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IMPACT ASSESSMENT INCORPORATED

**SOCIAL AND PSYCHOLOGICAL IMPACTS OF THE
EXXON VALDEZ OIL SPILL**

**THIRD INTERIM REPORT FOR THE OILED MAYORS STUDY OF
THE ECONOMIC, SOCIAL AND PSYCHOLOGICAL IMPACTS
OF THE *EXXON VALDEZ* OIL SPILL.**

August 13, 1990

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INTERIM REPORT #3

SOCIAL AND PSYCHOLOGICAL IMPACTS OF THE EXXON VALDEZ OIL SPILL

For the:

**Economic, Social, and Psychological
Impact Assessment of the
Exxon Valdez Oil Spill**

Prepared for:

**Oiled Mayors Subcommittee
Alaska Conference of Mayors**

Prepared by:

Impact Assessment, Inc.

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August 13, 1990

The Honorable Robert Brodie
Mayor
City of Kodiak
710 Upper Mill Bay Road
Kodiak, Alaska

Dear Mayor Brodie:

Please find attached the third of three interim reports scheduled for this project. This third report, *Social and Psychological Impacts of the Exxon Valdez Oil Spill*, presents preliminary information about social and psychological impacts in 22 communities affected by the oil spill and cleanup. The report is based on data from a survey of 596 households; over 150 interviews with community leaders, mental health professionals, and social service providers; analysis of statistics regarding the provision of municipal and social service services; and, observations by IAI field staff. While communities experienced common types of impacts, the particular configuration of those impacts was unique to each community depending on exposure conditions, the availability of social resources, and socioeconomic circumstances. Consequently, the body of this report is organized by geographical region with discussion of specific communities within each region.

This report opens by discussing the meaning of social and psychological impacts to clarify the types of phenomena presented in the report. Then we briefly review aspects of the oil spill and affected regions that contributed to the distribution of social and psychological impacts within communities. The following section provides a preliminary overview of findings from the household survey. A more thorough analysis of the survey and its relationship to other study data is a complex and ongoing task that will receive more attention between now and completion of the final report.


Importantly, social and psychological impacts are discussed throughout the report at both the household and the community level of analysis. The relationship between these two levels of analysis is straightforward, but significant. The availability of community resources such as social support were important for helping individuals and households cope with the impacts from the oil spill. Consequently, when, for socioeconomic, cultural, or other reasons, the oil spill placed community resources in jeopardy, individuals and households were exposed to greater risk because these community resources are unavailable or inhibited. Throughout this report the intent is to summarize how the entire community was affected and how the community responded. This is important information for analyzing the impacts experienced by households, local governments, and private sector businesses.

We would also like to call your attention to our emphasis on the cleanup effort itself as a source of immediate impacts in the affected communities. The cleanup was a major disruptive force in many communities affected by the spill. The infusion of large sums of cash and economic opportunity into communities resulted in feuding and conflict that altered interpersonal relationships and social networks. In relatively small scale communities, such alterations had major consequences for social support, consumer behavior, and other socioeconomic patterns. But an examination of the cleanup activities as a source of impacts also has significant long term implications for communities which may have been masked by the more immediate effects. For example, longer term concerns about the uncertainty of fishing are only now beginning to surface for some individuals because previously they were masked by the need for income that was foregone because of closed fishing seasons. The immediate need to replace this income, and the opportunities presented by the cleanup, thus concealed longer term concerns about the ultimate viability of fishing.

In this report we present descriptions of "what happened" in each community and at the same time offer some interpretation of the "hows" and "whys" in each case. The interpretations we offer are preliminary and will require further work as we develop the information collected. This caution is required since a full understanding of the impacts experienced by the regions and specific communities requires extensive consideration of all of the data collected in this project.

If you or any of the Oiled Mayors have any questions regarding this report, please contact me at your convenience.

Sincerely,



John S. Petterson, Ph.D.
President

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EXECUTIVE SUMMARY

This report is the third in a series of three interim reports prepared under contract to the Oiled Mayors. It contains a preliminary yet comprehensive account of the social and psychological impacts from the *Exxon Valdez* oil spill for the communities in the Oiled Mayors' study area.

Data for this report come from two broad sources: a household survey administered in a subset of the study communities; and field interviews conducted in all 22 communities over a four month period in the winter and spring of 1990. The household survey was administered to 596 randomly selected individuals from 11 affected, and two unaffected (control) communities. The survey addressed a variety of areas related to individuals' personal experience of the oil spill and cleanup activities. Included in the survey were questions about: exposure to the spill and cleanup; impacts on subsistence activities, employment, social relations, and physical health; and three psychological scales measuring anxiety, Post Traumatic Stress Disorder, and depression. A selection of descriptive statistics from the household survey is presented in this report but we stress that the findings are preliminary only. However, the household survey data clearly indicate the oil spill was a major event for many respondents, one that has affected their lives and communities in complex ways. The data also suggest many in this study expect the effects from the oil spill and cleanup to continue well into the future.

The fieldwork conducted for this report involved interviews with key community leaders, municipal department heads, and other citizens regarding impacts from the oil spill and cleanup. In addition, quantitative data on service use from municipal departments and providers of social services (such as police departments, fire/EMS departments, public works departments, mental health clinics, and hospitals) were collected and discussed with informants whenever possible. These data were used as indicators of two types of impact: demand on the department itself (to enhance and contextualize findings from the first interim report which analyzed the impact of the oil spill on revenues and expenditures from local jurisdictions); and the magnitude of social upheaval in a community. For example, an increase in rates of various crimes following the oil spill would signal that police department resources were strained and that the community experienced some degree of destructive social behavior and community unrest.

While the combination of impacts was unique in every community, findings from the field interviews and analysis of quantitative data indicate that most municipalities were extended beyond capacity. The crisis of the oil spill and cleanup was a source of additional work for city and Tribal government employees. In many cases, grant applications and projects were deferred because energy was concentrated on oil spill-related matters. Exacerbating the additional workload was the loss of some personnel to cleanup employment with VECO and NORCON who attracted employees with disproportionately high wages. The short term impact of this phenomenon was particularly devastating to the small villages where each person's contribution to the functioning of the community was vital.

It is also apparent from analysis of the quantitative data that the incidence of destructive behavior increased in many communities following the oil spill. Examples include increases in Driving While Intoxicated (DWI) arrests, jail bookings, misdemeanors, requests for emergency medical services (EMS), visits to mental health clinics, and admittances to women's shelters. In many communities where data were not available because records could not be maintained during the cleanup period, numerous informants attested to the atmosphere of unrest, confusion, greed, and sadness which prevailed in the months following the oil spill.

The existence of a number of ongoing, long term impacts also emerged from the fieldwork data. Uncertainty about the future was a common theme among individuals from many communities and sectors of the economy. Informants from subsistence-based communities expressed concern about long term impacts to their food resources which are critical to both health and cultural viability. While some commercial fishermen profited during the summer of 1989 by leasing their boats to Exxon, all were concerned about the ultimate effects of the oil on the food chain and the survival of a way of life that was typically more important than short term profit. Even in the communities of Kenai and Soldotna, where the immediate chaos experienced in most other communities was absent, people expressed concern about the future of their largely oil- and gas-based economy. They felt that the oil spill, and its widely publicized impacts, might trigger a legislative backlash against the oil industry rendering exploration in Cook Inlet unprofitable. Finally, Native Alaskans in a number of communities commented that the high wages expanded their expectations of earning and buying capacity. The following quote from a resident of Larsen Bay is representative, "The changes might not be immediately noticeable, but the money that people got changed their expectations, changed their perceptions of possibilities, what they could do, their perception of opportunities, what they were worth, etc. . . ."

The duration of these impacts on community social relations and on the individual are unknown at this time. But their prevalence suggests that many will be important long term features of the social landscape.

PURPOSE, ORGANIZATION AND FRAMEWORK OF THE REPORT

This purpose of this third Interim Report is to describe preliminary information about social and psychological impacts in communities affected by the *Exxon Valdez* oil spill and cleanup. The report is based on data collected by (1) a household survey of about 596 households in 12 affected and 2 control communities; (2) interviews with community leaders, municipal department heads, and citizens as well as providers of psychosocial services in more than 20 affected communities and organizations; and (3) examination of compiled statistics regarding the provision of psychosocial and emergency services to the affected communities during 1989 and previous years. This report first constructs a working definition of the ideas of social and psychological impacts and presents a discussion of why these are potentially important aspects of events such as the *Exxon Valdez* oil spill. Next, there is a discussion of existing community characteristics and circumstances of the oil spill and cleanup that provide the backdrop for understanding the occurrence of social and psychological impacts. Then we briefly review the different data types used as a basis for the Report, including an brief overview of preliminary findings from the household survey. The final sections of the report discuss community-specific social and psychological impacts and responses. These community-specific presentations are organized by regions which were constructed for descriptive and analytical purposes.

The structure of this report as well as our entire examination of oil spill-related impacts is guided by a framework initially presented in the Research Design for this study. This framework characterizes communities as having three components: local government, private businesses, and households. This particular use of the idea of "community," specifies dimensions of economic and social functioning that are susceptible to impacts from an event such as the *Exxon Valdez* oil spill. In everyday life these dimensions of community intersect and overlap as they do when an external event, such as the oil spill, affects a community. For example, household impacts affect local government and businesses and vice-versa. However, for purposes of description and analysis we have, in the first two Interim Reports, described fiscal impacts to local governments and economic impacts to private sector businesses as distinct and non-interactive with one another and with household impacts. In this third Interim Report we discuss household level impacts, as indicated by results from the household survey, as separate from other consequences of the oil spill and cleanup. However, we also begin to examine the intersection of different elements of community and especially the experience of impacts at the community level. In these discussions the concern is with the integration of individuals and households into overlapping social networks (e.g. friends are often work associates) and into intersecting institutional forms (e.g. business, household and local government). In these discussions we begin to bridge from our presentation of each individual element of community to presentations of community level impacts which are interactive.

Although brief and preliminary, our attention to this community level of analysis is important. Research about disasters from Erickson's study of the Buffalo Creek flood (Erickson, 1976) to Shkilnyk's (1985) examination of Ojibwa exposure to mercury poisoning suggests that the "availability" of the resources of a community to its members can inhibit or buffer the psychosocial effects of disasters. From these works, as well as research about natural and man-made disasters (Edelstein, 1988; Drabek, 1986), it can be inferred that the more community level functioning is disrupted, altered or destroyed, the greater the likelihood that social and psychological impacts will occur. Consequently, we examine community level impacts to understand the social processes and structures that influence adaptation to the demands presented by the oil spill and cleanup. Specifically, these issues are addressed in community-by-community descriptive summaries of impact types and concerns. We also examine the response activities and capabilities of communities since there are lessons to be learned from understanding if and how communities responded to the demands resulting from exposure to the effects of the oil spill and cleanup. This discussion of response efforts develops issues such as: characteristics that may predispose communities to or protect them from social and psychological impacts; interactions with outside groups agencies which might buffer impacts; and access to resources that either enable or inhibit response capability.

It should be emphasized that the initial data collection specifications for this study mandated a broad range of data was to be gathered within a relatively narrow time frame. This necessarily results in an overview perspective for the regions as a whole as well as for the specific communities included in the study. Furthermore, the emphasis on breadth also results in limited sampling of specific risk groups within particular communities. An advantage of this data collection approach is that casts a wide net and results in information for community-level analysis. Such analysis aids in characterizing the over-all "health" of a community as affected by the *Exxon Valdez* oil spill as well as providing a broad understanding of impact types. There are disadvantages to this approach. One is that time and scope limit the identification of the full range of impact types and another is that this approach is likely to under-represent the degree of impacts because there is no concentrated look at specific risk groups. Consequently, we emphasize that the findings in this report more than likely under-represent the severity and breadth of impacts experienced in the affected communities.

DEFINITIONS AND CHARACTERISTICS OF SOCIAL AND PSYCHOLOGICAL IMPACTS

Thorough elaborations of the concepts of social and psychological impacts exist in the social impact assessment literature (Wolf, 1983) and in the psychological literature about trauma and stress response syndromes (Pearlin, 1989; Horowitz, 1976). However, for purposes of this report it is useful to have some abbreviated, working definitions as a guide to the reader regarding the meaning and characteristics of social and psychological impacts.

As we use the term in this report, a "social impact" is one that disrupts or interferes with the usual patterns of interactions and meanings attributed to individual and group experience. That is the actual state of a community system is changed resulting from exposure to an external event or there are changes in the meanings attributed to patterns of individual and group experiences. For example, animosities that develop between individuals or communities because of how cleanup resources were distributed may change patterns of friendship, association, work groups, and cooperation that temporarily or permanently alter power alignments, consumer behavior, cooperation and other such interaction patterns within communities. Or, after being paid wages of \$16.69 per hour for cleanup employment, an individual's assessment of the value of his or her labor may be reevaluated and result in altered employment expectations and work seeking behaviors. In this case, the meaning an individual attributes to the value of his or her labor has changed. Implied in this definition and in these examples are several characteristics of social impacts that are both explicit and implicit in the presentation of material in this report:

- (1) a social impact results in changes that are directly related to or are induced by a specific event such as the *Exxon Valdez* oil spill;
- (2) the structure, i.e. the types or relationships among groups (e.g. power relationships) and other social elements (e.g. roles and statuses) can change;
- (3) structural changes can affect the abilities of communities to recover from an impact event or to restore the system to its pre-impact state;
- (4) alternations of meanings related to an event may be significant sources of change;
- (5) alterations in the continuity of individual and group experience are directly related to the exposure event; and,
- (6) impacts can have either positive or negative valences. That is, they can be understood as beneficial or harmful.

A "psychological impact" is a change in the usual state of individual's cognitive and/or emotional functioning that is either directly related to or induced by an event such as the *Exxon Valdez* oil spill. In this report the discussion focuses on the stress individuals, households and communities experience as well as the cognitive, emotional or behavioral changes that are directly related to the oil spill and cleanup. Specifically, the study addresses three types of psychological distress:

- (1) psychopathology directly or indirectly related to the oil spill, e.g. the experience of depression related to the event;
- (2) personal changes that are directly related to the event, but which do not result in psychopathology, e.g. feeling of anger, frustration, fear, etc...;
- (3) adverse behavioral changes that are directly related to the oil spill and cleanup, e.g. increased substance abuse, domestic violence, or criminal behavior.

Other research indicates that these three categories of impacts can be related to exposure to technological disasters such as the *Exxon Valdez* oil spill (Edelstein 1988; Drabek 1986).

These working definitions of social and psychological impacts guide this presentation of information about how communities are affected by the oil spill and cleanup. The definitions are purposefully broad to incorporate a range of individual and group experiences among the communities exposed to the oil spill and its cleanup. Importantly, these definitions also emphasize direct or induced relationships to an external event such as the oil spill. Although such broad definitions raise questions about the degree and significance of impacts (e.g., how much of a change does it take to make an important impact?), these issues are addressed by generally relying upon the informant's definitions of what is large or small and what is or is not significant.

THE IMPORTANCE OF SOCIAL AND PSYCHOLOGICAL IMPACTS

In both man-made and natural disasters there are usually economic, social, psychological, and other types of impacts. Often the economic aspects of such events are more obvious and more easily understood than social and psychological impacts. Also, in man-made disasters issues of responsibility and liability are conspicuous. Monetary impacts are often a dominant concern of everyone involved. Economic impacts are also intuitively easy to understand: capital, property, or some other monetary loss or gain affects individuals, businesses, or entire communities. Social and psychological impacts are less intuitively understood and often less readily observable by every member of a social group. Thus, such impacts are often more controversial because of disagreements about their nature or existence. Social and psychological impacts are also not associated with an obvious dollar loss or gain. The attribution of monetary costs in a disaster is more easily observed with economic impacts such as those reviewed in the two previous Interim Reports. At the same time, evidence from other natural and man-made disaster suggests that individuals and communities exposed to such events experience impacts that result in changes in thoughts, moods, and emotions that can seriously disrupt individual and collective functioning for extended periods of time (Gist and Lubin, 1989).

Social and psychological impacts are important because they can (1) decrease the quality of life in communities; (2) result in direct and indirect economic loss and (3) result in change that alters the character of a community. For example, social and psychological impacts can redirect resources, interrupt planning activity and otherwise disrupt productive activities needed to achieve continued progress in adaptation to everyday life. Whether the issue is building a hydropower plant, planning for new public facilities, paying off a car loan, or other such aspects of everyday life in the communities, attention and resources become redirected and disrupted. Momentum and continuity, not to mention actual economic resources, are lost. This has social and monetary costs as well as implications for decreased quality of life in the affected communities. A decreased quality of life itself can result in short to long term fiscal consequences because of the effort required to reestablish the directions that were disrupted by the oil spill. Lost economic opportunities as well as direct economic damage results from social and psychological impacts. Furthermore, existing social and psychological problems within communities can be exacerbated by the increased stress of coping with the event. There can be a multitude of outcomes from such situations that range from an increase in demand on services by individuals who are at risk to political conflicts that develop because of spill-related stressors. When a dynamic equilibrium within a community is disrupted, economic, social, and political pressures can emerge, changing the balance of power or structurally altering communities. Such a change can have major consequences for who moves in or out, the type and structure of economic activity, the political character of a community, and other major social dimensions if the stressors are sufficient. Although there is a tendency to emphasize the economic consequences of the oil spill, it is also important to recognize that social and psychological impacts can result in sociocultural changes that have quality of life implications.

CHARACTERISTICS OF THE REGION AND EVENTS AFFECTING EXPRESSION OF SOCIAL AND PSYCHOLOGICAL IMPACTS

Disasters such as the wreck of the *Exxon Valdez* require attention to the characteristics of the event that can affect the demands placed on individuals and communities, the actual process of impact occurrence, and the nature of response efforts. No two disasters are ever the same. Each event has unique elements that influence the emergence of social and psychological impacts. Among the most obvious of these are properties of the sociocultural environment of the disaster as well as the characteristics of the event itself. Current scientific literature also suggests that an important source of variation in impacts and outcomes is attributable to differences in causation: natural and man-made disasters result in different types and degrees of impacts (Berren et al., 1989), with social and psychological impacts being more severe and lasting for longer periods of time in man-made disasters (Baum, 1987). Consequently, in this section we briefly discuss some of the unique sociocultural properties of the region in which the spill occurred as well as characteristics of the event itself that contribute to the event as a stressor affecting individuals, households, and communities.

Properties of the Affected Regions

There are at least 5 characteristics of the affected regions that are important for understanding the social and psychological consequences of the oil spill and cleanup. These characteristics are: (1) different cultural backgrounds and histories; (2) differences in socioeconomic composition; (3) involvement with or dependence upon the use of marine resources; (4) exposure to previous disasters, particularly the 1964 earthquake and tsunami; and (5) the attribution of "pristine" to the environment of Prince William Sound. Each of these characteristics and their relevance for understanding social and psychological impacts is briefly discussed in the following pages.

Differences in Culture

The *Exxon Valdez* oil spill covered a wide geographical area that ranges from upper Prince William Sound to southern Kodiak Island and west to the Alaska Peninsula area of Chignik Bay. This geographical area encompasses thousands of square miles of ocean and land, although only parts of this immense area were oiled. Some of these areas are actual community beaches or shoreline, other areas are used by community residents for fishing or other activities.

Within this wide-ranging area reside a number of distinct cultural groups of Native and non-Native origin. The Native ethnic groups represented in the affected areas include Aleuts, Alutiiqs, and Koniags. However, there are two basic commonalities among the Native groups which contrast with non-Natives. They share a unique cultural history as indigenous Alaskans in terms of their acculturation to Western society. In addition, subsistence practices crystalize many of the cultural values of Natives which don't apply to non-Natives.

There are at least two areas where the distinction between Native and non-Native is an important consideration for understanding impacts from the *Exxon Valdez* oil spill: (1) explanations of cause, effect, duration of effects, effective remedies, and the meaning of the event are likely to influence the types of impacts experienced and the character of response efforts; and, (2) the cultural history of the Native communities places them at risk for social and psychological impacts. In regards to the first issue, there is a developing literature about the effects of culture on the definitions of risk and the experience of disaster (Sutlive et al., 1986; Douglas and Wildavsky, 1982). From this literature we can infer that in Native communities the event may be defined and appraised such that impacts and response efforts are different in Native and non-Native communities. For example, Native communities generally tend to emphasize impacts to subsistence resources and concerns about health effects from consuming potentially contaminated wild foods. This emphasis is rooted in cultural values, beliefs, and practices. In regards to the second issue, since early contact with Russian fur traders, the cultural history of Native communities is one of intensive pressures for sociocultural change. Such changes, and, especially, the rate at which change

occurs, consume extensive social and psychological resources. Diversion of these resources to respond to an event such as the *Exxon Valdez* accident thus places these communities at risk because community support systems can be disrupted. The results can be either partial or extensive sociocultural disruption that has consequences for the psychosocial health of entire communities (Shkilnyk, 1985). Cultural difference is thus important for understanding which impacts individuals and communities perceive as important. Although the point may seem obvious, it is a distinguishing characteristic of how the oil spill and cleanup affects the social environment of communities.

Differences in Socioeconomic Character

Among the affected communities there are socioeconomic differences. For example, there are differences in the cultural homogeneity or heterogeneity of the populations, political and governmental organization, the structure of economies, and residence patterns. Socioeconomic characteristics are important because they emphasize structural and organizational differences that can affect the impacts experienced as well as response capabilities (Omohundro, 1982). This point needs to be made explicit since it could be incorrectly assumed that all communities are affected in the same way. However, differences in socioeconomic characteristics produce differences in impacts and response capabilities. For example, neither Cordova nor Valdez is part of an organized Borough whereas Seward, Kodiak, and some other affected communities do belong to Boroughs. The Borough structure offers assets that are not available to communities without such resources, thus response efforts of communities not included in Boroughs are different than those which are. Similarly, Cordova and Kodiak experienced economic impacts directly related to the presence of commercial fishing in each local economy. However, the composition of fishing is not the same in these communities and therefore the impacts experienced are dissimilar: Cordova's economy is based almost exclusively on salmon fishing. While salmon fishing is important for Kodiak, other species of fish diversify the industry making it less sensitive to the effects of salmon season closures. Thus, variation in socioeconomic structure and organization are important variables to consider when examining impacts and responses. Socioeconomic variation suggests that one cannot assume uniform consequences from the oil spill and cleanup.

Involvement with Marine Resources

Damage to the marine environment can impact the lifestyles, values and social processes of the affected communities. To some degree, most of the communities in the affected regions are involved with the use of the ocean and its assets through commercial fishing, harvesting wild foods for personal consumption, or recreation. These marine resources thus have varying degrees of social, economic, and cultural significance. For example, as we noted above, the basis of the Cordova and Kodiak economies is commercial fishing. To lesser

degrees Seward and Valdez also depend upon commercial fishing as an economic base, but the significance of commercial fishing in these latter economies is substantially different from Cordova or Kodiak. Furthermore, the lifestyle and quality of life of residents in these as well as other affected communities is tied to the ocean and its resources. In Native communities marine life provides important foods that are valued and preferred over "western" foods. Furthermore, the social process of taking, processing, and distributing these foods has cultural significance beyond the importance of the food consumed. That is, the use of marine resources as "subsistence" foods embodies cultural traditions and values that are central elements of cultural identity. Damage to these resources and to the ability of individual to harvest these resources thus results in potential disruption of cultural and social processes that have economic, social, and psychological significance. The degree of psychological and social impact in a community will depend, to some extent, on its reliance on marine resources.

Exposure to Previous Disasters

It is with some irony that many residents of the affected communities comment that the 1964 earthquake occurred on Good Friday, the same day as the *Exxon Valdez* ran aground on Bligh reef in 1989. Valdez, Kodiak, Seward, and many other communities in and near Prince William Sound were damaged or destroyed by either the earthquake or the tsunami that followed. Many residents of communities severely damaged or destroyed by the 1964 disaster now reside in communities affected by the oil spill (e.g. Tatitlek, Chenega Bay, English Bay, Old Harbor). This experience with the earthquake potentially affects the experience of the oil spill and cleanup impacts because, among other things, the earthquake established a historical precedent that catastrophic events can disrupt lives, cause deaths, and destroy communities. The oil spill may be perceived as threatening to individuals and communities because it is in some way compared to the 1964 disaster. The 1964 earthquake differentially affected Native and non-Native communities because, it is theorized, their history or acculturation makes them less able to cope. Consequently, Native communities were left more vulnerable to the effects of a disaster such as the *Exxon Valdez*. Individual and community coping responses were overwhelmed when the oil spill occurred. Attention to a community's previous exposure to the 1964 earthquake emphasizes variation and differences. That is, some communities may have brought forward positive adaptive experiences whereas others, especially Native communities, may experience an added risk by these events. Attention to the specific relationship of a community to the 1964 earthquake is thus considered in the analysis of the impacts and response efforts resulting from the oil spill.

"Pristine" Nature of Prince William Sound

Alaskans praise their state as a wonderment of nature in which Prince William Sound is a "pristine" jewel in a crown of environmental riches. There is almost a reverence for the beauty and "unspoiled" character of the Sound that is expressed by those who live there and those who also use it for a multitude of purposes (e.g., O'Meara, 1989; Frost, 1990). In fact, there are those who would argue that both Native and non-Native Alaskans especially value the abundant wildlife, majestic mountains, verdant forests, clear waters, and other such natural riches of the state. The natural "purity" attributed to these resources is experienced as an enrichment of individual lives that is less common in the lower forty-eight. Indeed, it can be argued that the pristine character of these natural riches marks a boundary that distinguishes Alaska and Alaskans as different, from other places where pollution, smog, and toxic contamination are issues of common concern. It is not that these issues do not exist in Alaska, but "pristine" places such as Prince William Sound stand for the essence of the Alaskan experience of unspoiled wilderness. While all Alaskans do not share in such valuations of the environment, among those who do, damage to the "pristine" quality of these resources is significant. The spill spoiled something that people define as pure and irreplaceable; something fundamental to who people are and what they value. Thus, the attribution of "pristine" to the area in which the oil spill occurred is a property which can influence how people define and understand the consequences of the spill and cleanup effort.

Special Circumstances of the Oil Spill and Cleanup

There are also particular characteristics of the event itself that influence the expression of and response to social and psychological impacts. Among these are the following: (1) classification of the event; (2) scope of the event; (3) the duration of the event; (4) uncertainty about its effects; (5) different degrees and types of exposure to the effects of the spill; (6) nature of the cleanup.

Classification of the Exxon Valdez Oil Spill: Environmental or Human Disaster?

The scientific literature makes a distinction between natural and technological -- sometimes called man-made -- disasters (Baum 1987). Natural disasters are intuitively easy to understand: tornados, earthquakes, tsunamis, hurricanes, floods and other acts of nature are examples. The term "technological disaster" is used to identify events such as the Bhopal, Chernobyl, Times Beach, Love Canal, Three Mile Island, Amoco Cadiz, and other such incidents. These are diverse events but they have certain features in common: each was the result of a sudden and powerful event caused by man; each involved the release of a potentially toxic substance capable of causing harm to people or the environment in which they live; the short and long term damages from the event have proven elusive; impacts to

human populations were usually emphasized; and the affected populations often indicated they had little control over the outcome and resolution of the event. More recently, it has been noted that technological disasters result in diverse explanations and understandings about what happened and why, often with negative consequences for social integration in an affected population (Gramling, 1989).

The *Exxon Valdez* oil spill generally fits within this conceptualization of a technological disaster. This classification of the event is relevant because the scientific literature also indicates that natural and technological disasters differ in the process and outcome of social and psychological impacts: Technological disasters usually result in more diverse and severe impacts which last for longer periods of time (Baum et al 1983). However, the classification of the *Exxon Valdez* oil spill as a "technological disaster" contains a paradox. An initial and enduring aspect of this event is that the oil spill is generally understood as an "environmental" disaster. Impacts to human and other populations living in the regions have received limited media and popular attention in comparison to that accorded damage to wildlife and to the rich natural resources of Prince William Sound, Kodiak and the Alaska Peninsula. This attention to environmental damage is fostered by concerns from communities in the region about the effects of oil on natural resources that have significant economic, cultural, and social value. However, in most communities where this study was conducted, the human impacts are a conspicuous concern of community leaders and citizens alike. There is concern about damage to the resource base, but there is an accompanying recognition that if the resource base is damaged then there is also damage to the social and cultural fabric of communities that use those resources.

The emphasis by government agencies and private corporations on damage to natural resources may have multiple explanations ranging from concerns about liability to differences in the abilities of interest groups to gain media attention and thus define the character of the event. It isn't our purpose in this Report to interpret the reasons for this emphasis, but rather to point out the effects of this classification of the event as an "environmental disaster." These effects are substantial. Significant resources were allocated by Exxon, the State, and federal governments to the assessment of and response to environmental damages. By comparison, minuscule resources were allocated to assessment of and response to human impacts. The consequence of this allocation of resources is that effects on human populations have not received the attention or the priority that appear to be indicated by the concerns and issues we have found in the affected communities.

Scope of the Event

Scope, actual and perceived, is an important feature of this and other disasters (Drabek, 1986) because it is an indicator of the resources required to respond to and cope with the demands of the event. If the event is perceived as overwhelming, individuals, households, and communities can experience feelings of loss of control or an inability to adequately

respond to the demands of the event. Also, the scientific literature about disasters suggests that the greater the scope of an event the more intense the social and psychological impacts (Myers, 1989).

By most standards the *Exxon Valdez* oil spill was an event of enormous proportions. Almost 11 million gallons of crude oil was spilled making it the largest spill in the history of the United States. The oil spread over a dispersed geographical area, with the slick reaching over 500 miles in length at one point. There are untold numbers of mammals, birds and ocean creatures that died as a result of the spill and hundreds of miles of shoreline was oiled. Furthermore, the spill closed salmon, halibut, and other fishing seasons in one of the world's most abundant and productive fishing areas. Additionally, Exxon Corporation, according to their estimations, spent over 1 billion dollars in responding to the spill. Thousands of people worked on the cleanup effort either as volunteers or as employees of Exxon's contractors, the State, the federal government or local government. In some communities large sums of money were made by a few people, whom some have called "spillionaires", while in other communities most of what was left behind was an oily residue. The use of terms such as billions, millions, "spillionaires," and thousands characterizes the spill as an event of overwhelming scope in almost all dimensions. Furthermore, the public rhetoric about the event depicts it as an accident of such immense size that no technology could effectively respond to the scope of this event. This assessment of spill-related impacts thus considers the scope of the *Exxon Valdez* oil spill as a risk factor that further increases the potential for social and psychological impacts.

Duration of the Event

Research about social and psychological responses to disaster suggests that there is a direct relationship between the amount of stress individuals and groups experience and the duration of a disaster event (Bolin, 1982). The span of the *Exxon Valdez* event has both structural and valiative properties to consider when assessing the duration of the spill and cleanup as a stressor. Specific structural features of the spill and cleanup suggest there has been no closure of the event almost 18 months after the accident: Exxon's initial summer cleanup ended September 15, 1989, Exxon's winter monitoring program, the State's winter cleanup, and the cleanup that is ongoing in the summer of 1990 provide definitive markers that the oil spill remains an issue for concern and attention. Individuals and groups also classify the event as unresolved. That is, there is an valiative feature of the oil spill in which individuals and groups act, think, and feel as if the oil spill requires continued attention and action. The spill remains a topic of frequent conversation, plans are made in response to the presence or absence of oil, and personal feelings of anger, despair, etc... related to the oil spill are part of the experience of people's lives in the affected communities. In fact, preliminary findings from the household survey indicate that a substantial proportion of households (e.g. 50% in Valdez, 60% in Cordova, 72% in Chenega Bay and Tatitlek) expect that the effects of the spill will endure for five years or more. That

is, the event did not stop and the end of last summer's cleanup nor will it end in September of 1990. Impacts from the spill are expected to continue until at least 1995. At the same time there is the wish that the oil spill would just go away. There is a need to get on with life and to bring closure to the spill, but there are also persistent structural and valuate indicators that the spill is enduring and with it the stressors that can produce social and psychological consequences.

Uncertainty Regarding Outcomes

A corollary of duration in this particular event is uncertainty. Not only do individuals experience the event as ongoing, but its effects and consequences are unknown. When the duration of an event is unknown and its outcomes are obscure, a result can be an increase in individual and household level stress. This uncertainty crosses the domains of economics, society, biology, culture and other domains of experience that can affect social and psychological impacts. This uncertainty appears to have at least two sources: (1) concerns about the recovery from or repair to individual and community lifestyles and (2) unknowns about the biological consequences of the event and their socioeconomic and cultural implications for individuals and communities who depend upon marine resources. These two sources of uncertainty are interconnected and mutually influence one another. For example, the closure of selected fishing seasons in 1989 provided a basis in experience for believing that future closures can happen if herring, salmon and other fish stocks are damaged by the oil spill. Local and expert opinion reveals uncertainty about the biological damage that has occurred. However, it is clear that damage to fish stocks and other marine resources also means damage to the economic livelihood of individuals, households, businesses, and local governments in the affected communities. Furthermore, the lifestyle that is associated with fishing is itself perceived as threatened and, therefore, at the most personal level there is the experience of uncertainty about the persistence of a valued way of living. Prolonged uncertainty across a number of economic, social, and psychological dimensions can increase the amount of disruption and stress experienced by individuals, households, and communities. Thus, this property of the event is significant because it increases the risk for the occurrence of social and psychological impacts.

Variation in Exposure Conditions

Generalizations about how each community was exposed to the effects of the oil spill and cleanup are difficult to make because exposure conditions vary across communities. This is a different situation from many other types of natural and technological disasters where the geographical scope and nature of the event results in uniform exposure routes and conditions. This is not to say that commonalities of experience do not exist: this study indicates that there are shared experiences. But focusing on commonalities minimizes the significance of the *Exxon Valdez* oil spill as an event in which there are community-specific

exposure conditions. In this Report, the emphasis is placed upon variation in exposure because it highlights the differences in demands placed upon communities and thus the potential for community-specific social, psychological, and economic impacts.

It is important to remember that many communities were not exposed to the direct effects of the oil. However, another part of the uniqueness of this event is that individuals or households did not have to be directly exposed to be affected. In this Report we suggest that the range of exposure conditions among individuals and households is mostly accounted for by six categories which are briefly outlined below. While these categories are presented as discreet entities, they are interrelated.

(1) Exposure through direct oiling of community shorelines. Examples of this category are Chenega Bay, Seward, and Larsen Bay which were directly oiled in contrast to Valdez, Cordova, and Akhiok which were not.

(2) Exposure through oiling of subsistence or commercial fishing areas. Although Corodva, Tatitlek, and other such communities were not oiled, they are exposed to the effects of the spill because important commercial fishing or subsistence hunting and fishing areas were exposed to direct oiling. The degree of this exposure also varied, but this category emphasizes that individuals and households can be directly impacted by the spill in the absence of oiled shorelines in the community.

(3) Exposure through oiling of geographical areas or wildlife that have personal or cultural meaning. Although a community may not have received direct oiling, and fishing or subsistence areas may not have been oiled, places of personal or cultural significance may have been damaged. For example, in Valdez there were individuals who expressed considerable concern regarding the damage to places in the Sound that they value for aesthetic reasons. In Native communities there are sites of cultural significance damaged by the oil. Then there is the damage to the ocean itself that is of fundamental importance to Native peoples in the affected communities. Damage to such places exposes individuals and households, if not entire communities, to the effects of the spill.

(4) Exposure through participation in the cleanup. The cleanup itself was a diverse experience. Some individuals had minimal exposure to the oil and its consequences while those on the front lines of the cleanup effort were exposed to extensive death and destruction of wildlife and damage to shorelines (Davidson, 1990). The cleanup itself was a major source of impacts because of the hours many individuals and families worked, the money they made, and what they did with it. This point will be

developed in the remainder of this Report as well as in the Final Report. However, at this point our concern is to point out that participation in the cleanup was a significant route of exposure to the effects of the oil spill.

(5) Exposure to the economic consequences of the oil spill or cleanup. Economic damages or gains resulting from the oil spill is an important source of exposure experienced by many individuals, households and communities in the affected regions. Lost income from not fishing, employment in the cleanup, business changes, and rearranged economies can be sources of stress and an exposure route for individuals and families in the affected communities.

(6) Exposure through social processes. The pervasiveness of conversation, visual images and other reminders of the spill in the social environment of the affected communities resulted in exposure to the effects of the event. The oil spill was a topic of many community meetings, pervasive media attention, and the substance of conversations among friends and families for months. Often, as some of our informants indicated, the only way to "get away from the spill" was to travel outside of Alaska although even then it was hard to leave behind because of questions and attention by friends or relatives about the spill.

These six categories of exposure to the effects of the spill are not intended to be exhaustive. They are important examples of individuals, households, and communities became exposed to the effects of this particular event even when not directly exposed to the oil itself.

The Cleanup as Impact

In many types of natural and technological disasters, impacts are typically the result, directly or indirectly, of the disaster event itself. But in the case of the *Exxon Valdez* oil spill the cleanup has been an important source of social and psychological impacts. In fact, during the first year of the spill it could be argued that the cleanup was a major stressor requiring intensive coping resources of individuals, households, and communities in the affected regions. There are at least three properties of the cleanup that make it a source of potential disruption:

(1) The scope of the cleanup effort overwhelmed many communities. At one time Exxon's contractors employed more than 9,400 Alaskans from the affected communities and elsewhere. Often, this brought to communities numerous outsiders seeking employment with the cleanup effort. Coping with this influx of new people

presented its own problems as we discuss in more detail elsewhere in this Report. Approximately 2,000 boats that would otherwise have been involved in commercial or subsistence fishing were also under contract to Exxon. Usual local government activity was suspended in some communities to respond to media, Exxon, VECO, and other demands. In some instances local businesses redirected their focus to supporting the cleanup and in other instances they were unable to continue with normal business operations because of the cleanup. Thus, at a number of different levels of community, the sheer size of the cleanup effort disrupted usual routines and depleted materials and resources that would have been used otherwise. Coping with such a large scale event can consume resources from other social and psychological processes with the result being the emergence of cleanup related impacts.

(2) The "cash spill" by Exxon and its contractors resulted in the infusion of large sums of cash into local communities that altered economic patterns as well as expectations about the worth of individual labor. Exxon and VECO claim that well over a hundred million dollars was spent in purchasing supplies and services for the cleanup and there was also an extensive influx of cash to individuals who worked directly for VECO or Norcon or leased boats and skiffs to Exxon. Such an infusion of cash is itself potentially disruptive to the relatively small scale economies in the affected communities. However, in some communities the issue of participation in the cleanup is a source of value conflicts, with some households assuming a "moral" stance that taking Exxon's money was improper and others viewing it as an opportunity to both make money and to make a positive contribution to repairing the damage caused by the oil spill.

(3) Sincerity of the Cleanup. There is a theme in public opinion that Exxon's cleanup effort was more of a public relations ploy than a sincere effort to cleanup the spilled oil. Indeed, there is often some bitterness, if not guilt, expressed by individuals who worked on the cleanup about taking money for cleanup work when in fact all many of them did was go out in their skiff and sit for days on end. One informant reported that taking money under these circumstances was a source of stress and unrest in his life. While this may be an unusual instance, the theme that the cleanup effort was not meaningful remains. The reputations of many who chose to work for Exxon, VECO, or Norcon were tainted with the same insincerity they attribute to Exxon. Often, participation in the cleanup divides communities into conflicting camps whose values clash on the principal of taking Exxon's money. The importance of this attribute of the cleanup is that it promotes further dissonance within and among communities about the meaning of the spill and thus can result in individual distress and social conflicts.

This discussion about the characteristics of the event and affected regions describes elements that need to be considered when interpreting social and psychological impacts. In the following sections we begin a more specific discussion of the data collected and the impacts experienced in the affected communities.

TYPES OF DATA COLLECTED FOR THE ASSESSMENT OF SOCIAL AND PSYCHOLOGICAL IMPACTS

Four different types of data have been collected to ascertain social and psychological impacts: (1) interviews with key community leaders, municipal department heads, and other citizens regarding impacts and responses; (2) interviews with psychological and social service providers regarding impacts; (3) compiled statistics regarding psychosocial impacts; and (4) a survey of about 596 households in 12 affected and 2 control communities. Several interviews were conducted in each study community with formal and emergent leaders about the nature of impacts experienced and the development and execution of response plans. In this report we use these interviews as sources of data regarding impact types in the specific communities. Interviews were also conducted with mental health and alcohol counselors, shelter directors, child care center directors, and other social service and mental health professionals. Information from these interviews is also used to construct the community-specific profiles that are the substance of this report. In each study community we also requested compiled statistics regarding client visits and services delivered from any mental health or social service provider for each month of the last three years. These requests met with varying degrees of success. Similarly, compiled data were requested from the state about visits to mental health center from 1987-1990, but as yet this request has not been granted. Nonetheless, some data from some communities augments the interview data for a different picture of psychosocial impacts in the affected communities. The structure and execution of the household survey as well as some preliminary findings are discussed more extensively below.

A final word is in order about the data presented and the preliminary interpretations offered in this third interim report. As was the case with the two previous interim reports, all data and findings discussed in this report should be understood as groundwork for more extensive analysis that can conform, elaborate, or rework the interpretations presented. Further analysis of the data may result in alternate interpretations. Furthermore, for purposes of analysis, we highlight differences among the affected communities in exposures and impacts, but this emphasis on differences should not overshadow the fact that affected communities experienced many common exposure, impact, and response issues. Highlighting the unique experiences of specific communities is a stage in our analysis that has suggested substantial commonalities among communities affected by the *Exxon Valdez* oil spill and cleanup. Additional analysis will elaborate the commonalities among affected communities.

HOUSEHOLD SURVEY: OVERVIEW AND PRELIMINARY OBSERVATIONS

This section will review the procedures utilized in the conduct of the household survey. This overview summarizes key features of the household survey process including: the major elements of sampling, techniques used in training interviewers, field procedures used in conducting the survey, data management, as well as coding and computer processing of the data set. In addition, a small selection of descriptive statistics will be provided from the survey data, although all findings should be considered preliminary at this point.

