OCS Study BOEM 2011-055

Social and Economic Assessment of Major Oil Spill Litigation and Settlement

- Final Technical Report -

Kodiak Island, Alaska

Prepared by

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for

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Ms. Chris Campbell
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December 28, 2011

Dear Ms. Campbell:

We are pleased to submit this final technical report for the project titled "Social and Economic Assessment of Major Oil Spill Litigation and Settlement." This report and the previously submitted report titled "Critical Human Dimensions of Maritime Oil Spills as Identified through Examination of *Selendang Ayu* Incident" have been completed as specified under BOEM Contract Number M03PC00008, which calls for in-depth analysis of major oil spill litigation and settlement, and related social and economic aspects of maritime oil spills viewed in their totality of the course of time.

The attached report describes the rationale and hypotheses used to guide the overall project. It also reviews the case study approach used to facilitate analysis of litigation and settlement processes associated with the *Exxon Valdez* oil spill, and provides principal study findings from our research on Kodiak Island.

It has been a great pleasure to contribute to the BOEM mission to effectively manage development of the nation's offshore energy resources in an environmentally and economically responsible manner. We wish to express our sincere thanks for your diligent oversight during the course of this important project.

Sincerely,

Edward W. Glazier, Ph.D.
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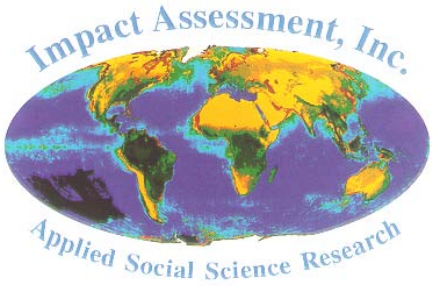
OCS Study BOEM 2011-055

Social and Economic Assessment of Major Oil Spill Litigation Settlement

- FINAL TECHNICAL REPORT -



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We also acknowledge the contributions of the following researchers and reviewers: Courtney Carothers, consulting social anthropologist, University of Alaska at Fairbanks; Lee Huskey, consulting economist, University of Alaska at Anchorage; William Nebesky, peer review economist; Stephanie Carlson, consulting data analyst, State of Alaska, Commercial Fisheries Entry Commission; Paulo Morais, consulting marine policy specialist; Lance Kaufman, consulting demographer, University of Alaska at Anchorage; Gregory Button, consulting public health specialist, University of Tennessee; Janet Cohen, consulting field anthropologist, National Park Service; and Rachel Mason, consulting field anthropologist, National Park Service.

Finally, we wish to express our deep gratitude to Dee Williams and Chris Campbell of the U.S. Department of the Interior, Bureau of Ocean Energy Management, Alaska OCS Region, for their diligent technical and administrative oversight of this important project.

List of Acronyms and Abbreviations

ADF&G	Alaska Department of Fish and Game
ADLWD	Alaska Department of Labor and Workforce Development
ANCSA	Alaska Native Claims Settlement Act of 1971
ATV	all-terrain vehicle
BEA	Bureau of Economic Analysis, U.S. Department of Commerce
BOEM	Bureau of Ocean Energy Management, U.S. Department of the Interior
CAMA	Chronic and Acute Medical Assistance
CDP	Community Development Plan
cf.	confer
CFEC	Commercial Fisheries Entry Commission
CQE	Community Quota Entity
et al.	and others
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EIS	Environmental Impact Statement
EQSF	Exxon Qualified Settlement Fund
EPA	Environmental Protection Agency, U.S.
EVOS	Exxon Valdez Oil Spill
FY	fiscal year
GDP	gross domestic product
H.R.	House of Representatives
IAI	Impact Assessment, Inc.
IRA	individual retirement account
IRS	Internal Revenue Service
KANA	Kodiak Area Native Association
KIB	Kodiak Island Borough
KMA	Kodiak Management Area
LOA	length overall
mm	millimeter
MMS	Minerals Management Service
NAICS	North American Identification Classification System
NASA	National Aeronautics and Space Administration
NEPA	National Environmental Policy Act of 1969
NOAA	National Oceanic and Atmospheric Administration
NPFMC	North Pacific Fishery Management Council
OCS	Outer Continental Shelf
OCSLA	Outer Continental Shelf Lands Act of 1953
PAC	Public Advisory Committee
POA	Plan of Allocation
POD	Plan of Distribution
PSP	Paralytic Shellfish Poisoning
PWS	Prince William Sound
PWSF	Prince William Sound Fund
UCI	Upper Cook Inlet
SIC	Standard Identification Classification
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
VPSO	Village Public Safety Officer

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Summary Overview

This report summarizes key findings from the long-term ethnographic research project titled *Social and Economic Assessment of Major Oil Spill Litigation Settlement.* The project was developed and sponsored by the U.S. Department of the Interior, Bureau of Ocean Energy Management, Alaska Outer Continental Shelf Region to further the base of knowledge needed to manage oil and gas resources along the OCS of Alaska in a safe and effective manner. More specifically, the research was designed to improve understanding of the long-term human effects of large oil spills and subsequent litigation and settlement processes. Because the human effects of significant maritime oil spills tend to manifest not only in the near-term but also years after the initial spill and response, the study underscores the value of examining social and economic aspects of such events over the course of time.

Research Approach. A case study approach was used to document and analyze select economic and social dimensions of the punitive damages case associated with the *Exxon Valdez* oil spill. Because litigation and settlement following Alaska's largest oil spill generated effects in numerous communities throughout spill- affected portions of Alaska, the full range of communities and outcomes could not be studied in full. A geographically focused case study was therefore used to delimit, understand, and represent an otherwise overly broad field of inquiry. The research was conducted on Kodiak Island, a region of Alaska that was extensively affected by the original spill event and by subsequent litigation and settlement of the *Exxon Valdez* punitive damages case.

Extensive fieldwork and archival research were undertaken to document social, economic, and demographic trends and conditions on Kodiak Island prior to disbursement of settlement monies from the case. The resulting data served as a baseline against which hypotheses regarding social-behavioral response to the litigation and settlement processes could be systematically tested and examined. Baseline description and analysis, and the associated rationale and research methods used to implement the overall study are described in detail in a technical report submitted to BOEM in 2010. Subsequent to submittal of the report, additional archival and ethnographic research was conducted update socioeconomic and demographic databases developed during the project, and to generate additional data needed for valid analysis of the effects of the settlement. This phase of work included interviews and follow-up work with 135 key informants residing on Kodiak Island.

Settlement Background. The *Exxon Valdez* oil spill generated a variety of human impacts throughout each phase of an incident that, viewed in its entirety, now span almost 22 years. With regard to the most enduring phase, that of litigation and settlement, it was hypothesized that the punitive damages settlement would affect: (1) the manner and degree of local participation in Kodiak's commercial fishing harvest sector; (2) the extent and nature of participation in subsistence fishing, hunting, and related cultural activities on the part of resident Alaska Natives; (3) the demographic structure of the study communities; and (4) socio-political relationships within and across groups of residents in the study area.

The research hypotheses used to guide the study were originally formulated with the possibility that the total settlement could be as large as $6.5 billion, to be differentially distributed to roughly 32,000 plaintiffs across the affected region of Alaska. Persons active in the most significantly affected fisheries received a greater proportion of the settlement than persons in less significantly affected fisheries and sectors. Well over 5,000 plaintiffs were residing on Kodiak Island when the EVOS punitive damages case was initiated. Many had been active in the region's heavily impacted salmon seine fishery. The Supreme Court's reduction of the punitive damages settlement to roughly $500 million constrained the spending and investment possibilities for these and all claimants. But it did not eliminate them. Award of interest on the settlement increased the total award to around $1 billion.

Several fundamental factors ultimately influenced individual use of punitive damage awards on Kodiak Island. These include: (1) historic and contemporary socioeconomic trends and conditions in the study communities; (2) the timing of the settlement; (3) the phased distribution of punitive damage awards over a nearly three-year period; (4) tax and lien encumbrances and tax incentives; (5) the age of recipients; and (6) the amount of the awards.

Select Characteristics of the Study Area. The formal economy of Kodiak Island Borough is based largely in the commercial extraction, processing, and distribution of the region's rich marine resources. These activities are based primarily in Kodiak City (the population of which was 5,130 persons in 2010). Raw and processed seafood products are the principal exports. Key economic and demographic indicators are suggestive of extensive demographic and economic change in the study region subsequent to 1993. The number of persons living in the small outlying villages has declined, as has the overall population of the region. The size of the regional labor force exhibited a reversal of a trend of growth noted in the 1980s and has been accompanied by a proportional increase in unearned income. Study participants tend to attribute such changes to challenges in the commercial fishing industry, including a loss of profitability in the region's salmon fisheries.

Available data indicate a fairly stable long-term pattern of earned income across the study region. Cyclical contraction in the seafood harvest and processing sectors have tended to be offset by gains in the government sector and in support sectors unrelated to fishing. Significant short-term earning anomalies have occurred, such as during the decline of the Bering Sea crab fishery in the 1980s, and following the *Exxon Valdez* oil spill, when commercial fishing activity was constrained but short-term high-paying clean-up opportunities were numerous.

Today, there are indications of a reversal of problematic trends in the region's marine fisheries, marked by robust landings, improving market prices, and increasing permit and quota values. Distribution of settlement awards has been occurring during this period of change. While overall fishing effort in the study region has been relatively stable in recent decades, production has risen sharply over time. The percentage of active salmon permits fished by residents and the percentage of gross earnings per pound have both gradually increased.

Rationalization has had and will continue to have profound implications for the future structure of Kodiak fisheries and associated levels of participation and production. Rationalization in the halibut fishery has led to steep declines in the number of shareholders and amount of quotas held by fishermen in villages. This research makes clear that the amount of the punitive damage awards is minimal when compared to profits earned by IFQ shareholders due to gains in quota price.

Improving salmon prices correlate with increased participation in the salmon fisheries during the settlement period. Increases in effort in the region's crab fisheries have also occurred during the last few years. In contrast, less than ideal market conditions and/or variable resource availability in the Pacific Cod and halibut fisheries appear to relate to stable rates of participation; that is, it does not appear that effort in these fisheries has increased in recent years.

Kodiak's basic employment sector, which includes seafood harvesting, began to expand in 2003. In particular, the number of businesses involved in seafood processing increased from 19 in 2004 to 26 in 2010. These changes likely reflect increased optimism regarding the future of local commercial fisheries.

Data compiled during this study elucidate the ongoing importance of involvement in subsistence activities in communities across the study region. At least one or more persons in most village households continue to engage in the pursuit, sharing, and/or consumption of wild foods. Benefits are both sociocultural and dietary in nature.

Some informants in the villages assert that problems in the commercial fishing industry have affected their income levels and thereby constrained their capacity to maintain subsistence fishing and hunting activities. Over the last decade or so, reportedly fewer people and less capital have been available to maintain their hunting and fishing operations. Net out-migration also challenges participation in subsistence activities.

The Settlement and Disbursement of Awards. The majority of EVOS punitive damage recipients received a minimum of two payouts: one for actual punitive damages; the other for interest on the settlement. Payments began in December 2008 and continue to date. Persons entitled to punitive damage awards in more than one category received multiple payouts at unpredictable points in time.

The vast majority of persons interviewed during this study expressed the opinion that the phased nature of the disbursements was an important aspect of the overall settlement process. Interviewees in the financial sector suggested that phasing may ultimately have promoted efficient money management, especially for persons unaccustomed to dealing with large sums of money. Active fishermen, however, maintain that it is easier to work with a large payment when investing in fishing operations, and that a series of smaller payments is more difficult to apply in a prudent and effective manner.

The timing of award disbursements clearly influenced individual spending choices. Disbursement occurred over nearly a three-year period that was characterized by improving conditions in the region's fisheries, and a national and regional economic recession of historic proportions.

Initial disbursement of settlement awards in late 2008 and early 2009 occurred during downturns in both the national and world economy. Credit was difficult to obtain, individual stock portfolios were deflated, and fuel and heating oil prices were high. Many of the countries to which Alaska exports seafood products were also experiencing economic problems, including high bankruptcy rates and devaluation of currency. During that time of economic uncertainty, some recipients chose to use their settlement funds to invest in IRAs, pay off debts, assist family members experiencing hard times, and cover basic costs of living. Some informants concluded that investing in the commercial fishing industry was less risky than investing in the stock market.

By the end of 2010, the national economy appeared to be recovering, albeit slowly. Moreover, the value of commercial fishing permits and quotas were increasing, and fishermen's attitudes regarding the future of the certain fisheries were improving. Many active fishermen invested in vessel and gear upgrades. Settlement monies were useful in this regard, particularly when considered in the larger context of increasingly valuable IFQs, and good market conditions in certain salmon fisheries. Fishermen especially chose to invest in the seine and set net salmon fisheries, as recent trends indicate continued market stability and/or further improvement. Few of the recipients invested in the Pacific cod and halibut fisheries, given declines in market prices for the former and quota share values for the latter.

Notably, the first round of checks arrived in mid-December of 2008, leaving little time to consult with a financial advisor at the end of the tax year. The timing of the distributions in 2008 and 2010 also correlated with the holiday season and winter weather, and several discussants reported that many recipients were spending award monies on gifts and/or heating bills.

The disbursement process was phased in part because many fishermen were encumbered by liens. In order for the settlement process to move forward, these situations were identified and gradually resolved through significant effort on the part of plaintiffs' counsel. Various tax incentives have shaped and are shaping the investment choices of many settlement recipients. The Murkowski Bill, which provides for tax deferments of up to $100,000 for contributions to retirement accounts, has made IRAs a popular option for recipients who had retired or were nearing retirement age, or who had not previously

established such a fund. Some active commercial fishermen were motivated to invest in their businesses because of recent changes to the tax code which allow a one-time write-off for major capital improvements.

Numerous interviews were conducted with bankers, financial advisors, and other knowledgeable persons to acquire information about post-settlement spending patterns in the study region. Active fishermen under the age of 55 reportedly were likely to use settlement monies to purchase boats, gear, permits, or IFQs. Vessel and gear purchases afforded tax write-offs, while for some fishermen, purchases of permits and IFQs functioned as substitutes for savings and retirement plans. Recipients between the ages of 55 and 65 reportedly are tending to use settlement monies to pay off personal debt, including credit card debt, loans, and home mortgages. Recipients over the age of 65 reportedly have tended to invest a large part of settlement awards monies into retirement accounts.

Notably, while many recipients have tended to invest checks of $50,000 or more, checks of less than $25,000 have typically be used to pay existing debts and to address the costs of living on Kodiak. Financial sector representatives did not discern significant differences in basic patterns of award usage between residents of Kodiak City and residents of the villages. Rather, the amount of the award appears to be the primary determinant in patterns of spending and investment.

Conversations with settlement award recipients residing in the villages suggest that the awards are being used for many purposes: to support fishing lodges, to meet the high costs of heating fuel, and to invest in commercial and subsistence fishing activities. Of note, receipt of settlement monies put numerous village residents over the allowable income threshold for receiving public assistance.

Results of Hypothesis Testing. The overarching hypothesis of the study was that settlement monies would amplify social, economic, and demographic trends at household, community, and regional levels of analysis. The truth value of this hypothesis was borne out for some phenomena but not others, with the primary determinant being the size of awards in specific settlement award categories. In all cases, analytical parsing of settlement effects was complicated by a variety of intervening factors. Four subsidiary hypotheses were also tested.

First, it was hypothesized that unearned income resulting from settlement awards would affect the manner and degree of participation in Kodiak-based commercial fisheries. A basic uncertainty was whether such income would lead individuals in the harvest sector to increase the level of involvement in commercial operations or afford an opportunity to exit the industry. As noted above, many commercial fishermen are using settlement monies to invest in their fishing operations. Settlement monies are generally insufficient for purposes of cleanly exiting the industry and beginning a new career. Moreover, this project has made clear that exiting is by no means an option of universal interest to Kodiak-based fishermen. Many such persons derive great satisfaction through their avowed profession and through interaction with like-minded others in communities that are deeply rooted in the industry. In this sense, settlement monies have served to reduce some of the ongoing economic challenges experienced by participants in the various fleets.

Second, it was hypothesized that settlement awards would influence the extent and manner of participation in subsistence fishing and hunting activities in the outlying villages, with associated effects on related cultural activities. It was anticipated that extensive unearned income may have served to reduce some of the tension experienced by Alaska Natives who historically have engaged in some component of the region's workforce to simultaneously meet the economic demands of the household and perpetuate culturally significant subsistence hunting and fishing activities. Thus far, settlement monies have indeed been used to support subsistence activities and household economies in the study villages. But in a context of many contemporary economic challenges and a dramatically reduced settlement, the

awards were not sufficient to fundamentally diminish the difficulties of subsistence-oriented living in the 21st century.

Third, it was hypothesized that the settlement would enable long-term residents to leave their home communities for other parts of Alaska or elsewhere if they so desired, thereby registering change in select social and demographic indicators. As for each of our hypotheses, the amount of the settlement after taxes and the phased manner of disbursement has had a significant bearing on the response of the claimants. In sum, while relatively few claimants received settlements of a size that would act as sufficient incentive to undertake the immediate and long-term social and economic costs of relocating, the awards have enabled many recipients to undertake various financial investments, purchase durable goods, and engage in what reportedly has been limited discretionary spending.

Finally, it was postulated that spill-related litigation and settlement would amplify socio-political challenges within and across residents and groups of residents in the study communities. That is, it was anticipated that financial empowerment would force difficult individual and collective decisions about the future, and that these decision-making processes and their outcomes could cause new interpersonal and collective difficulties among and between claimants. While this project did not involve a directed analytical focus on the social-psychological effects of the litigation and settlement processes, various such effects were indeed observed across the study region. These included arguments and perceived inequities associated with categorization of spill-affected individuals and groups in specific settlement award categories and release of information about individual award amounts to the public, among others.

For instance, concepts of deservedness varied across groups of claimants, with potential implications for long-term social relations across the region. Certain purse seine fishermen, for example, questioned why some set-netters received higher settlement awards despite a relatively smaller volume of historical landings. Some claimants believed there was a lack of transparency surrounding the determination of award levels for the various claim categories. Several owners of marine-related businesses questioned why their businesses were not directly entitled to punitive damage awards. Similarly, an owner/operator of a fishing lodge lost all of his bookings in 1989 but was not recognized as a candidate for the class action suit. Some informants complained that captains failed to submit claims for their crew members, thus denying punitive damage awards to an important group of affected fishermen. In short, the claims process itself did create tension among and between plaintiffs residing in Kodiak City and other communities on Kodiak Island.

Informant Recommendations. Research participants representing various sectors of the Kodiak economy and Kodiak communities offered a variety of opinions regarding potential improvements to any oil spill punitive damage cases and settlement processes that might occur in Alaska or elsewhere in the United States in the years to come. Certain ideas repeatedly surfaced during the discussions; these are represented in the following prospective recommendations:

- An advisory panel of fishermen should be created to act as intermediaries between lawyers and plaintiffs. The panel would serve to: (a) relate the changing situations of commercial fishery participants and subsistence practitioners to legal counsel, (b) keep claimants and the community apprised of the litigation process, and (c) relieve some of the burden on attorneys who otherwise must address questions on an individual basis;

- In addition to creating tax exemptions for punitive damage settlements, such settlements should be considered “exempt resources” for persons on public assistance, especially considering the advancing age of many recipients and the length of time between the event and settlement;

- Impacted communities need to be provided with the capacity to hire objective social and physical scientists to document and gather supporting information that can best represent their needs and interests during litigation and settlement;

- Local tax consultants and financial advisors should be given legal guidance on how best to protect the interests of their clients. This would include information on how to create trusts to protect loss of public assistance due to the receipt of damage awards; and

- Small communities with limited resources should be given assistance in negotiating legal and bureaucratic hurdles to the receipt of equitable punitive damage settlements.

Additional Considerations. Litigation and administration of the punitive damages settlement that followed the *Exxon Valdez* oil spill in 1989 have involved an essentially incalculable collective investment of time and resources on the part of many social groups and individuals. Persons involved in the region's commercial fishing industries, residents of the affected villages, plaintiffs' counsel, and many dedicated individuals expended extensive time and resources to minimize any potentially deleterious effects of the settlement.

Viewed in total, the spill and subsequent litigation and settlement processes have fundamentally altered the trajectory of life throughout the affected region. It must be noted here that significant maritime oil spills tend to be both costly and socially disruptive over a long period of time. The settlement in this case did generate certain benefits, but it is not possible to project what life in the affected region would have been like today had the spill not occurred, nor whether such benefits outweigh the social and economic costs of protracted litigation and settlement. These uncertainties and the various physical and social damages generated by the original oil spill deeply underscore the value of programs and policies that are designed and funded to *prevent* maritime oil spills and the many difficult consequences they invariably generate.

At the time of this writing, the Ninth Circuit Court of Appeals had approved the 23rd application for punitive damages for claimants in the halibut, damaged gear, and recreational use categories. Officials administering the settlement process report that disbursement will likely continue through December 2013.

Social and Economic Assessment of Major Oil Spill Litigation

1.0 Introduction

The following pages constitute the final technical report for the research project titled *Social and Economic Assessment of Major Oil Spill Litigation Settlement*. The project was developed and sponsored by the U.S. Department of the Interior, Bureau of Ocean Energy Management (BOEM), Alaska Outer Continental Shelf (OCS) Region[1] to further the base of knowledge needed to manage oil and gas resources along the OCS of Alaska in a safe and effective manner. More specifically, the research was designed to improve understanding of the long-term human effects of large oil spills and subsequent litigation and settlement processes.

BOEM Contract No. M03PC00008 was awarded to the social science research firm Impact Assessment, Inc. (IAI) in 2004. Because the date of final settlement of the EVOS punitive damages case was unknown at the outset, the project necessarily was designed to facilitate research over an extended period of time. Due process did indeed oblige protracted litigation, and the settlement award process also has been protracted. Although disbursement of punitive damage awards continues at the time of this writing, sufficient monies have been distributed to enable initial analysis of the social and economic implications of the overall settlement.

The settlement has generated social and economic effects in numerous communities throughout oil spill-affected portions of Alaska. In fact, the scope of effects is such that the full range of communities and outcomes cannot be studied in full. A geographically focused case study was therefore used as means for delimiting, understanding, and representing an otherwise overly broad field of inquiry. In keeping with the geographic focus prescribed in the project solicitation, research was focused on assessing the effects of the settlement in communities on Kodiak Island and throughout Kodiak Island Borough generally.

Communities on Kodiak Island were particularly appropriate for IAI's research because: (1) many residents of fishing-oriented communities on the island were affected by the *Exxon Valdez* oil spill and clean-up; (2) IAI had worked extensively to document the spill's human effects on Kodiak Island and throughout the spill-affected region[2] (cf. Impact Assessment, Inc. 1990a, 1990b, 1990c, 1990d, 2001), and (3) many Native and non-Native Kodiak fishermen eventually became plaintiffs in the punitive damages case against Exxon Corporation.[3] Moreover, members

[1] Formerly the Minerals Management Service, Alaska OCS Region.

[2] The IAI study involved comprehensive analysis of the spill's social, psychological, and economic effects in 22 communities throughout the affected region. This was by far the most extensive study of the human effects of the event and one of the largest social-environmental impact analyses undertaken in North America.

[3] Grant Baker; Seahawk Seafoods, Inc.; Cook Inlet Processors, Inc.; Sagaya Corp.; William McMurren; Patrick L. McMurren; William W. King; George Norris; Hunter Cranz; Richard Feenstra; Wilderness Sailing Safaris; Seafood Sales, Inc.; Rapid Systems Pacific Ltd.; Nautilus Marine Enterprises Inc.; William Findlay Abbott, Jr., *Plaintiffs-Appellees* ***vs.*** Exxon Mobile Corporation; Exxon Shipping Company, Defendants, *Defendants-Appellants***.** Signatory plaintiff categories include: aquaculture associations, area businesses, cannery workers, municipalities, Alaska Natives, Native corporations, personal injury, personal property, processor, real property, recreational use, subsistence, tender, "oiled" and "unoiled" fishermen.

of the team have been involved in other recent social and economic research with fishery participants on Kodiak Island and across the larger region (e.g., see IAI 2004, 2011).

Extensive ethnographic fieldwork and archival research were therefore undertaken to document pertinent social, economic, and demographic trends and conditions on Kodiak Island prior to disbursement of settlement monies from the *Exxon Valdez* punitive damages case. The resulting data serve as a baseline against which hypotheses regarding social-behavioral response to the litigation and settlement processes could be systematically tested and examined in relation to the original spill event (cf. IAI 2010). The hypotheses related to the potential for the settlement to affect: individual decisions regarding investment in marine fisheries; engagement in subsistence hunting and fishing activities; physical relocation of households to other parts of Alaska or elsewhere; and sociopolitical relationships between groups of residents.

A companion project was also conducted under BOEM Contract No. M03PC00008. The associated report describes and analyzes critical human dimensions of maritime oil spills as exemplified by that of *Selendang Ayu* on Unalaska Island in 2004 (IAI 2011).[4] Both projects were designed to monitor and document changes associated with oil spills and spill litigation over a period of time that would enable meaningful and useful analysis for persons involved in the management of offshore oil and gas and maritime transportation activities in Alaska and elsewhere in the United States.

1.1 Administrative and Policy Background

As specified in the Outer Continental Shelf Lands Act of 1953 (OCSLA), the BOEM is responsible for administering oil and gas exploration and development on the OCS. An important provision of the OCSLA authorizes the bureau to conduct and/or sponsor scientific investigation of coastal and marine environments potentially or actually affected by oil and gas industry activities occurring on the OCS.

BOEM and other federal agencies also operate in accordance with stipulations in the National Environmental Policy Act of 1969 (NEPA). NEPA requires that major environmental policy decisions be informed by natural and social science research. As such, federal agencies including the BOEM must acquire, analyze, and use environmental, economic, and social information that is pertinent to decisions regarding management and use of natural resources on the OCS.

The BOEM Alaska OCS Region is responsible for managing and regulating oil and gas exploration and development activities potentially or actually occurring on the OCS throughout Alaska. As part of its functions under OCSLA and NEPA, the BOEM administers an Environmental Studies Program, the purpose of which is to "define information needs and implement studies to assist in predicting, projecting, assessing, and managing potential effects on the human, marine, and coastal environments of OCS and coastal areas that may be affected by gas and oil development" (MMS 2002:1).

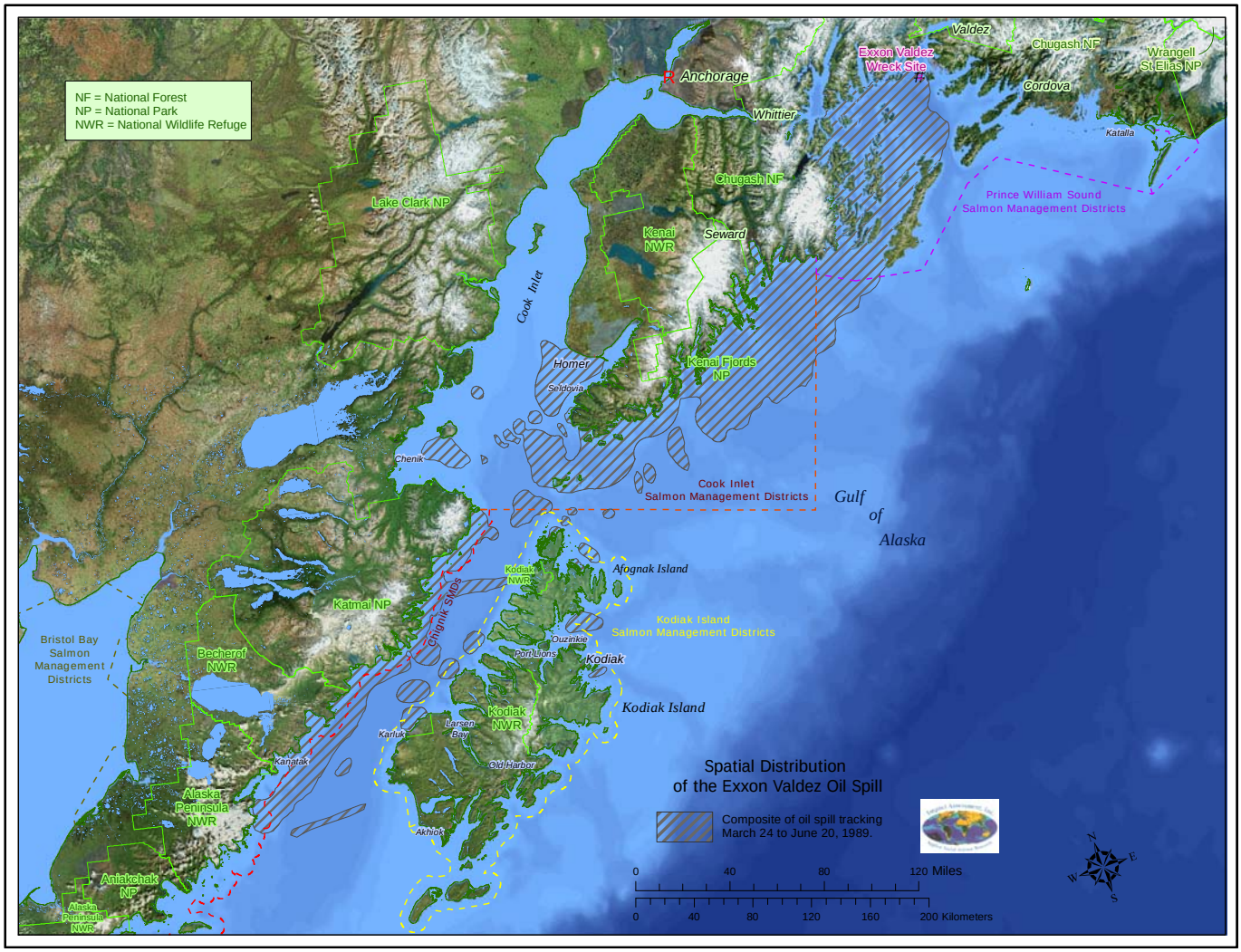
[4] The spills resulting from the grounding of the *Exxon Valdez* in Prince William Sound in 1989 and the *Selendang Ayu* in the Aleutian Islands in 2004 were the first and second largest maritime oil spills in Alaska history.

BOEM maintains a keen interest in maritime accidents and oil spill events affecting coastal communities along the nation's OCS. Information from BOEM studies is used in Environmental Assessment (EA) and Environmental Impact Statement (EIS) documentation, and various federal agency planning and decision-making processes. This report on major oil spill litigation and settlement, and the above-mentioned companion report on critical human dimensions of maritime oil spills, both contribute to the BOEM mission by documenting the manner in which industry, government, and coastal communities are involved in and affected by significant oil spill events.

1.2 Study Background

The supertanker *Exxon Valdez* foundered on Bligh Reef in Prince William Sound on March 24, 1989. The physical-environmental and human effects resulting from the 11-million-gallon spill were unprecedented in the history of spill-related maritime accidents in the U.S. Much research was undertaken to document the event, including its social and economic impacts. An extensive literature review is available to inform readers of the ways in which people in coastal Alaska responded to the accident and clean-up (cf. IAI 2001). Map 1-1 below depicts the region and communities affected by the spill and clean-up activities.

Early litigation resulted in compensatory awards to commercial fishermen, subsistence practitioners, Alaska Native corporations, and other individuals and groups affected by the accident. A $250 million settlement resulted from the *Exxon Criminal Case*, which was adjudicated in October 1991: $150 million of this was levied as fines; $125 million of which was forgiven based on the corporation's efforts to respond to the spill. Of the remaining $100 million, state and federal government agencies each received restitution in the amount of $50 million, the Victims of Crime Act account received $13 million, and the North American Wetlands Conservation Fund received $12 million. The *Exxon Civil Case*, also settled in October 1991, involved the distribution of $900 million via a "Joint Trust Fund" administered by three state and three federal Trustees. Some $686.9 million of the settlement was applied to restoration efforts managed by the EVOS Trustee Council beginning in 1992. The remaining $213.1 million was applied to clean-up costs that had been borne by government agencies and Exxon. The *Alyeska Civil Case*, settled in November 1992, involved disbursement of $29.7 million to the State of Alaska and $2 million to the federal government, with unspent balances of the latter applied to the Joint Trust Fund.



Map 1-1 Spatial Distribution of the *Exxon Valdez* Oil Spill

The punitive phase of litigation associated with the *Exxon Valdez* oil spill lasted for many years. Exxon Corporation continued to contest as exorbitant the award requirements set during class action punitive damages trials held in the federal courts since 1994. Various corporate-level punitive damages cases heard concurrently with the Exxon case influenced the nature of arguments and appeals and the length of time involved in adjudicating the case under due process.

The original punitive damages award figure of $5 billion assessed in federal court in Anchorage in 1996 was found to be excessive by the Ninth Circuit Court of Appeals in 2001 and reinstated at $4 billion in 2002. The amount was reviewed once again by the Ninth Circuit under newly developed U.S. Supreme Court punitive damages guidelines in 2003, and in 2004 it was ruled that an award of $4.5 billion plus $2.25 billion in interest was in keeping with the new guidance.

Subsequent appeal to the Ninth Circuit in December 2006 was based primarily on the arguments that previously disbursed damage compensation awards mitigated the putative reprehensibility of certain Exxon Corporation's spill-related actions, and that precedent in other corporate-level

punitive damage cases indicated that damage awards in the Exxon case were excessive.[5] A three-judge panel upheld that rationale and reduced the award to $2.5 billion, with interest.

On January 12, 2007, Exxon Corporation petitioned for a rehearing by the Ninth Circuit panel and for rehearing by the Court *en banc* to further reduce the settlement amount. The appeals were denied. A final appeal was heard by the U.S. Supreme Court, and in June 2008, it was determined that for a maritime case of this nature, punitive damages could not exceed compensatory damages, and thus the settlement was limited to $507.5 million. The Supreme Court also determined that it would not decide whether interest on the settlement should be paid to the plaintiffs. In June 2009, the Ninth Circuit Court of Appeals decided that interest should indeed be part of the final settlement and established an annual interest rate of 5.9 percent. The additional interest payments roughly doubled punitive damage totals for most claimants.

1.3 Principal Goal and Objectives

The research described in this report was designed to document and analyze select social and economic effects of the litigation and settlement processes associated with Alaska's largest oil spill to date. The study involved the collection, review, and cross-validation of data from a variety of primary and secondary sources, and objective analysis of documented local and regional conditions and trends prior to, during, and soon after extensive EVOS punitive damage settlement awards had been disbursed in the region. The project design did not involve survey research, nor was it intended to undertake extensive statistical analysis of relevant social or economic phenomena. Rather, it was designed to utilize new and existing quantitative and qualitative data to describe pertinent aspects of the study setting and to refutably explain the effects of EVOS litigation and settlement processes, given other sources of change in the region.

The overarching project objective required the research team to identify and generate an in-depth understanding of the issues and variables that are most fundamentally associated with the effects of major oil spill litigation and settlement, and the human context in which punitive damage award spending and investment decisions are made. This required phased satisfaction of a series of secondary objectives involving the collection, review, and synthesis of baseline data regarding pertinent trends and conditions on Kodiak Island, and data regarding the nature and effects of the settlement in Kodiak City and the outlying villages. As discussed in Chapter Three and Chapter Nine, a series of research hypotheses was used to guide the course of the research.

This project was intended to be of utility for planners and analysts seeking to understand the long-term human consequences of oil spills occurring in Alaska and elsewhere in the world's oceans. It is notable that social-behavioral reaction to settlement-related litigation and broadly distributed large-scale settlement awards is not well-known. The following pages are thus also intended to contribute to better understanding of a relatively new area of social inquiry.

[5] Based on precedent in *State Farm Mutual Auto Insurance v. Campbell*, 538 U.S. 408 (2003), it was argued that the ratio of punitive damages to "actual harm" was too high in the Exxon case. Actual harm was defined as the sum of the early compensatory damages verdict of $287 million and Exxon's pre-trial settlements. The total harm thereby assessed was on the order of $513 million.

1.4 Parameters of the Settlement Award

The formula and legal rationale for allocation of punitive damage awards in this case is inherently complex. Types and amounts of awards varied by affected region and fishery, and with regard to type and extent of damage to: commercial fishing activities, subsistence activities, real property, and seafood market prices, among others. In addition to individual claimants, municipalities, tribal councils, and Alaska Native corporations were eligible for awards, based on damage to real property and other effects.

Table 1-1 below depicts settlement shares for each of the signatory plaintiff claim categories across the affected region. The data confirm that Kodiak is an appropriate location for study in that numerous commercial fishery participants and Alaska Natives involved in the case are residents there. Plaintiffs who were involved in the overall Kodiak fisheries category received or are receiving some 20.1 percent of the total award.[6] The Kodiak salmon seine fishery was significantly affected by the spill and was allocated 14.5 percent of the total award.[7] Kodiak salmon set netters received 4.47 percent of the total. Note that some Kodiak-based fishery participants were involved in multiple fisheries in multiple locations and thus have received awards of varying amounts through a series of allotments. Some plaintiffs received settlement monies based on their status as Alaska Natives whose subsistence practices had been affected by the spill. Some also received monies as participants in the oiled fisheries and/or other categories.

Table 1-1 Matrix of Shares for Signatory Plaintiffs across the Affected Region

Claim Category	Percent Share	Number of Plaintiffs in Category Who Reside on Kodiak
Aquaculture Associations	1.910	1
Businesses	0.280	153
Cannery Workers	0.530	Number uncertain at time of writing
Commercial Fisheries (Oiled)	78.73	~2,500
Commercial Fisheries (Unoiled)	2.310	Number uncertain at time of writing
Municipalities	2.180	Kodiak Island Borough, Kodiak City, villages
Alaska Natives	6.640	~2,500
Native Corporations	0.650	5
Personal Injury	0.140	10
Personal Property	0.014	Amount uncertain at the time of this writing
Processors	2.099	5
Real Property	3.558	~250 oiled ANCSA land claims being filed by Alaska Natives
Recreational Use	0.008	~20
Subsistence	0.008	~100 non-Natives in addition to Alaska Native claims above
Tenders	0.940	~25
Total	100.0	~5,570

Source: Notice of Proposed Plan of Allocation of Recoveries by Plaintiffs in the Exxon Valdez Oil Spill Litigation, and of Court Hearing on Plaintiffs' Request for Approval of the Plan of Allocation; United States District Court for the District of Alaska; Case Number A89-095-CV

[6] Plaintiffs in Chignik fisheries received 4.96 percent of the total award. Cook Inlet fishery plaintiffs received 24.3 percent, and Prince William Sound fishery plaintiffs received 29.4 percent.

[7] Second only to plaintiffs in the Cook Inlet salmon driftnet fishery who received 15.2 percent of the total award. Plaintiffs in the Prince William Sound salmon seine fishery received 11.75 percent of the total.

Table 1-2 below depicts the matrix of shares for plaintiffs in the oiled fisheries categories for Kodiak Island. Table 1-3 and Figure 1-1 detail the settlement distribution schedule, disbursement amounts, and number of claimants across the affected region.

Table 1-2 Matrix of Shares for Plaintiffs in Oiled Fisheries Categories: Kodiak Island

Fishery		Percent Share	Estimated Number of Claimants
Dungeness Crab		0.034	25-35
Food Bait Herring		0.033	2-3
Miscellaneous Finfish *		0.029	~100
Miscellaneous Shellfish		0.017	35
Roe Herring	Drift	00.17	~800 total
	Seine	00.57	
Salmon	Beach Seine	00.24	35
	Seine	14.50	2,500
	Set Net	04.47	500
Scallops		0.015	3-4
Area Total		20.10	~3,170

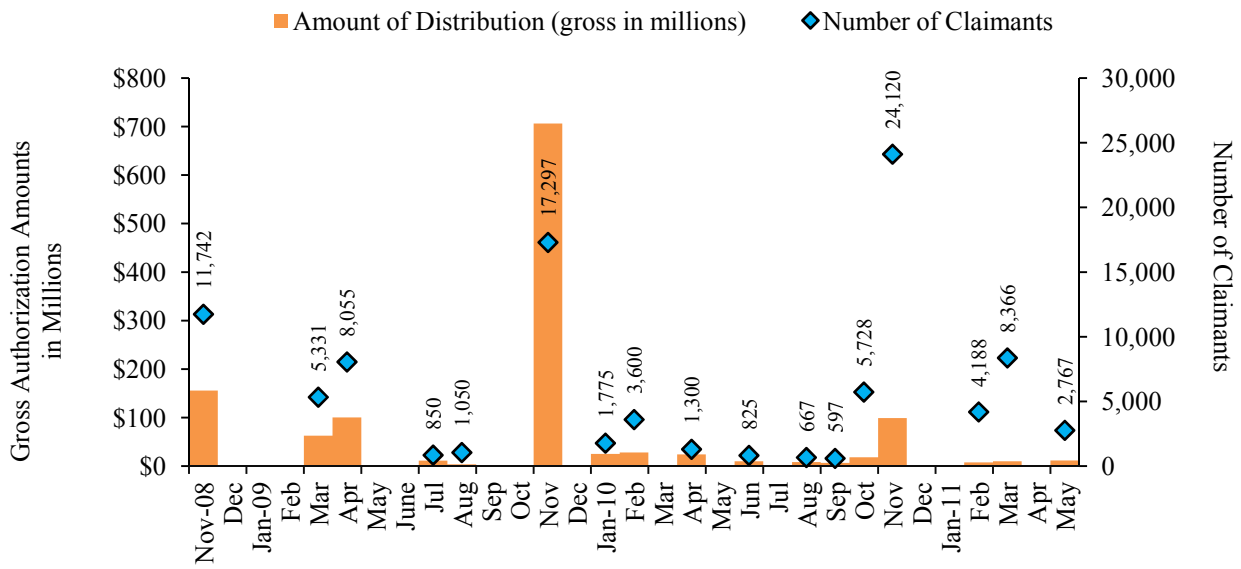
*Primarily cod and pollock fisheries; Source: Notice of Proposed Plan of Allocation of Recoveries by Plaintiffs in the Exxon Valdez Oil Spill Litigation, and of Court Hearing on Plaintiffs' Request for Approval of the Plan of Allocation; United States District Court for the District of Alaska; Case Number A89-095-CV

Table 1-3 Schedule of EVOS Punitive Damage Awards and Award Characteristics

Year	Application	Date Approved	Number of Claimants Included	Amount Approved (gross in millions)	Total Number of Distributions	Distribution Timeline
2008	1st	Nov 24	11,742	$155.6	2	Dec 2008-Apr 2009
2009	2nd	Mar 03	5,331	$62.5	10	Mar 2009-Jun 2009
	3rd	Apr 15	8,055	$100.2	11	May 2009-Sep 2009
	4th	July 08	443	$2.6	1	July 2009
	5th	July 10	407	$8.5	1	July 2009
	6th	Aug 20	1,050	$3.7	1	Sep 2009-Oct 2009
	7th & 8th	Nov 05	17,297	$299.5	3	Nov 2009-Jan 2010
2010	9th	Jan 22	1,775	$25.0	5	Feb 2010-Mar 2010
	10th	Feb 17	3,600	$28.0	6	Mar 2010-May 2010
	11th	Apr 13	1,300	$24.0	3	May 2010-Jun 2010
	12th	Jun 17	781	$10.0	3	Jun 2010-Aug 2010
	13th	Aug 06	667	$8.2	2	Sep 2010-Oct 2010
	14th	Sept 13	597	$6.4	3	Nov 2010-Dec 2010
	15th	Oct 6	5,728	$18.0	1	Oct 2010-Nov 2010
	16th	Nov 12	24,120	$98.8	1	December 2010
2011	17th	Feb 11	4,118	$7.4	2	Feb 2011-Apr 2011
	18th	Mar 21	8,366	$9.8	3	Apr 2011-May 2011
	19th	May 25	2,767	$11.4	3	Jun 2011-July 2011
	20th	Jun 08	784	$1.9	2	July 2011-Aug 2011
	21st	Aug 10	826	$3.4	2	Aug 2011-Sep 2011
	22nd	Sept 19	733	$2.9	(1)	Sep 2011-
	23rd	Pending	738	$0.2	Pending	Pending

Source: Exxon Qualified Settlement Fund, http://exspill.com/News/tabid/1901/Default.aspx

Figure 1-1 Timeline of Authorization for EVOS Punitive Damage Awards: November 2008-May 2011



Source: Exxon Qualified Settlement Fund, http://exspill.com/News/tabid/1901/Default.aspx

Although settlement awards are subject to taxation, tax relief on settlement-derived income has been provided through the Exxon Valdez Oil Spill Tax Treatment Act (H.R. 1334 and S. 552). The Act provides that the plaintiffs or their heirs and dependents could: (a) average settlement income over three years to reflect the extent of fisheries income had the oil spill not occurred, or (b) make contributions up to $100,000 to tax-exempt retirement plans. The Act also exempts payment of self-employment and payroll taxes. The rationale of the Act is that the oil spill diminished the extent and value of seafood landings in the affected region and subsequently led to the loss of fisheries income and opportunities for fishermen to establish retirement plans.

The reduced settlement was not likely to generate the kinds of changes that were possible prior to the Supreme Court ruling. However, disbursement of settlement and interest monies has indeed provided economic opportunities for recipients, with cumulative implications for the towns and villages in which such persons reside.

Many persons who were originally affected by the oil spill reacted to the litigation process even prior to actual settlement. Some report having speculated on the amount and imminence of awards from the punitive case and made purchases or investments accordingly. A large number of claimants had liens placed on their awards, as discussed in greater detail later in this report. Many claimants have been directly involved in and/or have followed the case closely, expending time and resources in so doing. Two decades after the spill, plaintiffs' counsel report that at least 20 percent of those who were directly affected and involved in class action suits are deceased. As of January 2011, 1,886 claimants could not be located: they or their heirs had failed to update their addresses with the Exxon Qualified Settlement Fund.

1.5 General Methodological Approach

This study has been designed to examine macro-social change among populations of Alaska residents who are involved in commercial and non-commercial use of living marine resources. The vector of the hypothetical social change of interest is the punitive damages settlement and disbursement of associated award monies. As reviewed in depth in subsequent chapters of this report, we have compiled extensive data that are descriptive of recent trends and contemporary social and economic conditions in and across communities on Kodiak Island. These data constitute a baseline against which change resulting from the settlement may be identified, described, and explained. Potentially intervening sources of change, such as rationalization of the region's crab fisheries and the recent economic recession, were key subjects of monitoring and analysis.

Development of the baseline and characterization of key social and economic trends required: extensive review and compilation of information from a wide variety of archival sources; observation-based fieldwork across the study area; and an ongoing series of in-depth conversations with knowledgeable fishery participants, elders, and public officials (N=150+).

Because certain information in the database derives from ongoing programs that are administered only periodically, the research plan involved use of an ongoing data collection strategy. For example, we continually monitored demographic change in the study communities and region by consulting available data, working with local officials and the state demographer's office, and by directly observing demographic changes in the communities.

Similarly, we continually consulted knowledgeable persons in the communities to document and assess potential changes in commercial fishing and subsistence activities. Given the regularity of state and federal monitoring of commercial fisheries, data associated with such programs has been available to inform the research. Acquiring current secondary source information about subsistence activities in the region was relatively more problematic in that data regarding such activities are, on the whole, formally collected only on a periodic basis.[8]

We note that the ultimate intent of the project has not been the development of a baseline for its own sake, but rather to enable valid assessment of the effects of the settlement. Our strategy has been to work closely with highly knowledgeable informants to develop and update such information and to enable inference of post-settlement changes in the consumptive-oriented harvest of natural resources across the communities. An important achievement of this project has been development of rapport necessary for trusted consultation with such persons.

[8] Household surveys are periodically conducted by the Alaska Department of Fish and Game in rural communities across Alaska. The most recent survey in the Kodiak region was conducted between 2003 and 2005, thus providing a relatively recent benchmark against which change could be measured for key indicators (Fall et al. 2006; ADF&G 2005). We used social network sampling methods to identify persons who are highly knowledgeable of subsistence activities in the communities and who could provide post-settlement updates on subsistence trends in terms of community-specific participation, per capita consumption, and nature of interactive effects between involvement in commercial fisheries and subsistence activities.

Individuals and households are important units of analysis in this study. This is because analysis of the perspectives and experiences of knowledgeable individuals provides insight into the collective social processes that are the actual focus of the study. This is the essential value of the case study approach. The individual case, whether it involves an individual, a household, a fleet, a community, or a specific social situation, offers data and understanding about the larger social processes of which it is an element. The approach requires that sufficient data are examined to ensure adequate understanding of variability.

In order to test hypotheses about social and economic aspects of life potentially affected by the settlement, we examined trends, current conditions, and the potential for change for many cases at many levels of analysis. We examined trends and conditions across Kodiak Island Borough[9] to aid in understanding the effects of the settlement across the larger region. Likewise, we examined relevant aspects of life in communities on Kodiak Island to enable inference of settlement-related change across the larger Borough, and we examined firms and households to infer change in and across Kodiak communities. Finally, we worked with many individuals who possess knowledge and expertise about families, communities, fisheries, and other relevant dimensions of life on Kodiak Island and across the larger region so as to enable inference at all levels of analysis.

1.6 Project Phasing and Component Methods

This project has proceeded in two basic phases. Phase One involved compilation of a large dataset and monitoring system prior to adjudication of the EVOS punitive damages case by the Supreme Court. As litigation was progressing through the courts, we collected and developed a framework for organizing and managing extensive archival and primary source information about select social, economic, and cultural trends and conditions in the study area.

The first phase of the project involved five interrelated objectives. These were: (1) development of a research design and ethnographic field plan for conducting the research; (2) review and analysis of pertinent background literature and archival data; (3) exploratory interview work with public officials, fishery participants, and others in the City of Kodiak and in the villages of Akhiok, Larsen Bay, Old Harbor, and Port Lions; (4) synthesis of the resulting primary and secondary source data into coherent formats of utility for analysts; and (5) development and completion of a baseline report (IAI 2010), which describes the project and baseline trends and conditions prior to the settlement.

Phase Two of the project involved assessment of recent social, economic, and demographic changes in the study area, and a focus on factors, variables, and research questions that have emerged during the settlement award disbursement process. This phase of work has involved use of existing and emerging data and appropriately timed return to the study communities to conduct additional fieldwork as the disbursement process moved forward.

[9] As borough-level data is the best available data for many of the economic and demographic variables anticipated to be valid indicators of settlement-related change, the baseline is particularly well-suited for enabling that level and those types of analysis.

1.7 Organization of the Report

Following this introductory chapter, Chapter Two provides an overview description of the physical environment and social history of the study area. Chapter Three elaborates on the methodological approach to archival and field-based research. Chapter Four discusses select conditions and trends in local and regional employment, demography, and socio-economic conditions; this is intended as necessary context for understanding and using the baseline database and monitoring framework. Chapter Five furthers the baseline by describing historic and recent trends in the Kodiak commercial fishing industry. Chapter Six examines select aspects of life in the villages. Chapter Seven describes settlement-related investment and spending patterns in various sectors of the local and regional economy, and Chapter Eight analyzes local perspectives on the effects of the settlement on the study communities and region. Chapter Nine summarizes key project findings. Cited references and appendices follow.

2.0 Overview of the Study Area

This chapter provides overview description of the study region and communities. The material is intended to provide the background needed to contextualize the study.

Figure 2-1 Cannery at Larsen Bay on Kodiak Island

2.1 Physical Environment

Overview. Kodiak Island is located in the south-central portion of the Gulf of Alaska, about 250 air miles south of Anchorage. Encompassing about 3,465 square miles of land area, Kodiak is the second-largest island in the nation, after Hawai'i Island (the Big Island). The Kodiak Archipelago extends for some 177 miles along a northeast-southwest axis, no more than 25 miles south of the Alaskan Peninsula, across treacherous Shelikoff Strait.

Given the moderating influence of the warm Japanese Current, climatic conditions in this region of Alaska are considered temperate. Average lows in January are 30° F; average highs in July are 54° F. Rain, fog, and high winds are common year-round. Average annual rainfall in Kodiak City is 55 inches. Average annual snowfall is 60 inches (Chaffin 1967).

Numerous bays, lakes, rivers, and estuaries transect Kodiak Island. Glaciers formed narrow fjords and valleys along the northwest coast. The east and southeast coastlines are commonly characterized by estuarine embayment. Sand and gravel beaches typify the western shorelines. Much of the terrain is heavily forested and mountainous. Maximum elevation is 4,400 feet at Koniag Peak. The landscape in the southern reaches of the island is characteristically wet, with extensive areas of grassy tundra. Seismic activity is extensive throughout the region.

Figure 2-2 Windmills on Pillar Mountain

Kodiak Island is sparsely populated and the remainder of the archipelago is largely uninhabited. According to data gathered by the U.S. Census, the City of Kodiak was home to some 6,334 persons in 2000 and 6,130 in 2010. The population of six outlying villages - Akhiok, Karluk, Larsen Bay, Old Harbor, Ouzinkie, and Port Lions – range between 37 and 194 persons (detailed population figures and trends are provided in Chapter Four). The communities are separated by mountainous terrain. With the exception of the area around Kodiak City, local roads are not paved and tend to terminate at the periphery of the villages. Transportation to remote areas occurs by small plane or by boat.

Safe and efficient mainland-to-island transportation services are basic to the functioning of the Kodiak Island economy. Air transport services are critically important. Kodiak Airport supports cargo and passenger services via three active runways. Coast Guard Air Station Kodiak is also located on airport property here. The airport is maintained by the Alaska Department of Transportation and Public Facilities.

The Port of Kodiak on Chiniak Bay serves as a vital point of consolidation and transshipment for cargo arriving from the mainland and heading to Kodiak City and the outlying villages. Two full-service marinas and three deepwater piers provide moorage for up to 650 commercial, recreational, cargo, passenger, and cruise vessels (City of Kodiak 2000). Many of the island's deep-draft bays are free of ice year-round, affording additional possibilities for temporary mooring.

