World Systems Analysis. Beverly Hills: Sage Publications.
- Horvath, Ronald J. and Kenneth D. Jensen
n.d. "Capital and the Eskimo: The Origins of Underdevelopment in the Canadian Arctic." Unpublished paper.
- Hughes, C.E.
1960 An Eskimo Village in the Modern Age. New York: Cornell University Press.
- Iglauer, Edith
1979 Inuit Journey. University of Washington Press: Seattle, Washington.
- Indian and Northern Affairs Canada
1986 "Briefing Papers Assembled by Ed Weick." Ottawa, Ontario.
1985a The Northern Mineral Sector: A Framework for Discussion. Ottawa, Ontario.
1985b "Living Treaties: Lasting Agreements." Report of the Task Force to Review Comprehensive Claims Policy. Ottawa, Ontario.
- Innis, H.A.
1962 The Fur Trade in Canada: An Introduction to Canadian Economic History. Yale University Press: New Haven, Connecticut.
- IOC (Inter-Organizational Council)
1981 "An Alternative to the Proposed Eight Percent Cut in the Pribilof Islands' Fur Seal Program's FY 83 Appropriation." St. Paul and St. George.
- Impact Assessment, Inc.
1987 "Bering Straits Regional Strategy." Planning document prepared under contract to Kawerak, Inc., Bering Straits Native Association. Nome: Kawerak, Inc.
- Irrigoo, Hanson
1987 Personal Communication, July 9. (Mayor, Gambell, Alaska)

- Jacobs, D.
1982 "Competition, Scale and Political Explanations of Inequality: An Integrated Study of Sectoral Explanations at the Aggregate Level." American Sociological Review 47 (5): 600-614.
- Jellis, Arvin D.
1977 "The Loss of Economic Rents." In: Mel Watkins, ed., Dene Nation: The Colony Within, pp 62-74. Toronto, Ontario.
- Jochim, M.
1976 Hunter-Gatherer Subsistence and Settlement: A Predictive Model. New York: Academic Press.
- Jones, Dorothy K. (M.)
1981 U.S. Colonialism in the Pribilof Islands. Lexington, KY: University Press of America.
1980 A Century of Servitude: Pribilof Aleuts Under U.S. Rule. Lexington, KY: University Press of America.
1976 Aleuts in Transition. University of Washington Press: Seattle, Washington.
1973 "Patterns of Village Growth and Decline in the Aleutian Islands." ISEGR Research Note A2. Fairbanks: Institute for Social, Economic, and Government Research, University of Alaska.
- Jorgensen, Joseph G.
1986 "Oil Age Eskimos." Minerals Management Service. Submitted to Human Relations Area Files for publication.
- Jorgensen, Joseph G. ed.
1984 Native Americans and Energy Development II. Anthropology Resource Center: Boston, Massachusetts.
- Kahn, J.
1978 "Marxist Anthropology in Peasant Economics: A Study of the Social Structures of Underdevelopment." In: The New Economic Anthropology. J. Clammer (ed.). New York: St. Martin's Press.
- Kamali, Nasser
1984 "Alaskan Natives and Limited Fisheries of Alaska." Commercial Fisheries Entry Commission Report No. 84-8. Juneau, Alaska.
- Kemp, William B.
1971 "The Flow of Energy in a Hunting Society." Scientific American, September 1971, Vol. 225, No. 3.
- Kirkwood, C.
1985 "Overall Economic Development Plan." St. Paul, Alaska: City of St. Paul.
1984 "St. Paul Comprehensive Plan." St. Paul, Alaska: City of St. Paul.
- Klandemans, B.
1984 "Social-Psychological Expansions of Resource Mobilization Theory." American Sociological Review, 49 (5): 583-601.

- Kladkin, V.M. and A.D. Kurilyuk
 1980 The Intensification of Reindeer Herding at Tompo Sovhoz. Yakutsk Publishing House: Yakutsk, U.S.S.R.
- Klausner, Samuel and Edward Foulks
 1982 Eskimo Capitalists. Allenheld, Osmun: Totowa, New Jersey.
- Kleivan, H.