Sampling Procedures

The household survey utilized a systematic random sampling technique for each of the communities studied (see the following table). Sampling frames were developed in the field from a variety of resources. Not all communities had available comparable sources of household addresses. Thus, the basis of the sampling frame for each community varied, based on availability of materials in specific locale. In most instances maps indicating the location of domiciles were used if available. Included were Census Bureau tract maps, other city maps, or maps developed by interviewers and local experts. In some instances addresses were drawn from electric company billing listings. After listing the addresses of all domiciles in the community, numbers were assigned to each household in the sampling frame.

After a sampling frame for each community was completed, random samples of households were drawn at the predetermined sampling ratio using computer generated tables of random numbers. Sampling ratios were determined by desired statistical power (.90) and confidence interval (.95) for subsequent data analysis. For communities with more than 650 households (e.g. Valdez, Cordova, Seward, and Kodiak) approximately 7% of the households were selected for interviewing. Smaller communities, such as Tatitlek, Chenega Bay, Chignik, Akhiok and others, were intentionally oversampled. In most instances, smaller communities were sampled at 50% or higher ratio, depending on total number of households (see the second table, following). Replacement households, necessitated in the case of refusals or unoccupied dwellings, were also selected from the same sampling frame using a table of random numbers.

Once each household was randomly selected, a respondent within the household was randomly selected. The person to be interviewed was selected on the basis of birthdate. For all persons within the household who were at least 18 years of age, the one whose birthday was closest to the date of the interview was selected as the respondent. If, for some reason, that person was unable to be interviewed, then the person with the next closest birthdate was selected. Thus, both random selection of household and random selection of respondent within each house hold was fundamental in conducting the surveys. Because

random samples were used in all communities in which household surveys were conducted, the findings of the this research are generalizable to the entire population of each of the selected communities.

Household Survey Sample Information	
Community	No. of Interviews Completed
Seward	60
Valdez	65
Cordova	66
Tatitlek	14
Chenega Bay	11
Kodiak	119
Akhiok	11
Karluk	11
Larsen Bay	22
Chignik	31
English Bay	24
Petersburg*	102
Angoon*	60
Total Interviews Completed	596
* Non-impacted control communities	

Sample Ratios for Communities by Size	
Less than 650 Households	10% Sample
More than 650 Households	7% Sample
Native Villages: Oversampled by Contract Agreement	
Less than 100 Households	66% Sample
More than 100 Households	50% Sample

Respondent Selection Criteria

Several criteria were used to delimit sampling frames and respondent eligibility. Households had to be located within geographic city or village limits. Further, respondents had to have resided in the community for at least three months over the year preceding the study. Households were defined as domiciles that had a kitchen/cooking area and that were routinely occupied. This requirement, as well as the residency requirement, was intended to exclude transient or institutional housing facilities and persons who were not at least part-time residents of the community. In many instances, domiciles included houseboats.

Interviewing and Field Procedures

A total of 16 interviewers were used in the household surveys. The majority of interviewers were recruited from existing IAI staff engaged in other facets of this research or were recruited from the Anchorage area specifically to work on the household survey. The remainder were recruited in the communities in which interviewing was taking place. Most interviewers were either anthropologists trained in interviewing or had previous experience relevant to survey type interviewing.

Interviewers received extensive training for the household survey, irrespective of their prior experience in survey interviewing. Initial training took place in the IAI Anchorage office. The interview schedule used in the household survey was reviewed in detail with interviewers, the intent of questions was explained as were the specific rules for utilizing the interview document during interviews. Interviewers also received training in how to manage the interview situation and how to respond to questions from respondents. Because of the sensitive nature of a number of questions, particularly psychological impact scales and questions on drugs, alcohol use, and domestic violence, interviewers were given special instructions in how to administer those sections of the interview.

During the initial training sessions, interviewers were encouraged to provide feedback on the wording of questions and related issues of conducting the interview. As part of the training process, pretesting was conducted in Seward. This allowed a careful review of the instrument by those who would be administering it. Additionally, it provided the basis of a final editing of the interview protocol based on experiences of the interviewers under actual field conditions. The pretesting was also used to work out organizational structure of the field teams for the subsequent conduct of the survey in targeted communities.

Interview teams were organized under the direction of team leader and the overall interview process was coordinated by a project director at the IAI Anchorage offices. The training and pretesting insured that the field work proceeded smoothly and that the data gathered was complete and consistent across communities.

The interview protocol, in its final iteration, was a lengthy document, necessitating the extensive training procedures to insure accuracy and comparability across sites. Actual interviews took anywhere from 45 minutes to more than two hours depending on the size of the household and the number and type of questions that applied to a particular respondent. Interviewers were instructed to probe for additional information on a number of questions, sometimes resulting in extended answers from respondents. Interviewers were trained to pace the interview by giving the respondent adequate time to answer questions, and to be sensitive to "respondent fatigue."

Because of the number of communities in which interviewing was to take place, and their accessibility problems, considerable attention was given to the significant logistical problems of coordinating field teams over a wide geographic area. All house hold interviews took place between March 30 and May 15. For larger communities such as Valdez, Seward, Cordova, Petersburg, and Kodiak, interviewing took from one to two weeks. Interview teams spent anywhere from two days (Chenega Bay) to three weeks (Kodiak) completing the interviews.

The fact that the entire household survey was completed within a relatively short period of time reduced the likelihood that significant contamination of the data by events may have occurred. For example, all interviews were completed before the resumption of spill

clean-up activities, an event that might have otherwise introduced unknown effects into that part of the sample that had not yet been interviewed. In addition, having data on two communities elsewhere in Alaska that were not directly affected by the oil spill will provide a 'control' group for comparatively assessing the effects of the oil spill.

Data Management

As interviewers completed their assigned interviews in the communities, their interview schedules (questionnaires) were turned in to local team leaders. After each day's work the team leader would review the interviews for completeness, legibility, and accuracy and meet with and debrief other interviewers. Based on reviews and debriefings, interviews were field edited to insure that each booklet was ready for subsequent coding and processing. Local team leaders maintained records of completed interviews and would, in turn, report to the overall field coordinator.

A careful contact record was maintained for each interview. This record included all information regarding when the household was contacted, how often the respondent was contacted before an interview was completed, or if the interview could not be completed. In the case of households lacking eligible respondents, or in instances where persons refused to be interviewed, interviewers would report to team leaders who would, in turn, randomly select a replacement household from the sampling frame for the particular community.

As interviewing in each community was completed, the completed interview booklets were sent to the Anchorage office of IAI for final review, coding, and data entry. All interviews were again reviewed by office staff and additional editing for consistency was done prior to coding. Because of the size and complexity of the questionnaire, the additional review and editing minimized problems during the data entry phase.

Because the interview schedules contained a number of open-ended questions in addition to the usual fixed choice items, data could not be entered until coding categories were developed. To develop coding formats for the large amount of textual material that the interviews provided, a multi-stage analytic process was used.

To begin with, all answers from respondents recorded verbatim on the questionnaires, were transcribed and entered into separate computer files. This provided a complete written record of answers to the open-ended questions. Once this textual record was completed for each question, the responses were content analyzed. As major themes in the answers were identified, a series of general coding categories for each question were developed. Thus, where respondents originally gave 600 somewhat different answers to a question, a set of 10 or so broader conceptual categories were developed into which a given answer was placed. This allowed the assigning of a number (e.g. 1 through 10) to a verbal statement by the respondent, and is an important data reduction strategy.

The assignment of a numerical code to a verbal statement involves abstraction, conceptualizing, and coder judgment. To insure consistency in coding decisions, the four persons coding the open ended questions were given training sessions in use of the codes developed for the questions. Coders worked together during the coding process and as questions emerged regarding how to code a given response, it would be discussed and a mutually agreed upon code assigned. Coders would also randomly select coded questionnaires from other coders and check them both for completeness and for consistency of coding decisions. All open ended questions were pre-coded on the questionnaires to facilitate rapid data entry.

Actual data entry utilized an SPSS data entry system which provided a systematic and structured format to enter data directly into documented system files. The data entry system was programmed to allow only certain numbers to be entered for a given answer. If the data entry person entered an out-of-range value, the data entry system would not accept it. This system produced a data set that has required only a minimum of cleaning. In addition, the system produced data files ready for analysis with the SPSS statistics package.

The data set produced by the household survey is large and comprehensive, consisting of more than 600 variables for nearly 600 respondents. Because of the size of the data file, much of the analysis will be conducted on a mainframe computer.

Preliminary Findings

At the time of this writing, data cleaning and analysis is in its initial phase. Figures in this report will be limited to a few representative descriptive statistics taken from initial data runs. Preliminary data runs have been used to produce only univariate frequencies. Data to be discussed below have been arrayed by study community only, and have been selected to highlight a few key variables from the household survey. All reported percentages are based on sample sizes reported above.

Interviews began with several open ended questions intended to get respondents to think about the oil spill and to provide information on their subjective responses to the spill. One of the first questions asked: "When you think about the oil spill and cleanup, what is the one thought or feeling that immediately comes to mind?" Answers were coded into 15 categories based key words and themes in respondents' answers. Most answers involved negative emotional responses (e.g. anger, disgust, despair, fear for the destruction of the environment etc.) or critical responses (e.g. criticisms of Exxon, the state of Alaska, environmental regulators etc.) Some answers were either non-evaluative or expressions of the positive economic effects of the clean-up. For the total sample (N=596), 88% gave responses to this question that were coded as negative or critical answers.

When coded answers to the "first thought" question are looked at by community, it is clear that the majority of respondents had either negative emotional or critical responses to the spill. Percentages responding in this fashion ranged from 73% of the Akhiok sample, to 91% of those in Chignik and 94% of the Valdez respondents. The community with the highest proportion of respondents having negative/critical first thoughts was English Bay at 96%. It is, of course, not surprising that the majority of respondents from all the study sites viewed the spill and cleanup as a significant negative life event.

Examples of answers given include comments such as:

"Overwhelming vastness-the size of the spill-an overwhelming problem. I just assumed they had some way of containing something like that." (Cordova)

"It shouldn't have happened-not just the oil spill but the whole thing. It shouldn't have been allowed to get so out of control." (Cordova)

"Everything is ruined. This oil spill is one of the worst things that could ever happen." (Kodiak)

"My first reaction -- miles of beach covered with oil and dead animals. I have a grudge feeling against big companies like Exxon that exploit and take advantage by not using safety and not being more prepared." (Kodiak)

"How will they ever get this cleaned up? Will it ever go away?" (Tatitlek)

"...it was a terrible disaster and the future is unknown in terms of what was hit [by oil]." (Seward)

Respondents were next asked what they felt were some of the important changes that happened in their community as a result of the spill. Answers were coded into a number of categories including both positive changes (e.g. increased income, employment, enhanced environmental awareness) and negative changes (e.g. increased social problems, disruption of subsistence, social disruptions of cleanup). For example, 66% of the respondents in Larsen Bay said that the changes in their community were negative. This compares to 85% in English Bay, 73% in Akhiok, 59% in Karluk, 55% in Chignik, 54% in Cordova, 53% in Kodiak, and 34% in Valdez. When responses were summed for the entire sample, approximately half of all respondents felt that at least some of the changes in their

communities as a result of the spill were not desirable. As the figures here indicate, there is significant variation in respondent answers by community.

The following quotes illustrate the range of observations respondents made about the changes they saw in their communities:

"It has drifted (sic) people apart. Not the same as it was before. [We] used to help each other. Kind of different now."
(English Bay)

"Economic changes involves higher prices as well as a change in personal monetary gains. Some people made a lot of money, others didn't. It changed people. It was real emotional here for a lot of people -- it still is. People are trying to shake it and get on with things." (Cordova)

"It'll never be the same. Both environmentally and economically. People's values have totally changed, leaving what they do to make more money on cleanup. More domestic violence, alcohol, and drugs. Unsettling-distrust of others especially outsiders. I'm distressed that there's no cure." (Kodiak)

"Hunting -- they don't go out for seal and ducks or sea lion because we won't eat it. Haven't had a shellfish or bottom fish since the oil spill." (Chenega Bay).

"There was happiness because there was employment- they got jobs. Then there was a lot of stress involved in that people [became] abnormal. Before they always used to want to share [help]-now everything is money." (English Bay)

These quotes indicate that there were both objective (e.g. higher prices, more employment) and subjective (changed values, lack of cooperation) changes that respondents felt had occurred in their communities as a consequence of the spill.

In order to assess personal (as opposed to community) changes as a result of the spill, respondents were asked two related questions: "First, have you personally experienced any positive (good) changes that resulted from the spill?" This question was followed by: "Thinking along the same lines, have personally experienced any negative (bad) changes that resulted from the oil spill?" A number of respondents said that they had experienced positive personal changes, particularly as a result of cleanup enhanced income/employment.

Others were quite emphatic in denying that they had any positive changes in their lives from the spill.

In contrast to positive changes, a wider array of answers were given to the question on negative personal changes. Reported negative changes included such things as disruptions of community lifestyles/routines (from the cleanup), increased divisiveness in the community, negative personal emotional impacts, increased workplace stress, negative effects on subsistence activities, disruptions of the commercial fishing industry, and the like.

The following table presents a summary of responses to the two questions described above. The two questions, of course, are not mutually exclusive. Some respondents indicated that they experienced both positive and negative changes in their lives as a result of the spill. The data do illustrate some comparatively large differences among respondents by community of residence. Most importantly, in almost all the study communities the majority of respondents reported negative personal impacts from the spill and related cleanup disruptions. For the overall sample (N=596), 61% said that they had no positive personal changes from the oil spill or cleanup, and an almost equal proportion, 63%, said they had experienced unfavorable changes in their lives.

Another impact-related question asked respondents what effects they thought the spill would have on them in five years. The most commonly stated anticipated effects were negative economic changes (unemployment, inflation, loss of fishing) and negative environmental changes (reduction or elimination of subsistence resources). In Seward, for example, 52% anticipated enduring negative impacts of the spill while in Valdez the majority (62%) felt there would be no effects in five years. By comparison, in Tatitlek 43% expected negative spill effects in five years as did 45% of the respondents in Karluk and 50% in English Bay. While there is variation among study sites, in most instances significant numbers of residents anticipated enduring disruptions from the spill.

Personal impacts of the spill are expected to be a function of a number of different factors, including respondent variations in direct and indirect exposure to the spill. While data analysis is not yet at a point where the various statistical effects of exposure on outcome variables can be identified, variations on a key exposure variable will be possible to present in the future. Respondents who worked in cleanup related activities had the most direct exposure to oil spill. Communities with relatively small percentages of respondents who worked on the cleanup included: Seward (26%), Valdez (28%), Chignik (23%), Kodiak (16%), Petersburg (2%), and Angoon (2%). (The latter two communities are 'controls.') In contrast are communities with proportionately large percentages of cleanup workers including: Karluk (45%), Tatitlek (80%), Akhiok (82%), English Bay (83%), and Chenega Bay (64%). Overall, of the 596 respondents in the survey, 25% engaged in cleanup related work.

Summary of Personal Changes		
Community	No Positive Personal Changes	Negative Personal Changes
Akhiok	55%	55%
Angoon	95%	45%
Chenega Bay	36%	64%
Cordova	54%	82%
Chignik	80%	75%
English Bay	33%	92%
Karluk	55%	67%
Kodiak	59%	65%
Larsen Bay	45%	73%
Petersburg	78%	35%
Seward	59%	69%
Tatitlek	71%	71%
Valdez	46%	65%

Another indicator of exposure is whether respondents had property/possessions damaged or destroyed by the physical effects of the spill. In contrast to the numbers exposed through cleanup work, few experienced losses to property. For example no one in Chenega Bay, Tatitlek, or Angoon had property losses and only a nominal 2% reported losses in Petersburg. Communities with the highest proportion of respondents with losses included Larsen Bay (26%), Valdez (10%), Seward (13%), and Akhiok where 8 out of 11 (78%) reported property losses. Typically, fewer than half of those with such losses in a given community actually filed claims against VECO or Exxon for compensation. Overall, 3% of those interviewed filed claims against either Exxon or VECO.

Those who fished (commercial, sport, or subsistence) were likely to have had significant exposure to the oil spill. Persons who fished were also likely to have experienced damage to, and/or closures of fishing areas in the aftermath of the spill. Illustrative is the case of Valdez where 80% of the respondents fished, and half of them had fishing areas closed. Similar impacts were observed in other communities: Larsen Bay- 86% fished- 68% had fishing areas damaged or closed; Tatitlek- 93% fished- 79% had areas damaged or closed; Karluk- 90% fished-40% had damage to or closure of areas; English Bay-100% fished- 75% had fishing areas damaged or closed.

The spill and cleanup had various indirect effects on respondents. Time spent working on the cleanup was time necessarily taken away from other social, leisure, and work activities. Conversely, not being able to fish commercially had the opposite effect on available time for respondents. To assess respondents' time commitments, one item from the household survey asked respondents if the number of hours worked had changed since the oil spill.

In several communities there was only a modest increase in hours worked for respondents. In the non-impacted communities of Angoon and Petersburg, approximately 14% in each indicated increased working hours due to the spill. In Akhiok, 27% reported increases in the number of hours worked. In other communities the increases were more pronounced: Chenega Bay and Karluk- 73% reported increases; Larsen Bay- 59% had such increases; Valdez- 80% indicated work increases; Seward- 40% reported spill related increases in time spent working; Chignik- 23% had increased time spent working. Increases in work time could be a direct result of working on the cleanup. However, as the cleanup caused labor shortages in small businesses and community agencies in many areas, those who remained in those jobs often had to work more hours to compensate for staff shortages. For the total sample (N=596), 39% reported increases in hours worked since the spill.

One potential effect of working longer hours is in changes in the quality of social relations, both within the immediate family and with kin, friends and neighbors. To get at potential effects of the spill on the quality of such relations, respondents were asked about how their current relations with spouses, children, relatives etc. compared to those before the spill. In some instances, such as Seward, Angoon, Larsen Bay, and Tatitlek, there were few reported changes in a range of social relations. In Valdez, 28% reported improved relations with their spouse/partner since the spill, a distinct increase compared to other sites. In Akhiok, on the other hand, 20% indicated they were not getting along as well with their spouses, and 27% not as well with their neighbors. Similarly, 18% of the Chenega respondents and 25% of those from English Bay reported worsened relations with their spouses compared to pre-spill.

In addition to social relations with family and friends, a significant issue in many of the impacted communities was how well residents got along with the influx of persons who came into their communities. In most of the communities in the survey, approximately one-third of the respondents indicated that they had problems or conflicts with "outsiders." For some

communities a larger percentage reported problems: Chenega Bay- 46%; Karluk- 46%; English Bay- 58%. The fewest respondents who reported such problems resided in Chignik where 13% said that they had difficulties with outsiders. For the overall sample, 27% reported having problems with newcomers in their particular communities.

Another significant area of potential disruption from the spill was in subsistence activities. Subsistence activities were affected by the oil spill through the closure of resource areas, from obvious, visible contamination of resources, and from persons' fears about the possible contamination of foodstuffs. In addition, cleanup related work activities reduced the time available for subsistence for some respondents, reducing in turn the amount of subsistence foods they were able to acquire. Summary information on three questions from the household survey is presented below. The first question asked respondents about pre-spill subsistence activities in the household, and the second asked about post-spill subsistence activities. The third question concerned whether changes in subsistence activities were the result of the oil spill or some other factor.

As can be seen in the following table, most study communities reported a 10% to 20% drop in household subsistence activities since the oil spill. For the majority reporting a drop, the oil spill was a significant factor. The sharpest drop was in the case of English Bay respondents, where two-thirds of the households indicated a drop in subsistence, and all there attributed the reduction to the effects of the oil spill. For the entire sample (N=596), 81% had engaged in subsistence activities prior to the spill, 64% did so after the spill, and 35% said the oil spill had a direct effect on their subsistence patterns.

Changes in respondent physical health was the subject of a comprehensive set of items in the interview protocol. For this report a summary of two items will serve as general indicators of pre- and post-oil spill health status of respondents. The second table following presents summaries of the percentages of respondents reporting either 'excellent' or 'very good' health for prior to the spill and for the time period since the spill.

Subsistence Summary			
Community	Pre-Spill Subsistence	Post-Spill Subsistence	Spill Affected Subsistence
Akhiok	100%	91%	73%
Angoon	92%	92%	8%
Chenega Bay	82%	64%	91%
Chignik	94%	71%	36%
Cordova	78%	55%	39%
English Bay	100%	33%	100%
Karluk	64%	55%	55%
Kodiak	83%	63%	44%
Larsen Bay	86%	64%	68%
Petersburg	82%	79%	3%
Seward	67%	43%	43%
Tatitlek	100%	85%	79%
Valdez	62%	44%	28%

Physical Health Summary: Respondents Reporting Very Good/Excellent Health		
Community	Pre-Spill	Post-Spill
Akhiok	46%	18%
Angoon	52%	48%
Chenega Bay	46%	36%
Chignik	48%	42%
Cordova	53%	42%
English Bay	33%	13%
Karluk	55%	55%
Kodiak	61%	55%
Larsen Bay	46%	36%
Petersburg	62%	61%
Seward	63%	53%
Tatitlek	50%	36%
Valdez	60%	49%

With the exception of Karluk, at least some respondents in all communities reported a drop in health status. Statistically, the largest percentage declines are in the communities of Akhiok, Tatitlek, and English Bay. It is noteworthy that English Bay also has the lowest percentage of respondents reporting very good or excellent health. For the entire sample, 56% (N= 596) reported very good/excellent health before the oil spill and 48% reported it after the spill. Subsequent statistical analyses will attempt to identify explanatory factors for these declines in self-reported health statuses. For the total sample of 596 persons, only 7% indicated that they had health problems that were a direct result of the spill or cleanup.

In addition to measures of physical health, three psychological scales were administered to respondents. All three scales (anxiety, depression - CES-D [Center for Epidemiological Studies of Depression scale], post-traumatic stress disorder - PTSD) measure sequelae typically associated with disasters and other major life events. As with physical health

measures, only a few preliminary observations will be made from the household surveys for this report.

Respondents were first asked if they had experienced a period of a month or more in which they felt worried or anxious. For a number of communities (e.g. Seward, Tatitlek, Valdez, Chignik, Akhiok, Angoon), approximately a quarter to a third of the respondents answered in the positive to this anxiety scale screening question. The percentages reporting periods of anxiety were somewhat higher at Cordova (46%), Chenega Bay (46%), Karluk (55%) with the greatest number at English Bay (79%). These numbers compare to 23% for the total sample of 596 persons.

Those who reported one or more symptoms of anxiety were also asked if they thought their feelings were related to their oil spill experiences. The data suggest that in a number of instances the oil spill was not the primary source of these periods of anxiety for respondents. In Akhiok, approximately one-third of those who had experienced significant anxiety attributed it to the effects of the spill. In Karluk, with a relatively high number reporting anxiety, only 17% said their anxiety derived from the oil spill. Conversely in Tatitlek, of the 30% reporting anxiety, 75% said it was the result of the oil spill. In English Bay, with the highest proportion of respondents in this category, 68% attributed their anxiety to the oil spill. Only Chenega Bay had a greater proportion of respondents (80%) who said their anxieties were caused from the spill.

Post Traumatic Stress Disorder is a recently defined, multi-dimensional psychological disorder measured using one of several different scales. Key dimensions include elements of depression and anxiety, as well as sleep disturbances, hyper-vigilance, heightened startle response, intrusive recollections of traumatic events, avoidance of stimuli, emotional numbing, and flashbacks. In communities such as Chenega, Karluk, Tatitlek, Seward and Valdez, anywhere from 10 to 35% of the respondents reported one or more symptoms associated with PTSD. The actual percentages varied by the symptom in question. Generally, a higher percent of respondents would indicate symptoms such as sleep disturbances, avoidance of stimuli, and having unpleasant memories, than symptoms such as flashbacks, emotional numbing, and startle responses.

In the community of English Bay, a somewhat higher percent age of respondents reported PTSD symptoms. While in most communities between a tenth and a third indicated they had experienced a given symptom, for English Bay respondents the numbers are consistently in the 40% to 60% range for each symptom. This indicates a greater likelihood of trauma related distress in the community. Of course, the incidence of self-reported symptoms does not constitute a clinical diagnosis of PTSD. The significance of different symptom rates for respondents will be explored fully in the final report for this study.

When the PTSD index is summed for each respondent, it produces a scale with values ranging from 0 to 20, with larger values indicating more pronounced stress disorders. For

the total sample the average PTSD score was 4 and the modal category was 0. Further, 85% of the 596 respondents scored under 10 on the 20 point scale. In subsequent analyses, factors that account for high PTSD scores will be identified for that small segment of the sample with possible psychosocial disorders related to traumatic events.

The 20-item CES-D scale developed by the Center for Epidemiologic Studies of the National Institute of Mental Health provided the operational definition of depression. The 20 CES-D items were scored on a standard four-point scale (0-3). The potential range of the score is 0 to 60; our actual range was 0 to 50. A score of ≥ 16 used as a criterion for depression, based on its use in similar community surveys of the prevalence of depressive symptoms (Comstock and Helsing, 1976; Frerichs et al., 1981; Berkman et al., 1986; Kennedy et al. 1989; Golding and Burnam, 1990). Subjects with a score of 31 and above were defined as seriously depressed. Validation studies by Weissman et al. (1977) indicate that a cutpoint criterion is a sensitive but not overly specific indicator of depression; hence the scale does not provide an accurate measure of the prevalence of clinical depression. Nevertheless, its use in other studies indicates it is a reliable measure of depressive symptoms.

A preliminary analysis of depressive symptoms by community and subregion is presented in the following table. Overall, the mean CES-D score of the total study sample was 8.39 and the prevalence of scores of ≥ 16 was 16.8%. The patterns of depressive symptomatology are in close agreement with those reported in other community surveys using the CES-D. Frerichs and his colleagues (1981), for instance, reported a mean CES-D score of 9.2 and a prevalence rate of scores of ≥ 16 of 19.1% in a community survey of Los Angeles County. Berkman and her colleagues (1986) reported a mean score of 8.06 and a prevalence of scores of ≥ 16 of 16.4% in a sample of older adults living in New Haven.

Subjects living in the community of English Bay displayed the highest mean depressive symptom score and prevalence of scores of ≥ 16 and ≥ 31 . Akhiok and Chenega Bay also displayed higher mean CES-D scores and scores of ≥ 16 than most of the other study communities. Due to the high prevalence of categorically defined depression in the English Bay sample, the Kenai Peninsula subregion displayed the highest mean CES-D score and prevalence of categorically depressed, followed by the Kodiak Island, Prince William Sound, and Southeast/Chignik subregions. It appears that small, predominately Native communities (English Bay, Akhiok, Chenega Bay, Larsen Bay, Tatitlek, Karluk, Angoon) had higher mean CES-D scores than larger, ethnically mixed communities (Valdez, Seward, Petersburg). When examined in terms of community size, mean CES-D scores and rates of categorically defined depressive symptoms appeared to be higher in the small communities located in closest proximity to the spill (Chenega Bay, English Bay), than in small communities located further away from the spill (Chignik, Angoon, Karluk). Among the larger communities, Cordova and Kodiak had higher mean CES-D scores and rates of categorically defined

Center for Epidemiologic Studies-Depression Scores					
Community or Subregion	CES-D Score				
	Number	Mean	S.D.	% \geq 16	% \geq 31
Prince Wm Sound Subregion					
Chenega Bay	10	10.50	10.58	30.0	0.0
Cordova	56	9.41	9.27	23.2	1.8
Tatitlek	12	8.83	13.33	8.3	8.3
Valdez	60	4.87	5.75	5.0	0.0
Kenai Peninsula Subregion					
English Bay	23	20.17	12.61	56.5	21.7
Seward	52	7.46	8.21	13.5	3.8
Kodiak Island Subregion					
Akhiok	10	10.90	10.69	30.0	0.0
Karluk	6	8.33	6.50	16.7	0.0
Kodiak	103	9.40	9.44	18.4	5.8
Larsen Bay	17	11.82	9.68	17.6	5.9
Chignik Subregion					
Chignik Bay	25	7.04	5.17	8.0	0.0
Southeast Subregion					
Angoon	57	8.88	9.05	17.5	3.5
Petersburg	93	5.40	6.43	10.8	0.0
Total Region	524	8.39	9.04	16.8	3.4

depressive symptoms than the communities of Valdez, Seward, and Petersburg. As with the PTSD scale, further analysis will identify what role exposure to the oil spill may have had in the incidence of depression in respondents.

Related to indicators of psychological impacts were a series of questions on drug and alcohol use by the respondent as well as by others in the community. Respondents were also asked if they thought that drug and alcohol use was creating problems in their communities that were not present before the spill. The following table summarizes, by community, percentages of respondents saying that alcohol use and drug use since the spill was creating new problems in their respective communities. In a number of instances respondents said that the alcohol and drug problems weren't new, but rather that the oil spill and cleanup simply exacerbated existing problems.

Respondents Reporting Community Problems From:		
Community	Alcohol Use	Drug Use
Akhiok	9%	9%
Angoon	11%	8%
Chenega Bay	36%	36%
Chignik	10%	3%
Cordova	29%	17%
English Bay	71%	29%
Karluk	55%	36%
Kodiak	32%	27%
Larsen Bay	50%	41%
Petersburg	3%	3%
Seward	35%	32%
Tatitlek	7%	21%
Valdez	35%	25%

The next table below illustrates significant variation in respondent perceptions of drug and alcohol related problems in their respective communities. It is only in the communities of English Bay, Karluk, and Larsen Bay, that a majority felt the oil spill caused new alcohol related problems in the community. Similarly, in no community did a majority of respondents feel that drug use had created new social problems.

When responses to the questions on drug and alcohol related problems are summed for the total sample (N=596), 26% reported community problems from alcohol use, and 20% likewise for drug use. These overall figures can be contrasted with the data presented earlier to observe variations by community. From this preliminary look at these data it is clear that respondents in Karluk, Larsen Bay, and English Bay were more likely to report new alcohol related problems than were respondents in the total sample.

Summary: Household Survey Preliminary Results

This preliminary look at the household data highlights only a few of the variables for which data were gathered. The data presented were selected to illustrate indicators available in the areas of exposure, effects on employment, disruptions of subsistence, effects on social relations, psychological impacts, and respondent attitudes and opinions on the spill and cleanup. The household data clearly indicate the oil spill was a major event for many respondents, one that has ostensibly affected their lives and communities in complex ways. The data also suggest that many in this study expect these effects to continue well into the future.

This presentation of the household survey has been descriptive and is intended for introductory purposes only. Pending the completion of multivariate analyses, drawing conclusions about the impacts of the oil spill and cleanup on the social and psychological well-being of respondent households would be premature. Because no pre-oil spill data were available on respondents, relevant pre-spill information has been gathered retrospectively as part of the cross-sectional research design of the survey. For variables which pre-spill and post-spill data are available (e.g. subsistence activities, social relations), determining the effects of the oil spill on changes in these indicators will be possible. Analyses currently being conducted will assess what effect the various exposure variables have on available indicators of the social and psychological statuses of respondents.

It should be noted that our preliminary information tends to support the findings of a study conducted by the Valdez Counseling Center (VCC). The VCC study was conducted to determine the psychological impact of the *Exxon Valdez* oil spill on the residents of Valdez and Cordova. This study was a one year, three phase effort. The summary of the study (VCC 1990:22 [unpublished manuscript]) states that:

Stress reactions to the oil spill, as measured by the Frederick Reaction Index, upheld the primary research hypothesis that the oil spill was an extreme stressor that could cause emotional problems for most area residents. Cordova was found to have a higher incidence, intensity, and duration of stress as a result of the spill than was experienced in Valdez. Evidence of delayed and cyclical stress reactions was found as well as a cause and effect relationship between stress and the incidence and severity of depression. Perceived Social Support was found to be a mediating factor in Valdez but not Cordova. In spite of certain demographic similarities, Cordova was noted to represent a very different population than Valdez. Investigation of subgroups found little relationship between group membership and Reaction Index scores due to a high level of variability in individual stress reactions to the oil spill and its aftermath.

Further analysis of household survey results will allow a closer comparison with common types of measures between the VCC study and the household survey. The household survey also contains a much wider array of information that will provide a richer context for psychological impact results.

An appendix at the end of this volume presents household survey results for selected questions, by community. The information presented in the appendix focusses on a limited number of questions within the set of questions that addressed social and psychological impacts of the oil spill and the ensuing cleanup. Again, like the preliminary results presented above, it is important to note that the data from the household survey have not yet been analyzed to any degree. The information is presented to be suggestive of the type of data that will be available from the survey database.

The remainder of this report describes the salient social and psychological impacts uncovered in the course of fieldwork during the late winter and spring of 1990. There are five regional sections, each of which begins with a brief description of the economic, demographic, and social characteristics of the area. Within each regional section are chapters on the communities we have included as part of that region. The format of the community chapters are virtually identical. They begin with a short community description followed by discussions of response effort, effects on local government, changes in community, changes in way of life, effects on family, mental health, physical health (medical), and changes in personal experience.

KODIAK ISLAND: REGIONAL OVERVIEW

Kodiak Island is located in south central Alaska east of the Alaska Peninsula. The area referred to as Kodiak Island includes a group of smaller islands in addition to the city of Kodiak. The region includes the city of Kodiak, and the six Native villages of Port Lions, Ouzinkie, Larsen Bay, Karluk, Old Harbor, and Akhiok all of which are part of the Kodiak Island Borough (KIB). The borough population fluctuates between 13,000 and 15,000. The population on the island is ethnically diverse, and includes Natives of Alutic background, and immigrants from the Philippines and Central and Meso-America. The KIB administers a number of social services to the villages on the island. The Kodiak Area Native Association (KANA) provides medical and social services through the Tribal governments in each village. The Coast Guard has a base on the island which accounts for approximately one third of the population on the island.

The economy of the island is centered around commercial fish harvesting and processing. The population of the island includes many seasonal residents who live in other areas for part of the year and make their home in Kodiak in the summer months. The fishing industry employs cannery workers, crewmen, and provides a variety of jobs for local residents. Throughout this discussion, the use of subsistence foods is referred to. For the purpose of this section of this report, the meaning of "subsistence foods" includes food often obtained through commercial fishing methods, and distributed among the community for consumption, and is not limited to specific subsistence activities.

An estimated two thirds of the shoreline of Kodiak Island was oiled. The oil spread from the northern end of the island, along the west coast, and through the many passages, coves and small islands that comprise the Kodiak Island group. Oil coverage was sporadic and reached the area in the form of mousse, tarballs, and sheens.

The villages, although discussed separately, experienced many similar psychosocial impacts. The influence of outsiders in Native communities and the change in economy associated with oil spill cleanup work were disruptive to life in the villages. Many villages experienced extreme disruption of local governments and strained relationships with service providers. The introduction of additional regulations, although discussed in only a few communities, had ramifications in all communities within the region. An example of this is the introduction of the "six pack" licensing requirements as explained in the section on Port Lions. Concerns about subsistence and commercial fishing were prevalent in all communities during the field visit in the winter and spring of 1990.

The City of Kodiak

The city of Kodiak is located near the northeastern section of Kodiak Island and is the seat of the Borough. The population of the city of Kodiak is roughly 7,000. A Coast Guard base is located near the city of Kodiak and Coast Guard personnel and dependents represent approximately 3,000 residents. The economy is primarily based on fish harvesting and fish processing. Other economic activities on the island are tourism, some timber industry and governmental offices. For the purpose of this report, residents of the city and the Borough are discussed jointly and referred to as Kodiak "residents." Community members are a unique combination of Alaska Natives, and people from outside the area who have often chosen to live in Kodiak for the scenic beauty, economic opportunities, and the independent lifestyle. Residents have described the community as resilient and individualistic, yet cooperative and helpful times of need.

Response Effort

The response effort by the KIB and the city of Kodiak comprised the nucleus of response for the entire island. When citizens of Kodiak Island first heard of the *Exxon Valdez* oil spill there were a variety of reactions. During the first weeks of the spill, many citizens believed the fishing season would continue as usual. Others were adamant that the oil would reach the island and early efforts at preparation for response were initiated. A long series of events took place preceding the Exxon and VECO cleanup operations. Meetings were held daily in the city and Borough assembly chambers, and attendance was so large the meetings had to be moved to the high school auditorium. Community members took active positions and verbalized their opinions and concerns while city and Borough officials informed the public about the progress of the spill and plans for cleanup response.

Soon after the spill, the area around the city of Kodiak was physically oiled with tar balls and a local leader estimated that approximately two thirds of the entire coast line was oiled. However, in many places the oil was not visible because it would permeate the sand and become wedged under rocks.

The city of Kodiak and KIB had a mutual ordinance that put in place an emergency services organization. The plan was designed with the help of the [former] city manager of Kodiak who, in the case of an emergency, would become director of the organization and the two separate governments would disappear. Although an official disaster was not declared, the emergency services organization was functional during the summer of 1989 in response to the oil spill on Kodiak Island.

Because the city manager was out of town at the time of the spill, the finance director was appointed acting city manager. The mayors of Kodiak and the KIB worked together with the commander of the Coast Guard base to formulate plans and pressure Exxon to supply

materials and assistance for the cleanup of oil around Kodiak Island. Initially Exxon did not recognize the need for any action to protect the resources of the island. The progress of the spill was monitored by Coast Guard surveillance, air charters by city and Borough personnel, and various specialists who disseminated information to Kodiak.

acting city manager, the city of Kodiak finance director traveled with a local fisherman to Cordova to consult with officials and fishermen there to learn how the process for response was handled. Information on boat charter rates, financial matters in city government, and Exxon's overall treatment of the community was gathered and sent back to the city of Kodiak through fax.

Meanwhile, in Kodiak, the librarian was assigned the task of collecting a list of potential volunteers. A volunteer fire department collected names for volunteers, and other lists for volunteers in the community were generated. The original volunteers who signed up on those lists were often not people who became paid VECO employees. Some citizens complained that the original lists were never used by VECO in selecting employees.

The resource manager from the KIB mayor's office began setting up a command center. The center was equipped with phones, fax machines, maps, and supplies for Coast Guard, Exxon and VECO representatives. City and Borough representatives made reconnaissance flights around the island and towards Prince William sound to track the spill. Maps were produced from the Borough planning department and Coast Guard. Local residents familiar with the tides of the sea became convinced by early April that the oil would reach the island. Negotiations had been ongoing with Exxon officials for recognition of the problem, but action from Exxon officials was delayed.

By the time Exxon became involved in the cleanup plans, Kodiak had developed an involved response plan. Local fishing fleets were prepared to work on the cleanup, and had been collecting old nets and supplies to use for collecting oil out of the water. Foreign boats were on call to aid in the effort. Lists of volunteers had been generated. The Coast Guard had been working closely with Kodiak officials. Citizens had been stockpiling rags for cleanup, and plans for treatment of oiled animals were made.

A local program for the use of geotextile (also called typar) was implemented and citizens began manufacturing boom and nets with the geotextile material. Geotextile is a petroleum product that has the ability to absorb oil and allow water to pass through. The Coast Guard donated hangers for construction of the products and a local woman with her own clothing manufacturing company worked with the help of others to build geotextile products for collecting oil out of the water. The local effort was funded with help from the Borough, and a variety of methods for removal of oil from the water were developed. Much to the dismay of the local residents who were active in the geotextile movement, any use of the material was banned by Exxon.

Exxon began takeover of the cleanup operation during the third week in April. Shortly thereafter VECO arrived. One concerned citizen voiced her opinion about the early days of the spill before Exxon arrived on the scene:

When we first heard about it, it was really exciting, because our local leader, coast guard leaders, and city manager, and other people were saying, we don't care about Exxon, we don't care about anybody else, we are gonna protect our island, we're gonna do everything we can to protect our island . . . and the town was really excited, because there was something that we could do, we could unify . . .

According to several citizens, Exxon and VECO management personnel expressed little or no interest in working with the local response effort already in progress. Local fishermen and Kodiak officials had identified areas to be protected and continued to do so throughout the summer of 1989. Several community leaders and VECO employees stated that they were forbidden to work on beaches known to be oiled, and instead were sent to relatively clean areas. Many locals believe that there was an intentional effort to prevent them from working on oiled beaches. An atmosphere of exasperation, sadness, and resentment towards the VECO and Exxon cleanup effort was present at the public meetings held throughout the summer.

Citizens of Kodiak became extremely frustrated by the loss of control over protection of resources on the island. Public meetings continued and attendance was high. The city and Borough officials maintained communication with the outlying villages through a village liaison and continued to try and work with Exxon and VECO for a successful cleanup operation. The regulations and directives from Exxon and VECO officials, whose personnel changed continuously, combined with the various state and federal agencies, served to stifle the efforts of locals at "getting oil out of the water," as one activist stated.

Local Government

The oil spill placed constraints on the functioning of city and borough governments. The finance director of the city of Kodiak was active during the early weeks of the spill with response, and some additional workload was placed on the staff in that department because of phone and faxes. The KIB finance department was affected by an enormous amount of bookkeeping for Exxon-related expenditures and revenues. Billings for city expenses were reimbursed by the borough who handled most of the Exxon accounting for both governments. The Borough accountant and secretaries worked substantial amounts of overtime to keep track of Exxon records. The increased workload from oil spill-related tasks

on the KIB finance department was still continuing during the field visit in late winter of 1990. At that time, one section of an entire room was devoted to storage of Exxon-related data.