The Alaska State Ferry system is also an important mode of inter-island and cross-Gulf transportation. Its fleet now provides passenger, cargo, and vehicle service to 32 Alaskan communities. Currently, two vessels provide regular service to Kodiak Island, although frequency of service varies by season. One of the vessels also services Port Lions. In Southwest Alaska, the ferry sails from Kodiak to Unalaska/Dutch Harbor, making stops in several

communities along the way. It also connects Kodiak to the mainland road system via Valdez, Cordova, Homer, Seward, and Seldovia.

The open ocean, straits, and more sheltered coves and fjords surrounding the Kodiak Archipelago are rich in marine resources. Kodiak-based fisheries are accordingly diverse and productive. Kodiak City is consistently one of the most productive commercial fishing ports in the U.S. The port was ranked fourth in the nation in terms of commercial landings in 2009 (282 million pounds), and third in terms of ex-vessel value of those landings ($103 million) (NOAA Fisheries 2009a:7).

Subsistence-oriented fishing and hunting are important in cultural and dietary terms. This is especially true for Alaska Native residents, though many non-Native residents also engage in and, to some extent, depend on successful pursuit of wild foods. Introduction of various mammal species in the 20th century enhanced hunting opportunities, as only river otter, ermine, red fox, tundra vole, and brown bear are endemic to the region. Introduced mammal species include Dall sheep, reindeer, snowshoe hare, red squirrel, beaver, Sitka black-tailed deer, Roosevelt elk, and mountain goats (Kodiak Island Borough Community Development Department 1983).

Climatic Factors. Large-scale decadal and longer-term changes in atmospheric pressure over the North Pacific can create rapid and significant changes in marine ecological conditions around Kodiak. Several such regime shifts have occurred in the region over the past few decades. The first occurred in 1977, when the Aleutian Low intensified to generate a relatively strong Alaska Current, warmer average ocean temperatures, increased rainfall, and increased stability of the water column. The marine ecological effects of these changes included: an apparent doubling of primary productivity (Brodeur and Ware 1992); increased recruitment and survival of salmon, demersal fish, and flatfish; increased recruitment of rockfish; and decline of shrimp and forage fish populations (Anderson 2004). The latter effect may have contributed to a measurable decrease in marine mammal and seabird populations (Piatt and Anderson 1996).

Widespread changes in biomass patterns- not clearly attributable to changes in fishing effort- were observed in the 1990s. Anderson and Piatt (1999) attribute the changes to a large-scale cause, such as climate change, although the particular mechanism of change is not clear. Anderson and Piaff (1999) assert that the increasing economic importance of salmon, whitefish, and halibut fisheries during the 1980s and 1990s may also have had an effect on ecosystems in the region.

Atmospheric pressure and oceanic regime shifts may have been associated with cool and variable temperatures in the Bering Sea and Gulf of Alaska during the late 1980s. This may, in turn, have been associated with a decrease in primary productivity during the period. More recently, a general warming trend has been noted in the surface waters of the Gulf of Alaska (< 50 meters). A trawl survey undertaken by NOAA Fisheries in 2005 observed the highest summer water temperatures ever recorded in the region (North Pacific Fishery Management Council 2006).

Oceanography and Indicators of Fisheries Productivity. Two primary currents circulate in the Gulf of Alaska – the subarctic gyre in the central basin and the Alaska Coastal Current along the continental shelf. The Alaska Coastal Current bifurcates northeast of Afognak Island. One

branch flows through Kennedy Entrance into Shelikof Strait, the other flows along the south side of Kodiak Island (Stabeno et al. 2004).

Down-welling associated with coastal currents and gyres is favorable for groundfish fisheries in the region. These fisheries include walleye pollock, Pacific cod, Pacific halibut, and sablefish (Francis et al. 1998). Total commercial landings of groundfish in the Gulf of Alaska increased from less than 50,000 tons in the 1950s to a high of 384,242 tons in 1965 (much of it rockfish), and a near high of 377,809 tons in 1984 (much of it pollock).

Pacific cod and pollock have continued to comprise significant proportions of landings across the Gulf of Alaska in recent years (North Pacific Fishery Management Council 2006). Residents landed some 100,000 pounds across the region in 2004 (see Figure 5-19).

Salmon are abundant in the study region. As indicated throughout this report, salmon resources are central to social and economic dimensions of life on Kodiak Island.

2.2 A Brief Social History of Kodiak Island

Overview of a Complex Culture. Kodiak Island has been occupied by humans for many thousands of years. Sites associated with what is called Ocean Bay culture were occupied at least 7,000 years before present (Saltonstall and Stefian 1999). Evidence suggests that humans occupied the larger Gulf of Alaska region at least 10,000 years before present (Ackerman 1992).

A succession of maritime societies have inhabited the Kodiak Archipelago over the millennia, each making use of the region's extensive and varied marine resources. Known prehistoric cultural traditions include: Ocean Bay (ca. 4500-1400 B.C.), Kachemak (ca. 1400 B.C.-1200 A.D.), and Koniag (ca. 1200-1784 A.D.) (Stefian 2001).

The long history of human residence on Kodiak Island is complex. The people encountered by Vitus Bering in the mid-eighteenth century revealed cultural traits now known as Alutiiq, and most Alaska Natives residing on Kodiak today assert an Alutiiq heritage. That culture appears to have evolved in complex fashion through ongoing interaction between numerous Arctic and North Pacific peoples over the course of time. As evinced by archaeological data, Crowell and Lurhmann (2001: 25-29) assert that Alutiiq culture was influenced by Inuit peoples, Kachemak and Norton Traditions, and possibly by various people of the Thule cultural tradition.

Alutiiq origin stories suggest influences from societies further north, and from Tlingit people to the south (Pinart 1873). Linguistic evidence suggests that Sugpiaq (a term used to refer to the Alutiiq people and language) is closely related to central Alaska Yup'ik languages. Analysis of art, tools, clothing, systems of belief, and other Alutiiq cultural attributes bear similarities to those of Yup'ik, Tlingit, and Unangan societies (Pritzker 2000:525). Genetic evidence indicates relationships between Alutiiq, Inuit, Northwest Coast, and Unangan populations.

Such genetic and cultural influence and admixture is typical of all human societies when considered over long periods of time. According to Crowell and Luhrmann (2001: 29), a clearly

distinctive (if evolving) culture developed in the Kodiak region at least 1,000 years ago. People of this cultural group first encountered Russian and other explorers and called themselves *Qikertarmiut*, or people of the island, now known as the Alutiiq.[10]

Interactions with Russian explorers and fur traders occurred as early as the late 18th century. Russian sea otter hunters established the first non-Native settlement on Kodiak Island in 1784, near the present-day village of Old Harbor. Kodiak remained important to fur traders until seals were first protected by international agreement in 1911 (Chaffin 1967). Russians brought various materials to Kodiak Island, thus influencing the material culture of the Alutiiq residents.

The history of interaction between Alutiiq peoples and people of European ancestry is laden with instances of violence and mistrust. Fall et al. (2001) assert that the early presence of Russians on the island significantly disrupted kin networks, social ties, and political alliances that were characteristic of pre-colonial Alutiiq society. Outsiders also transmitted viruses for which the Alutiiq had not developed immunity. Epidemics took the lives of many. This challenging history is retold among contemporary Alaska Natives living on Kodiak Island and thus it can influence contemporary interactions between Alaska Natives and non-Natives in and beyond the region.

Russians and other newly arriving groups often tended to advocate the tenets of Orthodox Christianity. Some elements of this new system of belief became joined or syncretized with those of the Alutiiq, which emphasized (and to some extent, among some Alutiiq, continue to emphasize) the importance of the spirit world, spiritual relationships between humans and animals, mask symbology, ritualized dancing and feasting, shamanism, and reincarnation.

Crowell and Leer (2001: 213-214) assert that Russian Orthodoxy was embraced by the Alutiiq in part because its principles differed from those of non-Orthodox sects, which were forced on indigenous people in Alaska during the late 19th and early 20th centuries. Certain uniquely Alutiiq/Russian Orthodox practices are still common in the Kodiak region, including those associated with the Feast of the Nativity, the Eve of Theophany (Epiphany), and the Russian New Year.

The Significance of Alutiiq Heritage. The long pre-contact history of indigenous people in the Kodiak Archipelago is an important element of the contemporary identity of Alutiiq people. We do not attempt to provide a full ethnographic account of historic or contemporary Alutiiq society here. The point being made in this overview is that contemporary Alutiiq people living in the study region identify closely with a truly ancient, if complex and ever-evolving culture. Only those qualified by birthright or rare circumstance enjoy access to that heritage. The Alaska Native Claims Settlement Act of 1971 (ANCSA) formally empowered Alutiiq and other Alaska Natives in this regard.

Indigenous heritage and the right to undertake cultural practices associated with that heritage are highly valued by the Alutiiq people. Fieldwork in the study area bears out this perspective.

[10] According to Crowell and Leer (2001:4), "Alutiiq" is the Sugpiaq term for "Aleut," which was first used by early Russian fur traders to describe indigenous peoples in the region. The term was eventually accepted by the Native residents - who originally called themselves Supiaq (the real people).

Subsistence hunting and fishing remain central to life in the villages, and these activities are often figured into one's plans for the future. Johnson (2001:95) speaks to the adaptive qualities of the Alutiiq in this regard and to the need for self-determination and perpetuation of Alutiiq cultural identity:

> Through generations of gradual cultural change and rapid transitions brought on by colonization and traumatic events, the Alutiiq people have remained adaptive and resilient while maintaining a strong connection with their distant past. They maintain the ability to decide who they are despite outsiders' attempts to decide for them. The right to decide who they are and what they will be called is clearly the exercise of self-determination.

European and Euro-American Influences through Fishing. Alutiiq peoples engaged in whale hunting many centuries before Europeans arrived (cf. Holland 1992). A commercial whaling industry was established in the Kodiak region in the mid-nineteenth century, but fell into decline and was practically obsolete by 1880.

An era of immigration followed the purchase of Alaska by the United States in 1867. Persons from Sweden, Finland, and Norway were among the first to arrive. Fishing and trapping were common forms of subsistence and employment, and commercial fisheries developed rapidly given an abundance of marine resources across the region.

The area's first salmon cannery was established on Karluk spit in 1882. Seattle investors established four additional canneries by 1889. The sockeye harvest increased from about one million fish in 1887 to nearly five million in 1901 (Kodiak Chamber of Commerce 2006; Fall et al. 2001).

Population figures for Karluk reflect the growing nature of the island's fishing economy. In 1880, Karluk was home to around 300 persons. By 1890, 1,123 persons were living in the area. About 495 persons were living in Kodiak City at that time. Other villages were more sparsely populated, with about 20 persons living in Larsen Bay, 86 in Old Harbor, and 74 in Ouzinkie (Alaska Department of Community and Economic Development 2007).

Russian and Euro-American interactions with Alaska Natives initiated several important changes in Alutiiq society. Marine resources that traditionally had been objects for reciprocal exchange and consumption were increasingly recognized for their value as export commodities. The attractions of the cash economy drew Alaska Natives into non-indigenous trading companies, capital holding corporations, and processing firms (Fall et al. 2001:49-50).

Kodiak canneries relied extensively on workers from China, the Philippines, Japan, and Mexico. Relatively few Alutiiq men were employed in the canning industry, since they tended to prefer direct involvement in harvest activities. Some sold part of their catch to the canneries, and a few Alutiiq men took part in the boat-building industry (Fall et al. 2001:51).

In the 1930s, some Alutiiq residents of Kodiak were operating cannery-owned commercial fishing vessels. Others worked the production line in the plants (Fall et al. 2001). Extensive commercial fishing activity in the summer months was often followed by subsistence-oriented

harvest activities in the winter. Commercial trapping provided an additional source of income in many households.

Alutiiq fishermen sought independence from the canneries after World War II. But the canneries tended to monopolize the salmon market through ownership of many salmon traps, and it was difficult for Alaska Native fishermen to develop competitive commercial operations (Colt 2000). A ban on salmon traps was sought and finally won by independent operators in 1959, soon after statehood was established. Many persons of Alutiiq ancestry worked in the Kodiak-based commercial fishing industry throughout much of the 20th century, while simultaneously maintaining traditional subsistence life ways.

As its deepwater harbor became increasingly important, the population of Kodiak Island gradually became concentrated in Kodiak City. By 1940, some 864 persons were living in Kodiak City. Meanwhile, the population of Karluk had diminished to 192 persons, Ouzinkie to 253 persons, Old Harbor to 109, and Larsen Bay to 38 (Alaska Department of Community and Economic Development 2007).

Evolution of Local Government. The political structure of early societies on Kodiak Island was based first on relationships between extended families and secondarily upon tribal allegiances. Lineage played a key role determining leadership, but social status and adherence to culturally important gift-giving traditions also influenced one's position in a social hierarchy (Pritzker 2000: 524).

The political organization of historic Alaska Native villages is reflective of the influence of European agencies and institutions, representatives of which encouraged Alutiiq peoples to form village councils led by chiefs and elders, or elected representatives (Alaska Judicial Council 1999). The 1934 Indian Reorganization Act codified federal recognition of these governing bodies and provided Alaska Native groups with a model for reorganizing the political structure of the village councils. Despite new empowerment, the legal authority of village councils was superseded by state and federal agencies.

Village-level councils developed in tandem with a style of government more typical of the lower 48 states. This was first established in 1884, when Congress passed the Organic Act allowing for an Alaska governor and establishment of a legal system with a federal court. The Alaska Territory Constitutional Convention adopted and ratified a Constitution in 1956. This became effective when the territory's statehood was enacted in 1959. Government of the Kodiak polity was subsequently enacted via a complex hierarchy of village, borough, state, and federal political entities and relationships (see Chaffin 1967).

Kodiak Island Borough and other borough governments in Alaska govern through an elected assembly, as do many counties elsewhere in the nation. Kodiak Island Borough was incorporated in 1963. Daily operations are overseen by a borough manager. Kodiak was incorporated as a city in 1940.

Overview of Land Holdings. The European concept of privately owned property gradually replaced indigenous stewardship of the land and the characteristically flexible Alutiiq

arrangement of moving villages in response to environmental challenges and availability of resources. Alaska Native villages have persisted around the archipelago over time, although lands surrounding the best anchorages typically became the property of non-Native persons with commercial interests and capital, and who espoused the ethos of private land ownership. Federal presence in the region accelerated during World War II, as Kodiak became an important staging area for the Aleutian campaign and other North Pacific operations.

Today, five principal entities own land on Kodiak Island: the federal government, the State of Alaska, Alaska Native corporations, Kodiak Island Borough, and persons in the private sector. According to the Kodiak Chamber of Commerce (2006), only about 17 percent of the total land area on Kodiak Island is privately owned sector holdings.

Regarding land holdings among Alaska Natives, the Alaska Native Claims Settlement Act (ANCSA) was passed in 1971 to redress some of the inequities experienced by Alaska Natives, by designating large acreages of Alaska lands as Native-owned. The act was passed after much struggle and negotiation between the Alaska Federation of Natives, federal and state government agencies, oil companies, and conservationists. Through a complex process of negotiations, more than 200 local village and regional corporations assumed ownership of some 44 million acres of land, including land in the Chugach National Forest, Kenai Fjords National Park, the Alaska Maritime National Wildlife Refuge, and the Kodiak National Wildlife Refuge (Mishler 1999).

ANCSA stipulated the transfer of some 675,000 acres of lands in the Kodiak Archipelago to Alaska Native corporations. The Kodiak regional corporation is Koniag, Inc., which currently represents the interests of over 3,500 shareholders. Its extensive land holdings on Kodiak Island are used for commercial, recreational, and cultural purposes.

Afognak Native Corporation represents persons with ancestral ties to Afognak and adjacent islets. The corporation owns some 160,000 acres of land, the use of which is regulated by permit. Natives of Kodiak, Inc. also maintain land holdings on Afognak Island and adjacent islets.

Ouzinkie Native Corporation represents the interests of 410 shareholders. It owns lands around the village of Ouzinkie on Kodiak Island.

Akhiok Kaguyak, Inc. is the village corporation for Akhiok. As discussed later in the report, some 76,000 acres of its EVOS Land Trust holdings were liquidated in 2002.

The Kodiak Tribal Council is the non-profit arm of the Sun'ak Tribal Council, which regained federal recognition in 2000. It represents the interests of many indigenous persons living on Kodiak Island. Finally, Old Harbor Native Corporation represents the interests of some 350 shareholders, which owns parcels of land around Old Harbor and Sitkalidak Island.

While Alaska Native corporations own and maintain extensive lands in the Kodiak Archipelago, 3.4 million acres of land remain under the jurisdiction of the federal government. Some 1.8 million acres of these lands are managed by the U.S. Department of the Interior Fish and Wildlife Service.

The State of Alaska owns 639,000 acres of land on Kodiak Island. Holdings include five state parks totaling 56,448 acres, and much of the island's tidelands. Of note, the Department of Natural Resources leases portions of its tidal holdings to local salmon set netters (Kodiak Island Borough Community Development Department 1983).

Kodiak Island Borough holds title to approximately 70,000 acres of land in the Kodiak archipelago, more than half of which is on Shuyak and Raspberry Islands. Most of these lands were acquired through a state land grant entitlement in the 1970s. Sixty acres are designated for recreational use at 11 municipal parks on Kodiak Island (Kodiak Chamber of Commerce 2006).

Historic Disasters. On June 6, 1912 the volcanic eruption of Mount Katmai on the Alaska Peninsula covered Kodiak Island with 18 inches of ash, clogging salmon streams, filling lakes, and killing vegetation. Commercial salmon fishing and processing operations did not function for much of that year. Numerous Alutiiq people from the Alaska Peninsula were transported to the village of Afognak. Pullar (2004) asserts that traditional knowledge about effective response to such events ensured the safety of Alaska Native residents. Although the eruption was more powerful than that of the 1883 eruption of Krakatoa in Indonesia, no lives were lost.

The earthquake and tsunami of 1964 destroyed 40 percent of the City of Kodiak's downtown business area, and most of the city's food supply. Damage to public and private property was estimated at $22 million in 1967 dollars (Chaffin 1967). The fishing industry was particularly hard hit. Some 46 crab vessels were destroyed and 86 were damaged. Mishler et al. (1995) report that costs associated with losses of fishing vessels amounted to $7 million in 1964 dollars. Canneries in Shearwater and Ouzinkie were also destroyed, as was much of the salmon fleet based there (Chaffin 1967). The village of Afognak was largely destroyed, and both Ouzinkie and Old Harbor required extensive rebuilding. Kaguyak villagers relocated to Akhiok. Eleven Kodiak-area residents died as a result of the combined event (Mullan 2003).

2.3 Overview of Kodiak and the *Exxon Valdez* Oil Spill

The *Exxon Valdez* oil spill was a highly significant event in the history of Kodiak Island and its communities. This description is intended to provide a basic understanding of the event and the way in which it has conditioned the life experiences of Kodiak's citizens since 1989.

Poor weather and various response challenges preceded the movement of oil from the *Exxon Valdez* on Bligh Reef to shorelines as distant as Ivanof Bay along the Alaska Peninsula. By mid-April 1989, extensive portions of the Kodiak Island shoreline had been affected by mousse, tar balls, and/or sheen emanating from the site of the grounding.

The oil spread from the northern end of the island, along the west coast, and through many passages, coves, and small islands that comprise the Kodiak Archipelago (IAI 1990c:37). Commercial and subsistence fisheries were closed throughout the region during the first year of the spill, and an extensive response was undertaken to minimize damage to the region's natural resources.

Clean-up and Mitigation. Not long after the spill first occurred, it became increasingly clear that wind and current could ultimately drive the oil toward Kodiak Island. Local government officials, concerned fishermen, seafood processors, and others formulated response plans prior to the arrival of oil in the region.

Community meetings were held on a daily basis. Officials interacted with the public to discuss the progress of the spill and strategies for effective response. Residents verbalized their own concerns and perspectives. By the time Exxon Corporation became involved, a local response plan had been developed. Local fishing fleets were prepared to respond, lists of local volunteers had been generated, and plans for treatment of oiled animals had been made (IAI 1990c:38-39).

But discussions with local leaders indicated that Exxon Corporation personnel and staff working for its clean-up contractor, VECO, did not articulate effectively with local planners and first responders. Communications challenges notwithstanding, City, Borough, and U.S. Coast Guard (USCG) officials worked with Exxon Corporation and VECO and with outlying village representatives to undertake an effective response on Kodiak Island (IAI 1990c: 40).

The challenges were many and significant. The oil was distributed more sporadically on Kodiak Island than in other oiled regions, but this merely forced a spatially interrupted and hence more logistically challenging clean-up effort. Clean-up methods included: pressure washing of beaches and rocks, removal and bagging of oiled debris and wildlife, cleaning of rocks with rags, and various forms of bioremediation.

Some 46 percent of adults residing in Kodiak Island Borough were employed in oil spill clean-up jobs in 1989 (Fall et al. 2001). Household incomes were typically higher during the spill year than during previous years, but returned to pre-spill levels when clean-up ended (Fall et al. 2001: 298). It should be noted that many non-residents were hired as well, with some friction noted between local and non-local workers and administrators (IAI 1990d:42).

Select Commercial Fisheries Effects. Concerns about the potential effect of oil on the region's seafood and its prospective consumers led to cessation of most commercial fishing activities in most locations around Kodiak Island. Because Kodiak Island is homeport for numerous fishermen who fish in the larger region, some were also affected by closures in Prince William Sound, Cook Inlet, and along the Alaska Peninsula.

Many fishermen leased their vessels and/or participated directly in the clean-up. Many crew members were displaced and also were not entitled to initial compensatory payments provided to vessel owners through insurance adjustors. Many crew members took clean-up jobs. Some processing firms also became involved in the response, leasing vessels and providing various other services.

Indicative of the effects of the spill on participation in the region's marine fisheries in general, salmon landings from the Kodiak region decreased by 60 percent or 11.3 million fish between 1989 and 1990. This was less than half of the pre-season harvest projection of 14.5 million salmon (IAI 1990b:31).

The Kodiak salmon seine fleet was most significantly affected by the spill event and associated closures. Other affected fisheries conducted from and around Kodiak included: Dungeness crab, food bait herring, roe herring drift, row herring seine, salmon beach seine, salmon set net, scallops, various finfish, and various shellfish. Again, some Kodiak-based fishermen were also affected by spill-induced closures and pricing problems occurring elsewhere in the larger region.

As the effects of the spill were increasingly felt on Kodiak Island, the local economy became based in spill response work and fishery compensation (IAI 1990c:47). Exxon eventually disbursed $300 million in compensation to more than 11,000 individuals and businesses in affected portions of Alaska (Exxon Mobil 2007).

Not all fishermen elected to become involved in clean-up operations. Such persons lost both fishing income and income that might have been earned from spill clean-up. Other fishermen earned extensive income through response clean-up work and also received compensation from Exxon Corporation. Economic effects were therefore varied and driven in part by personal decisions. Of note, some fishermen later regretted not working on the clean-up and stated that it put them at a competitive disadvantage with fishermen who were able to upgrade vessels and gear with income earned through participation in the clean-up (IAI 1990c).

Because it is typically the case that more Native than non-Native villagers on Kodiak Island are commercial fishermen, Native commercial fishermen were disproportionately affected by the spill event in their home communities (IAI 1990d:58-59). Similarly, Native villagers were disproportionately affected by the spill's effects on subsistence activities.

Effects on Subsistence Practices. Subsistence hunting and fishing and associated cultural practice were and remain important aspects of life on Kodiak Island. Today, this is particularly the case in the villages. In the early 1980s, nearly all Alaska Natives on Kodiak used subsistence resources, with average per capita consumption of 148 pounds of wild foods per year. Fall et al. (2001:75) report that 96 percent of Alaska Native persons residing in the spill-affected areas harvested subsistence foods, 90 percent received harvested items from others, and 79 percent shared their harvest with others.

Following the spill, Alaska Department of Fish and Game (ADF&G) personnel considered closing subsistence fisheries throughout the Kodiak Management Area. But given the sporadic distribution of oil around the island, it was decided that subsistence fishermen should be allowed to retain the flexibility to shift harvest activities to unaffected areas. Thus, not all areas were closed. Subsistence activities were disrupted nonetheless. Most village residents reported decreased involvement in fishing for food because of the oil spill. For example, while approximately 83 percent of households in Akhiok, Karluk, Kodiak, and Larsen Bay had engaged in subsistence activities prior to the spill, only about 68 percent reported doing so after the spill. Some 60 percent of Kodiak respondents reported that the oil spill had a direct effect on their normal patterns of hunting and fishing (IAI 1990c:28).

Fall et al. (2001:208) report that subsistence harvest declined by 50 percent on Kodiak Island during the year following the spill. This followed from strategic common-sense avoidance of affected areas and less time for traditional activities given participation in clean-up activities.

Figure 2-3 Rural Setting and Modern Communications Technology on Kodiak Island, 2008

IAI (1990d:xiv,52) reports that the result of diminished participation in subsistence activities led to a variety of social effects, including less time spent with people from other households and diminished availability of foods for sharing with kin, elders, and members of other households in one's home village and elsewhere on Kodiak. Decreased involvement in subsistence activities also led to increased reliance on store-bought foods (IAI 1990c:47).

Initial and Ongoing Litigation. The first of many lawsuits were initiated against Exxon Corporation two weeks after the grounding of the tanker in Prince William Sound. Eight months later, more than 150 lawsuits had been filed. The cases and claims were gradually either settled out of court, adjudicated, or consolidated for future hearing. Many thousands of claimants gradually became involved in the protracted punitive damages suit, the settlement of which is the vector of hypothetical social change that is the principal subject of this report. The ongoing series of legal debates, appeals and settlements, and associated speculation, opinions, and promises of favorable outcomes have constituted chronic sources of stress for many of those involved, including many residents of Kodiak Island. As Mitchell (1996) notes and our own long-term research of the spill indicates, the far-ranging and prolonged litigation 'mania' following from the oil spill should be considered one of its most significant social impacts.

The Ninth Circuit's $5 billion punitive damages figure created an expectation of windfall among many plaintiffs. Even after the settlement was later reduced to $2.5 billion, many plaintiffs felt confident the new amount would remain constant. Lawyers and investment companies worked to promote financial planning to help claimants avoid money mismanagement that can attend

large windfalls, such as lottery winnings. As one prominent lawyer explained, "it was an attempt to encourage people to invest." The non-profit foundation Oiled Regions of Alaska (ORA) was established to encourage giving to charitable organizations. This was seen as a way to decrease tax obligations and to give back to the communities that had been harmed by the oil spill.

The EVOS Land Trust. The EVOS Trustee Council was formed with funds from settlement of the *Exxon Civil Case.* The principal objectives of the Council involve: (a) the funding of projects that would protect wilderness habitat in oil-affected and adjacent areas around the region, and (b) the purchase of such lands for purposes of conservation. Several Alaska Native corporations and entities on Kodiak Island participated in this program, as follows. The Old Harbor Native Corporation sold 31,609 acres of land to the Council for $14.5 million. This acreage subsequently became part of the Kodiak National Wildlife Refuge. The Trustee Council also purchased: 119,000 acres from the Akhiok-Kaguyak Corporation for $46 million; 117,000 acres from Koniag, Inc. for $26.7 million; 42,000 acres from the Afognak Joint Venture group for $70.5 million; 41,500 acres from Seal Bay/Tonki Cape for $39.5 million; and 27,000 acres from Kodiak Island Borough for $42 million (Phillips 1999). Some 7,000 acres of land was also purchased through its small parcel buyback program, 2,923 acres of which were located in the Old Harbor area. Other small parcel purchases were located near Larsen Bay, inside Karluk Lagoon, and along the Ayakulik River (Map 2-1).[11]

The sale of land was intended to support Trustee Council goals and benefit Alaska Native corporation shareholders. Mishler (1999) asserts that proceeds helped offset losses resulting from downturns in the commercial fishing industry.

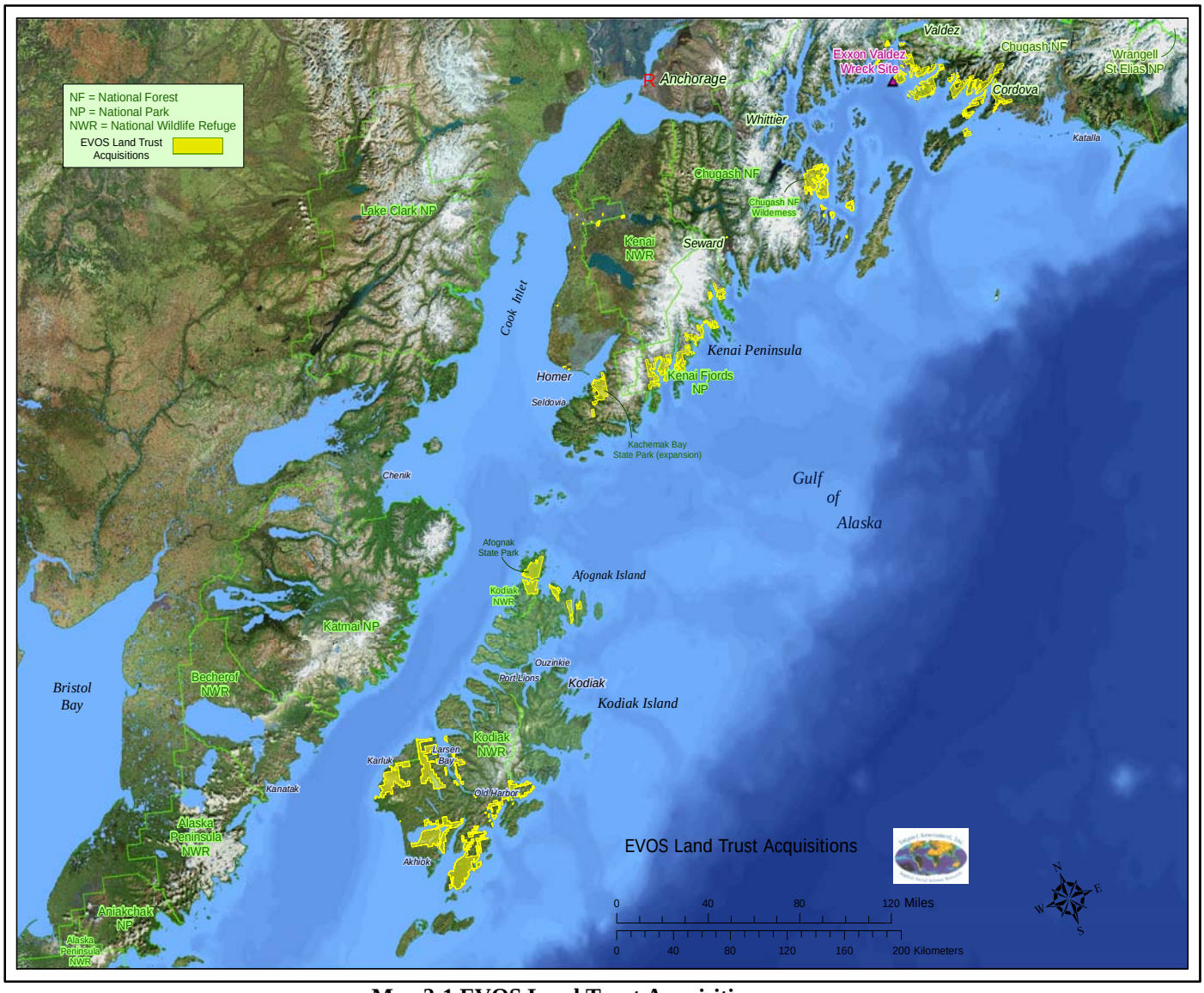
The land purchase program was not without problematic social effects. The Akhiok-Kaguyak Corporation, for example, experienced much internal disagreement over the course of distribution of buyback proceeds. Shareholders eventually took the corporation president and board to court to contest the proposed dividend amount. The board eventually settled out of court and the president was subsequently voted out of office (Mishler 1999).

As discussed later in this report, Akhiok-Kaguyak Corporation later liquidated much of the $36 million trust fund that had been part of the EVOS civil settlement. This resulted in two large settlements (~$100,000) to individual shareholders and a range of subsequent changes, including, among others: increased mobility and hence increased in- and out-migration of residents; changes in patterns of employment, including temporarily diminished participation in commercial fishing (see Chapter Six of this report); and changes in spending patterns, including increased investment in subsistence hunting and fishing activities.

As of March 2010, some 691,446 acres had been acquired by the EVOS Trustee Council. Approximately $100 million was at that time available for additional purchases.

[11] Map 2-1 was created from data acquired through the Alaska State Geo-Spatial Data Clearinghouse and the EVOS Trustee Council (see http://www.evostc.state.ak.us/habitat/large/).

The Settlement and Social Remediation. According to Fall et al. (2001:288), litigation settlement monies have led to some degree of economic and cultural revitalization in Alutiiq villages, including those on Kodiak Island. In many cases, village corporations and shareholders have used settlement monies to improve local service and physical infrastructure. For instance, settlement funds have been used to support the *Kodiak Youth Spirit Camp,* which was established to educate youth about traditional Alutiiq culture. The *Kodiak Island Youth Area Watch* was also supported. This project is designed to engage students in projects that are in line with the general restoration objectives of the Trustee Council (Schneider 2003). Fall et al. (2001:300) assert that while a cultural renaissance was occurring before the oil spill occurred, settlement monies do appear to have furthered cultural revitalization in the region.



Map 2-1 EVOS Land Trust Acquisitions

3.0 Analytical Framework and Field Methods

This chapter describes the rationale and methods used to develop the baseline monitoring framework and the methods used to examine the effects of EVOS litigation and settlement on Kodiak Island. The overall approach was designed to examine long-term local and regional changes resulting from: (a) settlement of the case, (b) disbursement of damage awards, and (c) other social and economic processes both related and unrelated to the oil spill.

3.1 Analysis of Baseline Trends and Conditions

Characterization of baseline trends in select social and economic conditions in the study region was both descriptive and analytical in nature. Development of the baseline was intended to provide the contextual information needed to assess the impact of settlement monies vis-à-vis other sources of change.

Here we review basic economic principles to clarify the research design. First among these is *optimization*. Optimization holds that consumers will maximize well-being through participation in the labor force, through measured rates and kinds of consumption, and through savings. Under these parameters, consumers are constrained by a fixed budget. All else held equal, disbursement of punitive damage awards may fundamentally expand household budgets while generating opportunities for savings and/or consumption. This may, in turn, reduce the need for optimizing well-being through behavior such as engagement in the workforce. As such, settlement-related changes in baseline economic conditions and variability in behavioral response to those conditions at individual and household levels of analysis may collectively affect the economies of Kodiak Island.

Theoretically, producers such as commercial fishermen and other small business owners engage in a rational strategy of optimization; in this case, maximization of profit. The ability to maximize profit depends on available capital and labor costs. As a form of capital, settlement monies have the potential to improve the chances that any given business owner will be able to improve his or her profit margin.

The concept underlying *equilibrium* is also pertinent to the current research. Originally advanced by Ricardian economists, the equilibrium theory of distribution and growth holds that stability is the natural state of the economy (Wilk 1996:48). The concept is heuristically useful for understanding the instability which, to some extent, characterizes all local and regional economies.

The *export-base model* is useful for understanding the basic economic structure of resource-dependent regions such as Kodiak Island (Haines 1997). The model is also useful for measuring the magnitude of short-term direct, indirect, and induced effects from exogenous *shocks*. For the purpose of this assessment, the EVOS punitive damage settlement is treated as an exogenous shock which generated direct effects on the economies of the study region and its communities (Haines 1997). In economic terms, a shock is an unpredictable change in external conditions that exerts a positive or negative effect on local or regional economic conditions. For instance, the stock market failures of 2008 generated an economic shock of unprecedented proportions

throughout the nation. In an Alaska-specific context, a significant shock might result from a major regulatory change in marine fisheries, or from a particularly robust period of landings coupled with good market conditions (or conversely, a crash in resource availability or overseas prices for local salmon). In this case, the EVOS punitive damages settlement was conceived as a source of rapid economic change of unpredictable scope and with uncertain effects.

In this context, a *direct effect* follows from an economic shock to enable or constrain local spending patterns. An *indirect effect* often follows. An example of the sequence of economic shock to direct economic effect to indirect economic effect would be the spending of Federal Emergency Management Administration (FEMA) monies by local contractors and suppliers hired to respond to a hurricane in one of the nation's coastal communities. Following this logic, the arrival of punitive damage award monies in Kodiak Island banks would hypothetically be followed by increased spending in local marine supply establishments, for instance, generating a secondary or indirect effect among retailers who would then possess more capital to invest in some aspect of their business or to spend in some other fashion. Indirect effects are traditionally referred to as multiplier effects.

The extent of the total direct impact of an exogenous shock under these conceptual parameters is determined not only by its initial magnitude, but also by the way it is distributed across the economy and by the nature of the economy in question. We use the traditional export-base model, which envisions export of local products as the regional economic engine, to elucidate the direct and indirect impacts of exogenous shock on known relationships within and between Kodiak's economic sectors. Because the economy of Kodiak is so deeply rooted in the commercial fishing industry, and because we hypothesize that settlement induced spending and investment is likely to be expressed in the support sector of that industry, we use the export-base model in a way that analytically isolates support-sector income and employment from the basic and government sectors of the economy.

Select baseline socioeconomic data were organized into a time-series framework in order to enable assessment of key effects of the settlement. Appropriate economic, demographic, and social indicators informed the overall process and analytical context. Indicator variables were selected for use based on relevance to the research hypotheses and the extent to which data were available and/or suitable for facilitating change over time.

For instance, seasonal and cyclical trends in Kodiak's fishing sectors were assessed using select indicators, and certain variables were selected to provide a benchmark for assessing external shocks or other anomalies. Steps for time-series assessment in this case include the following: (1) per historic and contemporary patterns, project trends beyond date of settlement award (using a 95 percent confidence range for quantifiable data); (2) update the baseline as new data become available; (3) document the nature and timing of the income shock event as its manifests in the region following the settlement and over a period of time that would allow effects to manifest at least initially; and (4) develop analysis that relates baseline trends and conditions, projected conditions, and actual data collected during and after the settlement.

Note that observed departures from baseline projections can be evaluated for a range of quantifiable variables and that the rationale can also applied to qualitative assessment of change.

Moreover, qualitative data can be used to interpret and cross-validate quantitative data and vice versa. For purposes of this study, a combination of quantitative and qualitative data are used especially to: (a) examine relationships between commercial fishing and subsistence practices and investment in these activities, (b) analyze the implications of those decisions and relationships with respect to the larger social and economic trends and conditions that have characterized the Kodiak region prior to and during the settlement, (c) conceptually project or hypothesize the effects of the settlement on select historic and contemporary trends and conditions, and (d) examine whether, how, to what extent, and why settlement award monies have contributed or are contributing to economic and social change in the study region.

3.2 Elaboration of the Research Hypotheses

The overarching hypothesis of the current study was that the EVOS punitive damage awards would influence individual employment, spending, and investment behavior and thus collectively affect important aspects of life in the affected region. Based on the findings of Knapp et al. (1984), who examined the economic effects of the Alaska Permanent Fund Dividend Program,[12] it was hypothesized in this case that unearned income is likely to lead to increased spending and consumption of goods, and more extensive participation in leisure activities. Because leisure activities are correlated with diminished participation in the workforce, it was hypothesized that this would occur to some extent in the present case. But it should be noted that diminished participation in the workforce logically may be offset by an overall increase in employment opportunities resulting from a stimulated regional economy.

According to the U.S. Bureau of Labor Statistics (2011), commercial fishing is the nation's most dangerous occupation, with a fatality rate of 116 deaths per 100,000 workers. This is over 30 times greater than the average fatality rate for industrial occupations in total. Commercial fishing is also a risky investment. Many commercial fishing businesses are constantly on the verge of failure, subject as they are to uncertain market conditions, a finite resource base, and the exigencies of the marine environment and fishing itself.

Thus, it was hypothesized that settlement monies would lead some fishermen to work in less risk-laden industries or retire. But plans and perspectives on the future in this case are influenced by many factors, including: (a) spending and investment philosophy, (b) socioeconomic status, (c) employment status, (d) existing debt, (e) interest in maintaining or establishing a business, (f) interest in staying on Kodiak Island, (g) age and station in life, (h) previous speculative investment or spending, and (i) existing level of satisfaction with fishing.

It was also hypothesized that settlement monies would lead some recipients to persist in the commercial fishing industry. Many claimants assert that they are not likely to exit the industry, given various non-pecuniary benefits associated with fishing and fishing-centered lifestyles. Many fishermen envision that settlement money will help maintain such lifeways.

[12] The Alaska Permanent Fund Dividend Program involves the distribution of revenue from oil and natural gas development in the State of Alaska to full-time residents via annual cash payments. Each resident receives an equal share of a total appropriation; in some recent years individual shares have approached $2,000.

Thus, fishermen may use settlement monies to invest in their existing operations or in new fishing ventures. For instance, some fishermen have discussed the possibility of establishing guide services. One lifelong fisherman in a Kodiak village explained how the guide industry is a favored alternative to commercial fishing:

> "For some fishermen it's hard to change. But most realize [guiding] is the only way to make it now. I've lived by the sea my whole life; I didn't have to, but I chose to. I went to college and had jobs. I chose to operate a lodge rather than stay in town [to work]. I realized that I could be doing the same things I used to do as a commercial fisherman – on the sea, with wild salmon . . ."

It was further hypothesized that some residents would use punitive damage settlement monies to leave Kodiak Island. Importantly, out-migration can bear significant social and economic consequences in small towns and villages such as those on Kodiak Island. For instance, out-migration may alter local population dynamics by affecting birth rates, the nature of the work force, and continuity of local traditions. Similarly, the characteristics of persons who in-migrate may affect the local societies as they introduce new social mores, skills, capital, and perspectives.

Residents' decisions to remain in a chosen community during periods of economic challenge are often influenced by culture. For example, many Alaska Native residents value the opportunity to engage in a subsistence lifestyle in Kodiak's villages. Although village life can be economically challenging in certain ways, most residents are involved in and reportedly enjoy various aspects of traditional lifeways that include hunting and fishing, and the processing, consumption, and sharing of wild foods. For this reason, it was hypothesized that settlement award monies would both reduce some of the economic stress experienced in the villages, while contributing to the capacity of residents to perpetuate key aspects of contemporary Alutiiq culture.

Finally, it was hypothesized that the litigation and settlement processes would generate sociopolitical tensions within and between social groups in the study region. This potential outcome was anticipated as a possibility in part because the oil spill and clean-up generated problems of this nature, and because subsequent litigation and settlement processes are and were seen by claimants as an extension of the original event. Moreover, it was posited that disbursement of varying amounts of money across numerous claimant categories would generate social tensions in some quarters, regardless of historic context.

Although social discord and social-psychological effects were observed during the course of this study, these were not the subject of in-depth analysis because: (a) the spill and clean-up caused many instances of social discord, some of which were exacerbated by protracted litigation, and it was deemed that in-depth research had the potential to worsen such problems in certain settings; (b) such work would have necessitated extensive study of micro-sociological dynamics at the expense of other research topics; and (c) disaster-related psychological problems are subjectively experienced, rendering valid, objective, and refutable analysis of the subject matter a significant and challenging study in itself.

Formulation of a regional economic baseline guided by our hypotheses warranted several considerations, framed here as questions. First, what are the most appropriate measures of

regional socioeconomic change in this case? Second, what methodological terms are required to establish a baseline capable of evaluating the effects of settlement award distributions? Third, is it possible to distinguish the regional and localized impacts of settlement awards from other simultaneously occurring events, such as those described in Chapter Four?

The subject of this study is a socioeconomic system characterized by productive commercial and subsistence fisheries, guided hunting and fishing opportunities, scenic and wildlife values, and significant Coast Guard and strategic defense activities.[13] Change in these sectors can be assessed using a variety of indicators and research methods.

3.3 Ethnographic Research Methods

This project called for a methodology that would enable analytical isolation of changes both related to and distinct from the settlement. Notably, the phased manner of the settlement distribution process coupled with a changing economic climate and an uncertain fishery outlook presented challenges in this regard. These were solved by using and cross-validating a variety of archival and interview data. Interview data were particularly useful for making sense of changes in marine fisheries data and other economic indicators.

Extensive archival research, observational work, focus group research, and many scores of interviews were conducted during the baseline development phase of this project (Phase One). Three periods of ethnographic research were conducted to initiate assessment of the settlement vis-à-vis other sources of change in the region. This work was conducted in December 2008; June and July 2009; and April 2011.

The first round of post-settlement field work was timed in accordance with award distributions to non-disputed claimants, including participants in the Kodiak salmon fisheries. The second round was conducted after the majority of distributions to non-disputed claimants had been completed. During this period, the Ninth U.S. Circuit Court of Appeals ordered Exxon to pay interest on the settlement. Set at a rate of 5.9 percent calculated from 1996, interest payments doubled the amount of awards previously received by most claimants. The third period of fieldwork was conducted shortly after the 17th round of distributions were made. By this time, the majority of claimants had received final payment of awards and accrued interest. The Exxon Qualified Settlement Fund was still addressing lien-encumbered claims at this point in time.

Discussions with approximately 135 award recipients, public officials, and other informants were completed during the settlement-specific fieldwork. Many additional phone conversations and e-mail correspondence were also conducted during this time. For instance, business owners and financiers were repeatedly contacted to facilitate an understanding of local spending and investment patterns after the settlement.

In some cases, the discussants fit into more than one claimant category. For example, an impacted business owner might also be a subsistence fisherman, and a tribal representative might

[13] The United States Coast Guard typically employs some 17 percent of the Kodiak workforce. The Kodiak Launch Complex provided about 45 year round jobs in 2005 (Kodiak Chamber of Commerce 2007).

also be a commercial fisherman. Discussions were conducted in private homes, places of work, on fishing vessels, and other locations. Researchers contacted informants by phone as needed in-between field visits to gather new information or to clarify points of uncertainty. In-person interviews, phone conversations, and e-mail correspondences with local bankers and financial investors helped to assess the movement of damage awards through the local economy.

Fishing claimants were located through a social network sampling process. As the research progressed, award recipients were asked to identify additional persons and businesses most likely to have experienced direct and indirect impacts. The approach was particularly valuable for identifying certain kinds of awardees, such as commercial high-liners and knowledgeable subsistence fishermen. The approach was relatively less successful for identifying persons in less obvious categories, such as part-time crew members. Identifying such persons often required additional time and effort in the field.

Discussion topics with fishermen included: the nature of individual use of awards; the impact of the Supreme Court ruling; and the effect of the awards on the Kodiak community as a whole. Topics related to the broader context within which recipients were making consumer and investment decisions included: history of involvement in specific fisheries; recent fishery-related investments not related to the settlement; and the general status of the commercial fishing industry, in terms of regulations, market prices, and other important factors.

Discussions with public officials covered a wide variety of topics, including: the regional economy; the village economies and employment issues; concerns related to administration of city matters; and public assistance programs available to residents.[14] Discussions with tribal representatives focused on changing practices and patterns of subsistence living, social and economic aspects of village life, and other factors.

In order to better understand how awards were being spent, the significance of the award schedule, and impacts of the awards to local businesses, discussions were conducted with bankers, investment specialists, tax consultants/bookkeepers, and loan officers. Such personnel provided the financial context needed to understand the nature of commercial fishing loans, patterns of loans and taxation, and the retirement structures within which commercial fishermen made their spending and investment decisions.

Finally, researchers spoke with key personnel at the Alaska Department of Fish and Game, and lawyers involved in the EVOS punitive damages case. Conversations with ADF&G staff focused on: recent harvest levels, the current regulatory environment, subsistence harvest data, and challenges experienced by subsistence harvesters. Discussions with legal counsel focused on the history of the case, calculation of awards, and the nature of the distribution process.

[14] Discussants included representatives of: the Kodiak Island Housing Authority; Department of Labor, Health, and Human Services; Kodiak Area Native Association; various Native corporations; village mayors; Village Public Safety Officers (VPSOs), and clinic personnel in Port Lions, Larsen Bay, and Ouzinkie.

4.0 Select Conditions and Trends on Kodiak Island: 1940-2010

This chapter provides an overview of select conditions and trends in the study area. The material provides the context needed to understand social, demographic, and economic changes in the Kodiak Island study region prior to and during the EVOS punitive damages settlement.

4.1 Demographic Trends

Population Changes. The population of Kodiak Island grew slowly until the 1940s, when the United States entered World War II (Fall et al. 2001). In the early 1930s, between 400 and 800 persons resided in Kodiak City. Between 1940 and 1950, many military personnel arrived in the region, boosting the population to some 15,000 persons. Infrastructure and services were necessarily expanded to accommodate this growth (Chaffin 1967).

Several significant broad-scale demographic shifts occurred in the region during the latter half of the 20th century. The first can be attributed to the 1964 earthquake, when residents of heavily impacted villages were forced to relocate to other areas. Port Lions was established during this period.

A second shift occurred as the population of Kodiak Island Borough (KIB) increased by nearly 26 percent during the first three years of the 1980s. This period of growth was associated with: (a) regional expansion of the groundfish industry; (b) growth in the then-highly profitable salmon fisheries; and (c) the necessity of a labor force to support these fisheries.

Yet another change occurred as the population increased by another 15 percent between 1990 and 1991. Some analysts attribute this growth to an influx of newcomers who remained in Kodiak following work on the clean-up phase of response to EVOS (Mishler et al. 1995).

The U.S. Census Bureau enumerated 13,592 persons in the Kodiak Island Borough in 2010, indicating a population increase of 36 percent since 1980. Since 2000, however, the total KIB population has decreased by 2.3 percent. Table 4-1 below depicts yearly population figures and rates of change in Kodiak Island residency since 1980.

Since 1990, the population growth rate on Kodiak Island has been slower than for Alaska as a whole. The downturn is likely reflective of difficulties in the region's salmon fisheries and associated effects on the larger economy (Fried and Windisch-Cole 1999).

Table 4-1 Kodiak Island Borough Population Figures and Rates of Change: 1980-2010

Year	Population	Net Change	Rate of Change (%)
1980	9,939	--	--
1981	10,132	193	1.9
1982	12,623	2,491	24.6
1983	12,978	355	2.8
1984	13,207	229	1.8
1985	13,525	318	2.4
1986	13,467	-58	-0.4
1987	13,469	2	0.0
1988	13,698	229	1.7
1989	13,682	-16	-0.1
1990	13,309	-373	-2.7
1991	13,018	-291	-2.2
1992	14,635	1,617	12.4
1993	14,594	-41	-0.3
1994	15,059	465	3.2
1995	14,847	-212	-1.4
1996	14,158	-689	-4.6
1997	13,648	-510	-3.6
1998	13,716	68	0.5
1999	13,989	273	2.0
2000	13,913	-76	-0.5
2001	13,565	-348	-2.5
2002	13,643	78	0.6
2003	13,817	174	1.3
2004	13,573	-244	-1.7
2005	13,693	120	0.9
2006	13,457	-236	-1.7
2007	13,664	207	1.5
2008	13,954	290	2.1
2009	13,860	-94	-0.7
2010	13,592	-268	-1.2
Total Net/Rates of Change between 1980-2010		3653	+36.7

Source: Alaska Department of Labor and Workforce Development (2011d)

Ancestry and Demographic Change. Table 4-2 below depicts characteristics of the Kodiak population in terms of ethnic ancestry. Because numerous workers come to Kodiak from around the world to participate in the seafood processing sector, the resident population has changed dramatically in the last decades. Workers, who originally came to the area for seasonal employment, gradually established relationships to place and family and began to stay in the region. For instance, the percentage of residents who report Asian or Pacific Islander backgrounds has more than doubled in recent decades (U.S. Census Bureau 2011). There is now a strong historical association between persons of Filipino ancestry and the seafood processing industry on Kodiak Island, and an increasing level of participation on the part of Pacific Islanders. For further discussion of these phenomena, see Fried and Windisch-Cole (1999).

According to the 2010 Census, the resident Alaska Native population in the study region has decreased by six percent over the last four decades. Persons reporting Caucasian ancestry comprise the majority of KIB residents, while persons claiming Hispanic and African-American heritage are among the minority.

Table 4-2 Ethnic-Racial Composition of the Population, Kodiak Island Borough: 1980-2010

Population Statistics	1980		1990		2000		2010	
	Count	Percent of Total	Count	Percent of Total	Count	Percent of Total	Count	Percent of Total
Total Population	9,939	100	13,309	100	13,913	100	13,592	100
Caucasian	7,148	71.9	9,467	71.1	8,805	63.3	7,522	55.3
Alaska Native/Native Am.	1,911	19.2	2,162	16.2	2,309	16.6	1,797	13.2
African American	73	0.7	138	1.0	153	1.1	92	0.7
Asian/Pacific Islander	807	8.1	1,542	11.6	2,646	19.0	2,747	20.2
Other	142	1.4	267	2.0	387	2.8	397	2.9
Two or More Races	n/a	0.0	n/a	0.0	718	5.2	1,037	7.6
Hispanic	304	14.1	663	5.0	848	6.1	996	7.3

Source: Alaska Department of Labor and Workforce Development (2011d)

Table 4-3 below depicts the relative proportion of Alaska Natives residing in each study community at the time of the last three Census counts. As has been the case for many centuries, most residents of the outlying villages are Alaska Natives.

Table 4-3 Proportion of Alaska Natives Residing in Kodiak Communities: 1980-2010 (%)

Community	1980	1990	2000	2010
Akhiok	93.3	96.6	93.8	50.7
Karluk	100.0	91.7	96.3	94.6
Larsen Bay	84.3	87.5	89.2	71.3
Old Harbor	89.9	92.2	86.9	87.6
Ouzinkie	94.2	92.6	88.9	79.5
Port Lions	68.9	n/a	65.3	58.8

Source: U.S. Census Bureau

Components of Population Change. Births, deaths, and migration comprise the vectors of population change in a given region. Table 4-4 below depicts demographic change in the study area between 1970 and 2010. Of particular note is the changing rate of in- and out-migration. The 1970s, 1990s, and 2000s were decades of extensive out-migration, whereas many people migrated to the area in the 1980s.