 "Contemporary Greelanders." In: D. Damas (ed.). Handbook of North American Indians. Volume 5, Arctic. pp. 700-717. Washington, D.C.: Smithsonian Institution.
- Koslow, J. Anthony
 1982 "Limited Entry Policy and the Bristol Bay, Alaskan Salmon Fishery." Canadian Journal of Fisheries and Aquatic Sciences. 39: 415-425.
- Krech, S.
 1986 "Review of Handbook of North American Indians, Volume 5, Arctic." D. Damas (ed.). American Anthropologist 88: 735-736.
- Krech, S. ed.
 1984 The Subarctic Fur Trade: Native Economic and Social Adaptations. University of British Columbia Press: Vancouver, British Columbia.
- Kruse, John A.
 1986 "Subsistence and the North Slope Inupiat: The Effects of Energy Development." In: Steve J. Langdon ed., Contemporary Alaskan Native Economies, pp 121-151. Lanham, Maryland.
- Kuipers, H.
 1983 "The Role of Game-Simulation in a Project of Change: A Case for Deep Sea Fishing." Simulation and Games, 14 (3): 275-296.
- Langdon, Steve
 1980 "Transfer Patterns in Alaskan Limited Entry Fisheries." Final Report for the Limited Entry Study Group of the Alaska Legislature.
- Langdon, Steve J.
 1986 "Contradictions in Alaskan Native Economy and Society." In: Steve J. Langdon ed., Contemporary Alaskan Native Economies, pp 29-46. Lanham, Maryland.
- 1984 "Alaskan Native Subsistence: Current Regulatory Regimes and Issues." paper prepared for the Alaska Native Review Commission.
- Langdon, Steve J. ed.
 1986 Contemporary Alaskan Native Economies. University Press of America: Lanham, Maryland.
- Lantis, M.
 1970 Ethnohistory in Southwestern Alaska and the Southern Yukon. Lexington, KY: University Press of America.
- LaRusic, I.
 1982 "Income Security for Subsistence Hunters: A Review of the First Five Years of Operation of the Income" (Security Programme for Cree Hunters and Trappers). Ottawa, Ontario.

- Laughlin, W.S.
 1980 Aleuts: Survivors of the Bering Land Bridge. New York: Holt, Rinehart and Winston.
- 1976 Aleut Community of St. Paul Island, Alaska. New York: Clearwater Publishing Co.
- Leask, Linda
 1985 "Changing Ownership and Management of Alaska Lands." Alaska Review of Social and Economic Conditions, xxii (2): 1-32.
- 1983 "Effects of Oil Revenues on State Aid to Local Governments in Alaska." Alaska Review of Social and Economic Conditions, xx (4): 1-20.
- Lee, R.B.
 1968 "What Hunters Do for a Living, or, How to Make Out on Scarce Resources." Lee, R.B. and I. DeVore (eds.). In: Man the Hunter. Chicago: Aldine.
- Lee, R.B. and I. DeVore (eds.)
 1968 Man the Hunter. Chicago: Aldine.
- Lenz, Mary
 1986 "Alaska Native Teens are Nation's Highest Risk Suicide Group." Tundra Drums, March 6: 4-5.
- Levy, Marion J. Jr.
 1972 Modernization: Latecomers and Survivors. Basic Books: New York, New York.
- Little, Ronald L. and Lynn A. Robbins
 1984 Draft Final "Effects of Renewable Resource Harvest Disruptions on Socio-Economic and Sociocultural Systems; Gambell, Alaska." John Muir Institute for Alaska Outer Continental Shelf Office. Socioeconomic Studies Program. Minerals Management Service. Anchorage, Alaska.
- Lum, M., L. Knutson, David Hall, Hal Margolis and Tom Bender
 1986 "Decline in Infant Mortality Among Alaska Yup'ik Eskimos from 1960 to 1980." Public Health Reports, 101 (3): 309-314.
- Lund, Thomas A.
 1980 American Wildlife Law. University of California Press: Berkeley, California.
- Lyck, Lise
 1986 "Greenland's Economy and It's Relations to Denmark." Forthcoming.
- Magdanz, J.