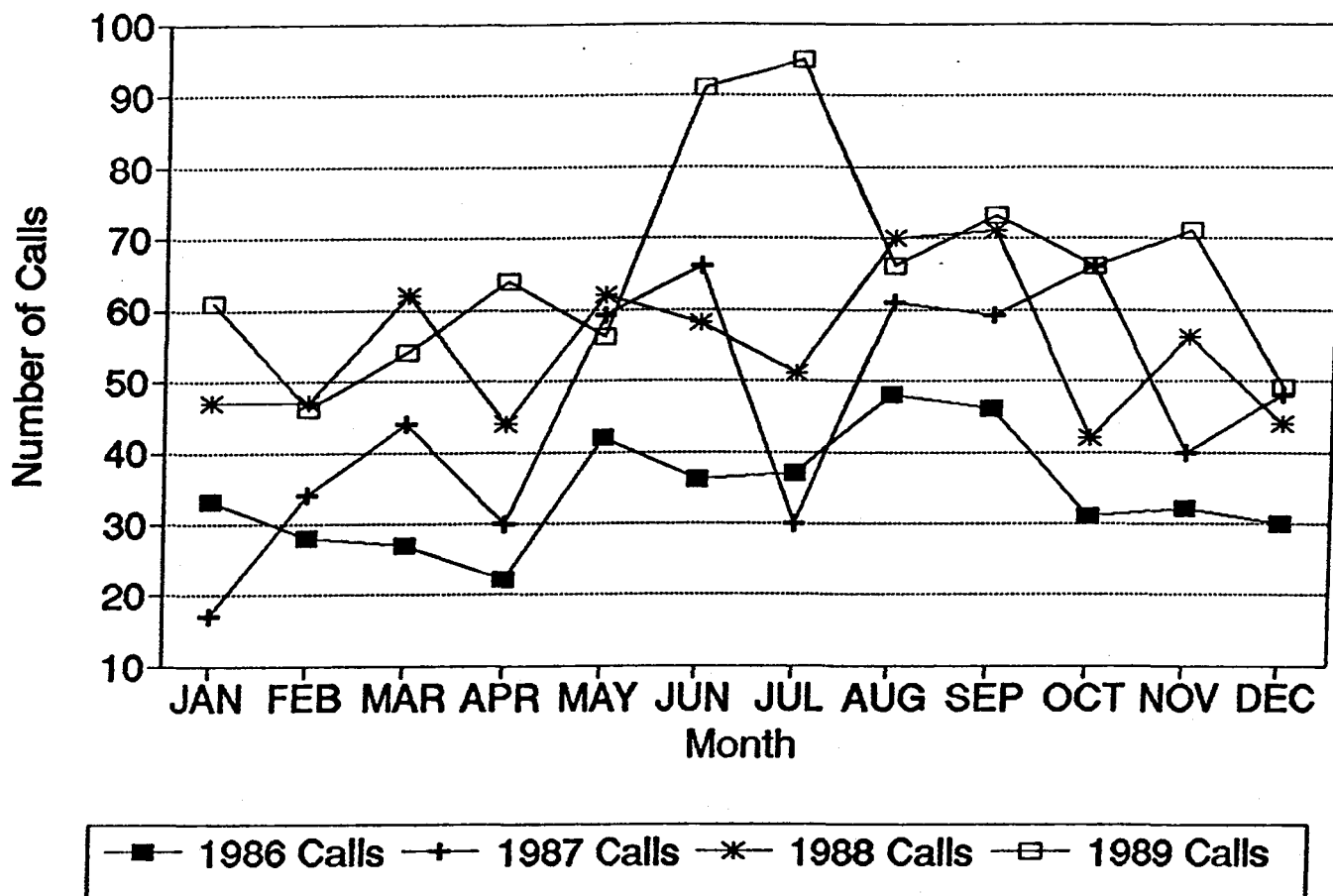
The Director of the Community Development Department (CDD) for KIB was appointed acting mayor during the oil spill when the KIB mayor was out of town. She also served as public information provider and village liaison for oil spill issues. The KIB mayor was often away in Washington on oil spill-connected business. Some planning staff at the CDD experienced an increased workload. This impact was mainly confined to secretaries due to the absence of the director. Some planning projects were delayed because there were less available staff in the Community Development Department. Two direct effects of the oil spill on the CDD were: (1) the request by residents of an outlying neighborhood for zoning compliance permits for wash racks to be used for netting and oil booms and (2) the efforts of planning associates who worked with the Department of Environmental Conservation (DEC) and other agencies to locate a site for storage of contaminated materials before they were shipped away. The CDD department also became active in assisting the villages of Port Lions and Ouzinkie with protesting an incinerator project that was proposed to be located near Port Lions. The proposed incinerator would have burned oil-contaminated waste near the village, and many residents of both Kodiak and the villages were outraged at the proposal. With the aid of Borough personnel, the project was terminated.

The city of Kodiak Fire Department was affected by decreased availability of volunteers during the summer of 1989. Most of the volunteers left the force left to work on oil spill cleanup. The additional stress on existing volunteers was evident when there were only one or two volunteer firefighters available to respond to calls, instead of an average of 5 or 6. This lower number of volunteers placed an additional workload on the paid staff in the fire department. There was an increase in emergency medical services calls in June and July of 1989 compared to the three previous years.

The city of Kodiak Police Department assigned some officers to be body guards for Exxon officials who had allegedly received threats against their lives. City police were also stationed at the public meetings which were often volatile. There was no increase in crime reported by the chief of police. However, there was a 20% increase in jail bookings during June of 1989, though it is unclear whether or not this was oil spill-related. The following two graphics refer to levels of activity for the Emergency Medical Service (EMS) and jail bookings for the past several years.

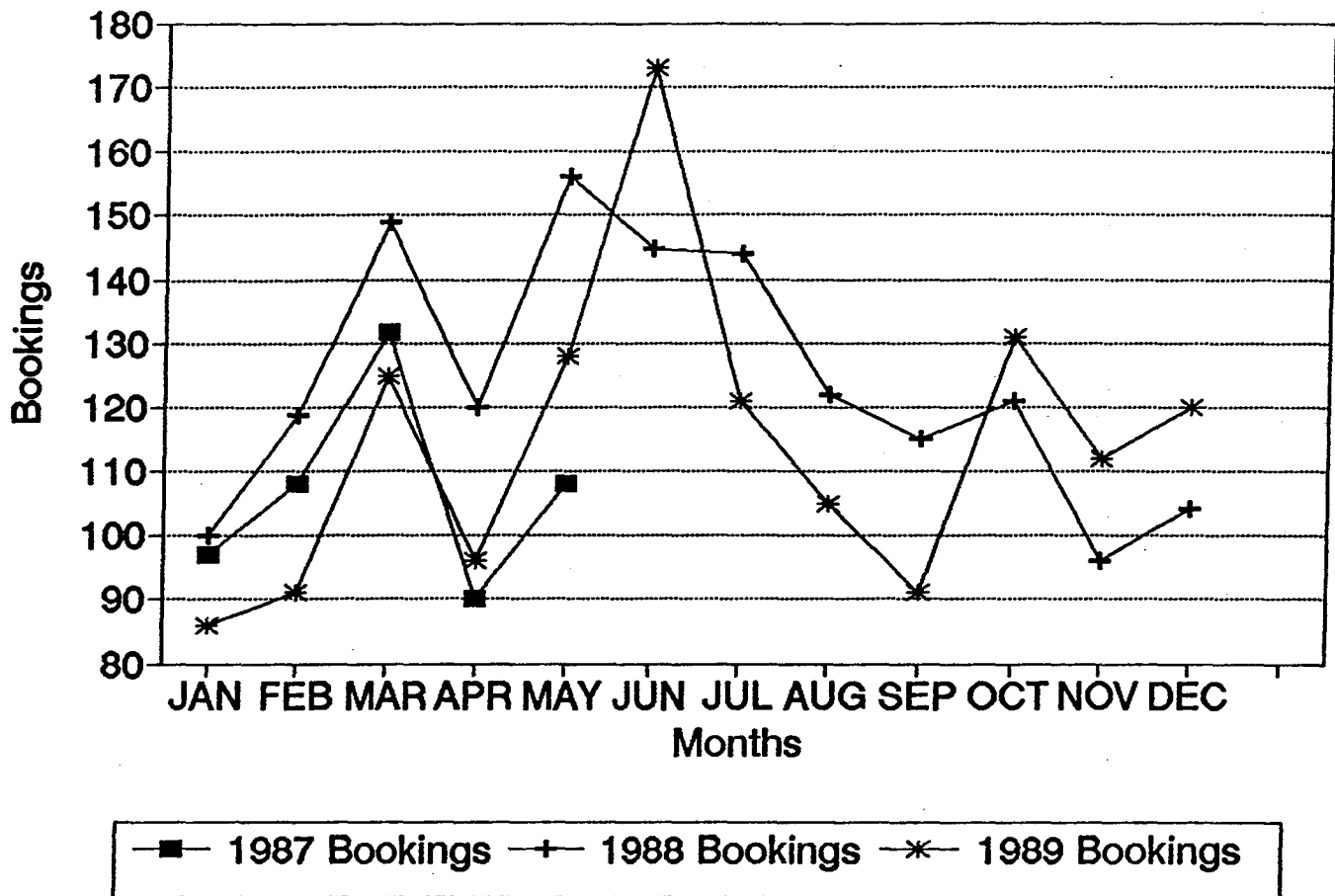
City of Kodiak, Alaska

EMS Calls, 1986-1989



Kodiak, Alaska

Jail Bookings, 1987-1989



The library was minimally affected by requests for oil spill information and temporary use of staff for manning phones at the command center, and compiling lists for volunteers, and distributing applications. The library did not experience increased activity during the summer, but there was a noticeable difference in the types of people using the service. People who used the library in the summer of 1989 were better acquainted in library use than those of an average summer. Library staff have collected "a vast amount of oil spill related material that should prove useful in the future," according to the librarian.

The KIB School District was affected by the spill in different ways. The high school auditorium was used for public meetings during the end of the academic school year and part of the summer of 1989. In the fall of 1989 there was an unusually low number of applicants for classified employees such as cooks, custodians, aides, and secretaries.

The harbormaster in Kodiak experienced some increased workload during the early stages of the spill. The harbormaster's office received phone calls concerning oil spill inquiries and the harbormaster attended public meetings. When the VECO cleanup was underway, they rented a private dock which took some of the pressure off of the city of Kodiak harbor. At first, staff worked additional hours during evenings and weekends. After the first few weeks in April, the harbor operated in a normal manner.

Both the city of Kodiak and KIB governments postponed some of their ongoing projects until after the active cleanup phase of the spill. Some of the projects have not been reinstated since they were suspended. An additional staff person was hired to work for the city of Kodiak in order to allow the city manager to spend the time and energy necessary to work on oil spill-related issues. The city mayor and the KIB mayor also spent numerous hours attending public meetings, working with state and federal agencies, oil spill-associated companies and the media. Officials from both the KIB and the city worked to negotiate claims for fishermen and cannery workers.

The KIB was involved extensively in oil spill cleanup problems and projects. The KIB supported the geotextile project and canning and distribution of salmon for the Native villages on the island. A separate division of KIB called the Kodiak Environmental Cleanup Effort (KECE) was formed and subcontracted by KIB to work on oil spill cleanup through a bounty bag program. The program offered a certain amount of money for the collection of oiled waste. Other geotextile experimental projects were conducted by KECE. The Borough operated the DEC "local response" cleanup operation during the spring of 1990, and maintained contact with the villages and DEC for the cleanup. Overall, leaders from the city and the KIB governments were active with oil spill concerns and policies during the summer of 1989, and continued their involvement throughout the time of the field visit in winter and spring of 1990.

Changes in Community

Many people of Kodiak Island pride themselves on being independent. Non-Natives as well as Natives have chosen to live or stay on the island often because of the atmosphere of closeness and friendliness as well as the independent lifestyle provided by commercial and subsistence fishing.

The feeling of closeness and community was disrupted by the Exxon and VECO cleanup operation, according to some residents. People who generally respected each other found themselves suddenly in the midst of total chaos, and displacement. Those who were actively involved in oil spill concerns felt the effects of the influence of outside control. Some individuals that were active in oil spill issues believed that the citizens of Kodiak were no longer in control of their lives and their environment.

Some Kodiak residents felt little or no affects from the spill, but others were severely affected in the way the community functioned. The Kodiak area residents began depending on the oil companies to control their own affairs. Competition among fishermen for boat charters caused cases of intense rivalry among friends and coworkers according to some local fishermen.

Although some fishermen initially signed up as volunteers, many others had been randomly selected. Many felt they were treated unfairly in the hiring process. The lack of consistency in VECO's hiring of boat charters and beach crews created dissension among many fishermen. An element of competition always existed among fishermen, but the introduction of outside control and money, with no system they considered fair for distribution of charters and claims, caused disagreements among friends within the community.

Disagreements among fishermen concerning the distribution of monetary compensation for lost fishing to permit holders and crewmen by Exxon were unresolved as late as the winter and spring of 1990. The permit holders sometimes charged that they received settlements that were less than adequate in comparison to the previous year's income. Complications with the distribution of crew shares from boat captains created resentment towards captains by crewmen. A separate organization to deal with crew members who received no shares was formed to deal with the problem. Instances of crew members who did not hold permits or receive any crew shares led to animosity towards those captains who declined to sign for their "would be" crew members. Some splits in the community occurred between fishermen who worked for the cleanup and those who did not.

Some cases of increased social solidarity evolved throughout the course of the summer of 1989. The involvement of local women with oil spill affairs led to the formulation of a group of women who call themselves "the crude women." This group of friends initially began as a group that got together as a release from dealing with oil spill activities. They attended public meetings, legislative research and lobbying, and advocacy for geotextile

technology. The "crude women" have become involved in various causes related to oil spill legislation and environmental issues. The participation of women in the oil spill cleanup activities has in some cases been a new role for otherwise less politically active women. Two of the women from the group traveled to Washington D.C. to lobby for oil spill legislation. Another member of the group has been contacted by various organizations to speak across the United States about her role in the geotextile movement and grassroots activities associated with the spill.

Other active community changes since the oil spill were an increased movement towards recycling, and the formulation of fishermen's associations. The local Audubon society took an active interest and role in oil spill concerns. Simultaneously, as factionalism in the community transpired and a sense of solidarity within the community increased. One city employee described a day for social protest:

We made a banner [Kodiak, Fighting For Our Life] out of geotextile material and hung it down at the harbormaster building, and had a big rally and did all these revolutionary things that you use to so often a couple of decades ago.

Housing in Kodiak has always been influenced by a transient population including the Coast Guard. Additional stress was placed on the rental market by the high rentals that VECO and Exxon were willing to pay. Some local residents have experienced an increase in rental rates and a decrease in availability of rental housing since the oil spill. The number of people in the community was not reported to have been more than usual, but the types of people were different.

Way of Life

The public meetings held daily presented the opportunity for individuals to verbalize their concerns and complaints. Strong attendance and participation at the meetings revealed a group of active concerned citizens. Many Kodiak residents expressed frustration with the lack of respect by outsiders toward the way of life on Kodiak Island.

Many fishermen who believed that the fishing season could open at any time did not pursue oil spill cleanup employment during the summer of 1989. They were told that the season could open on a day's notice, and many waited each day to find out if they would be allowed to fish. Waiting on land for the summer was a dramatic change in the way of life of fishing families. Men were not accustomed to staying at home, and were not interested in pursuing alternative activities in hopes that the fishing seasons would open. Some worked on chores around the home, and spent more time with their families. Other's attended daily public

meetings with hopes that they would affect the policies to be implemented and learn about the potential impacts to surrounding fishing areas.

Since Kodiak Island is a base for a large number of fishermen who fish waters outside the area, some fishermen who reside in Kodiak were not directly affected by the close of fisheries around Kodiak Island.

The transient nature of life on the island has not been changed, but the overall economic base of the fishing industry became focused on oil spill claims and cleanup jobs into the spring of 1990. Some fishermen who originally believed they were not affected often express concerns about the market price of their catch for the summer of 1990. Others spoke of a trend towards a change in the species fished. Some local guide services were concerned about the potential affect on tourism for sport fishing around the island. Uncertainty about the possible close of the fishing season at any time during the summer of 1990 was present in the minds of many fishermen during the field visit in the spring of 1990. Some of those fishermen who did not earn a substantial amount of income from cleanup jobs and charters in the summer of 1989 felt they were at an unfair disadvantage for competition with fishermen who upgraded their equipment with excess income from oil spill cleanup work in the summer of 1989.

Many of the local service-oriented jobs in local businesses underwent staffing shortages due to employees who left their jobs for oil spill cleanup employment. Restaurants and hotels were especially understaffed. The high wages introduced by the cleanup operations continued to affect service employment during the winter and spring of 1990. People who had become accustomed to the high wages earned from VECO were sometimes unwilling to apply for jobs that paid lower wages.

Some families who normally used subsistence foods had begun buying more meats at grocery stores in contrast to their typical diet of wild game and fish. An increase in the price of food at local grocery stores since the summer of 1989 was reported by some residents. This increase in the cost of food, coupled with the increased use of "store bought" foods has increased the amount of money spent on food for some families on the island.

Family

As a result of changes in the way of life during the summer of 1989, there were significant changes in family life in Kodiak. The increased workload on private business and government employees often left less time for people to spend with families and less energy to devote to family life.

The concept of having men at home during the fishing season was new to many fishing families. While this change in roles for men provided an opportunity for them to spend

time with their children, some women who did not usually work full time were away for long hours on cleanup jobs. The change of male and male roles in family structure was in some cases new to the children of such families. The lack of time at the beach for many families was a common theme when discussing family life with residents.

One mother spoke about an attempt for a family outing at the beach in the summer of 1989:

My oldest daughter went down onto the beach, and the little kids started . . . to follow her down onto the beach, and she goes, mom there's tar, and then there's another one, there's another one, and it was like ooh get off the beach, get the kids off the beach . . . we couldn't go down on the beach because there's too much tar down there . . .

Parents spoke of introducing their young children to death as they encountered dead birds on the beaches.

In some instances both parents were busy working long hours on cleanup activities and children were responsible for caring for younger siblings at home. The largest day care center in the city of Kodiak reported a decrease in attendance during the month of July of 1989, compared to previous years. The center's director cited possible reasons for the decline in attendance as the need for longer evening and weekend hours by cleanup employees who had children. Some behavioral problems were observed by supervisors in day care settings, and were believed to be related to parents who were involved with oil spill activities.

Private day care was difficult for some parents to obtain because some providers worked on the cleanup. At least one group of mothers who were active in public meetings and usually cared for each other's children found themselves without daycare.

Mental Health

The social services in Kodiak operate through a network of various agencies. Referrals to different agencies are common and an effort is made to keep communication open between the social service agencies. The agencies discussed in this section include the Kodiak Women's Resource and Crisis Center, the Kodiak Council on Alcoholism, Kodiak Island Borough Mental Health Center, and social services provided by Kodiak Area Native Association.

The Kodiak Women's Resource Center offers crisis intervention services to victims of domestic violence and sexual assault and to people who need help with personal or professional transition. The center provides shelters for victims of domestic violence and serves men as well as women who desire services. An overall decrease in the number of people using the shelter was reported by the Director of the Kodiak Women's Resource Center. It was hypothesized that the decline in use of shelters and support groups was linked to the fact that community members who worked on the oil spill cleanup were too busy to use the service. During the winter of 1989 - 1990 the Director reported that use of the shelter's support groups was related to family stress or violence associated with financial matters.

An increased number of crisis calls was reported during the summer of 1989, with many calls from women reporting first time incidents of violence. Participation in educational and support programs dropped during the summer of 1989. Staff at the center stated that rural services dropped during the summer months of 1989. The rural services from Kodiak Women's Resource and Crisis Center provide villages with consultation and education for social service and health professionals. Staff at the women's center said they were unable to contact service providers in the villages during the active cleanup phase and that people in the villages were unreceptive to help from outside agencies. There was concern among the social service providers about the family life and problems in the villages during the summer of 1989. The staff at the women's center heard there were increased domestic problems but had no way to assist with the problems without consent from village service providers who were often absent from their positions.

The types of problems that the shelter dealt with related to the oil spill were often related to stress associated with financial affairs which, in turn, affected family life. "A lot of calls where people were just scared economically, . . . what in heaven's name were they going to do with no income coming in," as a staff member reported. At least one incident of a male using the center as a resource from stress associated with the oil spill was noted by a community individual.

The Kodiak Council on Alcoholism (KCA) provides support services for alcohol and drug abuse clients and operates residential treatment programs through a facility called Hope House. KCA lost a large number of staff due to an increase of stress on the job according to the KCA Director. Night staff, support staff, and volunteers were less available with work for KCA from May to October of 1989. The KCA Director reported that the occupancy rate at Hope House was increased by approximately 10% from the summer months through the fall of 1989. Typically, most of the services provided by KCA occur between fishing seasons. Since the oil spill, the cycle changed to periods related to oil spill cleanup. A noted increase after the active cleanup phase and during the winter of 1990 was reported by KCA staff, however no statistics were provided which show trends in service needs and delivery.

Additional staff funds were requested by KCA and granted by the state. The funds were used to pay existing employees for the additional workload. An additional counselor for oil spill-related demands on services was hired in the spring of 1990. Recruiting for replacement personnel was slow during the fall of 1989, and nationwide advertisements were used to attract applicants.

The Kodiak Island Borough Mental Health Center experienced a marked increase in the number of total clients, the number of emergency visits, and the number of group counseling visits from March of 1989 throughout the rest of that year. Documented increase in client load lessened in the fall of 1989, but continued through the winter of 1990. The most severely affected component of the mental health center was emergency services. This increase can be seen in the following graph. Because of the increase in demand for emergency services, treatment for non-emergency services was shortened. Compared to prior years, the highest increase in demand for emergency services was in July of 1989. Much of the treatment provided centered around family issues according to administrative staff at the Mental Health Center. The need for crisis intervention during the summer and fall of 1989 prevented staff from being able to provide educational and prevention services for mental health services. However, use of the facility for group and individual counseling increased in 1989 over previous years. Additional graphs that follow show increased demand in these areas.

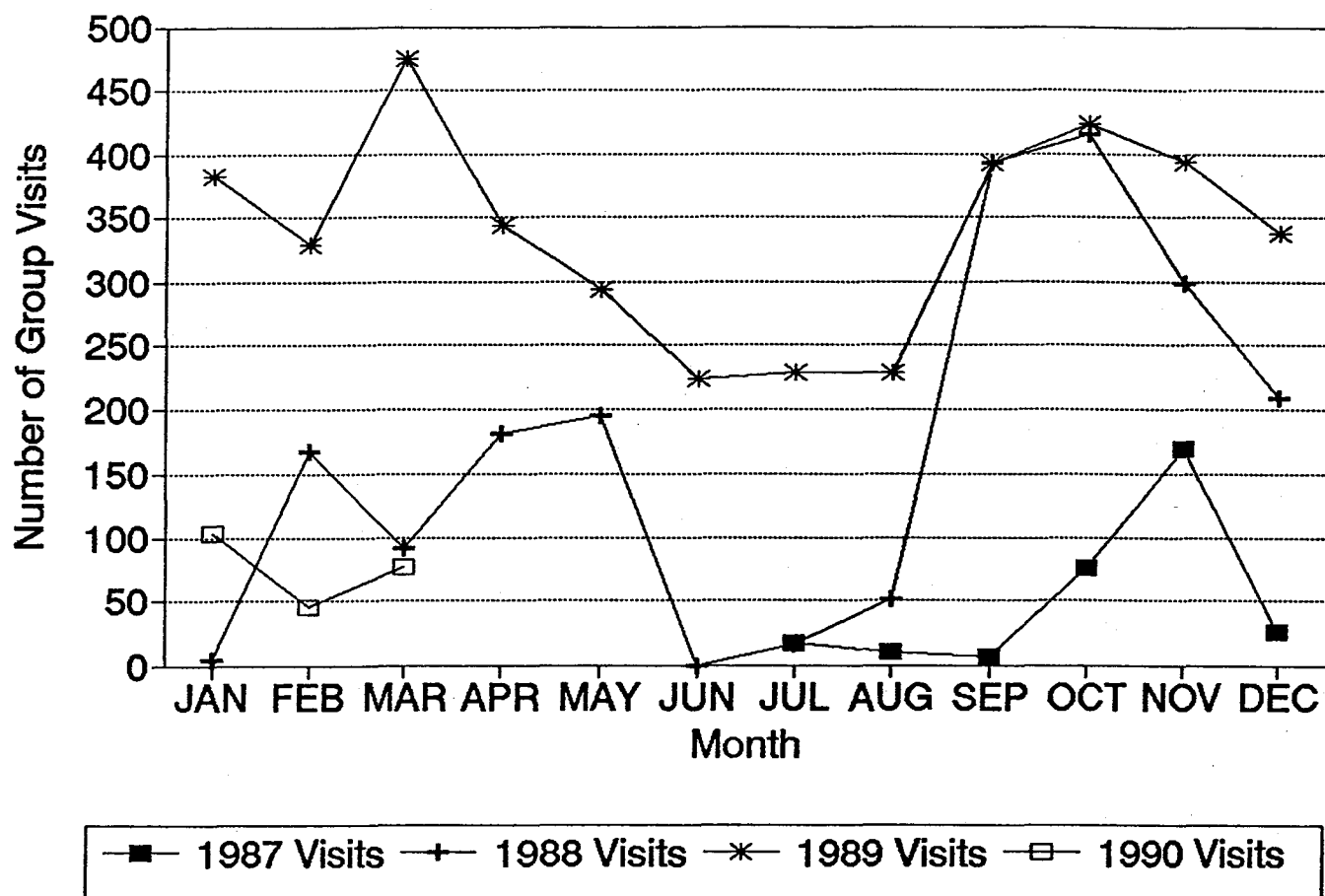
Increased usage of cocaine in the community was noted by mental health personnel who often refer drug and alcohol clients to KCA. The Community Support Program provides service to chronically mentally ill people. Mental health staff noted an increase in suicidal tendencies from clients utilizing the Community Support Program. Mental health professionals believed the high levels of stress caused the marked increase in suicide tendencies.

The issue of uncertainty about the effects of the oil spill was believed by mental health professionals to be the basis for much of the increased stress and frustration in the community. The Director of the Mental Health Center attended public oil spill meetings to offer services for people who were frustrated and in need of someone to talk to.

The Kodiak Area Native Association (KANA) provides social services to native residents of Kodiak City and Borough and the six villages. KANA social services were heavily affected by loss of existing staff to oil spill employment and difficulty in replacing staff who had left for various other reasons. An increase in alcohol counseling services in Kodiak was reported by a KANA counselor. The need for more alcohol counseling in the villages was perceived by KANA alcohol counselors, but the people in the villages were unreceptive to on-site visits. Personnel at KANA felt that people in the villages were busy with oil spill jobs, and most service providers had left KANA positions.

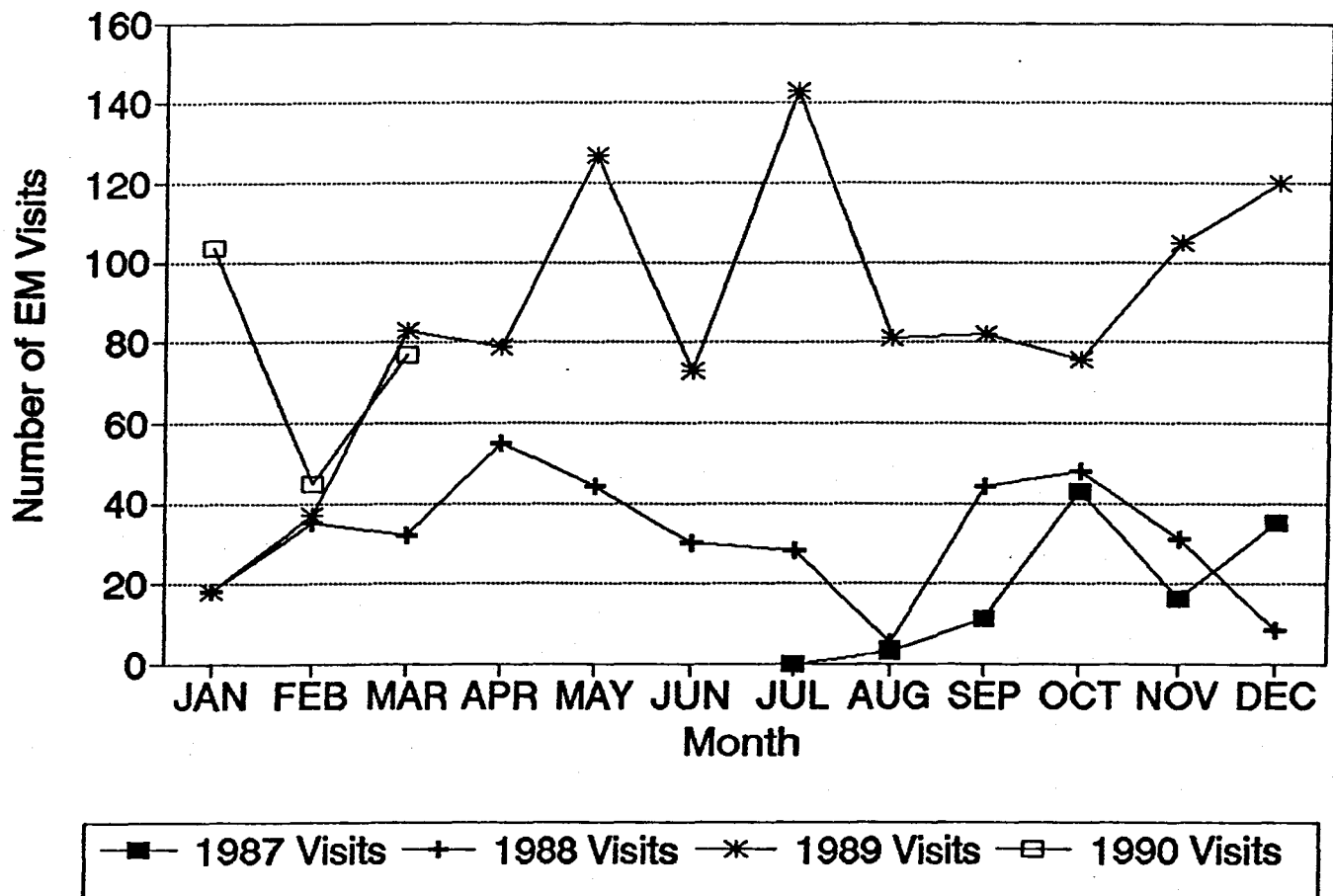
Kodiak Island Mental Health Statistics

Group Visits, 1987-1990



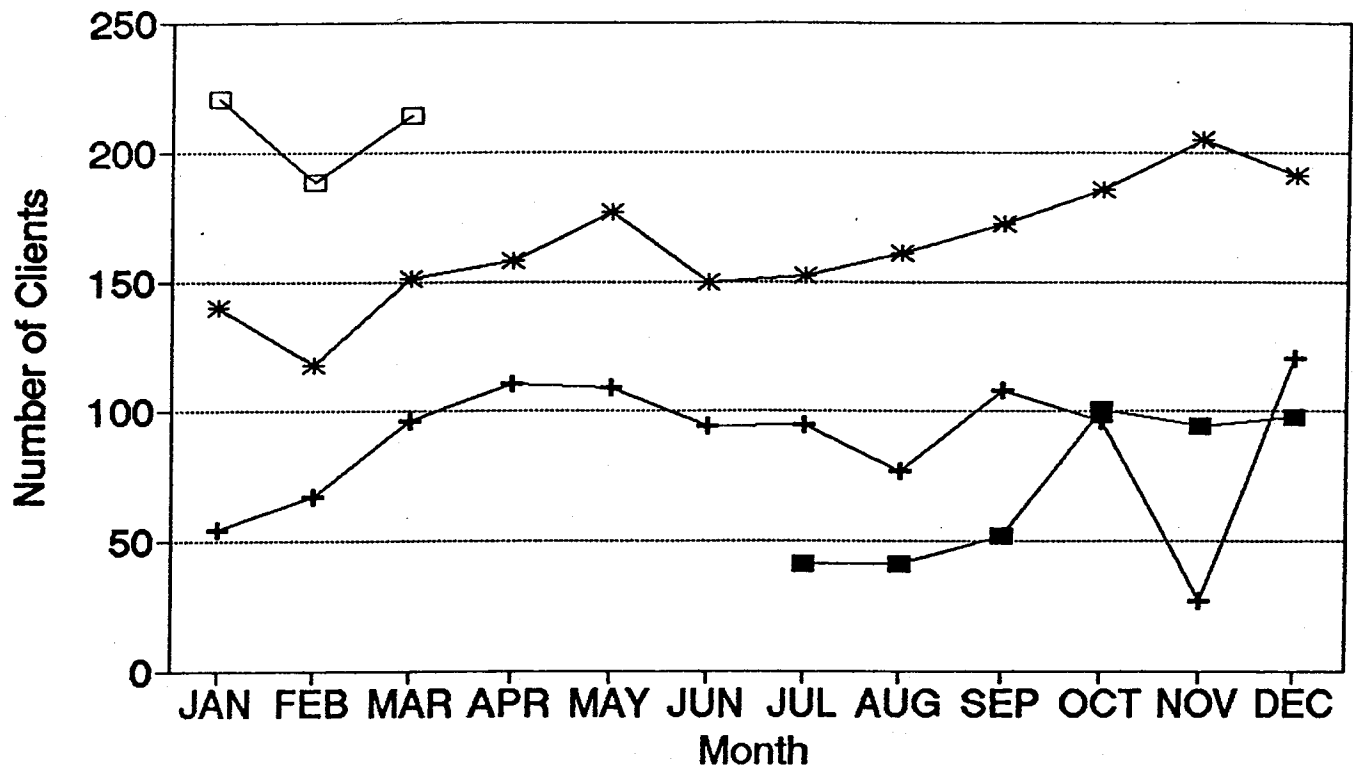
Kodiak Island Mental Health Statistics

EM Visits, 1987-1990



Kodiak Island Mental Health Statistics

Individual Clients, 1987-1990



1987 Clients
 1988 Clients
 1989 Clients
 1990 Clients

The influx of Natives into the city of Kodiak during the fall and winter of 1989 caused additional workload on KANA staff according to one social service worker. Some KANA employees stated that many Natives relocated to the city of Kodiak with oil spill cleanup money, but were faced with housing and financial problems during the winter of 1990 after their funds had been exhausted. They requested help from KANA services with rent, income tax and public assistance forms. The KANA social service employees worked with oil spill related social problems during the spring and winter of 1990. Assistance with forms requiring basic literacy skills was needed by some individuals who sought help from KANA social services. A new support group for children of families with problems was formed in the winter of 1990. Many of the Native youth attending the group were children of parents who worked on the oil spill cleanup.

Medical

Kodiak Island Hospital (KIH) is the only hospital on Kodiak Island. An increase in demand for emergency services was reported by staff at KIH. The emergency room staffing was restructured since the summer of 1989 to include a nurse on duty at the hospital for additional coverage since the summer of 1989.

A member of the nursing department noted increased problems with discharge planning for patients. Some of the patients had no place to go and hospital personnel had difficulty with releasing them without proper housing. This placed additional workload on social services staff at the hospital and nursing staff. Information on toxicity and oil related issues was given to people as it was requested in person or over the phone.

A nationwide shortage of nurses was a continuing problem for KIH before the oil spill, and the shortage continued throughout the summer of 1989. Difficulties in recruiting left the nursing department short of staff while some increased demand for services occurred. Demands on housing in the community were compounded by the oil spill, and any nurses who were recruited often arrived and were unable to find housing.

The Kodiak Area Native Association provides medical services for Natives in the city of Kodiak and the six villages. The medical services at KANA were severely affected by the oil spill according to the KANA Clinic Administrator. At least half of the KANA medical employees left their jobs during the summer of 1989. Some left for reasons unrelated to the oil spill, and others left to work for VECO. Replacements were unavailable for these positions and existing staff took on the tasks of three or four different jobs in some cases. Recruiting problems persisted until the winter of 1990. Many of the medical personnel that would normally have been available were working in the Prince William Sound area, according to one health care provider. During the field visit in winter and spring of 1990, KANA was still affected by problems with billings and finances that resulted from oil spill-related activities.

During the summer of 1989, KANA operated with one doctor and one mid-level practitioner. Normally there are two of each of those types of health professionals. The increased demand for services and the lack of available staff created an enormous amount of additional workload on existing personnel and made it difficult for clients to obtain services. Many of the clients who required service had to wait for long periods of time before they could get an appointment. Walk-in appointments were not available because of the lack of medical staff. The lack of available air transportation to and from the villages made it impossible for some village patients to receive treatment from the KANA clinic. KANA sent some medical staff to the heavily impacted village of Larsen Bay to assess physical symptoms that may have been related to oil spill cleanup.

The symptoms patients complained of were symptoms of lightheadedness, and others that could be associated with exposure. Sanitary conditions caused some concern because of oil spill cleanup workers who were eating on the beaches during long work days. Natives from outside the area requested services from KANA. Questions about food supplies poured into the clinic, and the lack of dietary and toxicology specialists in Kodiak made it difficult for KANA health professionals to provide answers.

Receptionists answered phone calls from the villages regarding oil spill concerns, and often patients who called needed reassurance from KANA staff. A health care provider from KANA stated that a substantial portion of the time of KANA medical staff was devoted to talking with people who needed someone to talk to. Patients were confused and worried about food supplies, damage to the environment and changes in their lives created by the spill and cleanup activities.

Changes in Personal Experience

Many residents of Kodiak resumed their usual lifestyle after the active phase of the oil spill in the summer of 1989. There were some, however, who report the spill has changed the way they perceive their environment. Some citizens spoke about the change in their complacent attitude, and have decided to become more involved in environmental legislation. Others stated that Kodiak is a resilient community and after having survived the 1912 Katmai eruption, and the 1964 earthquake, the *Exxon Valdez* oil spill was another incident in a series of catastrophes that the community has endured.

One individual's comments about personal lifescape changes follows:

I've lived out in the bush and the wilderness, . . . my kids have been raised in wall tents, and dories, and deer skin rugs, and fish drying . . . I've really lived in nature and in the environment . . . and so I kind of was an escapist . . . I thought the oil spill made me really sad, I had to be active for the rest of my life .

. . It's like the rest of the world came to me, and said 'you can't run away any more.' We have covered too much in the earth and there is no place left to hide.

The Village of Akhiok

The village of Akhiok is the southernmost village on Kodiak Island. Residents are almost exclusively Native with little or no evidence of Russian or Scandinavian background, in contrast to the villages on the northern part of the island. The population fluctuates from approximately 60 to 80 full time residents. The primary economic activities are subsistence and commercial fishing and local government jobs. There are few permit holders in the village, and those who work as commercial fishermen generally work for others. The nearby cannery at Alitak provides some jobs for villagers. Alitak also operates a store which residents use to purchase food and supplies.

Akhiok is a second class city and operates both a Tribal and city council. The two governments cooperate on grants and programs for the village. Akhiok is more isolated than most of the other villages on Kodiak Island, and flights to and from Kodiak are less frequent than other villages. Many set net sites for salmon fishing are used by permit holders from other areas in the summer months. Family ties are maintained with residents from Old Harbor.

Response Effort

Akhiok was not exposed to as much oil as some of the Northern and Eastern villages on Kodiak Island. Oil was found in the form of tarballs in nearby areas. Direct effects of oiling were not easily determined by local residents and the question of uncertainty about damage to their environment prevailed even a year later. Nearby, Olga Bay remained open for gill netting. However, most of the fishermen from Akhiok are seiners and not allowed in that area.

Although the oil was not excessive in the area, a response effort and cleanup program operated by VECO was implemented. The sole volunteer attempt at cleanup was a set netter's group that worked for one day during the early part of the spill. Most of the residents did not believe the oil would reach their village, but there was always concern. One person remarked:

We weren't excited. We weren't overly excited. As long as it left us alone, you know, keep it away, keep it away. There were no big to do's.

The mayor of Akhiok during the summer of 1989 was initially contacted by Exxon regarding plans for response efforts. Later he became employed by VECO as an oil spill coordinator. The Village Public Safety Officer (VPSO) was not employed by VECO and remained in the

village during the active cleanup, despite the pattern of hiring VPSO's as coordinators on Kodiak Island. The city council denied permission for the VPSO to work on the cleanup.

The [ex] mayor continued to attempt to operate city business and run the cleanup program with VECO. He directed crews to different beaches according to their reports from the previous day's work. Foremen were rotated within the crew every few days. The crew foremen were not paid more than other beach cleanup workers, and few desired the position. As in other villages, problems with hiring local people, and accusations of unfairness towards the coordinator developed.

Communication through fax machines with VECO and Exxon officials was used for progress reports. The response was operated from a city office, in the community building. Exxon was billed for the lease of office space. The [ex] mayor wrote a top official during the summer of 1989 asking for cooperation and stating the willingness of the people from the village of Akhiok to work together with VECO and Exxon for a successful operation. He believes that the letter produced results and there were few problems in acquiring supplies.

Local Government

The effects of the oil spill on local government were disruptive to every day operations. Although the mayor tried to continue with daily operations, the main focus was the oil spill at local city council meetings. There are few city employees and most work part time. In some cases city employees kept their jobs and worked for VECO. The city clerk maintained the bulk of city duties during the active cleanup phase of the spill. The position of city administrator was vacated by a person who left the job to work for VECO. The city clerk assumed the responsibilities of administrator and clerk during the summer of 1989.

Many daily operations within the city government stopped, and at least two projects were postponed. The types of projects that were deferred involved erosion control, streetlights, community building improvements, and the construction of board walks for the fuel delivery. The JOBS bill, although extended by one year, was funded to provide jobs for community residents at a wage half of that of the cleanup operations. During the field visit in spring of 1989 city officials were concerned that it would be difficult to fill the positions to get the work done, even with the year extension.

The school suffered a loss of staff substitute teachers since the oil spill which continued throughout the academic school year of 1989-1990. One aide position was vacant for several months, and another aide assumed the duties of the extra position along with her regular job. She considered requesting restructuring of the job description because of the extra income. The difficulty in attracting village residents to be school aides was explained by a teacher:

Before the oil spill, a job at the school was something that everyone wanted, because it was steady employment and it was guaranteed for as long as you wanted it . . . Right now they're making a lot of money. They don't want to have to come up here and work at a job.

The income referred to was from DEC's "local response" winter cleanup. The "local response" winter cleanup was run by the current mayor who assumed his position in the fall of 1989. He stated that he became mayor because "no one else wanted it." Some city employees said that the "local response" cleanup operation was more efficient and better organized than the VECO cleanup. Although the program was designed to be separate from city government, during the spring of 1990 the city clerk was often the mediator between phone calls for the "local response" in the midst of her regular duties and the excess workload caused by the oil spill.