Table 4-4 Demographic Change, Kodiak Island Borough: 1970-2010

Period	Start Population	Total Change	Percent Change	Births	Deaths	Natural Increase	Percent Change	Net Migrants	Percent Change
2010-09	13,592	-268	-1.2	n/a	n/a	n/a	n/a	n/a	n/a
2009-08	13,860	-94	-0.7	225	54	171	1.2	-265	-1.9
2008-07	13,954	290	2.1	199	58	141	1.0	149	1.1
2007-06	13,664	207	1.5	214	63	151	1.1	56	0.4
2006-05	13,457	-236	-1.7	214	64	150	1.1	-386	-2.9
2005-04	13,693	120	0.9	205	45	160	1.2	-40	-0.3
2004-03	13,573	-244	-1.7	194	54	140	1.0	-384	-2.8
2003-02	13,817	174	1.3	233	53	180	1.3	-6	--
2002-01	14,167	-315	-2.2	208	42	166	1.2	-88	-0.6
2001-00	13,565	-348	-2.5	227	49	178	1.3	-590	-4.3
1999-00	*	*	*	*	*	*	*	*	*
1999-98	13,716	273	2.0	268	53	215	1.6	58	0.4
1998-97	13,648	68	0.5	258	47	211	1.5	-143	-1.0
1997-96	14,158	-510	-3.6	271	44	227	1.6	-737	-5.2
1996-95	14,847	-689	-4.6	266	63	203	1.4	-892	-6.0
1995-94	15,059	-212	-1.4	277	58	219	1.5	-431	-2.9
1994-93	14,594	465	3.2	285	46	239	1.6	226	1.5
1993-92	14,635	-41	-0.3	285	63	222	1.5	-263	-1.8
1992-91	13,018	1,617	12.4	271	44	227	1.7	1,390	10.7
1991-90	13,309	-291	-2.2	428	77	351	2.6	-642	-4.8
Population Change by Decade									
2010-2000	13,913	-321	-2.3	*	*	*	*	*	*
2000-1990	13,309	604	4.5	2,897	544	2,353	17.7	-1,682	-12.6
1990-1980	9,939	3,370	33.9	3,042	533	2,509	25.2	861	8.7
1980-1970	9,409	530	5.6	2,343	470	1,873	19.9	-1,343	-14.3

* Data not available; Source: Alaska Department of Labor and Workforce Development (2010a; 2011d)

Migration behavior and subsequent population trends can relate to changes in regional employment. For instance, seasonal peaks in fishing and seafood processing opportunities may be insufficient for some workers to meet local costs of living requirements. This may result in out-migration, despite apparent stability in overall annual average employment figures. Cyclic or rotational work opportunities, such as those provided by the U.S. Coast Guard on Kodiak Island, can also affect rates of in- and out-migration.

Net migration figures indicate the total difference between the number of persons moving to and from Kodiak Island. The trend of net out-migration appears to be associated with general economic decline in the fishing industry, as discussed throughout this report. During the 1980s, when fisheries-related economic growth was characteristic of the region, net migration was positive; the Kodiak population grew by almost nine percent during the period. During the 1990s, when the economy began to decline and fisheries became relatively less profitable, people began leaving the region.

The relationship between migration and employment can be both direct and indirect in nature. In some cases, out-migration can occur if the quality of available employment declines, or if wages are insufficient to maintain the requirements of the workforce. Emigration can also occur if opportunities do not meet the demands of population growth resulting from natural increase.

The social and economic implications of change in population size and structure tend to be amplified when the population in question is relatively small and geographically isolated. This is the case for Kodiak villages and, to a lesser extent, for the region as a whole. For instance, closure of canneries in Karluk is associated with extensive out-migration. Without some form of economic stimulation, natural increase is unlikely to lead to growth of the community in question.

Significantly, individual decisions to migrate are often strongly influenced by the nature and extent of economic opportunity between places (Huskey 2004). Donkersloot (2006) investigated the situation in the Bristol Bay region of Alaska, and found that young women are significantly more likely than young men to seek opportunity in other parts of Alaska. The author asserts that this is one result of ecological and economic challenges in the region's commercial fisheries. She argues that young women experience more stress than do young men and that they tend to aspire toward solutions that involve attainment of higher education and economic gain outside the village setting. This has obvious implications for the demographic structure of villages in the Bristol Bay region, with direct relevance to the situation in villages on Kodiak Island.

A prominent public official described a similar situation on Kodiak Island, with the added perspective that while various programs provide incentives for youth to leave their home villages, sufficient incentive to return is often lacking:

> As more and more [kids] receive scholarships, their draw to come back to the villages is limited because there are no jobs for them to use their educational background . . . So, they remain in Kodiak or Anchorage or go outside of Alaska . . . People want their children to get a better education, but there isn't the opportunity for them to come back. So, it's like the village dies . . .

Commercial fishing and processing have been the principal venues for earning income in the villages. Opportunities to work in local and state government agencies and in Alaska Native corporations are limited. Moreover, many government jobs are in jeopardy of disappearing under current budgetary constraints.

Demographic change in the Kodiak region cannot be adequately indicated by net migration. It should be noted that people often move in and out of the region, with little net change in the size of its population. Table 4-5 below illustrates the tendency toward population "turnover." The table presents the results of the Census question, "where did you live five years ago?" The gross rate of immigration describes the share of the population that moved into Kodiak over the previous five-year period. This rate fell from 41.3 percent in 1980 to 30 percent in 2000. Note that rates of population turnover tend to be affected by the age structure of a resident population. Younger persons are more likely to emigrate; elderly persons tend to be more likely to stay; and many people return to the village setting after pursuing interests in Anchorage, elsewhere in Alaska, or outside the region entirely.

Figure 4-1 View of Larsen Bay, Kodiak Island, 2006

Table 4-5 Population Mobility Figures for Kodiak Island Borough: 1980-2000

Population Statistic	1980		1990		2000	
Total Population of Kodiak	9,939		13,309		13,913	
Kodiak Population Five Years Earlier	4,854		6,844		8,394	
Number of Persons Who Moved to Kodiak	4,101		5,053		4,173	
From Other Places in Alaska	705	17.2 %	1,112	22.0 %	974	23.3 %
From Other Places in U.S.	3,066	74.8 %	3,613	71.5 %	2,631	63.0 %
From Outside U.S.	330	8.0 %	328	6.5 %	568	13.6 %
Gross Rate of In-migration	0.413		0.380		0.300	

Sources: U.S. Census Bureau 2000 Summary File 3, P24; 1990 Summary Tape File 3, P043;
1980 General Social and Economic Characteristics, Alaska

As depicted in the table above, population in-migration resulted in almost one-third of the Kodiak population being new to the region between 1990 and 2000. The characteristics of newly arriving residents changed slightly over the period. More were likely to have migrated from other parts of Alaska and from the contiguous United States in 2000 than in 1980. Population mobility data from the 2010 Census were not yet available at the time of this writing.

Demographic data indicate that net out-migration occurred in all of the Kodiak villages during the last three decades. Population increases occurred only in Kodiak City. Discussions with local leaders and residents clearly indicate that many persons strongly identify with the village setting and appreciate the social and cultural attributes that contribute to the unique nature of each village in contemporary Alaska and many describe the amenities of village life in terms of opportunities to maintain subsistence life ways, to maintain family ties, and to experience the natural surroundings of Alaska traditional ways. But many also identify the challenges inherent in rural life in Alaska that can override cultural ties to place and, indeed, have resulted in out-migration. Beyond the lack of quality employment and educational opportunities, common

reasons for relocating include: a high cost of living, social issues such as substance abuse, and limited health care.

Table 4-6 Population Figures for the Outlying Communities on Kodiak Island: 1980-2010

Place	1980		1990		2000		2010		1980-2010
	Persons	% of Total	Persons	% of Total	Persons	% of Total	Persons	% of Total	Growth Rate %
Kodiak Is. Borough	9,939	100.0	13,309	100.0	13,913	100.0	13,592	100.0	36.7
Kodiak City	4,756	47.9	6,365	47.8	6,334	45.5	6,130	45.1	28.9
Kodiak Station	1,370	13.8	2,025	15.2	1,758	12.6	1,301	9.6	-5.0
Akhiok	105	1.1	77	0.6	80	0.6	71	0.5	-32.4
Karluk	96	1.0	71	0.5	27	0.2	37	0.3	-61.4
Larsen Bay	168	1.7	147	1.1	115	0.8	87	0.6	-48.2
Old Harbor	340	3.4	284	2.1	237	1.7	218	1.6	-35.9
Ouzinkie	173	1.7	209	1.6	225	1.6	161	1.2	-6.9
Port Lions	215	2.2	222	1.7	256	1.8	194	1.4	-9.8
Remainder	2,716	27.3	3,909	29.4	4,881	35.1	5,393	39.7	98.5

Sources: Alaska Department of Labor and Workforce Development (2010c); US Census Bureau (2010)

Figure 4-2 Village Elder in Larsen Bay

4.2 Employment Trends

Rates of Employment. Table 4-7 and Figure 4-3 depict data regarding historic patterns of employment in the study region. Public officials report that the regional employment rate was very high in 1989 and 1990 due to increased opportunities associated with oil spill response activities. Numerous persons traveled to Kodiak to work on the spill during the period, and spill-related opportunities also attracted local residents who would not otherwise have been employed.

Again, ethnographic data suggest that employment rates declined during subsequent years in large part due to a declining seafood market. Pricing factors appear to have affected rates of participation in the harvest, processing, distribution, and support sectors of the industry.

Trends in employment rates and the size of the Kodiak Borough labor force follow the trend line for total population during the period 1990 to 2010. The labor force includes persons who are able and willing to work, including those who were unemployed at the time of enumeration. As depicted in Figure 4-3 below, both the count of persons in the labor force and persons actually employed increased between 1990 and 1994, declining steadily thereafter until 2005. The annual average rate of resident unemployment reached a maximum of 12 percent in 1994 and averaged about nine percent during the 15-year period between 1990 and 2004. Between 2005 and 2010, the annual average rate of unemployment peaked at 8.3 percent in 2005 and averaged seven percent across those years (Alaska Department of Labor and Workforce Development 2011).

Participation in the workforce is obviously influenced by the availability of jobs. Job scarcity is an ongoing problem in the villages around Kodiak, where employment opportunities are perennially limited. The demographic term for a person who is interested in working but who cannot find a job is “discouraged worker.” Public officials report that the number of discouraged workers increased during the 1990s as employment opportunities in the region’s salmon fisheries diminished. However, Irwin et al. (1992) reiterate the perspective of Mr. Edward Rutledge, Director of Planning and Development, Tanana Chiefs Conference, Fairbanks, who contends that accurate data regarding the number of discouraged workers is not readily available for the following reason:

> The Alaska Department of Labor's official definition of unemployment, currently in place, excludes anyone who has made no attempt to find work in the previous four-week period. Most Alaska economists believe that Alaska's rural localities have proportionately more of these "discouraged workers." What is not mentioned by the Department of Labor is that in most rural, remote areas, discouraged workers do not result from those individuals not seeking work, but as a result of no work being available during much of the year. Therefore, after a period of four non-working weeks, they drop out of the system and no longer register on unemployment statistics.

Table 4-7 Kodiak Island Borough Employment Trends: 1980-2010

Year	Population	Number of Persons Employed	Percent Employed
1980	9,939	4,642	46.7
1981	10,132	4,374	43.2
1982	12,623	4,408	34.9
1983	12,978	4,883	37.6
1984	13,207	4,866	36.8
1985	13,525	4,688	34.7
1986	13,467	4,981	37.0
1987	13,469	4,734	35.1
1988	13,698	4,835	35.3
1989	13,682	5,616	41.0
1990	13,309	5,742	43.1
1991	14,594	5,320	36.5
1992	15,059	5,811	38.6
1993	14,847	6,090	41.0
1994	14,158	6,308	44.6
1995	13,648	6,193	45.4
1996	13,716	5,733	41.8
1999	13,989	5,801	41.5
2000	13,913	5,701	41.0
2001	13,555	6,091	44.9
2002	13,649	5,616	41.1
2003	13,797	5,240	38.0
2004	13,466	5,507	40.9
2005	13,693	5,381	39.3
2006	13,457	5,553	41.3
2007	13,664	5,616	41.1
2008	13,954	5,803	41.6
2009	13,860	5,961	43.0
2010*	13,592	6,709	49.4

*2010 Employment data includes avg. monthly employment for Jan-Sept only. Sources: ADLWD (2010d; 2011c); U.S. Census Bureau (2011). Note: a change in the official method of estimating labor force statistics makes the labor force and unemployment data prior to 2000 not comparable with data after 2000.

Figure 4-3 Annual Averages in Labor Force Participation and Employment Counts: 1990-2010

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Labor Force	6343	6710	6927	7240	7746	7464	7510	7384	6973	6829	6520	6860	6317	5927	6112	6051	6149	6168	6424	6583	6669
Employment	6014	6154	6188	6523	6819	6736	6798	6660	6471	6336	5993	6310	5753	5338	5551	5551	5697	5796	5999	6109	6193

Source: Alaska Department of Labor and Workforce Development (2010d)

Table 4-8 depicts the most recent Census data available for rates of unemployment and participation in the labor force in Kodiak City and surrounding villages. U.S. Census figures for 2010 have not yet been released for all relevant categories. Data for the State of Alaska and the U.S. are provided for sake of comparison. Particularly noteworthy in the table are data suggestive of challenging employment conditions in the Kodiak villages. The indicators – low rates of participation in the workforce and high rates of unemployment – diverge significantly from the norm in some cases. But again, it should be kept in mind that while many villagers may be considered discouraged workers, valid data enumerating such persons are not readily available through archival sources.

Table 4-8 Rates of Unemployment and Participation in the Labor Force, Kodiak Island: Year 2000

Community	Population 16 Years and Older		Unemployment Rate (%)			Percent in Civilian Labor Force
	Males	Females	Males	Females	Avg. Total	Avg. Total
Akhiok	35	22	5.7	13.6	8.8	61.4
Karluk	9	12	0	0	0	52.4
Kodiak City	2,498	1,991	4.0	3.0	3.6	75.1
Larsen Bay	35	25	5.7	8.0	6.7	65.0
Old Harbor	83	53	15.7	7.5	12.5	54.4
Ouzinkie	76	71	9.2	4.2	6.8	58.5
Port Lions	97	94	0	0	2.1	49.7
Kodiak Island Borough	5,296	4,498	3.5	3.3	3.3	74.1
State of Alaska	237,360	220,694	7.4	4.7	6.1	71.3
United States	~105 m	~112 m	4.0	3.3	3.7	63.4

Source: U.S. Census Bureau (2000b)

Major Employers (Public and Private). Establishment of a naval base on Kodiak Island in 1939 introduced a new governmental presence to the island. The facility was subsequently converted to a United States Coast Guard (USCG) base in 1972. USCG personnel and their dependants, the vast majority of which are not Alaska Natives, now constitute a sizeable portion of local population. In 2010, nearly 1,400 active duty personnel and 1,700 dependents were living at the base (Kodiak Island Borough 2010). Integrated Support Command Kodiak is the largest Coast Guard base in the country. Located seven miles from Kodiak City, this 21,000-acre facility is also home to Air Station Kodiak, the North Pacific Fisheries Training Center, Loran Station Kodiak, Electronics Systems Unit Kodiak, a Coast Guard Investigative Services office, Communications Station Kodiak, a 17th District Public Affairs Detachment, and a Naval Special Warfare Detachment. Additionally, the *CGC Spar*, *CGC Storis*, and *CGC Alex Haley* are based here (Munoz 2005).

Other government agencies also provide employment opportunities. For instance, administrative offices of Kodiak Island Borough, the Kodiak National Wildlife Refuge, the Alaska Department of Fish and Game, and several local village Alaska Native corporations are based in Kodiak City. Government employment and expenditures are important elements of the local and regional economy. On average, the public sector engages about 35 percent of the Kodiak labor force and generates about 15 percent of its total economic base. Sales tax generated $7.3 million in revenue in 2004. City dock fees are deposited in capital funds, generating nearly $315,000 during 2004. Property taxes generated $8.6 million in 2004.

As of 2009, the vast majority of jobs in Kodiak Borough were provided through local seafood processing firms. A total of 1,539 such positions were actively filled across nine processing firms that year. Nearly 47 percent of the positions were filled by non-residents (ADLWD 2010e).

The Kodiak Island Borough School District employed 475 persons in 2009, and the region's hospital employed 200 persons. Other major employers in 2009 included: the City of Kodiak (200 persons employed); Safeway Stores (175 persons employed); Wal-Mart (175 persons employed); and the Kodiak Area Native Association, which employed 75 persons (Kodiak Chamber of Commerce 2011).

The Kodiak Launch Complex, developed and maintained by the Alaska Aerospace Development Corporation, is the nation's first such complex not located on federal land. Some 45 workers were employed at the site in 2005, and spending reportedly generated another 80 jobs on the island that year (Kodiak Chamber of Commerce 2007). A variety of aerospace missions are conducted from the site for the U.S. Air Force and/or NASA, including launches of sub-orbital vehicles, quick reaction launch vehicles, and atmospheric interceptors. According to an independent consulting firm, the facility generated a $20-million-impact on the Kodiak economy, including $16.3 million in purchases and hospitality, and $3.6 million in payroll.

Kodiak has long attracted tourists and recreational enthusiasts. Most come to fish and hunt, hike, camp, engage in whitewater rafting, observe wildlife, and learn about island culture. The Island's six state parks and the Kodiak National Wildlife Refuge attract many visitors. According to the Kodiak Chamber of Commerce (2005), about 30,000 tourists visited the island

during 2004; annual visitorship figures remained stable through 2009, representing 31 percent of the Southwest Alaska visitor market (Kodiak Chamber of Commerce 2005). Kodiak tourists contributed nearly $22 million in direct expenditures in 2004, $15 million in 2005, and $30 million in 2010 (Kodiak Chamber of Commerce 2007 and 2011). The recent growth of the charter/guide fishing industry is particularly noteworthy. In 1994, third quarter receipts in this sector totaled approximately $175,000; by 2004, receipts for the same quarter totaled nearly $700,000 (Kodiak Chamber of Commerce 2006).

Figure 4-4 Industrial Zone in Kodiak City, 2010

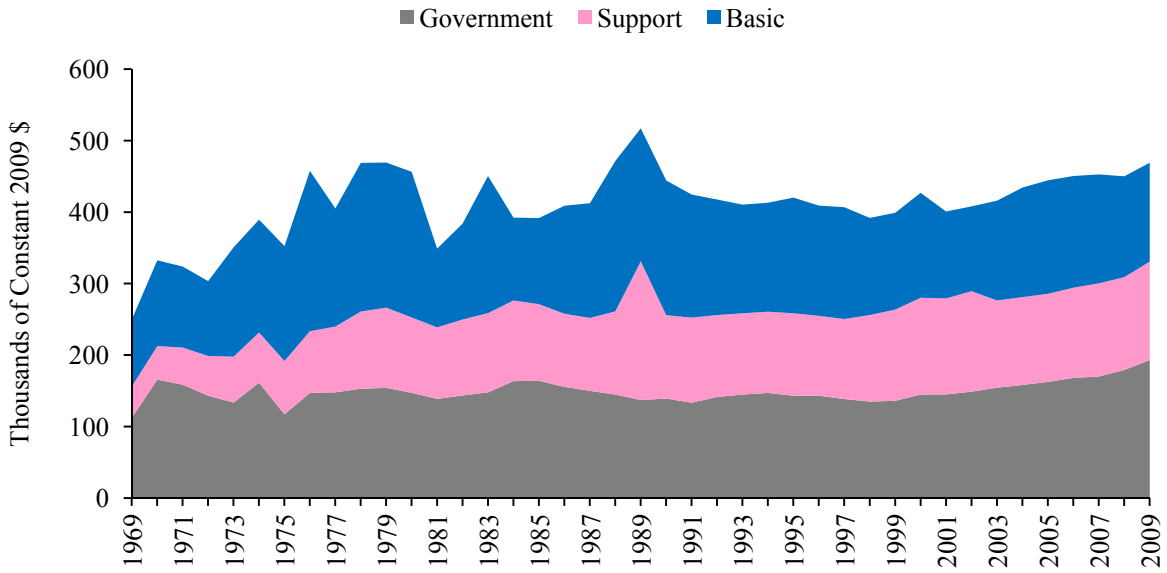
Employment Sectors. We remind the reader that the export-base model used in this study addresses three economic sectors, each somewhat distinct in terms of inter-industry relationships and multiplier effects. The traditional export sector is classified and defined here as the *basic* sector: this is sometimes termed the "goods-producing" sector. In the case of Kodiak Island Borough, the principal components of the basic sector include the harvest and processing components of the seafood industry, tourism, public sector construction, mining, agriculture, and forestry. The *support* sector includes local manufacturing, private sector construction, transportation, communications, utilities, trade, finance, insurance, real estate, and a range of service activities. Thus, the *support* sector includes employment in all industries not encompassed in the *basic* sector. Finally, the *government* sector incorporates federal civilian and military governmental activities, along with state and local government activities.

Below is a description of trends in earnings and rates of employment across the most significant sectors of the region's economy, as derived from industry-specific employment data compiled by the Alaska Department of Labor and Workforce Development (ADLWD) and the Alaska Department of Fish and Game. Data include workers who live outside the Kodiak region, such as certain fishermen and certain employees in the seafood processing and distribution sectors. The series incorporates all full-time and part-time jobs, but excludes business owners and other

persons who are self-employed.[15] ADF&G generates information regarding seasonal rates of employment for persons in the commercial fishing harvest sector.

Earnings by Major Sector. The time-series data depicted in Figure 4-5 below is similar to trends in per-capita income and suggests an economy that has transitioned from a state of significant volatility prior to 1990 to greater stability and mixed sector growth since 1990. The data clearly show that much of the early-period volatility was generated in the basic sector. The notable increase in earnings in 1989 captures response and clean-up activities associated with the *Exxon Valdez* oil spill. [16]

Figure 4-5 Annual Earnings by Economic Sector on Kodiak Island: 1969 to 2009



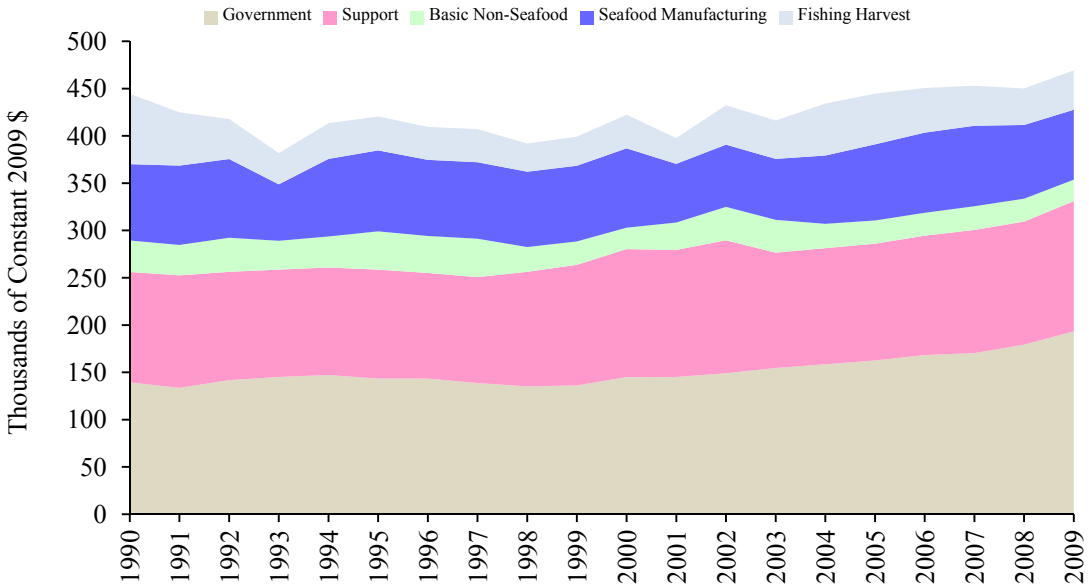
Source: Bureau of Economic Analysis (2010)

Figure 4-6 and Table 4-9 below provide detail about total annual earnings for Kodiak firms prior to and since 1990. The trend has been consistently gradual improvement in earnings over time across all sectors. The data suggest considerable inter-industry relationships and a moderate degree of stability across all sectors.

[15] As per differences in the NAICS and SIC coding systems, data prior to 2001 are comparable only for Total Non-farm Wage & Salary. Moreover, the source reports separately two or more wage and salaried jobs in cases where they are held by the same person. An alternative ADLWD dataset based on *count of persons* rather than a *count of jobs* is also described.

[16] The industry classification system used for the Bureau of Economic Analysis (BEA) earnings data and for the ADLWD earnings and employment data underwent an important change in definition after the year 2000. The Standard Industrial Classification (SIC) system was used prior to that year, and the North American Identification Classification System (NAICS) was used after 2000. Note that while the change is potentially important for certain applications, it does not have a significant effect on the continuity of time-series data applied in the export-base model used for this study.

Figure 4-6 Annual Earnings by Sector, Including Seafood Sectors: 1990 to 2009



Source: Bureau of Economic Analysis (2010)

Table 4-9 Analysis of Annual Earnings on Kodiak Island by Sector: 2004-2009 (in constant 2009 $)

Year	Basic Sector				Support	Government	Total
	Total	Seafood Harvest	Seafood Manufacturing	Non-Seafood			
2004	152.9	55.0	72.2	25.6	122.9	158.4	434.6
2005	158.6	53.5	80.6	24.5	123.5	162.6	444.7
2006	156.1	47.2	84.8	24.2	126.2	168.3	450.7
2007	152.3	42.3	85.1	24.9	130.2	170.3	437.8
2008	140.8	38.5	78.1	24.2	129.9	179.4	450.2
2009	138.2	41.6	73.9	22.7	137.7	193.4	469.2
Annual Growth (%)	-9.6	-24.5	2.4	-11.4	12.0	22.0	8.0
Measures	**Basic Sector**				**Support**	**Government**	**Total**
	Total	**Seafood Harvest**	**Seafood Manufacturing**	**Non-Seafood**			
Mean	149.8	46.4	79.1	24.4	128.4	172.1	447.9
Median	152.6	44.8	79.3	24.3	128.1	169.3	447.4
Standard Deviation	83.537	67.521	5.399	98.2	5.500	12.645	12.303
Sample Variance	697.854	455.916	29.155	96.577	30.250	159.913	151.366
Standard Error	34.1	27.6	2.2	40.1	2.2	5.2	5.0
Range	20.4	16.5	12.9	2.9	14.8	35.0	34.6
Minimum	138.2	38.5	72.2	22.7	122.9	158.4	434.6
Maximum	158.6	55.0	85.1	25.6	137.7	193.4	469.2
Ratio: Max/Min	1.1	1.4	1.2	1.1	1.1	1.2	1.1

Source: Bureau of Economic Analysis (2010)

Tables 4-10a and 4-10b below depict patterns of business activity in the region for the period 2002 through 2010, as indicated by the entry and exit of business establishments. The total number of active firms declined from 484 to 464 in 2007 and then recovered to 470 in 2010, representing an overall decline of one percent. Activity in the basic sector (not including seafood harvesting) increased 7.3 percent.

Notably, 10 out of 29 Kodiak-based seafood processing firms went out of business between 2002 and 2004; by 2010 had improved with a total of 26 processors active on the island. The greatest losses occurred in the support sector, where activity decreased by 8.6 percent between 2006 and 2010. Activity increased in the government sector during that period by 35.8 percent.

A net loss of 30 business establishments in the support sector included 29 firms in the wholesale non-durable goods category. The declines were partially offset by the entry of 17 businesses in the health and educational service sector: four of these are outpatient health care firms. Three repair and maintenance businesses were established between 2008 and 2010 – a 27 percent increase.

In sum, the regional pattern of recent business closings and openings suggests a slight downturn of business activity within a longer cycle of growth and contraction. Between 2008 and 2010, growth in the seafood processing and repair and maintenance categories indicate an upturn in landings, since both categories are closely associated with the harvest sector.

Oncorhynchus nerka (Red Salmon)

Table 4-10a Entry and Exit of Kodiak Island Borough Business Establishments: 2002-2005

Employment	Number of Reporting Business Units				
	2002	2003	2004	2005	Change (%) 2002-2005
Basic	82	81	84	87	6.1
Natural Resource	15	15	20	20	33.3
Mining	1	--	--	--	-100
Construction	35	40	40	39	11.4
Manufacturing (Non-fish)	2	5	5	5	150
Manufacturing (Fish Processing)	29	21	19	23	-20.7
Support	349	346	333	332	-4.9
Trade, Transportation, and Utilities	143	136	131	128	n/a
Wholesale Trade	60	55	48	48	-25.0
Wholesale, Durable Goods	2	2	2	2	0.0
Wholesale, Non-durable Goods	54	48	42	40	25.9
Wholesale, Electronic Markets	4	5	4	3	25.0
Retail	46	45	47	48	4.3
Transport and Warehousing	31	30	30	29	-6.5
Utilities	6	6	6	6	0.0
Financial Activities	29	29	28	28	-3.1
Services	177	181	174	176	-0.6
Professional and Business Services	48	43	43	43	-10.4
Educational and Health Services	24	27	35	34	41.7
Out-patient Health Care	14	14	17	16	14.3
Hospitals	1	1	1	1	0.0
Nursing and Residential Care	--	1	1	1	--
Social Assistance	8	9	14	14	75.0
Leisure and Hospitality	44	47	45	47	6.8
Other Services	52	53	41	43	-17.3
Repair and Maintenance	10	11	11	12	20.0
Personal and Laundry	6	6	6	6	0.0
Membership Organizations, etc.	29	29	20	20	-31.0
Private Households	7	7	4	5	-28.6
Information	9	9	9	9	0.0
Government	53	55	60	60	13.2
Federal Government	13	13	15	15	15.4
State Government	24	25	27	27	12.5
Local Government	16	17	18	18	12.5
Total	484	482	477	479	-1.0

Source: Alaska Department of Labor and Workforce Development (2010d), ES 202 Employment Series

Table 4-10b Entry and Exit of Kodiak Island Borough Business Establishments: 2006-2010

Employment	Number of Reporting Business Units					Change (%)	Change (%)
	2006	2007	2008	2009	2010*	2006-2010	2002-2010
Basic	90	86	88	90	88	-2.2	7.3
Natural resource and Mining	21	19	20	22	21	0.0	31.2
Construction	39	37	40	39	38	-2.5	8.5
Manufacturing (Non-fish)	7	5	4	3	3	-57.1	50.0
Manufacturing (Fish Processing)	23	25	24	26	26	13.0	-10.3
Support	322	311	313	320	319	-0.9	-8.6
Trade, Transportation, and Utilities	125	110	108	104	99	-20.8	-30.7
Wholesale Trade	42	33	32	29	29	-30.9	-51.6
Wholesale, Durable Goods	1	1	1	1	2	100	0.0
Wholesale, Non-durable Goods	38	29	32	26	25	-34.2	-53.7
Wholesale, Electronic Markets	3	3	3	2	2	-33.3	-50.0
Retail	45	41	43	41	39	-13.3	-15.2
Transport and Warehousing	32	30	27	28	29	-9.3	-6.4
Utilities	6	6	6	6	2	-66.6	-66.6
Financial Activities	30	28	29	28	27	-10.0	-6.9
Services	166	169	173	183	188	13.2	6.2
Professional and Business Services	33	33	36	37	40	17.5	-20.0
Educational and Health Services	34	40	41	41	41	20.5	70.8
Out-patient Health Care	16	37	19	20	20	25.0	42.8
Hospitals	1	1	1	1	1	0.0	0.0
Nursing and Residential Care	1	1	1	1	1	0.0	0.0
Social Assistance	14	16	16	16	16	14.2	100.0
Leisure and Hospitality	48	48	50	56	56	16.6	27.2
Other Services	42	37	35	38	40	-4.7	-23.0
Repair and Maintenance	12	12	11	13	14	16.6	40.0
Personal and Laundry	5	4	4	4	5	0.0	-16.6
Membership Organizations, etc.	21	20	19	19	20	-4.7	-31.0
Private Households	4	1	1	2	1	-75.0	-85.7
Information	9	11	11	11	11	22.2	22.2
Government	65	67	68	67	72	10.7	35.8
Federal Government	15	21	21	21	11	-26.6	-15.3
State Government	28	26	26	26	27	-3.5	12.5
Local Government	22	20	21	20	24	8.3	50.0
Total	477	464	469	477	479	4.2	-1.0

*First three quarters of 2010 only; Source: Alaska Department of Labor and Workforce Development (2010d), ES 202 Employment Series

Temporal Allocation of Labor. Table 4-11 below depicts trends in the allocation of labor over the course of the year, as reported in the 1990 and 2000 Census. Relevant data for the most recent Census year are not yet available. The data are expressed in terms of persons working less than or more than one-half year during the year prior to the Census. Note that 88 percent of the Kodiak population reported working during 1989, while 84 percent reported working during 1999. This difference likely reflects the increase in spill-related employment opportunities available on Kodiak in 1989. The data percentages are otherwise fairly similar over the period in question.

Allocation of work effort is reflective of both the nature of demand for labor and the decisions of individuals in households to engage in the labor force. On Kodiak Island, where fishing is a mainstay for so many householders, labor is often seasonal in nature. During certain years, abundant seafood and good market prices can lead many fishermen to truncate their fishing season, since good or sufficient money can be earned during relatively short periods of time. Other years are more challenging; many fishermen hold secondary jobs in the construction trades during the off-season.

Such patterns vary extensively across fleets and sectors, and over the course of time. Fried and Windisch-Cole (1999) assert that more people are now engaging in full-time work on Kodiak Island and that the trend may relate to: (a) the increasingly year-round nature of the overall fishing industry (see discussion below), and (b) an increase in the number of processing workers who are available to work year-round.

Table 4-11 Annual Allocation of Work Effort in Kodiak Island Borough: 1990 and 2000

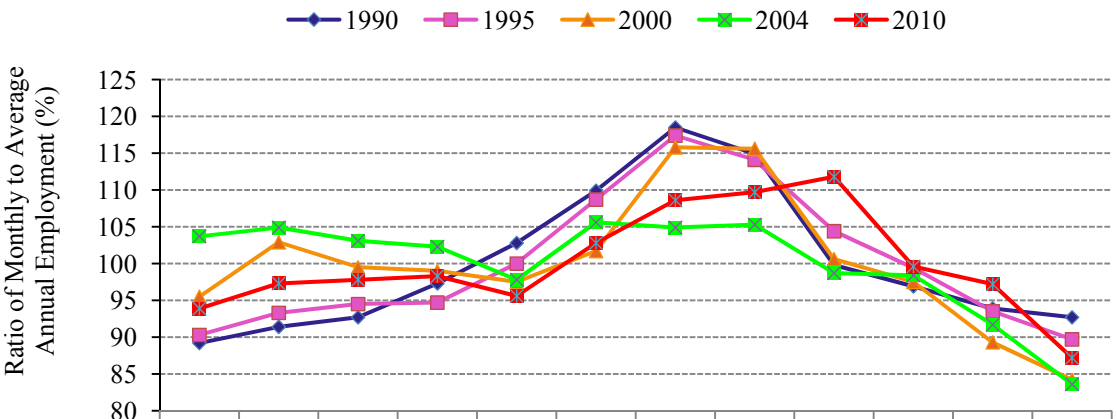
Persons 16 Years of Age or Older	% Population Working 1-26 Weeks		% Population Working 27-52 Weeks	
	1990	2000	1990	2000
Total Population	20.2	16.8	67.3	66.7
Total Workers	23.1	20.1	76.9	79.9

Source: U.S. Census Bureau (2000b; 1990b)

Nevertheless, as indicated in Figures 4-7 through 4-9, the Kodiak regional labor force is more active during the summer months, when salmon fishing is at its peak. Seasonal variation typifies many sectors of the region's economy, linked as it is to the fishing industry.

Of note in Figure 4-7 is the decline in the seasonality of employment during 2004. The rate of employment during peak season declined from almost 19 percent above the annual average in 1990 to only five percent above that average in 2004. Moreover, employment was somewhat more evenly distributed across the year during 2004. This anomaly corresponds to the previously noted change in the number of fish processing firms active on Kodiak Island in 2004. As noted in Tables 4-10a and 4-10b, respectively, there were 19 such firms in 2004 and 26 in 2010.

Figure 4-7 Seasonal Nature of Employment in Kodiak Island Borough: 1990-2010



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	89.2	91.4	92.7	97.3	102.8	109.9	118.5	114.9	99.8	96.9	93.9	92.7
1995	90.3	93.3	94.5	94.7	100	108.7	117.4	114.1	104.4	99.4	93.5	89.7
2000	95.5	102.9	99.5	99	97.5	101.7	115.8	115.6	100.6	97.5	89.3	84.2
2004	103.7	104.9	103.1	102.3	97.8	105.6	104.9	105.3	98.7	98.4	91.7	83.6
2010	93.9	97.3	97.8	98.3	95.6	102.8	108.6	109.7	111.8	99.6	97.2	87.2

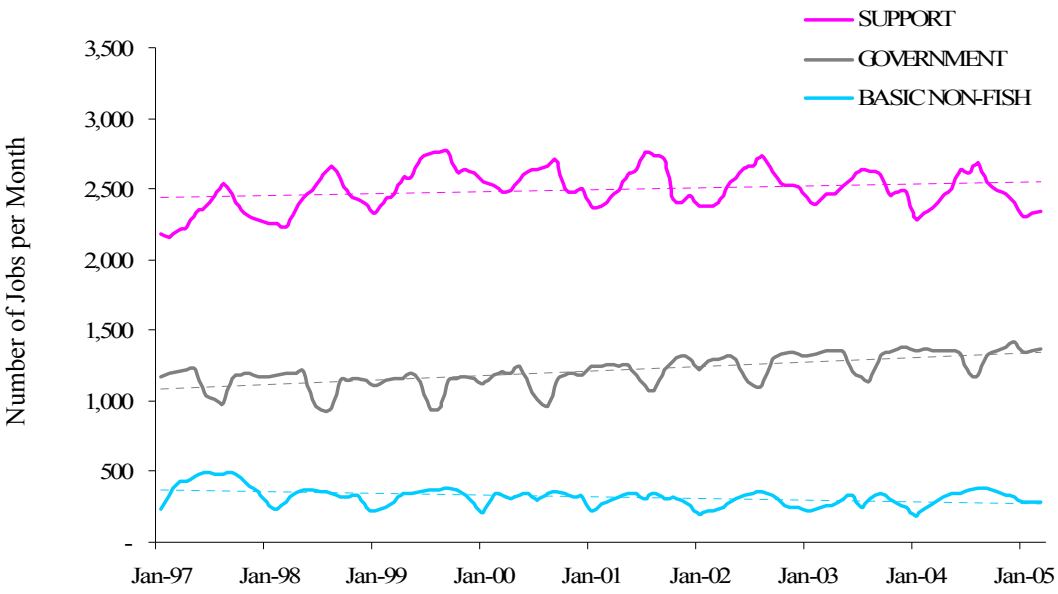
Source: Alaska Department of Labor and Workforce Development (2010d)

The time-series data enable further comparative analysis of seasonal and cyclical trends and patterns in regional employment. The data in Figures 4-8a and 4-8b pertain to non-seafood basic-sector employment and to employment in the support and government sectors. The long-term trends exhibited in these sectors are relatively neutral; rates of employment in the government and support sectors trend slightly upward, while employment in the basic sector (*sans* seafood) appears to be slowly diminishing.

Analysis of monthly employment among seafood processing firms indicates a downward trend for the period 1997 to 2002. The decrease is likely related to diminishing landings of salmon and groundfish and associated closures of processing plants prior to the reversal.

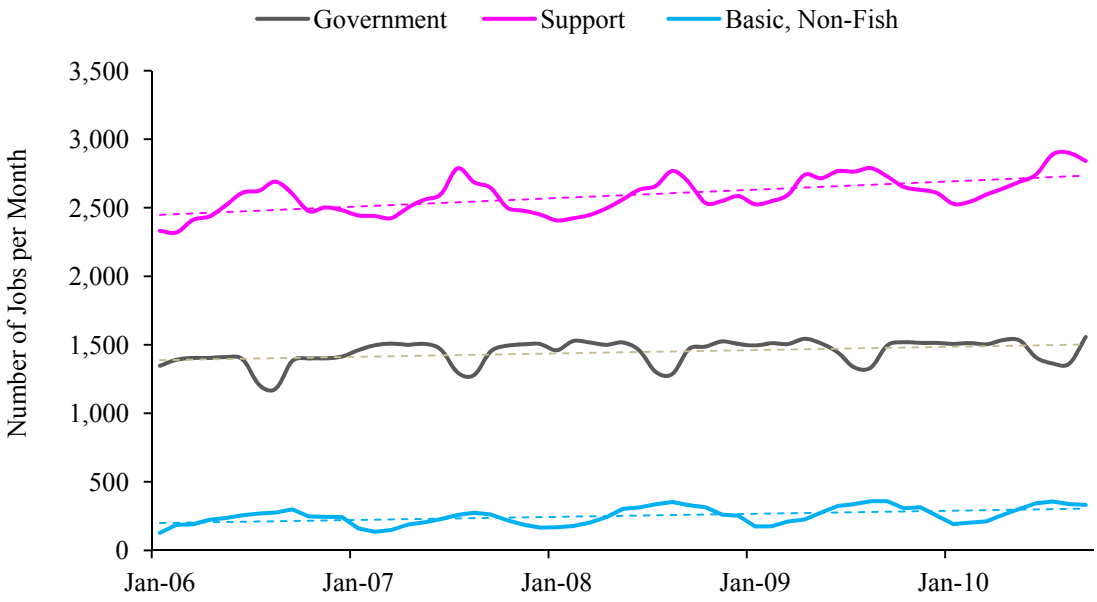
Figures 4-10a and 4-10b depict employment in the commercial harvest sector vis-à-vis other prominent sectors. The data clearly indicate that harvest-specific jobs constitute a critically important component of the regional employment base. Moreover, when expressed in monthly units, the data accentuate the seasonal nature of employment in the region, as previously demonstrated for the seafood processing sector and, to a lesser degree, for other economic sectors around the region.

Figure 4-8a Reiterated Monthly Employment in Kodiak's Support, Basic Non-Fish, & Government Sectors: 1997-2005



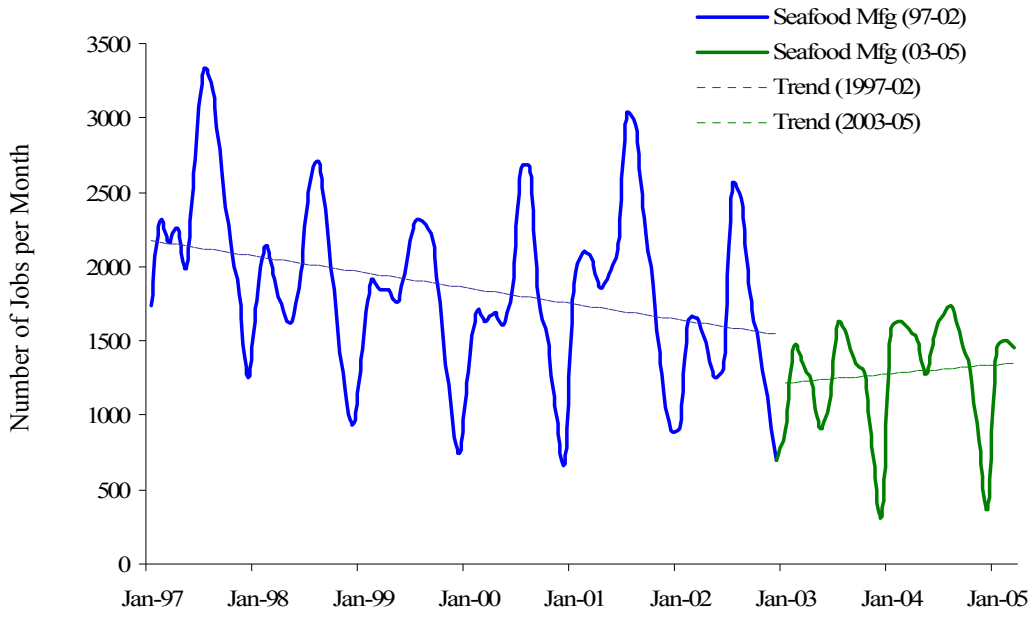
Source: Alaska Department of Labor and Workforce Development (2010d)

Figure 4-8b Reiterated Monthly Employment in Kodiak's Support, Basic Non-Fish, & Government Sectors: 2006-2010



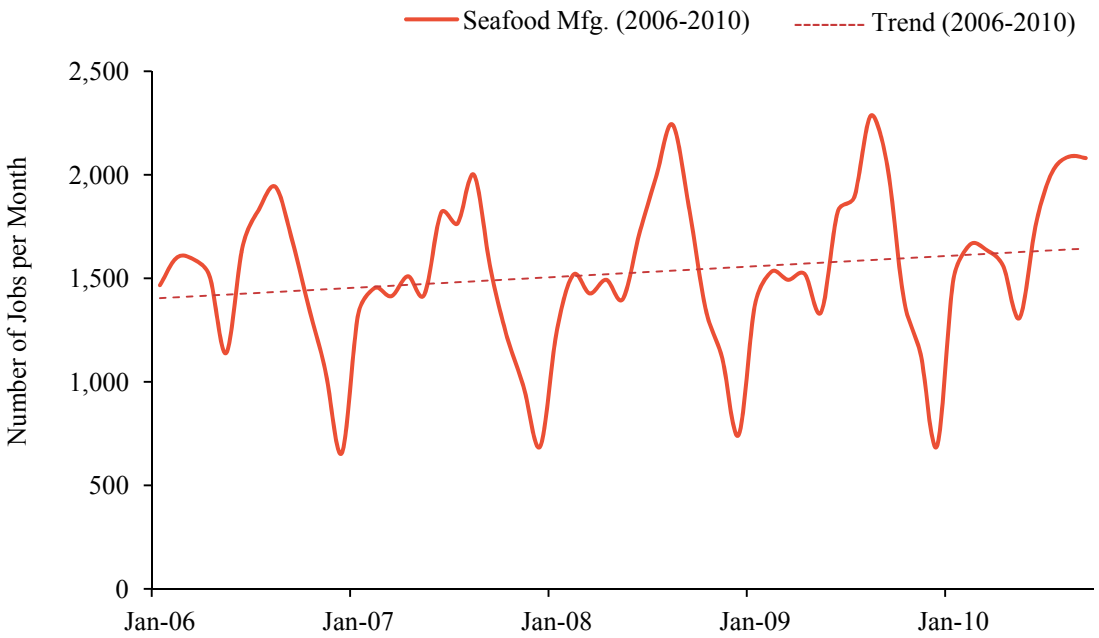
Source: Alaska Department of Labor and Workforce Development (2010d)

Figure 4-9a Reiterated Monthly Employment in Kodiak Seafood Manufacturing: 1997-02 and 2003-05



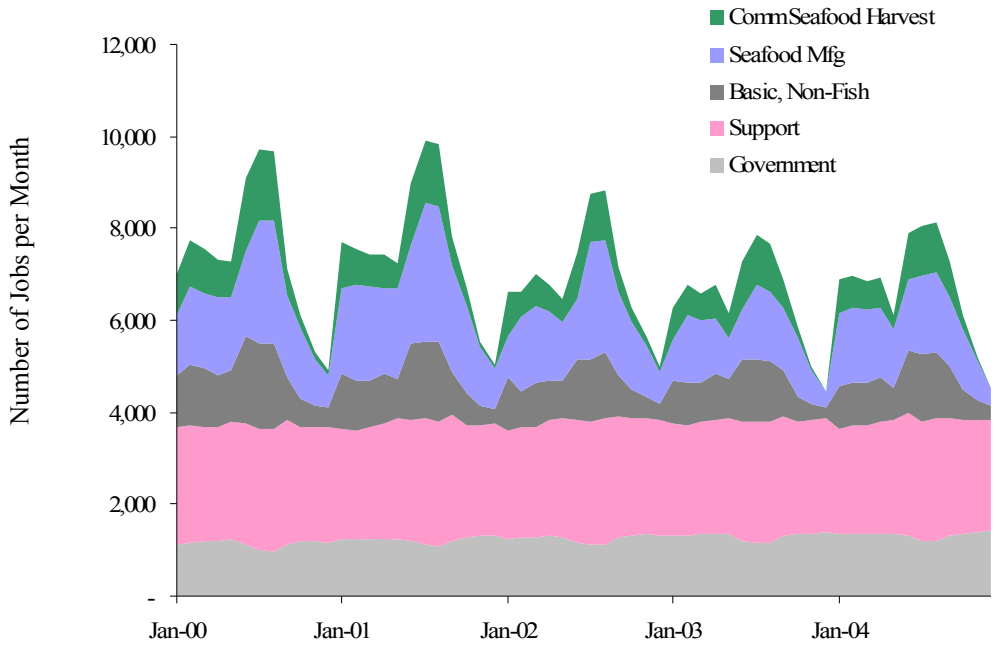
Source: Alaska Department of Labor and Workforce Development (2010b, 2010d)

Figure 4-9b Reiterated Monthly Employment in Kodiak Seafood Manufacturing: 2006-2010



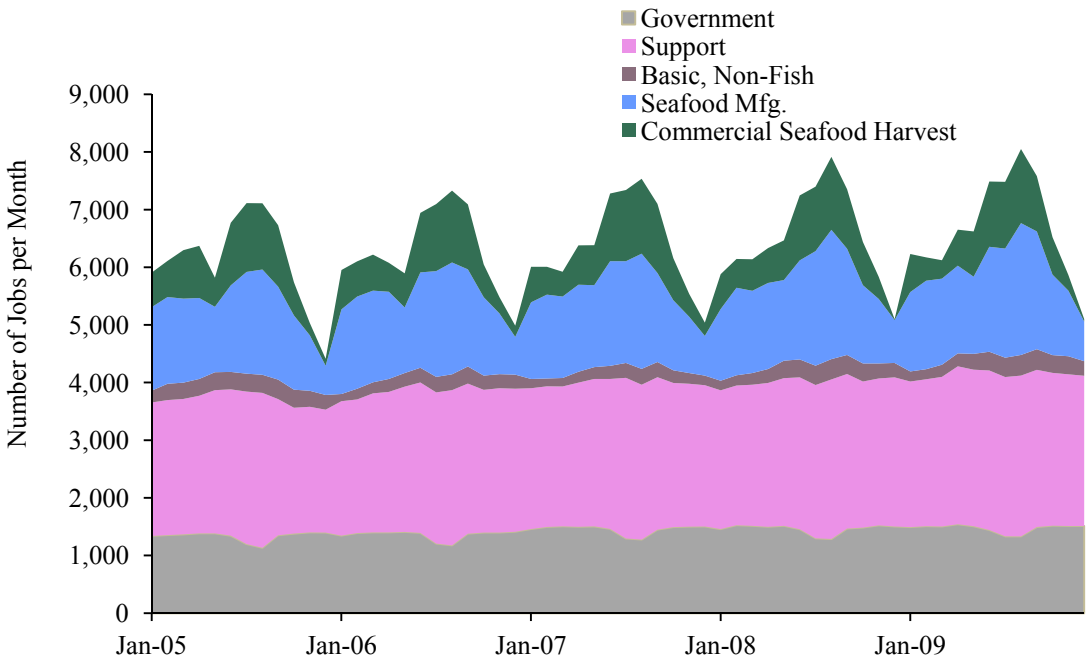
Source: Alaska Department of Labor and Workforce Development (2010b, 2010d)

Figure 4-10a Monthly Employment by Major Sector: January 2000 – December 2004



Sources: Special Tabulations prepared by ADLWD and ADF&G: December (2005)

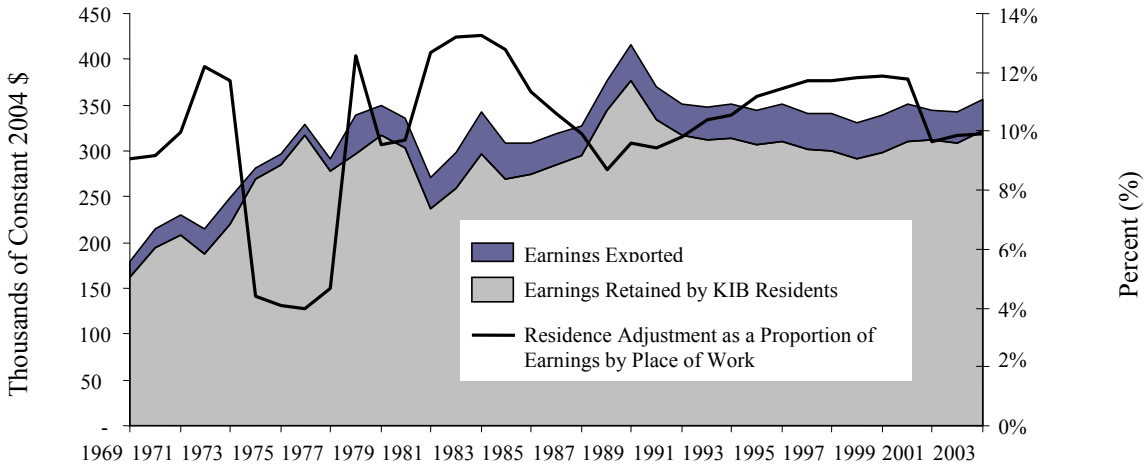
Figure 4-10b Monthly Employment by Major Sector: January 2005 – December 2010



Source: Alaska Department of Labor and Workforce Development (2010b, 2010d)

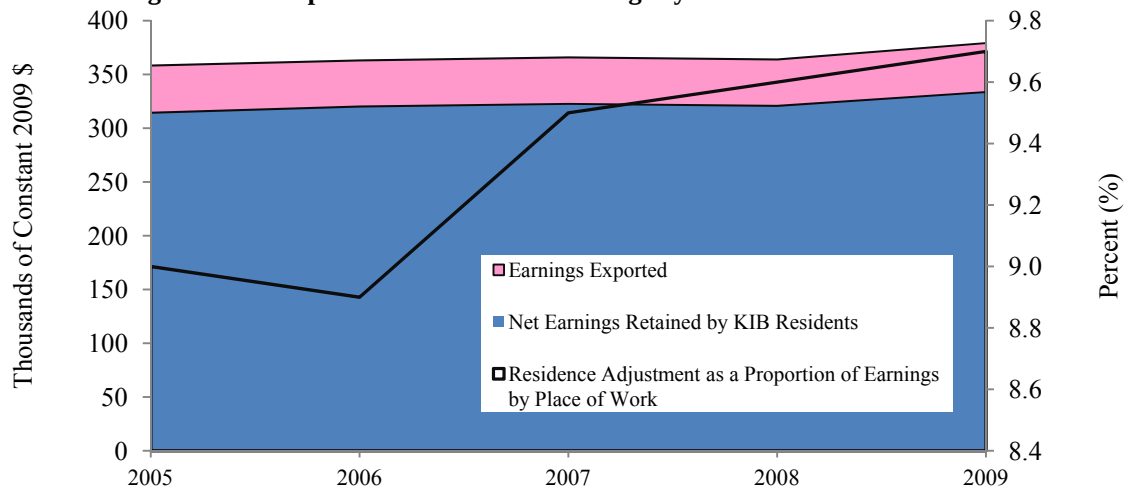
Export of Earnings. The Kodiak economy is also noteworthy in terms of earnings generated within the region, but by persons who are legal residents of other parts of Alaska or other states in the lower latitudes. The distinction between place of residence and place of work is significant for all of the income and employment data considered in this study. Indeed, a significant portion of total regional earnings are traditionally "exported," and the Bureau of Economic Analysis (BEA) calculates a resident adjustment to depict such earnings. Resident adjustment figures reveal that the percentage of exported or "leaked" earnings has been increasing on Kodiak Island in recent years - from eight percent in 1990 to nearly 12 percent in 2000. Figures 4-11a and 4-11b below depict the resident adjustment figures for the period 1969 to 2004 and 2005 to 2009. Exported earnings decline to under nine percent in 2006, in apparent association with a decline in the ex-vessel value of salmon and the departure of many non-residents from the salmon fisheries. The figure now appears to be increasing in conjunction with what some participants believe is a trend of improving market conditions for salmon.