 1982 "Norton Sound-Bering Strait Subsistence Crab Fishery Update." Technical Paper No. 6. Juneau: Alaska Department of Fish and Game, Subsistence Division.
- 1981 "Northern Bering Sea Subsistence Report." Technical Paper No. 4. Juneau: Alaska Department of Fish and Game, Subsistence Division.
- Magdanz, J. and A. Olanna
 1985 "Bering Sea King Crab Update." Technical Paper No. 117. Juneau: Alaska Department of Fish and Game, Subsistence Division.

- Mahler, Vincent
 1980 Dependency Approaches to International Political Economy. Columbia University Press: New York, New York.
- Maiolo, J.R. and M. Orbach (eds.)
 1980 Modernization and Marine Fisheries. Ann Arbor: Ann Arbor Science Publishers.
- Martin, J.
 1983 "Optimal Foraging Theory: A Review of Some Models and Their Applications." American Anthropologist 85: 612-629.
- Maynard, J.E. and Hammes, L.M.
 1970 "A Study of Growth, Morbidity and Mortality Among Eskimo Infants of Western Alaska." WHO, 42: 613-620.
- McBeath, Gerald A.
 1981 "North Slope Borough Government and Policy Making." Institute of Social and Economic Research. Fairbanks, Alaska.
- McBeath, Gerald A. and Thomas A. Morehouse
 1980 Dynamics of Alaska Native Self-Government. University Press of American: Lanham, Maryland.
- McCarty, T.L.
 1987 "The Rough Rock Demonstration School: A Case History with Implications for Educational Evaluation." Human Organization, 46 (2): 103-112.
- McElroy, A.
 1977 "Alternatives in Modernization Styles and Strategies in the Acculturative Behavior of Baffin Island Inuit." New Haven: Human Relations Area Files.
 1975 "Canadian Arctic Modernization and Change in Female Inuit Role Identification." American Ethnologist, 2 (4): 662-686.
- McNabb, S. and L. Robbins
 n.d. "Resource Distribution and Egalitarian Ethics in Alaskan Native Societies." (Arctic Anthropology, in press.)
- Mead, W.R.
 1974 The Scandinavian Northlands. Oxford University Press: London, England.
- Meredith, Thomas C.
 1983 "Institutional Arrangements for the Management and Exploitation of the George River Caribou Herd." Etudes/Inuit/Studies, 7: 95-112.
- Morehouse, Thomas A. ed.
 1984 Alaskan Resources Development. Westview: Boulder, Colorado.
- Morehouse, Thomas A. and George W. Rogers
 1982 Limited Entry in the Alaska and British Columbia Salmon Fisheries. Institute for Northern Studies. Edmonton, Alberta.
- Muller-Wille, L., P.J. Pelto, Li. Muller-Wille and R. Darnell eds.
 1978 Consequences of Economic Change in Circumpolar Regions. Boreal Institute for Northern Studies. Edmonton, Alberta.

- Murphy, R.F., and J. Steward
1956 "Tappers and Trappers: Parallel Process in Acculturation." Economic Development and Culture Change, 4 (4): 335-355.
- Nelson, Edward W.
1887 "Report Upon Natural History Collections made in Alaska Between the Years 1877-1881." Washington, D.C. Arctic Series of Publications, U.S. Army Signal Service, III.
- Nunam Kitlutsisti
1981 The Issue is Survival. Bethel, AK.
- Nebesky, W.E. and O.S. Goldsmith
1981 "The Impact of Rising Energy Prices in Rural Alaska," Research Summary No. 9, Institute for Social and Economic Research. Anchorage, Alaska.
- North, Douglass C. and Robert P. Thomas
1973 The Rise of the Western World. Cambridge University Press: Cambridge, England.
- O'Brien, Maggie
1986 "Annual Report." Bethel Prematernal Home. Bethel, AK.
- Olson, Dean and Bradford Tuck
1982 "The Role of Regional Native Corporations in Alaska's Rural Development." In: Peter G. Cornwall and Gerald McBeath eds., Alaska's Rural Development, pp 77-100. Boulder, Colorado.