The Tribal government has had a history of working closely with the city government for projects to benefit the village of Akhiok. These grants are sometimes received through KANA. Some of the grants received through the Tribal government are suicide prevention and youth programs. The Tribal Council president was not employed by VECO and maintained his role as a solid community leader and Tribal council president throughout the cleanup.

A damaging impact of the oil spill on both city and Tribal governments in Akhiok was the loss of staff well versed in government management. A staff member who was an integral part of both governments became less active in government functions because of personal problems which some community members believe were aggravated by the stress related to the oil spill. The loss of skilled staff placed additional burdens on those who were not accustomed to some of the procedures involved with grant applications and management.

Changes in Community

The village of Akhiok did not experience more than the usual number of outsiders into the community in the summer. Set net sites from Olga Bay attract more people to the community seasonally. There was talk among residents about the disruption of community relationships from the cleanup effort and handling of the response. Many people in the village had been actively involved in a sobriety movement which faltered during and after the active cleanup phase.

Increased tension from more drinking in the community caused strained relations between those who maintained sobriety and others who did not. Many of the political problems that

developed in relation to the cleanup effort created discontent between community members. Some informants believed that the way the community functioned as a whole had been changed. One person described what she experienced and spoke on the sobriety movement and the effects of the oil spill:

The village got to be a whole family. Before, people would be against each other, and after the healing workshop sobriety movement, these people were one big family . . . but during the oil spill I noticed the village, that it's pulling away again, people started going into their own shells, and just pulling away. It was like people were mad at each other, they put a lot of stress on the workers. They were just at each other's throats, not agreeing with the people that were working in the office and having to deal with all the complaints that were coming in during the day.

After some people noticed that there were divisions within the community, there was a conscious effort to keep the community together. Alcoholics Anonymous (AA) had become less frequent, and more meetings were held. Visiting within the village to keep in touch was more frequent after recognition that the family and community atmosphere in the village was threatened. There are those residents who do not believe that the oil spill caused some of these problems but instead "added fuel to the fire," using the words of some residents.

Way of Life

The introduction of high wages for cleanup employment has influenced changes in the lives of the villagers. Specific damage to fishing grounds had not been assessed during the field visit of 1989, but it was known that the damage was less than some of the other more heavily oiled areas. The change in way of life in the village of Akhiok was the outcome of the lack of activity associated with subsistence activities, and not only the lack of food provided from subsistence resources.

Exxon and Kodiak Island Borough provided compensation for the close of fishing areas and damage to the villagers but the essence of the activities associated with subsistence activities could not be replaced. One account of this point follows:

Exxon was bringing in all this fish, but that's not our way. A part of the life style is going to be able to go out and get it, the fun of going out and getting it. You know a part of the lifestyle

is being able to go out and provide for yourself, that's our life. The fun is gone. To be able to go out and get your own fish, can your own fish, dry it. Where's the fun in it if they bring it to you?

Many community members have been employed over the course of three different cleanup programs. First the VECO operation, then the Exxon winter monitoring program which employed 8 people from the village, and finally the DEC "local response." Many people were happy to have the employment, but the change and the inevitability that on oil cleanup jobs will end has created concern that after the jobs no longer exist, many will have become accustomed to the paycheck and abandoned subsistence activities and commercial fishing. Some fishermen did not attempt to go fishing during the spring of 1989 because they were depending on oil spill cleanup work.

The life cycle and economic cycle changed from the spring of 1989 throughout the following year from one based on subsistence and fishing to oil spill-related income. Some people used the extra income to buy equipment, household goods, and items useful in the village. Others spent money on more trips to town [Kodiak]. Some people planned their vacations and town trips based on Exxon claims, winter cleanup money and the possibility of more cleanup work in August of 1989.

Family

Family life was affected by the amount of time parents spent away from their children on cleanup work. Of those who chose not to work on the cleanup, some concentrated more on family life. The sobriety movement had been a strong element in family life before the oil spill. Some parents were making progress in strengthening family relationships at the time of the spill. Through healing workshops and AA meetings they had begun to focus on family issues. Of those who had been sober for some time and worked on the spill, several parents knew that the time devoted to their children and family life suffered. Since they were aware of the need to be attentive to their families, many solicited the help of other residents to provide activities and care for their children. At least one family left for a family vacation at the end of the summer with the specific purpose of spending family time together that was lost during the spill.

One individual stated that more children had to rely on each other and themselves, and that the village life in the summer of 1989 was:

a lot different, Usually all summer long, their parents are around and . . . I worked here last summer with VECO, and last summer all the parents were working and the kids were left by themselves, ten and eleven year olds. All the adults were tense because as soon as you start throwing that, the money and all, into it . . . that was passed on to them. It was pretty tight for a while. It took some time to loosen things up and get back to semi-normal.

Two couples in the village separated and began divorce proceedings after some had begun drinking following years of sobriety. One person involved in a separation did not blame the oil spill for his return to drinking or divorce, but believed that the stress added to his life during the spill played a part in the changes in his family life. This incident of family disruption has had a major affect on the morale of the community. The people involved in relapse of alcoholism and breakups of families were looked upon with respect by village residents who mourned their return to drinking. They did not, however, let the verge of collapse within family structure affect their own lives. Instead they took control and maintained a steady move towards putting things back together for themselves.

Mental Health

In the winter of 1989 there was an increase in reports of child molestation cases in Akhiok. Some service providers explained that the movement towards sobriety and "healing" in the village emphasized the acceptance of children who expose these types of problems. Therefore, some children have become aware that it is acceptable for them to tell someone when they have been abused or molested. The Village Response Team (VRT) which is comprised of KANA employees and village residents, takes an active role in dealing with cases of child abuse and molestation and informs the proper authorities of abuse cases. There are at least four safe homes where children can go in Akhiok if they have been abused. One prominent community member who has been active in many community programs believes that there may be a decrease in child abuse cases, "just due to the fact that the perpetrators know that there will be something done, you know, and they're not gonna get off scott free like it used to be before." Any increase in reports of child abuse cases in the period following the oil spill could be the result of the movement towards acceptance of such reports, and may not necessarily represent an actual increase in abuse cases.

As already discussed, there has been an active sobriety movement in Akhiok for the last two years. This movement was started after one village resident committed suicide. The suicide

was reported to have been alcohol-related. The persistence of a KANA alcohol counselor was one factor that influenced the sobriety movement. Some people had maintained sobriety without treatment before the movement started. But, overall, there was a high rate of active alcoholism in the village before 1987. Several village residents boasted that 90% of the village was sober before the spill and service providers said that the rate of sobriety fell after the oil spill. There was no mention of use of other drugs in the village.

Since there was recognition that several village residents had begun drinking again since the spill, attempts were made to prevent other from doing the same. The conscious effort at preserving sobriety in the village was successful for the majority of residents. Those who continued to drink were often ostracized and sometimes went to Kodiak to drink rather than do it in the village. Not everyone who drinks from Akhiok is considered to be alcoholic, and social drinking without addiction occurs, according to one informant. Some people believe that the oil spill was a test for the sobriety movement in Akhiok and although it faltered, some parents stated that they became more dedicated to providing an alcohol free environment for their children.

The social services in the village revolve around AA meetings and extended family networks. There is a women's support group, the only such group among the villages of Kodiak. The community health representative took a leave of absence to work on the oil spill so her support group with teenagers quit functioning. However, other support groups and an atmosphere of service within the community has prevailed.

There has been an active suicide prevention program which emphasized cultural heritage through bead work and other projects that encourage pride in the Native culture. Both children and adults were involved in the reconstruction of a traditional kayak as part of a Cultural Heritage Program sponsored by KANA. The construction of a replica of a traditional barabara was ongoing during the summer of the oil spill, and although the project was slowed by the spill, there were enough participants to help complete the project.

The youth in the village took an active role in the programs they participated in. Often they planned, wrote grants, and administered programs with the aid of adults. There was an active youth council which held dances weekly in a multipurpose building. Money for such events was raised by the children themselves from a store they operated to sell snacks, and from mini grants from the Alaska Council on Alcohol and Drug Abuse. The dances continued throughout the period of the active cleanup with the supervision of adults, but some said they were less frequent.

Medical

There were three residents who maintained the position of health aide and alternate health aide throughout several years prior to the oil spill. The health aide during spring of 1990 reported no change in the types of problems she dealt with or the staff during the oil spill. There was a health professional assigned to work at the clinic in Akhiok for the health problems of cleanup personnel. This person operated from an office in the Akhiok clinic and worked for VECO or Exxon. The clinic is owned by the city which billed the appropriate agency for use of the facility.

Changes in Personal Experience

There were perhaps two major aspects of personal lifescape that changed as a result of the oil spill. One was a strengthening of the commitment to sobriety in the village. Several residents expressed fear that the village would revert back to the days when most people were drinking. Since the threat of breaking sobriety, and the disruption of family ties was so strong during the oil spill, some people may have become more determined that their children would not be surrounded by alcoholism.

Children voiced their opinions about the effects the spill on their family lives. They became more aware of their surroundings by a newfound interest in environmental aspects of education. This changed the way teachers approached education:

We've changed in the way that we approach a lot of things. The students are more aware. Before the oil spill, environment was a long worked that you found in science books. Now most of them know that environment is things around you. A lot of what you have to present now is presented in a different light, because they're a lot more aware and knowledgeable in those areas . . . It used to be when you mentioned the middle east, none of them knew where it was, and now when you mention the middle east, they say, oh, yeah that's where all the oil comes from . . . they're a lot more aware of everything to do with oil spills and cleanups and economics and things like that.

The Village of Karluk

Karluk is located on the west coast of the Southern half of Kodiak Island. The population of Karluk has been declining for several years and stands at approximately 60 individuals. It is the only village on Kodiak Island that is not incorporated as a second class city. Consequently, it has less services available to residents. The village operates a Traditional Village Council, also referred to as "Tribal Council" under the Indian Reorganization Act (IRA). Village services operate in conjunction with the Kodiak Area Native Association (KANA). The village was originally located on two sides at the mouth of the Karluk river. Floods in 1978 disrupted travel between both settlements and prompted resettlement to a nearby site on a hill away from the mouth of the river.

Karluk's economy is based on subsistence and commercial fishing. A lodge on the river opposite the village operates guide services for fishing on the world famous Karluk River. The area is famous for red salmon fishing. Family ties are maintained with Larsen Bay, and many residents have relocated to Larsen Bay. The village is a two hour skiff ride from Larsen Bay. Air transportation from the city of Kodiak and Larsen Bay is available.

Response Effort

Some of the people from Karluk felt they were last to be considered by Exxon for cleanup efforts. The Tribal council president was involved in meetings initially with Exxon, Kodiak Island Borough, and KANA. Contact with the village of Larsen Bay was maintained throughout the active cleanup phase. Larsen Bay was the most heavily impacted village on Kodiak Island, and their response effort included aiding Karluk with supplies and consultation. The Director of Community Development at KANA worked with both communities during the initial stages of the spill.

The Tribal council president was active during the early weeks of the spill and he tried to arrange for the provision of equipment and supplies to Larsen Bay and Karluk. Early flights with other Tribal council presidents from Kodiak Island revealed that the oil was moving south from Shelikof Strait towards Larsen Bay. Outlying beaches rich with clam beds were heavily oiled. The Karluk River was blocked off with boom, and any oil that may have entered the stream was considered minimal. Many residents from Larsen Bay go to Karluk for subsistence fishing and were able to catch their usual amounts of fish before the season closed. Many spoke of eating subsistence foods, but feared contamination.

The Tribal council president left the village for two months and the Village Public Safety Officer (VPSO) was assigned the job of coordinator for VECO. There was no official command station set up in Karluk, but the local school was used for some meetings. Initially residents of both Karluk and Larsen Bay intended to deal directly with Exxon, without working with VECO. However, they were eventually forced to work with VECO.

Local Government

The local government of Karluk is run by a traditional Tribal council. There had been a decline in services for several years before the oil spill due partially to a decrease in population in the village. All local government functions came to a halt during the oil spill. The Tribal council president put all of his time into oil spill logistics, and did not have any time to work on daily government activities. The jobs that the village controls are a heavy equipment operator, and a Tribal clerk. Both of these jobs were vacated due to employees who left to work on the cleanup. The school was unable to replace a janitor during the end of the school year because of loss of potential employees to the oil spill.

The most important grant lost since the spill was for construction of a lodge. The plans had been prepared by a former KANA employee who left the position at KANA during the spill. The village has not received the documents that were compiled for the project, and several village residents believed that they were intentionally taken from the village for use elsewhere. The start of an erosion control project was postponed because of loss of workers to oil spill cleanup. There were no capital improvement grants filed since the oil spill, because the Tribal council president became involved in oil spill related activities since the summer of 1989. Village residents stated that they have received the assistance needed to deal with the oil spill from KANA and other agencies.

Some residents expressed the desire to see local jobs provided through Tribal government, but the knowledge and education required to get grants and run programs was not always available from community residents. Because they did not get the assistance they felt was needed, some service providers stated that relations with KANA were strained, which affected other government programs.

Another major concern for the village was an ongoing problem with electricity. There had been some outside contractors who owned generators that furnished electricity for the village prior to the oil spill. During the summer of 1989, some problems with management of the electricity system and billings caused a backlog of bills for residents. The Tribal council president was involved in sorting out the finances for electricity and incoming fuel into the village. Although these may not have been considered government functions, as a leader he believed he was expected to take care of various tasks for the village. It is unknown whether the oil spill had direct impact on the problems with electricity and fuel in the village.

The DEC's "local response" cleanup was run by the Tribal council president who worked on arranging safety training and "six pack" courses in the winter and spring of 1990. Problems in training schedules and communication with Exxon, and DEC regarding regulations became a time consuming activity for the Tribal council president. A problem unique to Karluk, in comparison to other Kodiak Island villages, was due to its lack of status as a second class city. It was thus unable to pay for costs in advance to operate the "local

response" cleanup. This was part of the reason for the delay in starting the DEC "local response." The community looked to the Tribal council president as someone to arrange any oil spill cleanup jobs. Any problems that resulted from changes in the cleanup were often blamed on the president. This has caused increased factionalism within local government and tension within Tribal government. Many local residents who were displeased about current activities within Tribal government are at the same time unwilling to run for those positions.

Changes in Community

Several changes in social relations within the community transpired from oil spill-related activities in the community. The VPSO was accused of favoritism as coordinator, and personality problems that had been brewing were exacerbated by the relationships among beach cleanup crews. Eventually, the VPSO was fired from his job, which some residents said was the outcome of his drinking on duty, and the inability to get along and manage his crew. There has been no VPSO in the community since 1989, and incidents of crime have since been handled by State Troopers. Some community members expressed a desire to have a law enforcement officer present at all times.

Some informants felt that the relationship of village residents with leaders in the community was been damaged by changes that have resulted from oil spill cleanup activities. Many residents looked upon others who purchased new vehicles and all terrain vehicles with jealousy. Those who purchased new equipment often feel guilty for driving a new truck or four wheeler.

Some residents felt that outsiders who worked on cleanup crews were condescending towards locals. There was not a large influx of outsiders into the community, but some VECO employees worked in the area during the summer of 1989. Other strangers in the village included the various researchers doing oil spill related studies. The press in the past has given a negative impression on the village of Karluk and residents have become leery of any outsiders in the community. There is much confusion about the purpose of the various studies that have resulted from the oil spill. A local resident stated that the community sense of identity and control over their own lives was damaged by the attitude of the few strangers who treated them with no respect. There were reports of VECO employees illegally digging artifacts from local beaches. This type of invasion of community privacy made local people even more wary of strangers in the community.

Some former residents of the community returned to Karluk and became employed by local jobs that were vacated by those who sought oil spill cleanup work. There were more people taking trips into Kodiak with money earned from the various cleanup jobs, but no definite oil spill-related migration out of the community has occurred.

Way of Life

The oil spill provided jobs for Karluk residents who had been unemployed in years prior to 1989. This gave many residents the opportunity to try something new, like vacations to Hawaii, Seattle or Anchorage. But the oil spill also created an artificial economy and dependence on cash income that will not always exist once oil spill cleanup jobs are gone.

The Karluk River provides subsistence resources for many of the village residents. There were warnings about eating subsistence foods during the early part of the summer of 1989 and, although some continued to eat subsistence fish, there was fear of contamination. One person explained the importance of subsistence in Karluk:

The oil spill mainly hurt the community in the area of subsistence fishing. People of Karluk typically put their fish up in May and June, when the fish are running and the amount of biting bugs are lower . . . that was the time that the warnings against eating the subsistence products were coming out: eat at your own risk. So people were given some frozen and canned fish from Exxon, but they didn't really eat much of that. It was considered a joke by most of us. First of all it was not the same kind of salmon that people preferentially catch for eating here, and secondly it was not cured in the culturally accepted way. Thirdly, there was not enough freezer space here in Karluk to store all the fish that was brought here by Exxon. so some of it spoiled . . . and some of the canned salmon that they brought out sat outside and froze and thawed and froze and thawed, making in unappealing to eat.

The salmon referred to was donated with the effort of Kodiak Island Borough.

Money earned from oil spill cleanup work affected many Karluk residents' eligibility for food stamps. While the extra income was spent to buy enough food for families at the time, later, when the money was gone, some families had no money or food stamps. A resident explained the change in economy:

. . . there were a lot of people getting food stamps. But because of the oil spill cleanup, they had to get off. Then they couldn't get back on for a couple of months after. Just then, when people had all that money to spend, they didn't need them. But they had bills to pay, fuel bills, light bills . . . That

was really a hard time. For three weeks I was finding that the kids didn't have nothing to eat. You know some of the people here that normally eat good really dropped down. Then after the people started the cleanup jobs again with the DEC this winter . . . well that seemed to help people out a lot. And now that is ending, things will start happening again.

Family

The affect of the oil spill on family life was much the same as in other communities where the amount of time spent away from home increased for some parents. Not all families in the village were affected this way because, in some cases, one parent was at home. There were several instances where women who had not traditionally worked became employed by VECO and had the experience of earning cash income they may not have had before. Some people reported positive changes in family lives because of the material goods they were able to acquire with additional income.

The position of the Indian Child Welfare Worker who usually provides activities for children was vacant during the summer of 1989. Some of the high school aged children took on additional responsibilities caring for younger children while parents worked on the cleanup. During a normal summer, children are often free to roam outdoors on their own, but some community members believe that children were left on their own for longer hours during the summer of 1989. Others stated that there was not much effect on families.

Mental Health

Most of the village residents declined to speak about any incidents of domestic violence within the village. There were no safe homes provided the village for abused children or women. Service delivery for these types of problems was difficult for several reasons. First, there were ongoing problems with local residents in a small community being held responsible for the mental health needs of their friends and relatives. Residents have stated that they were uncomfortable talking about these types of problems within the community because of concerns about confidentiality. Some cultural traits that discourage people from talking about any personal problems also make provision of mental health services in small villages difficult according to some providers.

Distrust of outsiders is another reason that Karluk and other villages have not always welcomed services that deal with social problems in the community. There are some who said they believed that these types of issues should stay within the community.

Problems with services in the community have been exaggerated by the oil spill in some cases. The community health representative had made some progress with activities for teenagers in Karluk before she took a leave of absence to work on the spill. Eventually, she resigned from the position after two years at the job. Activities with the youth in the community were discontinued for part of the summer and the interest in resuming them was minimal after the summer of 1989. The position was inactive for several months before it was filled.

Medical

The former health aide reported that there was an increase some health problems which may have been caused by spoiled canned salmon. Overall, there were no other increases or changes in types of medical problems reported. There were some difficulties in obtaining medical consultation by phone from KANA physicians and health aide coordinator. Several different reasons have been stated for the termination of the primary health aide in Karluk during the summer of 1989. The health aide had been employed in that position for 20 years.

Changes in Personal Experience

The oil spill created some changes in the world view of Karluk residents. The exposure to outsiders had a positive as well as a negative affect on local residents. One person described damaged self esteem because of the way Natives were treated by VECO employees:

These people out here, their environment is them. I'm talking the social environment and the natural environment. And if either one's damaged, it damages the people itself, their self esteem. And I think there was a lot of self esteem damage out here the way the VECO people talked down to them, when they were working, like you know me smart white man, you dumb or something . . . So I think that had a real damaging affect on some of them . . . and it just built frustration up, and people start thinking well, who am I? This place might not always be here, anything could happen to this place.

In contrast to the idea of damaging of self esteem, some individuals believed that exposure to different kinds of people actually provided an opportunity for residents to learn more about their own potential. One person commented:

There were a lot of people around here that hadn't really talked to other people before. At least big shot people like came out here last summer. Some of them found they really enjoyed doing it. It really surprised me that they would do it because usually they are people we have never seen before, and they are some high muckety - muck people. And they talked to the people like they knew just as much or more than other people.

The Village of Larsen Bay

The village of Larsen Bay is located on the west coast of Kodiak Island. The total population is approximately 160 people and commercial fishing is the primary economic activity. A cannery operates seasonally and people from around the country are employed there in summers. Some tourism and guide services are available for fishing, hunting, and hiking. The village residents are mostly Native with some Russian, and a large influence of Scandinavian background from immigrants who came to the area to work in the canneries in the 1940s. Larsen Bay is a second class city and a city and Tribal council operate within the village. The village is accessible by airplane or boat transportation from the city of Kodiak. Family ties with the village of Karluk are maintained.

Response Effort

Larsen Bay was the most heavily oiled of all the villages on Kodiak Island. The oil reached the area in the form of mousse and tarballs along the shorelines, and underneath the surface of the water in the area. A sheen of oil reached the mouth of Larsen Bay. The tides carried oil into the beaches in front of the village and the surrounding coves. The village mobilized volunteer forces for cleanup before Exxon, VECO or the Coast Guard moved in to help protect the area. Local clam beds and fishing areas were affected. During the first weeks of the spill village officials contacted these outside agencies who assured them that "it was going to be taken care of," according to one local source. Progress of the moving oil was monitored by television news, local news sources and contact with agencies in Kodiak.

Soon after residents began finding oil along the beaches, the volunteer effort began. Containers from the local cannery were used along with other resources to collect oil. One village official reported:

the whole village got together and they kind of mobilized and they decided they were going out to do something about it . . . with no contract or anything . . . In fact they worked for a whole week . . . they didn't wait for any money . . . that's our livelihood, you know and we knew we were going to be hurting real bad.

The mayor began negotiations with Exxon and quickly appointed the Village Public Safety Officer (VPSO) as coordinator for the cleanup operation. Initially, there was difficulty convincing Exxon that oil had reached Larsen Bay. Local city and Tribal government officials wrote letters and made phone calls to the KIB, state politicians, and Exxon representatives to demand that they contribute resources and hire local boats for cleanup.

After negotiation with Exxon they agreed to assist in a cleanup operation at Larsen Bay and sent boats from Kodiak to monitor the area.

The coordinator contacted a former Kodiak Area Native Association (KANA) employee in an effort to secure supplies needed for cleanup. The supplies were delivered to the village promptly, despite problems the former KANA employee encountered with logistics and purchase orders. Survival suits, life jackets, radios, and other needed materials arrived. When Exxon began full scale cleanup operations the local Larsen Bay cleanup effort was already in tact. VECO personnel arrived shortly thereafter. A command center was set up in a community building with communication systems and maps. Contact with other Kodiak Native villages was maintained throughout the active cleanup phase.

Safety meetings were held weekly and the community voiced their opinions and concerns about the cleanup. The coordinator explained the meetings:

Mostly I would tell them what was going on. Tell them what a good job they were doing, what we were doing, what Exxon was doing, what VECO was doing, and if something was wrong I would talk to them about it and see what kind of ideas they could come up with . . .

At the end of the summer, the coordinator left the position for family reasons and another person replaced him for the last few weeks.

Local Government

Almost all of the city employees left their city jobs to work on the oil spill. The mayor became involved in Oiled Mayors meetings and few people were left in city positions. Those who stayed in their jobs were unable to take vacation time because there were no alternates to replace them while they were gone. The library was closed, and almost all city functions stopped.

Council meetings were delayed because of the lack of a quorum for three consecutive months. City projects were postponed because of the lack of personnel. One major project that was delayed during the summer of 1989 was the "mini hydro project." The city had acquired a loan to construct a hydroelectric power plant and the materials had already been ordered before the oil spill happened. Delivery of the materials which included several miles of pipes for the project, turbines and generators was interrupted by the lack of available boats for delivery. After a barge delivered the materials to the city, there were no available workers for the project and the supplies were unused during the summer of

1989. The project was further delayed because potentially available personnel were working on other cleanup jobs throughout the winter of 1990. Another project that was halted was erosion control of lands in the village.

Both the city and Tribal governments were involved in negotiations and claims with Exxon and VECO. The communication between the two governments was strained by the oil spill. One local resident explained that the Tribal government was involved mostly with Exxon, and the city was dealing mostly with VECO. Problems with billings for the use of facilities caused tensions between the city and Tribal government, and there has been reorganization of the Tribal government since the summer of 1989.

The DEC "local response" cleanup program operated independently from the city offices in the spring of 1990 with separate staff and facilities. The program employed many village residents for cleanup of local beaches.

Changes in Community

Many of the changes in community relationships centered around the hiring of boat and skiff charters and beach cleanup crews during the summer of 1989. People spoke of jealousy about the amount of money people earned from the various jobs associated with the cleanup, but many reported that those types of disagreements were not long lasting. A common source of disagreements and arguments among crew members was accusations about the amount of oil different crews were picking up. Crews members who believed they were working harder because they collected more bags of oily waste than others argued with the coordinator, or others, that the other crew members were not working enough. A sense of competition around the amount of oil collected developed between cleanup workers.

Some tensions arose regarding the hiring of outsiders who were often related to village residents. The policy in hiring was originally for locals only, but several friends, relatives, and former residents of the village called requesting jobs. As the oil continued to be found in the area, the hiring procedure was changed to employ whoever was willing to work, even if they were outsiders. Some resentment about this practice caused tension within the community. Some fishermen who reside in Washington and base seasonal fishing operations out of Larsen Bay arrived later in the summer seeking boat charters for oil spill cleanup and were often disappointed when they were not hired.

Some of the relatives who came to Larsen Bay during the summer of 1989 to work on the cleanup have remained in the community and become active in local government and village functions. One such resident had left the village for seventeen years and felt the need to return, "I really can't explain it, but I just, there was something here that made me realize that I needed to be here, and you never really know what that is."

Some of the factionalism that resulted in the community between Tribal and city governments has also caused divisions within the community. Disagreements about the distribution of salmon received from the Kodiak Island Borough and Exxon took place within the community. During the field visit in the spring of 1990, there was no consensus about whether these divisions would be prolonged. Some residents believed that there had already been underlying tensions among those who had disagreements related to the oil spill.

Way of Life

Commercial fishermen holding permits in Larsen Bay changed their yearly cycle of activities throughout the year following the summer of 1989. Not only was their fishing lifestyle interrupted because of the original cleanup effort, but the cycles in pay schedules for Exxon's winter monitoring program and DEC's "local response" differed from average annual income. The Exxon winter monitoring program employed residents to look for oil in areas around the island during the winter of 1989-1990, before DEC's "local response" effort began. Some people who leased charters acquired the task of sorting through income tax and employer reporting requirements. The amount of bookkeeping for individuals and families who engaged in oil spill cleanup work was more than the average village resident was accustomed to.

An uncertainty about the coming fishing season created hesitation among some local fishermen and they expressed a lack of enthusiasm about preparation for the season of 1990. Others were anxious to resume fishing activities but were concerned about contamination of their fishing gear. Some fishermen were troubled about the prospect of market prices for the fishing season of 1990.

Subsistence food has been an important part of family and community relations in Larsen Bay, as in many Native villages. Many of the younger residents of Larsen Bay provide subsistence food for elders by travelling to Karluk to catch salmon. The clam beds of the area were oiled, and during the field visit in the spring of 1990, some residents were still reluctant to eat clams. Seal, deer, ducks, and other game were hunted by some local residents and shared with family members. One service provider commented about the attitude towards subsistence foods:

you would have to speak to them individually on that [subsistence foods] because people don't talk too much about them, everybody is using them . . . going down to the beaches . . . but a lot of times in their minds when they're actually eating that stuff, sometimes a person can lose their appetite [and] that kind of thing. You get that funny kind of feeling, you know.

Some community members purchased new four wheel all terrain vehicles, outboard motors, "skiffs," and other household items with money earned from the cleanup. Commercial fishermen were able to upgrade their equipment in some cases. Others took vacations to places outside of Alaska.

A new lodge opened in the village which offers visitors fishing, sightseeing and hiking opportunities in the area. Previous lodge accommodations have focused primarily on fishing and hunting guide services. One resident used income earned from VECO employment to help fund the lodge.

Family

Along with changes in the way of life of the overall community, came changes in family life in Larsen Bay during the summer of 1989. Children had less parental supervision during the active cleanup stage while most parents worked long hours. Many of the elders, who would normally have served as babysitters, worked on the cleanup also. Older children took care of younger children in cases where there would have usually been an adult present. The Indian Child Welfare Worker who provides afternoon activities for children was absent during the summer of 1989. When child care was available through a private person, prices were sometimes inflated compared to pre-oil spill levels.

Some of the teenagers who normally fish with their parents were unable to fish or work on the cleanup because of 18 year age requirement. Not only was expected income lost, but the canceled fishing season and absence of family life left older teenagers in the village to provide their own entertainment. One teenager reported that she was unable to attend college as planned during the fall of 1989 because she did not earn the money she had expected from fishing.

Mental Health

Some residents believed there was been an increase in domestic violence in the community since the oil spill. An informant explained that women in the village often look forward to the fishing season when their husbands are not home. Having the men at home during the summer when they were accustomed to being out of the house caused stress within the household which some think has led to increased domestic violence.

The position of community health representative (CHR) was vacant during the summer of 1989. Although village residents do not commonly talk to others about their problems, the CHR works with senior citizens, counseling, and drug and alcohol problems. The CHR position was filled in the fall of 1989. The Village Response Team (VRT) was comprised of KANA employees. The VRT did not hold regular meetings during the active cleanup

phase. The senior meal program was inactive during the summer of 1989, and resumed in the spring of 1990.

Some Alcoholics Anonymous meetings were held twice weekly during the summer of 1989. The group was small and often attended by people from the community who had left and returned for oil spill jobs. After the summer, the meetings were discontinued. There is no consensus about the notion that there was an increase in drug and alcohol use in the community following the oil spill.

Some service providers believed there was more drug and alcohol use among youth during the summer of 1989. One attempted suicide by a teenager occurred during the summer of 1989. The youth was a child of a parent working on the cleanup. There has been a reported increase in the number of suicide attempts since the oil spill, but no definite statistics to verify the increase in attempted suicide.

Medical

Health care delivery in Larsen Bay operated with one health aide and no regular alternates during the summer of 1989. There were three alternates during that summer who left the position. After the summer ended, a nurse from outside the community was hired as an alternate health aide. This was the first reported case of a nurse from outside Larsen Bay who worked as a health aide in the village.

The health aide worked more hours because of oil spill patients in the summer of 1989, and she treated people from outside the community. She became responsible for different kinds of health issues such as advice about subsistence foods. The standard advice about the safety of clams was: "If you dig up clams, soak them over night, if you see any kind of sheen on the water, don't eat them, and don't eat the liver or the vital organ of the deer or halibut."

During the summer of 1989, time was spent contacting patients' regular doctors by phone for consultation. Concerns about liability of treating non-Natives were reviewed with the supervisor from KANA. VECO had Emergency Medical Technicians on the job sites to work with VECO employees.

Medical problems commonly treated were upper respiratory problems, headaches, sprains, and back problems. The toxicity of the oil itself was a subject patients were unfamiliar with and carelessness in hygiene sometimes caused health problems. A health aide noted:

one person [that] said that they didn't wash their hands,...had oiled hands, ate a sandwich and got very sick and threw up after eating the sandwich. They really didn't realize how toxic it was,

Changes in Personal Experience

The way villagers from Larsen Bay look at the world around them may have been changed by the events following the Exxon Valdez spill. Some feel that they have a different perspective because of the money that came into the community and others expressed thought about their physical environment.

A Native of the village commented:

The changes might not be immediately noticeable, but the money that people got changed their expectations, changed their perceptions of possibilities, what they could do, their perception of opportunities, what they were worth, etc. It gave them exposure on the news, you know, so yeah, I would say it had, at the very least, several changes in the psychology, and it probably had some equal changes in the social structure . . .

The Village of Old Harbor

Old Harbor is located on the southeastern portion of Kodiak Island and is protected from the Pacific Ocean by Sitkalidik Island. The population fluctuates around 400. The community economy is based on commercial fishing and a number of residents are active in subsistence activities. The village is divided into three parts all of which are within a mile of each other. The older section houses are inhabited by many of the senior residents, and the other two sections are newly constructed. Most of the residents are of Native descent, with Russian and Scandinavian influences. The village operates as a second class city and has a city government, and a Tribal government which operates through the Kodiak Area Native Association (KANA).

Ties with the village of Akhiok, which lies south of Old Harbor are maintained where nearby fishing sites are used by subsistence permit holders from Old Harbor. The cannery at Alitak, near the village of Akhiok, has maintained a long standing business relationship with fishermen from Old Harbor. Commercial fishing relationships with Kodiak are common, and many of the commercial fishermen from Old Harbor operate out of the Kodiak Harbor.

Response Effort

When the oil spill occurred, the mayor of Old Harbor and several other fishermen left to go fishing in Togiak thinking it was highly unlikely that the oil would reach Kodiak. "No way in our wildest dreams did we ever think it would touch Kodiak..we figured with all the modern technology...I even assured my people not to worry," he stated. Some preparation was made with two boats and a few booms during the early stages of the spill before it was known that the oil would reach the shores of Kodiak Island. The Tribal council president flew with other Tribal presidents from around the island to monitor progress of the spill. She became coordinator for the VECO cleanup effort and operated out of the city-owned Tribal Office building.

The physical oiling of the area around Old Harbor was less than the heavily oiled villages of the western side of the island, but some oil did threaten local salmon streams. No organized response effort took place until after the Exxon and VECO cleanup began. The Tribal council president and a city council member kept track of the spill by air charters and began negotiations with officials in Kodiak.

The Village Public Safety Officer (VPSO) employed by VECO to be in charge of safety and supervision. He maintained contact with the VPSO in Ouzinkie in an effort to help the flow of supplies to Old Harbor. The confusion of roles between the Tribal council president, who acted as coordinator, and the VPSO caused some conflict.

When the mayor and other fishermen returned from Togiak, the cleanup operation was in the peak of activity. The majority of boat charters and cleanup crews had already been hired and some fishermen who missed the second salmon season because the fishery closed were unable to get charters or cleanup jobs.

The coordinator had no experience managing an operation similar to the cleanup effort. She commented:

that first day . . . came in and said ok you're going to need . .
. and gloves, liners, garbage bags . . . right down to how many
pairs of gloves does it take for one day's work, how many bags
does one boat use verses a skiff, beach crew etc.

Old Harbor was not a major cleaning station, and not many outsiders came into the village related to the cleanup. The coordinator had some unfavorable experiences with supervisors from VECO who accused her of "operating on Native time." Contact with both VECO and Exxon was maintained throughout the active cleanup phase. After the active cleanup was over, the coordinator left Old Harbor to recover from the stress she experienced in the summer of 1989 she then decided to relocate permanently.

Local Government

The oil spill and cleanup operations disrupted both city and Tribal governments. The city government dealt with oil spill related issues from the summer of 1989 throughout the winter and spring of 1990. Although not directly involved in supervision of the cleanup itself, the mayor was called upon constantly to answer questions about the spill, especially residents' concerns about subsistence foods.

It was often difficult for local government officials to identify those agencies involved in testing of food sources, and faith in the results of the tests was lacking during the field visit in May of 1990. The mayor discussed a common theme around the island concerning the uncertainty about subsistence testing:

I think there were two different Exxon agencies and there was
another agency that came in, and you know, they would make
checks and they dug clams . . . but they report themok, but you
know oil is still floating and still coming in . . .

According to a city council member, regular government functions were not usually very active during the summer fishing season, but because the fishing time frames were predictable, council meetings could be scheduled in advance for weekends. Regular meetings were either canceled or rushed during the active cleanup phase. Council members working on the cleanup were too tired to discuss city business at length according to one source. There were problems when a city employee was denied his request to work on the cleanup but took an unauthorized leave despite the council's position.

Contact with Larsen Bay for information on billing rates for office space was ongoing. The mayor tried to charge rates for use of city facilities that were comparable to the other villages on the island. He felt that each village was treated differently by Exxon and VECO.

The city of Old harbor had no regular full time staff except the city clerk during the summer of 1989. The clerk worked part time on the cleanup, but said that it did not affect her job with the city at the time. She has said that the oil spill correspondence has been an additional workload throughout the year since the spill took place. The DEC's "local response" cleanup was directed through the mayor's office during the spring of 1990, with the aid of the Tribal council president. The program employed many local residents.

Construction of the school was underway when the cleanup activities occurred in the summer of 1989, and, although some employees were lost to VECO employment, the facility was completed by fall. Some school employees worked on the cleanup, but no significant staff loss was mentioned. There was some delay in public assistance for housing repairs which were postponed until the summer of 1990. A comprehensive plan for Old Harbor was in progress with the KIB, but was delayed during the summer of 1989.

The mayor of Old Harbor did not participate in many Oiled Mayors meetings because of the expense of travel. There was some miscommunication about reimbursement from the KIB regarding Oiled Mayors meetings, and due to low operating funds he decided not to participate. The increased workload on the mayor's office was demonstrated during the field visit in May of 1990 when a fax was sent to the office asking the mayor to be responsible for hiring two people for Exxon jobs for the summer of 1990. The request from Exxon was that two people be chosen for the jobs within two days from the received fax. This type of request was not common for the mayor and created a different role for his position.

Tribal Government

The Tribal government literally stopped functioning during the summer of 1989 because the Tribal council president was consumed with her duties as coordinator of the activities. The Tribal council president was active in enrollment of members into the Tribe before the summer of 1989. There were problems prior to 1989 keeping an active Tribal government

and, for the six months prior to the oil spill, the president made progress towards activating Tribal government. Since she was the main person familiar with the various grants, programs and policies of the council, her absence from the position entailed complete dysfunction of the Tribal council and programs.

There were few people in the village who understood the system of grant writing and procedures during the field visit. Both the city and the Tribal governments complained of lack of assistance, knowledge and time allotted to submit grant proposals. Reporting requirements, bookkeeping, and general administration of programs are all necessary parts of maintaining services within Tribal government. The new Tribal council president began working with KANA in the winter of 1990 to reorganize the Tribal affairs. The position of Tribal clerk was advertised during the spring of 1990 and reorganization of the Tribal government. A Tribal representative reported that the position was funded by Exxon in compensation for some of the problems created by oil spill and operation.

Some individuals stated that there was conflict within Tribal government, city government and the Native Corporation during the active phase of the oil spill. Some of the members belong to several of the local organizations and when one governing body had difficulties, it often caused problems with relations between them.

Changes in Community

The community did not receive the influx of newcomers experienced in other villages - VECO and Exxon supervisors were the only ones. The opinion of several residents of Old Harbor was that those employees were condescending towards them and were not helpful or cooperative.

Some experiences with the media were displeasing to the coordinator. The press from Kodiak was judgmental about the comments made by the coordinator during interviews, and she finally had to discontinue any contact with the press. A local television interview took place that highlighted the affect on Native villages.

Many of the differences between residents over government matters were prompted by oil spill involvement. Some people felt that the coordinator used her position of power to the advantage of her family and friends. She believes that she did the best she could to be fair. The responsibilities placed on key leaders in the community may have widened existing splits within the village. During the field visit there were some individuals who believed that it was time to move on with their lives rather than dwell on the past.

The distribution of canned salmon donated by Exxon and Kodiak Island Borough to residents caused some complaints in the community about favoritism. A local school teacher who had an adopted child from the village received what some considered more

than her share. The intent was supposedly to feed other children who didn't always have lunches at school, but friction and accusations of biased distribution of the salmon resulted.

The most extreme case of inequity of claims settlements encountered in the villages on Kodiak Island occurred in Old Harbor. As reported by several citizens, two young high school aged boys received an estimated \$80,000 in claims for new fishing permits they held. Many of the older fishermen in the village received low settlements by comparison. They observed as the young men received large amounts of money. One of the local fisherman explained his feelings about the situation:

I've seen these young kids, you know I don't begrudge any fishermen, I think everybody would have a piece of the pie, but when you see a kid with a \$13,000 new truck, I had a hell of a time buying the kids school clothes.

The Native Corporation assisted in filing claims for fishermen who often lacked the literacy skills need to fill out forms.

Way of Life

The disruption of the fishing cycle was a recurring subject among residents interviewed during the field visit in spring of 1990. There is a sizeable commercial fishing fleet as well as much use of subsistence foods in Old Harbor. The commercial fishermen are often connected with boats from Kodiak, and some of the highliners were able to receive charters for the summer. The local fishermen who fished the first season and then returned to Old Harbor expecting to be hired on charter were too late. Most of the boats had already been hired and they were unable to fish or get charters. Some didn't want any involvement in activities and kept hoping the fishing season would open. One person described a friend who spent his first summer in the village after forty years of fishing:

He'd come in to the office, and it got to the point where I would almost cry when I'd see him come in. He'd say, 'I wanted this to be a good season' . . . he was going through a lot of emotional sort of stuff . . . he literally was like a fish out of water.

Some fishermen said they could see fish jumping in the water. Being forbidden to fish was especially hard for these individuals. Some change in the species of fish caught were reported by one individual. He reported:

... people are starting to get into cod, because you know, the oil spill make everybody start using everything they had to made up for the lost salmon season ... nobody was fishing for cod, because it was 78 cents a pound, and you know, after the oil spill closed everybody had big boat payment, and they tried to do everything to make up the payments. I see three or four boats cod fishing, and nobody cod fishes here, but they were out cod fishing.