Figure 4-11a Exported Annual Total Earnings by Place of Work: 1969 – 2004



Source: Bureau of Economic Analysis (2010)

Figure 4-11b Exported Annual Total Earnings by Place of Work: 2005 – 2009



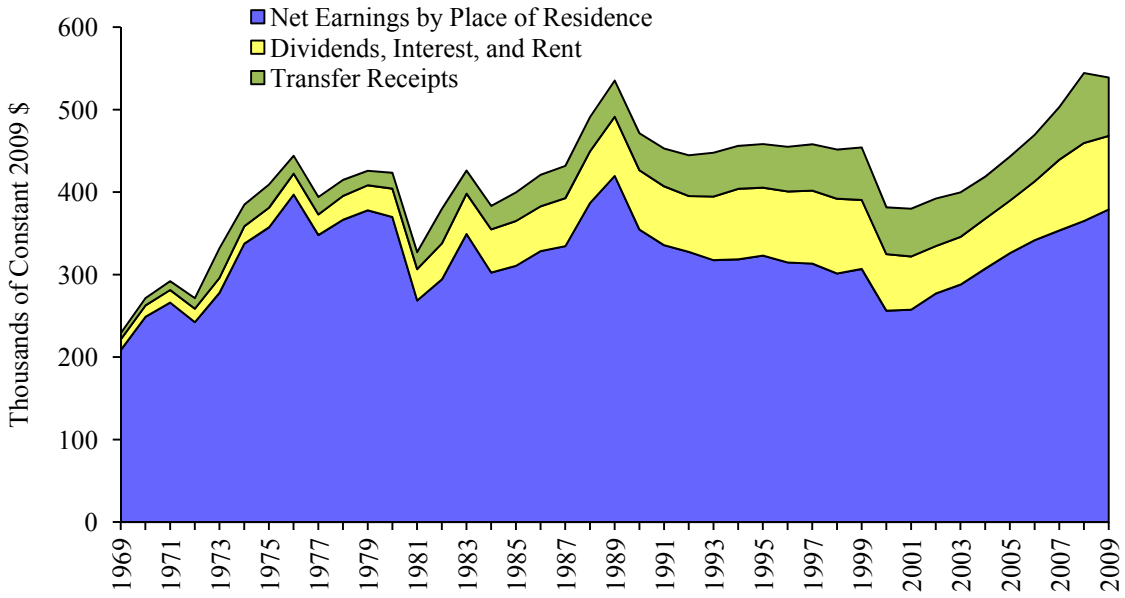
Source: Bureau of Economic Analysis (2010)

Sources of Income. The principal incomes for Kodiak residents are illustrated in Figures 4-12 and 4-13 below. Here the distinction of note is between earned and unearned income. The personal income indicator depicted in these figures is a "place of residence" construct, which incorporates earnings in 2009 dollars irrespective of where they were generated. Two sources of unearned income are considered here: (1) interest, dividends and rents; and (2) transfer receipts. The latter consist of all forms of public assistance, such as unemployment benefits, food stamps, social security benefits, etc.

Unearned income accounts for a significant share of total income in this context (Table 4-12). Both forms of unearned income have increased steadily as a proportion of total personal income until the later years of the 25-year time frame. Notable in recent years is the significant decrease in all forms of income at the start of the new century, and a steady increase thereafter until the economic recession beginning in 2008.

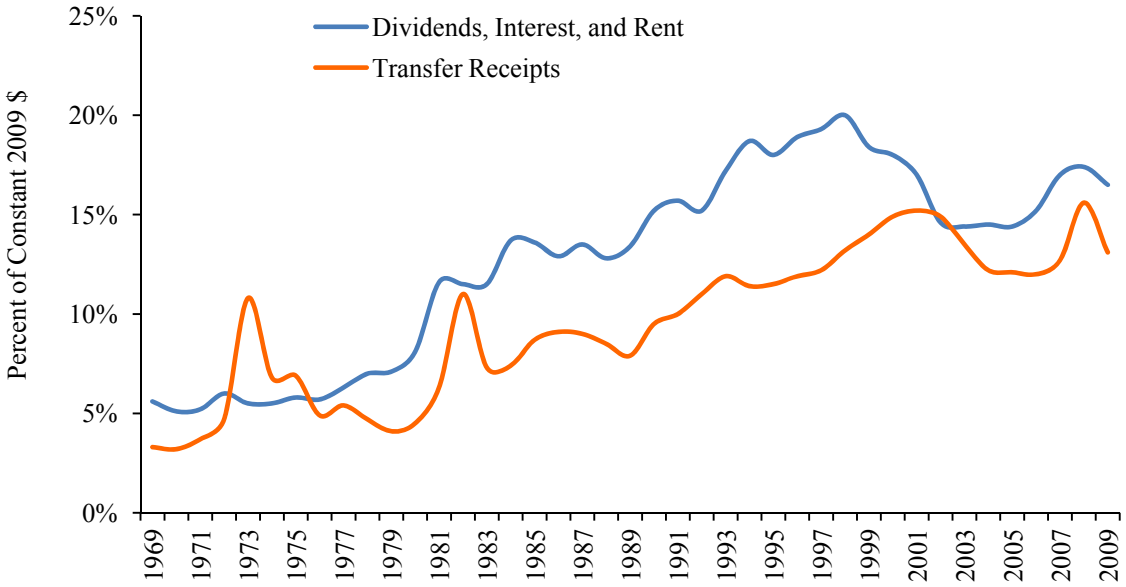
Diminished unearned income is noted for 1989, likely in association with the availability of oil spill clean-up job opportunities. In light of the economic climate of 2008, one would anticipate transfer receipts to rise. As will be discussed in Chapter Six, the relative decline in this form of income may be associated with the initiation of settlement award distribution.

Figure 4-12 Composition of Personal Income across the KIB Region: 1969 to 2009



Source: Bureau of Economic Analysis (2010)

Figure 4-13 Components of Unearned Income, Kodiak Island: 1969-2009
(Percent of Constant 2009 Dollars)



Source: Bureau of Economic Analysis (2010)

Table 4-12 Components of Unearned Income as Percentage of Total Personal Income: 1980-2009 (%)

Source	1980s	1990s	2000-03	2009
Transfer Receipts	8.0	11.7	14.9	13.5
Dividends, Interest, Rent	12.4	17.5	15.9	16.4
Percent of Total	20.4	29.2	31.3	29.4

Source: Bureau of Economic Analysis (2010)

5.0 Commercial Fisheries and Related Socioeconomic Conditions on Kodiak Island

This chapter provides an in-depth discussion of select trends and current conditions in Kodiak's commercial fishing sectors. The discussion draws on information derived from existing databases and in-depth discussions with fishermen, many of whom are recipients of settlement monies. The information provides the necessary context for understanding recent trends of investment in marine fisheries in the region and thereby elucidates analysis of local spending and investment behavior following the settlement.

5.1 Formal Economic Sectors and Milestone Events

Federal government workers comprise 35 percent of the KIB workforce (Kodiak Island Borough 2010). The commercial fishing industry employs 27 percent of the workforce. Borough agencies, U.S. Coast Guard and other federal agencies, transportation services, port services, support sector businesses, and land-based fish processing firms are all concentrated in Kodiak City. As is the case for Barrow, Bethel, Dillingham, Gulkana, King Salmon, Kotzebue, McGrath, and Nome, Kodiak City is a center of commerce for smaller communities located in the adjacent region. That is, most residents of the villages periodically travel to Kodiak City for a range of services. Many also pass through Kodiak en route to Anchorage.

We begin discussion of historic events and trends in this human geographic context by using Figure 5-1 below, which summarizes population figures and per capita income for Kodiak Island Borough over the period 1969 to 2009. The figure underscores important institutional and economic events- especially those related to the commercial fishing industry- that have affected the course of economic development in the region over time.

The harvest and processing sectors of the Kodiak commercial fishing industry gradually expanded during the 20th century to accommodate all five species of salmon. By 1966, 18 processing plants were operating in Kodiak City, with eight additional facilities in the outlying villages (Chaffin 1967). Participation and production in salmon fisheries were unrivaled until the post-World War II years, when improvements in transportation and distribution infrastructures rendered the region's crab fisheries increasingly lucrative. A crab cannery was established in Kodiak City in 1949. This was the first Alaska facility to process king crab in commercial quantities. Landings increased from 60,000 pounds in 1950 to 21 million pounds in 1960. Some 94 million pounds of king crab were landed in 1966. The shrimp harvest also increased rapidly; from 32,000 pounds in 1958 to an average of 11 million pounds in the early 1960s. The shrimp fishery peaked in 1971, with production reaching 82 million pounds (Jackson and Ruccio 2003).

Among the most significant events associated with the growth of the Kodiak fishing fleet was establishment of the Magnuson-Stevens Fisheries Management and Conservation Act of 1976. The Act established the nation's Exclusive Economic Zone (EEZ), which precluded fishing activity by foreign fleets in waters from three to 200 miles offshore. It also called for the establishment of regional fishery management councils to guide management of marine resources in the EEZ. The North Pacific Fishery Management Council interacts with the

National Oceanic and Atmospheric Administration (NOAA Fisheries) to manage fishing activity in the Alaska region. As such, 1976 was the beginning of an era of increased federal management of offshore fisheries in Alaska and elsewhere in the U.S., with ongoing implications for fleets based on and operating around Kodiak Island.

The American Fisheries Promotion Act of 1980 was also significant for Alaska and Kodiak-based fisheries. The Act led to establishment of joint ventures between domestic harvesters and foreign processing interests, with implications for the economic growth of groundfish fleets around the region. During this period, the State of Alaska increased general fund expenditures to expand onshore and nearshore oil and natural gas production. Oil and gas industry activities subsequently stimulated economic activity in the private sector.

The prosperity enjoyed by the crab fleet in the 1960s was not long-lived; the Kodiak crab fishery began to diminish in significance in the early 1980s. A shortage of the resource in the Bering Sea led to especially acute effects on Kodiak, since much of the fleet and processing capacity was based in Kodiak City. Shrimp resources diminished as well and by the late 1980s, rates of production were down significantly.

Worldwide market prices for salmon peaked in 1988. Widespread availability of relatively cheap, pen-reared salmon preceded subsequent market challenges encountered by Alaska-based harvesters and processors. While the perceived quality of Alaska salmon has always been such that its purveyors have been able to compete on the global market, the rapid emergence of large-scale salmon farming in countries such as Norway, Canada, and Chile resulted in a significant expansion of the supply of salmon (Gilbertson 2003), which served to reduce market prices for wild-caught salmon in Alaskan waters during much of the 1990s and early 2000s.

Meanwhile, the *Exxon Valdez* oil spill of March 1989 was a highly significant event in the Kodiak region. Most Kodiak and Gulf of Alaska fisheries were closed during the months following the spill. The closures coincided with the market challenges mentioned above and were, to some uncertain extent, also associated with public perceptions about oil-tainted seafood.

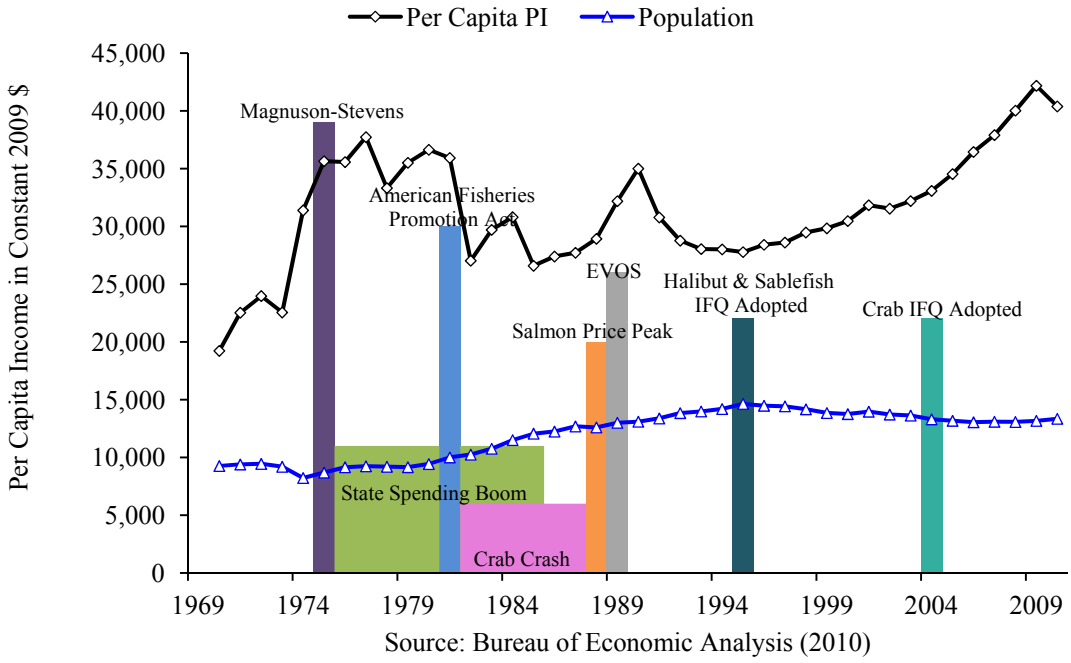
Rates of participation in the Kodiak region halibut fisheries increased throughout the late 1980s and early 1990s. New management strategies were subsequently established to regulate the fishery. An Individual Fishing Quota (IFQ) system was adopted in 1995 to address over-capitalized halibut and sablefish fleets, and in 2004, the Bering Sea crab fishery also came under an IFQ strategy. The IFQ system involves the allocation of a percentage of total allowable landings in a given commercial fishery to individuals legally possessing the rights to engage in that fishery. IFQs present an alternative to open access fisheries management, wherein entry into a given fishery is open but restricted in terms of the type of gear that may be used, the number and duration of openings, seasonal or spatial strictures, and so forth (NOAA Fisheries 2009b). While the implications of these milestone events and processes are not fully understood in the specific social and economic context of Kodiak, each did have a discernible effect on the region's economy.

When expressed in constant 2009 dollars, per capita income exhibited significantly greater variability in the Kodiak region during the 1970s and 1980s than during the 1990s and early

2000s. Sharp declines in per capita income during the early 1980s and early 1990s appear to have coincided with a decline of the Bering Sea crab stocks and challenges in the salmon market. The oil spill also led to significant changes during 1989 and the early 1990s; the 1989 peak in per capita income is largely attributable to income earned through wide-scale participation in oil spill clean-up activities.

The effects of fisheries legislation and State spending are less discernible. With the exception of a modest decline in 2003, per capita personal income increased steadily in the Kodiak region from 1994 until 2008. Meanwhile, total population, which previously exhibited two decades of steady expansion, has been trending downward since 1994, with the exception of a slight increase in 2000.

Figure 5-1 Kodiak Island Borough Population and Per Capita Income: 1969-2009



Source: Bureau of Economic Analysis (2010)

5.2 Current Participation in the Seafood Industry

The commercial fishing and processing industries are of central importance to the contemporary economy of Kodiak, and thus downturns in marine fisheries bear widespread implications. As mentioned in Chapter Two, Kodiak City is consistently one of the top fishing ports in the United States. In 2009, the port was ranked third in terms of ex-vessel value of landings at $103 million (NOAA Fisheries 2009a:7).

The wholesale value of the Kodiak groundfish fishery increased from $23.5 million to more than $70 million between 1986 and 2009. Halibut, perch, herring, sole, flounder, and crab are also highly valuable resources. Salmon has long been Kodiak's primary fishery in terms of pounds harvested. Indeed, there are more than 800 salmon streams in the Kodiak Management Area.

Salmon comprised 36 and 16 percent of the total catch in 2004 and 2010, with ex-vessel values of nearly $19 million and $29.8 million, respectively (Kodiak Chamber of Commerce 2006 and 2010). Some key informants suggest that market conditions for salmon are improving, and that Alaskan salmon fisheries are now achieving a national and international reputation for high-quality wild products. Although prices are recovering, they are still below the historic peak of 1988.

The Commercial Fisheries Entry Commission (CFEC) reports that 1,186 commercial fishing permits were issued to 519 permit holders/residents of Kodiak City during 2010. This was up significantly from 2009, when 728 permits were fished by 412 fishermen. Commercial permits issued to residents in 2010 included: 155 crab permits, 204 halibut permits, 117 herring permits, 279 permits for other groundfish, 44 sablefish permits, 348 salmon permits, and 39 shellfish permits. Local residents purchased 816 crew permits, with 723 crew members fishing.

Table 5-1 depicts the overall scope of participation in marine fisheries across Kodiak Island Borough for the years 2000 and 2010. Information about the nature and extent of Kodiak-based sport, charter, and subsistence fisheries is provided elsewhere in this report.

Table 5-1 Licensed Participation in Commercial Fishing across Kodiak Island: Year 2000-2010

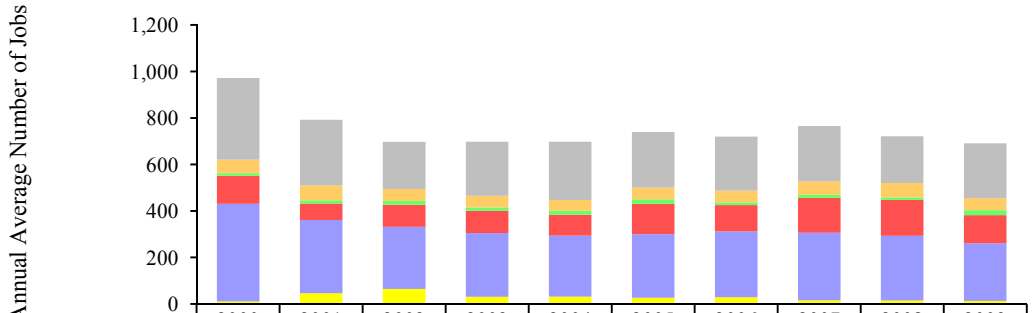
Community	Commercial Permits Issued to Residents*		Resident Licensed Crew Members		Local Seafood Processing Firms[17]	
	2000	2010	2000	2010	2000	2010
Akhiok (Alitak)	6	7	12	7	1	1
Karluk	0	0	6	2	0	0
Kodiak City	1,569	1,186	1,263	723	11+	13
Larsen Bay	22	11	29	6	1	1
Old Harbor	72	54	63	29	0	1
Ouzinkie	48	30	35	22	0	0
Port Lions	49	36	41	20	0	0
Total	**1,766**	**1,324**	**1,449**	**809**	**13 +**	**16**

* Includes both state and federal permits; CFEC (2000a, 2000b, 2010a, 2010b); Alaska Department of Environmental Conservation (2010)

Figures 5-2 through 5-3b depict the absolute importance of the harvest sector to the Kodiak economy in terms of recent annual and average monthly employment. (Chapter Four addresses the importance of the harvest and processing sectors vis-à-vis other sectors of the economy). Figure 5-2 depicts average annual employment in the harvest sector during the period 2000 to 2009; 700 direct jobs or about 12 percent of the annual employment across all sectors of the economy are in the harvest sector. The estimates provided in Figure 5-2 are based on landings for all major species. The groundfish and salmon fisheries account for the highest percentage of total harvest-related employment throughout the past decade.

[17] Not included here are large offshore vessel processors, smaller direct marketing fishing vessels, and non-employing businesses involved in fish processing.

Figure 5-2 Employment Estimates for Kodiak's Principal Fisheries: 2000-2009

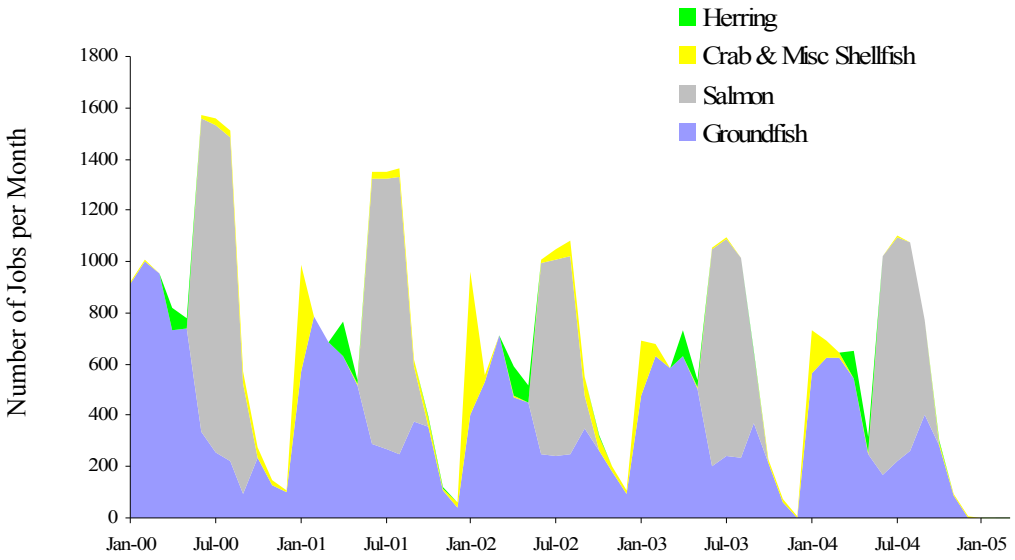


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Salmon	351	282	203	233	251	239	233	238	201	236
Sablefish	59	64	51	50	46	51	50	58	62	52
Herring	11	14	16	14	17	19	12	13	11	21
Halibut	120	71	95	96	90	131	113	150	154	121
Groundfish	420	315	267	274	262	273	283	290	278	248
Crab & Misc. Shellfish	11	46	65	31	32	27	29	16	15	13

Source: Alaska Department of Labor and Workforce Development (2010b)

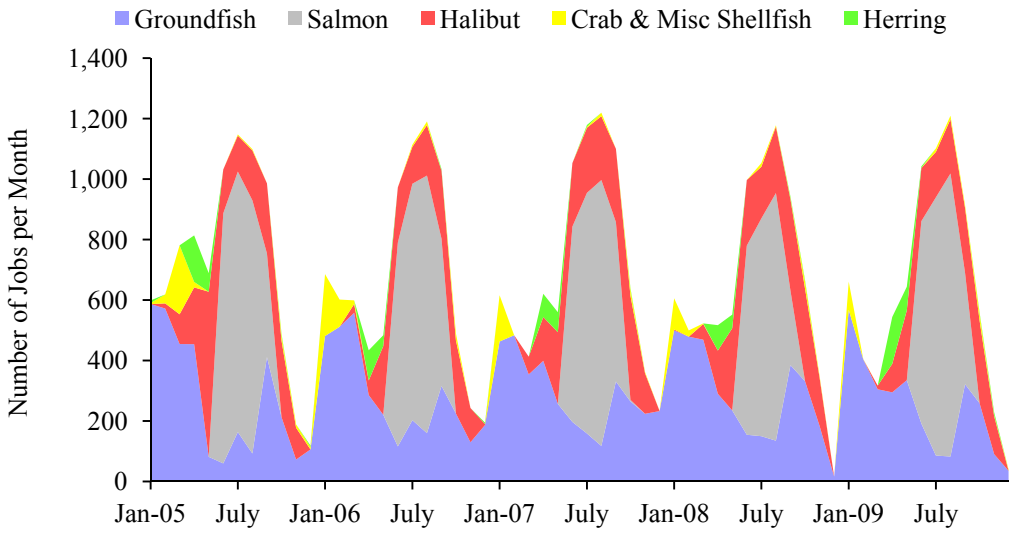
The timing of employment in the harvest sector is depicted in Figures 5-3a and 5-3b. The region's groundfish fisheries continue year-round, with the highest levels of employment and production during the winter months and a secondary peak in September. Employment in the salmon fisheries peaks in July, counterbalancing the summertime trough in employment in the region's groundfish fisheries. Harvest-specific employment in the crab fishery follows a pattern similar to that of groundfish, with a winter peak in January and a secondary surge in August and September.

Figure 5-3a Average Monthly Harvest Sector Employment in Kodiak's Principal Fisheries: 2000-2004
(excludes halibut)



Source: Special Tabulations prepared by ADLWD and ADF&G (2005)

Figure 5-3b Average Monthly Harvest Sector Employment in Kodiak's Principal Fisheries: 2005-2009
(includes halibut)



Source: Alaska Department of Labor and Workforce Development (2010b)

5.3 Trends in Commercial Fisheries Participation and Production

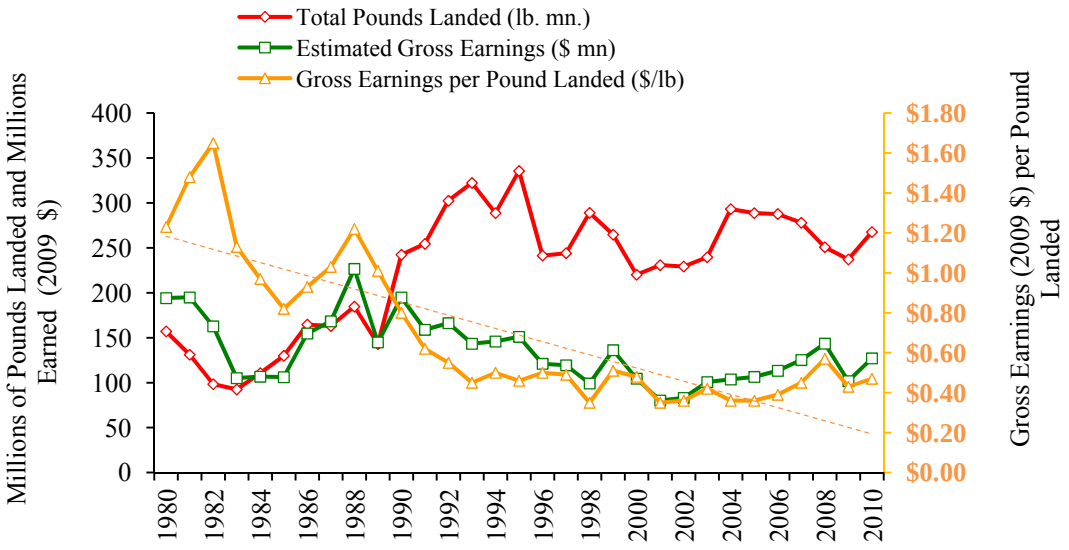
Kodiak Residents. Note that while the following data are specific to Kodiak residents, the figures incorporate landings and earnings deriving not only from the Kodiak Management Area (KMA) but also from elsewhere in Alaska. Thus, a Kodiak resident who harvests salmon in the Bristol Bay region would be enumerated here, as would his or her catch. Conversely, non-residents who fish for salmon in the KMA are not enumerated here, nor are their landings. Later we provide production and participation information for both resident and non-resident participants in KMA fisheries.

The following graphs describe broad trends in local production and participation for the major state- and federally managed salmon, groundfish, crab, and halibut fisheries of the KMA. Figures are used to summarize and depict trends in landings, effort and gross earnings by permit and pound of fish and percentage of permits fished.[18] Figures 5-4 and 5-5 depict combined data for: salmon, groundfish, herring, halibut, sablefish, crab, and other shellfish fisheries conducted in the KMA.

[18] The effort data presented here derive from CFEC tabulations of permit activity. Effort is measured and reported in two ways in this analysis: (1) the ratio of the number of fishermen to the number of permits fished; and (2) the number of permits fished to the number of permits issued in a given year. Production is measured and reported in terms of pounds landed per permit fished. These data are generated from fish ticket receipts for targeted and incidental catch, and they are expressed in rounded pounds landed. Halibut is based on net pounds landed. Gross earnings data derive from CFEC estimates of average ex-vessel price per pound. Again, earnings are expressed in constant 2009 dollars per the annual Gross Domestic Product (GDP) deflator series.

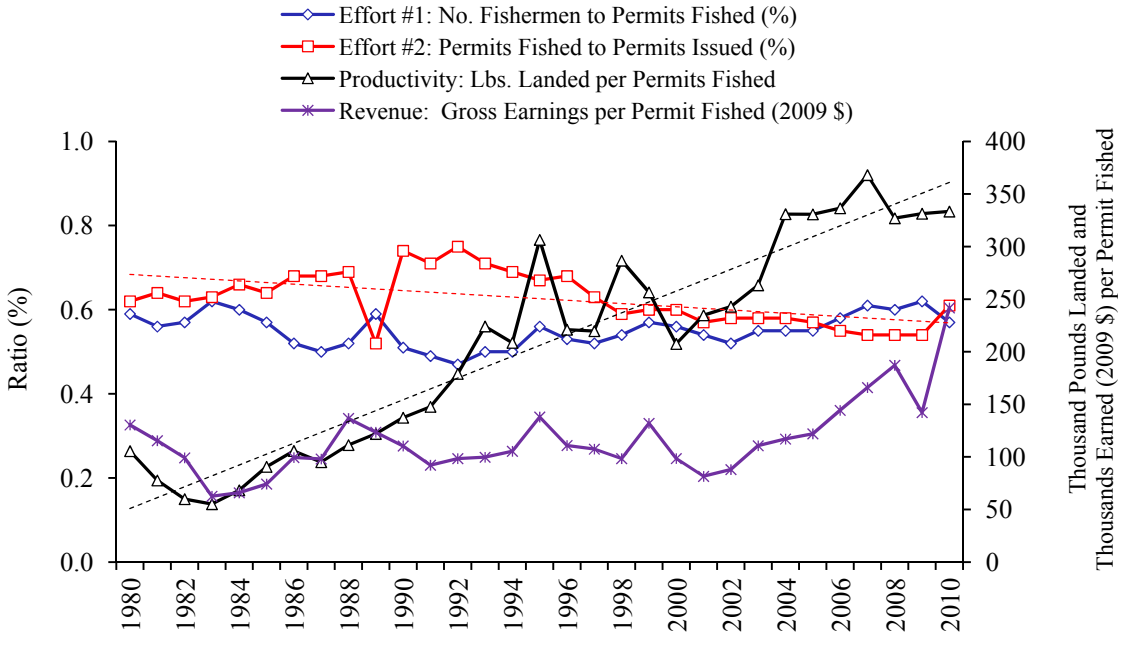
Figure 5-4 below reveals that the trend in ex-vessel value of landings (depicted as "gross earnings per pound" by the gold line and right-hand axis) is toward decreasing value after 1989. Total gross earnings (green line, left-hand axis) also have diminished throughout much of the period. Again, the data validate the assertions of participants who report that while resource availability has been fairly stable in recent decades, market prices have tended to fall. Both gross earnings and ex-vessel value show a general upward trend since 2000.

Figure 5-4 Landings and Gross Earnings for Kodiak Residents, All Fisheries: 1980-2010



Note: 2010 data not adjusted for inflation. Source: CFEC (2010b)

Figure 5-5 Effort and Production per Resident Permit, All Fisheries: 1980–2010



Note: 2010 data not adjusted for inflation; Source: CFEC (2010b)

Figure 5-5 above depicts measures of harvest effort and production for Kodiak residents across all fisheries for the period 1980 through 2010. The objective here is to explore the relationship between harvesting effort and production on one hand, and ex-vessel value and gross earnings on the other. Note that while overall fishing effort in the Kodiak region has been relatively stable in recent decades, production has risen sharply over time. Notwithstanding a change in the abundance of marine resources, increasing levels of productions suggest increasing efficiency on the part of local fleets.

Note that production and efficiency level off in 2008, a time when many fishermen note the impact of rising fuel prices. Production is also generally inversely correlated with gross earnings until approximately 2000. We posit that this indicates a situation of periodic excess supply vis-à-vis limited capacity and demand. Key persons in the harvest and processing sectors additionally suggest that open access and seasonal restrictions often encourage harvesters to "race to fish," which then results in an excess of product in the marketplace.

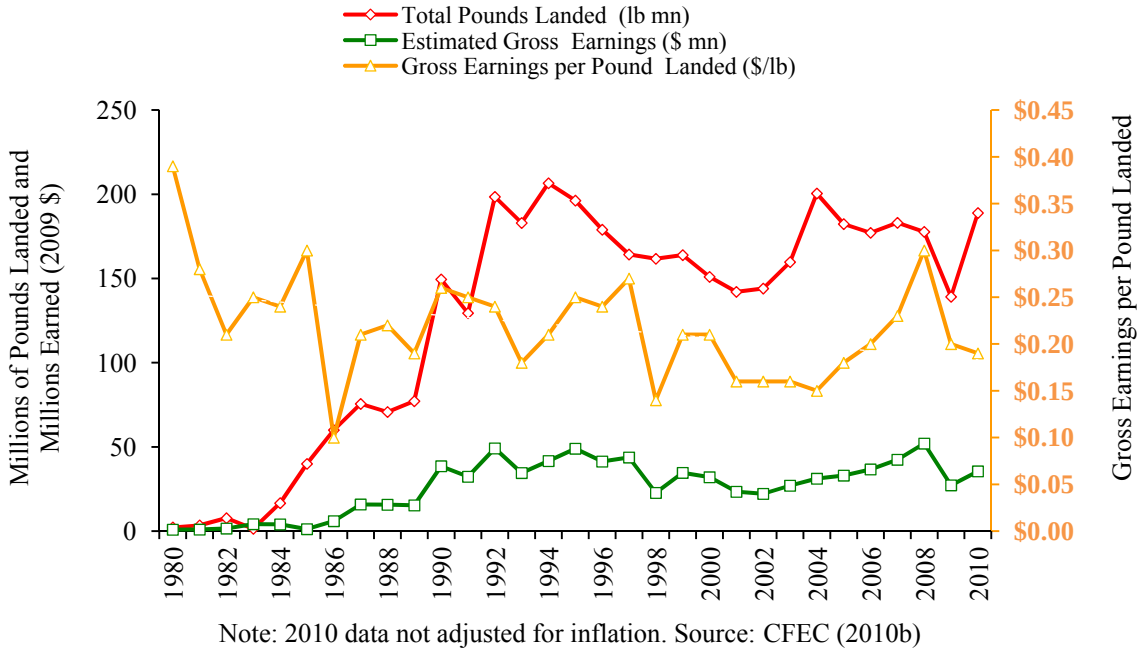
Given limited capacity to process, export, and profitably distribute seafood in distant markets, processors and buyers tend to be overwhelmed when marine resources are suddenly, albeit predictably, produced in the region. When supply exceeds capacity and demand, buyers reduce negotiable prices. Although many do not agree with the approach, one intention of the establishment of the IFQ system is to minimize such volatility by distributing effort and processing capacity more evenly over the course of the year. Note that the data for the gross earning sectors (total gross earning, plus gross earning per permit and per pound) display a sharp but momentary decline in 2009 and then quickly resume an upward trend.

Figures 5-6 through 5-13 summarize trends in effort, earnings, and overall production for resident permit holders for the period 1980 through 2009-10 (depending upon data availability).[19] We depict data for: (a) all species of groundfish combined (Figures 5-6 and 5-7); (b) all species of crab (Figures 5-8 and 5-9); (c) halibut (Figures 5-10 and 5-11); and (d) all species of salmon (Figures 5-12 and 5-13).

The figures are indicative of variation across the fisheries over the course of time. Focusing on the past ten years, one can discern a gradual increase in gross earnings, gross earnings per pound, and gross earnings per permit until 2009 in both the groundfish and halibut fisheries. Production of crab landed from the KMA had diminished significantly up until 2000, but remained stable and showed a marked increase in gross earnings per permit fished until 2009. The percentage of salmon permits fished by residents and gross earnings per pound reveal a gradual increase through 2009.

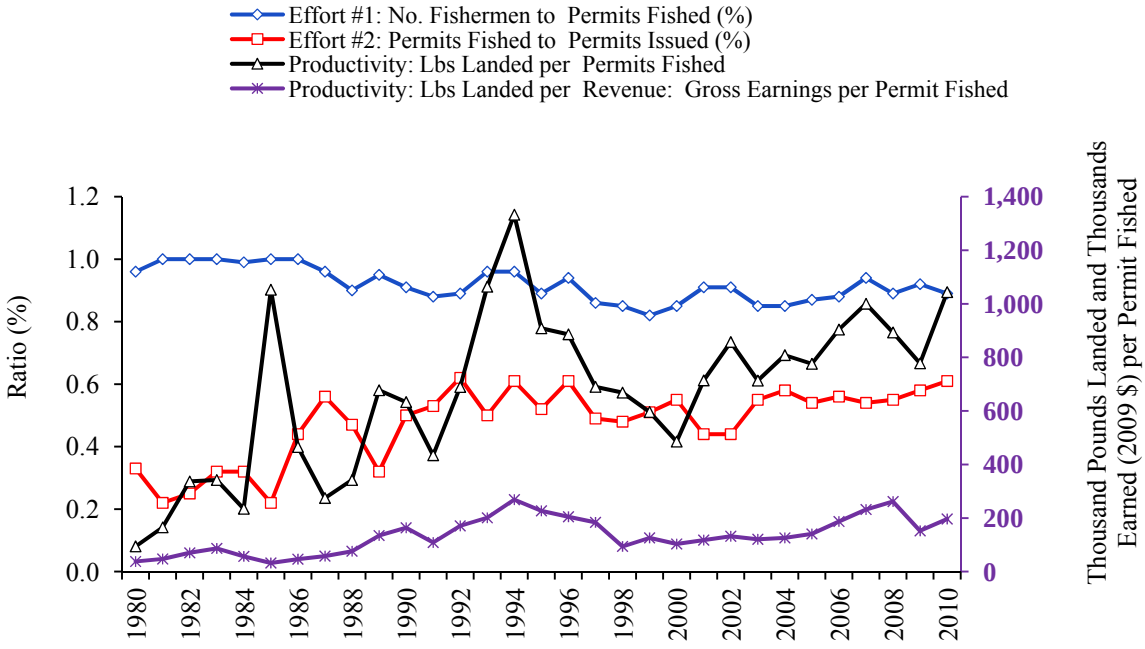
[19] Confidentiality restrictions require that at least three persons or permits be represented when expressing landings or ex-vessel value information for a given fleet, fishery, set of businesses, or other entity. This is not a significant problem for regional-level analysis, but it can challenge reporting and analysis for smaller fisheries and communities in the region.

Figure 5-6 Landings and Earnings for Resident Groundfish Permit Holders: 1980-2010



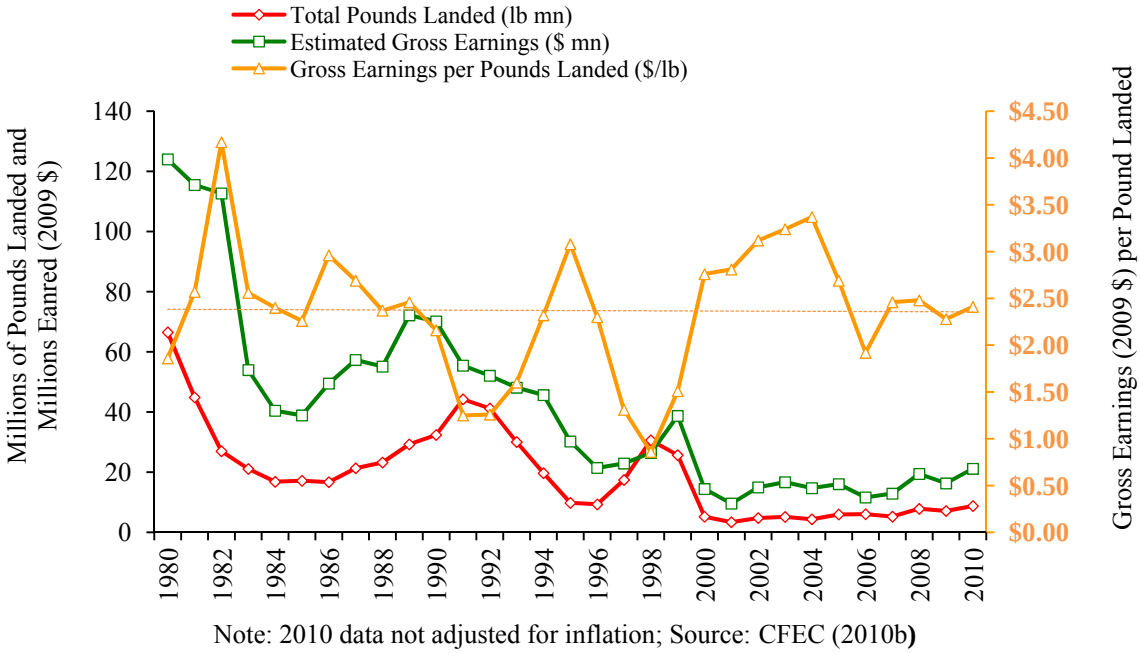
Note: 2010 data not adjusted for inflation. Source: CFEC (2010b)

Figure 5-7 Effort and Production per Resident Groundfish Permits: 1980-2010



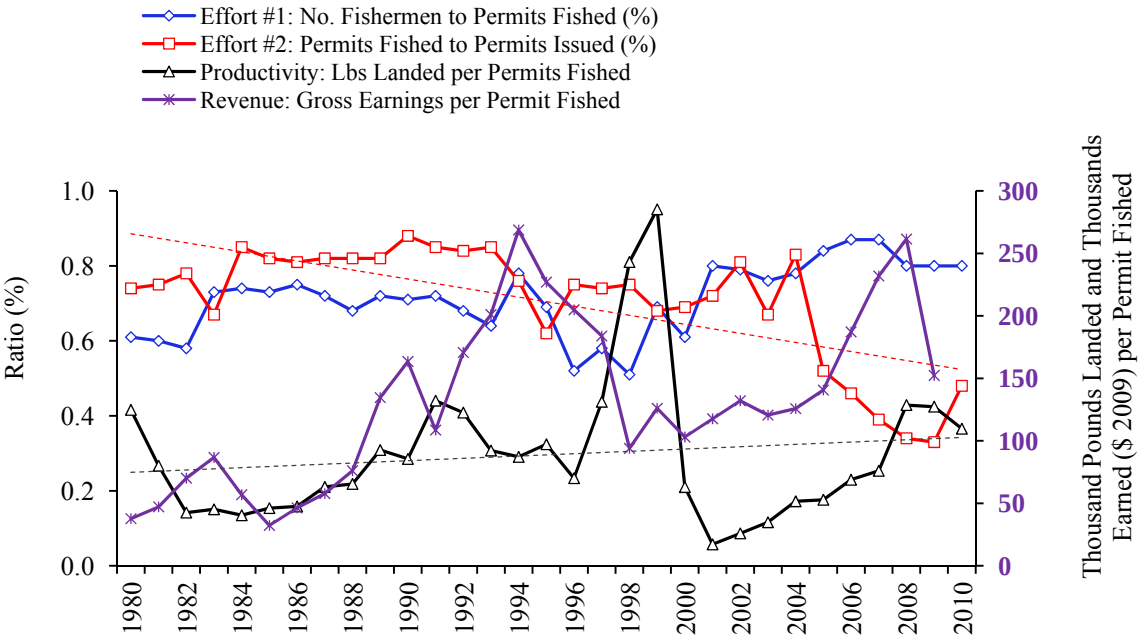
Note: 2010 data not adjusted for inflation; Source: CFEC (2010b)

Figure 5-8 Landings and Earnings for Resident Crab Permit Holders: 1980- 2010



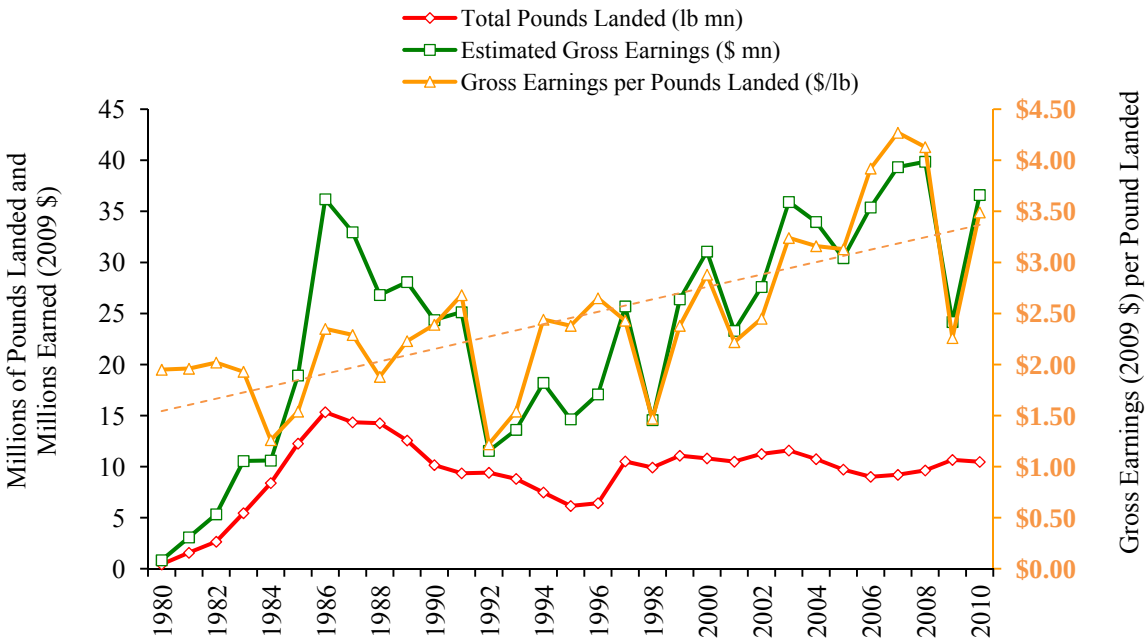
Note: 2010 data not adjusted for inflation; Source: CFEC (2010b)

Figure 5-9 Effort and Production per Resident Crab Permits: 1980-2010



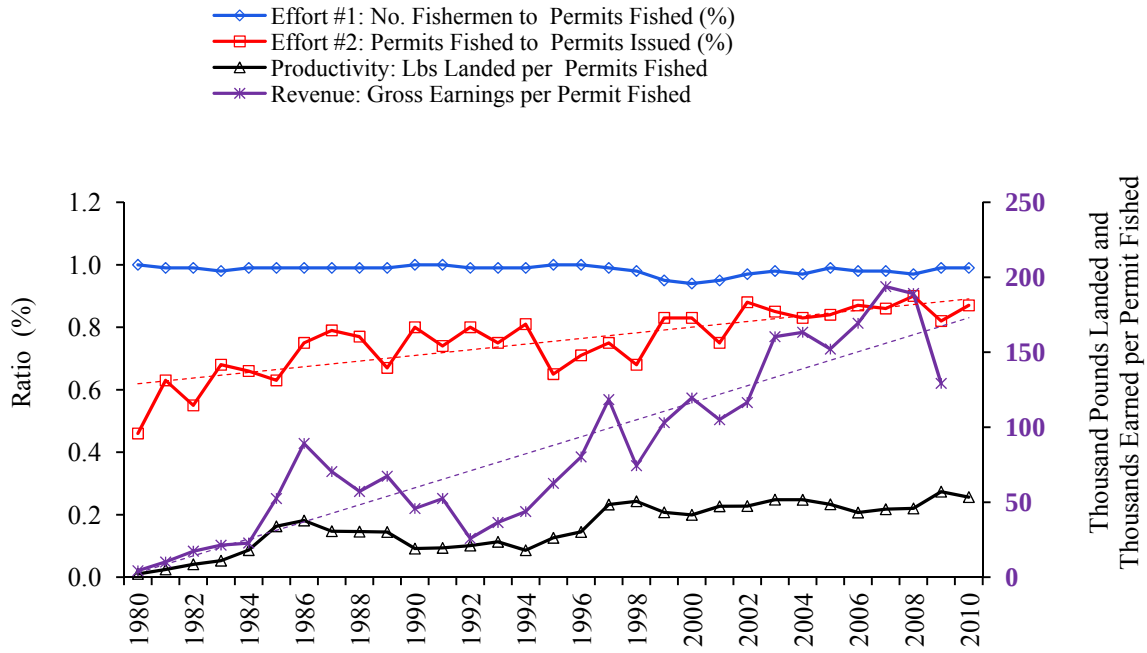
Note: 2010 data not adjusted for inflation; Source: CFEC (2010b)

Figure 5-10 Landings and Earnings for Resident Halibut Permit Holders: 1980-2010



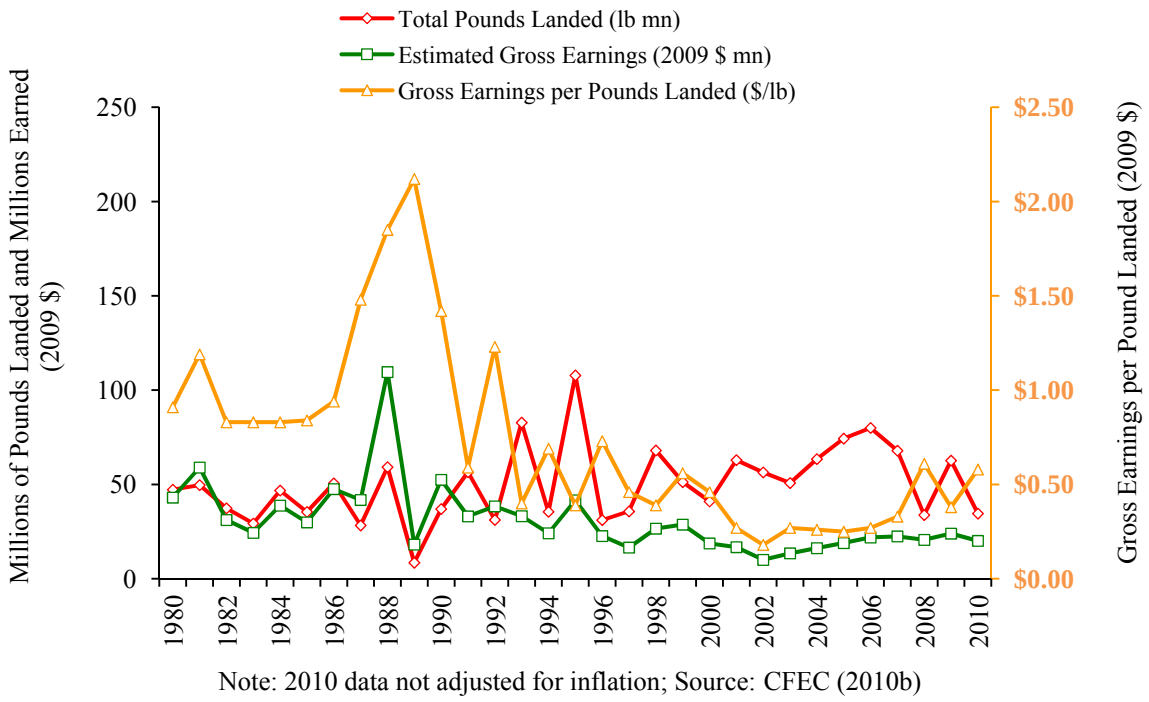
Note: 2010 data not adjusted for inflation; Source: CFEC (2010b)

Figure 5-11 Effort and Production per Resident Halibut Permits: 1980-2010



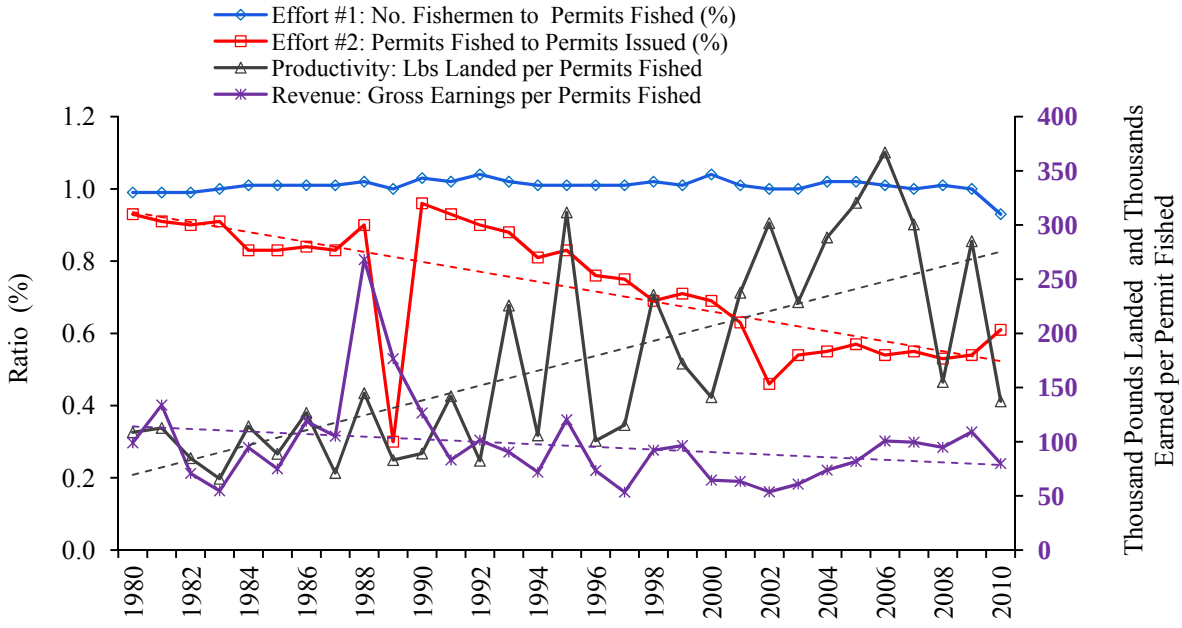
Note: 2010 data not adjusted for inflation; Source: CFEC (2010b)

Figure 5-12 Landings and Earnings for Resident Salmon Permit Holders: 1980-2010



Note: 2010 data not adjusted for inflation; Source: CFEC (2010b)

Figure 5-13 Effort and Production per Resident Salmon Permits: 1980-2010



Note: 2010 data not adjusted for inflation; Salmon is notable in terms of a recent increase in gross earnings per pound; Source: CFEC (2010b)

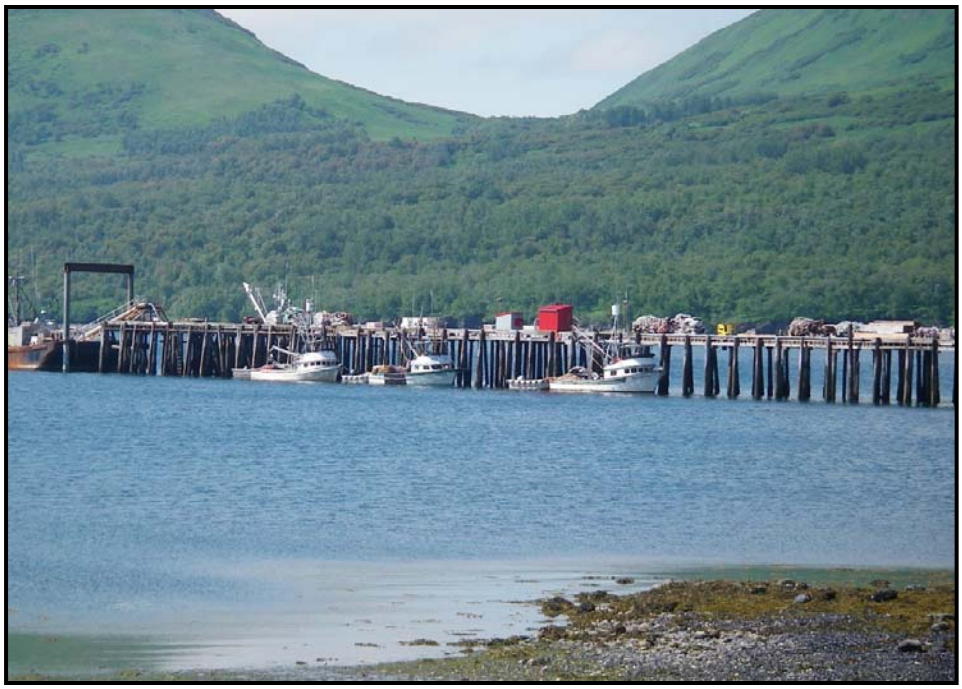


Figure 5-14 Salmon Purse Seine Vessels Moored in Larsen Bay, 2010

Kodiak-Area Salmon Fisheries. Pink or humpback salmon (*Oncorhynchus gorbuscha*), which is of relatively low value, has long dominated salmon landings in the Kodiak area. Sockeye or red salmon (*Oncorhynchus nerka*) landings consistently rank second, followed by chum or dog salmon (*Onchorynchus keta*), with coho or silver salmon *(Oncorhynchus kisutch*) landings ranking fourth. Although the annual volume of chinook or king salmon (*Oncorhynchus tshawytscha*) landed in the region is too small to be depicted on our scaled graphic (Figure 5-14), it is the largest and most valuable salmon species landed in Alaska.