- Orbach, Michael K. and Beverly Holmes
1986 "The Pribilof Island Aleuts: Tentative Players in a Hybrid Economy." In: Steve J. Langdon ed., Contemporary Alaskan Native Economies, pp 71-99. Lanham, Maryland.
- 1982 "Aleuts of the Seal Islands." Santa Cruz: University of California/Center for Environmental Education.
- Orbach, Michael K.
1978 Hunters, Seamen, and Entrepreneurs: The Tuna Seiners of San Diego. Berkeley: University of California Press.
- Orth and Associates (with Braund and Associates)
1983 "Lower Yukon Delta Economic Impact Study." Alaska Department of Community and Regional Affairs/Nunam Kitlutsisti.
- Ortiz, Roxanne Dunbar and Larry Emerson eds.
1979 Economic Development in American Indian Reservations. University of New Mexico Institute for Native American Development: Albuquerque, New Mexico.
- Orvik, Nils
1984 "Greenland: The Politics of a New Northern Nation." International Journal, xxxix: 932-961.
- 1983 Northern Development: Northern Security. Queen's University: Kingston, Ontario.
- 1976a "Northern Development: Modernization with Equality in Greenland." Arctic, 29: 67-75.

- Orvik, Nils (cont.)
 1976 "Toward a Theory of Northern Development." Queen's Quarterly. 83: 93-102.
- Oswalt, W.
 1962 "Historical Population in Western Alaska and Migration Theory." Anthropological Papers of the University of Alaska, 11 (1): 1-14.
 1979 Eskimos and Explorers. Novato: Chandler and Sharp.
- Paine, Robert A.
 1982 "Dam a River, Damn a People." IWGIA Document No. 45. Copenhagen, Denmark.
 1977 The White Arctic: Anthropological Essays on Tutelage and Ethnicity. Memorial University Institute for Social and Economic Research: St. John's, Newfoundland.
- Palsson, G. and E.P. Durrenberger
 1983 "Icelandic Foremen and Skippers: The Evolution of a Folk Model." American Ethnologist, 10: 511-528.
 1982 "To Dream of Fish: The Causes of Icelandic Skipper's Fishing Success." Journal of Anthropological Research, 38 (2): 227-242.
- Parsons, Talcott
 1971 The System of Modern Societies. Prentice-Hall: Englewood Cliffs, New Jersey.
 1966 Societies: Evolutionary and Comparative Perspectives. Prentice-Hall: Englewood Cliffs, New Jersey.
- Pelto, Pertti J.
 1978 "Ecology, De-localization, and Social Change." In: L. Muller-Wille et. al. eds., Consequences of Economic Change in Circumpolar Regions, pp 29-36. Boreal Institute for Northern Studies. Edmonton, Alberta.
 1972 "Snowmobiles: Technological Revolution in the Arctic." In: Technology and Social Change, editors H. Russell Bernard and Pertti J. Pelto, pp. 165-200. Macmillan Company, New York.
- Peterson, Everett B. and Janet B. Wright eds.
 1978 Northern Transitions, Vol. 1. Canadian Arctic Resources Committee: Ottawa, Ontario.
- Petersen, R.
 1974 "Perspectiver for Minedrift i Gronland." Insitut for Eskimologi, No. 2. Copenhagen: Kobenhavns Universitet.
- Petterson, John S.
 1981 "Limited Entry and the Native American Fisherman: A Case Study of the Bristol Bay, Alaska Salmon Fishery." Final Project Report to the National Science Foundation (NSF Contract NO. DAR 79-17582, 249 pp.).
 1980 "Fishing Cooperatives and Political Power." Anthropological Quarterly, 53: 64-74.
 1979 "The Political Significance of Fishing Cooperatives." Doctoral Dissertation, University of California, San Diego.

- Petterson, John S., B. Harris, L. Palinkas, and S. Langdon
 1983 "Cold Bay: Ethnographic Study and Impact Analysis." Minerals Management Service Technical Report #93. National Technical Information Service: Springfield, Virginia.
- Petterson, John S., L. Palinkas, and Bruce Harris
 1982 "North Aleutian Shelf Non-OCS Forecast Analysis. Volume I, Regional Level Analyses." Minerals Management Service Technical Report #75. National Technical Information Service: Springfield, Virginia.