Not only did the economy of Old Harbor change for the summer of 1989 because of closure of the fishing season, but some city officials believed there was a heightened awareness of other economic development potential for the community. A new lodge was under construction during the summer, and although building was stopped temporarily because of lack of funds from fishing income, the lodge was completed and opened in the winter of 1990. The lodge was originally intended for government and public assistance workers, but the prospect of tourism became more appealing to lodge owners since its opening. A new cafe opened in the lodge, and some villagers were more accepting of the economic benefits of tourism compared to the past. Some of the other economic endeavors considered were a fish processing plant and a gift shop. Some citizens were concerned that without aid and guidance in economic development to individuals with lower income levels, the wealthier village residents would be the sole beneficiaries of future economic development.

Family

The extended family has played an important in the village of Old Harbor as it has in most villages role on Kodiak Island. A teacher's description of family life follows:

the extended family is used traditionally, where the kids will stay with aunt or grandma and be nurtured and well taken of they can go to their grandparents, but if they're downtown or uptown they can stay with relative. The idea that there is always food out, if you want any help everybody offers to eat, or tea or coffee and want to visit.

While this is one person's view of family life, some informants stated that underlying friction between some families and within some extended family networks was magnified by tensions from oil spill-related affairs.

The impact on children in the community was much the same as other areas where the time that parents spent with their children was often much less than an average summer. One person commented:

There wasn't you know, picnics and stuff like in the summer people would come home, they would go out and they would go to the lakes and to go to swimming, we used to have a lot of summer picnics, berry picking . . . and you would think they looked forward to it but it wasn't there. Mom and Dad were tired and come home and go to bed, grandma's cranky, stuck with the kids and stuff like that, you know the kids didn't have the attention, it was sad.

Teenagers who typically fished with their families were left on their own without many activities to occupy their time. Men who were normally out of the village fishing every summer found themselves in a foreign environment in their own village. Their wives were unaccustomed to the change of having their husbands home. Some of the women were accustomed to going on vacation with other women from the village and didn't get that opportunity because of the change in family life in the summer of 1989. In some cases having the men home allowed the completion of some odd jobs and chores around the house, and more participation in things like gardening.

Mental Health

Residents were reluctant to talk about domestic violence in the village, although there have been incidents reported in the past and since the oil spill. Some believed that alcohol use increased in the village after the oil spill, and others felt that it was inappropriate to blame an ongoing problem on the spill. Still others felt that with the increase in money in the community and fewer activities to occupy their time, some people began drinking more. A few have stopped drinking on their own in the past, and usually relied only on family and self for support. The influence of the church has played a strong role of support to individuals with alcohol problems. A priest who returned to the village in August, 1989 after several years away was considered a primary counselor for personal problems and alcohol abuse.

An increase in juvenile offenses involving alcohol was reported during the fall and winter of 1989. Not much consistency with drug and alcohol programs existed in Old Harbor in years prior to 1989, however there was an active attempt by the former community health representative (CHR) and the Tribal council president to hold Alcoholics Anonymous (AA) meetings before the spill. The effort to hold meetings was disrupted by the oil spill. An

effort by KANA to provide services to the community was also interrupted by the spill. Village residents formerly involved with alcohol and drug counseling were overwhelmed by oil spill workload and other problems in the community. Visits from counselors from KANA were not welcomed during the active cleanup phase. The same was true of some other services, according to some service providers.

The position of CHR had been vacant for around three months when the oil spill occurred. The replacement for this position was not hired until fall of 1989. Most programs for social services are operated by the Tribal council or KANA and were discontinued during the summer of 1989.

Four deaths occurred in the village of Old Harbor during the summer of 1989, according to service providers. At least two of the deaths were documented suicides. Another death was attributed to a stroke, alcohol or suicide. One death was attributed to alcoholic seizure. Three of the four deaths took place within weeks of each other. The fourth was in August. The first suicide was less than a month after the spill.

While these suicides were not attributed to the oil spill in interviews, this dis-proportionately high number did occur within six months of the accident. The deaths added to the already chaotic summer of Old Harbor residents. A young man said to have been in his mid-twenties jumped off of the city dock. A community leader spoke about the incident:

I accidentally witnessed on . . . within two weeks of the spill a guy jumped off the dock. By the time I got to him . . . he was underwater for two hours, by then the whole village was down there on the dock just looking. It's so awful because 2 and 3 and 4 year olds were down there. It was a cruel thing.

This person had a history of suicide in the family according to a local villager. There had been two other suicides in the family in the past.

The other death of question was a man who "fell" off of the dock. One person who witnessed the event said a stroke caused the person to fall into the water. Another account relates the incident to alcohol. The other definite suicide occurred in August when a man with no history of suicide attempts in the family killed himself with a shotgun. The psychological impact of several deaths in a small village cannot be ignored, especially when some of them were suicidal.

Besides the fact that suicide is a sensitive subject, there are other reasons that people may be unwilling to recognize deaths as suicide. Possibly the most important of these is the religious practice of ostracizing the body of the suicide victim from burial within the church

cemetery. Several people have said that the Russian Orthodox church will not acknowledge the death.

During the time of the suicides, a suicide prevention program had been underway as a result of a history of suicides in the villages of Kodiak Island. The suicide prevention coordinator was witness to one suicide and one death from alcoholic seizure. Guilt relating to the failure of the program coordinator to prevent the suicides prevails in that individual today.

Medical

The position of health aide was vacant for most of the summer. There had been a stable health aide for around two years before the spring of 1989. When the previous health aide resigned before the oil spill for personal reasons, replacements for the position were inconsistent. New health aides vacated the positions during the summer and it became impossible to attract villagers to the position because they feared the large responsibilities associated with the recent deaths.

In an effort to encourage locals to apply for the position of health aide, two nurses were hired by KANA and city of Old Harbor. During the field visit in the spring of 1990, they worked alternate positions with schedules of one week on, and one week off duty. At that time there had been little interest by residents in applying for the health aide positions. The possibility of a former health aide returning to the village and resuming the position was under consideration at the time of the field visit. One of the nurses described the philosophy, "The original idea was to bring other Native health aides forward, work with them, give them more of a sense of self-worth."

A new clinic was under construction in the village during the spring of 1990. Construction of the clinic was halted because of lack of funds in the summer of 1989. The interruption of construction was not related to the oil spill.

Changes in Personal Experience

Many different events transpired in the village of Old Harbor since the oil spill. Not all could be directly linked to the oil spill. However, some residents believed the spill caused changes in the way they perceive the world.

One fisherman spoke of hatred:

Bitter feelings, especially someone I don't know, I hate hating them. Probably if I met them, they're probably decent people. I believe that these people should have come to the village themselves instead of sitting back writing a bunch of forms. They more or less told us how to live our lives . . . They should have come out to the village and talked to the people, instead of sending their lower, I think their higher ups should have come out. Maybe they would have gotten a handle on the situation.

Another comment illustrated how the spill changed the view of the past of one individual:

I don't think that we'll ever forget it. It's changed the way we talk. I know that it's going to be, 'before the spill and after the spill.' Previously it was, 'before the tidal wave and after the tidal wave.' Now it's had that much of an impact that we're going to be talking in terms of, 'before the oil spill and after the oil spill.'

The Village of Ouzinkie

The village of Ouzinkie is located on Spruce Island, one of the smaller islands that comprise the Kodiak Island group near the northeastern tip of Kodiak Island. The village is the closest of the Kodiak villages to the city of Kodiak, and easily accessible from Kodiak by a twenty minute "skiff" (small boat) ride or 7 minute airplane flight. Air flights are also available from Port Lions. Ouzinkie is one of the only two villages on Kodiak Island that has not been relocated. Family relationships with residents from nearby Port Lions are common. The population is primarily Native, with a mix of Scandinavian and Russian backgrounds. Commercial fishing is the primary economic activity of the village, and subsistence activities are an important part of village life. Commercial fishing ties with Kodiak and Port Lions are maintained. The total population of Ouzinkie is approximately 220 residents.

The village is a second class city within the KIB. An active Tribal council operates programs for the city of Ouzinkie with the aid of the Kodiak Area Native Association (KANA). The city and the Tribal governments often work together on projects for the benefit of the community. The Ouzinkie Native Corporation is located in the village of Ouzinkie, and owns much of the land surrounding the area.

Response Effort

The initial response to the oil spill from Ouzinkie differed from that of other villages for several reasons. The Ouzinkie Native Corporation took an active role in response during the early stages of the oil spill. The president of Ouzinkie Native Corporation began contacting lawyers and specialists from Anchorage during the first three days of the spill. A consultant with prior experience in oil spill cleanup was hired through the Native Corporation. The consultant then advised the mayor of Ouzinkie, the president of the Native Corporation, and the Village Public Safety Officer (VPSO) on procedures for cleanup. This included information on construction of boom, acquisition of materials, and communication equipment.

The VPSO had some background in disaster training and was familiar with communication systems and safety procedures. The disaster training had not prepared him for the specific tasks of oil spill cleanup, and the consultant proved to be a valuable resource. The Native Corporation president attended public meetings in the city of Kodiak, and spoke with Exxon officials during the early stages of the spill. Early samples of oil found near Ouzinkie were sent into Kodiak for testing. According to one local informant, Exxon referred to the oil found around Kodiak Island as "unknown oil." Local residents were extremely frustrated by the lack of acknowledgement about the existence of oil around Kodiak Island.

The Ouzinkie Native Corporation began taking measures for cleanup with the city and Tribal governments. The Corporation owns and operates a logging company on a nearby island and labor and resources were utilized from the logging company. Logs the city had stockpiled from airstrip construction were also used to build boom. Other supplies were ordered from Anchorage with the aide of the consultant. The costs for materials and labor were paid for by the Ouzinkie Native Corporation and later reimbursed by Exxon.

Subsistence areas were prioritized for protection and boom was constructed around important beaches with clam beds and salmon streams. The location of Ouzinkie on a small island exposure to the Shelikof Strait made the island more susceptible to oiling. Oil came into the area in the form of thick mousse and tar balls and mixed with sand and kelp on local beaches. The oil permeated into the sand and was found by beach crews in layers underneath the surface. The strong winds and currents carried oil into the coves and beaches around Spruce Island. Commercial fishing areas were closed.

When VECO came into the community and began cleanup operations, much of their boom and materials were already in place. VECO set up a command center in the Native Corporation building and leased some space from the Tribal Offices. A Coast Guard representative joined the VECO command center. Close contact between the Ouzinkie Native Corporation, the VPSO who worked for VECO as Coordinator, and the city government was maintained throughout the active cleanup phase. The lottery method was used for the hiring of boat charters and beach crews.

Safety meetings were held daily by the VPSO, and the public was encouraged to participate and voice concerns about the cleanup. Concerns about toxicity of clam beds, and fumes from garbage bags were discussed. Untimely removal of garbage bags filled with oil caused concern among residents about the gases that accumulated in the bags and posed threat of combustion. Masks were used to protect the workers from fumes.

The president of the Native Corporation worked almost exclusively on oil-related issues during the summer of 1989. The city government and village residents supported his efforts, however he also received complaints about problems with boat hiring and VECO workers. Communication with VECO and Exxon and with government agencies such as the Department of Environmental Conservation (DEC), Kodiak Island Borough, the Alaska Department of Fish and Game was ongoing. There were contradictory test results about the safety of fish and wild game from the various agencies involved in testing of subsistence foods.

In mid summer of 1989, because of problems with VECO employees and local cleanup personnel, the city of Ouzinkie and The Ouzinkie Native Corporation wrote a letter to a head VECO official demanding that VECO contact the VPSO for communication regarding all oil spill cleanup issues. According to a city official, the results of that letter combined with pressure on VECO representatives at meetings in Kodiak produced satisfactory results.

One VECO coordinator in particular was helpful in acquiring the supplies and action that were needed for an effective cleanup effort.

Local Government

Activities of the city government were disrupted by the cleanup but key personnel maintained employment. Some of the office personnel worked part time on the cleanup, and an effort was made to allow employees the opportunity to work on the cleanup if they desired. The city council granted leaves of absence for most of the city employees to work for VECO and they returned to their positions during the fall of 1989. Plans to submit one grant proposal for renovation of the fire house and airport remodeling were deferred because of the loss of assistance from a council member who was busy with oil spill work.

In the spring of 1989 some of the school aides left their jobs to work on the cleanup. During the academic school year 1989 - 1990 the principal of Ouzinkie school reported that several children no longer qualified for the free lunch program at school because of increased income from oil spill cleanup employment.

Additional workload was placed on the mayor who worked with the Native Organization in communicating with outside officials about oil spill-related issues. city council meetings were less frequent and there was difficulty obtaining a quorum. One council member left the position to work on the oil spill. One of the people who had worked closely with the city in grant writing and project development left the position to work for Exxon during the summer of 1989.

The DEC spring cleanup put additional stress on the city clerk during the spring of 1989 because of bookkeeping and communication requirements. One office worker talked about her dilemma:

Well, it seemed like I would be trying to do everything, but it just seemed like you'd be rushing through it, you'd just throw it in a corner somewhere, and say you'll get back to it . . . just rushing through everything . . . instead of filing it, you'd just put in a pile for filing later . . . things that needed to be done . . . wouldn't get done . . .

Training for first aid cards and "six pack" licenses organized through the city government and any questions concerning regulations related to oil spill cleanup were directed through the city offices. Because of the additional regulations required as a result of the oil spill, many of the local residents looked to the city for advice on the best way to acquire the "six pack"

licenses and safety cards needed for beach cleanup jobs and the operation of skiffs to carry passengers. During the field visit in spring of 1990, telephone calls and correspondence regarding oil spill issues continued to be a part of the workload at the Ouzinkie city Office.

There has been an active movement for disaster planning in Ouzinkie since the oil spill. City government had previously worked on plans for a disaster plan with the aid of Kodiak Island Borough several years earlier, but no formal action had been taken. Several community members attended a public meeting in May of 1990 and began planning for an emergency response plan. The types of disasters that had been presented in VPSO safety training prior to the oil spill lacked any instruction about oil spills. Community members present at the meeting discussed types of possible disasters to add to the standard disaster plan presented by the VPSO. An active interest in the welfare of the community was evident at the meeting. At a disaster training meeting in the Spring of 1990 with VPSO's from other parts of Alaska, contributions from those who had been active in the oil spill events were made to overall disaster planning.

The Tribal government has worked closely with the city of Ouzinkie for grant proposals and community projects. One Tribal council member resigned from his position because of an Exxon employment conflict. Some expertise was lost for grant writing and administration of projects because of the resignation of a council member. The Tribal council government remained inactive for several months, but there was no mention of specific grants lost as a result. Tribal employees took leaves of absence from their jobs or resigned during the spill. Most vacant positions were filled during the fall of 1989.

Changes in Community

The most commonly noted change in community relations was the inequity of distribution of crew shares from Exxon. Some residents reported that they did not receive any crew shares from Exxon because they were not listed as crewmen by a boat captain. Some stated that captains who would have hired them as crewmen claimed family members instead, consequently, crew shares were given to family members who would not normally have fished. Some of the alleged captains reside outside of the village of Ouzinkie, but there was some conflict within the community regarding distribution of crew shares. The crewmen who did not receive any settlements at all suffered severe financial loss.

Other changes in social relations within the village were related to hiring. At first, community members who were not hired complained about unfair hiring practices. Through the lottery method and a conscious effort to provide employment opportunity to those who desired employment, some of the tensions were eased. The assignments of crew foremen caused some friction between people who were not accustomed to taking orders from friends or younger relatives.

Some fishermen said they were willing to start over and forget the past, while others believed there would be ongoing strains in relations. Informal verbal agreements were common arrangements for crew hiring. Fishermen who did not receive crew shares had no proof they would have worked on a particular boat. One fisherman talked about his feelings about the distribution of crew shares:

there was nothing vicious about it, the point is this: we're stuck, ok. Some of these people that did that . . . we have a feeling about our relations . . . a lot of people are related . . . I'm not gonna go and file suit against my brother-in-law over money, we don't usually do things like that . . .

The village of Ouzinkie has had a history of uniting against outside control. When people were asked if there was anything special about Ouzinkie that makes it resistant to something like the oil spill, some responded by explaining they have always taken control of villages affairs. A village official spoke in this regard:

We don't have to jump every time one of them says do this or that and I believe that's the reason we're different . . . we realize that we don't have to be dominated by the white people. If we have something to say, we're gonna say it, you know, we're just as good as they are and there is no reason that we have to do everything they tell us to, and I think we feel that if there is anything that has to be done, we should make the plan out ourselves, and do it.

The increased sense of social solidarity between the Tribal council, the Native Corporation, the city council the VPSO, and the villagers was mentioned by most of the informants. Some were concerned about the lasting effects of inner village conflicts, but most residents interviewed believed that things were "pretty much back to normal."

Way of Life

The closing of and damage to subsistence fishing areas prompted the Ouzinkie Native Corporation to draft a proposal with the aid of Kodiak Island Borough and the Alaska Department of Community and Regional Affairs (DCRA) for compensation for the loss of subsistence fishing. The proposal requested that Exxon pay for the cost of boats and supplies for local fishermen to travel to Southeast Alaska and fish for their own salmon.

The original proposal requested compensation for other types of sealife and wild game. The proposal was denied by Exxon, but with the aid of a Kodiak DCRA representative, a modified proposal was submitted to the state of Alaska and funded.

The subsistence grant funded by DCRA was helpful in providing food resources that were lost because of the oil spill, but the timing of the arrival of the salmon was late in comparison to an average year. Precautions for weather conditions had to be considered for any curing and storage of salmon that would have otherwise been routine. Some of the salmon was stored in a community freezer building. The activities associated with subsistence lifestyles were lost during the summer and fall of 1989.

Concerns about subsistence issues were voiced by representatives from the Native Organization and city officials who were not satisfied with the reporting of test results back to the community. One official recounts a public meeting with representatives from various agencies:

I wish you guys [from outside agencies] would get together and pool you information, so we understand what is what rather than four or five different answers . . . nobody would commit themselves and say that it was safe . . .

Another important concern discussed by residents during the field visit was the long term affects of subsistence foods. One individual stated his opinions on the subject:

I'm talking about a daily diet of food that we eat. And you're telling us to go back to our way of eating . . . I said remember Agent Orange? For the next ten years, I'm going to be healthy, but what happens after? After the stuff is in your system . . .

The long term affects of deer, ducks and other game as well as fish were issues concerning local residents, and some curtailed hunting activities because of local sightings of dead deer on the beaches.

Only a few residents continued to garden in the traditional way with the use of kelp as fertilizer before the summer of 1989, and gardening activities were non existent during the summer of 1989 because of reports of contaminated kelp. It was unknown if the few residents who normally garden resumed the practice in the summer of 1990. Many of the residents who participated in gardening were senior citizens.

Many fishermen worked on the DEC "local response" cleanup through the winter of 1990 and were still uncertain about the fishing season during the spring of that year. Fear about the rise of oil to the surface and the closure of the fishing season posed a sense of passiveness about the coming season. Some dependency on oil spill-related jobs changed the way some residents viewed employment.

Family

Typical family life was changed during the active cleanup period. In some cases, both parents worked long hours during the active cleanup period. A few teenagers who worked as babysitters but some community members said that young children were being cared for by older children. The Indian Child Welfare (ICW) program, which usually provides afternoon activities for children, was suspended during the active cleanup phase of the spill because of cleanup employment. One person's account of family life during the summer of 1989 follows:

People didn't have family lives during the first period, because they worked so many hours a day, and in most cases it was a man and a woman and they were so tired when they got home that they went straight to bed. They were up and gone early in the morning . . . there was no social life. Nobody went out. There was no place to go . . . you didn't want your kids on the beaches.

Some residents spoke of divorce and separation during and after the active period of the oil spill but no cases that were specifically caused by the events of the spill were named. A change in gender roles was described as the cause for some of the family problems by one resident. The women who worked on the cleanup in many cases did not have much experience with employment outside of the home. The money earned by women and the time spent away from the house changed some family structures for the summer of 1989, and may have changed their overall perspective. One single mother became accustomed to earning a living and sought full time employment. Consequently, she acquired the confidence to stay employed which released her from dependency on public assistance.

Mental Health

The position of community health representative (CHR) was occupied by the same person for two years prior to the oil spill. The CHR took a leave of absence from her job in the summer of 1989 and resumed the position in the fall of 1989. The CHR provided

counseling, assistance to the elderly and senior meal programs, and other social services. There was some effort towards starting Alcoholics Anonymous meetings in the months prior to the oil spill, but none were actually initiated.

One respected community resident entered treatment for alcohol rehabilitation after the active cleanup ended. This person believed that the stress created during the oil spill prompted the decision to seek help. Several residents requested that the returning citizen hold AA meetings in the community.

Service providers reported an increase in domestic violence during the spill. There was also an increase in the number of attempted suicides according to one provider. One attempted suicide occurred during the spring of 1990, a few weeks before the field visit to Ouzinkie. The attempted suicide was committed by a person with a family history of suicide. It is unknown whether the suicide was related to effects of the oil spill.

There is a large population of seniors in the village consisting of 29 elders. Senior meal programs were suspended during the summer of 1989, and the senior cook took a leave of absence to work for VECO. Some residents said that they felt regrets for the lack of attention that both senior citizens and children received during the active cleanup period. Children's programs and the senior meal program began functioning normally in the early part of the fall of 1989.

Medical

The primary health aide in Ouzinkie had held the position for 32 years by 1989. She usually had an alternate health aide to assist at the clinic, but the position was vacated during the summer of 1989. The alternate left to work on the cleanup, and this position was not filled until several months later.

More illnesses related to stress and overwork were treated during the summer of 1989. The health aide reported that "people [were] exhausted from the hours they were keeping and they would be susceptible." Severe sunburns were reported, but no marked increase in medical problems were noted.

Some patients went to the clinic feeling sick but had no specific symptoms, and/or related illnesses. The health aide spoke about some of her experiences with patients during the active cleanup phase:

Sometimes it was a matter of telling them that they were working too hard, they're not giving themselves enough time for anything but work and that's why they were feeling this way.

It's not something that's [was] really physically wrong. And the mothers, of course, working from seven in the morning until seven in the evening...

Advice about the use of subsistence foods was also given through the clinic, although this was not the only source for such information. Residents who worked on the cleanup stated that they sometimes had headaches from the fumes from the oily waste.

Medical consultation from the health aide coordinator or physician at KANA was not readily available because of increased workload on the KANA medical staff. In many cases decisions were made without consulting medical staff. Fewer visits from doctors to the village and fewer referrals to KANA in Kodiak were made because of the limited medical staff available.

Changes in Personal Experience

The world view of residents of Ouzinkie may not have necessarily changed, but the conviction of residents to maintain control of their lives and community has possibly been strengthened. Suspicions about the state and Exxon's use of a new technique to stimulate growth on oiled beaches called bioremediation was illustrated in the following quote:

I feel like it's another slap in the face because . . . what's going to happen in the future . . . they're just toying with this stuff, the oil spill's bad enough but when you spill something on top of it, and you have no idea what the future's going to bring from it . . . I think that's crazy.

In another case an official spoke about outside control:

I felt intimidated by the fact that they could impose themselves on us and our land and on our way of life, with total disregard, with total disrespect of the leadership of each community, in which we have lived here all of our lives . . . we're able to handle our own affairs. So the total intimidation was that some of the agencies thought that we couldn't have our own affairs.

The Village of Port Lions

Port Lions is located on the northeast section of Kodiak Island. At 40% Native and 60% Non-native. Much of the population is comprised of people with Russian and Scandinavian ancestry. The village was built in 1964 for the residents of the neighboring island of Afognak after it was destroyed in the earthquake and tidal wave that year. Many residents of Port Lions maintain ties with Ouzinkie and Kodiak due to their close proximity, extended family networks, and commercial fishing relationships. The primary economic activities of the residents are commercial fishing, local government jobs, and tourism, including guide services for hunting and fishing.

The village operates as a second class city and has a population of about 300 people. The Tribal council operates local community services with the aid of the Kodiak Area Native Association (KANA). Some residents are members of both the city and Tribal councils. Port Lions is accessible by air flights from Kodiak and Ouzinkie.

Response Effort

Exposure to the oil in Port Lions was sporadic. The oil came into the outlying areas in the form of tar balls or mousse patties with varying degrees of density and size depending on the tides and other unknown factors. The oil also mixed with sand, gravel, and kelp on the beaches, and often was not visible on the surface. This made it difficult to target areas for cleanup. Local clam beds used for subsistence were damaged, and some local salmon streams were affected.

Port Lions' response to the oil spill was influenced by several key community leaders during the initial weeks of the spill. The mayor worked closely with Kodiak Island Borough in coordinating plans for the response effort, including the construction of log booms. However, he left to pursue commercial fishing in another area and appointed a council member as acting mayor in charge of spill operations. In early April the Village Public Safety Officer (VPSO) was appointed as coordinator for the cleanup operations.

The local cleanup effort began with a handful of volunteers. When Exxon, then VECO, took control of the cleanup operations, some of the original volunteers became paid employees. Some confusion and animosity arose between the VPSO and the city council while both were in contact with officials from VECO and Exxon. The acting mayor dealt primarily through Exxon, and the VPSO was a VECO employee. The lack of consistency between Exxon's communication with the acting mayor and VECO's interaction with the VPSO led to various problems with cleanup operations and community relationships.

City and Tribal Officials maintained contact with other communities to learn about how the cleanup effort was handled in affected areas such as Cordova and Valdez. A working

relationship with the neighboring village of Ouzinkie was ongoing throughout the summer. Progress of the spill was monitored by plane flights taken by city and Tribal officials during the early stages. The movement of the oil was also monitored with maps received by fax from the Kodiak Island Borough and the Coast Guard.

During the early weeks of the spill people used their own equipment, boats, and skiffs to work on cleanup. A resident of a neighboring bay assisted by offering instruction on how to build log booms. The booms were constructed with the use of city equipment from trees that were felled from city property. When equipment was finally received from Exxon, there were problems with the type and size of equipment sent.

Decisions regarding areas to be protected were coordinated with Ouzinkie residents to maximize the effectiveness of their resources. Before Exxon or VECO assumed control of the cleanup operations, the Ouzinkie Native Corporation took an active role in oil spill response and invited Port Lions to join in a response effort. Port Lions declined to become involved in joint purchase of any cleanup equipment because they could not afford to pay in advance for costs for supplies.

Representatives from both communities joined together to request supplies from VECO offices in Kodiak. The VPSO explained his efforts and frustrations:

We represented Port Lions and Ouzinkie in one meeting, which was the first time that happened . . . There's strength in numbers . . . Ouzinkie and Port Lions showed up there together. So yeah, we got answers . . . we didn't get it all . . . they really, really needed to justify sending it out to us. I wasn't asking for helicopters, I wasn't asking for trucks, I wasn't asking for some type of a fancy food concession stand. I was asking for garbage bags, I was asking for shovels, I was asking for cable, I was asking only for what we really needed.

Many of the local boats were leased to Exxon and local people were employed for beach cleanup. Complaints by community members who did not get hired eventually led to use of a lottery system for choosing employees. Even after the hiring system changed to the lottery, there were protests about unfairness in hiring practices. Residents felt they should have had more control over the cleanup operations in their community and the surrounding areas.

The coordinator resigned from his position with VECO in late June for various reasons. He was frustrated with the problems in dealing with VECO and Exxon to acquire equipment, manage personnel, and exchange information with supervisors who were

changing constantly. He also felt he had neglected his duties as VPSO and his first commitment was to that job. He did continue to occasionally work on the cleanup effort and helped to dismantle the program.

Local Government

Both the city and Tribal governments were heavily impacted by the oil spill and related cleanup operations. VECO and Exxon officials operated out of the city offices and disrupted normal daily activities. Meetings were held almost daily and officials from various agencies often gave no advance notice when they expected to hold city council meetings. Communications with the Tribal and city governments with outside agencies such as the Coast Guard, Department of Environmental Conservation (DEC), Exxon, VECO, and the Kodiak Island Borough were not coordinated between agencies or local governments. The city clerk was called upon to hold meetings and was forced to stop regular activities to keep up with day to day cleanup meetings, communications, and correspondence. The clerk described one day in particular:

Coming in at eight a.m. Sunday morning when Exxon demanded a meeting . . . I'll never forget it . . . I was already frustrated because the council hadn't had a quorum and hadn't adopted the budget and all this work I was trying to do in the middle of the whole mess, basic city work wasn't being taken care of and that's what I mean the whole basic city operation came to a standstill . . .

Exxon and VECO's use of city offices displaced city workers from their desks and equipment, such as copy machines and phones. City employees were used to build log booms with city equipment, sometimes on the payroll of the city. Although some of the labor costs were reimbursed by Exxon, the amount of bookkeeping increased due to the additional labor hired. The number of W2 forms to be filed in 1989 increased to six times the average amount. Much of the paperwork required for employees that were hired on the cleanup created additional work for the bookkeeper, secretary and city clerk and continued through the fall of 1989 and winter of 1990.

Almost half of the city employees quit their jobs or took a leave of absence (sometimes unauthorized) in order to work on the cleanup. Those who did keep their jobs with the city while working on the cleanup often had difficulties keeping up with city work because of the long hours put in for VECO. The harbor master, who did not work for VECO but for the city, spent part of his time running city equipment to build log booms and therefore spent less time keeping track of harbor activity.

The library lost all of its assistants and substitute staff, which created additional work for the librarian. When the librarian left for the summer because of family matters, no trained substitutes were available to work. Volunteers from the church helped run the library, and various untrained people worked sporadically. Other problems resulted from non-residents using library materials that were never returned and maintenance being neglected because of a lack of labor.

The city dump was overused from an additional amount of waste from consumer products due to the increase of people in the community. Garbage collection increased to double, sometimes triple, the normal amount. A new position of a permanent, part time maintenance person was added to the staff in March, 1990 because the city's previous practice of hiring temporary labor was no longer functional. Since the summer of 1989, the city of Port Lions had been unable to find temporary help at the wages they offered, so the council felt the only alternative was to create a new position.

City council members were often absent or not available for meetings because of cleanup employment. Some council members took a leave of absence for the summer which created some animosity and factionalism within the council. Other problems developed within the city council regarding decisions about hiring. The council became divided on a number of issues that were oil spill-related. One prominent council member left the community in the fall of 1989 for personal reasons including dissension within city and Tribal governments.

Several community projects were postponed due to lack of staff. The building of a new community hall was stopped after the foundation had been constructed. A project for replacing all of the old water and sewer lines in the center of town was also halted. City dock repair funded by the Job Opportunities in Basic Skills (JOBS) bill was postponed. A proposal for a Community Development Block Grant was late in preparation because of the additional oil spill-related work load the city office was still suffering from in March, 1990. The mayor and city council members have continued to spend much of their time on oil spill issues since the summer of 1989.

The "local response" cleanup effort began in March 1990, funded by a subgrant from the Kodiak Island Borough and administered under the supervision of the Department of Environmental Conservation. A separate office was set up to run the cleanup. This office was more organized in response efforts than was the case last summer. To participate in the spring cleanup, residents were required to pass safety tests and receive "six pack" licenses allowing them to charter boats. The regulatory requirements for "six pack" licenses caused city offices to become indirectly involved in organizing training sessions. Many residents complained that the "six pack" license gave outsiders who were more likely to be educated and accustomed to taking tests an unfair advantage. The local fishermen believed that they were more qualified to carry people in their boats than someone who has simply passed a safety test. The fishermen are knowledgeable about the tides and currents, know the

underwater topography, and are able to maneuver around the local coves and straits easily, but some have difficulty passing written tests.

Tribal Government

The Tribal government which manages most social services through KANA for the city of Port Lions was severely affected by the oil spill. The Tribal council president was involved in initial flights from Kodiak Island to Prince Williams Sound with Tribal Leaders from other villages. She was active in city government response and was also a VECO employee. She left the community in the fall of 1989, and the position of Tribal council president was vacant for several months. The newly elected president found it difficult to learn the necessary skills needed for completing grant applications and for administration when she assumed the position in March, 1989. The Tribal clerk, who was familiar with the job and the council's various programs also left the position. Her replacement was overworked because of the accumulated tasks, and left the position after a few months. Examples of grants that were lost, halted, or not pursued were the suicide prevention grant, an Administration for Native Americans grant, and a youth grant.

The Tribal council president requested technical assistance for help in reorganizing the Tribal council which stopped operating during the summer of 1989. She noted, in particular, the need for assistance in communication skills for Tribal council members. In her words: "we're drastically looking for training or technical assistance of some type to rebuild."

Changes in Community

Many of the changes that took place in local politics as a result of oil spill response inundated changes in social relations among community members. People who had active roles in response were often alienated from others in the community. According to some informants, disagreements were commonplace. This was true not only between people who worked on the cleanup, but also among friends and neighbors who did not participate in the cleanup. Many community members believe the disagreements were a result of stress and long hours of work. Others thought that jealousy and greed over money caused the disputes.

Some divisions within the community were related to oil spill response. Because some people felt the oil would definitely reach the area while others did not, there were disputes about the way the response was handled. This continued throughout the summer, and some people believed the oil had more serious consequences than others. Some relations among the younger, less experienced community members who became leaders during the spill were strained because of the role of authority in the cleanup. One supervisor commented on his position:

They felt that I was trying to, I guess, show power or something. They felt that I was trying to tell them how it was going to be, when they felt that as a city council they should be telling me how it was gonna be . . .

Other fissions in the community occurred between those who chose not to work for VECO and those who did.

Migration out of the community was a common theme discussed in Port Lions. According to city staff eight to ten families left the area after the summer of 1989. While some of this out-migration was a result of staff changes at the school unrelated to the oil spill, one resident described the oil spill as, "the straw that broke the camel's back." Three of my best friends left," he said. Some left because the money they earned gave them the opportunity to try something different. During the field visit in March of 1990, local citizens expressed concern for their children's education at a public meeting. They feared the loss of families in the community would result in less school staff and a poorer quality of education for their children.

One incident that illustrated a positive community effort was the banding together of the residents of Port Lions to prevent an incinerator project from being implemented nearby. An area near Port Lions was chosen for the floating incinerator which would have burned oil contaminated waste. Other potential sites had been rejected because of potential damage to wildlife and the environment, but the residents of Port Lions were worried about their own health. The community felt that decisions were being made about their lives by outsiders with no regard for the opinions of those who would be most affected. After city officials had numerous meetings with Kodiak Island Borough staff, representatives from Ouzinkie, and reporters, the project was halted and the floating incinerator was sent away before it was able to begin operation in the area.

Crime during the summer was mostly in the form of juvenile and alcohol-related offenses. DWIs were handled by the community health aide or the VPSO who would be sure to escort the drivers off the road safely.

Way of Life

Disruption of the yearly cycle of commercial fishing and subsistence was pervasive in Port Lions. People were unable to have family picnics either because family members were working on the cleanup or the beaches were oiled and inaccessible. One resident described his experiences trying to get to his cabin by a nearby river with his two children, "We tried to go in, and the whole bay was blocked off. You couldn't get by these log booms..."

Experiences such as this disrupted the important social elements of the lifestyle of Port Lions' residents such as fishing, clam digging, and berry picking.

The safety of subsistence foods was a major issue for residents. Because the appearance of oil was sporadic, the testing of portions of beaches was not considered completely valid by several residents. During the field visit, people were concerned about their food supply, especially clams, and although some continued to eat the clams, the unknown factor of long term effects and general toxicity was always present. One person described subsistence concerns:

There's no telling to what degree that shell fish is tainted. Until you get some real comprehensive results back, from all the testing going on, they could go into a clam bed and take a sample here, and a sample here, and not get any tainted clams, but fifteen feet over here, where a couple of mousse patties sat down and went and sunk into the ground a little bit, you're gonna have a section of tainted shell fish.

Some residents stated that food costs went up, because of a decrease in subsistence food and increased prices at the local store.

Hunting was curtailed because some deer had been seen eating kelp from the oiled beaches and people were afraid the meat would be toxic. Consequently, some residents went to other areas of the state to hunt, asked relatives from other areas for subsistence meats, or began depending more on processed meat.

Gardening is another family activity which was abandoned for the summer. Gardening was affected because the kelp used as fertilizer was contaminated, and the fear of further contamination caused people to abandon the practice for the summer. This lack of garden foods had an impact on food supplies. Few families garden in this traditional way and those that do are often older residents, but the importance of this impact should not be overlooked.

Vacations were affected because city employees and others were unable to take their planned vacations and when they were able to leave, they returned to extra work that had accumulated due to the spill. Travel plans were interrupted because planes in and out of Kodiak were monopolized by cleanup-related travel. One local resident was unable to see her husband who was out fishing for several weeks because she couldn't hire a charter to get out of town.

Some local people believe that the "six-pack" license will change the economy of the area such that those who have their licenses will depend on the charter business. This could affect the economic structure of the area which had limited charters and outfitting businesses in the past. Those who operated charter operations would be forced to maintain licenses. If they were unable to pass the tests their businesses would suffer. Some people reported six or seven attempts at passing the test for a six pack license.

The wages paid by the cleanup effort and subsequent state cleanup have changed the perspective of residents regarding employment. Several positions remained unfilled in the community because people were unwilling to work for wages of \$10.00 to \$12.00 per hour. In March of 1990 many people were depending on future cleanup work for income, and still believed there might be another major cleanup with high wages in the summer of 1990.

Family

The change in lifestyle for the summer especially disrupted some of the younger high school children who were unable to fish with their families and earn money. They were not old enough to work on the cleanup and the fishing season was closed, so they had less activities to keep them occupied. People who worked long hours on the cleanup had little time to spend with their families. The position of an Indian Child Welfare (ICW) worker, who usually provided activities for children, was vacant during the summer of 1990, because the ICW worked on oil spill cleanup.

The disruption of gender roles was evident in the homes of families where the men were usually gone in the summer fishing, and women did not traditionally work outside the home. At least one woman who normally took care of the home full time took on a job with the city that no one else applied for. She and her husband did not work on the cleanup last summer but both have taken on more responsibility in the community, filling positions on boards and councils that others had vacated as a result of the oil spill.

Some parents expressed regret that they did not have the time to spend with their children because of the long hours working on the cleanup. There is no formal day care in the village and private babysitters are usually family members.

Mental Health

The community health representative position was vacated by an employee who left to work for VECO. Some service providers reported an increase in violence in the community during the active cleanup period. Increases in domestic violence were also noted, and older teenage boys and girls were involved in physical fights more than usual according to service providers.

Drug and alcohol use increased during the summer, and there was a reported increase in the amount of cocaine coming into the community according to service providers. Increases in marijuana and alcohol use were also noted. There were no active Alcoholics Anonymous (AA) meetings in the community at the time of the oil spill. There have been sporadic attempts to hold AA meetings and some service providers believed there was progress towards reinstating drug and alcohol programs that were interrupted by the oil spill.

Senior citizens receive meals and services through the Senior meal program. This program, operated by a senior cook who has run the program for several years, continued throughout the active cleanup phase. The community health representative is also active in the senior meal program and delivers meals to some elders at home. The senior cook reported that food costs and the number of seniors attending meals increased from the summer of 1988 to 1989. His estimates for average increases are 10 more servings per meal. One reason given for the increase in senior meal attendance is the lack of subsistence foods donated to seniors by family members. The senior cook also normally donates food from his garden to the senior meal program but was unable to do so since the oil spill.

Some canned and frozen food was donated by Kodiak Island Borough and Exxon for senior citizens, but a few seniors returned the cans that were given to them in fear that they were contaminated. Debates among seniors about whether or not the fish were safe to eat were sometimes a topic of conversation at senior meals visited during March of 1990.

A suicide prevention program was halted because of a lack of personnel to manage the program. The program was funded through the Tribal government. One letter threatening suicide was written to a parent by a teenager saying she was feeling ignored by her mother who was working long hours. The child was taken outside the village for counseling and has not shown any signs of suicide threats since.

Medical

The local clinic staffed by one health aide was also affected by the oil spill. This health aide remained on 24 hour call during the entire summer until an alternate was hired in the fall. The health aide had worked in the position for less than two years, and began to earn more trust in the community during the summer of 1989. She often found herself in the role of counselor as well as a medical provider. An increase in demand was noted for patients that fell within the age bracket between small children and elderly adults. This increase lasted until the fall of 1990 when patient visits slowed down at the clinic.

The types of problems that required medical care were different during the active cleanup phase. There were more personal injuries and more cases of pneumonia. Additional treatments were sometimes required for people who did not take the medication as prescribed, originally due to erratic work schedules. In general, the people receiving

medical attention were often working long hours on the cleanup and not caring for their personal health.

Some patients that came into the clinic were not diagnosed with a medical problem. The stress on some community members prompted them to go to the clinic to seek help. Although they didn't ask for counseling, they often needed someone to talk to. One example of this was a teenager who thought his heart was hurting. After several tests that showed negative results, the problem was attributed to stress by the health aide.

Communication between the health aide coordinator and staff at KANA was difficult because of the activity at the KANA clinic related to the oil spill. At times the health aide could not make phone contact with her supervisors, because the phones were busy, or medical staff at KANA were unavailable. Medical evacuations with the Coast Guard were slow, so private charters were used in some cases.

Changes in Personal Experience

People described not only a loss of control of the cleanup effort and the community, but a loss of control of their personal lives. "They wanted to keep control, they did not want you to get organized or anybody to get organized... I think they wanted to keep control," one person said about Exxon and VECO.

Others feel that their views of oil companies and the legislature have changed. They described an increased sense of mistrust towards any outside agencies and sometimes towards their friends and neighbors. One person characterized the realization that the oil was going to impact the island as a state of "emotional shock."

"I fish therefore I am," was the way a resident described her feelings about her subsistence lifestyle. A feeling in the past of security with the environment was mentioned by another resident. She felt that security was taken away with the threat of contaminated fish and wildlife such as deer and fox. Her perception of security and independence was damaged by the lack of answers about food supplies and contamination.

THE CHIGNIK BAY AREA: REGIONAL OVERVIEW

The three communities discussed below, Chignik Bay, Chignik Lagoon, and Chignik Lake, are located in close proximity to one another on the middle of the Alaska Peninsula. United in both their isolation and their jurisdiction within the Bristol Bay Borough, these three communities remain distinct from one another. The city of Chignik Bay is the economic and, in some ways, political center of all of the "Chigniks." The community has two large fish processing plants and a small boat harbor that make it the hub of the region's commercial fisheries. Although the VPSO has been formally appointed to serve only the city itself, because he is the only VPSO in the entire region, he is often asked by the state troopers to assist in other communities. During the spill and cleanup period the city also served as the nerve center for the regional response. Ironically, this response was largely spearheaded by the VPSO.