It should be emphasized that salmon returns vary from year to year across a given region as per a wide variety of biophysical factors and ecosystem constraints and opportunities, including anthropogenic effects associated with fishing (Finney et al. 2000). Although the research described in this report does not directly address biophysical factors affecting or associated with participation and production in the region's marine fisheries, we have documented participants' perspectives on patterns of resource availability and related effects on continued investment in the industry.

Moreover, abundance is not typically cited as a major constraint on success in Kodiak's principal fishery. Rather, most salmon fishermen agree that the most significant long-term challenge relates to diminishing prices for salmon in the marketplace. Generally speaking, fishermen say that KMA salmon resources have been sufficient over recent decades, whereas return on investment has not.

The information detailed here addresses all species of salmon currently pursued for commercial purposes in the Kodiak Management Area (KMA)[20] by both resident and non-resident permit holders. Note that Kodiak residents landed about 60 percent of all KMA salmon taken during the period 1970 through 2005. Figures are used to summarize and depict trends in landings, ex-vessel value of the various salmon species, and the number of permits fished by gear type.

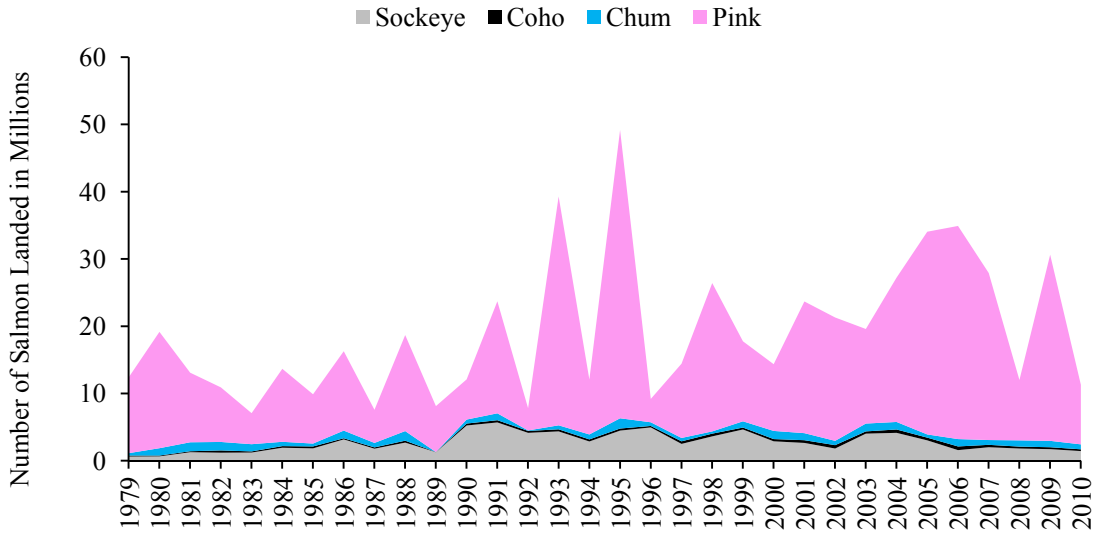
Table 5-2 is accompanied by Figure 5-14. These summarize total commercial landings of salmon in thousands of fish per year for the period 1979 to 2010.

Table 5-2 Summary of Annual Landings of Salmon by Species, Kodiak Management Area: 1990-2010

Variable	Salmon Species				
	Pink**	**Sockeye****	**Chum**	**Coho***	**Chinook***
Mean	17,853.5	3,325.1	803.8*	350.0	19.5
Median	16,642.8	3,047.1	738.8*	324.9	18.7
Maximum	42,849.3	5,702.8	1,522.8**	553.5	41.0
Minimum	3,310.6	1,436.6	69.5*	201.8	7.2
Range	39,538.7	4,266.2	1,453.3**	351.7	33.8
Standard Deviation	10,907.2	1,327.7	338.8	85.9	6.8
	Confidence Limits (95 %)				
Upper	22,519.0	2,757.2	948.7	386.7	22.4
Lower	13,189.0	3,893.0	658.9	313.2	16.6

* In thousands ** In millions; Source: Jackson et al. (2010)

Figure 5-15 Total Salmon Landings, Kodiak Management Area: 1979-2010

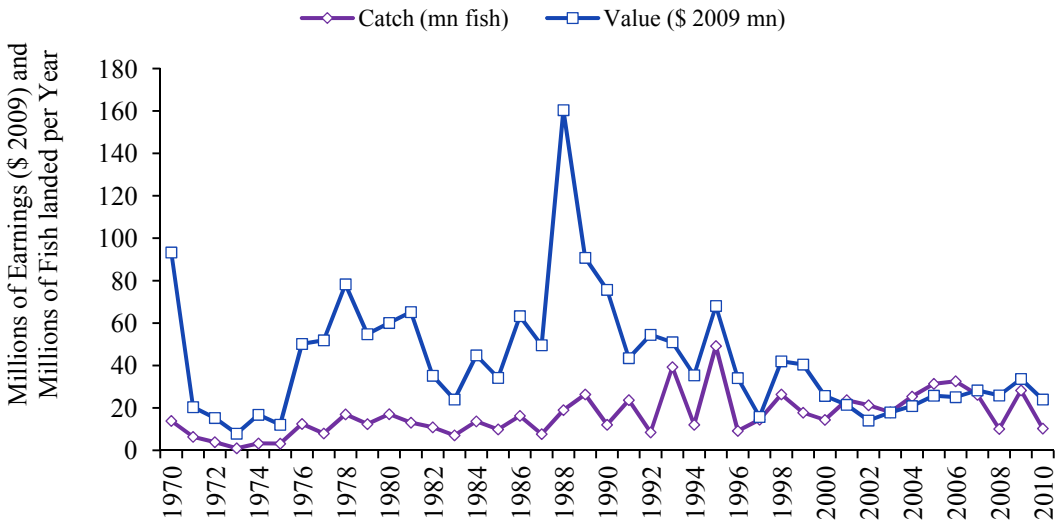


Source: Jackson et al. (2010)

[20] KMA boundaries encompass state waters surrounding the Kodiak Archipelago south of the Cook Inlet Management Area and northeast of the Chignik Management Area.

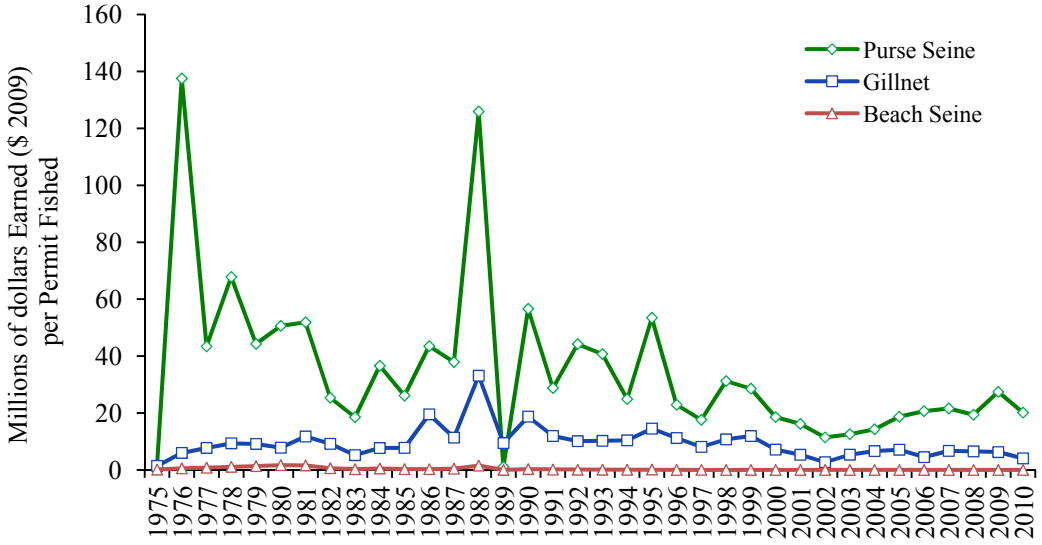
Total annual salmon landings and ex-vessel harvest value are summarized in Figure 5-15. Figure 5-16 presents the same information by type of gear.[21] Most landings derive from use of purse seine gear. Purse seines are large nets used to surround salmon. Small tender vessels are used to help deploy and close the nets. These are subsequently loaded onto the larger mother vessel. Boats that utilize purse seines tend to be larger than those deploying other types of gear and are therefore often used in multiple fisheries.

Figure 5-16 Landings and Ex-vessel Value for Kodiak Salmon Fisheries: 1970-2010



Note: 2010 data not adjusted for inflation; Source: Dinnocenzo et al. (2007), Jackson et al. (2010)

Figure 5-17 Annual Salmon Landings by Gear Type: 1975-2010



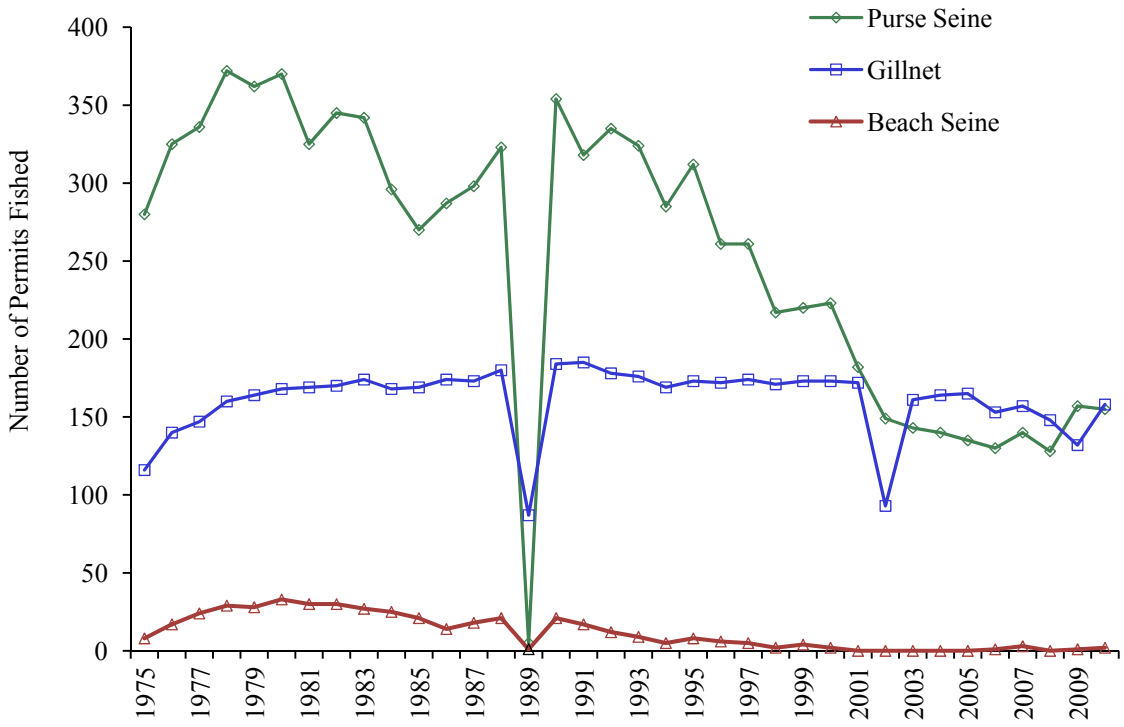
Note: 2010 data not adjusted for inflation; Source: Dinnocenzo et al. (2007), Jackson et al. (2010)

[21] Unless otherwise noted, all price, cost, and value information depicted in this chapter are expressed in constant 2009 dollars.

The number and type of salmon permits active in the KMA between 1975 and 2009 are depicted in Figure 5-17. Note that the number of active set gillnet permits is relatively stable, with the exceptions of 1989 and 2002. In contrast to the seine fishery, fishermen in the set gillnet fishery are less mobile; permits are attached to a place and are generally sold or leased with the land from which one fishes. Permit fees tend to be high and prices exhibit less volatility. The boats and gear needed to participate are generally less expensive than for the purse seine method. The numbers of active purse seine permits and gill net permits decreased steadily after 1990 but have registered slight increases in the past couple of years. The number of beach seine permits peaked at 33 in 1980, with landings valued at $1.7 million (adjusted for inflation). The number of active beach seine permits rapidly declined after 1985, with fewer than 10 in all years after 1993.

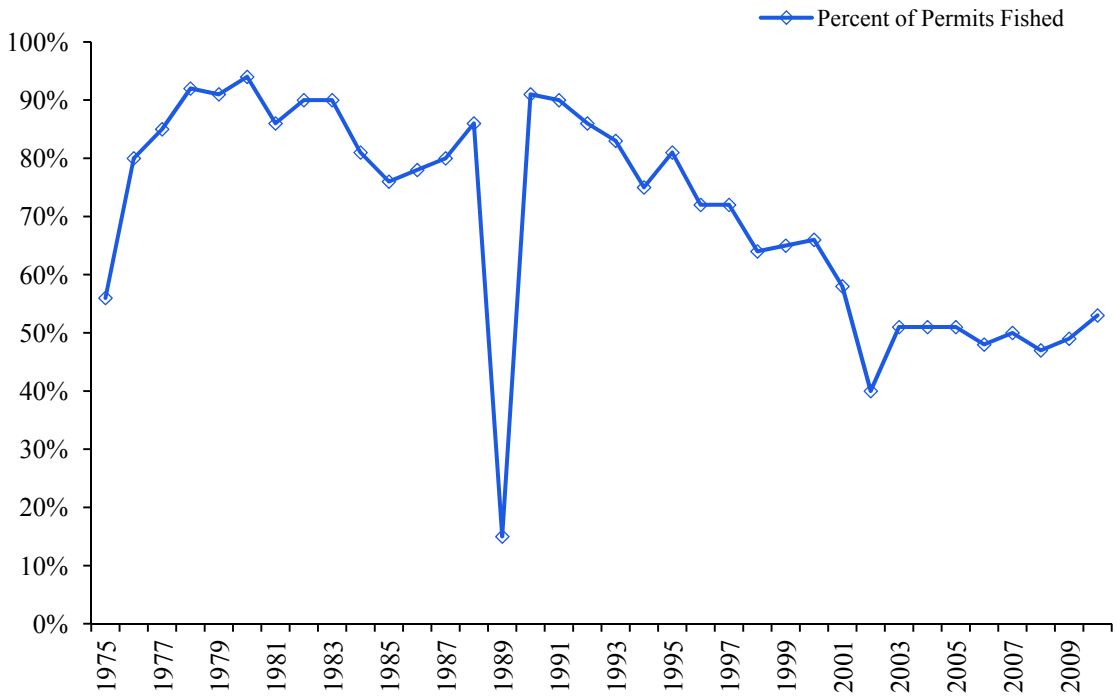
The number of active permits expressed as a proportion of total available permits (Figure 5-18) declined between 1990 and 2002. From 2002, there has been a modest increase in active permits, with some fluctuations.

Figure 5-18 Active Salmon Permits by Type of Gear: 1975-2010



Source: Jackson et al. (2010)

Figure 5-19 Active Salmon Permits and Ex-vessel Value across all Gear Types



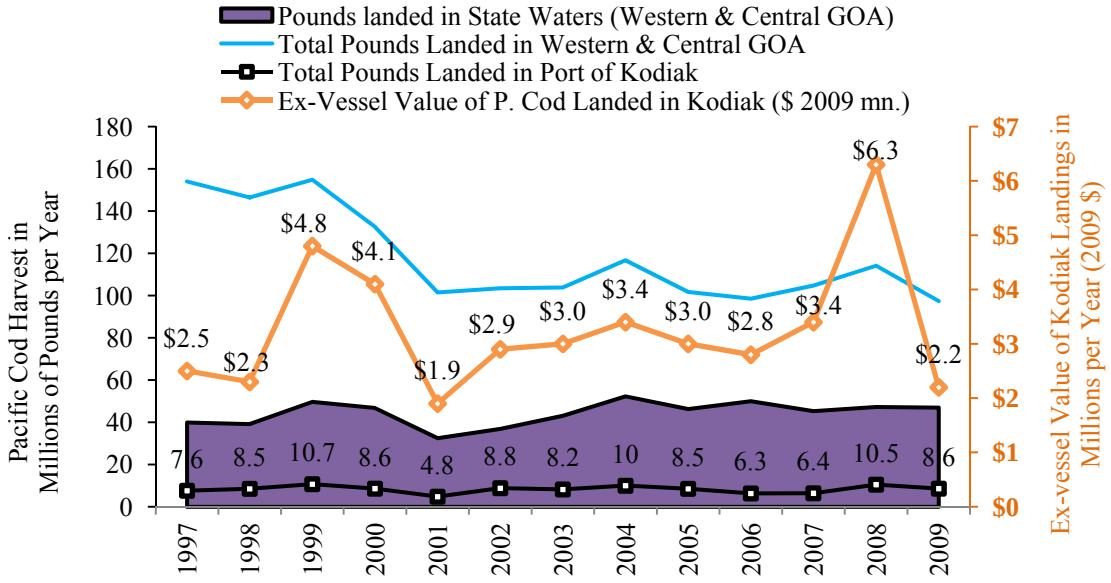
Source: Jackson et al. (2010)

Groundfish Landings. Pacific cod and walleye pollock are the principal groundfish species harvested across the Kodiak region.[22] Groundfish landings vary by allowable catch determinations, based on year-round monitoring of direct and incidental landings. Figure 5-19 depicts trends in total landings of Pacific cod for the Western and Central Gulf of Alaska and the Port of Kodiak.

The volume of cod landed at Kodiak is relatively small, constituting about 15 percent of total regional landings for the period 1997 to 2009. Ex-vessel values of those landings have varied considerably. Landings are serviced primarily by offshore factory vessels based in Dutch Harbor, with only a relatively small amount of groundfish processed in Kodiak. Moreover, while Kodiak-based firms provide some logistical and physical support to vessels active in the regional groundfish fishery, most such services are provided from Dutch Harbor.

[22] Groundfish fisheries occurring in federal and state waters are managed by NOAA Fisheries per guidance established by the North Pacific Fishery Management Council and ADF&G.

Figure 5-20 Alaska Pacific Cod Landings in the Western Gulf of Alaska, the Central Gulf of Alaska (GOA), and the Port of Kodiak and Ex-Vessel Value: 1997-2009



Sources: Sagalkin and Spalinger (2005); Sagalkin et al. (2010)

5.4 Local Perspectives on Kodiak's Seafood Industry

Overview. During the course of ethnographic interviews with fishery participants, many expressed the opinion that several regulations have had a major impact on the region's marine fisheries. Many fishermen pointed to the establishment of IFQs in the halibut fishery as one of the most economically significant changes occurring since the *Exxon Valdez* oil spill.

The IFQ System. The IFQ system represents a significant change in that rather than attempting to land a maximum number or poundage of seafood during openings of limited duration, commercial harvesters may distribute effort over a longer period of time and undertake operational strategies for minimizing costs to obtain a fixed share of total catch.[23] Significantly, IFQ shares may be traded, leased, or sold. As such, the IFQ system has had far-reaching effects on many aspects of commercial fishing, including the size and extent of capitalization of a given fleet, harvesting and processing methods, and pricing conditions at the marketplace.

Management strategies such as the IFQ system are controversial as they allegedly benefit some fishermen more than others (Knapp 2006; Fina 2005; Carothers 2008). For example, some Kodiak fishermen credit the establishment of the IFQ system with prolonging fishing seasons, increasing the safety of fishing, stabilizing supply, increasing product prices, and increasing the percentages of resident fishermen. Other local participants argue that rationalization programs have resulted in: a loss of bargaining power for captains and crew members; increased entry

[23] Note that a limited entry approach to management was first adopted in the late 1970s to regulate effort in the Bristol Bay salmon fishery.

costs; and a disproportionate loss of fishing rights for crew, small vessel operators, and small communities. In his preliminary analysis of the effects of rationalization on Kodiak's participation in the Bristol Bay crab fisheries, Knapp (2006) finds that during the year following implementation of the IFQ system: (a) the number of Kodiak-based vessels involved in the red king crab fishery fell by 53 percent, (b) between 160 and 285 related jobs were lost on Kodiak Island, and (c) loss of overall earnings on Kodiak Island were as high as $1.6 million.

Fishery participants have also criticized the IFQ system for extending losses to the support sectors. For instance, consolidation of the crab fleet reportedly has resulted in a reduction in the number of vessels requiring maintenance or fabrication.

On the other hand, some fishermen assert positive effects. For example, one fisherman was able to lease his quotas for $105,000; others have sold their halibut IFQs to invest in other fisheries or to purchase new gear and/or new vessels.

More recently, new licensing requirements foreshadow the establishment of an IFQ system for the groundfish fishery. Many fishermen are said to be increasing harvest capacity in part to establish a strong history of landings before the fishery is rationalized.

In short, the new IFQ system has impacted the commercial fishing, seafood processing, and marine support sectors throughout the study region. Many fishermen assert that the effects of rationalization will far exceed the impacts of the EVOS punitive damage awards.

Recent Economic Considerations. Phase II field research was conducted between December 2008 and April 2011. During that period, fishing patterns and market conditions fluctuated greatly in response to regulatory changes and demand for seafood products, and a national recession.

During the first two periods of fieldwork, occurring late 2009 and mid-2010, fishermen and owners of marine-related businesses discussed significant changes in the Pacific cod and halibut fisheries. In 2009, Pacific cod and halibut prices dropped in conjunction with the national economic recession, bankruptcy of firms in major export countries (such as Ireland), and low currency exchange rates between the U.S. and Europe. Moreover, in 2009, regional halibut quotas were formally reduced by 30 percent.

By the time IAI's third stint of Phase Two fieldwork was conducted in the spring of 2011, fishermen were reporting that Pacific cod prices and quota allocations had both increased, resulting in a much-improved fishery. Reportedly, the number of captains participating in the open access jig fishery for cod increased from 90 in 2010 to 145 in 2011. Landings for the cod jig fishery increased by nearly one million pounds during the period (Welch 2011).

Fishermen were less optimistic about the Kodiak region halibut fishery. Although the market price for halibut has improved since 2009, halibut quotas for the areas where most Kodiak halibut fishermen are active were further reduced in 2011. Optimism was highest among those fishermen who possessed IFQs in regions with relatively high catch limits.

The herring roe fishery provides seafood destined primarily for Japanese markets. The Japanese earthquake and tsunami of March 2011 reportedly disrupted the market chain for roe due to the loss of major distribution and processing facilities, which were primarily located in Northeastern Japan, near the epicenter of the tsunami. Devaluation of the Japanese yen and decreased demand for roe also disrupted the Kodiak-based herring roe fishery.

In contrast, local perspectives on the Kodiak salmon fisheries were positive. The market share of Alaskan salmon has increased since the mid-2000s, reportedly due to a changing perception among consumers regarding the nutritional value of wild-caught salmon. In 2011, salmon fishermen were encouraged by increasing market demand, strong forecasted returns, and high market prices. The value and number of salmon permits issued to and fished by Kodiak purse seiners increased significantly from 2009 totals.

It was within this changing economic and regulatory climate that Kodiak fishermen were making decisions regarding the use of their punitive damage awards. A full discussion of how the awards were being used and how they might be used in the upcoming months is provided in Chapter Seven of this report.

Figure 5-21 Kodiak Harbor in 2005

6.0 Community-Level Factors and Effects

Previous sections of this report have reviewed unique aspects of life in the Kodiak villages. These include, among others: (a) the Alutiiq heritage shared by many residents; (b) the commonality of valued subsistence practices and reliance on wild foods; (c) geographic isolation and extensive out-migration; and (d) the interface between the informal subsistence economy that is culturally meaningful to residents and the formal wage economy, which in the villages is dominated by commercial fishing and public sector employment. This chapter draws on existing information and ethnographic fieldwork to provide quantitative and qualitative description of the socioeconomic and sociocultural trends and conditions in the villages. This serves as essential context for gauging the effects of EVOS punitive damages case.

Residents of Kodiak's outlying villages share certain challenges arising from geographic isolation, associated fuel and food costs, and limited employment opportunities. Many residents depend on a mix of wage employment, Alaska Native corporate dividends, and hunting and fishing activities. Assessing the use and impact of the punitive damage awards in this context requires an understanding of village economics and social organization, along with proximity and options for transportation to Kodiak City, and collective affiliation to Alaska Native corporations.

6.1 Income

Employment. As briefly discussed in Chapter Five, village-based commercial fishing has been in a state of decline over the past 20 years. Currently, wage-based employment is, in many villages, provided primarily by local government, tribal councils, the Kodiak Island Borough School District, and the U.S. Postal Service. Many village residents support themselves through a mix of part-time/seasonal work, public subsidies, corporate dividends, and subsistence harvesting.

A number of researchers have sought to address the relationship between wage work and subsistence practices in Alaska. For instance, Chance (1987) and Van Stone (1960) assert that while wage work generates income that can be applied to the operating costs of hunting and fishing, it also reduces the amount of time available to actually engage in those activities. Dryzek and Young (1985) maintain that intensification of effort to earn money that can be used for subsistence activities constrains traditional practices and diminishes cohesion between families and individuals in Alaska Native communities. Wolfe (1984) suggests that successful harvest of wild food resources by Alaska Natives helps offset an inherently cyclical cash economy associated with commercial fishing. Jorgenson (1990:198-199) observes that Inupiat villagers regularly fish for consumptive purposes with vessels and gear originally purchased for commercial fishing ventures that often failed to be cost-effective endeavors.

To highlight current conditions in and differences between villages on Kodiak Island, we provide ethnographic data from fieldwork conducted in 2009 in the villages of Larsen Bay and Port Lions in regard to local employment opportunities. During that year, the Larsen Bay Tribal

Council was funding full-time positions for six residents. The municipality employed another eight persons on a full-time basis.

Prior to the 1980s, many residents of Larsen Bay worked in the village cannery in the following capacities: cooking, storekeeping, processing, and conducting machine repair. Today, all 180 employees involved in summer cannery operations were brought in from outside the region. Of the six lodges serving sport fishing enthusiasts, two were owned by "outsiders" who employed persons from elsewhere. One Native-owned lodge provides year-round hunting and fishing guide services: the lodge employed numerous local residents during the 2009 fishing season.

Figure 6-1 Foggy Morning at the Docks in Port Lions, 2010

In 2009, the City of Port Lions employed eight persons on a full-time basis. The tribal council employed 16 persons full-time. Positions involve business management, administration, bookkeeping, transportation, grant writing, tribal services, building maintenance, fuel sales, and in the roles of cook, custodian, receptionist, laborer, and preschool educators. The Kodiak Area Native Association (KANA) funded two full-time positions at the local medical clinic in 2009.

Eight residents of Port Lions worked in the commercial salmon gill, set, and seine fisheries in 2009, and ten residents were operating charter or guide services. Five captains were associated with local lodges or bed-and-breakfast establishments. Although lodges hire local persons, jobs are limited in number. A few residents work for a logging company active on adjacent Afognak Island.

Community leaders in both Larson Bay and Port Lions have encouraged new economic ventures in response to periodic declines in the commercial fishing industry and limited funding for positions in government agencies. Larsen Bay officials have sought to stimulate economic activity by changing zoning laws to allow lodges to operate along the village waterfront.

Currently, Larsen Bay Community Development Plan objectives include: (1) development of a means for leasing community halibut IFQs; (2) establishing local processing facilities; (3) constructing a deep-water docking facility to enable transportation of guide and lodge patrons and to augment city revenue through moorage and fuel fees; and (4) identifying means for enhancing access to Kodiak National Wildlife Refuge and Karluk River.

Officials in Port Lions have encouraged new economic ventures in ecotourism, lodging, and food services. Port Lions Community Development Plan objectives include: (1) promoting the manufacture of wood products from locally produced timber; (2) providing computer training and internet access to more residents; and (3) establishing a tribal for-profit company capable of bidding on government contracts. Discussions with community leaders suggest concern about changing demographic conditions in the community. For example, it was noted that an influx of financially secure retirees from other parts of Alaska and the Pacific Northwest has led to inflated real estate prices, making it difficult for some young families to stay in the area. One official stated that the "dream [of buying property] is out of reach for the younger generation."

Community leaders in Old Harbor report that about 162 positions were available in the area in 2005: most were associated with the commercial fishing and guide services, and over half were season in nature. Local leaders believe that in-migration will increase if community development goals can be met. These involve: (1) formation of a Community Quota Entity which could purchase and lease quota shares for various species, particularly halibut; (2) development of a small flash freezer facility to process locally caught fish for possible export to expanding Pacific Rim markets; (3) promotion of locally operated fishing and hunting guide services; and (4) expansion of air and marine transport options to reduce the costs of passenger and freight travel, support tourism, and expand seafood-related export markets. Community leaders in Ouzinkie similarly hope to expand tourist-related businesses and commercial fishing by: (1) building a lodge and restaurant, and (2) purchasing up to 300,000 pounds of community fishing quotas in halibut.

Charter guide services for tourism provide a significant revenue stream for village economies. Table 6-1 below details this sector in terms of the number of sport fishing businesses and permits issued in each village and in Kodiak City.

Table 6-1 Sport Fishing Activity across Kodiak Island: 2000

Community	Sport Fishing Guide Businesses*	Sport Fishing Permits Issued†
Akhiok	0	0 / 0
Karluk	6	8 / 79
Kodiak City	Numerous**	5,030 / 6,301
Larsen Bay	26	75 / 497
Old Harbor	12	17 / 101
Ouzinkie	2+	46 / 55
Port Lions	11	18 / 148
TOTAL	>100	5,194 / 7,181

Source: Sepez et al. (2005); *Includes guide operations for both freshwater and marine species;
**The authors do not specify the total number of sport fishing guides operating from Kodiak City;
† Number of permits issued to residents/Number of permits issued to non-residents

Figure 6-2 Sport Fishing and Hunting Lodge in Larsen Bay

Recent Trends of Participation in the Harvest Sector. The scope, scale, economic significance, and subjective importance of commercial fishing in the Kodiak region have been discussed at length in this report. Information in Chapter Four characterized commercial fishing activity in the study region as a whole. This section describes similarities and differences between communities in these regards.

Of particular note is the extent to which participation in the harvest sector has diminished in each of the villages. In explaining such declines, informants discuss the institution of permit and quota share systems, declining salmon prices post-1989, the loss of canneries, and depletion of marine resources due to trawling. More recently, an increase in fuel prices has also impacted both subsistence and commercial fishing in the region. A shift toward sport fishing in some villages has not universally provided adequate compensation for the loss of commercial fishing and cannery jobs. Table 6-2 indicates the total number of permit holders living in each village between 2000 and 2010. Table 6-3 indicates the halibut shares owned by residents in each village.

Table 6-2 KMA Permit Holders and Licensed Crew by Village: 2000-2010

Community	Commercial Permit Holders				Number of Licensed Crew			
	2000	2003	2005	2010	2000	2003	2005	2010
Akhiok	5	5	7	5	12	4	6	7
Karluk	0	0	0	0	5	2	2	2
Larsen Bay	17	9	11	10	24	19	20	6
Old Harbor	31	23	26	25	52	28	45	29
Ouzinkie	26	23	24	18	28	25	20	22
Port Lions	24	18	19	15	24	20	23	20

Source: Sepez et al. (2005) for year 2000 data; and CFEC for 2003, 2005, and 2010a data

Table 6-3 IFQ Summary for Kodiak Villages: 1995/2000/2008

Community	IFQ Holders			IFQ holdings (in lbs.)		
	1995	2000	2008	1995	2000	2008
Akhiok	1	0	0	8,439	0	0
Karluk	0	0	0	0	0	0
Larsen Bay	8	2	0	16,823	597	0
Old Harbor	15	8	7	112,510	36,312	52,636
Ouzinkie	21	20	12	100,421	94,187	81,867
Port Lions	21	15	13	41,690	32,848	27,124

Source: Report on Holdings of IFQs by Residents of Selected Gulf of Alaska Fishing Communities: 1995-2008; NOAA Fisheries (2009b)

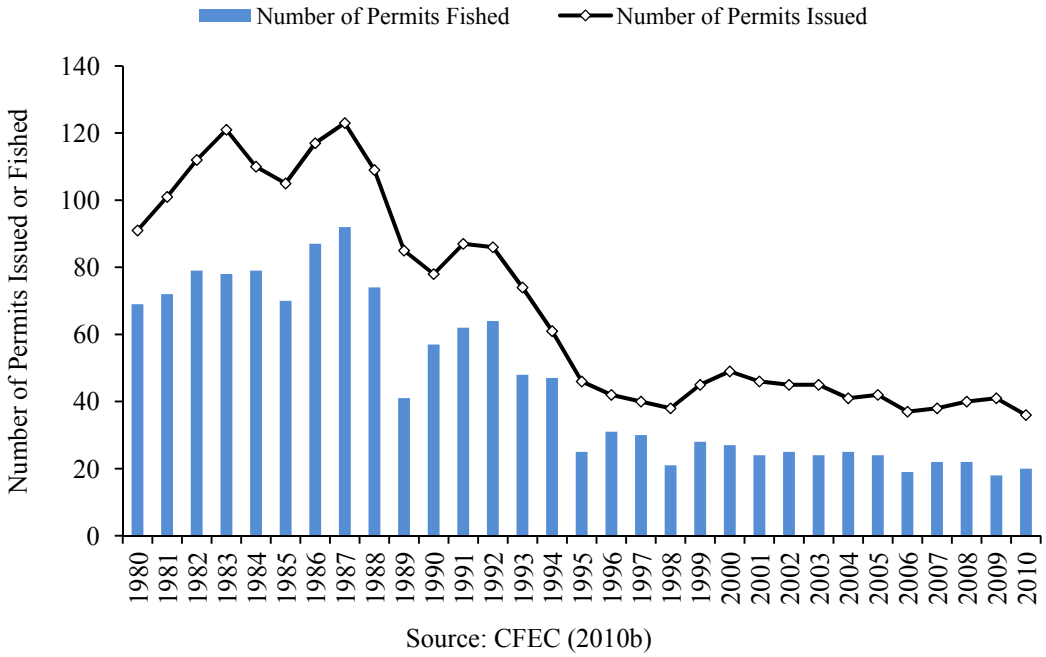
Between 2008 and 2011, the number of persons holding IFQs decreased by three in Port Lions and one in Ouzinkie (NOAA 2011). In light of recent declines in IFQ holders and holdings in Alaska communities, the North Pacific Fishery Management Council developed the Community Quota Entity (CQE) program in 2004 to allow eligible communities to purchase quota shares. The primary goal of the program is to build community involvement in the region's halibut and sablefish longline fisheries, and thereby mitigate out-migration of fishermen and quota shares. The high cost of quotas and difficulties accessing capital have constrained the overall success of the program. In 2011, Ouzinkie purchased 106,488 shares. The villages of Larsen Bay and Akhiok have also established CQEs.

The following figures indicate trends in effort, production, and earnings at the village level of analysis. We limit the reporting of data to three communities: Port Lions, Larsen Bay, and Akhiok. These communities tend to vary in terms of: 1) proximity to Kodiak City; 2) population size; 3) poverty and average income rates; and 4) the type and scale of fishing activity.

Port Lions. The total number of commercial fishermen based in Port Lions declined from 46 in 1984 to 15 in 2010. The decline in participation is directly related to diminished market value for salmon. In response to the decline of the salmon fishery, some fishermen transitioned their efforts from commercial fishing to sports fishing, aided in part by dividends from Alaska Native Corporations. Declining participation has also been attributed to the establishment of the IFQ system for regional halibut fisheries. The number of permit holders and associated shares (in pounds) declined from 21 IFQ participants and over 40,000 pounds in 1995 to 13 participants and under 30,000 pounds in 2008.

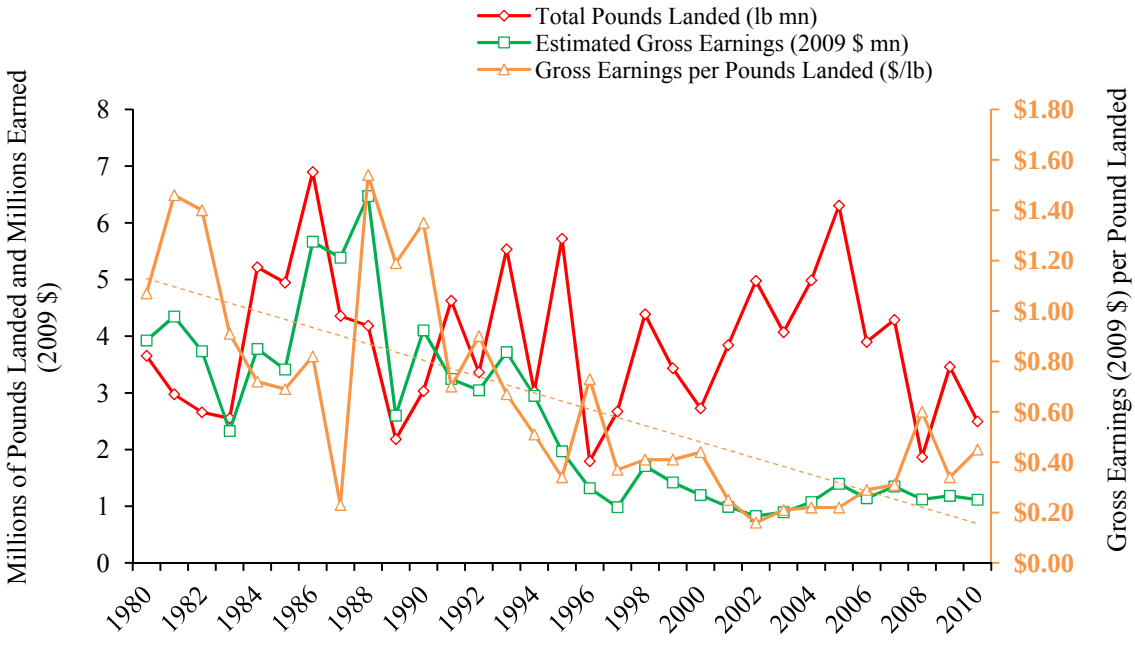
Figure 6-2 below depicts a dramatic decline in permits issued and fished between 1989 and 1995. The figures stabilize between 2001 and 2010. Figure 6-3 depicts declines in estimated gross earnings between 1989 and 1998, followed by a leveling trend. Although there has been considerable variation in total pounds landed, gross earnings per permit fished (Figure 6-4) have increased slowly since 2002, portending a more positive future.

Figure 6-3 Commercial Permits Issued and Fished by Residents of Port Lions, All Fisheries: 1980-2010



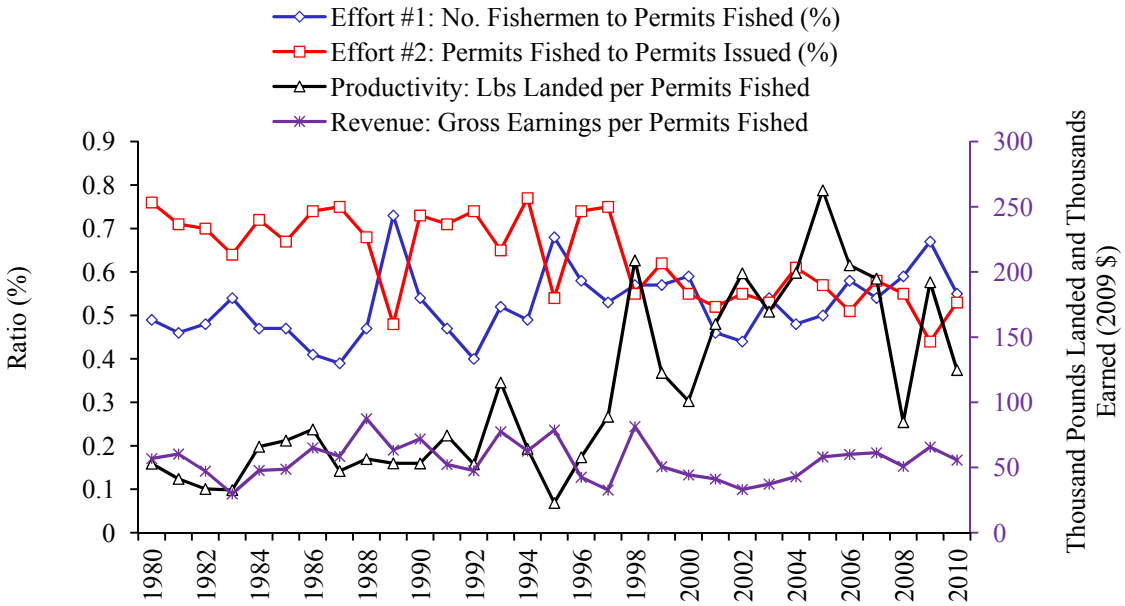
Source: CFEC (2010b)

Figure 6-4 Commercial Landings and Earnings in Port Lions, All Fisheries: 1980-2010



Note: 2010 data not adjusted for inflation; Source: CFEC (2010b)

Figure 6-5 Effort and Production Per Permit, All Fisheries, Port Lions: 1980-2010



Note: 2010 data not adjusted for inflation; Source: CFEC (2010b)

Larsen Bay. An overall trend of declining participation in the commercial fishing industry is clearly indicated for residents of Larsen Bay (Figure 6-4). Permit figures validate ethnographic data regarding local involvement in the region's salmon fishery and the many challenges that residents active in that fishery have experienced in recent years. Discussants report that numerous families departed the village in the early 1990s when the fishing economy was severely depressed. Many villagers reportedly were also detrimentally affected by the oil spill and frustrated with the litigation process. One resident described the situation in the following way:

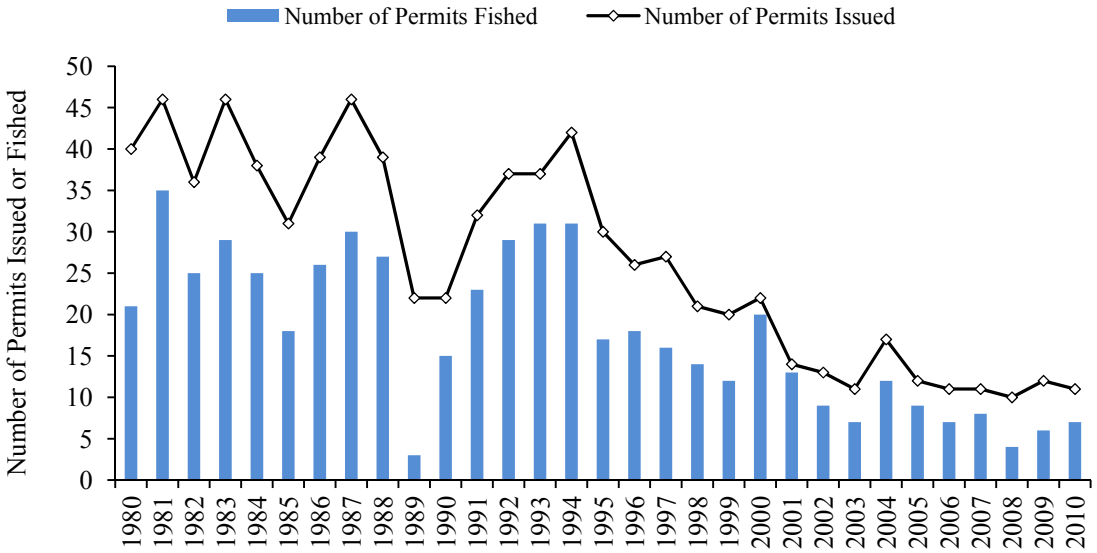
> "If it had been just a year or two of waiting for the [punitive damages] settlement, people could have and would have waited it out. But by about 1992 or 1993, when salmon prices didn't recover, people just gave up. People just stopped waiting. That's when some of the big families started leaving."

Eight Larsen Bay residents were issued a total of 18,000 pounds of halibut IFQs in 1995. But by 1997, 97 percent of the quotas had been transferred out of the community, either through sale or emigration of shareholders. By 2008, no Larsen Bay residents held halibut IFQs (NOAA Fisheries 2009b).

Research data indicate that 19 percent of all Larsen Bay households currently derive income from commercial fishing, down from 57 percent ten years prior. Most currently fished permits are for salmon. A small number of residents hold permits for groundfish and crab.

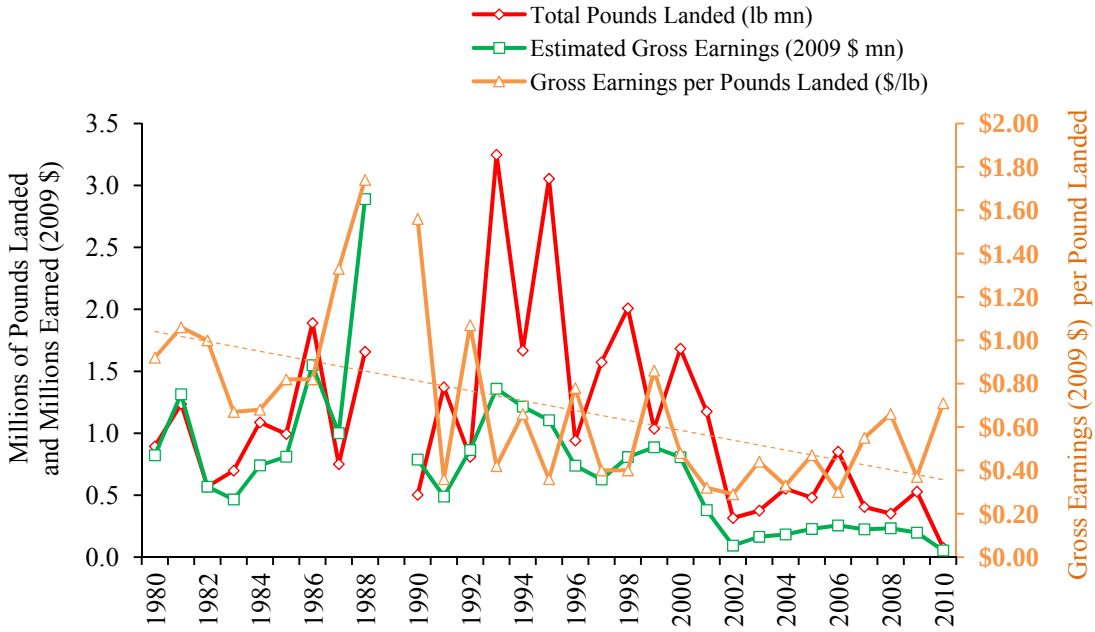
The number of actively fished permits increased slightly between 2008 and 2010, as did the total pounds of seafood landed (Figures 6-5 and 6-6). The slight upturn in permit activity is indicative of improving market conditions for Kodiak wild-caught salmon. An increase in the number of active permits did not, however, translate into extensive landings or earnings per permit (Figure 6-7). Although local overall participation in the region's commercial fishing industry diminished significantly during the time series depicted, some residents are optimistic that future years will be more productive, and some are poised to invest in vessels and gear should market conditions continue to improve.