- 1982 "North Aleutian Shelf Non-OCS Forecast Analysis. Volume II, Community Level Analyses." Minerals Management Service Technical Report #75. National Technical Information Service: Springfield, Virginia.
- Petterson, John S., L. Palinkas, B. Harris, M. Downs, and B. Holmes
 1983 "Unalaska: Ethnographic Study and Impact Analysis." Minerals Management Service Technical Report #92. National Technical Information Service: Springfield, Virginia.
- Piven, Frances Fox and Richard A. Cloward
 1971 Regulating the Poor. Pantheon: New York, New York.
- Plattner, S.
 1983 "Economic Custom in a Competitive Marketplace." American Anthropologist, 85: 848-858.
- Rae, K.J.
 1968 The Political Economy of the Canadian North. University of Toronto Press: Toronto, Ontario.
- Ray, D.J.
 1964 "Nineteenth Century Settlement and Subsistence Patterns in the Bering Strait." Arctic Anthropology, 2 (2): 61-94.
- 1975 "Early Maritime Trade with the Eskimo of Bering Strait and the Introduction of Firearms." Arctic Anthropology, 12 (1): 1-9.
- Richardson, Boyce
 1976 Strangers Devour the Land. Random House: New York, New York.
- Robbins, L. and S. McNabb
 1987 "Oil Developments and Community Responses in Norton Sound, Alaska." Human Organization, 46 (1): 10-19.
- Robertson, Gordon
 1985 Northern Provinces: A Mistaken Goal. Institute for Research on Public Policy: Montreal, Quebec.
- Rogers, George
 1982 "The Nature of Rural Economic Development in Alaska." In: Peter G. Cornwall and Gerald McBeath eds., Alaska's Rural Development. Boulder, Colorado.
- Ross, David P. and Peter Usher
 1986 From the Roots Up: Economic Development as if Community Mattered. Bootstrap Press: Croton-on-Hudson, New York.

- Rostaing, A.
1984 "Native Regional Autonomy: Initial Experience of the Kativik Regional Government." Etudes/Inuit/Studies, 8: 3-36.
- Royal Commission on Sealing and the Sealing Industry
1986 "Final Report." (forthcoming) Ottawa, Ontario.
- Ruddle, K. and T. Akimichi (eds.)
1984 Maritime Institutions in the Western Pacific. Osaka: National Museum of Ethnology.
- Sahlins, Marshall
1972 Stone Age Economics. Aldine-Atherton: Chicago, Illinois.
- 1971 "The Intensity of Domestic Production in Primitive Societies: Social Inflections on the Chayanov Slope." In: Studies in Economic Anthropology. G. Dalton (ed.). Anthropological Studies No. 7. Washington, D.C.: American Anthropological Association.
- Salisbury, Richard F.
1983 "Formulating the Common Interest: The Role of Structures in Cree Development." In: Robert S. Merrill and Dorothy Willner eds., Conflict and the Common Good, pp 135-150, Studies in Third World Societies Publication No. 24. Department of Anthropology, College of William and Mary.
- 1972 "Development and James Bay: Social Implications of the Proposals for the Hydroelectric Scheme." Montreal: McGill Program in the Anthropology of Development.
- 1972 "Not by Bread Alone: The Use of Subsistence Resources Among the James Bay Cree." Montreal: McGill Program in the Anthropology of Development.
- Samuelson, Paul
1985 Economics. 12th Edition. McGraw-Hill: New York.
- Scarlett, Maurice ed.
1977 Consequences of Offshore Oil and Gas - Norway, Scotland, and Newfoundland. Memorial University Institute for Social and Economic Research: St. John's, Newfoundland.
- Schusky, Ernest I. ed.
1980 Political Organization of Native North Americans. University Press of America: Washington, D.C.
- Scott, C.H.
1979 Modes of Production and Guaranteed Annual Income in James Bay Cree Society. Montreal, Quebec.
- Scott, Charles
1981 "Between "Original Affluence" and Consumer Affluence: Domestic Production and Guaranteed Income to James Bay Cree Hunters."