Like Chignik Bay, the village of Chignik Lagoon is composed of a highly mixed ethnic population whose inhabitants are of Native and non-Native ancestry. Here, as in Chignik Bay, the population fluctuates from winter to spring with the advent of the fishing season. However, many of its inhabitants seem less involved in community affairs and most of the residents focus their attention and energies on their families and less on civic affairs. Chignik Lagoon residents often described themselves as "lacking a sense of community." Within recent years a number of the year-round residents have moved to Kodiak, Anchorage, and Seattle for their winter residence. There is a fish processing plant located across the Lagoon from the village.

The village of Chignik Lake, unlike its two neighboring villages, is situated inland on Chignik Lake. While its residents fish in the Lagoon and live on one side of it during the fishing season, their permanent village is more remotely located than the two communities on the ocean. Their ethnic composition is different as well. The majority of the villagers are Natives, often with a higher percentage of Native ancestry than the residents in the other two communities. More heavily dependent on subsistence activities, they hunt bear, moose, and caribou to augment their marine diet. Per capita, residents' income is considerably lower than the residents of Chignik Bay and Chignik Lagoon. While the residents of the latter communities consider themselves commercial fishermen, the villagers in Chignik Lake are considered by their neighbors as people who fish commercially but live and depend more on traditional activities for subsistence. Moreover, the community population is more stable and while its population relocates to the Lagoon for the fishing season, it has a much higher percentage of year-round residents than the other communities.

All three communities were exposed to oil in the same way. By-and-large the area was not heavily oiled. While some remote beaches were oiled, it was mostly in the form of tar balls and oil sheen. The effect on local fisheries was the same for all three communities. The policy of zero tolerance closed all the fisheries but that of the Lagoon.

Their exposure to the cleanup was also similar except Chignik Lagoon suffered from having to contend with all the boats in the region fishing in the Lagoon, which became the stage for much competition and tension.

Finally, while it can also be said that all three communities shared similar psychosocial impact from the spill and cleanup effort, it must be borne in mind that culture remains a significant consideration for understanding the type and degree of this impact. As will be discussed below, this consideration is responsible in part for a differential psychosocial impact.

The Village of Chignik Bay

Chignik Bay is located in Anchorage Bay on the Alaska Peninsula 535 air miles from Anchorage. It is the oldest continuously occupied community in the region. The community is accessible by air from Kodiak and King Salmon as well as by boat. Incorporated as a second class city, the community is governed by a city council and a Native village council. The majority of its revenues are derived from the fish tax. The residents of the community are mostly of a mixed background of Aleut, Russian, and Scandinavian heritage. The population is approximately 128 people, although the population fluctuates greatly between winter and summer and can reach a thousand in the summer. The economy of Chignik is based on a mixture of cash and subsistence. The city is situated in one of the richest and most profitable salmon districts in the world. There are two fish processing plants in the community and one store.

Response Effort

For a long time after the spill occurred, most residents believed it was posed no threat to their community. However, once the spill reached Gore Point people became very concerned about the possibility of it reaching their community. Consequently, the VPSO began listening to the Kodiak MAC meetings over the radio and broadcasting them over the VHF to the residents. He also organized public meetings and raised the issue with the city council. In concert with these activities, he made phone calls to Homer, Valdez, Port Graham, and Kodiak. Moreover, he invited people from all five of the regional communities to public meetings in order to organize a regional response. In this way, the city of Chignik and the VPSO became the central organizing focus of the response effort for the entire region. The communities solicited the knowledge of local fishermen in planning what areas they should protect.

When the VPSO was absolutely certain the oil was heading for the community, he requested the city council to declare an emergency and enact an emergency ordinance that would establish the mayor, the vice-mayor, and the fire chief as the emergency coordinator for the city. The measure was adopted and the VPSO (who is also the fire chief and for a short time during this period was also the mayor) became the emergency coordinator. More public meetings were held in conjunction with the Native Association, the local Native council and Exxon. hired twelve boats to patrol the waters and scout for the presence of oil. also hired 16 workers to sew material for the booms. The city acquired a fax machine that allowed them closer contact with other communities, and DEC helped them establish a command center.

Two months after the spill occurred, VECO came in and assumed control of the response effort. According to the emergency coordinator they began "taking over." As one city official stated, "Once VECO took charge of the cleanup, we were sidelined in terms of

control and input." This same official asserted that "having in charge of the cleanup was like putting a fox in charge of the chicken coop." Yet another individual stated, "we had a major distrust of their [s] people." A former city council member said: "We should have handled it [the cleanup] ourselves rather than let outsiders handle it . . . we should have kept more control. should have been made to pay the bill but let the communities do the work."

Many people felt VECO attempted to control the flow of critical information into the community. For instance, when a Fish and Game boat arrived with test samples, VECO allegedly tried to keep it quiet and prevent local people from viewing the samples. The VPSO stated he would not stand for this kind of "interference" and "suppression" of information to the public. The community had a difficult time obtaining information from the rest of the state because of its remoteness. In order to compensate for this, the city hired part-time workers to write and distribute bulletins to update the population. Despite these attempts to provide accurate information, the VPSO stated that there was an atmosphere of distrust and animosity throughout the community, "Nobody would believe anybody, what anybody was saying and part of it was I think the mind game--Exxon and VECO would say that's not our oil . . . first they'd say there was no oil and then we proved it, bring the dead birds or bring the oil up to them and so yeah it is oil, then they'd say its not their oil . . ." He also addressed this issue of pervasive mistrust in a public speech he made in which he said,

"I've been in fire services since '75 and I have never, ever ran across a situation that generates so much distrust between all players, never seen it like that and that's going to be around awhile and I also said because we do not have community disaster plans in much of the area, because we did not have the rules established we were told by the spiller what they were going to do . . . we weren't in charge, we weren't in the driver's seat . . . and I said unless we make some changes . . . and prepare for the future it is going to happen again."

There was also extreme dissatisfaction over the number of boats hired, according to the emergency coordinator. For six weeks they had a dozen boats on line. When these began to discover oil in the northern fishing district of the region, laid off all of them because Kodiak Island was hard hit and they wanted to send some of their boom over there. Two weeks after they sent the boats home, the oil began arriving in the Chignik fishing district. Exxon then hired approximately four boats which were the only boats they had on line the rest of the summer.

Although many city officials were quite critical of and VECO, they praised a number of outside groups that did assist them during the cleanup period. Included in these groups are the Fish and Wildlife Service, The Bristol Bay Coastal Resource Services, the Department of Community and Regional Affairs, and the Bristol Bay Times.

Local Government

Although the city of Chignik was not as hard hit by the spill as many other communities, the spill and the cleanup did create disruptions in the operations of city government. Excessive demands were made on the city offices. The city's infrastructure was too small in scope and personnel to be able to deal adequately with the plethora of issues and demands that arose as a result of the spill; nevertheless, it would appear the city made an exceptional effort to respond to the demands made upon it. One of the greatest difficulties with which it had to deal was with the lack of available and up-to-date information. The region was so remotely located from the other regions affected by the spill that it required extraordinary efforts to maintain daily contact. Not only was there no radio station or other media to provide information, but it is also a community whose remote location and severe weather often makes it difficult to reach by plane or boat.

According to the former city clerk, at the time, the city offices were overwhelmed by the presence of so many people who demanded information or the use of their phones and fax machine. Furthermore, because it was often difficult to log the use of such equipment they have never been able to seek adequate reimbursement for the additional expense of the phones. These communication costs alone were considerable for a small municipality.

The city suffered other financial losses as well. First, being so dependent on commercial fishing, they lost a sizeable portion of their regional economy when the fisheries were closed down. 90% of their revenue is derived from the fish tax and, because the poundage dropped dramatically, the city lost a large share of their annual revenues. Furthermore, it remains to be seen how potential damage from the spill could reduce the revenues in the coming years. At the time of the crisis period the city had only a city clerk and a part-time assistant. These two people could not perform both their regular job tasks and meet the demands of the spill. Consequently, they were unable to apply for several grants they had intended to apply for. Moreover, all of their city personnel including the VPSO/emergency coordinator and others worked hundreds of hours of unlogged overtime for which they cannot now be compensated.

Another indication of the disruption is the massive turn over in municipal positions within the last year during which time, there have been five mayors, 17 city council members (on a seven member council) and four city clerks. The only key person who has remained in his position has been the VPSO. The degree to which the spill was directly or indirectly responsible for this turn-over will be addressed in the section below on changes in the

community because these changes are inextricably tied to community relations beyond municipal politics. However, the turmoil in the local government, regardless of its primary causes, has created deep-seated factionalism. The Native Village Council has also had considerable factionalism within the last year. There is now only one member of the village council. The former acting president, allegedly self-appointed, resigned in a dispute over the winter cleanup program. The reasons for this turnover on the Native council remain unclear. For whatever reasons, the council has been relatively inactive for several years.

Changes in Community

The biggest changes in the community stem from the factionalism mentioned above, and it is difficult to attribute all of these changes directly to the effects of the spill because other community issues are embedded in the disputes. Much of the factionalism centered around the actions of a local church group which has been very active in the community. Although its members remain a minority, they have been successful until lately in having their members elected to the city council and the mayor's office. One of the disputes arose in the summer of 1989 when the city clerk, responding to the requests of a number of citizens for more news and information about the spill, made an initiative to have the city subsidize a transponder in order to pick up a public radio station in Kodiak. Members of this church group objected to the move because they claimed that the station sometimes broadcast rock and roll music which they found offensive. Moreover, the church group was in the process of trying to raise funds to purchase a transponder in order to broadcast a gospel station out of Homer. Eventually, the city clerk prevailed. She and her supporters raised over one hundred signatures in support of the subsidy. However, she stated that because of this struggle and the difficulty she had in performing her job in the face of the demands of the spill, she resigned from her office.

This church group was also involved in other controversies in the community during the past year. For instance, at one point they objected to the school having its gym open on Friday nights because that is when they hold church services, and they didn't want the children of the community to be distracted by other activities. Many community members objected to this view and the church group eventually was defeated. In an even more controversial move, the church group demanded that two books be removed from the school library because they found them morally objectionable. Most parents and members of the school advisory board as well as the principal objected to this censorship. The principal offered to compromise and insure the parents in the church group that the books would be signed out of the library only on the basis of parental permission. The church group maintained their demand and eventually one family withdrew its children from the school because of the dispute. Even though the school principal and the regional school office prevailed, the issue caused considerable discord and a few advisory members resigned because they felt "harassed" by some of the parents. These disputes, though centered around one minority group, are indicative of the highly charged and factionalized atmosphere in the community.

There seem to be many disputes on civic and private levels that have caused tension in the community at large.

There are other sources of tension in the community that may have contributed to the disruption of municipal government. The population of the community fluctuates greatly during the fishing season. Both permanent year round residents and summer residents seem to distinguish themselves from one another. Many permanent residents claim that the seasonal residents are not willing to contribute to the well-being of the community but nevertheless blame the permanent residents for "everything that goes wrong."

Way of Life

The policy of zero tolerance and the closing of all the fisheries had an enormous impact on this commercial fishing community. The state only allowed fishing in the protected waters of Chignik Lagoon. This exception seems to have disturbed most of the fishermen. To begin with, it seems to be the prevailing consensus that the zero tolerance policy was far too stringent. Many fishermen think the state over-reacted because most of the region's waters were not heavily oiled, although oil sheen and tar balls were found in various areas. However, since the waters were closed, the fishermen think all of the waters should have been closed. Allowing people to fish in Chignik Lagoon prevented the fishermen from qualifying for the clearly defined reimbursement that other fishermen qualified for.

In addition to the disruption of normal fishing activities, the two fish processing plants in the community were affected which further upset the economic balance of the community. Both plants had to cut back their staff levels, and at least one plant switched from salmon to cod processing. The closing of all the waters but the Lagoon had serious consequences for the fish processing plants. One plant reported that 70% of its fishermen normally fished outside the Lagoon. This plant's production fell about 30% below their normal production rate. Although both plants employ few residents of the community, the loss of income and the drop in production seriously affected the regional economy. Moreover, as one plant manager observed, the closing down of the fisheries and the overly competitive activity in the lagoon "placed the fishermen in a bad mood and made it difficult to deal with them." Another plant manager reported that during the summer of 1989, the plant lost about five boats from which they usually purchase fish because those boats had been chartered to VECO.

Mental Health

The Bristol Bay Area Native Association received a \$55,000 grant to provide enhanced services in the Chignik Area in response to the spill from the state Department of Health and Social Services. However, this funding was not received until January 1990 and the

mental health counselor in Chignik was not hired until some time after that. The major source of information on the incidence of domestic violence, child abuse, depression, and suicide rates was the VPSO. For crime in general, the greatest increase he observed was in theft. While he has observed an increase in alcohol abuse he had a marked decrease in DWI arrests within the last year compared to previous years. Furthermore, he has had no reported cases of sexual abuse during the last year and a half. However, he has had the first reported incidence of a rape in six and one half years, but that incident involved two non-residents working at one of the fish processing plants. In six and one half years he has never had an official suicide or attempted suicide case in the region.

Medical

According to the newly appointed physician's assistant and the Bristol Bay Area Native Association, the spill did not result in an increase in demand on the medical clinic even though it was anticipated that it might do so.

Changes in Personal Experience

While Chignik Bay and the other Chignik communities were not affected by the spill to the same degree as other communities, people did undergo serious changes in lifescape. Many of the informants became very skeptical about "so-called experts." People questioned the reliability of scientists on two issues: 1) the rationale for a zero tolerance policy being imposed in their fishing districts and 2) the indecisiveness of most "experts" on the potential contamination of foodstuff in the environment. Some people seem to have lost their faith in scientific analysis; others seem to have lost their trust in the motives of some scientists.

People in all the communities were upset and anxious over the uncertainty of their future. The possible long term effects of the spill on the environment, particularly on marine resources, was a source of considerable worry. In addition people were extremely frustrated that there was little they could do to insure the continuation of their way of life and livelihood. In this regard, many people thought that they had lost control over their fate and the fate of their environment.

The Village of Chignik Lagoon

Located approximately six miles west of the city of Chignik, Chignik Lagoon is an unincorporated village and is governed by a traditional council. The community is accessible by air and boat. The village participates in the state revenue sharing program. The ethnic composition of the community is mixed. Most residents have a cultural heritage which includes Aleut, Scandinavian, and Russian ancestry. The population is listed at around 40 people, but during the summer fishing season it increases at least three-fold. The mainstay of the economy is fishing. There is an airstrip in the community and across the lagoon there is a cannery and a store. In a sense, there are two Chignik Lagoons: One is known as the "flat side" and the other as the "cannery side." This report addresses itself to the "flat side." The cannery side is populated largely by summer residents from the nearby community of Chignik Lake.

Response Effort

All of the cleanup operations were coordinated from Chignik Bay. The village itself was not officially involved directly in the cleanup operations. Few community members and very few boats were hired by VECO or Exxon. Two members of the community used their personal fax machines to maintain communication with the nerve center of the response effort in the region in Chignik Bay and with other communities in the state affected by the spill. Information that they received was posted in the Lagoon to update the village residents. The villagers did experience difficulty in attending the public meetings held by VECO and Exxon often without prior public notice in Chignik Bay. Chignik Lagoon residents complained that without advance warning they were unable to make it over to Chignik Bay in time to hear and meet with these corporate representatives. Some people thought that VECO and Exxon might have done this deliberately. Others observed that spring is a busy time of the year when most fishermen are preparing for the upcoming fishing season and if they were not near a radio they might not hear of the meetings even if announced in advance.

Local Government

Since the governmental response for the spill was conducted in Chignik Bay for all the Chignik communities, the spill and cleanup had little direct impact on the local government. At this point in time the local government exists almost in name only since there are only two council members. The village has always had a difficult time getting residents to partake in local government. One reason for this is that most of its residents only live in the community during the summer, living elsewhere in Alaska or the lower forty-eight the rest of the year. According to year-round residents, many of these people do not think of the village as their home. Even if they do, they want nothing to do with the local

government for a variety of reasons. During the hectic fishing season, these summer residents see themselves as having little time for civic responsibilities, or they little or no interest in village affairs. Many year round residents apparently also lack interest in participating in local affairs. One resident stated regarding the village council, "there's a lack of interest . . . nobody wants to take the responsibility." Other villagers stated that most residents were interested only in their immediate families and had no interest in the greater public good. One former council person stated that the residents of the community "are more independent than even most Alaskans and tend to keep to themselves."

Within the last year the situation has deteriorated because of a dispute over the management of the community Safewater Program. Controversy over the management and funding of the program resulted in the entire village council resigning because of their inability to resolve the dispute. While the central issues causing this political fall-out and factionalism are not directly related to the spill, some say that the spill may in part be responsible because the heightened tension and stress in the community caused by the spill may have exacerbated community relations.

Changes in Community and Way of Life

Normally, only the residents of the Lagoon fish in the lagoon but sometimes there may be up to 25 boats there to fish during salmon season. Because the waters outside the Lagoon were closed to everyone, almost 100 boats fished the Lagoon during the summer. Boat crews had to line up and wait their turn to fish. Some boats did fairly well, but others did poorly. One person stated that, "there were slim pickings in the little Lagoon with all those boats in it." According to all reports, tension between the boat crews was very marked and there was a highly charged sense of competition that is not normally felt in fishing seasons. Most residents reported high levels of animosity erupting from time to time and constant bickering and quarrelling over the marine radio. Other residents say that because of the extreme stress, alcohol consumption increased and there were more fights and bitter exchanges than in previous summers.

Despite the fact that the waters were not heavily oiled, there was considerable anxiety over the potential impact of the oil spill on the fisheries. It was decided to close the fisheries. Many people are reported to have thought that this was unfair. Once they were closed however most thought the Lagoon should be closed as well so that fishermen could more easily qualify for reimbursement from Exxon. There remains some tension because the predictions for fishing in the Lagoon this year are very poor.

As a whole, the community is a relatively affluent community because of the abundance of salmon in its waters. While some boat owners reportedly did poorly, many others did well and some even fished to nearly normal levels. Crew members seem to have been more adversely affected, since to start with their incomes are much lower than those of most boat

owners. Some informants stated they thought the spill had little negative impact, while others stated that there was some major impact, but not severe enough to prevent many from taking long winter vacations. In fact, more than a few residents commented that some villagers seemed to have taken longer vacations than usual. The greatest concern expressed in most villagers was not for the impact of last summer, but for the potential long-term negative impact. The uncertainty of the future is what seems to disturb most people.

Mental and Medical Health

Both the community health aide and the community health representative reported that they have observed no adverse health effects of any kind as a result of the spill. The community health representative's position did not exist at the time of the spill, but the community health aide stated that there were no increased demands on the clinic nor did she perceive any additional stress on families because of the spill. According to these sources, while there was some increase in alcohol abuse, it was not significant. There was no increase in domestic violence or sexual abuse that they were aware of.

The Village of Chignik Lake

Located on the Alaska Peninsula approximately five miles inland from Chignik Lagoon, this community is only accessible by airplane and skiff when the tides are right. Chignik Lake is an unincorporated village governed by a traditional Village Council. The village participates in the state revenue sharing program. The ethnic composition of the village is largely Aleut and has a higher Native population than the neighboring communities of Chignik Bay and Chignik Lagoon. The year-round population is approximately 170 people. The village has a mixed cash-subsistence economy. While the mainstay of their economy is fishing they also depend to a greater degree than their neighboring communities on other subsistence activities which include caribou and moose hunting and berry gathering. There is a store and an airstrip located in the village. Most of the villagers relocate to the "cannery side" of Chignik Lagoon during the summer months.

Response Effort

As discussed above, the nerve center for the response efforts was located in the city of Chignik Bay. The Chignik Lake Village Council was not directly involved in the response. As in the village of Chignik Lagoon, some community members worked on the cleanup crews. No boats from the community were leased by VECO. Villagers had the same complaints as those in Chignik Lagoon about the VECO and Exxon meetings being held "at the last minute without sufficient notice" for villagers to attend. Advance warning was especially critical for the residents of this community since the tides dictate when people can travel. There were other complaints about VECO. For instance, villagers reported that, on one occasion, a VECO representative at a public meeting said he wanted to take a short break before finishing the meeting and then failed to return. As a result, the villagers became suspicious of VECO and began to distrust them.

Change in Community and Way of Life

The village of Chignik Lake seems to have been more adversely affected by the spill than its two neighboring communities. Many of the fishermen did not own large boats that could be leased. The average per capita income of the community is much less than in Chignik Bay and Chignik Lagoon and the villagers could not afford a substantial drop in income from year to year. Some men stated that as crew members on boats, they were not paid and were suing the captains. They also claimed a lot of their boats were "hurting", that they did not catch many fish last year. Some people complained about having to fish in the Lagoon because it was like "having to fish in a bath tub." The fishermen also complained that the six-pack course held this past spring was held too close to the Togiak fishing season opening and they could not enroll in the course.

According to those interviewed, many of the villagers were afraid for the future outlook. The villagers were concerned about how the spill would affect their families and fishing in the coming years.

The loss of income from a normal fishing season appears to have created economic hardships for some. Here is how one spokesperson described the situation;

A lot of people had hard time all winter long because they never had no money to live on. There was a shortage of money . . . so I am sure they had to do without . . . you know, some of them had to do without certain things and there's not too many jobs in the winter time in a village like this to employ everyone and pretty much everyone depends on fishing for their livelihood, as their income for the entire year.

One women stated that many of the people are also very afraid of eating foods they normally eat like clams and halibut. People seem disturbed because no reliable health authority can give them assurance as to what foods are safe or dangerous to consume. The fears about contamination of foodstuffs in the environment strike at the heart of their concerns about subsistence. One person stated that they have "always lived off the land on salmon and caribou." The over-riding concern seems to be that this way of life will be undermined by the effects of the spill and that the foods they enjoy eating the most, as well as their cultural traditions that are enmeshed in subsistence activities, will be lost forever.

A year after the spill, just before the opening of the fishing season, people were apparently still preoccupied with the impact of the spill on their lives. One individual described the situation like this: "When you get together that is the main topic, is the oil spill, what is going to happen to us, what is going to happen to our fish, what is going to happen to our livelihood. It's always the main concern, the main topic."

It is difficult to know the impact of the spill on crime rates in the community since there is no VPSO in the village. However, one of the community health representatives stated that there has been an increase in alcohol-related incidents and feels there should be a VPSO in residence in the village. One of the community health aides was injured in an incident with a drunken patient in the late spring of 1990.

Mental and Medical Health

One health official stated that, since the spill, there have been more problems with alcohol in the community. According to this person some of the people with this problem are not

just those who had this problem before the spill. The same individual stated that there has been no apparent increase or even usage of drugs in the community. (She doubts many villagers could even afford drugs.) Nor has this person witnessed any increase in domestic violence or sexual abuse. However, this source did state that four people from the community were being treated for clinical depression. It was unclear if their depression was directly related to the spill.

According to this official, many people felt helpless last summer and didn't know where to turn:

It was literally out of our hands . . . all summer long there was anxiety. You would stay in line for five hours at a time before you'd get your turn to make one haul and the luck of maybe getting one fish. Talk about depression! And some of the captains were really depressed. They didn't think this was going to happen.

This person went on to talk about the implications of the spill for the future:

The impact of the spill, like anything, it takes a while for a person to really absorb anything and it doesn't really hit them until maybe, for some people, maybe a month later. This is not something totally new, it's terrible. I mean, you can't feel an impact after something really happens. Just like right now, Oh God, it's a problem. It is something that has to be absorbed and then comes to the surface. I think fishermen are feeling it a lot more, even the housewives . . . they are feeling all the tension, you have got all kinds of payments to make and it just comes out in another way. It's hard.

THE KENAI PENINSULA: REGIONAL OVERVIEW

All the communities discussed in the Kenai Peninsula Region are part of the Kenai Peninsula Borough. The Kenai Peninsula Borough is located south of Anchorage, Alaska's population center. The Borough traverses both sides of the Cook Inlet from the southern tip of the Kenai Peninsula north to where the Cook Inlet splits into the Knik and Turnagain Arms. North of the Peninsula and Turnagain Arm lie the Chugach Mountains. The Kenai Mountains run north and south across the Peninsula in contrast to the lowlands lying to their west. Across the Inlet, the land is dominated by the Chigmit Mountains, a part of the Alaska Range.

The Kenai Peninsula Borough was incorporated January 1, 1964. The Borough has an elected mayor and provides residents with the following areawide services: Assessment and Collection, Education, Planning and Zoning, and Solid Waste Disposal. Non-areawide services include two hospitals, two fire departments, and a sports center. There are five first class or home rule cities in the Borough and one second class city. In addition, there are a number of unincorporated settlements ranging in size from under 30 to over 200 in population.

The Kenai Peninsula encompasses 99% of the Borough's population and most of the development, according to the Borough's Resource Development Office. The only population centers on the West side of the Cook Inlet are the village of Tyonek and the oil and gas facilities at Drift River, Trading Bay, and Granite Point. However, according to the Borough's Situation and Prospects report, only 0.7% of the population of the Borough resided in these areas in 1986. The bulk of the Borough's residents, 63%, lived in the Central Peninsula Region the economic centers of which are communities of Kenai and Soldotna, lying 11 miles apart. In 1986, 27,338 persons lived in the vicinity of these two communities. Homer and Seldovia are the centers of the Southern Peninsula region. In 1986 they contained 11,541, or 26%, of the Borough's population. The only other population center in the Borough, and the only area not focussed on the Cook Inlet, is the Eastern Region, which includes Seward. This region had a population of 4,426 in 1986, constituting 10% of the Borough's population.

The economy of the Central Peninsula region, and the Borough as a whole, is dominated by the oil and gas industry, the nucleus of which is in the North Kenai area. Historically, the industry's real property values account for more than 50% of the Borough's assessed values, and the addition of all properties of those businesses and services directly influenced by the industry would combine to represent upwards of 80% percent of total property values.

The Southern Peninsula region is dominated by commercial fishing, fish processing, and tourism. The economy of the Eastern Peninsula, which is dominated by Seward, is the most

diverse in the Borough, consisting of fish and timber processing, tourism, and a number of local, state, and federal agencies.

Involvement of the Borough in Oil Spill Response

The first Borough department involved in oil spill response was the Office of Emergency Management (OEM). The coordinator of this office was in Seward when the National Park Service representative convened with various municipal department heads to plan a course of action. The Borough's course of action was set in large part by the mayor of the borough who, according to one department head, began to think in economic terms and public policy terms when everyone else was thinking of the spill in environmental terms alone. As a result of these concerns, one of the first involvements of the Borough in oil spill-related tasks included the sponsorship of a short-term, early assessment of the economic impacts from the oil spill by a private contractor under the auspices of the quasi-governmental Economic Development District (EDD). The report was designed to be a preliminary assessment and was published in May 1989, two months after the spill. Many of the findings in this report were confirmed by IAI's research almost a year later. For example, the EDD's report states that the high wages paid to oil spill cleanup workers must be matched by local businesses if they are to maintain the same level of production. Otherwise, "prices must increase to cover the additional labor expense (EDD 1989:15)." Although interviews for this segment of the study did not focus on private businesses, it was clear from the experience of many public agencies that lack of committed personnel was a serious problem. People began to *expect* to earn at least what VECO employees earned. It appears that these expectations about wage level will persist whether or not cleanup operations continue and that economic ramifications will be incurred.

Another interesting finding of the EDD is that, while short-term increases in sales and profits in tourism-related businesses occurred, the long-term outlook on Kenai Peninsula tourism is bleak. The report hypothesized that news of contamination of prime fishing spots would become common knowledge among the regular Anchorage visitors who patronize the Peninsula's attractions discouraging them from coming. At least during the summer following the oil spill, this was hardly the case. In fact, Soldotna's campgrounds were more crowded than usual as the Kenai River was teeming with salmon. It will be of interest to know if this trend will continue in following years.

In regard to impacts to municipal governments, IAI's findings are in close agreement with those of the EDD. Essentially, department heads and their staff were derailed from their usual tasks to work on oil spill-related activities. Consequently, projects, grants, and everyday municipal office work was left undone. Often, employees left their permanent jobs to take the higher-paying cleanup jobs with VECO which increased the workload of those employees that remained.

In response to the realization that the spill and spill-related work was clogging the workload of many of the departments in the Borough (or had the potential to do so), a position of Oil Spill Liaison was created. This "effectively allowed everybody to clean off their desks as much as possible, [and put the spill-related work on] only one desk." The liaison position was also created to deal with the likelihood of regulatory and statutory fallout associated with the spill -- part of the job of the liaison person was to track potential consequences along these lines. According to the liaison person:

The position was originally to be for six months. By that time we thought that the legislation and the spill would be managed to the point that we could get back . . . [to] . . . a normal state of affairs. We found that the *Valdez* oil spill has not only changed the way Alaskans look at their environment, development, and interrelationship between industries, the governments, and the community, but the whole nation is looking at Alaska differently, and they are effecting policies toward Alaska with the best of intentions, but with some pretty significant fallout in terms of what our future development might be.

The Borough acted as a pass-through entity for funding from Exxon to the local governments within the Borough. For example, when Seward encountered spill related expenses, bills for those expenses were submitted to the Borough which paid them out of a kitty Exxon had established with the Borough. In this way, the individual communities within the Borough did not have to deal directly with Exxon or VECO for reimbursement (after the Borough system was established).

The Borough's OEM was also involved in both the Seward and Homer MAC groups. Originally the Borough wanted only one MAC, but conceded to facilitate the establishment of a second in Homer at local insistence. Plans for the summer of 1990 were to have a single MAC for the Borough, and the Borough was contracted by the state to run a Spring 1990 response program. During the spill response in 1989, there was not a great deal of coordination between the Seward and Homer MACs. In the overall spill response planning, the borough was split into two zones, the Seward zone and the Homer zone, and each of those zones had representatives that reported back to Valdez. A phone conference with DEC in Valdez was held every two days, but the communication was mainly Seward-Valdez and Homer-Valdez, and very little Seward-Homer. This was seen in the Borough as hampering effective coordination to a certain degree.

Unlike the constituent communities, the Borough did not submit billings for overtime worked by its personnel. Additional hours worked by salaried persons, and vacations

canceled, were absorbed by those individuals. The departments of emergency management, finance, the mayors office, and legal services were effected the most within the Borough in terms of increased work load. The personnel office was also effected through the management of union personnel who had to be shifted in work locations and shift times, the slotting of new persons into temporary organizational structures, and so on. They were also involved in issues of insurance and risk management.

In terms of lasting effects of the spill on the organization of the Borough, it is thought that the oil industry, upon which the Borough is dependent for financing, will face a different regulatory environment because of the spill. Within the structure of the Borough itself, communities have come to expect a lot from the Borough in emergency situations, and it is considered likely that the division of emergency management, which is now part of the mayor's office, might well become its own department, based on its increased importance over the past year, not only in serving the needs of the communities with respect to the oil spill, but also management of the emergencies associated with ashfall from the repeated eruptions of Mt. Redoubt. It is also considered likely that there will be a separate division or subset of that proposed department that will deal exclusively with emergency response. In terms of the politics of the Borough, since the oil spill environmental and fishing groups have become much more closely aligned in their desired political ends and have been working together more closely than in the past.

The Borough experienced a number of other impacts as a result of the oil spill. Many of these impacts stemmed from the Borough's role as dispenser of Exxon monies to the communities as reimbursement for oil spill-related expenses. However, there were impacts more typical of municipal departments. For example, the Borough's public works department reported difficulty finding construction workers for repairs to the school in Seward. In addition, the public works department lost its manager of road maintenance in January 1990 while he worked for six months on the Borough's emergency management team for the winter cleanup. In the interim, he was replaced by his secretary. The secretary's position was filled by a temporary employee whose salary was paid out of monies given to the Borough by Exxon.

In late October 1989, the Borough was cited by the state of Alaska for not maintaining the landfills in the villages of English Bay and Port Graham. While the Borough is ultimately responsible for the landfills, the local Native Corporation is contracted to maintain them. To remedy the problems at the landfills the Borough was required to barge heavy equipment twice to the two villages. The expenses for manpower, overtime, and transport of the barge cost the Borough \$6,000. The Borough was reimbursed for these expenses by Exxon because the Village Councils claimed the landfill workers had been working on the cleanup from the oil spill. However, one Borough public works employee noted that at other times in the past the Native Corporation has failed to meet its contracting duties so it is not clear the oil spill is entirely to blame for the unmaintained landfills.

Finally, the sports center funded by the Borough lost employees and had trouble replacing them. Community service workers and other replacements circulated through the center but none became reliable employees. The manager could never leave the facility during operating hours because employees (when there were any) could not be trusted -- one morning he "found a couple of them robbing the place." Consequently, his work load increased dramatically. This does not show in direct costs, however, as his "overtime" will in actuality be "comp time." The Sports Center's biggest source of revenue comes from the annual Commercial Fishing Show which is hosted there. Since 60% of the exhibitors cater to driftnet fishermen, and the driftnet season was canceled, the exhibitors pulled out. This constituted about \$15,000 - \$20,000 in lost revenue for the center from a normal operating budget of about \$350,000.

The Cities of Kenai and Soldotna

The twin communities of Kenai and Soldotna form the hub of activity in the Central Peninsula region. The city of Kenai is the dominant market and business center for the area. It is a commercial fishing and processing center and the nucleus for oil and gas development in the Borough. Soldotna is the seat of the Kenai Peninsula Borough. The community is located 11 miles from Kenai at the principal highway crossroads on the Peninsula. Soldotna is the home of the Central Peninsula Hospital and the Kenai Community College. Sport fishing and tourism are the basis of Soldotna's economy with the Kenai River, the Kenai National Moose Range, and a number of state recreation facilities. Soldotna also serves as a bedroom community for oil industry workers in Cook Inlet, Swanson River, and the North Slope.

Response Effort

Exposure to the Oil Spill

Neither Kenai nor Soldotna experienced direct exposure to the oil from the grounding of the *Exxon Valdez*. With a few exceptions, which will be described below, these communities were relatively unscathed by the oil spill and cleanup activities. In fact, both the private and public sector of these Kenai and Soldotna saw some benefits indirectly related to the oil spill, and damage was limited to relatively discrete economic sectors. (Please see IAI Interim Reports 1 and 2 for fiscal and business impacts.) The benefits came primarily from increased tourism to the Kenai River which was unusually abundant with salmon, a phenomenon some have attributed to the closing of the driftnet fishery; the damage was primarily limited to driftnet fishermen and those businesses dependent on driftnet fishing. While the impacts on driftnet-dependent businesses were significant, they comprise a relatively small segment of the mixed economy of the area.

It is important to note that although driftnet fishermen were compensated for not being able to fish, that money was redistributed and circulated through the economy in a different way than had that money been earned fishing. There clearly were consequences to not fishing that do not show up a "bottom line" analysis alone. Money was not distributed to spin-off or support industries, crew, cannery workers, etc. in the same way as previously.

Local Response Effort

There was no local cleanup response effort in either Kenai or Soldotna which can be compared to that of other communities. Neither Kenai nor Soldotna was a base for cleanup operations so there wasn't the influx of people or oil spill-related activity that other communities in the Borough experienced. Rather, the most widespread impacts from the oil spill were more subtle. Most significantly, city department heads commented on the implications of the oil spill for the long term future of the economies of their communities. They worried about the possible shift in the regulatory environment which could render the local oil and gas industry, particularly in the Cook Inlet, upon which so much of the economy of both communities rests, unprofitable. In addition, the paucity of available wage laborers, while felt less strongly than in coastal communities dealing directly with the oil spill, had reverberated to the Kenai/Soldotna area.

The closing of the driftnet fishery not only put fishermen out of work, it affected the local canneries in an unexpected way. While the canneries did not have to close as anticipated because they were able to process fish from Bristol Bay, they were unable to supply 80% of their market. One effect that concerns local interests is that this may jeopardize the source of future markets for the local fisheries since the canneries may be perceived by the buyers as unstable and unreliable suppliers, but this will not be confirmed or disconfirmed until after the 1990 seasons.

The only local non-governmental organizational response to the *Exxon Valdez* oil spill consisted of a group of Kenai fishermen and consumers who organized a non-profit corporation called OEKOS in Fall 1989 "... dedicated to prevent further ocean destruction and to revive the natural ocean economy in places where destruction has occurred." The group was not involved in cleanup response. Their focus is on environmental issues and increasing awareness of the ecology of the marine environment. The group has published the first of edition of its quarterly newspaper "The Ocean Citizen."

Local Government

Municipal services in Soldotna include water, sewer, a library, an airstrip, a police department, and camper park. Of these, only the camper park and the police department experienced increased activity during the summer of 1989, but these can only be attributed

indirectly to the oil spill. Informants strongly stated the increased activity was due to the high volume of tourists who came to take advantage of the huge salmon run in the Kenai River. The contractor for the camper park reported that summers at the park are always busy but that the summer of 1989 was particularly busy, again because of the larger than usual salmon run. As a result, an assistant to the park manager was hired. The increase in park use is reflected in the camper night figures, which rose in comparison to past years.

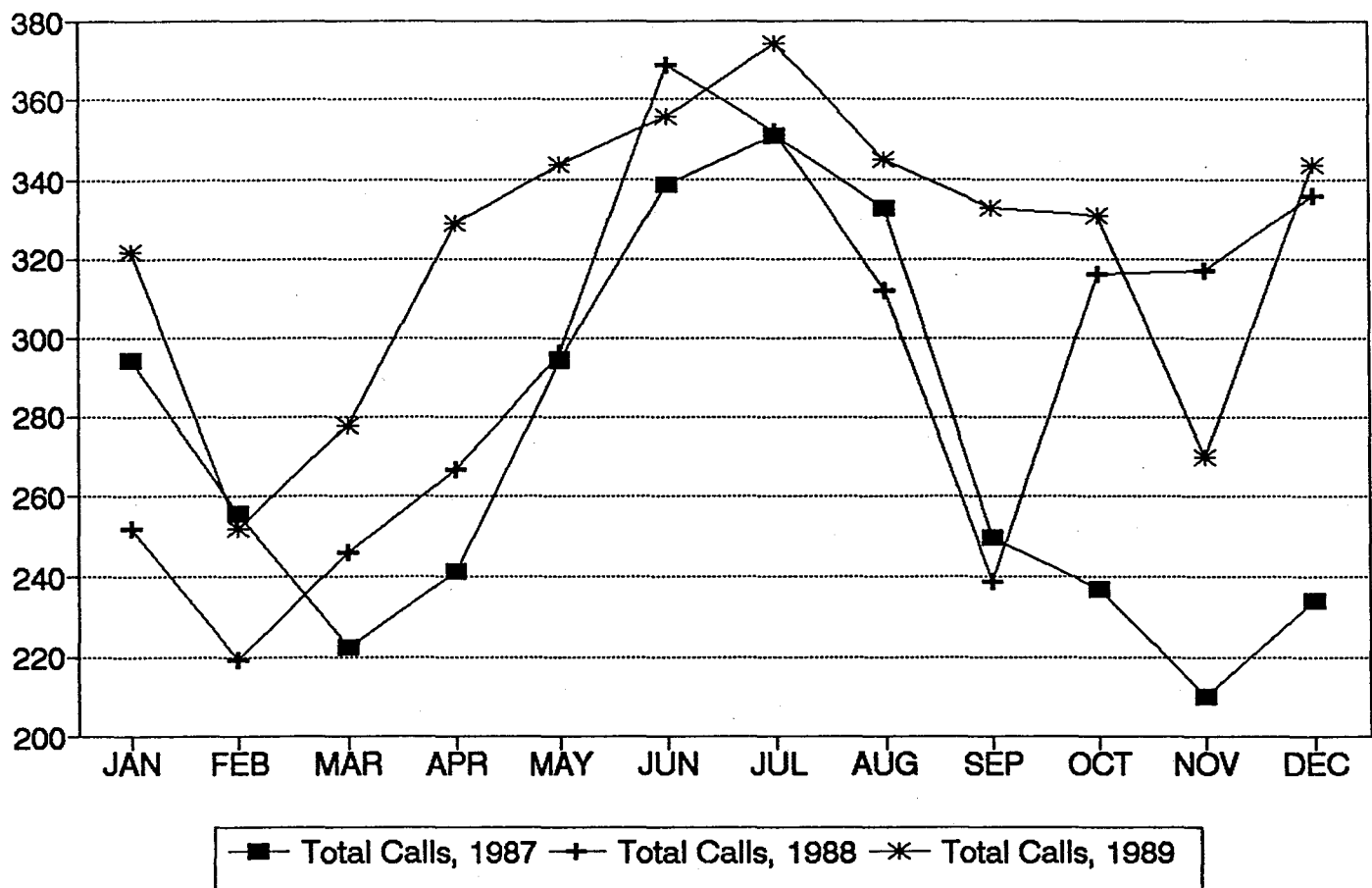
Total calls to the police department and citations issued during the summer of 1989 had risen over the previous two years. The graphs below illustrate the trends in police department activity. The activity of the patrol officers was routine in nature and did not require officers to work a significant amount of overtime. The police department also did not lose any employees to work on the cleanup.

In Kenai, the biggest impact was to the city dock facility which lost revenue with the closing of the driftnet fishery. The City submitted a claim to Exxon for \$40,000 and in the end was able to recoup most of its losses from \$32,000 compensation. (The \$8,000 difference is accounted for by a disagreement in labor costs -- the City did not hire seasonal employees for dock positions, so this cost was disallowed by Exxon claims personnel as an expense not incurred.)

The finance department was another municipal department that was reported to have been affected by the oil spill. The impact in this department was due to time spent on oil spill-related work such as keeping track of all billing for losses at the city dock. In addition, there were "... little things that happened - there was additional load on the secretarial staff because we'd get reams and reams of faxes and reports coming over the fax machine that had to be filed ... but it wasn't such an undue load on the staff that it caused them not to be able to function in their areas."