Figure 6-6 Commercial Permits Issued and Fished by Residents of Larsen Bay, All Fisheries: 1980-2010



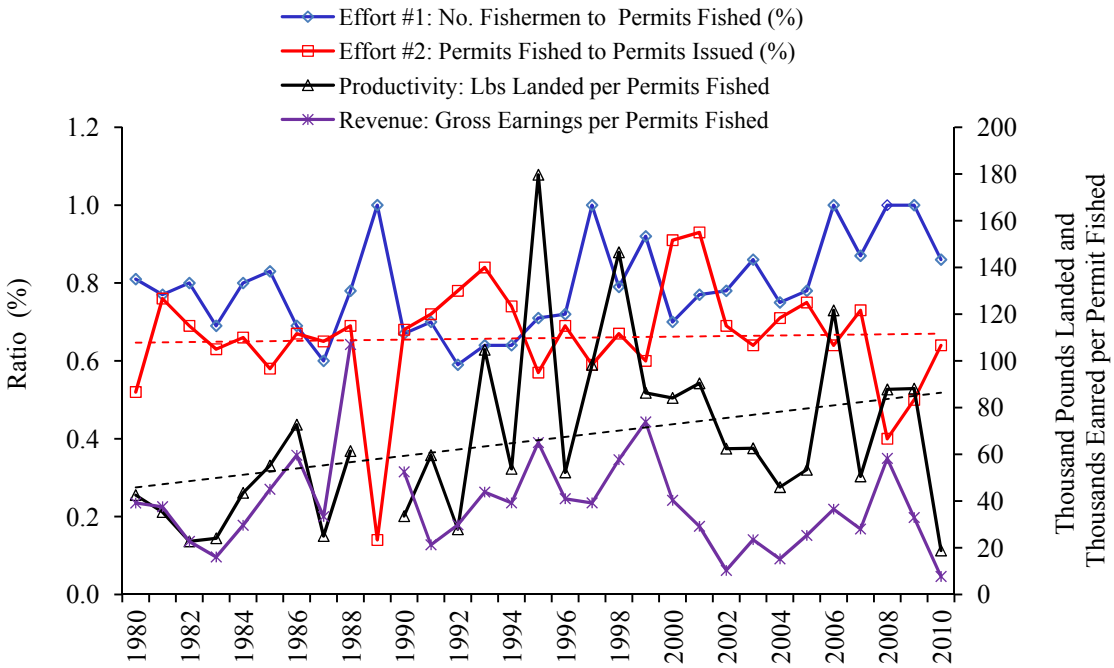
Source: CFEC (2010b)

Figure 6-7 Commercial Landings and Earnings in Larsen Bay, All Fisheries: 1980-2010



Note: 2010 data not adjusted for inflation; Source: CFEC (2010b)

Figure 6-8 Effort and Production Per Permit, All Fisheries, Larsen Bay: 1980-2010



Notes: Landings and Revenue data for 1989 are not publically available to maintain confidentiality; 2010 data not adjusted for inflation; Source: CFEC (2010b)

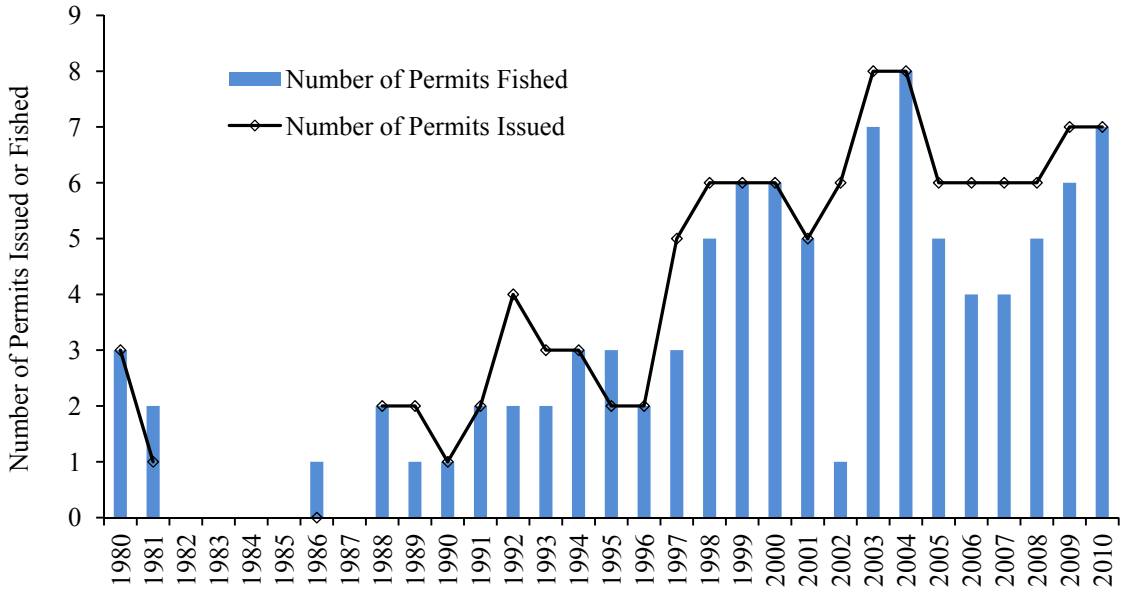
Akhiok. Fisheries trends for residents of Akhiok are unlike those of Kodiak City or the other villages. With the exception of an abrupt, single-year drop in activity that was associated with the EVOS land trust settlement in 2002, the number of active salmon permits held by Akhiok residents increases dramatically after 1989 (Figure 6-8).[24] Salmon is the only fishery in which Akhiok residents participate to any significant extent. Only one groundfish permit, one herring permit, and one halibut permit were issued for much of the time series. Confidentiality restrictions under the rule of three obviate more extensive description of local involvement in the region's marine fisheries.

Diminished use of commercial fishing permits by Akhiok residents during the year of the EVOS land trust liquidation (briefly described in Chapter Two of this report) is indicative of temporary distraction from the industry. Discussions with residents support this explanation: many people left the community that year, and typical ways of living were, in many cases, temporarily altered. Conditions began to normalize the following year, and rates of participation in subsistence hunting and fishing were reportedly high in 2003 (Davis, in Fall et al. 2006:140). Since 2002, participation has vacillated between four and eight permits fished. Number of permits fished,

[24] Note that the number of permits fished is higher than the number of permits issued in certain years. This is observed in cases where a permit was revoked or where persons fishing under an interim-use permit eventually received permanent status.

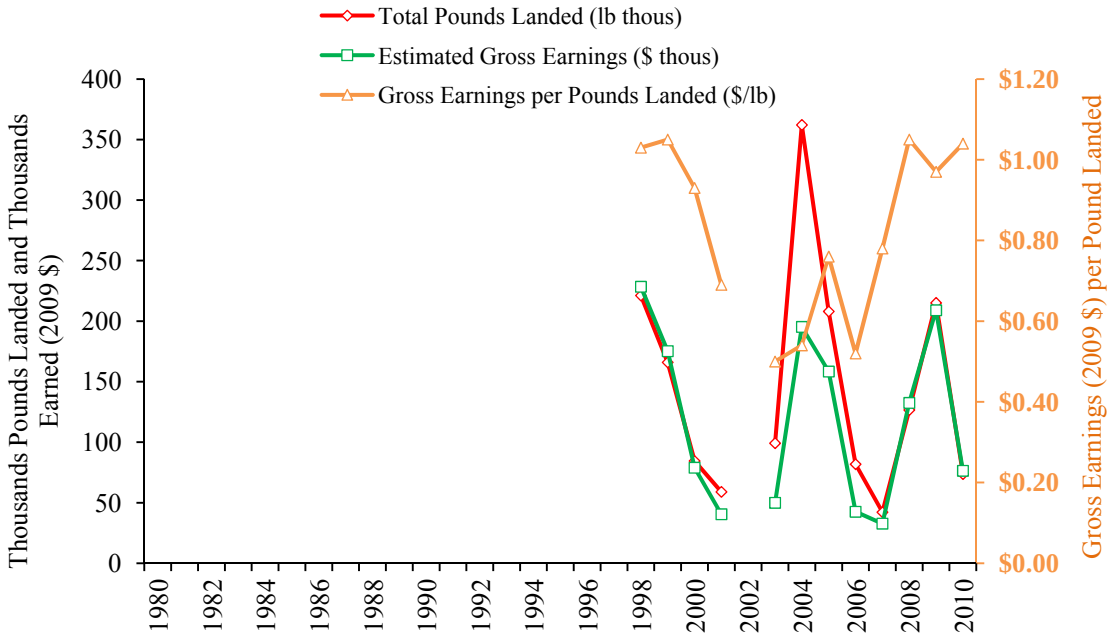
total pounds landed per permit fished, and gross earnings per permit fished increased between 2008 and 2010.

Figure 6-9 Commercial Permits Issued and Fished by Residents of Akhiok, All Fisheries: 1980-2010



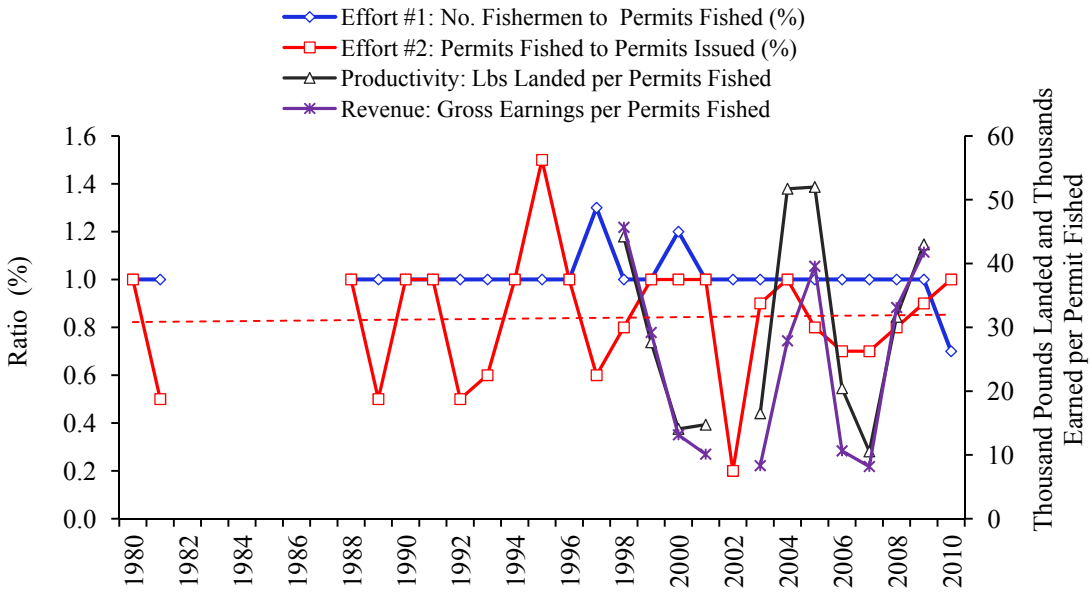
Note: data not available for 1982, 1983, 1984, and 1985 due to confidentiality restrictions; Source: CFEC (2010b)

Figure 6-10 Commercial Landings and Earnings in Akhiok, All Fisheries: 1980-2010



Note: Landings and Revenue data are not available for years between 1982 and 1997, and 2002 due to confidentiality restrictions; 2010 data not adjusted for inflation; Source: CFEC (2010b)

Figure 6-11 Effort and Production for Residents of Akhiok, All Fisheries: 1980-2010



Note: Landings and Revenue data are not available for years between 1982 and 1997, and 2002 due to confidentiality restrictions; 2010 data not adjusted for inflation; Source: CFEC (2010b)

Alaska Native and Tribal Benefits. Of particular importance in assessing the differential effects of EVOS settlement awards on recipients is a concomitant understanding of the other sources of income. For instance, many village residents are members of Alaska Native corporations and are affiliated with tribes, both of which engage a complex system of investment services and shareholder dividend payments. A complete description of the history and nature of these benefits is beyond the purview of this report; however, we provide a brief overview to facilitate a description of recent trends.

Individuals born in or before 1971 are benefactors of Alaska Native corporations. Alaska Native corporations own land and various natural resources, and maintain extensive financial holdings. Some Alaska Native corporations have been very successful in winning federal grant monies.

The corporations distribute profits to their shareholders. Most Alaska Natives are members of both village and regional corporations. The number and amount of dividends can vary over time, depending on the net profits of the corporation.

Here we discuss data from fieldwork undertaken in Larsen Bay and Port Lions in 2009 to highlight inter-village differences with regard to Alaska Native corporate benefits. Many Alaska Native residents of Larsen Bay are members of the Koniag Corporation. Koniag, Inc. is one of 13 for-profit regional corporations established through ANCSA. Koniag owns and manages land that was received under ANCSA and also maintains investments in real estate, subsidiary companies, and stocks and bonds. Shareholders receive dividends on a bi-annual basis; in 2011, persons holding 100 shares received approximately $2,200 for the year.

Many Alaska Native villagers of Port Lions are shareholders of Afognak Native Corporation. Afognak Native Corporation is often regarded as highly successful. Initially, the corporation

focused on timber production, but now provides security, construction, and information technology services to the federal government. In 2009, annual revenues exceeded $750 million. Annual dividends recently increased from $17,000 in 2005 to $25,000 in 2009.

One prominent individual in Port Lions is a shareholder of Afognak Native Corporation. Over the years, he has used his dividends to: finance the conversion of a commercial fishing vessel to a charter boat; purchase a larger boat; and expand his home to create a bed-and-breakfast lodge for charter clients. He credits the Afognak Native Corporation with allowing him to return to Port Lions from Anchorage to create a viable business in his home village.

Alaska Natives receive benefits through tribal affiliation. Tribal councils are responsible for channeling federal funds to Alaska Native constituencies, one example of which is the home heating program that assists in covering fuel costs and winterizing homes in Port Lions. Many such programs require specified household income levels.[25] Other programs provided by the Port Lions Tribal Council include: pre-school education, Alutiiq dance, traditional arts and crafts, welfare assistance, recycling services, transportation, family activities and recreation, senior citizens meals, fuel services, and burial assistance. Many tribal councils focus on heritage-based programs and also provide educational scholarships.

Woody Island Tribe, a Kodiak City-based tribe, has been active for ten years. The Tribe has a small local constituency – reportedly 50 persons in Kodiak and 100 residents in all of Alaska. A tribal council representative describes members as generally "affluent;" and the tribal council does not provide the extent of services of other tribes. The council focuses on: (1) higher education benefits; (2) cultural activities; and (3) environmental programs funded by an Environmental Protection Agency grant. One such program encourages subsistence harvesting, growing organic produce and teaching members (and non-members) about traditional use of plants on Kodiak Island.

In addition to family social services and scholarship funds, the Sun'aq Tribe, another Kodiak City-based tribe, offers its members vocational training and job placement services. The Sun'aq Tribal Council has also worked with lawyers to ensure those entitled to EVOS punitive damage awards would receive them. Koniag Native Corporation and the non-profit Kodiak Area Native Association also provide services to Alaska Natives living on Kodiak Island.

Public Assistance. Several federal and state agencies offer public assistance programs to Kodiak residents, as do a number of volunteer and non-profit organizations. Many of the programs have specific requirements regarding age, health status, and income levels. Of relevance to this discussion is the potential for EVOS settlement monies to edge recipients into a higher income bracket, thereby disqualifying them from participation in certain public assistance programs for a particular fiscal year.

The federal government administers the Social Security, Social Security Disability Insurance, and Social Security Insurance programs. The Supplemental Security Income program has a

[25] Minimum monthly income levels for assistance in 2009 were as follows: $2,348 (for 1 person); $3,281 (2); $4,325 (3); $4,969 (4); $5,813 (5); $6,656 (6); $7,500 (7); $8,344 (8); and $544 for each additional household member.

maximum income stipulation. The Medicaid program provides medical coverage to qualifying persons.[26]

The State of Alaska, Department of Health and Social Services, Division of Public Assistance oversees five programs: Chronic and Acute Medical Assistance program (CAMA), Food Stamps, Temporary Assistance programs, Adult Public Assistance, and General Relief Assistance. The CAMA,[27] Food Stamp,[28] and Adult Public Assistance[29] programs all have maximum income stipulations which, if exceeded, will reduce or revoke one's benefits.

The Kodiak Island Housing Authority (KIHA) provides public housing assistance to low and moderate income families in both Kodiak City and the surrounding villages. Available assistance includes rental housing opportunities, rental payment assistance, mortgage loans, down payment assistance, and home repairs and renovation. KIHA serves both the Alaska Native and non-Native communities; some of the programs, however, have Alaska Native preference requirements. Both the rental housing[30] and rental payment assistance[31] programs have annual income maximums and minimums. A KIHA consultant for tribal affairs estimates that 50 percent of the housing in Larsen Bay and 20 percent in Port Lions are provided by KIHA.

Indicators of Economic Challenges. Each year, the Denali Commission classifies Alaska communities as "distressed" or "non-distressed" based on average income, poverty, and employment rates. Kodiak village communities have frequently been classified as distressed over the past decade. Akhiok, Ouzinkie and Old Harbor were classified as distressed in 2009; Old Harbor was classified as distressed in 2010; and Akhiok and Old Harbor were classified as distressed in 2011 (Denali Commission 2011).

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[26] Examples of the current maximum (gross) income requirements are: $1,505 for a household of one; $2,406 for two persons; $2,708 for three persons; and $3,009 for four persons. See State of Alaska, Department of Health and Social Services, Medicaid Standards; available at: dpaweb.hss.state.ak.us/POLICY/PDF/medstandards2011. pdf

[27] Eligibility requirements for receiving aid from CAMA are as follows: a monthly income of $300 or less (for one person), $400 (for two persons), and $100 for each additional person thereafter. In addition, one may not have more than $500 in cash, bank accounts, or personal property that could be used to pay medical benefits. The existence of home, vehicle, or any property that is used to produce income, however, is not included in evaluating one's worth. See State of Alaska, Health Care Service; available on at: hss.state.ak.us/dhcs/CAMA/default.htm.

[28] The Food Stamp program allows for maximum benefits as follow: $1,466 for household of one; $1,973 for two; $2,480 for three; $2989 for four; $3949 for five; $4,001 for six; $4,508 for seven; $5,015 for eight; and $507 thereafter for each additional person.

[29] Maximum income standards for Adult Public Assistance are on a sliding scale. To receive the maximum benefits of $250 per month, a qualifying individual may not have a monthly income over $850 per month as an individual or $1,149 per month as a couple. See State of Alaska, Health and Social Services, Public Assistance; available on at: seniorbenefits.alaska.gov

[30] The maximum income amount (for non-disabled persons) was $12,000 as of April 2011.

[31] Maximum total gross family incomes in 2011 were: $43,800 for single person; $50,050 for two persons; $56,300 for three persons; $62,550 for four persons; $67,600 for five persons, and $5,000 for each additional person.

Tables 6-4 and 6-5 below illustrate key indicators of economic challenges that are now often characteristic of life in the villages. The data elucidate the fact that the formal economies of the six villages are relatively impoverished compared to that of Kodiak City, the Borough as a whole, the State of Alaska, and the United States as a whole.

Note that approximately 20 percent of households in four of the villages reported no earnings during the most recent Census. Both per capita income and median household income tended to be significantly below the figures reported for all larger units of analysis. Some variation is noted across Census years, with conditions tending to worsen over time, in some cases dramatically so. At the time of this writing, the 2010 U.S. Census figures for patterns of income and poverty levels were not yet available for the villages.

Table 6-4 Patterns of Income in Kodiak Villages, per the Decennial Census: 1980-2000

Place	Per Capita Income ($)			Households with Earnings (%)			Median Household Income ($)		
	1980	1990	2000	1980	1990	2000	1980	1990	2000
Kodiak Island Borough	10,415	19,979	22,195	95	93	92	26,421	44,815	54,636
Kodiak City	12,030	22,951	21,522	95	92	90	30,512	46,050	55,140
Kodiak Station	n/a	10,924	14,234	n/a	100	100	n/a	34,196	46,189
Akhiok	n/a	14,793	8,473	n/a	100	80	n/a	42,500	33,438
Karluk	n/a	8,052	13,736	n/a	100	83	n/a	31,250	19,167
Larsen Bay	n/a	19,222	16,227	n/a	100	78	n/a	39,750	40,833
Old Harbor	n/a	8,008	14,265	n/a	84	77	n/a	16,875	32,500
Ouzinkie	n/a	16,530	19,324	n/a	84	85	n/a	48,393	32,500
Port Lions	n/a	14,960	17,492	n/a	87	89	n/a	40,938	39,107

Source: U.S. Census Bureau: 2000 SF3 P82; 1990 STF3 P114A, 1980 General Social and Economic Characteristics

Table 6-5 Families and Individuals Identified as Living below Poverty Level: 1990 and 2000

Place	1990		2000	
	Families (%)	Individuals (%)	Families (%)	Individuals (%)
United States	10.0	13.0	9.2	12.4
State of Alaska	6.8	9.0	6.7	9.4
Kodiak Island Borough	3.7	5.5	4.6	6.6
Akhiok	0	2.5	5.3	9.9
Karluk	0	3.7	0	0
Kodiak City	4.6	6.2	3.7	7.4
Larsen Bay	3.2	3.1	27.3	20.5
Old Harbor	24.6	31.5	30.8	29.5
Ouzinkie	3.6	10.3	6.1	6.0
Port Lions	2.1	5.3	12.7	12.1

Source: U.S. Census Bureau, Tables DP3 (2000) and DP4 (1990); * data not available

6. 2 Cost of Living

Food and fuel are the two primary expenses in villages. Residents depend on barge and commercial air carriers for many day-to-day services, including transport of groceries, fuel, building supplies, and vehicles. This elevates costs. The cost of electricity is also relatively high. The Community Development Plans of many villages indicate a need to work with other

rural communities to achieve more cost-effective means of transporting goods, particularly bulk fuel.

Port Lions is the only village on the Alaska Marine Highway System and thus its residents enjoy the benefits of a ferry service to Kodiak City and the mainland. Many villagers take their cars to Kodiak (or to Homer and then on to Anchorage) to purchase goods and then return home. The ferry substantially lowers dependence on air services, and is much less costly than air freight.

Residents in other rural villages are more heavily dependent on air carriers. Flight costs for persons or freight vary; an average freight charge, as reported in 2009, was $0.65 per pound. Residents typically charter flights into Kodiak to shop or to put in "bush orders," which are then delivered by air. The largest retailers in Kodiak, such as Safeway, Walmart, and Cost-Savers, accept bush orders.

Figure 6-12 Ferry Pier at Port Lions, 2009

By and large, opportunities for local purchase of food are limited. Larsen Bay has one store open during the summer season when the cannery is in operation. Stock items include a variety of foods, T-shirts and caps, some fishing gear, some kitchen utensils, and various sundries. The local store in Port Lions closed after a Seattle-based barge service changed ownership and subsequently dropped its service to Port Lions. Without barge service, villagers depend on the ferry, privately owned boats, and/or air service. Transportation costs can double the cost of certain goods. For instance, some items are routed through Kodiak rather than directly from Seattle.

Figure 6-13 Cannery Dock and Store at Larsen Bay

High costs of living in the villages are reflected in differences between food stamp payments in Kodiak City and the outlying villages. In Kodiak City, payments are $239 per person per month, whereas the figure is $304 per person per month in the villages; a difference of 27 percent.

The price of heating oil in the villages is also relatively high. Fuel must be brought in either by barge or plane, which often doubles or even triples Kodiak City prices. However, prices can vary as much as $2.00 per gallon between villages, depending on when the last bulk shipment was received and how it was transported. Fuel companies will generally deliver without payment if an account is in good standing; otherwise some form of prepayment is required.

Each village has its own challenges in terms of meeting local demand for fuel. During the winter of 2008-2009, heating oil prices were inordinately high due to extensive shipping costs. The State of Alaska disbursed economic stimulus checks to households in many villages that winter in order to alleviate challenges associated with excessive fuel costs.

Economic challenges are also experienced at the village administrative level. Most villages generate relatively little tax revenue since property taxes are collected by the Borough, and there are few opportunities for levying local sales tax. Several villages are currently enduring financial hardship. In 2006, Larsen Bay administrators were struggling to maintain certain municipal programs, and new EPA standards require construction of a new water treatment facility; state and/or federal financial assistance will be necessary to complete the upgrade.

Port Lions administrators have been facing similar challenges. Port Lions, too, must build a new water treatment facility, and it also has infrastructure projects in need of attention, including upgrades to the ferry dock. Should the village lose ferry service because of an inability to repair the dock, life in the village would be considerably more challenging.

6.3 Participation in Subsistence Activities

In analytical terms, the economy of Kodiak Island is mixed, incorporating a market sector, a government sector, and a subsistence sector (Huskey 2004). The interplay between the informal economic aspects of subsistence hunting and fishing, and the formal aspects of the commercial fishing industry and other sources of income continue to characterize the village economies of Kodiak Island. As reviewed here and elsewhere, subsistence-oriented fishing and hunting, sharing of subsistence-oriented foods, and the labor required to attain them are important dimensions of village life.

Subsistence-oriented hunting and fishing are undertaken by many non-Native and Alaska Native residents of Kodiak City. It can be argued that those practices are particularly important to Alaska Native residents given: (a) the cultural meaning Alutiiq people ascribe to the natural world; (b) the importance of traditional food-gathering practices and sharing of subsistence foods; and (c) culturally influenced preferences for wild foods, and the dietary imperative of consuming them in the absence of other suitably nutritious and readily available sources of protein, carbohydrates, and vitamins.

Village societies can be seen as straddling the past and present. Pursuit of wild foods and traditional and customary forms of sharing and reciprocity are as critically important today as in centuries past. But individual and collective capacity to hunt and fish for consumptive and cultural purposes in rural Alaska today is often based in part on income derived through jobs in the commercial fishing industry, government, or other sectors of the formal economy. Corporate and government subsidies also help residents meet important cultural objectives.

Discussion with informants in 2009 make clear that costs associated with gear, vessels, and vehicles used for subsistence hunting and fishing are significant. For instance, all-terrain vehicles needed to reach hunting areas can cost between $6,000 and $8,000. A rifle with scope can cost between $800 and $1,200. Outboard fishing skiffs suitable for fishing in local waters cost $10,000 at a minimum. All such gear requires ongoing maintenance, and gas, oil, fishing gear, and ammunition must be purchased on a regular basis.

Prices for used goods can be substantially lower, and individuals will pool resources to meet costs associated with subsistence fishing and hunting. The benefits of corporate subsidies and public assistance notwithstanding, informants often relate that a lack of opportunities in the villages is associated with a variety of social problems, including diminished capacity to consistently engage in hunting and fishing activities.

Figure 6-14 Typical Residence in Larsen Bay

Conditions and Trends in Subsistence Participation and Production. Archival information regarding subsistence activities is collected in three ways: (1) through surveys attached to subsistence permit applications; (2) via landing tickets, such as those submitted by commercial fishermen who retain catch for subsistence purposes; and (3) household surveys. ADF&G Division of Subsistence representatives report that although survey return-rates are high, determining the actual nature and extent of subsistence activity in the villages has been problematic since not all village residents apply for permits.

Moreover, household surveys are costly and challenging to conduct on a regular basis. ADF&G conducted programmatic household surveys of subsistence hunting, fishing, and gathering activities in Kodiak Island communities during the mid-1980s, again at various points during the mid-1990s, and during the early 2000s. ADF&G reports (2005:121) that a total of 100 Kodiak village households participated in the subsistence program in 2000, 189 participated in 2001, 167 participated in 2002 and 165 participated in 2003. Based on input from households involved in the program, the overall harvest of salmon taken via subsistence permits was 6,299 fish in 2000, 9,034 in 2001, 9,386 in 2002, and 8,714 in 2003. The last on-site subsistence studies were completed in 2003.

Table 6-6 below depicts trends in the region-wide subsistence harvest of salmon. We reiterate that the information derives from programs in which landings are self-reported, and that the nature of those programs and hence the consistency of the data has varied over time. Other factors related to changes in harvest levels include: (a) biophysical parameters of the resource population and rate of return; (b) changes in allowable harvest levels in adjacent commercial salmon fisheries; (c) levels of escapement; and (d) changes in the size of the pool of residents who qualify for subsistence permits and/or are interested in subsistence fishing.

The data indicate a modest increase in participation in subsistence salmon fisheries in the KMA since 1989. While the resident population has been relatively stable during this period, the ratio of residents to active subsistence permits decreased from an average of 12:1 during the 1980s to about 7:1 after 1999. The ratio of the number of salmon landed to the number of residents also increased slightly. The ratio of number of salmon landed to the number of permits fished, however, has decreased, suggesting decreasing efficiency, diminishing resources, or less reliance on salmon by subsistence harvesters. These trends are also depicted in Figure 6-14 below.

Salmon may be seen as a particularly important resource for residents, but other permitted subsistence fisheries are also conducted in the region. For instance, a subsistence fishery for halibut was first formally managed in the KMA in 2003. Other permitted subsistence fisheries include: Pacific cod, ling cod, flounder, halibut, rockfish, Dolly Varden, king crab, Tanner crab, and Dungeness crab. In 2009, village residents held an estimated total of ten subsistence permits for herring. Other marine resources used for consumptive-subsistence purposes in the study area include: clams, cockles, mussels, chitons, octopus, and sea urchins (ADF&G, Division of Subsistence 2006).

Table 6-6 Reported Subsistence Harvest of Salmon in the Kodiak Management Area: 1980-2009

Year	Permits Held	Salmon Harvest (# of fish)	Kodiak Island Population	Ratio: Harvest/Permits	Ratio: Harvest/Population	Ratio: Population/Permits Held
1980	756	21,541	9,939	28.493	2.167	13.1
1981	658	19,944	10,132	30.310	1.968	15.4
1982	993	28,142	12,623	28.340	2.229	12.7
1983	1,082	25,256	12,978	23.342	1.946	12.0
1984	1,061	26,290	13,207	24.779	1.991	12.4
1985	1,196	28,887	13,525	24.153	2.136	11.3
1986	996	24,455	13,467	.24.553	1.816	13.5
1987	878	23,482	13,469	26.745	1.743	15.3
1988	2,066	16,171	13,698	7.827	1.181	6.6
1989	1,994	18,776	13,682	9.416	1.372	6.9
1990	2,340	28,977	13,309	12.383	2.177	5.7
1991	2,660	32,677	13,018	12.285	2.510	4.9
1992	2,614	31,934	14,635	12.217	2.182	5.6
1993	1,774	30,424	14,594	17.150	2.085	8.2
1994	1,518	27,856	15,059	18.350	1.850	9.9
1995	1,218	27,035	14,847	22.196	1.821	12.2
1996	1,429	35,163	14,158	24.607	2.484	9.9
1997	1,648	41,737	13,648	25.326	3.058	8.3
1998	1,145	27,783	13,716	24.265	2.026	12.0
1999	1,437	33,522	13,989	23.328	2.396	9.7
2000	1,679	39,753	13,913	23.677	2.857	8.3
2001	2,009	41,656	13,555	20.735	3.073	6.7
2002	2,068	42,622	13,649	20.610	3.123	6.6
2003	2,052	40,698	13,797	19.833	2.950	6.7
2004	2,063	38,403	13,466	18.615	2.852	6.5
2005	1,958	38,743	13,693	19.787	2.829	7.0
2006	1,911	32,173	13,457	16.835	2.390	7.0
2007	1,929	32,429	13,664	16.811	2.373	7.1
2008	1,745	27,947	13,954	16.015	2.003	8.0
2009	1,780	29,688	13,860	16.678	2.142	7.8

Source: ADF&G, Division of Subsistence (2009)

Figure 6-15 Involvement in KMA Subsistence Salmon Fisheries: 1980-2009

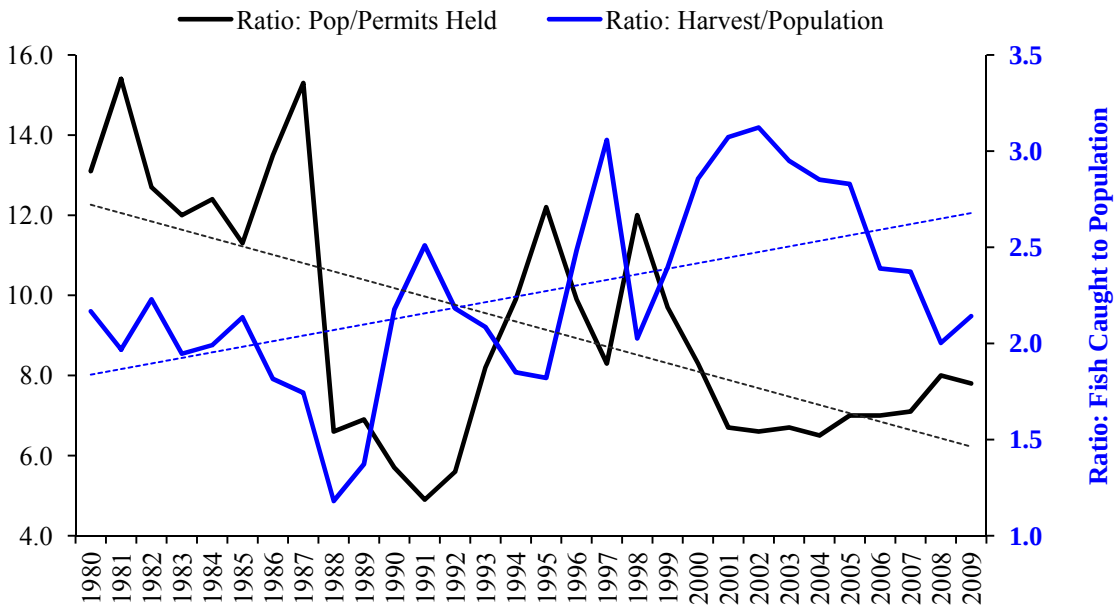


Table 6-7 depicts changes in numbers of issued and active subsistence halibut permits by village for the period 2008 to 2010. Prior to 2008, the number of active licenses was not monitored. The caveats on data reliability mentioned above also pertain here.

Table 6-7 Subsistence Halibut Licensing Information: 2008-2010

Community	2008		2009		2010	
	Issued	Active	Issued	Active	Issued	Active
Native Village of Akhiok	25	11	25	9	25	9
City of Kodiak	2,348	1,442	2,555	1,315	2,543	1,100
Sun'aq Tribe of Kodiak	210	122	218	118	223	123
Native Village of Karluk	5	0	6	1	9	4
Native Village of Larsen Bay	49	21	57	33	60	36
Village of Old Harbor	74	56	79	44	78	42
Native Village of Ouzinkie	46	29	51	33	55	32
Native Village of Port Lions	58	31	58	30	59	32

Source: NOAA Fisheries (2010)

Tables 6-8 and 6-9 below depict select findings from household surveys conducted in eight Kodiak communities during the period 1986 to 2003. The data provide compelling evidence that subsistence activities have been very common throughout the region during the period in question. Although generalized pursuit and/or use of subsistence resources are common across the Kodiak region, variation in the kinds of foods residents have pursued over time is quite extensive. The types of food most extensively harvested by residents in specific communities have also varied over the time series.

Such variation may be explained by many factors. These include but are not limited to: (a) the relative availability of certain foods in specific areas over time; (b) the relative cost of pursuing each type of food from a given location; (c) changing local interests in consuming various types of subsistence foods; (d) changing interest in and/or capacity to engage in hunting, fishing, or gathering prior to the survey year in question; and (e) changing interest in or availability of store-bought foods that are deemed suitable substitutions for wild foods.

Table 6-8 Consumption, Use, and Harvest of Subsistence Foods in Kodiak Communities: 1986-2003

Community	All Subsistence Resources								
	Consumption per Person (lbs)			Households Using %			Households Harvesting %		
	1986	1990s*	2003	1986	1990s*	2003	1986	1990s*	2003
Kodiak City	n/d	151	n/d	n/d	99	n/d	n/d	88	n/d
Akhiok	162	322	n/d	92	100	100	83	100	100
Karluk	385	269	n/d	100	100	n/d	100	100	n/d
Larsen Bay	209	371	326	97	96	96	81	89	96
Old Harbor	423	300	358	100	100	100	98	100	98
Ouzinkie	403	264	n/d	94	100	100	91	100	80
Port Lions	333	332	n/d	99	100	100	94	100	98

Note: n/d = data not available; * The ADF&G data collection year varied across communities in the 1990s: Kodiak in 1993; Akhiok in 1992; Karluk in 1991; Larsen Bay in1997; Old Harbor in 1997; Ouzinkie in 1997; Port Lions in 1993.
Sources: ADF&G (1993; 2005); Fall et al. (2006)

Table 6-9 Participation in Marine and Terrestrial Subsistence Pursuits, Kodiak Communities: 1986- 2003

Community	Percent of Households Harvesting														
	Fish			Salmon			Land Mammals			Marine Mammals			Other Resources		
	1986	1990s	2003	1986	1990s	2003	1986	1990s	2003	1986	1990s	2003	1986	1990s	2003
Kodiak City	n/d	71	n/d	n/d	69	n/d	n/d	38	n/d	n/d	1	n/d	n/d	76	n/d
Akhiok	83	96	100	83	96	100	50	67	73	17	25	18	58	88	100
Karluk	95	100	n/d	90	100	n/d	58	62	n/d	26	8	n/d	68	92	n/d
Larsen Bay	68	81	48	57	77	56	46	65	28	11	19	4	54	69	72
Old Harbor	89	84	86	89	81	85	75	54	64	48	35	29	50	93	91
Ouzinkie	76	87	73	73	81	75	56	49	43	47	28	20	79	100	88
Port Lions	88	87	82	86	82	78	65	58	52	11	4	17	59	98	96

Note: n/d = data not available; The ADF&G data collection year varied across communities in the 1990s: Kodiak in 1993; Akhiok in 1992; Karluk in 1991; Larsen Bay in1997; Old Harbor in 1997; Ouzinkie in 1997; Port Lions in 1993;
Sources: ADF&G (1993; 2005); Fall et al. (2006)

Figure 6-16 Halibut Destined for Shared Consumption: Kodiak Island, 2006

Sharing and Reciprocity. Sharing of subsistence foods remains a critically important dimension of life in the villages, and in Kodiak City as well. In fact, it can confidently be said that the pursuit and sharing of foods for celebratory purposes and as part of informal economic arrangements involving specific and generalized reciprocity contributes significantly to the quality of life for many residents. Sharing subsistence foods with elders is one of the defining elements of village life. Although our research and the work of others (e.g., Fall et al. 2006) suggest that the oil spill disrupted subsistence hunting, fishing, gathering, and the sharing of harvest resources over the long-term, Table 6-10 below illustrates the ongoing commonality of the sharing of subsistence foods around Kodiak Island. Finally, Table 6-11 provides additional information regarding the involvement of village residents and households in subsistence-oriented activities during recent years.

Table 6-10 Harvesting and Sharing Subsistence Foods on Kodiak, by Community: 1990 and 2003

Place	Harvesting (%)		Receiving (%)		Giving (%)		Ratio of Giving: Harvesting (%)	
	1990	2003	1990	2003	1990	2003	1990	2003
Kodiak City	88	n/d	97	n/d	84	n/d	96	n/d
Akhiok	100	100	96	91	83	82	83	82
Karluk	100	n/d	100	n/d	100	n/d	100	n/d
Larsen Bay	89	92	77	92	81	72	91	78
Old Harbor	100	98	95	100	79	79	79	81
Ouzinkie	100	96	94	98	92	86	92	90
Port Lions	100	98	100	98	91	91	91	93

Note: n/d =data not available; The ADF&G data collection year varied across communities in the 1990s: Kodiak in 1993; Akhiok in 1992; Karluk in 1991; Larsen Bay in1997; Old Harbor in 1997; Ouzinkie in 1997; Port Lions in 1993; Sources: ADF&G (1993; 2005); Fall et al. (2006)

Table 6-11 Additional Notes of Relevance to Analysis of Subsistence Activities in the Villages

Community	Households/Persons Per Household	Notes
Akhiok	15/4.7 (2003)	Small village with relatively young population, nearly 56 percent male; Long-term data suggest diminishing number of households and population; IAI research suggests recent extensive in- and out-migration of the same, otherwise permanent residents; Average household subsistence harvest was 873 lbs. in 2003; Informants report that subsistence hunting and fishing and related activities continue to be important, but that youth are not being exposed to traditional knowledge as in previous generations.
Karluk	15/2.4 (2003)	Very small village with no school; Fall et al. (2006:165) report that data collection on harvest levels was problematic; Respondents did report that abundance of resources had declined in recent years, as had extent of sharing between households. The latter was explained in terms of lack of available resources and/or interfamilial factors. It was also said that subsistence skills were not being handed down because there were so few youth in the community (p. 167).
Larsen Bay	31/2.0 (2003) 35/2.3 (2006)	35 year-round and 19 summer-only households with summer sport fishing increasingly important; Population size diminishing significantly and poverty increasing over time; Population relatively aged, with mean age nearly 40 years; Average household subsistence harvest was 666 pounds in 2003; Diminishing size of households may account for diminished harvest levels which were last measured in 1993 (Davis in Fall et al. 2006:177). As reported in 2009, changing regulations can occasionally conflict with Alaska Native subsistence patterns. The Alaska Native-owned year-round lodge plays an important role in providing food from guided hunts to the community.
Old Harbor	76/2.5 (2003) 78/2.6 (2006)	Moderate-size village, but resident population has diminished rapidly; Average age 35 years; Involvement in commercial fishing has diminished – a household survey conducted by Carothers (2008) suggests only 15 percent of households were earning fishing-related income - in significant contrast to extensive involvement as recently as 10 years ago; Average household subsistence harvest was 948 lbs. in 2003. The community's development plan (2005) notes that state and federal regulations create some confusion for residents who actively harvest and subsist on wild resources from both state and federal lands.
Ouzinkie	69/3 (2003)	Average age 34 years; Extensive local involvement in commercial fishing has diminished in recent years and an increasing number of fishermen are now working as hunting and fishing guides; Residents report that there is extensive communication of ecological knowledge between generations; Average household subsistence harvest was 972 lbs. in 2003.
Port Lions	71/3 (2003)	Largest of the villages and largest percentage of resident non-Natives; Average age 37 years; Extensive involvement in commercial fishing has diminished in recent years; Slightly over half of village residents reported that elders were exerting less influence than in previous decades; Average household subsistence harvest was 559 lbs. in 2003. As reported by key informants in 2009, Tanner crab biomass is low and paralytic shellfish poisoning (PSP) is increasingly common, leading to a change in subsistence priorities. Relatively low rates of subsistence activity noted in 2003 relate in part to a high percentage of non-Alaska Native residents.

Source: 2003 data derive from Fall et al. (2006); 2006 data derive from IAI's research on Kodiak Island

Subsistence Activities and Challenges. As reported in the various Community Development Plans, subsistence practices are threatened by: (1) continued impacts from the *Exxon Valdez* Oil spill; (2) decreasing biomass of important subsistence resources– halibut and crab, in particular; and (3) paralytic shellfish poisoning (PSP).[32] In addition, data collected during fieldwork suggest that while subsistence activities continue to occur with avidity in most of the Kodiak study communities, two primary challenges confront householders caught within and between differing cultures and societies– that of demography and cultural transmission.

Findings from the most recent ADF&G household survey suggest that the majority of residents in the originally affected communities assert that subsistence resources "have not recovered to pre-spill levels" (Fall et al. 2006). The authors assert that while harvest levels approximate those documented prior to the spill in 1989, nearly 40 percent of residents in communities surveyed earlier in this decade report using at least one subsistence resource with less frequency due to the detrimental effects of spilled oil. Further, the authors report that 72 percent of respondents report that the "traditional way of life" has not recovered since the spill, and that confidence in eating shellfish was very low in many Kodiak communities. Our own data indicate that shellfish are rarely consumed by residents in the Kodiak villages, largely due to fear of PSP contamination (which is not empirically associated with oil spills).

Demographic factors bear an obvious influence on the collective potential of a given community to engage in extensive consumptive-oriented hunting and fishing activities. The availability of persons who are fit and able to engage in those activities is an obvious and prerequisite factor for success. For instance, the population of Karluk on Kodiak Island has diminished significantly over the last three decades, concomitantly diminishing the possible scope of subsistence activities in that community. The owner of the only year-round lodge in Larsen Bay contributes fish and game to the community, and says such food is especially needed by elders who cannot provide for themselves. In small Alaskan towns and villages, such as the study communities on Kodiak Island, the loss of even a small number of fishers and hunters can have a dramatic effect on overall levels of production. Tragically, relatively high rates of substance abuse and suicide in many villages diminished participation in traditional subsistence life ways.

Some residents and former residents of the villages perceive that better educational opportunities are available in Kodiak City and Anchorage and have left or plan to leave to access them. The situation may serve to explain population attrition in the villages.

Knowledge of the natural environment and methods of harvesting wild foods are also prerequisites for the subsistence way of life. Values that are more deeply rooted in cooperation than competition are common in the villages. Elders continually stress the importance of cooperation and communication of traditional ecological knowledge to the village youth.

KANA representatives report that subsistence foods are sometimes provided to villages by ADF&G and Village Public Safety Officers (VPSO). In 2008, KANA received over 54 deer, 100 pounds of Dungeness crab, 75 pounds of king salmon, and many ducks from ADF&G. VPSOs sometimes provide food from animals that have posed a safety concern in the villages.

[32] Consuming PSP-affected shellfish can cause illness or death. The presence of the PSP toxins in shellfish is related to natural ecological processes and is not associated with oil spills.

In 2009, KANA was seeking federal assistance to build a central storage facility for harvested products that would then be distributed to certain households in each village. It was envisioned that contributions would be made by ADF&G, the VPSOs, and local students who gather berries and clams during the summer months.

Diminishing involvement in commercial fisheries has also impacted subsistence-oriented fishing activities. In particular, the rising costs of fuel, skiffs, engines, ATVs, and other gear make it difficult for some residents to hunt and fish on a regular basis.

State regulations regarding subsistence activities delimit allowable resource use areas and the types of gear one may use. For example, gear used for subsistence activities must be "customary and traditional" in terms of technique and area of use. Salmon seine and gill nets (drift or set) are the only salmon fishing methods legally considered traditional in nature. Less expensive rod-and-reel (also called hook-and-line) gear is considered sport fishing gear. As one ADF&G representative noted, such regulation requirements have real-life consequences to certain residents. For example, fishermen who cannot afford seine, drift, or set nets are required to participate in the sport fishery. Significantly, the sport fish fishery is more extensively restricted than is the subsistence fishery, with potentially significant implications for persons dependent on local fish and game.

In sum, village residents have experienced a variety of challenges over the past two decades. In some cases, changing demographic conditions and economic constraints have limited participation in subsistence hunting and fishing practices. The effects of putative changes in the communication of traditional ecological knowledge may manifest over subsequent generations.

7.0 Use of Settlement Monies in Kodiak Island Communities

This chapter examines the patterns of the punitive damage settlement awards as identified during ethnographic fieldwork conducted on Kodiak Island during the period of the largest settlement disbursements in December 2008; June and July 2009; and April 2011. Our analysis is based on observation and especially information provided by: individual recipients; representatives of marine-related businesses and non-marine related businesses; representatives of city and tribal governments; representatives of public assistance agencies; financial analysts; and fisheries specialists.

As outlined in Chapter Three of this report, a key economic concept used in this study is *optimization*, wherein individuals maximize their well-being through rational use of time and money. We posited that the EVOS punitive damage settlement would constitute an exogenous economic "shock" that would be registered in the study communities in a number of ways, including an increase in consumption and/or investment behaviors above prevailing levels. Hypothetically, this would in turn result in: changes in basic support sector activity; changing work patterns; increased leisure activities; and more extensive participation in subsistence activities. It was also hypothesized that more people would leave the villages and Kodiak City for other parts of Alaska or the nation. We noted settlement monies would flow directly and indirectly through the region's economy and increase employment opportunities in the support sector.

Chapters Four and Five of this report subsequently detailed fishing and harvesting trends and currents thereby providing the contextual factors within which individuals are making investment and spending decisions. The chapters note that, especially in small communities, decisions to migrate, for instance, can generate significant effects on local societies that are partially dependent on the presence and performance of avid subsistence practitioners.

In this chapter, we organize various ethnographic data to describe the experiences of various categories of informants with the punitive damage awards process. This allows us to provide additional context for understanding individual and collective response to receipt of the settlement monies. It should be noted that the goal of fieldwork was not to undertake an exhaustive survey, but rather to identify the factors that are influencing and conditioning use of settlement monies. It should also be noted that only initial responses to the receipt of monies are discussed here and that, in reality, investment and spending behavior will play out long after this project has been completed.

7.1 Projected Spending and Investment Plans by the Recipients

The various ways in which individual recipients have used or will in the future use settlement monies can be grouped into four general categories: (1) **investments** in vessels, homes, fishing-related businesses, retirement strategies or general saving accounts, and education attainment; (2) **payment** of existing debt, including credit cards, back taxes, medical bills, etc.; (3) day-to-day **expenses**, such as fuel, food, clothing, etc.; and (4) **discretionary**, i.e., for recreation and leisure.

An important set of findings from the study relates to the effect of the size of individual settlement award amounts on spending and investment decisions. Thus far, recipients have generally used medium and large awards (>$50,000) to invest, while smaller awards (<$25,000) have typically been spent on general living costs related to food, fuel, housing, and transportation. Very small awards (≤$5,000) reportedly have often been used for discretionary spending.

Not surprisingly, active commercial fishermen have thus far been most likely to use their awards to invest in some aspect of their fishing business. Notably, most fishermen who invested in salmon fisheries did so because they perceived the current market to be relatively robust–a condition that bodes well for the future. Purchases included: vessel retrofitting; refrigeration upgrades and/or new refrigeration compressor systems; gripper wheels for power blocks; skiffs; generators; deck houses; boat payments; fuel; and miscellaneous fishery-specific expenses.

Active fishermen, especially the high-liners, are tending to use settlement awards to pay down loans for vessel improvements initiated prior to 2008. Such fishermen stress that improvements were initiated in anticipation of large settlement awards, but that, in the end, amounts were insufficient to cover the loans. No informants reported that fishermen purchased IFQs with settlement monies, emphasizing the high price of IFQs during the settlement period to date. One prominent fisherman in Kodiak City opted out of the industry and invested his settlement monies in a placer gold mining operation. He and his wife asserted that gold mining may indeed be a better investment, given perennial challenges associated with fishing.

Many informants framed their spending decisions within the context of fishery markets and the national recession. It was often stated that the recession had given rise to deflated retirement portfolios and indebtedness. For example, one salmon fisherman had initially considered purchasing permits and a vessel equipped for the Pacific cod and halibut fisheries with his award monies, but had changed his mind by late 2008, citing the high costs of such purchases, decreased halibut quotas, and low Pacific cod prices. Given a forecast for a good salmon season in 2009, he purchased a refrigerated sea water system for his salmon seine vessel.

Another salmon fisherman, whose award monies arrived when he was feeling optimistic about the future of the fishery, invested in his existing operation. But he surmised that he might have made different choices had his settlement award arrived in 2007, when the salmon market was relatively weak.

Figure 7-1 Ancient Design on New Bow, Kodiak Island, Alaska

Discussants nearing retirement age often said they were using settlement awards to supplement retirement account contributions and defer tax burdens associated with the award. Several fishermen who put money into retirement accounts said they did so because they were unable to make strong contributions in prior years. Many fishermen tend to invest in businesses rather than IRAs and other options.

Some settlement recipients put money into retirement accounts to counter stock investment losses during 2008 and 2009. Others allocated their awards between retirement accounts, fishing businesses, and debt reduction. In some cases, awards are being used to assist economically depressed family members.

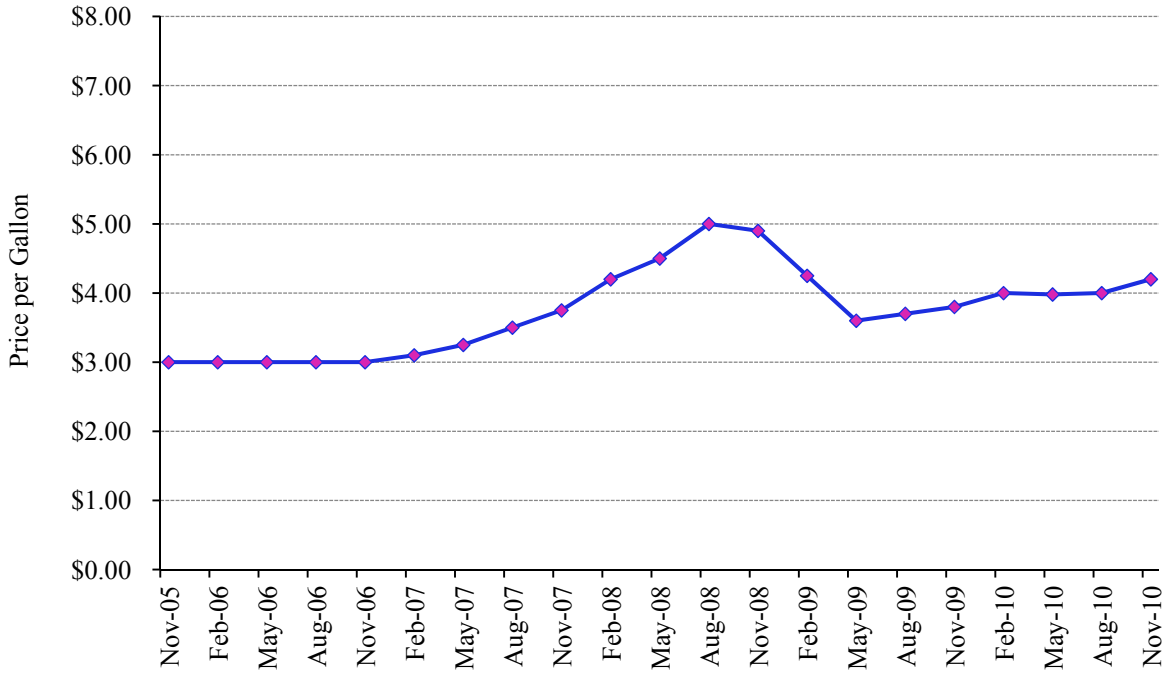
Several financially secure retirees from the commercial fishing industry said they gave their settlement monies back to their community and/or family members. One woman in her 70s desired to give her money to her church and a local historical society because she "did not have many needs or wants at [her] stage of life." Prior to reduction of the settlement award by the Supreme Court, however, it was much more common for claimants to state their intention to donate some portion of their award to charitable causes. A few recipients linked the change in donation plans not only to reduction of the settlement but also to downturns in the stock market.

By way of contrast, several young fishermen said they were saving punitive damage award money for potential future expenses, such as college tuition, building a new home, taking over the family fishing business, or relocating. Other young recipients did not have specific plans for the monies beyond generalized saving. Additional research would be required to determine the actual playing out of the award-related plans for the future.

While recipients have often invested or are planning to invest large awards, they tended to use or plan to use smaller awards to meet general costs of living and to purchase durable goods that may be seen as luxury items by some, but which actually constitute a form of investment. Examples of small to moderate award expenditures include: consumer goods (e.g., laptop computers, sewing machines, and flat-screen televisions); family visits and vacations; home improvements; and debt reduction. Many "small award" recipients were unsure how they would spend the money, saying they might use it to pay down debts or put it into a family "kitty." Low-income recipients of small awards often planned to cover day-to-day expenses or make discretionary purchases.

In 2009, many Larsen Bay residents reported using settlement awards to offset the high costs of fuel and other utilities, or to purchase wood-burning stoves.[33] Supplemented with wood heat, an average home will use 30 to 35 gallons of heating fuel per month (or 60 to 100 gallons, un-supplemented). One elderly respondent, living largely on Social Security reports spending $7,000 to meet 2008 heating oil costs. She pointed out that even running just one stove "eats up" her Social Security checks. For the time being, she is using part of her own subsistence damages award and her deceased husband's commercial fishing-related award to pay heating costs. Another elderly village resident explained that he was putting his award into the bank to create a "savings account" for future fuel bills. Figures 7-2 and 7-3 depict trends in average prices of heating oil in Gulf of Alaska communities between 2005 and 2010. Prices vary substantially due to delivery costs.