- Seers, D., B. Schaffer, and L. Kiljunen
1979 Underdeveloped Europe: Studies in Core-Periphery Relations. Harvester Press: Hassocks, England.

- Sherrod, George
 1982 "The Harvest and Use of Marine Animals in Fifteen Eskimo Communities." Technical Paper No. 56. Juneau: Alaska Department of Fish and Game, Subsistence Division.
- Sherwood, Morgan
 1981 Big Game in Alaska. Yale University Press: New Haven, Connecticut.
- Shkilnyk, Anastasia M.
 1985 A Poison Stronger Than Love: The Destruction of an Ojibwa Community. Yale University Press: New Haven, Connecticut.
- Smith, E.A.
 1980 "Evolutionary Ecology and the Analysis of Human Foraging Behavior: An Inuit Example from the East Coast of Hudson Bay." Ph.D. dissertation, Cornell University, Ann Arbor: University Microfilms.
- Smythe, C.
 1983 "Pribilof Islands Skills Rehabilitation Plan." Anchorage and St. Paul: Alaska Native Foundation and the Inter-Organizational Council.
 1981 "Pribilof Islands Field Report." SESP Occasional Paper. Anchorage: Alaska OCS Region, Minerals Management Service.
- St. Paul, City of
 1987a Bering Sea, Vol. IV, No. 2. St. Paul, Alaska.
 1987b Bering Sea, Vol. IV, No. 4. St. Paul, Alaska.
- Stokes, R. and D. Jaffee
 1982 "The export of raw materials and economic growth." American Sociological Review, 47 (3): 411-416.
- Sugden, David
 1983 Arctic and Antarctic: A Modern Geographical Synthesis. Blackwell's: Oxford, England.
- Svensson, Tom G.
 1986a "Ethnopolitics: A Base Strategy Towards Local Autonomy in the North." Arctic, forthcoming.
 1986b "Industrial Developments and the Saami Ethnopolitical Response to Ecological Crisis in the North." Anthropologica, forthcoming.
 1986c "Litigations as Ethnopolitical Action: A Means of Attaining Improved Land Rights." Unpublished paper.
 1984 "The Saami and the Nation State: Some Comments on Ethnopolitics in Northern Fourth World." Etudes/Inuit/Studies, 8: 158-166.
 1978 "The Effect of Economic Change on the Ecology, Culture and Politics of Reindeer Saami in Sweden." Boreal Institute of North America.
 1976 "Ethnicity and Mobilization Saami Politics." Stockholm Studies in Social Anthropology, No. 4. University of Stockholm: Stockholm, Sweden.

- Svensson, Tom G. (cont.)
 n.d. **Ethnopolitics Among the Saami: A Basic Strategy Towards Local Autonomy.**
 (Arctic, in press.)
- Tanadgusix Corporation
 1987a **"Tanadgusix Corporation Annual Report to Shareholders for the Fiscal Year Ended September 30, 1986."** St. Paul, Alaska.
 1987b **Personal Communication to Impact Assessment, Inc.** St. Paul, Alaska.
- Tannenbaum, N.
 1984 **"The Misuse of Chayanov: "Chayanov's Rule" and Empiricist Bias in Anthropology."** American Anthropologist, 86: 927-942.
- Tanner, A.
 1979 **"Bringing Home Animals: Religious Ideology and Mode of Production of the Mistassini Cree Hunters."** St. John's: Memorial University of Newfoundland.
- Thomas, C.K.
 1983 **"The Economic Status of Alaska Native Women."** Anchorage: Alaska Women's Commission.
- Thomas, Robert K.
 1967 **"Colonialism: Classic and Internal."** New University Thought, 4: 37-43.
- Thomas, D.
 1981 **"Norton Sound-Bering Strait Subsistence King Crab Fishery. Technical Paper No. 12."** Juneau: Alaska Department of Fish and Game, Subsistence Division.
- Tolbert, C.M., P.H. Horan and E.M. Beck
 1980 **"The Structure of Economic Segmentation: A Dual Economy Approach."** American Journal of Sociology, 85: 1095-1116.
- Torrey, B.B.
 1978 **Slaves of the Harvest.** St. Paul, Alaska: Tanadgusix Corporation.