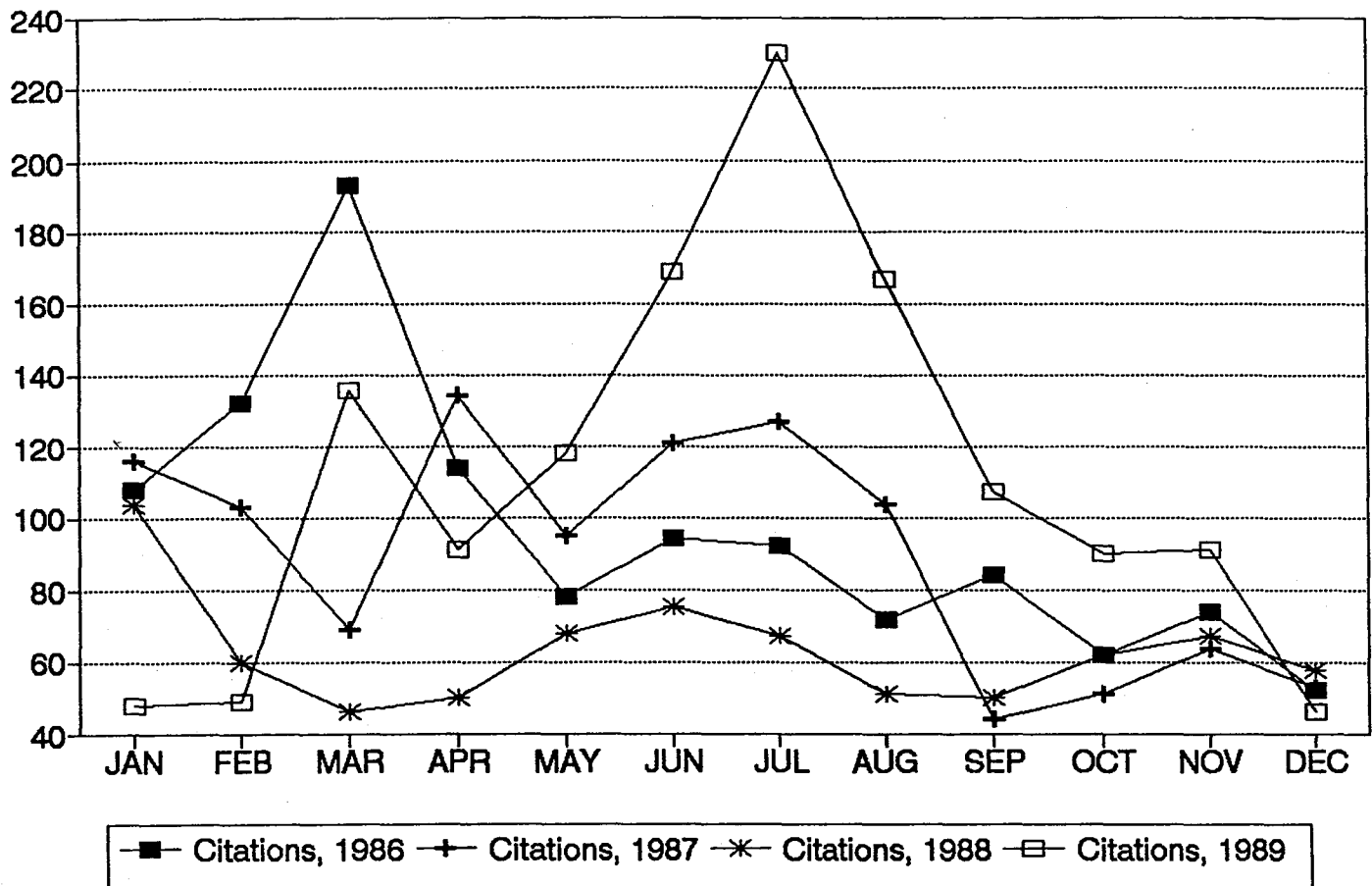
Soldotna Police Department

Total Calls, 1987-1989



Soldotna Police Department

Citations Issued, 1986-1989



Changes in Community

As discussed above, the economies of Kenai and Soldotna are heavily dependent on the oil and gas industry. While informants in the Kenai/Soldotna area reported no immediate adverse impacts from the oil spill (outside of driftnet fishing related concerns), many expressed concern that oil spill would ultimately affect their economy if new legislation made oil and gas exploration and exploitation in Cook Inlet less feasible.

Mental Health

Several mental health facilities serve the needs of the communities of Kenai and Soldotna. However, only one, the Kenai Women's Resource and Crisis Center reported an increase in demand for services or a loss of staff. The Center had 17 people on its staff prior to the oil spill and depended quite a bit on its pool of 35 volunteers. Following the oil spill, two staff positions were vacated and a large portion of the volunteers quit. Some volunteers resumed work after the active cleanup phase but not all. One of the permanent staff members who left was the Volunteer Coordinator. The loss of this person put added burden on remaining staff, especially as demand for services increased.

During the summer and fall of 1989, occupancy at the shelter increased significantly over past years. A shelter staff member reported that the added demand in many cases seemed to be related to the oil spill as stress in the home increased with husbands not being able to fish. The following table presents statistics from the Women's Resource and Crisis Center on the number of bednights and residents by quarter for Fiscal Years 1987 - 1989.

Another provider of mental health services is the Cook Inlet Council on Drug and Alcohol Abuse (CICDA). The Cook Inlet Council on Drug and Alcohol Abuse in Kenai serves residents from Kenai, Soldotna, and outlying communities although there is a branch of CICDA in Homer. The center in Kenai provides an out-patient treatment program, an education series for abusive individuals, a drinking and driving seminar, and runs the local Alcohol Safety Action Program. Staff at CICDA reported no impact on the Kenai center.

The third source of mental health services is the Central Peninsula Hospital which began the chemical dependency program in 1986 called the Family Recovery Center (FRC). There was no increased demand for services at the FRC according to hospital records.

**Kenai Women's Center
Selected Statistics, FY 1987-89**

Bednights

	FY 87	FY 88	FY 89
1st Quarter	1000	1264	1377
2nd Quarter	773	995	1379
3rd Quarter	939	683	1076
4th Quarter	450	939	746

Residents

	FY 87	FY 88	FY 89
1st Quarter	76	65	66
2nd Quarter	34	55	65
3rd Quarter	36	37	41
4th Quarter	50	73	53

Outside of the clinical context, there were disruptions in personal lives. As one person who was both a fisherman and a government official put it:

You know I can just say from personal experience -- man, it changed my life not fishing last year, I don't care how much money I made and got paid. I didn't know that I was going to get paid, I had bought a new engine for my boat and was planning to get married. I mean I could get up every day and not know . . . [if I was] gonna get up and go to work. It's a pretty alarming thing -- you [could] see the way it sat on people and caused conflict with people, it was really a tough deal . . . and I think it's gonna be different for a while, if we go fishing this year we are going to be fishing around oil in a certain respect. It's overly simplistic, I think, to say that as long as a fishermen get paid then that's all it takes . . . It was a tough

thing to see, I know some people who have gotten into major emotional battles, major personal relationship battles, and economics is overly stressed.

Medical

The Kenai Health Center in Kenai is a state-funded medical clinic staffed with two Ph.D. nurses, two community health aides and two clerks. Participation in a program offered by the clinic, which gives health screenings to children to determine eligibility for Medicaid, increased sharply after the oil spill. The children seen were children of younger parents who came to the Kenai/Soldotna area for cannery jobs. These families depended on the seasonal earnings from the canneries. When the oil spill occurred, some canneries closed and these families applied for state assistance. Thus, the Kenai Medical Center saw more children for the health screenings.

Central Peninsula Hospital is a 62 bed hospital serving the entire Central Peninsula region. The Hospital Administrator reported no changes in staffing or work load as a result of the oil spill.

City of Seward

Seward is a coastal community built on a glacial moraine at the head of a deep-water inlet known as Resurrection Bay. The community is 80 air miles south of Anchorage, 190 air miles northeast of Kodiak and 60 air miles southeast of Kenai. Prior to the Good Friday earthquake of 1964, Seward was a thriving city. It was the center of the Alaska Central Railway and provided access via passenger ship, railroad, air, and highway to the Kenai Peninsula and the Interior. Since the earthquake, much of the transportation activity has been diverted to Anchorage. Seward has responded to these changes by diversifying its economy. Seward's commitment to a diversified economy has resulted in the development of the Seward Marine Industrial Center, the Chugach Forest Product Mill, the Suneel Coal facility, and the decision by the state to place the Alaska Vocational and Technical Center (AVTEC) and a state prison within the city limits. Other industries contributing to the economy of Seward are tourism, commercial fishing, and local government employment.

The population of Seward is approximately 2,400, and most of the residents are non-Native. Incorporated in 1912, Seward is a Home Rule City and a part of the Kenai Peninsula Borough.

Response Effort

Exposure to the Oil Spill

Oil from the *Exxon Valdez* spill moved up the waters of Resurrection Bay, in spite of early assurances from spill officials that it would not. Within the city limits of Seward, tar balls and mousse were found on several area beaches. In addition to oiled coast adjacent to Seward, there were a number of fishing areas outside of Resurrection Bay that were contaminated by the oil. According to one city official, "[Exxon and VECO] were throwing the figure around in *tons* of debris that they picked up." Much of the shoreline hit by oil in the Seward area is within Kenai Fjords National Park, a federally owned and managed recreational area, or owned by the Chugach Alaska Corporation, the local Native Corporation.

The different statuses of the land around Seward allowed for potential conflicts of interest to evolve in terms of which areas should receive highest priority for boom and other protective measures. Fortunately, conflicts never actualized. Despite the differences in jurisdiction, those involved in Seward's emergency management effort ultimately unified into what was called the Multi Agency Coordinating (MAC) group, and approached the cleanup of the Seward "zone", Cape Puget to Gore Point, as one ecologically integrated area. There was almost unanimous agreement among informants that this action allowed Seward to survive the spill summer with minimal chaos in the community and to mitigate damage to the environment to a degree that would otherwise not have been possible.

Local Response Effort

In contrast to the course of events in other communities in the study, the MAC group in Seward was able to exercise a large degree of autonomy and authority over Exxon's and VECO's cleanup operations. This was because the City and the National Park Service (along with other locally represented entities) were able to combine their resources and their authority to take action and speak about the oil spill as a unified voice on behalf of Seward. It took only 14 days for the fusion of these entities formally occur. The first meeting of the MAC group took place on April 3, 1989.

The evolution of the MAC group can be attributed to a number of factors unique to Seward. First there are those which preexisted the spill. Frequently mentioned by Seward's department heads was the city's prior experience in dealing with emergencies. Since 1985 the community has experienced the effects of a volcano, a couple of large tsunami warnings, and a major flood which completely cut off the community. Consequently, the procedures for dealing with an emergency were already in place and people were familiar with them, and they had recent hands-on experience in mobilizing emergency resources. In the words of one local official, "the only way you can prepare for a disaster is to have a disaster." Secondly, most officials in Seward's City government were long time residents of Seward and Alaska as a whole. They had typically known each other for many years, had established working relationships, and had access to a network of friends in local, regional, and state governmental agencies. This tremendously facilitated the acquisition of needed materials and manpower. As one department head commented, "I know just about every administrator and police [chief] in the state and so it makes it a whole lot easier to be able to just call somebody and get something done." Finally, the military background of some department heads was credited with contributing to an awareness of the logistics of the emergency mobilization of resources and an understanding of the potential resources available through the Interagency Incident Management Team (IIMT). This IIMT had been dispatched first to Valdez, but that community declined their assistance; the "snatching up" of the IIMT by Seward, when it became known it was available, is credited by local officials as an extremely critical component of what is viewed as a successful response to a difficult set of circumstances.

There were several reasons Seward was able to distinguish itself as community capable of managing its own cleanup efforts. One was the use to which the Park Service and the City's emergency commander put the IIMT from the Alaska Fire Service in Fairbanks. Designed as a management and command structure for major critical incidents (particularly large wildfires), when this "overhead" team first arrived in Seward, about seven days after the spill, they were sent on reconnaissance missions. However, when leaders realized that oil on their coastline was immanent, they decided to use the IIMT in a proactive way and deploy the 10,000 feet of boom acquired by Seward's port marketing director. (Boom was acquired through early and persistent effort after Seward was informed by oil spill managers that

none was available in the country -- Seward tracked it down to the source and arranged for direct shipping.) However, in doing so they preempted the existing overall incident command structure, which gave only the Coast Guard the authority to take such action. Nevertheless, the incident command system leaders in Seward were commended by Senator Stevens and encouraged to protect their own natural resources if the Coast Guard and Exxon were not.

Prior to the utilization of the IIMT, local resources were first mobilized through the use of an incident command system (ICS). The ICS, with the fire chief given emergency command powers under city authority, is the means by which the city typically responds to emergencies. This system gave way to others during the oil spill due to the size of the spill and the fact that it extended far beyond city boundaries (and the fact that city needs were best served by cooperating with and sharing power with outside agencies). Subsequent to, and overlapping with, the utilization of the IIMT, the MAC group was formed as local officials transitioned into IIMT-established organizational and command categories. The IIMT established the structure of the incident response; as IIMT personnel trained local officials to take over particular slots in the structure the MAC group until it became fully operational. Eventually, all IIMT personnel were phased out to allow them to return to their regular assignments and to turn over control to local entities. The MAC was run by a representative from the National Park Service and the City with the IIMT performing the operational tasks. What made the MAC group unique was that the leaders decided to expand representation in the group to include members of the Fish and Wildlife Service, the Chugach Alaska Corporation, Alaska Department of Fish and Game, the Department of Natural Resources, and a representative from a commercial fisherman's group. Eventually, Exxon agreed to cover any expense the MAC group approved if Exxon could have a representative in the MAC group meetings. The MAC group met seven days a week setting daily objectives for the cleanup. A MAC resource group was set up to provide input on technical and scientific matters.

The IIMT served as interim support for about two weeks. In the middle of April, the IIMT began demobilization from Seward and turned over its resource acquisition responsibilities to Exxon. However, the first Exxon representative in Seward was so impressed with the efficiency and organization of the IIMT that he requested the IIMT commander remain in Seward long enough to train the Seward Exxon Staff to run an incident command system. By replacing the IIMT which received assignments from the MAC group, Exxon ipso facto became, in a sense, a resource of the MAC group.

The cohesiveness of the MAC group, and the control that was maintained in Seward as a result, served as a model for other communities affected by the oil spill. A number of mayors and representatives from other communities came to Seward to learn their management system. Initially, the Kenai Peninsula Borough planned on only having one MAC group to coordinate spill response, but the success of the Seward MAC in handling local as well as regional issues resulting in Homer seeking and receiving their own MAC.

Local Government

Personnel in all departments of Seward's local government experienced excessive demands on their time following the oil spill. Most often the demands resulted from loss of department staff combined with increased work load. Following is a description of the type and extent of impacts within Seward's local government.

City Clerk's Office: The city clerk's office was responsible for setting up the Emergency Operations Center (EOC). The process of setting up the EOC went relatively smoothly in Seward because the clerk had gone through emergency training and had experienced the activation of the EOC during the major flood the community experienced several years before and was somewhat prepared. The EOC (run by means of the ICS with the fire chief in command) was open 24 hours per day from March 30 - April 3, 1989. The individuals working in the EOC kept detailed logs of incoming calls and faxes of which there was an enormous amount. The activity slowed after April 3rd when booms started coming in, the response became more organized, and calls could be forwarded to appropriate persons by the regular city receptionist. The logistical and organizational tasks the EOC had been performing were turned over to the Multi Agency Coordinating (MAC) group.

The regular work of city clerk's office could not be deferred because of the oil spill. Consequently, employees worked an average of 14 hours per day while the EOC was operating. Oil spill-related work accumulated in the city clerk's office even after the EOC was dismantled. Their office was responsible for taking the minutes of Oiled Mayors meetings and keeping track of all oil spill-related city transactions. Almost one year after the spill, the deputy clerk retained boxes of oil spill-related notes, faxes, letters, and logs that had yet to be filed.

The Harbor: The harbormaster reported that the biggest problem in his department following the oil spill was the lack of available manpower for the distribution of booms and other oil spill-related work. The harbormaster was ordered by the City administration to assist in the shore monitoring. Beginning at "4th of July Creek" beach and along a 15 mile stretch of coast, harbor employees were assigned a walking survey to look for tar balls. This left the two office clerks to take care of all the business at the harbor itself. Attempts to supplement manpower at the harbor proved fruitless as the city was unable to pay as much as Exxon and VECO. In addition to the personnel crunch, approximately six planned projects were deferred at the harbor, the ultimate cost of which is yet to be realized.

The harbormaster had a number of problems getting Exxon and VECO to comply with their procedures for boat registration and for cleaning boats that had oil on them. A certain area was designated for use by VECO "as a favor" but VECO personnel cleaned oil off their

boats even after they had been requested not to. The harbormaster put signs on the dock threatening impoundment for noncompliance. Then a letter was sent to their attorney but there was no improvement in the situation. The harbormaster eventually threatened to have the crew arrested; that stopped the washing of oil into the bay.

An additional burden to the department came from assistance calls that required employees to go ten miles to the end of Resurrection Bay. This was much further than they usually go as their jurisdiction only extends to the harbor boundaries. They were caught in high seas during a few of these call-outs which added to the harbormaster's frustration.

The Public Works and Engineering Department: The personnel in the public works and engineering department in Seward experienced excessive demands in the aftermath of the spill. For the electric utilities branch, demand for service increased. The department reported a ten percent increase in service calls. Employees had to install new transformers for the otter center and the waste disposal site. Virtually all maintenance and system improvements that had been planned for the summer of 1989 were deferred. At the end of the summer employees had to dismantle the newly installed transformers which again increased their work load.

The water/sewer crew also experienced drastic increases in activity as a result of the oil spill and cleanup activities. Two employees that work on an on-call basis quit to work for VECO, making the permanent employees responsible for even more work. The City was strict about what it would and would not allow flushed into their sewage system. According to department personnel, they could not trust Exxon officials to obey the City ordinances in this regard. The superintendent of public works was called upon a number of times to go to the place where Exxon and was supposedly treating and storing its sewage to prevent illegal dumping into the bay.

The maintenance crew deferred painting curbs, cleaning drainage ditches, and maintaining equipment because of increased work load. The manager reported a 10-15% increase in direct costs due to deferred maintenance. Crews found it impossible to clean the streets because of all the cars. The inability of employees to get their work done reportedly increased stress and lowered morale substantially. The engineering branch of this department, which serves as the enforcement arm of City Planning Department, also experienced increased work load following the oil spill. All new temporary structures that were erected in Seward had to be inspected and given a permit by the engineer. No exceptions were made despite the emergency situation. The department manager reported that employees worked seven days per week and accumulated a large amount of overtime.

The High School: The principal of the high school in Seward reported that he and some students experienced some unique effects of the oil spill cleanup operation. There were

seniors who owned boats and were old enough to work for VECO. These students wanted to drop out of school six weeks before graduating to capitalize on the opportunity to lease their boats. The principal felt responsible for making sure the students graduated yet did not want to deny them the opportunity to earn up to \$2000 a day which could be saved, applied toward college, or used to pay off a boat loan. With the cooperation of the teachers, the principal was able to work out a program whereby the students did their school work on the job and reported to teachers every ten days. One student took his boat all the way to Kodiak to work on the spill. His father chartered a helicopter to get his son back to school within the ten day limit. This program worked out well and all of the seniors who worked on the spill graduated on time. However, the time the principal spent on the phone and in consultation with students and employers took time away from his usual duties.

The principal reported there were positive educational benefits to the students as a result of the oil spill. An animal expert, a specialist on the environmental damages from the oil spill, and an Exxon employee came to the school and gave talks to students. The principal also believes the students gained some awareness of environmental issues.

Parks and Recreation Department: Retaining summer employees to work at the campground, the swimming pool, and as program aides was the biggest problem experienced by the Parks and Recreation department following the oil spill. Normally during the summer there are eight positions at the campground. During the summer of 1989 there were never more than four working at any one time. There are usually four positions at the swimming pool but there were never more than two that summer. Five of the summer hires quit to work for VECO and the pool director quit on two days notice. According to department personnel, although there were candidates for many of the vacated positions, they were typically transients who were waiting for cleanup jobs or could not be trusted with park fees. The employees who remained with the parks and recreation department did not accrue a significant amount of overtime because they were part time who worked full time.

A burden was placed on City finances when administrators were forced to open the campgrounds a month early in mid-April instead of mid-May. This was necessary because the transient population that came to Seward to find work on the cleanup stayed in the campground area. In response, the City decided to start collecting fees. According to department personnel, there were difficulties. The transient workers claimed they were unable to pay the park fees and yet were "sitting next to three cases of beer." Many of them drove recklessly, became rowdy, and verbally abused law enforcement personnel.

The City of Seward lost revenue from camper nights which were down from 15,000 in the summer of 1988 to 13,500 after the oil spill in the summer of 1989. This decrease amounted to about \$10,000 in lost revenue, and may be taken as an indicator of the effect on tourism in the city.

The Library: The primary impact on the library from the oil spill came from increased use of the facility as a place to pass time. Oil spill workers were unable to obtain library cards so circulation was not affected. The lounge area for recreational reading was constantly full and library personnel were inundated with questions. Use of the paperback exchange increased as did the use of records and tape machines to make tapes.

Police Department: There were significant impacts on the Seward Police Department during the spill and cleanup period. These are described in the section on crime, below.

Changes in Community

Changes in Social Relations

With an estimated influx of at least 5,000 people, there was a housing shortage. After all the hotel rooms were full, people had to camp on the beach. The only hard data on effect of the housing shortage came from the director of the Alaska Vocational/Technical Center (AVTEC) in Seward. He reported that a few married students (4-5% of the entire enrollment) were unable to find housing and had to withdraw from school.

More than one city employee expressed resentment at those who worked on the cleanup and were able to make purchases of brand new cars and other things. They wondered if their loyalty was really the right decision.

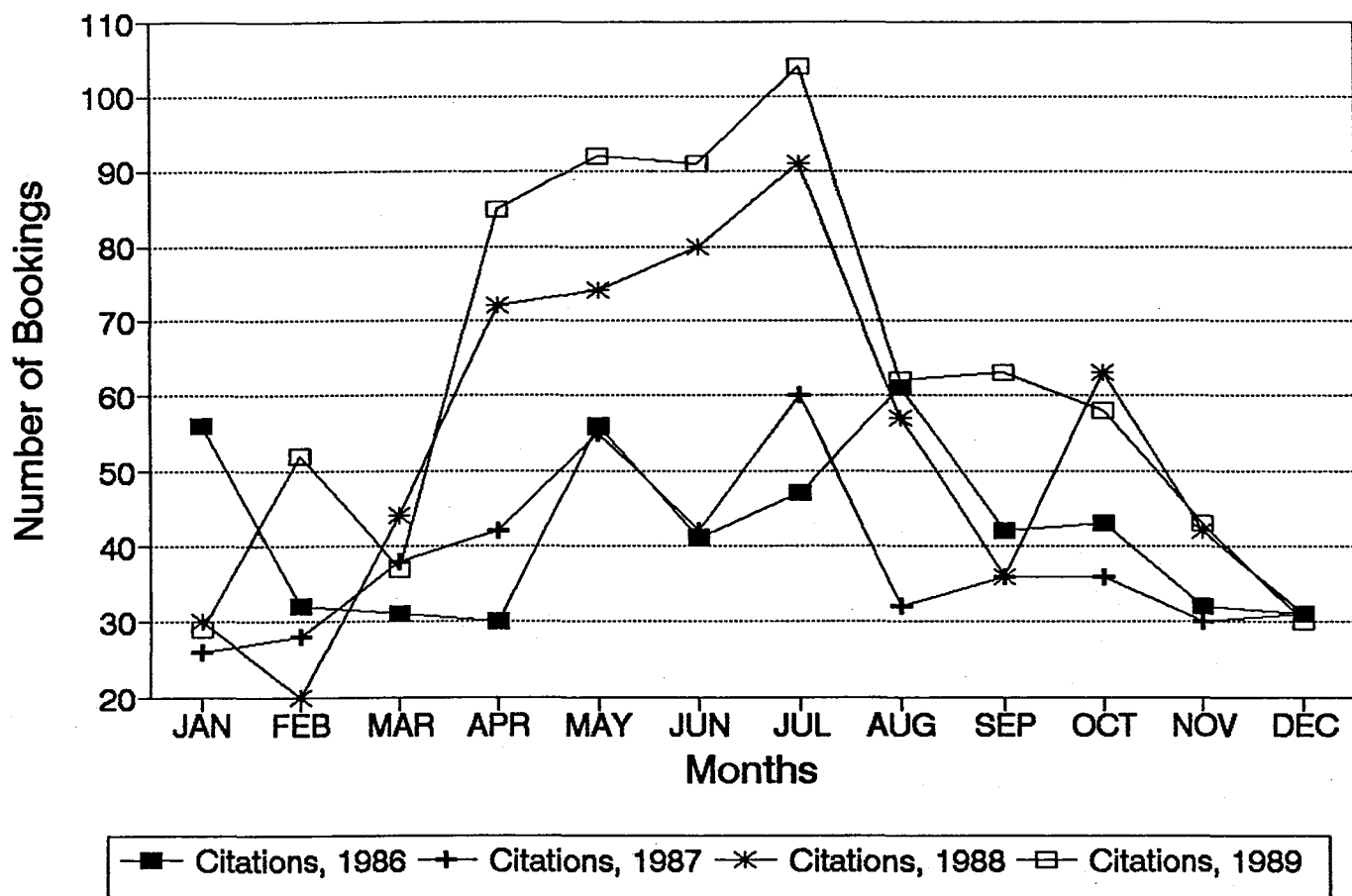
Crime

The influx of strangers into the community changed the small-town atmosphere of Seward. One day care teacher reported that during the cleanup operation parents felt uneasy leaving their car unlocked and running when picking up their children. Suspicions of criminal activity were confirmed by those who had more direct contact with crime such as the public safety department and the court. The police chief reported that the jail count was the highest during the summer of 1989 than it had ever been. These and other indicators of increased criminal activity in Seward appear in the following graphs.

The police chief reported that while formal actions taken by police would reveal some increase in crimes following the oil spill, a large proportion of the criminal activity which occurred would not show up in the statistics. These were crimes that often occurred at night and were dealt with informally by the patrol officer.

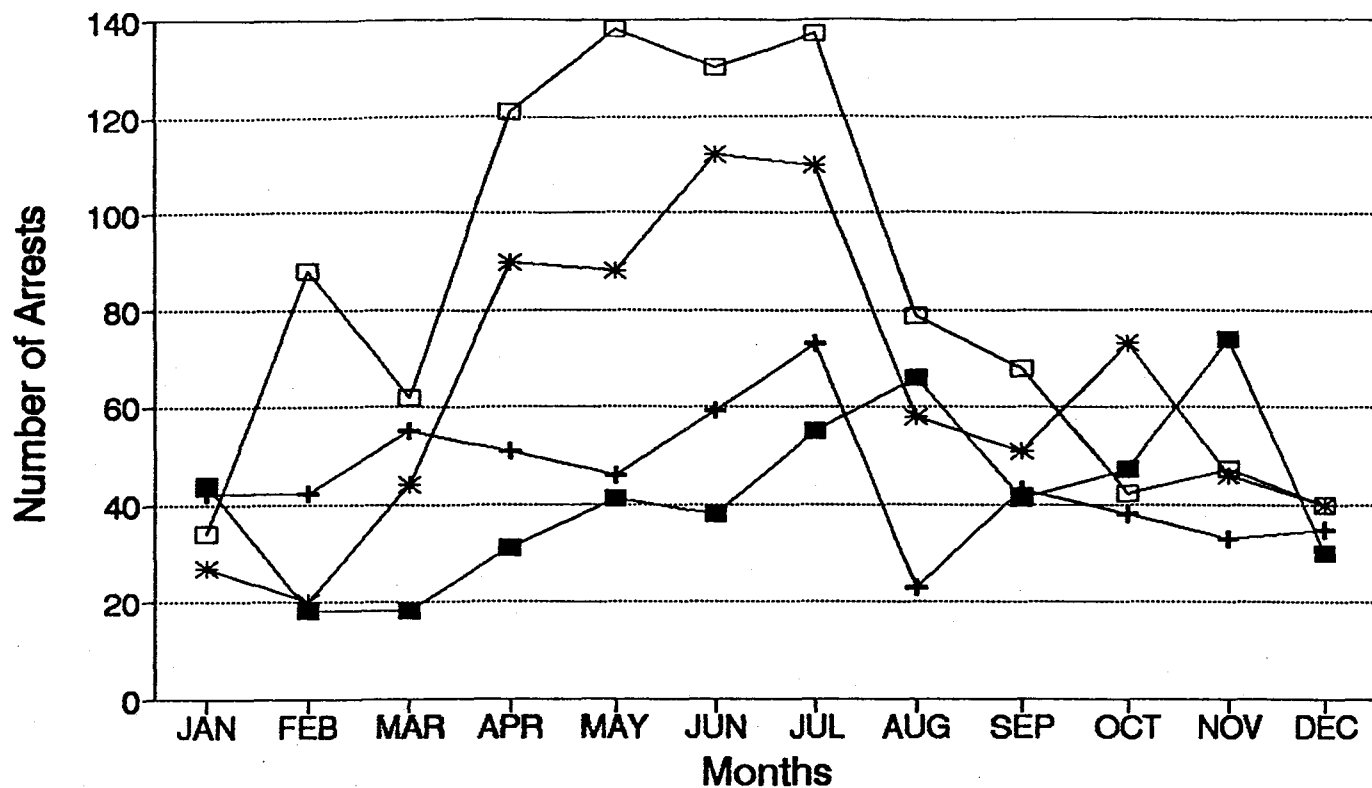
Seward Police Department

Jail Bookings, 1986-1989



Seward Police Department

Total Arrests, 1986-1989



■ Total Arrests, 1986 + Total Arrests, 1987 * Total Arrests, 1988 □ Total Arrests, 1989

Also significant was the increase in alcohol-related offenses. While the number of alcohol-related offenses decreased by 11.4% between 1987 and 1988, the number rose by 50.2% between 1988 and 1989. These statistics are consistent with what staff at Seward's mental health clinic reported -- an increase in clients with alcohol abuse problems that resurfaced following the oil spill.

Way of Life

One of the important dimensions of Seward's response to the oil spill and the associated cleanup activities is that, according to city leaders, the community retained control over life in the community. Leaders are quick to draw comparisons between Seward and Valdez as contrastive experiences. Most people attribute the differences between the communities to the fact that Seward had some lead time and could afford to do at least some planning, whereas Valdez was hit hard within a short period of time. According to one city official, Seward did not let Exxon and VECO "run the show." Exceptions to building codes were not made, temporary structures were not thrown up in town, compliance to local hazardous waste laws were enforced, and the transient worker/job seeker camping was contained to specified areas. As an example, one official related that there was an attitude in Seward that the city would retain control. Apparently at one point Exxon was going to call a town meeting, and were told that only the city council would call town meetings, and Exxon could address the meeting if they desired, but it would be within the framework of city council control. In this way, the city would be able to control that which they perceived as having gotten out of control in Valdez. Clearly the establishment of a coordinated response through the MAC group (and its local predecessors) so that Exxon/VECO were presented with a structured environment to work within, contributed to the sense of retaining control of a way of life in the community. Additionally, the inclusion of fishing interests in the operations of the MAC, and in such activities as fly-overs of the spill area and so on, contributed to the sense of a unified approach to what was seen as a community-wide problem. While many people reported severe disruptions of their way of life during the summer of 1989, there was a strong sense among community leaders that the way of life in the community was not permanently changed. Impacts to individuals, of course, varied in their intensity and direction, and are treated primarily in the data from the household survey.

Family

The question of whether there was a lack of child care in Seward during the summer is subject to dispute. Informants generally agreed that one day care facility closed because one of its two employees left to work on the cleanup, although one person reported that facility had been experiencing problems prior to the spill. The owners of the other two licensed day care facilities reported there was no day care crisis following the closure of the third center.

They never operated at capacity nor did they turn away clients, however, enrollment statistics for June, July, and August of 1987-1989 from one of the facilities show an increase for all three months in 1989.

Day Care Enrollment Nana's Nuggets (Seward)			
Month	1987	1988	1989
June	75	86	111
July	89	85	98
August	95	63	107

The number of hours children spent at day care reportedly increased in some cases as parents worked longer because of the oil spill activity. Weekend enrollment actually decreased at one of the day care centers. The informant attributed this not to parents spending more time with their children but, rather, to parents taking children to relatives who could watch the children on a 24 hour basis. In addition to relatives, an informal network of babysitting emerged when the high school let out which may have relieved the potential burden on the day care facilities. The day care facilities also reported they did not lose employees to the oil spill as did other businesses because some caregivers were too old to work on the cleanup and others simply weren't interested. In contrast to these reports from the operators of the day care facilities in Seward, more than one City official mentioned that lack of day care was a big problem, as did some other residents. The origin of these different perspectives on this issue is unknown.

Mental Health

The Seward Life Action Council (SLAC) is the nucleus for a number of psychosocial services in Seward. SLAC offers counseling, runs the state's Alcohol Safety Action Program (ASAP), holds group meetings, and ran the Adult Action Center, an alternative meeting place to bars. An indication of how the lives of many Seward residents changed following the oil spill is reflected in the fact that SLAC was inundated with crisis calls, ASAP referrals, and people in need of counseling. One informant from SLAC reported receiving a phone call from the phone company saying they had busy signals more frequently than any

line they had heard of. Consequently, many clients calling for help were unable to reach counselors on the crisis line.

Limited data from SLAC have been tabulated and are presented graphically below. The graph of the number of clients by month indicates the number of different clients who visited the clinic. Outpatient contacts refers to the number of visits made by clients. Both of these graphs clearly indicate there was an increase in demand for mental health services during the summer and into the winter of 1989 compared to the previous year.

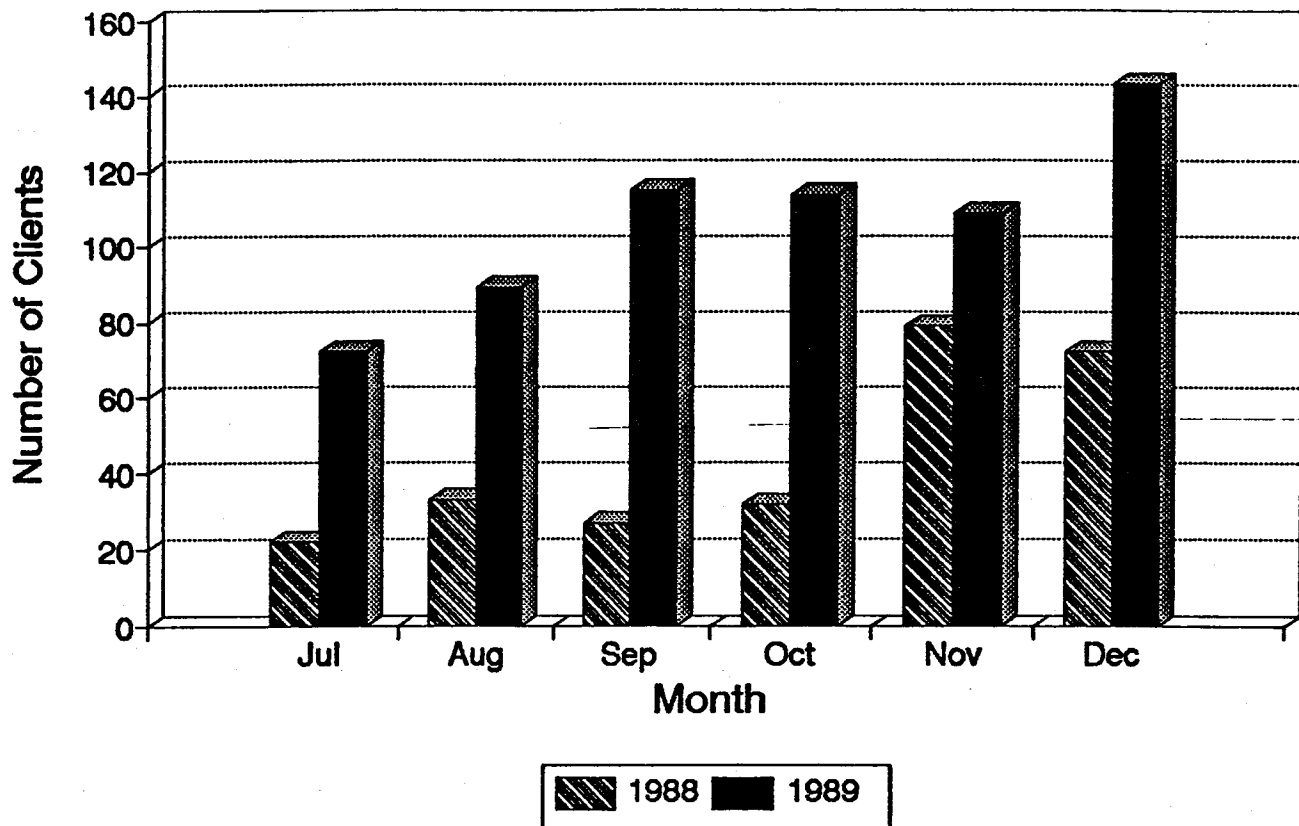
Compounding the difficulties in handling the increased demand, five volunteers at SLAC quit to work on the oil spill cleanup which made the work load for the remaining employees monumental. However, SLAC received a \$22,500 oil spill emergency funding grant. With this money the clinic hired a counselor with a masters degree in psychology. She handled the bulk of DWI referrals from the court. During the months of October through December 1989, she provided services to 40 clients with a total of 116 contacts. SLAC's FY90 Second Quarter Progress Report For Quarter Ended December 31, 1990 describes the mental health impacts in Seward:

Money was plentiful during the summer. Some people made more money than they had ever imagined. Some used it wisely; paid bills, got caught up, got ahead. Ms. --- saw many who squandered it on adult toys, and on legal/illegal substances. Not just a few woke up in Anchorage after a binge or in Seward after a bender, with nothing. This phenomenon was not like gambling and losing summer wages. This bonanza was once in a lifetime. It was a chance to finally have the resources to make a new beginning. But to have made a down payment on a house, for example, would have required a change of life style. Too many couldn't turn the corner. Instead they lapsed into familiar patterns which repeated waste and destruction. Ms. --- saw these "hardcore" alcoholics whose sobriety had been sabotaged by pseudo-wealth.

The report goes on to describe the increase in domestic violence and marital difficulties that seemed to be exacerbated by the oil spill and cleanup activities. The mental health effects continued after the demobilization of the summer cleanup when "... all the seasonal issues of late November and December in Alaska seemed geometrically intensified."