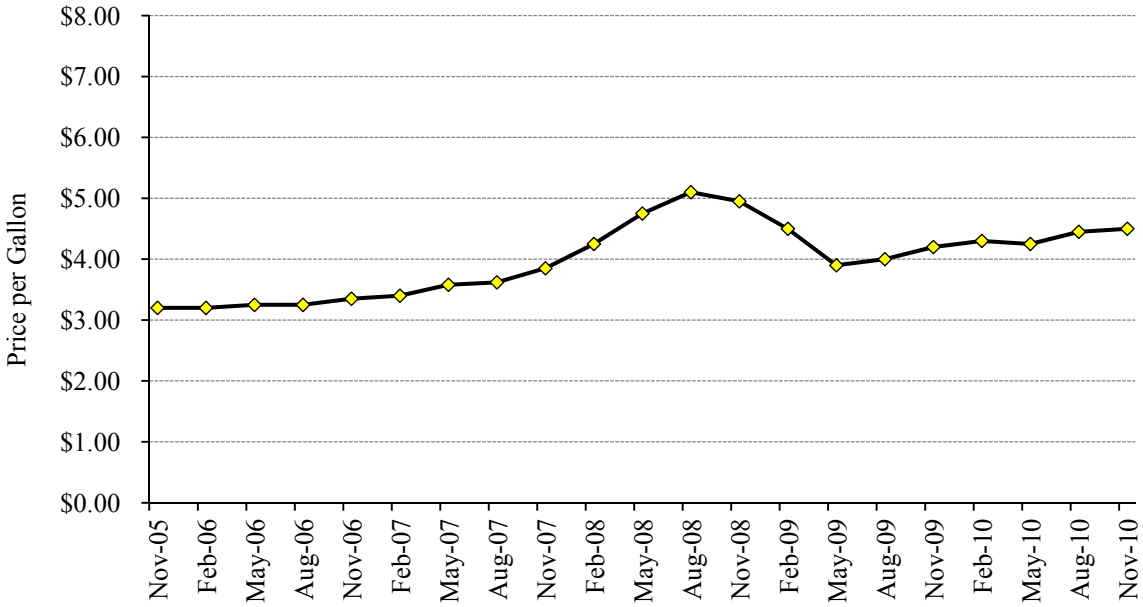
Figure 7-2 Heating Fuel Prices in Gulf of Alaska Communities: Nov 2005-Nov 2010



Source: Alaska Department of Commerce (2011)

[33] In 2009, Residents of Larsen Bay paid $6.02 per gallon for #2 heating fuel; $5.33 for #1 heating fuel, and $6.50 for gasoline.

Figure 7-3 Gasoline Prices in Gulf of Alaska Communities: Nov 2005-Nov 2010



Source: Alaska Department of Commerce (2011)

7.2 The Marine and Fisheries Support Sector

The potential for settlement monies to indirectly impact the Kodiak community through recipient spending at local business establishments (the multiplier effect) is limited by various geographic and socio-economic conditions. First, many non-marine-related purchases take place off-island, an increasingly common situation in the age of online purchasing. Moreover, many Kodiak residents said they traveled at least once a year to Anchorage to make major purchases, such as cars and large kitchen appliances. Such items are less expensive to buy off-island, even when shipping costs are included. Second, some award recipients are part-time residents, maintaining primary or secondary residences in other Alaska communities or other states. Third, many commercial fishermen necessarily follow fisheries around the region and often "export" their wages to other ports.

Notably, Kodiak communities endure a problem of scale that limits availability of certain goods and services, and reduces the probability of competitive local pricing. This is not the case in the marine-related goods and services sector. Marine and fishery support businesses are both numerous and competitive and residents purchase the majority of marine-related products and services in Kodiak City. The large mobile boat lift recently installed at the Kodiak boatyard can haul vessels as heavy as 660 tons in weight, 180 feet in length, and 42 feet in beam. This means that large resident vessels, such as crab boats, tenders, and groundfish trawlers no longer need to travel to Seward, Seattle, or Portland for lift services. The boatlift avails the Kodiak economy, while saving fishermen travel-related expenses. As reportedly the "largest mobile boat hoist north of San Diego," the lift is benefitting local suppliers of marine-related goods and services. Local hotels and restaurants that serve crew members who stay in town while vessels are being

repaired/retrofitted are also benefitting (Kodiak Island Borough 2011). In 2010, the lift reportedly generated upwards of $3 million and, by April 2011, approximately 70 vessels had been lifted for purposes of maintenance or repair.

Figure 7-4 Eastern Portion of Kodiak Harbor, Fall 2010

Key informants stated that the new boat lift, combined with a growing optimism regarding many fisheries in the region, may bring new marine service providers to Kodiak.

Figure 7-5 Boatyard in Kodiak City, 2011

The Settlement and Marine-Related Businesses. IAI ethnographers spoke with business owners and operators involved in many facets of marine-related support industries. These include: welding, boat construction and repair, boatyard management, engine sales/repair, hydraulic and electronic system sales/repair, and permit and IFQ brokering.

With few exceptions, owners and operators of marine-related businesses could not clearly and specifically link changes in their profit margins to expenditures deriving from settlement awards. Although business owners were experiencing improving sales in 2011, it was generally thought that the uptick was not clearly related to award spending, but to increased landings and improving market conditions in certain fisheries.

The few business owners who conceptually linked increases in local spending to the settlement could do so because they were aware of their clients' fiscal situation and their plans for spending and/or investing settlement awards. Purchases known to have been made with settlement monies thus far include, for instance: a $10,000 outboard engine; a $50,000 vessel modification; a 26-foot boat; and a skiff, among others. In 2011, a Seattle-based manufacturer reportedly received five orders for hydraulic purse seine gear from Kodiak residents who had received sizable settlements during the second round of disbursements. Additionally, at least ten resident and three non-resident vessel owners used settlement monies in 2011 for vessel repairs and maintenance at the Kodiak boatyard. The vessel owners planned to expand their current fishing operations or transition to new areas, gears, or fisheries.

Some business owners noted robust sales of new fuel-efficient outboard engines in the salmon fisheries that involve skiffs. But again, attribution to the punitive damage awards is muddled by the fact that some purchasers used money acquired through other means, such as the maturing of Capital Construction Funds, which can be used to acquire or improve U.S.-flagged fishing vessels without incurring tax penalties.[34]

In sum, while the EVOS punitive damage settlement awards have thus far resulted in local purchase of marine-related goods and services, the creation of a new generation of "spillionaires" or an influx of migrants seeking work has not yet occurred. Many persons in the fisheries and marine support sector asserted that, considering the scale of the systems of investment, debt, costs, and profits within which fishermen customarily operate, the settlement awards were relatively modest and could not result in large scale changes in marine-related business activity.

[34] Capital Construction Funds were created in 1976 when the U.S. was expanding its fishing fleet. A recently introduced bill would allow commercial fishermen to terminate their Capital Construction Fund without accruing interest penalties. The Bill has been introduced in light of current overcapitalization of the fishing industry.

Figure 7-6 Kodiak Fisherman Displays a New Engine

The Settlement and Other Business Sectors. With few exceptions, owners of non-marine businesses could not say that the settlement had led to dramatic increases in sales.[35] But in many cases, business owners noted that the simultaneous distribution of other monies made it difficult to tease out which funding sources had been used for purchases. For example, in September of 2008, Alaska residents received approximately $2,000 per person from the Permanent Fund. Residents also received an additional $1,200 per person as part of a state-initiated economic stimulus program to offset high fuel costs. Many merchants noted that the distribution of Permanent Fund dividends and stimulus checks in the fall overshadowed the distribution of first-round settlement awards in mid-December because the percentage of Kodiak residents receiving the former was far greater than the latter. Additionally, the arrival of settlement monies coincided with a general year-end increase in sales associated with holiday purchases and purchases made as tax write-offs.

Certain business owners noted that spending tends to be largely influenced by season or necessity. For example, Kodiak residents tend to buy home repair and renovation items "two weeks after it finishes snowing" and until the first snowfall. Residents also tend to purchase household appliances and equipment as needed, rather than when it is fiscally convenient. One recreational vehicle retailer correlates sales increases with recreational and sport fishing/hunting seasons.

Business owners who sell vehicles and furniture note a distinct spike in sales each year when new Coast Guard employees are transferred to Kodiak. Finally, one sporting goods store owner reported a sequence of sales peaks and dips as follows: an April peak, corresponding with spring bear hunting; June, July, and August peaks, due to summer fishing; an October uptick with the

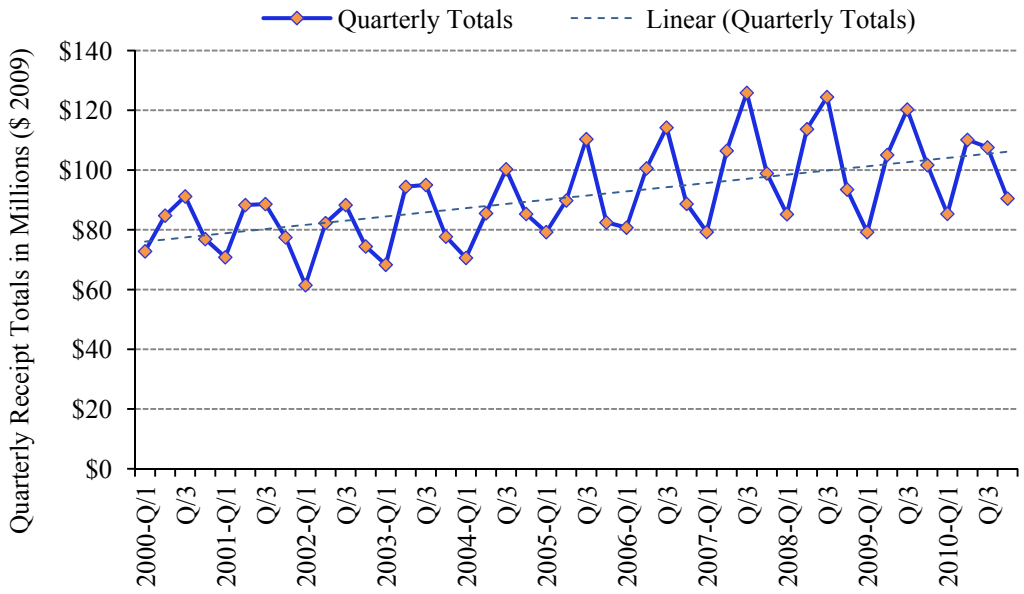
[35] One store owner selling ATVs was able to link vehicle purchases (costing $6,500-$7,000 each) to the settlement. Another business owner reported the sale of outboard engines to recreational or subsistence fishermen who made their purchases with settlement awards.

onset of fall hunting season; and December surges during the holiday season. Had the settlement awards been greater and disbursed in single lump sums, it is possible that spending patterns would have been disrupted, and that the affects of the awards on sales patterns would have been more clearly discernible.

Figure 7-7 depicts Kodiak City sales figures for 2000 to 2010. Sales peak in the third quarter of 2007 and remain fairly level (with seasonal fluctuations) until 2010. The trend line suggests no clearly discernible influxes of settlement monies into the local economy, although settlement monies may have buffered the impact of a national recession for many recipients.

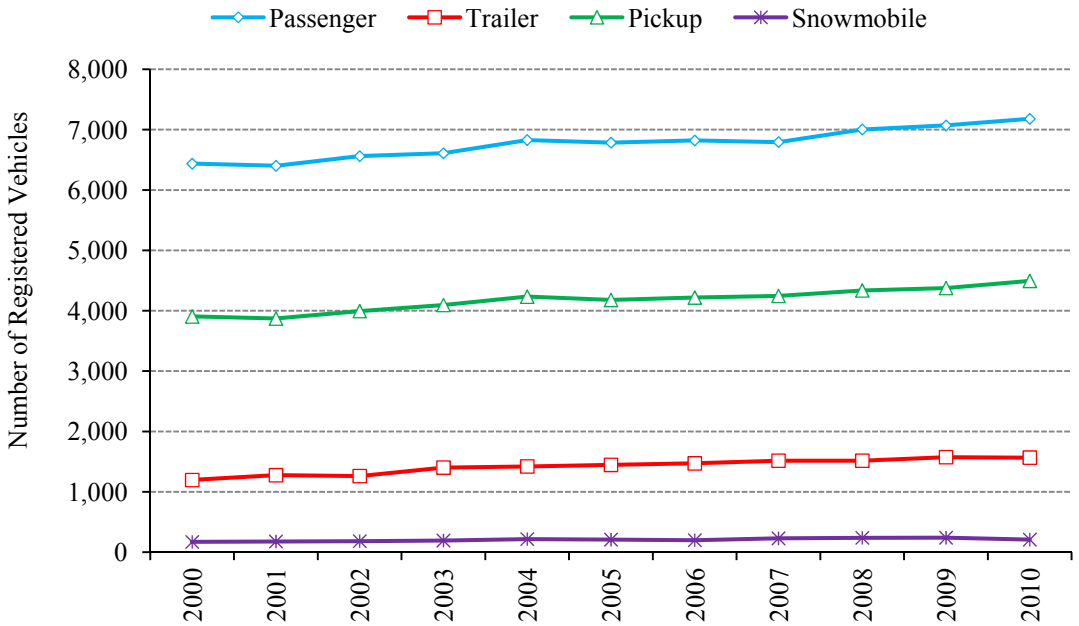
Figure 7-8 and Tables 7-1 and 7-2 depict figures for Kodiak Island Borough vehicle registration. The number of passenger vehicle and pick-up truck registrations increased between 2007 and 2008. In both 2008 and 2009, the total number of registered vehicles was higher on Kodiak Island than across the state as a whole. Given the tendency of persons receiving large settlements to invest and/or purchase durable goods such as vehicles, one explanation is that the increases in new registrations are related to the settlement.

Figure 7-7 City of Kodiak Quarterly Gross Receipts



Source: City of Kodiak Quarterly Gross Receipts: 2000 (1st Qtr) - 2010 (4th Qtr)

Figure 7-8 Currently Registered Vehicles, City of Kodiak: 2000-2010



Source: Alaska Department of Administration, Division of Motor Vehicles (2011)

Table 7-1 Registered Vehicles by Type, City of Kodiak: 2000-2010

Year	Passenger	Trailer	Pick-up Truck	Snowmobile	All Vehicles
2000	6,436	1,195	3,905	170	13,053
2001	6,401	1,276	3,871	177	12,932
2002	6,561	1,262	3,994	183	13,190
2003	6,609	1,401	4,095	194	13,455
2004	6,828	1,421	4,234	217	13,860
2005	6,785	1,446	4,179	208	13,811
2006	6,821	1,472	4,219	198	13,903
2007	6,794	1,516	4,246	229	13,996
2008	7,003	1,516	4,336	239	14,381
2009	7,070	1,574	4,376	240	14,592
2010	7,179	1,567	4,494	208	14,592

Source: Alaska Department of Administration, Division of Motor Vehicles (2011)

Table 7 -2 Registered Motor Vehicles, Kodiak Island and Alaska: 2000-2010

Kodiak										
2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
13,053	12,932	13,190	13,455	13,860	13,811	13,903	13,996	14,381	14,592	14,592
Percent of Change between Years										
--	-0.9	1.9	2.0	3.0	-0.3	0.6	0.6	2.7	1.5	1.8
State of Alaska										
2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
737,377	747,822	775,223	801,339	846,248	861,231	871,548	881,239	894,552	899,435	915,371
Percent of Change between Years										
--	1.4	3.7	3.4	5.6	1.8	1.2	1.1	1.5	0.5	1.8

Source: Alaska Department of Administration, Division of Motor Vehicles (2011)

7.3 The Financial Sector

Numerous ethnographic interviews were conducted with local bank personnel, financial analysts, tax consultants, and book keepers in order to understand the various uses of award monies and its impacts on local businesses. These discussions delineated a financial context for loan, taxation, and retirement structures within which many recipients were making spending and investment decisions.

Loans, Liens, and Income and Investment Leveraging. Commercial fishermen may access one or more of three primary localized institutions to acquire business loans: commercial banks; the State of Alaska, Division of Investment; or the Commercial Fishing and Agricultural Bank. Choice of lending institutions commercial fishermen ultimately approach depends on personal borrowing purposes, credit standing, and potential for timely acquisition of funds.

Commercial banks frequently loan money to commercial fishermen for the purchase of IFQs, federal permits, vessels, engines, and other equipment. Fishermen may also borrow from the State of Alaska, Division of Investment. State loans are available at competitive rates, but the loan approval process reportedly can be relatively slow and involves more extensive paperwork. Some fishermen apply for a loan from federally funded commercial banks for the sake of expediency, and repay it later with monies borrowed from the state. The State Division of Investment also offers Product Enhancement Grants, which provide matching funds up to $25,000; many commercial fishermen have used such grants to purchase and install refrigerated seawater systems on their vessels.

The Commercial Fishing and Agricultural Bank (CFAB) is commonly used by fishermen with low credit ratings, low income levels, or outstanding debts. The CFAB offers low interest loans and may consider unorthodox forms of collateral, such as fishing permits and, recently, settlement monies.

A considerable number of claimants had liens placed on their settlement awards by the IRS, the state, various financial institutions, and/or ex-spouses as part of divorce settlements or for failure to pay child support.[36] Many claimants had multiple liens. According to Kodiak-based financial advisors, the high prevalence of IRS- or state-levied liens stems in part from the depressed state of the seafood market at various points in history. For example, the price of pink salmon has long been depressed (relative to the halcyon period in the late 1980s), resulting in what one respondent described as "skinny years" for many fishermen. Moreover, the value of certain fishing permits, such as herring and salmon, decreased dramatically after the oil spill and in association with poor market conditions in the 1990s. According to one loan collection officer, many fishermen who could not repay state loans in the 1990s ended up with liens on their EVOS punitive damage awards.

Liens, in this case, also stem from the inability of some fishermen to pay taxes in the 1990s. Prior to the spill, many Kodiak fishermen paid personal taxes by March 1st for the preceding

[36] It should be noted that rates of domestic violence and divorce increased significantly in the year after the oil spill (IAI 1990d).

year, without penalty. In 1989, many fishermen planned to pay the last year's taxes with the current year's earnings, as usual. However, numerous fishermen, especially those who were not employed in the clean-up effort, reportedly had problems "just putting food on the table" and could not afford to pay taxes.

In the early 1990s, many Kodiak fishermen filed "Offers in Compromise" with the IRS, which reduced the amount due on past taxes. But for those potentially receiving settlement monies, the IRS added an addendum that negligent tax payers would have to sign over an appropriate amount of their settlement funds.

Many commercial fishermen changed tax payment strategies after the oil spill. Numerous fishermen began forming corporations and many also hired bookkeepers to document and organize business expenses. More fishermen now also pay estimated taxes on a quarterly basis.

The Settlement and Financial Institutions and Businesses. Bankers on Kodiak Island noted that some patrons received large-scale payouts at the end of 2008, the beginning of 2009, and the end of 2010. A few checks exceeded $100,000 (with a high of $200,000). But a large number of checks were much smaller, such as those received by persons who had worked as crew members during 1988. Checks received by Alaska Native claimants were also relatively small. Several recipients have received multiple disbursements of various amounts over a nearly three-year period to date.

Two of the three local banks have extensive business dealings with commercial fishermen. Bank representatives described the contemporary Kodiak fleet as a whole as well-capitalized, with the majority of fishermen using the services of accountants and tax consultants to help plan future spending and investment. As discussed previously, bankers report that the use of settlement awards fit into an active and ongoing process of loan repayment and collateral needed for further investment in the fishing industry.

Bank representatives described a correlation between the amount of awards and the nature of their use to date. Recipients of medium and large awards tended to invest in boat improvements, pay off mortgages, make loan payments, and invest in retirement funds. Many awards over $50,000 were deposited into IRAs. This fiscal strategy likely correlates with the first distribution of punitive damage awards at the end of the tax year in 2008. In contrast, smaller claims (categorized here for purposes of analysis as less than $25,000) tended to be cashed out or deposited in checking accounts and used over time for various day-to-day expenditures. Again, portions of many smaller awards reportedly were used largely for discretionary spending.

Figure 7-9 Newly Constructed Pilothouse

Bankers also noted that active middle-aged fishermen tended to use their settlement awards, along with recent profits, to support their fishing activities in ways that would "befit the pinnacle of their fishing careers" and facilitate transition into their final years on the water. The fishermen were investing in boats and permits that would "see them through" to retirement. That is, the permits were purchased for use in areas requiring less travel, and for fisheries considered relatively less strenuous. As one local banker explained, record high market prices between 2008 and 2011, coupled with recent tax changes which allowed a one-time write-off of major capital investments, had created ideal conditions for investing in fisheries. From the perspective of the bank, this resulted in "two great years of record-lending for fishing," as Kodiak fishermen purchased new fuel-efficient engines, modified vessels to increase productivity, and so forth. At least two fishermen purchased salmon seine vessels. The costs of such major purchases ranged from $200,000 to $2,000,000.

Bank representatives observed that punitive damage award recipients who were retired or nearing retirement age are tending to pay down debt. One banker recalled five persons with settlement awards of $50,000 to $100,000 who paid off or were paying down mortgages. Another banker reported that three clients had thus far paid down approximately $1 million in debts. Not surprisingly, fishermen are tending to pay off debts with the highest interest rates first: credit cards, vehicle loans, fishing-related loans, and mortgages. One financial specialist observed that recipients with existing auto loan or credit card debt used first-round disbursements to make payments, but deposited second-round checks into savings or retirement accounts.

For bankers, a major challenge associated with the administration of settlement monies stems from handling estate checks for which no estate account existed. One banker explained that bank policy requires branches to honor an estate check if the holder has an estate account with the bank and was the named executor of the will. Otherwise, the funds are held in probate while paperwork for creating an estate account is submitted–reportedly, not an inconsequential process. One banker estimated that 40 to 50 such estate issues have arisen since the first round of punitive damage disbursements were initiated, with some checks representing very small amounts.

A lawyer involved in the class action suit states that the legal requirements for dealing with the estate of a deceased EVOS settlement recipient represented a departure from previous state practices. Until 2006, the State of Alaska accepted the presentation of a death certificate as an Affidavit of Personal Property of Deceased for sums of money less than $15,000 in cases involving no legal wills: this was a common way to handle Alaska Native dividends in the event of death. In 2006, the maximum amount was raised to $50,000. This change in procedures reportedly arose from IRS requirements.

Estate issues notwithstanding, one bank president asserted that the majority of checks were reportedly "clean," that is, made out accurately to individuals and existing corporations in the correct amounts. Bankers had anticipated more problems with checks that were encumbered by pre-existing liens; however, the anticipated problems and associated fears of fraud losses did not occur largely due to the extensive administrative efforts applied to the situation by plaintiffs' counsel. In addition, bankers' fears of having many loans repaid and thus fewer loans on which to earn interest did not come to pass (a scenario imagined before the Supreme Court's reduction of the $5 billion judgment).

Financial Advisors/Investment Specialists. Bank managers noted that investment companies have been active in counseling recipients regarding potential investment of award monies. Financial advisors, like bankers, noted a correlation between the amount of the award and the spending and investment patterns of awardees. Disbursements totaling less than $50,000 reportedly were rarely used for investments, while awards of more than $50,000 were often deposited into new or existing tax-deferred retirement accounts. However, recipients reportedly did not base spending strategies solely on receipt of the settlement awards, no matter the amount.

Kodiak-based investment specialists contacted to discuss local use of settlement awards stated that retirement-age clients have tended to put award monies into IRA accounts. Most active fishermen are tending to invest in vessel maintenance or upgrades, and contribute to retirement accounts.

Like bankers, the financial specialists explained that tax incentives, such as the Murkowski Bill, provided active fishermen with a strong incentive to invest in IRA accounts. The Murkowski Bill, formally known as the Exxon Valdez Oil Spill Tax Treatment Act, provides tax deferment of up to $100,000 for IRA contributions. This has been a common choice for elderly recipients and those who had not previously been able to contribute due to poor past returns from the salmon fishery. The timing of the first major distribution in December 2008 also encouraged many recipients to invest in IRAs because "there was little time to do anything else with it" before the new tax year. The majority of IRA deposits were for sums in excess of $50,000.

In terms of institutional impact of the settlement awards, financial specialists noted the addition of new clients as a result of outreach efforts made to award recipients. However, this did not result in as many new clients as anticipated.

Tax Accountants/Bookkeepers. IAI ethnographers spoke with one tax accountant and one tax accountant/bookkeeper on Kodiak Island. The latter had a client base of 500, approximately half of whom received settlement awards. Of those, an estimated 50 to 75 clients (10 to 15 percent of clientele) received $100,000 or more. Monies were used primarily for IRAs as a result of the Murkowski Bill, and boat engines, permits, and gear, due to tax exemptions for capital improvements. First-round payments were often put in IRA accounts, but as the tax exemption was limited to $100,000 and with the status of the fisheries market improving, additional 2010 settlements were often invested into fishing businesses. An estimated 100 to 150 clients (25 to 35 percent of clientele) received $10,000 or less from: individual land damage claims; Alaska Native subsistence claims; distributions from Alaska Native corporations that had received land damage settlements; and crew claims. Awards of $10,000 or less were most often spent on discretionary purchases. Of this group, an estimated 50 percent became ineligible for some of the public assistance programs upon which they depended, including some medical and housing aid. This resulted in a loss of thousands of dollars in benefits.

The accountants reported that settlement recipients were noting a number of tax-related challenges. Many clients were "bumped into" new tax brackets or were unable to take investment write-offs in 2008 due to the year-end arrival of the award. Approximately 100 recipients received 1099 forms for settlement monies that were garnished due to divorce, subject to a state or federal lien, or had been sold.[37] For example, one person received a 1099 for $300,000 for a settlement once valued at $2.5 million that had been sold for $60,000. Another settlement recipient received a 1099 for $100,000 despite the fact that his ex-wife received half of the settlement. In a few cases, a 1099 was apparently mistakenly issued to the estate of a divorced couple and also again to the beneficiary of the estate, leading some recipients to state that the IRS was "double dipping."

Bookkeepers and tax consultants counseled clients to fill out W-9 forms for back withholdings so that taxes were paid before monies were distributed to lien holders. If they failed to do so, settlement recipients were required to pay taxes on the amount of settlement funds distributed to the lien holder. Much of the settlement planning-related work undertaken by various public officials, financial advisors, and tax consultants in the region has, for this reason, involved dissemination of information intended to help recipients envision the full range of options and implications associated with the spending of the long-anticipated awards. Much of the counseling was done on a *pro bono* basis.

Despite extensive outreach efforts, some recipients were surprised to learn that settlement awards to individuals were taxable, whereas other awards were not. For example, lump sum payments, such as were made to the Alaska Native community from land sales and insurance payments related to commercial fishing injuries, are not taxable. Bookkeepers and tax consultants agreed that IRS guidelines regarding taxation in this case were minimal and were not disseminated in a

[37] Interest on punitive damage awards can be sold. Some recipients took the opportunity to sell their interest for "cash on the barrelhead" rather than wait for the final settlement to occur.

timely fashion. In addition, tax forms completed as per IRS instructions occasionally were returned, suggesting that even IRS auditors were not adequately familiar with policy decisions regarding appropriate filing procedures.

7.4 Perspectives from the Government Sector

Public Assistance Services. The cash disbursements disrupted many claimants' eligibility for receiving public assistance services. Staff at the Department of Health and Social Services, which oversees the food stamp program for rural Alaska residents, state that settlement money caused temporary suspension of food stamps among 30 prospective recipients. An estimated additional 20 persons would have lost food stamp benefits, had they reported the receipt of settlement awards. The punitive damage awards also resulted in suspension of benefits for some Medicaid, CAMA, and/or Supplemental Security Income recipients.

For example, one claimant received a $58,000 award, which resulted in a loss of medical benefits. The recipient reportedly "had mixed feelings" about receiving settlement monies. Although she briefly enjoyed having some spending money, she now was responsible for covering her own costly medical expenses. In another notable example, the Supplemental Security Income (SSI) department considered a recipient's one-time punitive damages award of $2,000 as "continuing income," and the recipient subsequently lost his SSI benefits, and passed away before his reapplication process was approved.

Loss of eligibility for public assistance due to receipt of the settlement awards, and strategies for mitigating those losses, has varied by agency. Local and state agencies in Alaska are accustomed to calculating unique forms of earnings, such as the annual PFD and Alaska Native dividends: both types of dividends are exempt as income and therefore not a threat to eligibility for public assistance benefits. Staff at Sun'aq Tribe in Kodiak City confirmed that members who receive state public assistance were minimally impacted by settlement awards.

In the case of the food stamp program, Health and Human Services policies considered PFDs and punitive damage awards, regardless of amount, as a one-month payout and the agency will suspend food stamps for that time. The application process for food stamps is not complex and recipients can reapply whenever there is need for further assistance. In contrast, reapplying for Medicaid, CAMA, and SSI can be a time-consuming process. In addition, these programs reportedly do not exempt PFD and Alaska Native dividends as earned income. The loss of benefits can be extensive.

In a few instances, the settlement awards facilitated eligibility for public assistance. For example, the KIHA has an annual minimum income requirement for its rental housing assistance. KIHA staff stated that about 24 applicants submitted settlement distributions as proxy for the annual income minimum: the majority of those checks amounted to approximately $3,500.

Municipal Administrations, Tribal Councils, and Alaska Native Corporations. Municipalities, tribes, and Alaska Native corporations were eligible for punitive damage awards due to real property damage sustained from the *Exxon Valdez* oil spill. The City of Kodiak received two settlements: $756,228 in December of 2009 and $230,610 in December 2010. The monies were deposited in the city's General Funds account. At the time of this writing, it is not clear if the funds will be earmarked for use on specific projects. Insofar as Kodiak's annual budget recently has been in the range of $14 million, the settlement award is considered a significant contribution to the city's funds. The municipalities of Kodiak Island Borough, Larsen Bay, Ouzinkie, Port Lions, and Old Harbor received no additional punitive damage payments.

The following corporations received punitive settlements ranging from $300,000 to over $2 million: Koniag Native Corporation, Natives of Kodiak, Inc., Ouzinkie Native Corporation, Afognak Native Corporation, and Akhiok-Kaguyak Inc. Representatives for most corporations report that much of the settlement money was reapportioned as dividends. By law, an ANCSA Corporation cannot extend benefits disproportionally among shareholders.

The Koniag Native Corporation distributed one-third of the total amount of the settlement awards to its shareholders. In January 2010 and 2011, the settlement contributed $0.88 and $0.68, respectively, per share to the annual dividend, which totaled $10.00 and $10.50 per share.[38] Part of the annual dividend, in this case, derives from an agreement between Koniag Native Corporation and the Karluk River Conservation Easement, which was also awarded settlement monies. Koniag officials invested some of the remaining settlement monies and donated an amount to social and cultural programs that benefit the shareholder community.

Representatives of Natives of Kodiak Inc. report that the corporation distributed all of its allotment among its 800 shareholders. The amount of these checks was minimal.

The Sun'aq Tribal Council consulted with tribal members regarding use of the settlement and ultimately divided the monies among all 1,500 members. Persons who were members of the tribe in 1989 reportedly received a larger allotment than those who had joined afterwards. Discussions regarding the use of monies were transcribed on the tribe's Facebook® page; conversations suggest some tension regarding legitimacy of stakeholder status.[39]

In 2009, the president of the Port Lion Tribal Council said the tribe would use the award money to help finance a new council building; the current building was constructed in the 1960s using then-popular asbestos tiles. Also in 2009, the president of Larsen Bay Tribal Council noted potential interest in having the tribe purchase community quotas for halibut with the settlement funds. As of 2011, however, no community quota shares had yet been purchased: the outcome of the tribe's decision-making on this matter is not yet apparent.

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[38] See Koniag Dividend Announcements at: http://www.koniag.com/dividend-declared/ and http://www.koniag.com/dividend-announcement-2/

[39] See Sun'aq Tribe Facebook® discussion at: http://www.facebook.com/topic.php?uid=482693210187&topic=14891#!/topic.php?uid=482693210187&topic=14891

8.0 Subjective-Experiential Aspects of the Litigation and Settlement Process

Phase Two ethnographic fieldwork was intended to extend select baseline trends and conditions into the present. This would enable controlled examination of the punitive damage award process and the way it is affecting Kodiak Island communities amid other sources of change. It was hypothesized that settlement-derived non-earned income would affect a variety of important and observable aspects of life in the region. This report describes the complex nature of a range of observable changes, some of which can be analytically related to the settlement.

But it should be kept in mind that some effects are subjective in nature and not readily observable. They are, nevertheless, highly significant in the long-term analysis of oil spills and major oil spill litigation and settlement. For example, many respondents described in great detail the events precipitating disbursement of the awards, often harkening back to where they were and what they were doing when the spill first occurred. Many described a variety of problems experienced in the years after the spill. Notably, many respondents could not conceive of the settlement independent of the oil spill and the ensuing years of litigation; to them, the awards often represent a final chapter in a very long and troubled story.

The following discussion is divided into three sections: (1) respondents' variable understanding of the impact of the spill on local fisheries and its ongoing effects some 20 years after the event; (2) claimants'/awardees' explanation of the significance of the awards in their own lives and communities; and (3) sources of confusion about the settlement process and its outcomes.

8.1 The Spill and Kodiak Fisheries

Many research participants began discussions about the punitive damage awards with discussion of their experiences with the actual oil spill: where they were; what they did during the period of clean-up; and how they understood, both then and now, the impact(s) of the spill to their livelihoods. Respondents inevitably linked the spill to subsequent challenges in the commercial salmon fishery, although not everyone *blamed* the spill for the ensuing changes.

Of those respondents who did attribute blame, the spill was said to have damaged the Alaska salmon brand, increased the market for farmed salmon, and introduced change in the local commercial fisheries. Others blamed the decline of local salmon prices to forces distinct from the spill, such as the inevitable collapse of an already inflated market. The most analytical discussants recognized the complex interplay of numerous factors.

From the perspective of local processors, it is significant that the number of active Kodiak canneries declined precipitously after the spill. Importantly, the remaining firms adapted to the challenges of handling more product: thus, a new economy of scale emerged. Some key persons in the processing sector asserted that the rationalization of certain Kodiak fisheries and an influx of factory ships have had a more significant long-term impact than the oil spill.

Most discussants agreed that the oil spill led to the exodus of many fishermen from the industry *and* to increased efficiency across the remaining fleets. One high-liner described how the fleet contracted by two-thirds in a sort of Darwinian competition after the oil spill.

Figure 8-1 Kodiak Harbor and Downtown Area in 2011

Fishermen note that a tremendous effort was required by many captains to remain in the industry during the 1990s. In that new era, entrepreneurs often diversified into new fisheries, adopted new fishing techniques, and transferred effort to new fishing grounds in order to adapt. Many necessarily sacrificed the possibility of making contributions to retirement plans "simply to make ends meet." Some who eventually left the industry concluded that the oil spill was the "death knell" for many industry participants. One former fisherman said that the situation challenged basic assumptions about the value of the work - hard work no longer equated with economic success in the face of so many challenges.

Opinions about the compensatory damage phase of EVOS litigation were as varied as recipients' understanding of the impact of the oil spill. Some perceived the compensatory damage awards as fair. Others voiced discontent about the compensation calculations, asserting that compensatory awards were based on historic performance in the industry, and that such performance was impossible to equitably calculate.

It was also said that compensatory damage payment calculations neglected to account for potential long-term impacts to certain fisheries, such as the Prince William Sound herring fishery, which has been inordinately affected in the long term. Several Kodiak fishermen held Prince William Sound herring permits in 1989, purchased at record high rates of $190,000 to $250,000 per permit. Such fishermen reportedly have not been able to recoup the cost of the permits, the current market values of which have depreciated considerably. It should be noted that a widespread perceived inadequacy of compensatory damages contributed to the collective decision to sue for punitive damages. As one respondent rationalized, "because we were never adequately compensated for various long-term effects, I accepted the notion that the punitive award was a substitute for inadequate compensation."

8.2 Altered Plans and Future Uncertainties

The significance claimants attached to the potentialities of settlement monies varied widely. Some fishermen consider the punitive damages a "pipe dream" or a "bonus," while others hope or hoped the awards would "give us our lives back." Recipients expecting large settlements had imagined they would buy new boats and/or IFQs, paying off personal debt, or finance their children's college education.

For example, one Larsen Bay lodge owner hoped to buy a fishing lodge in Costa Rica so that he could provide his existing clientele with year-round fishing opportunities. Another fisherman purchased a new vessel in anticipation of a large settlement award. Another fishery participant hoped to use his monies to start a non-marine-related business, such as a bed-and-breakfast, or general store. An Alaska Native claimant hoped to buy some of her ancestral land. Other recipients had hoped to gift local charities. For many claimants, such hopes and dreams dissipated in 2008 following the Supreme Court's reduction of the punitive damages awards.

At a more analytical level, some fishery participants had hoped that a large influx of cash into the local economy would stimulate the island's marine-related industries. It was thought that large settlement awards would facilitate the entry or re-entry of fishermen into the industry who would need to purchase new vessels or upgrade and re-power existing vessels. Settlement monies would potentially allow fishermen to use cash for upgrades and avoid bank loans. One respondent imagined that the money would facilitate less anxiety and competition between fishermen, and that the need to fish in dangerous weather and sea conditions would diminish.

Conversely, some claimants expressed concerns about the potential for negative impacts from a large influx of cash in the study communities. For example, many reviewed periods of capricious spending that had occurred during the heyday of the king crab fishery in the 1960s, during the building of the oil pipeline in the 1970s, and in 1989 during oil spill clean-up. Some informants say such worries were unfounded only because the overall settlement was reduced so dramatically.

Cautionary tales circulated about how distribution of land sales proceeds in Akhiok had commonly resulted in marital discord, out-migration, and increased competition between fishermen. Certain discussants asserted that Kodiak residents would have suffered similar social problems had the much larger punitive damage amount been upheld by the Supreme Court.

Subsequent to the Supreme Court's reduction of the punitive damages award, recipients expressed a range of sentiments, from anger to relief. There was pervasive and sincere disappointment. Certain long-time residents of Kodiak emphasized the positives, saying that large influxes of cash could have created schisms between those who benefitted and those who did not. One cannery manager maintained that a large settlement would have caused jealousy and divisions that "jeopardize cooperative relationships" across the fleets, but that shared feelings of disenfranchisement leveled the playing field. Another fisherman echoed that sentiment, asserting that "Kodiak is a lot calmer now that people are making a living, rather than playing a lottery." Other recipients were grateful for any award monies at all, particularly in the

current economic climate. Some fishermen shrugged off personal disappointment, bolstered by former successes regardless of the outcome of the settlement.

Many fishermen expressed a certain amount of pride in their resiliency and ability to remain independent in troubling economic times. In some cases, the spill and litigation transformed pre-oil spill fishermen into post-oil spill businessmen. One respondent asserted that Exxon protected its business interests and, as a businessman himself, he could not begrudge them: "Exxon had good lawyers and they made strong arguments."

Many recipients expressed anger with Exxon. The protracted litigation process and its outcome has undermined claimants' faith in the judicial system and left them feeling marginalized. One respondent declared that the punitive awards would have "penalized [Exxon] for shortcomings prior to and during the oil spill and their attitude towards compensatory awards [during subsequent years]." Various discussants voiced their perspectives on corporate malfeasance and a lack of civic responsibility on the part of the responsible party.

While some recipients voiced displeasure with the plaintiffs' attorneys, this opinion was clearly in the minority. Many respondents spoke highly of local attorneys, crediting them for working with fishermen over many years to address damages and distribute punitive awards in an equitable fashion, despite many challenges and complexities.

A few respondents predicted that the outcome of the litigation process would discourage future class actions suits, as "no firm is going to feel it worth their while to go through the whole process." A leading attorney agreed, stating that the Supreme Court judgment created a clear disincentive for pursuit of punitive damages in similar future cases. He asserted, however, that punitive damages are nevertheless an essential mechanism for encouraging responsible corporate behavior. As such, the case has provided an impetus to challenge the distinction between punitive damage among corporations involved in maritime and land-related lawsuits. He was hopeful that the distinction established in the EVOS punitive damages decision would ultimately be overturned.

Certain informants worried that the judgment will decrease corporate incentives to maintain strict safety standards. The *Deepwater Horizon* oil spill of 2010 was a reminder of EVOS-related experiences and consequences. Residents remarked on what they considered to be minimal improvement in various aspects of spill response and clean-up.

8.3 Claim Categories and Spending Choices

Discretionary Spending. Generally speaking, recipients of large awards said that they were not interested in using a large portion of settlement monies for purchases of luxury items. This suggests that most such persons have and are addressing extensive fiscal needs and responsibilities associated with their advanced station in the fishing industry. Some frivolous spending undoubtedly did occur among all categories of awardees, but challenging economic conditions undoubtedly limited this.

Some recipients rejected the notion that the settlement monies are relevant to their well-being or an affront to their independent nature. One retired salmon seiner and Alaska Native explained, "We are treating it like nothing…we will not depend on it…we have learned to work without depending on Exxon."

Money for Business vs. Home. Certain informants in the harvest sector made it clear that the settlement monies were earmarked for business expenses or investments rather than for family use. The rationale for this was that because the spill had damaged fishing businesses, settlement monies should go toward fishing operations. In contrast, one fisherman categorized his award as "family money," explaining that it was just one of the many streams of income that support his family's way of life. Examples of family discord related to decisions regarding use of awards were noted during ethnographic fieldwork in the study communities.

Perceived Deservedness and Social Tension. As described in Chapter One, individual award amounts varied depending on the category of the claimant. The determination of percentages across categories was undertaken with the intent of addressing the relative extent of spill-induced damages to each affected group. This process in itself unavoidably generates social effects across groups of claimants.

For example, one commercial fisherman maintained that giving settlement awards to persons or corporations to remediate oiled property or decreased subsistence opportunities was "taking money away from those who really suffered: commercial fishermen." Another fisherman asserted the "[Punitive and/or compensatory damages] should only be about fishermen, not the Borough or Alaska Native community. It didn't affect their paycheck; they still got their money… oiled property – why did they get money?" Some Alaska Native subsistence claimants, however, felt they deserved better remediation for the long-term damages sustained. One recipient of an Alaska Native claim called the sum "pocket change," and "a slap in the face."

For instance, notions of deservedness varied across groups of claimants, with potential implications for long-term social relations across the region. Some purse seiners, for example, questioned why set-netters received higher settlement awards despite a relatively smaller volume of historical landings. Some claimants believed there was a lack of transparency surrounding the determination of award levels for the various claim categories. Several owners of marine-related businesses questioned why their businesses were not directly entitled to punitive damage awards. Similarly, an owner/operator of a fishing lodge lost all of his bookings in 1989 but was not recognized as a candidate for the class action suit. Some informants complained that captains failed to submit claims for their crew members, thus denying punitive damage awards to an important group of affected fishermen. In short, the claims process itself did create tension among and between plaintiffs residing in Kodiak City and other communities on Kodiak Island.

Social discord also resulted when individual award information was made public. According to one legal counselor, the award figures were disseminated without adequate explanation of how the amounts were calculated or what damages they represented, thereby "setting off a huge bomb" in the region. Many claimants said they felt uncomfortable if they received significantly higher or lower amounts than others and felt obliged to offer explanations. Fishermen also felt that their personal integrity was at stake if they received an award, but a crew member or partner did not receive an equal amount. Another respondent felt that the small award he received was an insult to his status as a successful commercial fisherman and that the information should not have been publicly disseminated. He remarked, "I feel like other guys are laughing at me." The above mentioned lawyer reported spending up to three "extremely emotionally challenging" months reviewing plaintiffs' queries over the phone after the initial public disclosure of settlement amounts, with many claimants "reliving" their experiences of the oil spill.

8.4 Informant Perspectives on Useful Policy Recommendations

Research participants representing various sectors of the Kodiak economy and community offered a variety of opinions regarding potential improvements to any oil spill punitive damage cases and settlement processes that might occur in the future in the Alaska region or elsewhere in the United States. Certain ideas repeatedly surfaced during the discussions and are represented in the following prospective recommendations:

- An advisory panel of fishermen should be created to act as intermediaries between lawyers and plaintiffs. The panel would serve to: (a) relate the changing situations of commercial fishing participants and subsistence practitioners to legal counsel, (b) keep claimants and the community apprised of the litigation process, and (c) relieve some of the burden on attorneys who otherwise must address questions on an individual basis;

- In addition to creating tax exemptions for punitive damage settlements, settlements should be considered "exempt resources" for persons on public assistance, especially considering the advancing age of many recipients and the length of time between the event and settlement;

- Impacted communities need to be provided with the capacity to hire objective social and physical scientists to document and gather supporting information that can best represent their needs and interests during litigation and settlement processes;

- Local tax consultants and financial advisors should be given legal guidance on how best to protect the interests of their clients. This would include information on how to create trusts to protect loss of public assistance due to the receipt of damage awards; and

- Small communities with limited resources should be given assistance in negotiating legal and bureaucratic hurdles to receipt of equitable punitive damage settlements.

9.0 Summary Conclusions

This report has described aspects of Alaska's largest oil spill and one of the most significant corporate-level maritime punitive damages cases in the history of the nation. Notably, the course of events that was initiated by the grounding of the *Exxon Valdez* and the spilling of its cargo in 1989 preceded a long series of ecological and social effects that continue at the time of this writing, almost 22 years later.

The *Exxon Valdez* oil spill punitive damages case has generated a variety of impacts on Kodiak Island. Given certain similarities between coastal communities in Southcentral Alaska, there can be no doubt that similar effects are being experienced across the spill-affected region. Some effects are positive in nature. For example, settlement awards have enabled residents to perpetuate subsistence-related cultural traditions, meet the economic demands of contemporary life, and invest in their futures. Notably, the timing of the disbursements has coincidentally helped to mitigate the local impacts of the national recession. But whether such benefits outweigh so many years of waiting and uncertainty is a subjective question that can be answered only by those directly involved in and affected by the spill, litigation, and settlement.

From an objective standpoint, litigation and settlement in this case clearly have lead to certain problematic social effects. For instance, the case spawned widespread disillusionment regarding the capacity of our legal system to equitably assess punitive damages and award plaintiffs in a timely manner: it led to social discord between certain claimants and groups of claimants, and it induced observable stress and anger among many individuals. The settlement disbursement process was also challenging: it was protracted, complex, and costly in administrative terms, and it too generated individual stress and social discord.

Our research suggests that disbursement of settlement awards has not resulted in reckless spending or widespread inflation on Kodiak Island. This is due in part to the nature of the process, wherein multiple payments have been distributed to various categories of awardees over a number of years. Significant outreach work undertaken by local officials and volunteering individuals has resulted in extensive monies being channeled into retirement savings and/or business investments.

Punitive damage award claimants awaited the settlement in a state of uncertainty for many years. The amount of the settlement was perennially contested and ultimately significantly reduced by the Supreme Court. Despite a dramatically reduced total settlement, various sums of money were and are being distributed to many households in the spill-affected region.

We have sought to develop a case-specific understanding of the economic context within which settlement monies have been and continue to be awarded, and a framework for monitoring and assessing the consequences of the process. The following summarizes key points developed in previous chapters, reviews important effects of the settlement, and provides options for future monitoring.

9.1 Summary of Trends Prior to and Soon After the EVOS Punitive Damage Settlement

The formal economy of Kodiak Island Borough is based largely in the commercial extraction, processing, and distribution of the region's rich marine resources. Raw and processed seafood products are the principal exports. The proximity of the island to the North Pacific Great Circle Route affords opportunities for transportation of seafood and other products to ports around the globe. Its location is also favorable in terms of strategic defense. Recreational opportunities are significant. As such, the economy of the Kodiak region is based in part on values inherent in local resources and geographic location.

The functioning of the economy also requires extensive interaction with exogenous actors and entities. Nearly all of the goods, supplies, and equipment consumed or used by residents in the course of their daily lives and in the conduct of commercial industries and government must be imported. While reliance on external markets both for export potential and for goods and services required locally is common in other regions of Alaska and characteristic of Alaska as a whole, the situation is intensified in this remote island setting. The Kodiak economy is also noteworthy in terms of earnings generated in the region by persons who legally reside elsewhere in Alaska and the United States.

Key economic and demographic indicators are suggestive of extensive demographic and economic change in the study region subsequent to 1993. The number of persons living in the villages has, for the most part, declined, as has the overall population of the region. The size of the regional labor force exhibited a reversal of a trend of growth noted in the 1980s and was accompanied by a proportional increase in unearned income. Study participants tend to attribute the above changes to challenges in the commercial fishing industry, including a general loss of profitability in the salmon fisheries and, subsequently, diminishing interest in participation in the fisheries. This in turn led to diminished activity among processors and distributors.

BEA data indicate a fairly stable long-term (20-year) pattern of earned income across the study region. Cyclical contraction in the seafood harvest and processing sectors have tended to be offset by gains in the government sector and in support sectors unrelated to fishing, and vice versa. Significant short-term earning anomalies have occurred on occasion, such as during the decline of the Bering Sea crab fishery in the 1980s, and following the *Exxon Valdez* oil spill, when commercial fishing activity was constrained, but short-term high-paying clean-up opportunities were abundant.

Commercial Fishing Patterns. Currently, there are indications of a reversal of problematic trends in the region's fisheries, marked by robust landings, improving market prices, and increasing permit and quota values. Distribution of settlement awards has occurred during this period of change. When considered in tandem, harvest and processing employment have recently accounted for over 30 percent of active jobs in the study region. We have focused on identifying the contributions of the former. Trends in fishing employment were assessed in two ways: (1) via the ratio of fishermen to active permits; and (2) the ratio of permits used to permits issued. Production was measured in terms of pounds landed and average income per active

permit. While overall fishing effort in the study region has been relatively stable in recent decades, production has risen sharply over time.

Available data are indicative of variation in participation and production across the fisheries over the course of time. Focusing on the past ten years, it is possible to discern a gradual increase in gross earnings, gross earnings per pound, and gross earnings per permit in both the groundfish and halibut fisheries. Production of crab landed from the KMA diminished significantly up until 2000, but now remains stable, and there is a marked increase in gross earnings per permit fished. The percentage of active salmon permits fished by residents and the percentage of gross earnings per pound have both gradually increased.

The number and type of salmon permits active in the KMA varies by specific fisheries. The number of active set gillnet permits has been relatively stable, with the exceptions of 1989 and 2002. The number of active purse seine and gillnet permits decreased steadily after 1990, but has increased since 2009. The total number of active salmon permits expressed as a proportion of total available permits declined between 1990 and 2002; since 2002, that number has increased, followed by a steady state for approximately five years. Another modest increase has occurred over the last two years.

Study data also reveal significant temporal variation in effort, earnings, ex-vessel value, and landings for individual fisheries across the region. Gross earnings per unit of effort tended to decline over the time series for all Kodiak fisheries except halibut, which exhibits a discernable upward trend. Landings, while highly cyclical, tended on the whole to be relatively stable. An exception is crab, landings of which have decreased significantly since 2000. Productivity increased in all fisheries, again with the exception of crab, which exhibited marked variability after 1996.

Rationalization (initiated in the halibut and sablefish fisheries in 1995 and crab fishery in 2004) has had and will continue to have profound implications for the future structure of Kodiak fisheries and for levels of participation and production therein. Knapp's (2006) preliminary analysis of the effects of rationalization on Kodiak's participation in the Bristol Bay crab fisheries, noted a dramatic decline in fleet size (down some 53 percent), with resulting losses in overall earnings and jobs. Rationalization in the halibut fishery has led to steep declines in the number of shareholders and amount of quotas held by fishermen in villages. Our research makes clear that the amount of punitive damage awards is minimal when compared to the profits reaped by IFQ shareholders due to gains in quota price.

Decisions to invest or reinvest in fishing operations relate in part to historical market prices for various seafood products and to extant levels of resource abundance. Increases in the market price of salmon correlate with increased participation (measured as percentage of permits fished) during the settlement period. Increases in effort in crab fisheries (as measured by percentage of permits fished) have also occurred during the settlement period. In contrast, less than ideal market conditions and/or variable resource availability in the Pacific Cod and halibut fisheries seem to be reflected in the stable state of participation (as measured in percentage of permits fished and number of fishermen to permits fished). That is, it does not appear that effort in these fisheries increased during the settlement period.

The basic employment sector, which includes seafood harvesting, began to expand in 2003 (see Table 4-9). Analysis of the entry and exit of businesses across the region suggests a turning point in the seafood industry that year. In particular, the number of businesses involved in fish processing increased from 19 in 2004 to 26 in 2010. These changes likely reflect an increased optimism regarding the future of local fisheries.

Commercial Fishing and Subsistence Use Patterns in the Villages. Fishing-specific effort and production were examined at the community level, using Larsen Bay, Akhiok, and Port Lions as three distinct case examples for purposes of comparison. In Larsen Bay, the numbers of issued and active commercial fishing permits, licensed crew, and IFQ holdings in the halibut fishery follow a clear pattern of decline over time. Approximately half of the permit holders residing in Larsen Bay in recent years held permits for salmon. The remainder held permits for groundfish and/or crab. The number of permits fished increased between 2008 and 2010, reversing a notable downward trend. Total pounds landed also increased, although landings or gross earning per permit did not increase significantly.

With the exception of an abrupt, single-year drop in activity in 2002 that is associated with the EVOS land trust settlement, the number of active salmon permits held by Akhiok residents increased dramatically between 1989 and 2004 and continues to remain above 1989 levels (Figure 6-7). Salmon is the only fishery in which Akhiok residents participate to any significant extent. During the settlement period the number of permits fished, total pounds, and gross earnings per permit fished increased, reversing a declining trend that reached a significant low in 2007.

Port Lions has experienced a decline in commercial permit holders, licensed crew, number of halibut IFQs holders, and number of IFQs held by the community. In 2010, there were 15 resident permit holders. During the period 2008 to 2010, the number of permits fished, gross earnings, and gross earning per permit remained stable, although there was a great deal of fluctuation in productivity and gross earnings per pound landed (Figures 6-1 through 6-3).