- Tussing, Arlon R.
 1984 **"Alaska's Petroleum Based Economy."** In: Thomas A. Morehouse ed., Alaska Resource Development: Issues of the 1980s, pp 51-78. Boulder, Colorado.
- U.S. Department of Commerce
 1987 **Statistical Abstract of the United States 1987.** Washington, D.C.: Bureau of the Census.
- U.S. Department of Commerce
 1982 **"General Population Characteristics, Alaska: 1980 Census of Population."** Washington, D.C.: Bureau of the Census.
- Usher, Peter
 1984 **"Property Rights: The Basis of Wildlife Management."** In: Canadian Arctic Resources Committee, National and Regional Interests in the North, pp 389-415. Ottawa, Ontario.
 1982 **"Assessing the Impact of Industry in the Beaufort Sea Region."** Paper prepared for the Beaufort Sea Alliance.

- Usher, Peter (cont.)
- 1981 "Sustenance or Recreation? The Future of Native Wildlife Harvesting in Northern Canada." Freeman, M. (ed.) First International Symposium on Renewable Resources and the Economy of the North. Ottawa: Association of Canadian Universities for Northern Studies.
- 1976 "Evaluating Country Food in the Northern Native Economy." Arctic, 29(2).
- 1970 "The Bankslanders: Economy and the Ecology of a Frontier Trapping Community." Indian and Northern Affairs Canada: Ottawa, Ontario.
- VanStone, J.
- 1960 "A Successful Combination of Subsistence and Wage Economies on the Village Level." Economic Development and Culture Change, 8 (2): 174-191.
- Veltre, D. and M. Veltre
- 1981 "A Preliminary Baseline Study of Subsistence Resource Utilization in the Pribilof Islands." Technical Paper No. 57. Juneau: Alaska Department of Fish and Game, Subsistence Division.
- Vinje, David L.
- 1985 "Cultural Values and Economic Development on Reservations." In: Vine Deloria, Jr. ed., American Indian Policy in the Twentieth Century, pp 155-175. Norman, Oklahoma.
- Wallerstein, I.
- 1979 The Capitalist World-Economy. Cambridge University Press: Cambridge, England.
- 1980 The Modern World-System II: Mercantilism and the Consolidation of the European World-Economy, 1600-1750. Academic Press: New York, New York.
- 1974 Modern World Systems. New York: Academic Press.
- Watkins, Mel ed.
- 1977 Dene Nation: The Colony Within. University of Toronto Press: Toronto, Ontario.
- 1977 "From Underdevelopment to Development." In: Mel Watkins ed., Dene Nation: The Colony Within, pp 84-99. Toronto, Ontario.
- Watson, P., S. LeBlanc and C. Redman
- 1971 Explanation in Archaeology: An Explicitly Scientific Approach. New York, Columbia University Press.
- Webb, Melody
- 1985 The Last Frontier: A History of the Yukon Basin of Canada and Alaska. University of New Mexico Press: Albuquerque, New Mexico.
- Wenzel, George W.
- 1986 "I Was Once Independent: The Southern Seal Protest and Inuit." Anthropologica, forthcoming.
- 1985 "Marooned in a Blizzard of Contradictions: Inuit and the Anti-Sealing Movement." Etudes/Inuit/Studies, 9: 77-91.
- 1983 "The Integration of "Remote" Site Labour into the Inuit Economy of Clyde River, N.W.T." Arctic Anthropology, 20: 79-92.

- Wenzel, George W. (cont.)
1978 "The Harp Seal Controversy and the Inuit Economy." Arctic, 31: 3-6.
- Whiting, Allen S.
1981 Siberian Development and East Asia. Stanford University Press: Stanford, California.
- Whymper, Fredrick
1869 Travel and Adventure in the Territory of Alaska. New York, Harper and Brothers.
- Wiessner, P.
1977 "Hxaro: A Regional System of Reciprocity for Reducing Risk Among the !Kung San." Ph.D. dissertation University of Michigan. Ann Arbor: University Microfilms.