In short, our data suggest that during the settlement period, the level of participation in commercial fishing in the study villages increased or remained fairly constant. Gains in total productivity (landings) and individual earnings varied between years and location.

Subsistence Practices. Data compiled during this study make clear the ongoing importance of involvement in subsistence activities across the study region. Most village households engage in pursuit, sharing, or consumption of wild foods. Benefits are both sociocultural and dietary in nature.

The *Exxon Valdez* oil spill significantly disrupted subsistence activities on Kodiak Island. Approximately 15 percent fewer households in Akhiok, Karluk, Kodiak, and Larsen Bay engaged in subsistence activities in the year after the spill as compared to the year before the spill (IAI 1990c:28). Declines in subsistence harvest were linked to: strategic avoidance of affected areas; worries about the health effects of eating contaminated wild foods; and less time for traditional activities given participation in clean-up activities. Moreover, findings from the

most recent ADF&G household survey (2005) suggest that the majority of residents in the originally affected communities assert that subsistence resources "have not recovered to pre-spill levels" (Fall et al. 2006). In particular, the ongoing contamination of shellfish was reported to be a major local concern. Our own data indicate that shellfish are now infrequently consumed by residents in Kodiak villages for fear of contamination.

Some informants in the villages assert that problems in the commercial fishing industry have affected involvement in subsistence fishing and hunting activities. Over the last decade or so, reportedly fewer people and less capital have been available to maintain operations. Increasing rates of poverty and net out-migration also challenge participation in subsistence activities.

Limited data notwithstanding, it is clear that subsistence activities vary between villages. For example, the City of Kodiak and village of Old Harbor have experienced the greatest declines in the number of active permits for the subsistence harvest of halibut (24 percent and 11 percent, respectively). The village of Larsen Bay experienced the greatest increase (71 percent); and Akhiok and Port Lions remained stable in terms of participation during the settlement period.

Long-range data regarding subsistence salmon fisheries in the KMA indicate that the ratio of the number of residents to the number of subsistence permits decreased from an average of 12:1 during the 1980s to about 7:1 after 1999. The ratio of the number of salmon landed to the number of residents increased slightly; the ratio of number of salmon landed to the number of permits fished, however, has decreased, suggesting diminished abundance or less reliance on salmon resources.

Conversations with settlement award recipients residing in the villages suggest that the awards are being used for many purposes: to support fishing lodges; meet the high costs of fuel; and invest in restarting commercial fisheries. Loss of public assistance, which was a commonly reported impact of settlement monies, could lead to greater reliance on subsistence hunting and fishing. Additional research is needed to examine this and related issues.

Population Change. Extensive population growth has occurred on Kodiak Island since 1980. Most growth occurred in the 1980s, in association with regional expansion of marine fisheries and the work force needed to support them. Population growth has since leveled off, and the rate of growth on Kodiak Island has been slower than for the state as a whole since 1990. This can be explained by naturally decreasing populations and net out-migration.

Net out-migration is limiting growth in the region. Again, in the absence of other explanatory factors, the trend of net out-migration appears to be associated with past declines in the fishing industry. During the 1980s, when growth typified the economy, the population grew by almost nine percent. Conversely, emigration was common through the early 1990s, when serious challenges were first confronting participants in various sectors of the salmon fishery. The population diminished by almost 13 percent during that period.

U.S. Census and state-generated demographic data indicate that the size of the resident populations in the villages generally declined during the period 1980 through 2010. Even villages exhibiting population growth and relatively stable economic conditions between 1990 and 2000, such as Port Lions and Ouzinkie, experienced population declines between 2000 and 2010. The proportion of the Kodiak Island Borough population residing in villages diminished from 11 percent in 1980 and six percent in 2004 to 5.6 percent in 2010.

Migration to and from Kodiak and its communities presents a variety of implications for this study. Migration can impact the manner and rate of participation in the workforce, local capacity to undertake productive subsistence activities, and overall economic activity. Household-level decisions to move from one place of residence to another clearly involve many variables.

Ethnographic data generated during this study indicate that settlement monies were, in most cases, insufficient for most householders to leave the region if they so desired. Census data are not yet available to cross-validate this finding. It is clear, however, that settlement monies are commonly being used to offset the costs of living on Kodiak Island and, to a lesser extent, to make discretionary purchases. Inasmuch as such spending reduces economic stress being experienced among Kodiak households, the settlement may actually be limiting the extent of out-migration.

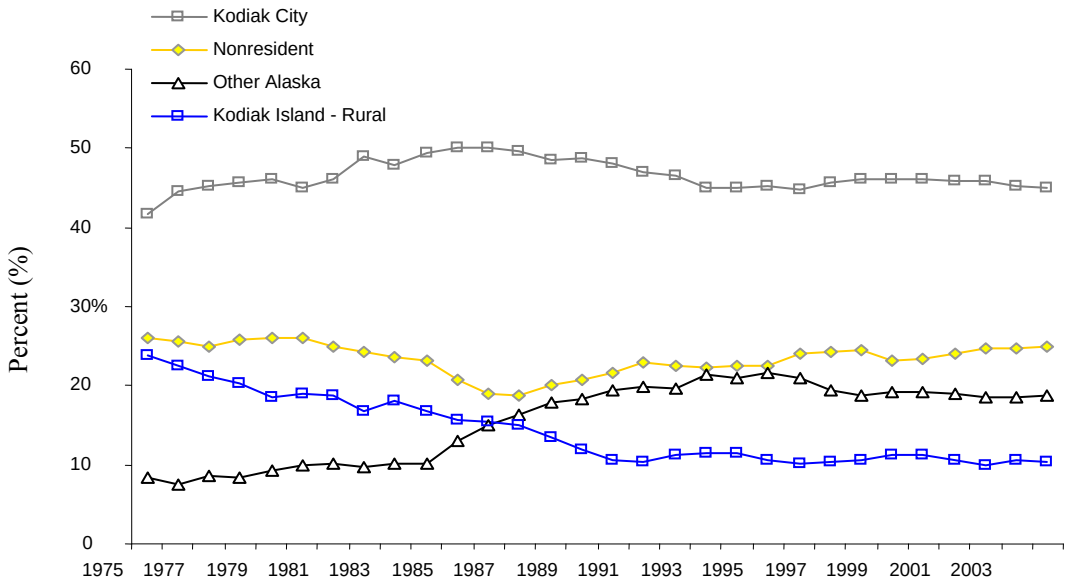
9.2 Long-term Monitoring

In light of the aforementioned commercial fishing-related investment patterns, recent changes in the outlook for Kodiak-based fisheries, and future opportunities for communities to purchase Community Quota Entities, a number of trends may warrant long-term monitoring in the Kodiak region. Regional planners may benefit from monitoring the following.

Changing Patterns of Residency and Permit Ownership. As is evident throughout this report, a significant portion of EVOS settlement monies have been reinvested in the commercial fishing industry. How such investments may affect fisheries that are changing for a variety of reasons is as yet uncertain. One possibility is that recent and prospective future changes will alter the pattern of permit ownership on Kodiak Island.

Notably, the proportion of permits owned by residents of Kodiak Island Borough declined during the first half of the 30-year time series, and then leveled off. Permit ownership among non-local Alaskan fishermen increased sharply from 1985 to 1995, and then leveled off. Permit ownership among residents of Kodiak City has been fairly stable over the 30-year period. Ownership of permits by persons residing outside of Alaska diminished in the late 1980s, recovered, and has since leveled off (Figure 9-1).

Figure 9.1 Ownership of KMA Limited Entry Salmon Permits by Residence Status (%)



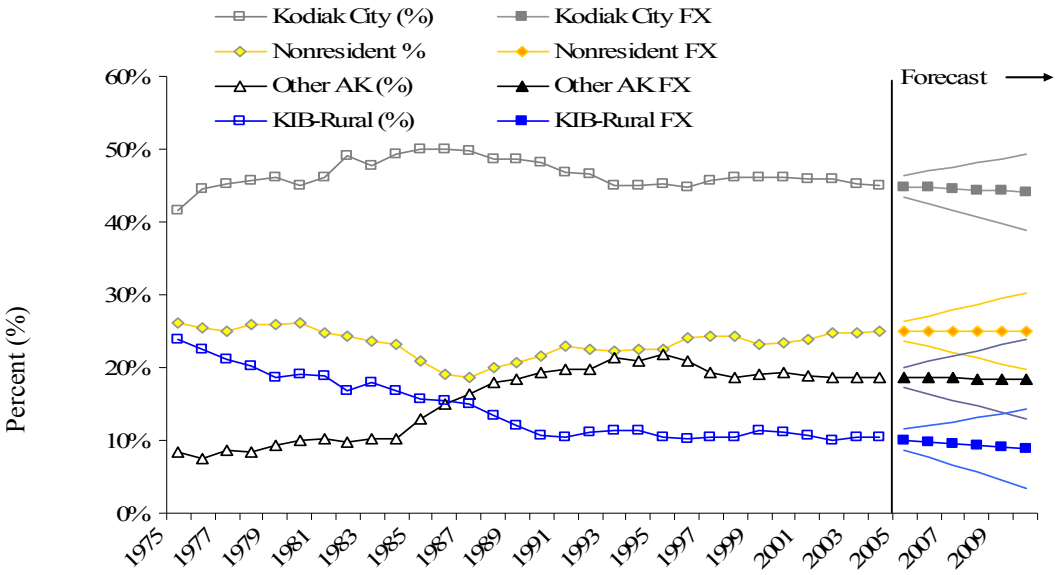
Source: Tide et al. (2005); CFEC Special Tabulations

Figure 9-2 below depicts a forecast for patterns of permit ownership for the period 2005 through 2010. The analysis was prepared using a Holt exponential smoothing model and data regarding historic changes in ownership of permits for limited entry salmon fisheries conducted in the KMA.[40]

Under the study hypothesis of increased local investment in commercial fishing activities, an increase in the number of permits held by current and long-term residents of Kodiak Island would be expected in conjunction with a concomitant decrease in the number of permits available for transfer to persons from outside the region. It is as yet unclear, however, whether the observed manner and extent of settlement-related investment will significantly change permit ownership patterns across the KIB.

[40] The forecast involves the assumption that new limited entry permits will not be issued by the state government and that some foreclosures and forfeitures will occur during the period. The model also assumes: (a) reasonably stable availability of resources; (b) an otherwise fairly stable regulatory regime; and (c) reasonably favorable conditions in the market during and, for some period, after the settlement. As such, monitoring and assessment under model parameters will necessarily involve attention to studies of resource abundance and factors associated with regulatory and economic constraints and opportunities in the fisheries of interest.

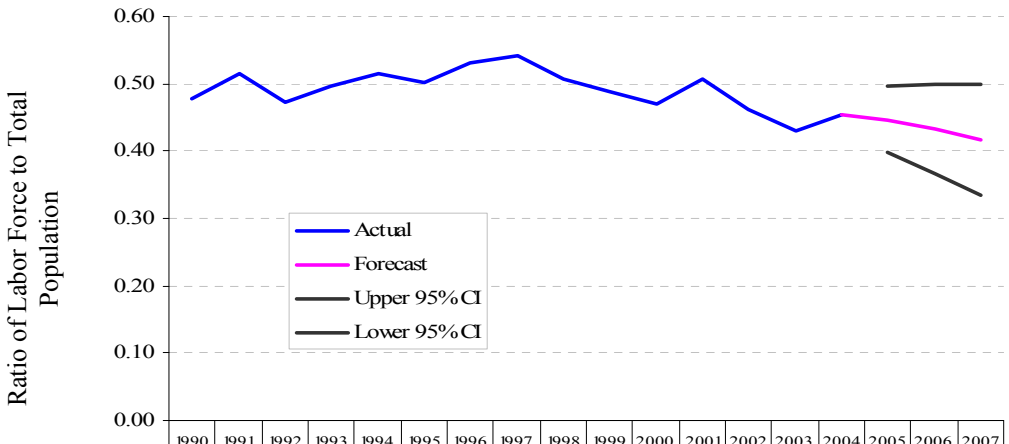
Figure 9-2 Forecasts of Ownership Patterns for KMA Limited Entry Permits: 2005-2010



Source: Tide et al. (2005); CFEC Special Tabulations; and IAI Forecast

Regional Employment Forecast. Figure 9-3 uses an exponential smoothing of historic data to generate a labor force participation forecast for the period 2005 to 2007. Should new data indicate significant deviation from the forecast, it could be hypothesized that the settlement is generating effects on the labor force. However, ethnographic work conducted in the study communities since 2007 suggests such changes are more likely to be identified in relation to regional and national economic conditions, which remain sluggish at the time of this writing, and/or to improving conditions in the region's marine fisheries.

Figure 9-3 KIB Labor Force Participation Forecast



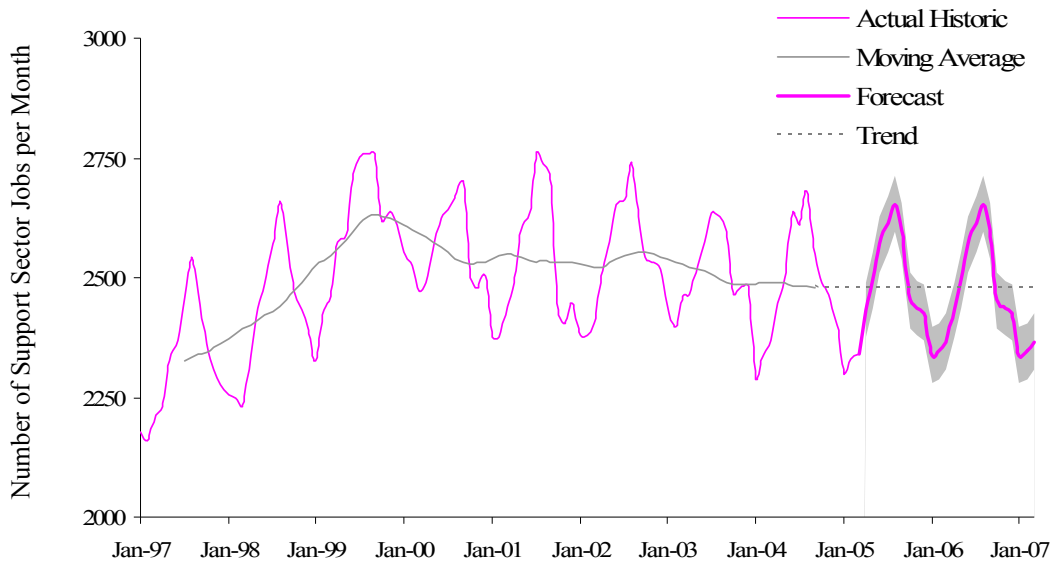
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Actual	0.48	0.52	0.47	0.50	0.51	0.50	0.53	0.54	0.51	0.49	0.47	0.51	0.46	0.43	0.45			
Forecast															0.45	0.45	0.43	0.42
Upper 95%CI																0.50	0.50	0.50
Lower 95%CI																0.40	0.37	0.33

Sources: Alaska Dept. of Labor and Workforce Development; IAI

Support Sector Employment. The effects of income generated through EVOS punitive damage awards are likely to manifest to some extent in the support sector of the regional economy since that economy is so deeply related to the commercial fishing industry. However, because revenue generated by the seafood harvest sector is so closely associated with exogenous market demand, the effects of settlement monies on rates of employment and extent of earnings in that sector may be relatively more difficult to detect than for the support sector, especially during a period of changing prices. But the statements of some public officials in the region suggest that the situation is worthy of long-term monitoring, in that some seafood businesses, vessel owners, and prospective vessel owners are using settlement monies to invest in new or expanded operations.

A time-series decomposition (TSD) forecast model of support sector employment is used to provide a measure of the impact of the settlement. The model entails extrapolation of data up to 24 months after the end point of award distribution. Based on interview data collected over the last three years, further extrapolation of trends would likely reveal an upturn in fisheries support sector employment that could not be confidently associated solely with the settlement.

Figure 9-4 Forecast of Average Monthly Support Sector Employment: 1997-2006



Source: ADLWD (historic) and Impact Assessment, Inc. (forecast)

9.3 Conclusion

Several fundamental factors have influenced individual use of punitive damage awards. These include: (1) the phased distribution of payments over a nearly three-year period; (2) the timing of the settlement and disbursements; (3) tax and lien encumbrances and tax incentives; (4) the age of recipients; and (5) the amount of the awards. These issues are reiterated below.

Distribution of Payments. The majority of EVOS punitive damage recipients received a minimum of two payouts: one for actual punitive damages; the other for interest on the

settlement. Payment distributions began in December 2008 and continue to date. Persons entitled to punitive damage awards in more than one category received multiple payouts at unpredictable points in time.

The vast majority of persons interviewed during this study expressed the opinion that the phased nature of the disbursements was an important aspect of the overall settlement process. Discussants in the financial sector suggested that phasing may ultimately have promoted better money management, especially for persons unaccustomed to dealing with large sums of money. Active fishermen, however, maintain that it is easier to "work with" a large payment if one wishes to make a needed purchase, whereas "smaller payments can get piddled away."

Significantly, high-liners are accustomed to working with large budgets, managing cash on a seasonal basis and budgeting for multiple costly expenditures. In contrast, other recipients may be less accustomed to handling such sums. Examples of costs, as suggested by fishermen and marine-related business representatives, are detailed in Appendix C.

Timing of the Settlement. The timing of the award disbursements clearly influenced individual spending choices. Notably, disbursements occurred over nearly a three-year period that was characterized by fluctuating fisheries conditions, and a national economic recession of historic proportions. Moreover, from the perspective of the claimants, the timing of the various disbursements was largely unpredictable.

Initial disbursement of settlement awards in late 2008 and early 2009 occurred during significant downturns in both the national and world economy. Credit was difficult to obtain, individual stock portfolios were deflated, and fuel and heating oil prices were high. Many of the countries to which Alaska exports seafood products were also experiencing economic problems, including high bankruptcy rates and devaluation of currency. During that time of economic uncertainty, some recipients chose to use their settlement funds to invest in IRAs, pay off debts, assist family members experiencing hard times, and cover basic costs of living. Some informants concluded that investing in the commercial fishing industry was less risky than investing in the stock market.

By the end of 2010, the national economy appeared to be recovering, albeit slowly. Further, the value of permits and quotas were increasing and fishermen's attitudes regarding the future of certain local fisheries were improving. Many active fishermen invested in vessel and gear upgrades. Settlement monies were useful in this regard, particularly when considered in the larger context of increasingly valuable IFQs, record high prices in certain salmon fisheries, and the maturation of Capital Construction Funds. Fishermen especially chose to invest in the seine and set net salmon fisheries, as recent trends indicate continued market stability. Few of the recipients invested in the Pacific cod and halibut fisheries, due to declines in market prices for the former and quota shares for the latter.

Finally, it should be noted that the first round of checks arrived in mid-December of 2008, leaving little time to consult with a financial advisor at the end of the tax year. The timing of the distributions in 2008 and 2010 also correlated with the holiday season and winter weather, and several discussants reported that many were spending award monies on gifts and/or heating bills.

Liens and Tax Incentives. As mentioned previously in this report, the disbursement process was phased in part because many fishermen were encumbered by liens. In order for the settlement process to move forward, these situations were identified and gradually resolved through significant effort on the part of plaintiffs' counsel. Various tax incentives have also shaped and are shaping the investment choices of many settlement recipients. The Murkowski Bill, which provides for tax deferments of up to $100,000 for contributions to retirement accounts, has made IRAs a popular option for recipients who had retired or were nearing retirement age, or who had not previously established such a fund. Some active commercial fishermen were motivated to invest in their businesses because of recent changes to the tax code, permitting a one-time write-off for major capital improvements.

Age of Recipient. Active fishermen under the age of 55 were more likely to use settlement monies to purchase boats, gear, permits, or IFQs. Vessel and gear purchases afforded tax write-offs, while for some fishermen, purchases of permits and IFQs functioned as substitutes for savings and retirement plans. Recipients between the ages of 55 and 65 are typically using settlement monies to pay off personal debt, including credit card debt, loans, and home mortgages. Recipients over the age of 65 have tended to invest a large part of settlement awards monies into retirement accounts.

Award Amounts. Recipients often invested checks of $50,000 or more, but tended to use checks of less than $25,000 to pay existing debts and to address the costs of living on Kodiak. Of note, in this regard, financial sector representatives did not discern significant differences in basic patterns of award usage between residents of Kodiak City and residents of the villages. Rather, the amount of the award appears to be the primary determinant in patterns of spending and investment.

The End of the Settlement Process. At the time of this writing, the Ninth Circuit Court of Appeals had approved the 23rd application for punitive damages for claimants in the halibut, damaged gear, and recreational use categories. Officials administering the settlement process report that disbursement will likely continue through December 2013.

Results of Hypothesis Testing. The research hypotheses used to guide this study were formulated with the possibility that the total settlement award could be as large as $6.5 billion, which undoubtedly would have borne highly significant consequences for roughly 32,000 plaintiffs, their families, and communities across the affected region of Alaska. Notably, well over 5,000 plaintiffs were residing on Kodiak Island when the EVOS punitive damages case was initiated.

It was known at the outset of the study that individual awards would vary depending on the demonstrable level of effect of the spill: for example, by the extent of one's performance in the affected commercial fisheries prior to the event. Some settlement amounts would be in the thousands of dollars, such as for crew members. Others could involve millions of dollars, such as those for Kodiak salmon seine owner-operators who were highly productive in the region prior to the spill and whose fishery underwent significantly detrimental change due to the spill event. Settlement allocation plans for this group of plaintiffs were developed primarily on the

rationale of loss of income and way of life, and devaluation of permits and vessels. The Supreme Court's reduction of the punitive damages settlement obviously constrained the spending and investment possibilities for these and all claimants, but it did not eliminate them. Thus, the research hypotheses and basic approach to the study were not significantly altered.

Basic research hypotheses were formulated based on: IAI's background understanding of the study region; the literatures regarding social and economic change resulting from spills, settlements, and windfalls; and the need to understand key macro-social changes in the study communities and region over time. Because the causal stimulus of interest was primarily fiscal in nature, indicator variables were selected based on their sensitivity to social, economic, and demographic change.

The overarching hypothesis of the study was that settlement monies would amplify social, economic, and demographic trends at household, community, and regional levels of analysis. The truth value of this hypothesis was borne out for some phenomena but not others, with the primary determinant being the size of awards in specific settlement award categories. In all cases, analytical parsing of settlement effects was complicated by a variety of intervening factors.

Secondary hypotheses were developed and organized with regard to potential human behavioral response to the settlement as anticipated through understanding of the region, the oil spill and clean-up, literature regarding social change in Alaska, and as expressed by public officials and fishery participants during the formulation of the research proposal. The sub-hypotheses were conceived and expressed in general terms and have been intended primarily to stimulate and organize meaningful and relevant examination of the litigation and settlement processes. Moreover, in the spirit of scientific inquiry, additional hypotheses were developed and internally tested as understanding of socioeconomic conditions in the study area grew and as the empirical effects of litigation and settlement have begun to emerge.

First, it was hypothesized that unearned income resulting from settlement awards would affect the manner and degree of participation in Kodiak-based commercial fisheries. A basic uncertainty was whether such income would lead individuals in the harvest sector to increase their own involvement in commercial operations or afford an opportunity to exit the industry. Notably, many commercial fishermen have used or are using settlement monies to invest in their fishing operations. Settlement monies are generally insufficient for purposes of cleanly exiting the industry and beginning a new career. Moreover, exiting is by no means an option of universal interest to Kodiak-based fishermen. Many such persons derive great satisfaction through their avowed profession and through interaction with like-minded others in communities that are deeply rooted in the industry. In this sense, settlement monies reduced some of the ongoing economic challenges experienced by participants in the various fleets.

Second, it was hypothesized that settlement awards would influence the extent and manner of participation in subsistence fishing and hunting activities, with associated effects on related cultural activities. It was anticipated that extensive unearned income may serve to reduce some of the tension experienced by Alaska Natives who historically have engaged in some component of the region's workforce to simultaneously meet the economic demands of the household and

perpetuate culturally significant subsistence hunting and fishing activities. Thus far, settlement monies have indeed been used to support subsistence activities and household economies in the study villages. But in a context of many contemporary economic challenges and a dramatically reduced settlement, the awards were insufficient for fundamentally diminishing the ongoing challenges of subsistence-oriented living in the 21st century.

Third, it was posited that the settlement would enable long-term residents to leave their home communities for other parts of Alaska or elsewhere, thereby registering change in select social and demographic indicators. This was also expressed in the inverse, since unearned income may enable residents to live a more leisurely life in their home communities. As for each of our hypotheses, the amount of the settlement after taxes and the phased manner of disbursement has had a significant bearing on the response of the claimants. In sum, while relatively few claimants received settlements of a size that would act as sufficient incentive to undertake the immediate and long-term social and economic costs of relocating, the awards have enabled many recipients to undertake various financial investments, purchase durable goods, and engage in limited discretionary spending.

Finally, it was postulated that spill-related litigation and settlement would amplify socio-political challenges within and across residents and groups of residents in the study communities. That is, it was anticipated that financial empowerment would force difficult individual and collective decisions about the future, and that these decision-making processes and their outcomes could cause new interpersonal and collective difficulties among and between claimants. While this project did not involve a directed analytical focus on the social-psychological effects of the litigation and settlement processes, various such effects were observed across the study area. A few examples from Kodiak Island are discussed herein. These included arguments and perceived inequities associated with categorization of spill-affected individuals and groups in specific settlement award categories and release of information about individual award amounts to the public, among others.

Litigation and administration of the punitive damages settlement that followed the *Exxon Valdez* oil spill in 1989 have involved an essentially incalculable collective investment of time and resources on the part of many social groups and individuals. Persons involved in the region's commercial fishing industries, residents of the affected villages, plaintiffs' counsel, and many dedicated individuals expended extensive time and resources to minimize any potentially deleterious effects of the settlement.

Viewed in total, the spill and subsequent litigation and settlement processes have fundamentally altered the trajectory of life throughout the affected region. It must be noted here that significant maritime oil spills tend to be both costly and socially disruptive over a long period of time. The settlement in this case did generate certain benefits, but it is not possible to project what life in the affected region would have been like today had the spill not occurred, nor whether such benefits outweigh the social and economic costs of protracted litigation and settlement. These uncertainties and the various physical and social damages generated by the original oil spill deeply underscore the value of programs and policies that are designed and funded to *prevent* maritime oil spills and the many difficult consequences they invariably generate.

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Appendix A

Chronology of Key Elements of *Exxon Valdez* Oil Spill Litigation: 1989-2009

Table A-1 Chronology of Key Elements of *Exxon Valdez* Oil Spill Litigation: 1989-2009

1989	
Mar 24	Exxon Valdez Oil Spill
Apr 26	Complaints filed in District Court.
Jun-Aug	Development of individualized claims begins.
Aug 14	The State of Alaska sues the Alyeska Pipeline Service Company for negligence and unspecified damage to the environment.
Sept	Plaintiffs' motion for class certification.
Oct 24	Exxon files a countersuit against the State of Alaska, claiming state interference in clean-up plans.
Dec 22	Pretrial Order 9 outlines organization of Plaintiffs' Case. Management Team.
Dec	Exxon pays $130 million in out-of-court settlements with commercial fishermen, cannery workers, and some local governments.
1990	
1990-1991	Claim forms prepared and submitted to Trans-Alaska Pipeline Liability Fund
1990-1994	Discovery commences and continues through trial, producing millions of pages of documents.
1991	
Mar	Federal and State governments file a natural resource damage suit against Exxon and Alyeska.
Oct 9	A landmark $1 billion agreement is approved to settle state and federal oil spill claims against Exxon. The agreement clears the way to pay $900 million to the state and federal governments over a 10-year period to restore Alaska's environment. Terms also call for the company and its shipping unit to plead guilty to federal crimes against the environment, drawing a $150 million fine.
Nov	Liability and Impact teams established.
1992	
Jun-Sept	Plaintiffs create TAPL fund determinations database.
Sept-Oct	First damages matrix for commercial fisheries is prepared.
Nov	Compilation of individual claims database is initiated
1993	
Jan-Dec	The "All Plaintiffs' Database" is compiled.
Apr	Briefing in the Ninth Circuit re: *Robins Dry Dock*.
May-Nov	Parties conduct expert depositions.
Oct 21	Order 158 dismisses Exxon's first motion to overcome punitive damages.
Oct 29	Settlement approved between Plaintiffs and Alyeska.
1994	
Jan	Plaintiffs respond to voluminous pre-trial motions. Solicitation for increased contributions to fund the litigation through trial introduced.
Apr 15	Mandatory punitive damage class receives final certification.
May 2	Phase I of the Federal Court trial begins – five years after the spill.
Jun 13	Captain Hazelwood is found liable for recklessness.
Sept 16	After a four month trial, the jury in an Anchorage federal court returns $5 billion punitive damages verdict in Phase III of case. Jurors also find Exxon liable for $20 million in actual damages.
Sept	An Anchorage Superior Court jury awards nearly $10 million dollars to six Alaska Native groups and the Kodiak Island Borough following a three-month trial over oil-damaged lands (Claimants were seeking in excess of $120 million from Exxon and, in early 1999, were still awaiting an appellate ruling from the Alaska Supreme Court).
Sept 30	Exxon files 12 motions to overturn the jury verdicts.
Oct 3	Exxon files 3 motions to overturn the jury verdicts.
Nov	Exxon Qualified Settlement Fund (EQSF) planning begins.
1995	
Jan 17	The Court issues 12 orders denying Exxon/Hazelwood's post-trial motions.
Jan 27	Judge Holland denies Exxon's remaining motions to overturn jury verdicts (Order 267).
Feb 7	Exxon motions to depose jurors, adjust Phase IIA verdict, and reconsider order regarding salmon chum price and UCI set-netter harvest.

May 5	Judge Holland denies Exxon's motion to reconsider the jury verdict regarding chum salmon price.
Jun 13-14	Judge Holland conducts jury interviews.
Jul 12	Exxon files motion to depose juror Rita Wilson and reporter Natalie Phillips, and seeks access to the original juror questionnaires filed under seal for jurors Murray and Dean.
Aug 11	Judge Holland denies Exxon's motion for the juror questionnaires.
Aug 16	Holland denies Exxon's motion to depose Wilson and Phillips.
Sept 6	Exxon files motion for a new trial claiming juror misconduct and coercion.
Sept-Nov	Plaintiffs' lawyers meet w/claimants re: damages matrix, power of attorney, and distribution issues.
Oct	Drafting of the power of attorney begins.
Oct 23	Exxon files motion for judgment on punitive damages claims.
Oct 24	Exxon files motion to amend the Phase 11(a) findings and adjust verdict re: United Cook Inlet set-netters; Exxon files motion attacking punitive damages verdict.
Nov 13	Exxon opposes plaintiffs' motion to finalize the Phase IIA verdict.
1996	
Feb 14	Plaintiffs are served with a complaint for declaratory relief from the Seattle Seven seeking a percentage of plaintiffs' damages on behalf of Exxon.
Feb 20	Judge Holland denies Exxon's motion for new trial based on possible juror misconduct and coercion (Order 308).
Mar 6	Seattle Seven intervene in litigation on behalf of Exxon.
Mar 18	Exxon files motion attacking punitive damage verdict. Seattle Seven object to (POA), acting on Exxon's behalf.
Apr 5	Judge Holland denies Exxon's fourth attack on the UCI set-netter verdict (Order 316).
May	Plan of Distribution is drafted.
Jun 11	Judge Holland approves POA (Order 317) and denounces Seattle Seven/Exxon scheme.
Jun 18	Exxon files motion to reconsider Court's order regarding Seattle Seven.
Aug 6	Judge Holland rejects Exxon's attempt to attack the punitive damages verdict based on credits claimed from the Seattle Seven releases (Order 326).
Sept 6	Judge Holland denies Exxon's motion to reconsider order regarding Seattle Seven finding that Exxon perpetuated a deception upon the court and the jury (Order 327).
Sept 24	Judgment finally entered on $5 billion federal court jury verdict for punitive damages – seven years after the spill and two years after the verdict.
Sept 30	Exxon and Seattle Seven filed joint appeal on Seattle Seven kickback.
Oct 8	Exxon files motion to alter or amend the judgment and files its bill of costs against certain plaintiffs.
Nov 20	Judge Holland dismisses the Seattle Seven complaint with prejudice.
Dec 19	Seattle Seven and Exxon file appeal challenging dismissal of complaint.
1997	
Jan 17	Judge Holland issues order on Exxon's motion to amend judgment (Order 332).
Feb 12	Exxon files notice of appeal to Ninth Circuit.
Feb-Mar	Development of POD continues.
Mar 18	Plaintiffs file motion for approval of POD.
Jun 26	Exxon files joint opening brief in the main appeal.
Sept 23	Exxon files motion for a new trial in District Court based on "newly discovered" evidence of juror misconduct and coercion.
1998	
Jan 5	Ninth Circuit issues a limited remand to permit the district court to reconsider Exxon's motion for a new trial.
Mar 16	Exxon deposes Juror Rita Wilson.
Jul 31	Judge Holland denies Exxon's second motion for a new trial (Order 339).
Aug 7	Exxon files an appeal to Ninth Circuit on the denial of the second motion for a new trial.
Nov 27	Exxon files its final brief in its second motion for a new trial.
1999	
Jan-Dec	Over 20,000 claim forms are processed, representing over 54,000 potential claims.

May 3	The U.S. Court of Appeals for the Ninth Circuit hears Exxon's oral appeal.
June 28	Meetings to update claimants are scheduled.
Aug	Exxon appeals POD order
2000	
Jan-Dec	Claim forms continue to be processed, including more than 9,000 Round 2 claims and representing over 15,000 potential claimants.
Jan 4	Response to Exxon's appeal of the POD.
Mar 16	Ninth Circuit denies Exxon's appeal for a new trial based on alleged juror misconduct re: Rita Wilson
Nov 9	Ninth Circuit hears oral arguments re: *Baker v. Exxon*
2001	
Jan-Dec	Claims processing continues; PAC hears and resolves 650 appeals regarding final percent shares of distribution.
Nov 7	Ninth Circuit rules on consolidated appeals.
2002	
Jan-Feb	Plaintiffs' counsels continue work on briefing regarding remand of punitive damages.
Jun-Jul	State Court trial hears arguments regarding municipalities' claims.
Jul-Dec	Funds from supplemental claims, compensatory damages and compensatory interest are mailed to numerous fishing claimants, which includes the oiled salmon and Alaska Native subsistence claims.
Oct 11	Oral arguments presented regarding punitive damages remand.
Nov-Dec	Payments from the Supplemental Claims Fund, Compensatory Damages Fund, and the Compensatory Interest Fund are made to claimants in the Cook Inlet Salmon Drift Net (S03H) and Cook Inlet Salmon Set Net (S04H) fisheries. Payments to the remaining oiled salmon fisheries in Cook Inlet, Chignik, Kodiak, and Prince William Sound occur over the next few months.
Dec 9	Judge Holland reduces the punitive damage award from $5 to $4 billion plus interest (Order 358), but states that the $5 billion award was constitutionally permissible, although the Court of Appeals decision required him to lower the otherwise valid award. Exxon plans to appeal.
2003	
Apr	Distribution of supplemental claims, compensatory damages, and interest on compensatory damages continues; processing of claims continues.
Jun 12	Appellate briefing begins to the Ninth Circuit regarding $4 billion punitive damages award.
Jul 11	Tender claims settled short of September trial.
Aug 22	Punitive damage award is remanded in light of *State Farm v. Campbell.*
Sept	PAC has ruled on over 1,000 appeals. By the end of September, there had been an initial payment to each of the Round 1 oiled salmon fisheries. Since that time, the EQSF has been focusing on releasing "held" checks, and completing payments to lien agencies.
2004	
Ongoing	Distribution of supplemental claims, compensatory damages, and interest on compensatory damages continues.
Jan 28	Judge Holland approves punitive damage award of $4.5 billion plus $2.3 billion in interest to the Plaintiffs (Order No. 364), and states that the $5 billion award is constitutionally permissible. Still, Judge Holland is obliged to reduce the jury verdict of $5 billion as per the previous mandates of the Ninth Circuit.
Jan 29	Judge Holland sets the Plaintiffs' lawyers fees at 22.4 percent of the punitive damages recovery. The lawyers, however, will not be paid their share of the punitive damages until the litigation, including all appeals, is complete and the claimants have been paid.
Feb	Exxon appeals to the Ninth Circuit.
Jun-Nov	Briefing to Ninth Circuit Court of Appeals filed.
2005	
Ongoing	Distribution of supplemental claims, compensatory damages, and interest on compensatory damages continues.
Sept	Plaintiffs' file a motion requesting the Ninth Circuit set a date for oral argument.
Nov 30	Ninth Circuit Court of Appeals schedules oral argument for January 27, 2006.

2006	
Jan 27	The oral argument regarding the appropriate level of punitive damages to assess against Exxon Mobil Corporation is submitted for decision to the U.S. Court of Appeals for the Ninth Circuit.
Dec 22	The 9th U.S. Circuit Court of Appeals reduces punitive damages from $5 billion to 2.5 billion.
2007	
Jan	Exxon Mobil Corp. files a petition asking the Supreme court to review and overturn a $2.5 billion punitive award.
May 23	The appeals are denied.
Aug 20	Exxon filed its petition for a writ of certiorari with the US Supreme Court.
Aug 29	Plaintiffs filed a conditional cross petition for a writ of certiorari. Exxon files an appeal for a hearing by the Supreme Court; the Supreme Court subsequently agrees to rule on the legality of the $2.5 billion punitive damages awards.
Sept 21	Plaintiffs filed its brief in opposition.
Oct 1	Exxon filed its brief in opposition to Plaintiffs' conditional cross petition.
Oct 9	Plaintiffs filed its reply brief for a conditional cross petition.
Oct 12	Exxon filed its reply brief in support of its petition for a writ of certiorari.
Oct 26	US Supreme Court conference to review petitions to issue an order to grant or deny them.
Oct 29	US Supreme Court granted in part the petition for writ of certiorari.
Dec17	Exxon filed its brief on the merits with the US Supreme Court.
Dec26	Amicus curiae briefs filed on behalf of Exxon.
2008	
Jan 22	Plaintiffs file briefs on the merits with the US Supreme Court.
Jan 29	Amicus curiae briefs filed on behalf of Plaintiffs.
Feb 18	Exxon files its reply on the merits with the US Supreme Court.
Feb 27	Oral arguments begin before the US Supreme Court.
June 25	The court rules that the punitive damages awarded by the jury and subsequently reduced by the Ninth Circuit Court of Appeals are excessive based on maritime common law. In particular, the Court holds that the punitive damages should be equal to the compensatory damages, which the Court recognized as $507.5 million. The court, however, did not rule on how much interest Exxon should pay and remanded the case back to the Ninth Circuit Court to resolve this issue.
Aug 12	The US Supreme Court officially remands the Exxon litigation back to the Ninth Circuit Court of Appeals to resolve the dispute over how much interest Exxon has to pay.
Sept 10	The Ninth Circuit issued two orders: the first is the judgment on the $507.5 million punitive damages award; the second stays the mandate pending the outcome of the dispute over interest and costs, and sets the briefing schedule for the dispute.
Sept 24	The plaintiffs' file their first brief with the Ninth Circuit Court of Appeals arguing that Exxon must pay interest for the last twelve years on the punitive damage award. The brief also argues that the plaintiffs' should not have to pay Exxon's appellate costs.
Sept	Exxon finally makes a payment of punitive damages to the Exxon Qualified Settlement Fund (EQSF) in the amount of $383,349,750. Exxon withholds $70 million based on its belief that the Plaintiffs should pay the costs Exxon incurred on appeal. Exxon also refuses to pay interest on the punitive damages.
Oct 9	The Ninth Circuit Court of Appeals scheduled oral argument on the interest and cost issues for Monday, December 15, 2008.
Oct 10	Sea Hawk Seafoods, Inc. files a motion in the Alaska District Court to vacate the Plan of Allocation. This impacts the timing of the pending distribution of the punitive damages.
Oct 20	Both parties file next round of briefs with the Ninth Circuit Court of Appeals regarding the interest on the punitive damages and certain costs.
Oct 27	Plaintiffs file their opposition to Sea Hawks' motion to vacate the plan of allocation. In the brief, the plaintiffs also urge Judge Holland to rule on Sea Hawks' motion by November 15th, so that a distribution to the ten oiled salmon fisheries, Native Alaskans, and Prince William Sound 1989 fund can be made this year.
Nov 24	Judge Holland authorizes the first distribution of punitive damages. This is a distribution to claimants

	with unencumbered claims in the ten oiled salmon fisheries, Native Alaskans, and the Prince William Sound 1989 fund. In a separate order, the Court rejects Sea Hawk's position as frivolous.
Dec	The first wave of direct deposit payments of punitive damages to claimants begins.
Dec 15	The Ninth Circuit Court of Appeals hears the oral argument on the cost and interest issues.
2009	
Jan 20	A second application for payment of the punitive damages principal is filed with Judge Holland. This application applies to the salmon fisheries in Chignik, Cook Inlet, Kodiak, and Prince William Sound. It also includes application for payment to Alaska Natives and the Prince William Sound 1989 fund. This application requests the authority to pay 5,331 claims that were not included in the first wave of payments made to these claim categories in December.
Jun 15	The Ninth Circuit Court decides that Exxon is liable for interest dating back to September 24, 1996, the date of the original judgment, at a rate of 5.9 percent. However, the court remained split 2:1 on the issue of costs. Exxon does not appeal the interest decision, but does file a petition for an en banc rehearing for reconsideration of the panel majority's decision that both the plantiffs and the defendants should bear their own court costs.
Jun 29	Exxon decides not to appeal the Court's interest decision. However, they do file a petition for en banc rehearing for reconsideration of the panel majority's refusal to award Exxon any part of its court costs.
Jul 1	Exxon pays the Plaintiffs $470 million in interest. The next steps will be for the EQSF to submit payment applications to the Court in Anchorage, and once the Court approves the payments the process of issuing checks can begin. The Ninth Circuit Court of Appeals also ruled that the Plaintiffs were not required to pay Exxon $70 million in costs that Exxon has withheld from the punitive damages judgment.
Dec	Exxon abandons appeal of $70 million and transfers money to the EQSF. Satisfaction of Judgment entered.

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Appendix B

EVOS Punitive Damages Settlement
Award Determination and Disbursement Schedule

Table B-1 Chronology of EVOS Punitive Damages Settlement Award Determination and Disbursement

Date	Ordinal	Action	Claimants Receiving	Number of Claimants Listed/Paid	Amount Paid* (gross)
2008					
Oct. 31	1st	Application	Non-Disputed Claimants (NDCs)	--	--
Nov. 24	1st	Authorization	Non-Disputed Claimants	--	--
Dec. 05 -12	1st	Distribution	NDCs in the ten oiled salmon fisheries; Native Alaskans; and 1989 PWSF	11,742	$155,642,133
2009					
Jan 20	2nd	Application	Disputed Claimants in the salmon fisheries in Chignik, Cook Inlet, Kodiak, and Prince William Sound, Native Alaskans, and the 1989 PWSF***	5,331	$62.5 million
Mar. 3	2nd	Authorization	Disputed claimants and lien-holders	--	--
Mar. 10	2nd	Distribution-1	Disputed claimants and lien-holders	--	$7 million
Mar. 17	2nd	Distribution-2	Bankruptcy trustees	--	$4 million
Mar. 23	2nd	Distribution-3	Disputed claimants subject to voluntary tax withholding	800	$8 million
Apr. 08	2nd	Distribution-4	Child support agencies	231	$1 million
Apr. 14	2nd	Distribution-5	Claimants subject to IRS withholding	--	$7.8 million
Apr. 27	1st & 2nd	Distribution-6	Disputed (resolved) claimants	124	$700,000
May 01	2nd	Distribution-7	Disputed (resolved) claimants (punitive & compensatory)	345	$1.3 million
May 22	2nd	Distribution-8	Disputed (resolved) claimants	491	$4.4 million
June 03	2nd	Distribution-9	Disputed (resolved) claimants	1,000	$11.8 million
Feb. 19	AQSF	Application	Non-disputed unoiled fishery claimants	--	--
Mar. 12	AQSF	Authorization	Non-disputed unoiled fishery claimants	2,220	--
Mar 23	AQSF	Distribution-1	Non-disputed unoiled fishery claimants	--	--
Apr. 24	AQSF	Distribution-2	Disputed (resolved) unoiled fishery claimants	486	$327,000
May 08	AQSF	Distribution	Disputed unoiled fishery claimants	261	$142,000
June 05	AQSF	Distribution-3	Disputed (resolved) unoiled fishery claimants	224	--
Mar. 25	3rd	Application	Disputed (A) and non-disputed (C) claimants	--	--
Apr. 15	3rd	Authorization	Disputed (A) and non-disputed (C) claimants	--	--
May 04	3rd	Distribution-1	Non-disputed aquaculture, Real prop. and Alaska Native Corp. claimants	585	$9 million
May 08	3rd	Distribution-2	Aquaculture associations; Cook Inlet Roe Herring Seine; Kodiak Food and Bait Herring; Kodiak Herring Seine and Combined Herring Gear; Kodiak Herring Set Gill Net and Combined Herring Gear; Prince William Sound Food and Bait Herring; Prince William Sound Roe Herring Drift; Prince William Sound Roe Herring Seine; Prince William Sound Roe Pound; Prince William Sound Wild Kelp Harvest; and Real Property claimants	1,900	$21 million

May 14	2nd & 3rd	Distribution-3	Disputed (resolved)	--	$4.6 million
June 12	3rd	Distribution-4	Disputed (resolved)	330	$3 million
June 19	3rd	Distribution-5	Disputed (resolved)	--	$2.6 million
July 2	3rd	Distribution-6	Disputed (resolved)	--	$2.5 million
July 13	3rd	Distribution-7	Disputed (resolved)	--	$2 million
July 22	3rd	Distribution-8	Disputed (resolved)	--	$1.6 million
July 24	3rd	Distribution-9	Disputed (resolved)	--	$2.0 million
July 28	3rd	Distribution-10	Disputed (resolved)	--	$2.8 million
Sept. 16	3rd	Distribution-11	Disputed (resolved)	completed	$3.8 million
May 19	4th	Application	Non-disputed area business, non-native subsistence, tender, personal injury, personal property, aquaculture, and Alaska Native Corp. claimants	--	--
July 08	4th	Approved		--	--
July 10	4th	Distribution-1		--	$4 million
June 22	5th	Application		407	$8.5 million
July 10	5th	Approved	Exhibit A claimants	--	--
July 31	5th	Distribution		--	$8.3 million
July 21	6th	Application	**Exhibit C:** Cook Inlet Dungeness Crab; Cook Inlet Misc. Finfish; Cook Inlet Shrimp Pot; Cook Inlet Tanner Crab; Kodiak Dungeness Crab; Kodiak Misc. Finfish; Kodiak Misc. Shellfish; Kodiak Scallop; Prince William Sound Dungeness Crab; Prince William Sound King Crab; Prince William Sound Misc. Finfish; Prince William Sound Misc. Shellfish; Prince William Sound Shrimp Pot; Prince William Sound Tanner Crab; **Exhibit D:** Cook Inlet Miscellaneous Finfish; Prince William Sound Shrimp Pot	--	--
Aug 20	6th	Approved	--	--	--
Sept. 28-Oct. 18	6th	Distribution		1,050	$3.7 million
Aug. 21	7th	Application	Cannery and processor workers	--	$407 million
Nov. 05	7th	Approved	--	--	--
			--	--	--
Aug. 28	8th	Application	Exhibits A,B,C-Cannery & processor workers	--	--
Nov. 05	8th	Approved	--	--	--
Nov. 24-Dec. 07	8th	Distribution-1	--	--	$268 million
Dec. 18	8th	Distribution-2	--	1,477	$16.4 million
Dec. 29	9th	Application	Disputed claimants for: Chignik Salmon Seine; Cook Inlet Roe Herring Seine; Cook Inlet Salmon Drift; Cook Inlet Salmon Seine; Cook Inlet Salmon Set Net; Kodiak Food and Bait Herring; Kodiak Herring Seine and Combined Herring Gear; Kodiak Herring Set Gill Net and Combined Herring Gear; Kodiak Salmon Seine; Kodiak Salmon Set Net; Alaska Native; Personal injury; Personal property; PWS 1989 Fund; PWS Food and Bait Herring; PWS Roe Herring Seine; PWS Roe Pound; PWS Salmon Drift; PWS Salmon Seine; PWS Salmon Set Net; PWS Wild Kelp Harvest; Real property; Non-native subsistence; Cook Inlet Misc. Finfish	1,775	$25 million
2010					
Jan. 21	8th	Distribution-3	--	335	$5 million

Jan. 22	9th	Approved	--	--	--
Feb. 4	9th	Distribution-1	--	597	$6.68 million
Feb. 12	9th	Distribution-2	Bankruptcy trustees	540	$6.61 million
Feb. 19	9th	Distribution-3	State of AKs Division of Investments	160	$4.41 million
Mar. 26	9th	Distribution-5		1,000	
Jan. 29	10th	Application	Includes claimants in all categories who owe money to the IRS, but have no other impairment, and those who have resolved previous impairments	3,600	$28 million
Feb. 17	10th	Approved	--	--	--
Mar. 19	9th and 10th	Distribution 9th-4 Distribution 10th-1	--	1,751	$8.25 million
Mar. 26	10th	Distribution-2	Disputed claimants with mandatory or voluntary withholding applied to their claims	2,600	$11.6 million
Apr. 05	10th	Distribution-3	--	1,100	$1.8 million
Apr. 09	10th	Distribution-4	--	500	$1 million
Apr. 16	10th	Distribution-5	--	700	$4.135 million
May 10	10th	Distribution-6	--	1,500	$6.453 million
Mar. 17	11th	Application	Disputed claimants with a single impairment and who have resolved previous impairments since the last application	1,300	$24 million
Apr. 13	11th	Approved	Area businesses; Chignik Salmon Seine; Cook Inlet Roe Herring Seine; Cook Inlet Salmon Drift; Cook Inlet Salmon Seine; Cook Inlet Salmon Set Net; Kodiak Food and Bait Herring; Kodiak Herring Seine and Combined Herring Gear; Kodiak Herring Set Gill Net and Combined Herring Gear; Kodiak Salmon Seine; Kodiak Salmon Set Net; Alaska Natives; Personal injury; Personal property; PWS 1989 Fund; PWS Food and Bait Herring; PWS Roe Herring Seine; PWS Roe Pound; PWS Salmon Drift; PWS Salmon Seine; PWS Wild Kelp Harvest	--	--
May 14	11th	Distribution-1	--	230	$800,000
May 21	11th	Distribution-2	--	1,050	$8.75 million
June 16	11th	Distribution-3	--	1,650	$13.975 million
May 24	12th	Application	Disputed claimants with multiple impairments, and those who have resolved impairments since the last application	781	$10 million
June 17	12th	Approved	--	--	--
June 28	12th	Distribution-1	--	200	$533,000
July 16	12th	Distribution-2	--	400	$7.12 million
Aug. 10	12th	Distribution-3	--	225	$1.7 million
July 20	13th	Application	Disputed claimants with multiple impairments, and those who have resolved impairments since the last application	667	$8.1 million
Aug. 06	13th	Approved	--	--	--

Sept. 08	13th	Distribution-1	--	400	$5.099 million
Oct. 05	13th	Distribution-2	--	400	$5.072 million
Aug. 17	14th	Application	Disputed claimants with multiple impairments, and those who have resolved impairments since the last application	597	$6.4 million
Sept. 13	14th	Approved	--		
Nov. 11	14th	Distribution-1	--	585	$6.39 million
Nov. 24	14th	Distribution-2	--	--	--
Nov. 29	14th	Distribution-3	--	--	--
Sept. 07	15th	Application	Non-disputed claimants in the Unoiled Fisheries (includes both compensatory and punitive damages)	5,728	$18 million
Oct. 06	15th	Approved	--	--	--
Oct. 29-Nov. 03	15th	Distribution-1	--	5,728	$18 million
Oct. 14	16th	Application	Final Distribution	Pending	Pending
Nov. 12	16th	Approved	--		
Dec. 14	16th	Distribution	--	24,120	$98.765million
Date	**Ordinal**	**Action**	**Claimants Receiving**	**Number of Claimants listed/paid**	**Amount Paid***
2011					
Jan. 20	17th	Application	Claimant listed on Exhibits A-F (Disputed claimants)	4,118	$7.427 million
Feb. 11	17th	Approved	--	--	--
Feb. 22	17th	Distribution-1	--	771	$3.165 million
April 08	17th	Distribution-2	EQSF completes issuance of 17th app. payments	3,300	$4.082 million
Feb 24th	18th	Application	Disputed claimants with a single payment that must be made to the IRS	8,366	$9.76 million
Mar 21	18th	Approved	Claimants listed on exhibits A-D±	--	--
April 20	18th	Distribution-1	--	728	$2.044 million

*Judge Holland authorized an attorney's fee of 22.4%. Therefore claimants should receive 77.6% of the gross amounts that are listed in court documents. ** Includes crab, other shellfish, roe herring seine, and salmon fisheries; personal and real property damages, and personal injury. *** NATV, NOOS, F00E (PWS Fund), S01E, S03E, S04E, S03H, S04H, S01H, S01K, S02K, S04K, and S01L

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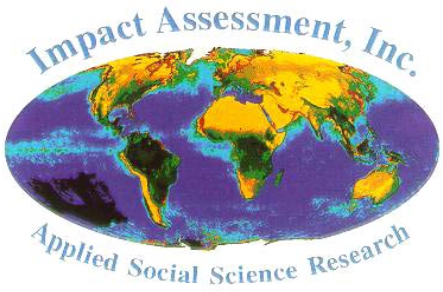

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The Department of the Interior Mission:
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The U.S. Department of the Interior protects America's natural resources and heritage, honors our cultures and tribal communities, and supplies the energy to power our future.

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