- Wilson, Zeev (a.k.a. Boris Komarov)
1983 "The Environmental Risk of the Developing Oil and Gas Industry in Western Siberia." Research Paper No. 52 of the Soviet and East European Research Centre, Hebrew University of Jerusalem.
- Winterhalder, B. and E.A. Smith
1985 "On the Logic and Application of Optimal Foraging Theory: A Brief Reply to Martin." American Anthropologist, 87: 645-653.
- 1981 Hunter-Gatherer Foraging Strategies. Chicago: University of Chicago Press.
- Wohl, Kent
1987 Personal Communication, October 13. (Wildlife Biologist, U.S. Fish and Wildlife Service, Anchorage, Alaska)
- Wolfe, R.
1982 "The Subsistence Salmon Fishery of the Lower Yukon River. Technical Paper No. 60." Juneau: Alaska Department of Fish and Game, Subsistence Division.
- 1981 "Norton Sound/Yukon Delta Sociocultural Systems Baseline Analysis." Technical Report 72. Anchorage: Alaska OCS Region, Minerals Management Service. (Also published as Technical Paper No. 59. Juneau: Alaska Department of Fish and Game, Subsistence Division.)
- 1979 "Food Production in a Western Eskimo Community." Ph.D. dissertation, University of California, Los Angeles. Ann Arbor: University Microfilms.
- Wolfe, R. and L. Ellanna (comps.)
1983 "Resource Use and Socioeconomic Systems: Case Studies of Fishing and Hunting in Alaskan Communities." Technical Paper No. 61. Juneau: Alaska Department of Fish and Game, Subsistence Division.
- Wolfe, R., J. Gross, S. Langdon, J. Wright, J. Sherrod, L. Ellanna, V. Sumida, and P. Usher
1983 "Subsistence Based Communities in Coastal Communities of Southwest Alaska." Technical Paper No. 89. Juneau: Alaska Department of Fish and Game, Subsistence Division.
- 1984 "Subsistence Based Communities in Coastal Communities of Southwest Alaska." Technical Report 95. Anchorage: Alaska OCS Region, Minerals Management Service.

- Wolfe, R. and M. Pete
 1984 "Use of Caribou and Reindeer in the Andreafsky Mountains." Technical Paper No. 98. Juneau: Alaska Department of Fish and Game, Subsistence Division.
- Woods, Shelagh Jane
 1986 "The Wolf at the Door." Northern Perspectives, 14 (2): 1-8.
- Woodward Clyde (with LZH Associates, John Muir Institute, and Resource Analysts)
 1984 "Lower Yukon Delta Habitat Impact Study." Alaska Department of Community and Regional Affairs/Nunam Kitlutsisti.
- Yellen, J. and H. Harpending
 1972 "Hunter-Gatherer Populations and Archaeological Inference." World Archaeology, 4: 244-253.
- Young, Oran
 1986 "The Pribilof Islands: A View from the Periphery." Anthropologica, forthcoming.
- 1983 "Fishing by Permit: Restricted Common Property in Practice." Ocean Development and International Law, 13: 121-170.
- 1982 "The Political Economy of Fish: The Fishery Conservation and Management Act of 1976." Ocean Development and International Law, 10: 199-273.
- 1982 Resource Regimes: Natural Resources and Social Institutions. Berkeley: University of California Press.
- 1981 "The Political Economy of the Northern Fur Seal." Polar Record, 20: 407-416.
- 1981 Natural Resources and the State: The Political Economy of Resource Management. Berkeley: University of California Press.
- 1977 Resource Management at the International Level: The Case of the North Pacific. New York: Pinter and Nichols.
- Zagoskin, Lavrentiy A.
 1967 "Lieutenant Zakoskin's Travels in Russian America, 1842-1844." Arctic Institute of North America, Anthropology of the North: Transactions from Russian Sources, No. 7. Ed. Henry Michael, University of Toronto Press, Canada.
- Zaslow, Morris ed.
 1981 A Century of Canada's Arctic Islands. Royal Society of Canada: Ottawa, Ontario.
- Zucker, L.G. and C. Rosenstein
 1981 "Taxonomies of Institutional Structure." American Sociological Review, 46 (6): 869-884.

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. Administration.