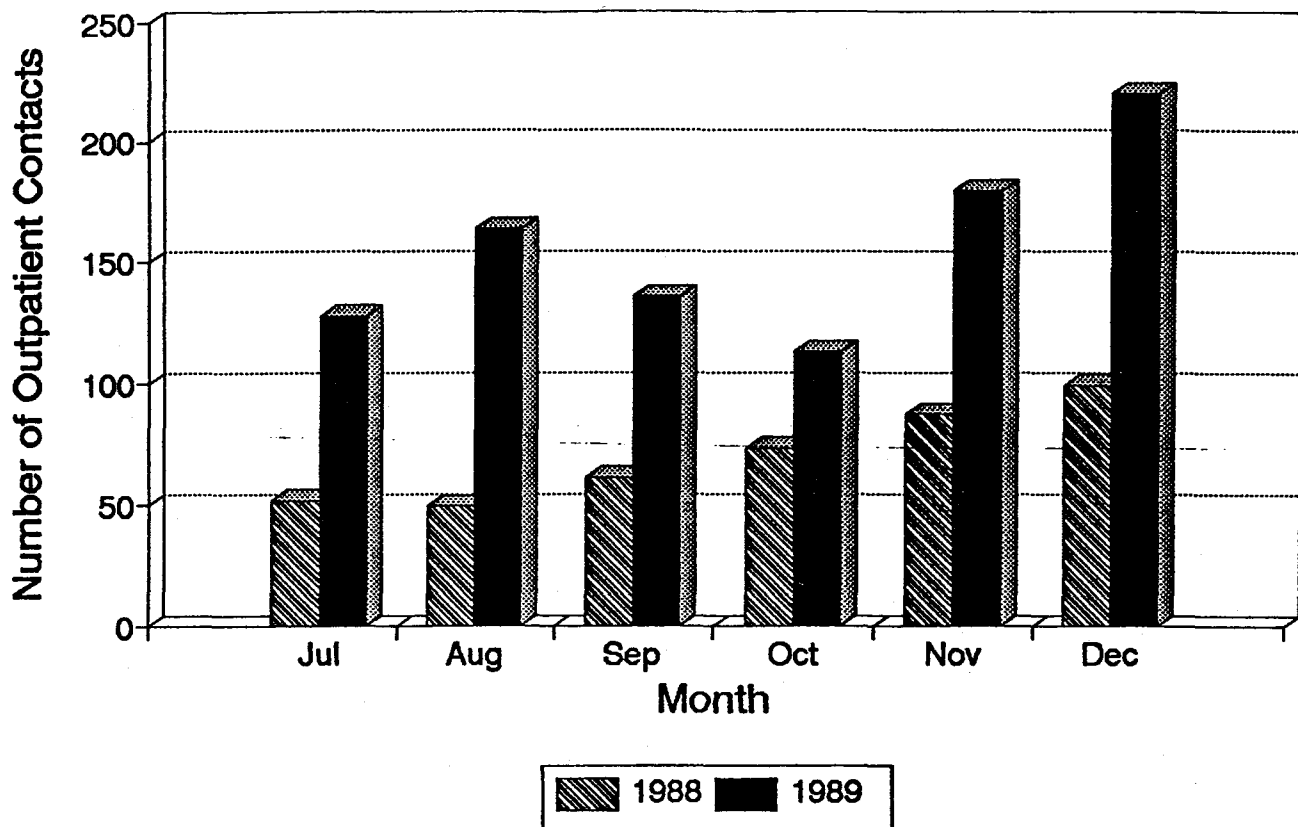
Seward Life Action Council - Seward, AK

Number of Clients by Month, 1988 & 1989



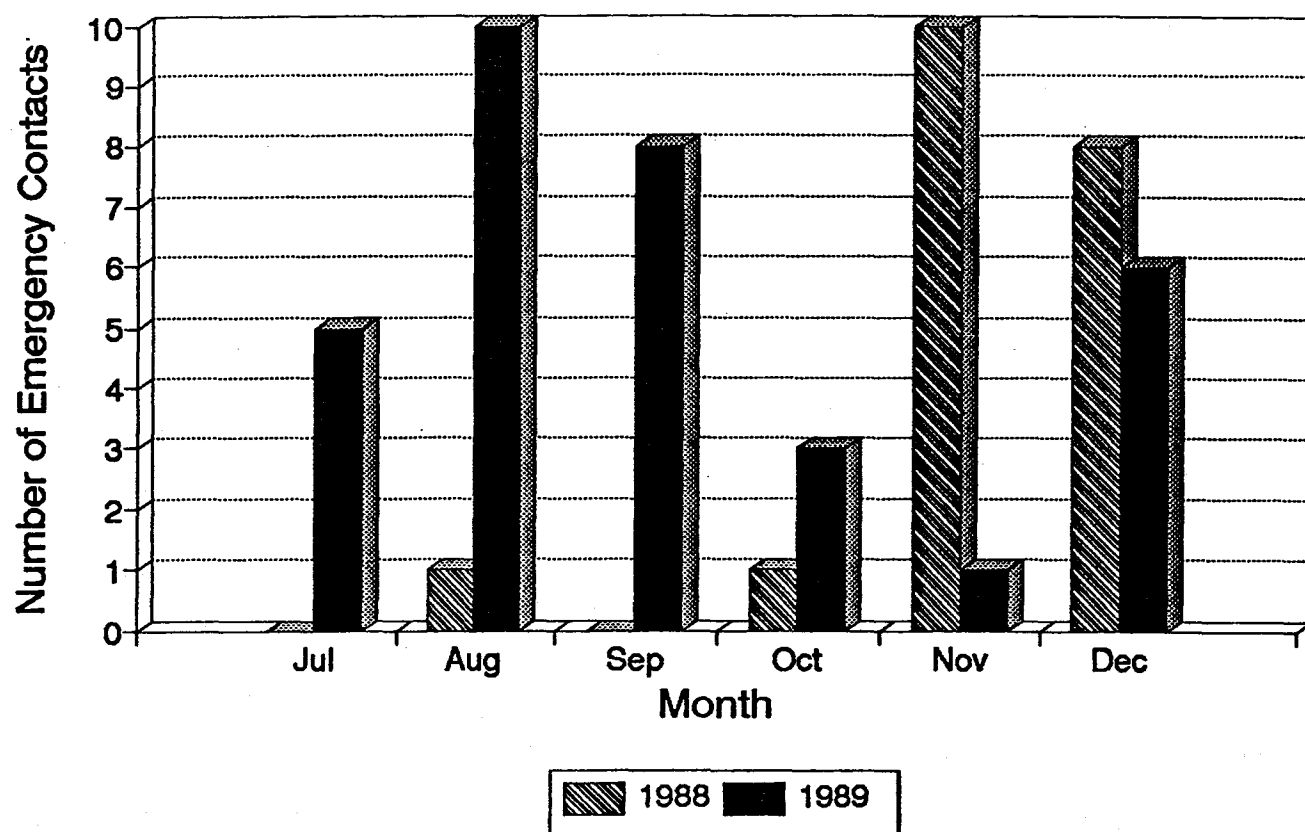
Seward Life Action Council - Seward, AK

Outpatient Contact, 1988 & 1989



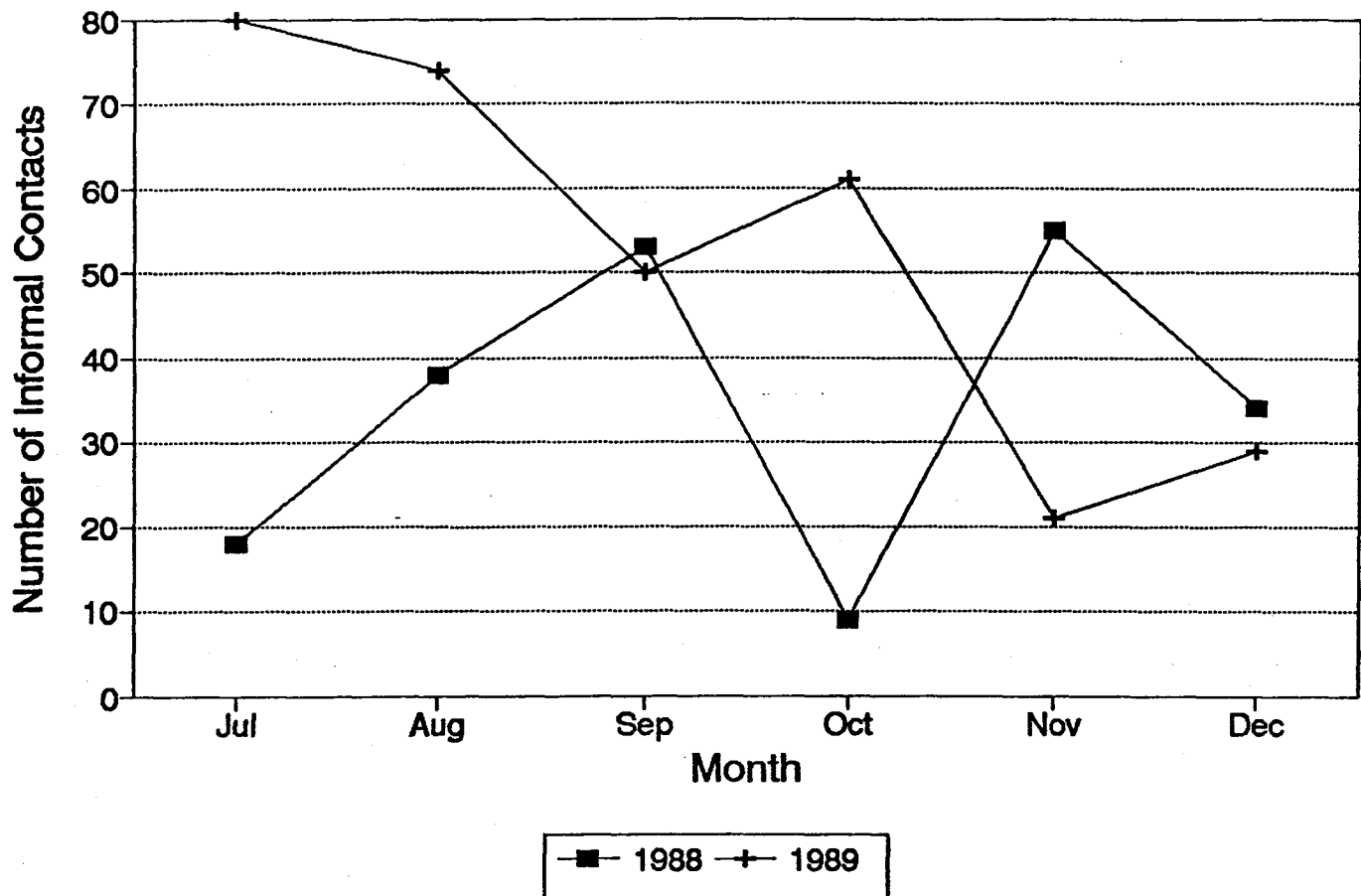
Seward Life Action Council - Seward, AK

Emergency Contacts, 1988 & 1989



Seward Life Action Council - Seward, AK

Informal Contacts, 1988 & 1989



The Seward Life Action Council Second Quarter Progress Report For Quarter Ended December 31, 1990 also reported that impacts on children were "awful" and began a children's group in response. The director of one of the day care facilities, who had extended periods of contact with children, described the behavioral changes she saw in children following the oil spill. Many felt angry and neglected because their parents were away from them for so many hours at a time. She reported a lot of crying and emotional disturbances. "The kids had always used to color nicely but since the oil spill they take a black crayon and cover everything black." This was attributed indirectly to the oil spill. In May 1989, two months after the spill, the kids were learning about and drawing pictures of sea life. All of the children reportedly drew the oil spill as part of their pictures and the subject of the oil spill hadn't been raised at the day care.

Medical

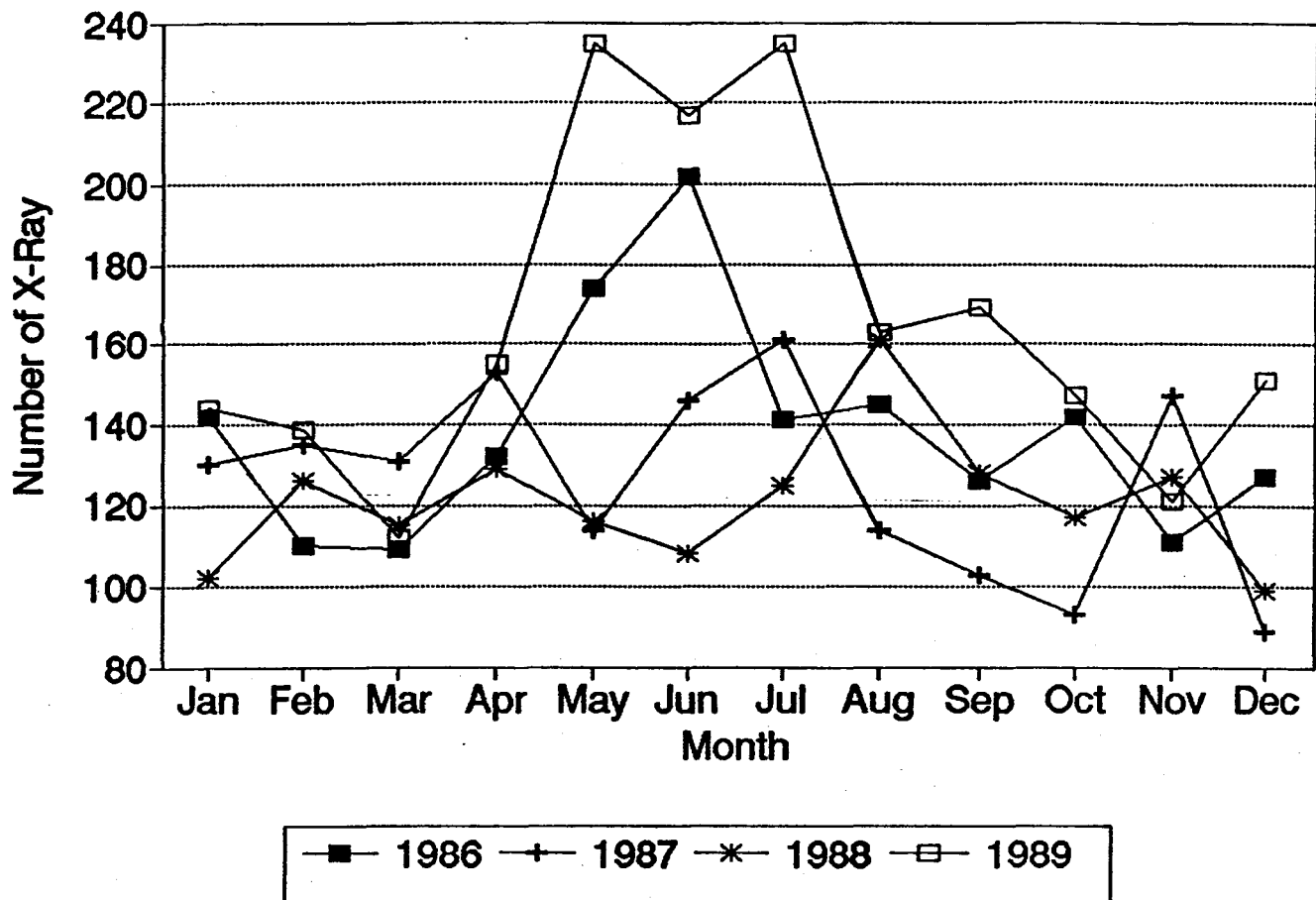
Hospital

Medical care in Seward is provided through Seward General Hospital. There was a marked impact on services due to the oil spill, and this impact was concentrated in specific areas. The magnitude of the impact was somewhat amplified over what might have been expected due to the structure of care in the community. According to one of the hospital directors, the care provided at the hospital is not of a volume equivalent to the needs of the local population. This is due to the fact that there is an estimated 60% outmigration of local residents to seek medical care. Being road connected, residents often seek care in Anchorage where they perceive the facilities and care to be more comprehensive. In other words, the Seward General Hospital, in effect, serves a community not the size of Seward, but a community approximately 40% the size of Seward in many respects.

The increased load on the hospital included many complaints of inhalation of toxic fumes; general exhaustion was another leading cause for care. Emergency room visits were up between 100 and 200% over a period of approximately four months, and there was a spill-over into increases in inpatient care. Laboratory facilities of the hospital were in very high demand for diagnostic testing. The heavy spill related load continued through the end of October. The following graphs present hospital use data for the oil spill period in comparison with previous years.

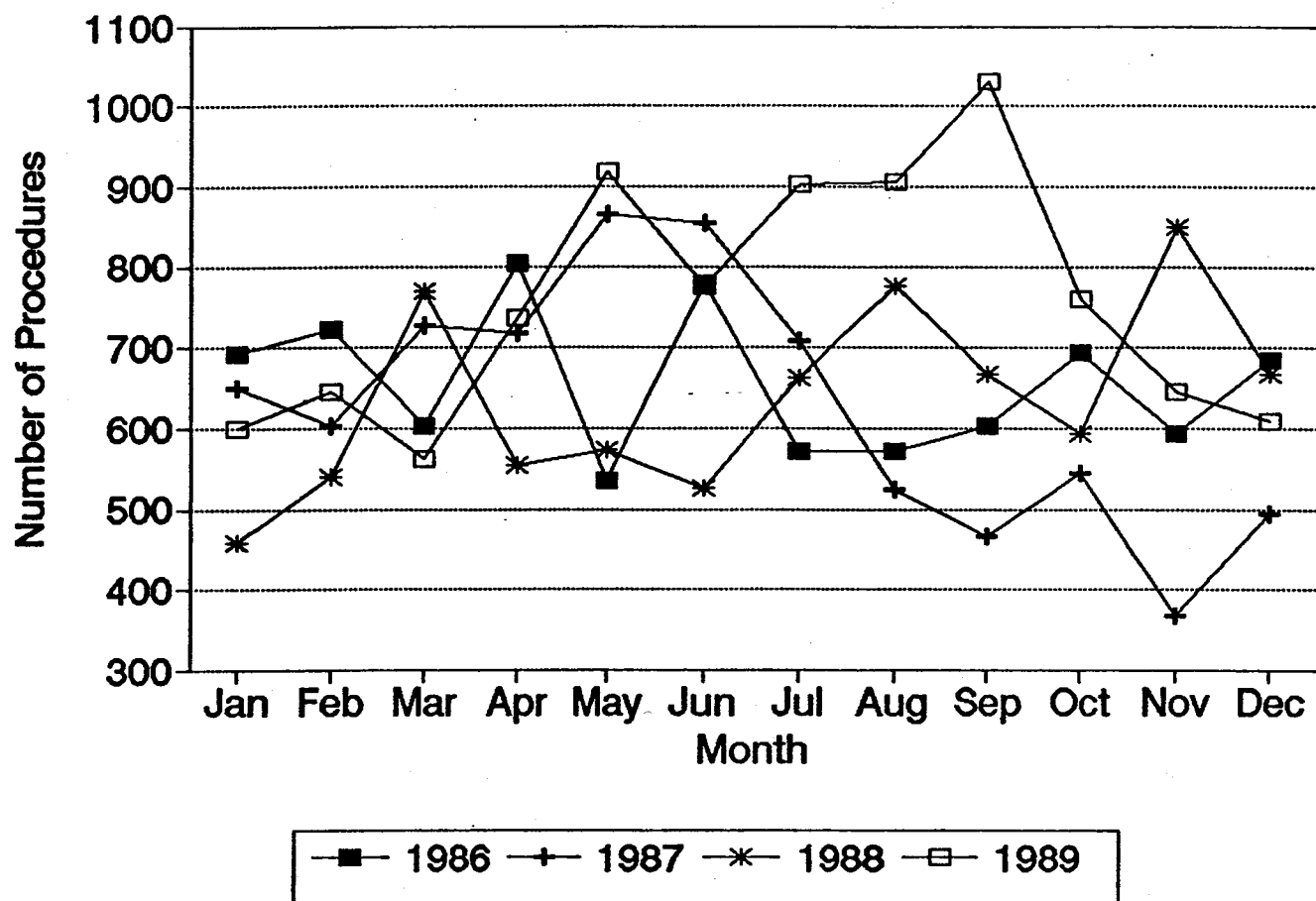
Seward General Hospital

Outpatient X-Rays, 1986-1989



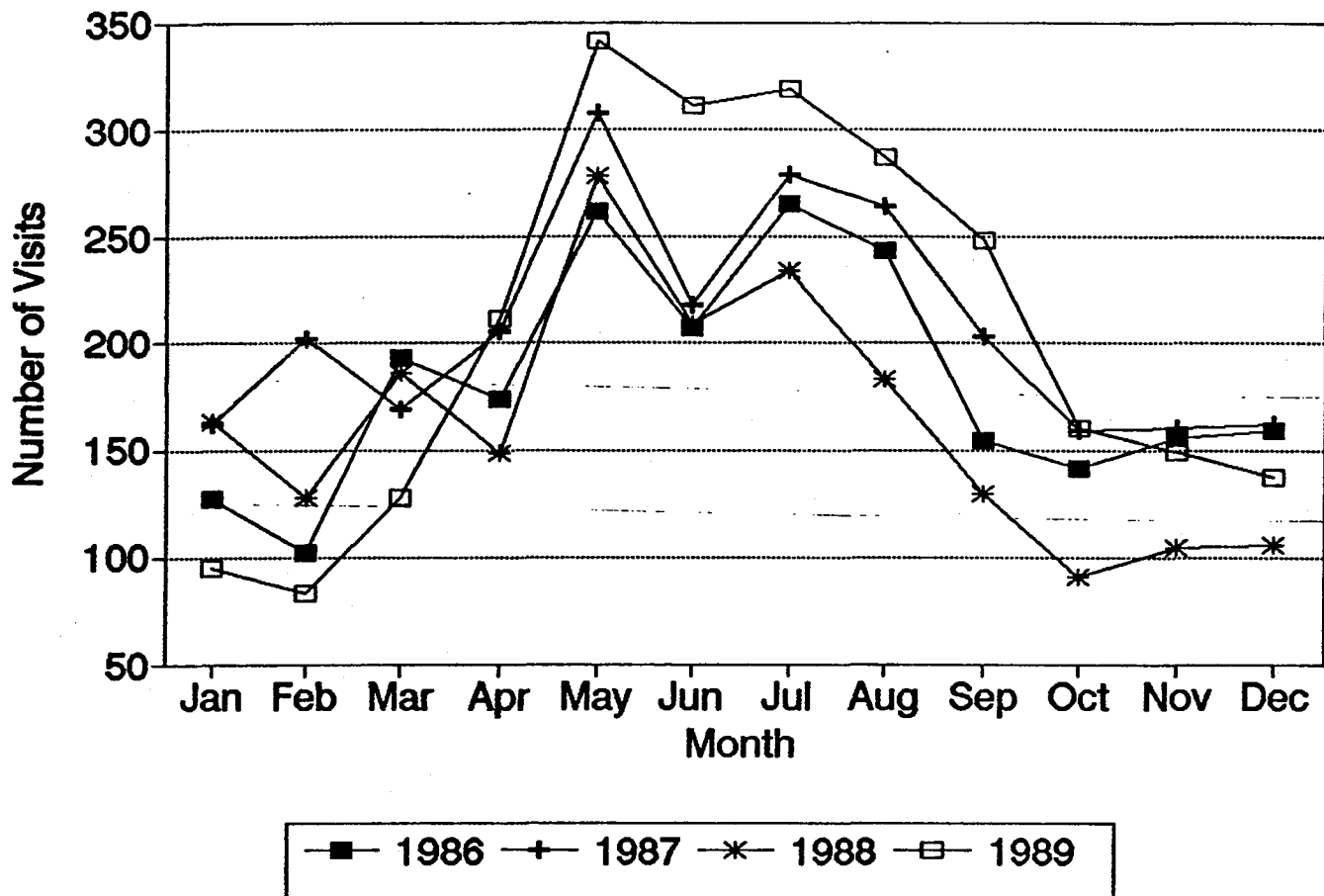
Seward General Hospital

Outpatient Lab Procedures, 1986-1989



Seward General Hospital

Outpatient ER Visits, 1986-1989



In order to alleviate the strain caused by increased demand, a PHS physician was assigned to the hospital for the period May through October, 1989. The physical facility at the 35 year old hospital were also taxed, and a new phone system, funded by Exxon, was needed to handle the load. Revenues were up for the hospital, but so were expenses -- accounts receivable were higher than ever before. Staff were overwhelmed and the hospital faced a serious cash flow problem. A \$200,000 six month no-interest loan from VECO was arranged to help with up-front costs and two administrative positions, a billing person and a medical administrator were funded by Exxon to help with the increased load. A revenue shortfall was still experienced and there was an increase in the patient bad debt percentage. This was attributable in part to increased treatment of individuals unable to pay (unemployed individuals who came to the community in an attempt to obtain oil spill related work), and care of individuals who misrepresented themselves as being employed by VECO or Norcon.

Emergency Medical Services

The Emergency Medical Service(EMS) in Seward is run by the Seward Volunteer Ambulance Corps (SVAC) under the auspices of Seward General Hospital, and operates its ambulance service out of the Seward Fire Department facility. SVAC makes approximately 200 ambulance runs per year, and the number of runs per month varies seasonally. Overall there is a natural increase of approximately 25 runs per year.

Of the approximately 16 volunteers who comprise SVAC, none went to work for VECO as Emergency Medical Technicians (EMTs), but the services of two were lost to the community during the cleanup when they took cleanup jobs in other capacities outside of the community. Although the EMS level of service was not compromised by a drain off of trained personnel (according to regional training personnel, Interior EMSs lost significant numbers of people to oil spill work, creating service difficulties through significant portions of the state), there were service difficulties caused by inefficient interactions between SVAC and VECO EMS efforts.

SVAC has a range of personnel from EMT Is (the minimum standard for patient care) through EMT IIIs (with advanced cardiac life support and drug/IV administration capabilities). SVAC also has Emergency Trauma Technicians (ETTs), but their roles are limited to ambulance driving and other non-patient care roles. Patient care protocols, obviously, vary with the level of training. SVAC EMT IIs and IIs, like all EMT IIs and IIIs, are required to operate under standing orders of a physician that cover the conditions and situations for the use of specific care techniques and types of medication to be administered. SVAC EMTs are supervised through the local hospital, but VECO EMTs were not. VECO standing orders were through a physician stationed in Valdez, and as a result there were some difficulties in continuity of patient care due to a lack of common treatment orders. The VECO EMS system did not operate on an even level during the cleanup and, according

to SVAC personnel, the VECO supervising physician quit one and a half months before the end of the cleanup. This meant that all VECO EMTs in the Seward region had to function only at an EMT I level, regardless of their level of formal training.

According to one SVAC leader, there was initially no communication between SVAC and VECO EMTs. SVAC interactions with the VECO system were limited in any event; mostly SVAC personnel were called upon to transport packaged and stabilize patients to the hospital from transportation points where they were handed off by VECO personnel: the dock, the airport, and the Bear Lake float plane area. VECO EMTs would not inform SVAC of what was coming and would expect a quick and appropriate response when a more planned response would have been possible. At times SVAC responded to calls with a crew composed of EMT Is, when IIs or IIIs would have facilitated care, but they were not requested.

There were other difficulties integrating the Seward EMS with the VECO effort. Normally the SVAC service area (in addition to a considerable land area) extends out into Resurrection Bay "as far as needed" and in the past SVAC personnel have responded to calls as far away as the village of Chenega Bay. During the oil cleanup, however, VECO wanted to handle all EMS calls on the water (and on the beaches) outside of the city limits that were connected with cleanup work. Further, SVAC was not involved in any planning or EMS coordination for spill cleanup activities. In one instance, there was a call where no VECO EMTs were available so SVAC responded out onto the Bay. When the responders returned with the patient to shore, the VECO EMT arrived and began asking questions that SVAC personnel took to be in violation of patient confidentiality, and then "they wanted to get in the back of the ambulance and tell us how to run things there." This precipitated a sharp disagreement. It was the opinion of the one of the leaders of SVAC that VECO was in the process of reinventing the EMS system and it was not appropriate for SVAC to change the local EMS system for an entity that was only going to be in town for a few months -- especially when the SVAC system had served the community for 30 years or so.

Communications were eventually improved, and VECO provided radios with common operating frequencies to SVAC, but according to an SVAC official, "most things had to be worked out at the individual EMT level" to get them to call ahead, coordinate efforts, and so on. Seward EMS personnel were careful to point out that on the individual level VECO EMTs were caring, good EMTs, but that the system they were operating under made things difficult.

There were problems with patient billings for the ambulance service. VECO would be billed for everything connected with care of its employees, and apparently they were not careful about collecting company identification cards of those who they laid off. As a result, SVAC as of February 1990 still had approximately \$4,000 in outstanding billings unresolved, but were confident that accounts would be squared in the near future.

One of the positive spin-offs of the oil spill for SVAC has been an increased interest in volunteers upgrading their level of training. According to and SVAC leader, at the time of the spill, SVAC had 4 or 5 EMT IIs, and since that time an five more volunteers have upgraded from level I to level II, which translates to a higher level of care for the community.

THE SOUTHERN KENAI PENINSULA: REGIONAL OVERVIEW

For purposes of this report, the four communities examined below, located on the Southern Kenai Peninsula, are clustered together into one region. There are solid geographical and political reasons for doing so. Besides these communities being in close geographical proximity to one another, they are all located within the boundaries of the Kenai Borough and were all members of the Homer Multi-Agency Coordinating Committee (MAC) during the Exxon Valdez oil spill crisis period.

However, these four communities are distinctly different from one another in a number of significant ways. The city of Homer is the only community located on a highway and accessible by car. The other three communities are remotely located from the rest of the Kenai Peninsula proper. Seldovia is only ten minutes by air from Homer but has one tenth the population of the latter with a significantly greater proportion of Natives (one third). While Seldovia's economy is somewhat dependent on tourism, it is by no means as dependent as Homer is.

The villages of Port Graham and English Bay are located approximately twenty minutes by air from Homer and ten minutes by air from Seldovia. These two villages are predominately Native and contain roughly half the population of Seldovia. In addition, the economics of Port Graham and English Bay are not dependent on tourism. If one were to imagine a continuum based on the dependence of subsistence foods the two Native villages would be on the higher end of dependence, Seldovia would be more in the middle and Homer would be on the lower end. Not only are the residents of Homer considerably less dependent than the other three communities on subsistence activities, they have a more diversified economy that makes them less vulnerable to a deficit within any one sector of their economy. The economy of Homer is based on commercial fishing, tourism, government and private sector employment, and agriculture.

It is instructive to compare these four communities according to three other analytical dimensions: (1) types of exposure to the oil spill; (2) types of exposure to the cleanup effort and (3) the psychosocial impacts of the spill. For example, even though it may be argued that Homer is the economic and political hub of the region and was the center of the containment and cleanup activities, it was the community least oiled by the spill. The communities of Port Graham and English Bay, the most heavily oiled by the spill, were located the farthest from the main response effort. In regard to the exposure to the cleanup effort, all four communities were exposed a fairly significant degree, though in different ways. Finally, the psychosocial impact on the communities was significant. However, culture remains an important consideration for understanding the impact of the Exxon Valdez spill on communities. While it should be stressed that the psychosocial impact of the spill disaster is severe in all four communities, it is important to remember that different cultural groups are likely to be affected in different ways as demonstrated in the community analyses below.

City of Homer

Homer is a first class city with a population of 3,500 people, located on the southern tip of the Kenai Peninsula. The city is at the end of the paved highway for the Kenai Peninsula and is reachable by car, plane, and boat. The community has a small boat harbor and is economically dependent on commercial fishing, tourism, and recreation. The economy is also based on government and private sector jobs, agriculture, and animal husbandry.

Response Effort

When the spill first occurred most residents thought there was little chance the oil would reach their shores. For a time, this perception was reinforced by NOAA's assertion that only small amounts of oil would ever reach the Gulf of Alaska. As time passed more residents became skeptical of both NOAA's and Exxon's assertions that the community had nothing to fear. As reports of the oil moving south began to appear, many residents became concerned about their beaches and their economic livelihoods.

During the first month following the spill, the community was reportedly "highly emotionally charged" and on the "verge of violent rebellion." While the community seemed quite upset over the events of the spill itself, many people channelled their concerns into constructive actions. One person, who thought the community should prepare for what looked like the inevitable, organized over 100 fishing boats to stand by to protect the surrounding waters. Despite pleas from both elected officials and private citizens, Exxon did not, according to some sources, take seriously the threat to the community and did not come to Homer to meet with officials and the public to discuss a response plan. Then on April 15th, an oily sheen entered Kachemak Bay and it became evident that the entire region was in peril.

By the third week in April, fishermen voluntarily cut logs and constructed booms. Following Seward's lead, Homer and the surrounding communities formed a Multi-Agency Coordinating (MAC) group. The Homer MAC was formed with representatives from Homer, Port Graham, English Bay, Seldovia, the Kenai Peninsula Borough, U.S. Fish and Wildlife Service, Alaska Department of Environmental Conservation, Alaska Department of Natural Resources, Chugach Alaska Corporation, Alaska Department of Emergency Services, and the North Pacific Fisheries Council. Once the agency was established its first priority was assessing what needed to be protected. As one local official explained, it became clear almost immediately that they did not know what they were doing. They discovered that boom, while it can be effective, it is vulnerable to penetration from high winds and fast moving tides. Exxon was hesitant, according to several sources, to send a representative to the community to meet with the MAC members. The mayor stated that only after exerting public pressure did Exxon and Coast Guard officials attend a public meeting held in Homer. After this meeting Exxon apparently began to make some commitment to help establish a cleanup response. The MAC team established as a first

priority the need for 30,000 feet of boom. Exxon claimed they could not provide the boom because it was not available, but the citizens of Homer and Seldovia called suppliers around the world and located boom for sale. Some officials claim that Exxon stated that boom was not available because they did not want to buy it, but merely wanted to rent it. The MAC group succeeded in getting money from Exxon and within two days ordered and received five thousand feet of boom.

The public perception of many Homer residents was that Exxon was dragging its feet. Some felt betrayed by Exxon's claim that boom was not available when in fact it was readily available. Citizens' groups lobbied state and federal officials to have Exxon eliminated from the cleanup process. When their attempt did not succeed, one MAC member attempted to make a citizen's arrest of an Exxon official at a MAC meeting claiming that Exxon had violated a federal law by providing false information about the availability of boom materials.

By the third week in April, a severe storm allowed oil to penetrate the boom that was set out to protect the bay. Within a couple weeks after the storm, globs of oil appeared on the Homer Spit. Other areas of the bay were more severely affected. Places like Gore Point were oiled repeatedly. The MAC group demanded, without success, that Exxon clean up these heavily oiled areas. Finally the Coast Guard and DEC demanded an explanation from Exxon as to why they had not cleaned them. One individual employed with the National Park Service organized a small, volunteer effort to clean a beach near Gore Point. The attempt was so successful that he eventually resigned from his job and began to organize a volunteer effort that was supported in various fund-raising drives by Homer citizens. In September, after Exxon ended its cleanup operations, this gentleman organized volunteers to clean up a cove. Other volunteer efforts in the community included the Homer Emergency Animal Recovery Team (HEART); the Otter Center, The Bird Center, and the Homer Area Recovery Coalition (HARC). Exxon helped fund some of these organizations.

Many individuals, either elected officials or people who actually worked on the cleanup crews, complained, as did many people in Seldovia, English Bay, and Port Graham that Exxon actually hindered their own cleanup effort. Because Exxon was encountering great difficulty in disposing of the waste collected, they began, according to some witnesses, "ordering" cleanup crews to collect less oil from the beaches. Shovels were replaced with trowels and cleanup crews were ordered to work more slowly. As word of this tactic spread throughout the region many individuals became enraged over Exxon's behavior. A number of elected officials and residents allege that Exxon's focus was a public relations effort rather than cleaning-up the spill.

Local Government

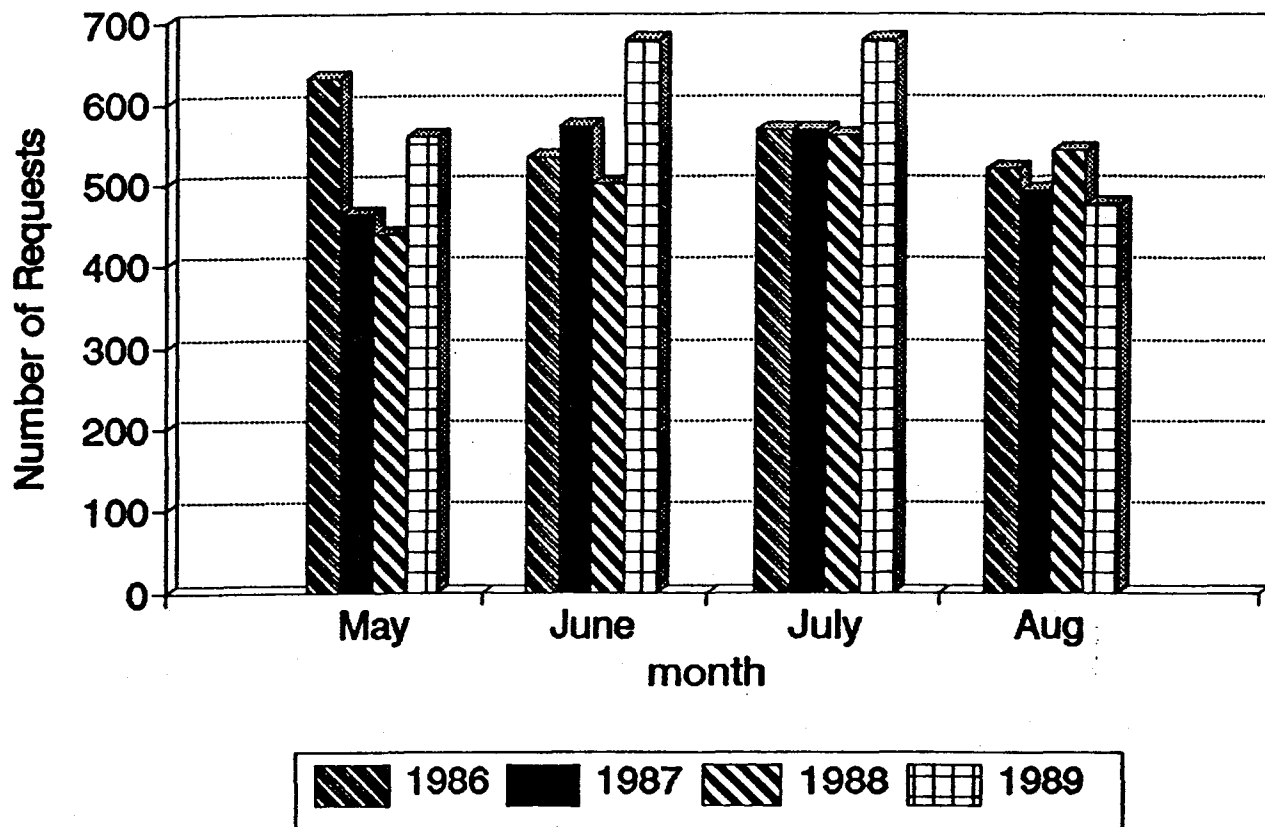
According to the mayor, the city relied a good deal on the Kenai Peninsula Borough (KPB) for maintaining communications with Exxon. Both the city and the MAC team did have direct communication with Exxon and VECO as the response effort developed. The point many emphasized was not the lack of communication with these groups, but the failure of these groups to respond to requests.

To varying degrees the spill placed excessive demands upon municipal departments. While the public works department and the fire department representatives state that the spill had little impact on them directly, the acting city manager stated that the former city manager and his staff experienced some increase in demands. The finance department experienced an even greater increase in demands. The mayor stated that his work load doubled as a direct result of the spill. City Hall, where both the city council and the MAC team met, experienced a great increase in the use of its facilities. The presence of the MAC group increased numbers and activity of the media representatives and state and federal officials in the building became a major distraction to the employees. For instance, the planning department was located across the hall from the MAC meeting room and suffered constant interruption from the hall activity and the press asking to use their phones. According to one employee, productivity declined by one half as a result of all these intrusions. The harbor master reports that his job increased ten fold during the summer. His primary concern was to make sure no bottle necks occurred. Moreover, he had to make room for VECO and Exxon and provide them with electricity. Three additional people were hired to deal with the spill. These additional harbor aides spent most of their time cleaning up the extra garbage created by the influx of people attached to the spill cleanup effort.

Because of the influx of outsiders, both the traffic and the crime rate increased. Police personnel were required to work overtime to deal with these increases. However, the police chief asserts that the majority of over-time resulted from having to provide security for the V.I.P.s that were frequently in town. In order to meet the increased demand caused by the oil spill, the police department had to hire three additional temporary personnel as well as a couple of permanent positions. According to the police department there was an increase in domestic violence and several racial incidents between Natives and non-Natives occurred during the summer and fall. During the month of July there were also several protests against Exxon that required additional police coverage. The total requests for police service rose significantly during the months of June and July of 1989. The following figure illustrates this phenomenon in comparison to the past three years. The magistrate's office was also severely affected as a result of the influx of strangers to the community and the increase in crime. The magistrate stated she was often on the bench until 10 or 11 PM at night and conducted arraignment proceedings almost every weekend. The increased caseload also made it difficult to conduct felony trials because of the shortage of available

Homer Police Statistics

Total Requests for Service, 1986-1989



courtroom space. The magistrate contended she was able to provide good service in spite of the extraordinary circumstances, but the court did fall behind in issuing bench warrants to pay fines. The demand on the court was compounded by the resignation of a judge whose replacement was not sworn in until the fall.

While few city employees resigned in order to work on the spill the acting city manger did state that the additional stress placed on municipal employees was, in part, responsible for the resignation of both the former city manager and the finance director.

The ineffectiveness of state and federal agencies due to overlapping jurisdictions, was, as in many other communities, a common complaint. One official stated that the Coast Guard asserted they were in charge because their jurisdiction included only navigable waters and adjacent beaches. However, the DEC had concerns that conflicted directly with those of the Coast Guard primarily because they felt responsible for all environmental concerns. For example, this official reported that the Coast Guard would tell Exxon to work on a specific beach, and when Exxon was later questioned as to why they had failed to follow through, Exxon would cite the fact that DEC forced them to leave because they didn't have the proper sanitary facilities. Once they secured the proper facilities and returned to the assigned beach the Coast Guard would suggest that they use four wheel vehicles to be more efficient. Exxon claimed that the Department of Natural Resources (DNR) would then intercede and say they didn't allow motorized vehicles on the beach. "It was like that all the time, just one thing after another. They [Exxon] continually ran into those kind of problems." However, the official pointed out that in a "broad sense" he would characterize the problem as a lack of efficiency by Exxon and various agencies coordinating their efforts.

The educational facilities did not escape impact either. The Kenai Peninsula Community College was affected in a number of ways. Several of the students dropped out during the last week of the semester in order to work for VECO. This generated a lot of paperwork for the college because it has a small clerical staff. Also, one of the faculty members was hired by Exxon, forcing the cancellation of a course. The spill affected the college in other ways as well. The summer elder hostel program was adversely affected. Many of the people who normally taught in the program were not available during that summer because they were working on spill-related activities. The major resource center for that program, the Marine Coastal Center, stayed closed during the summer because of the spill. The spill affected fall course offerings as well because many of the faculty members were hoping to work on spill-related activities after September and were reluctant to commit themselves to teaching in the fall.

The facilities of the high school and the junior high school were utilized in a variety of ways. The auditorium of the high school was used for community meetings both during the day and the evening for public meetings with VECO, Exxon, the media, the MAC team and various visiting dignitaries. Forty-five agricultural students were displaced from their lab when it was converted to a bird rescue center. At the junior high school the pool was

drained and used for the otter rescue program. One of the administrators stated that the spill and related activities were so traumatic that many of the staff, faculty, and students spent a considerable amount of time discussing it. It was reported that the number of people who frequented the school in connection with the spill, including the media, created a constant distraction for the students. Approximately a half -dozen students dropped out in order to work on newly created jobs in the community. On a few occasions there were problems with adolescents who had come to Homer with their parents who were looking for spill-related jobs. At times these adolescents would loiter on school property and in a few instances were suspected of dealing drugs.

Changes in Community

Once VECO and Exxon took over the cleanup effort they began hiring local residents and leasing boats from the Homer harbor. When these jobs and boat contracts became available there erupted within the community highly charged moral and political debates about whether one should work for Exxon. There seemed to be, among some residents, a moral sentiment that working on the cleanup effort for the big companies was tantamount to advancing the oil companies' interests. Several individuals made an analogy between VECO workers and the French Vichy collaborationists. Many still pride themselves on working solely on volunteer crews. One informant stated that in the future when their kids ask them "what they did during the war," those who worked for Exxon will feel a sense of "shame." Deep-seated arguments broke out between friends and relatives about this moral issue. The arguments that disrupted families and ended friendships seem to linger among many residents until this day. One person reported that she had a friend who remained highly critical of those who worked for VECO. She pointed out that this friend had made a considerable income after the spill working as a consultant for the Department of Fish and Game and that it was somewhat hypocritical of him to criticize others for making money off the spill. The value judgements that both she and her friend made are illustrative of the current moral discourse in the community. Other individuals who worked for VECO contend that their critics are unrealistic and morally "smug." There are those who assert that working on the cleanup crews helped to restore the environment and that people have a right to be paid for their labor.

An enormous amount of resentment, bitterness, and jealousy centers around those who profited from working for VECO. Critics often pointed out the "unfairness" of those who "sold-out"; they profited from their behavior and gained an unfair advantage over those who stood their moral ground. Those profiting were fishermen who were enabled to buy a new boat, a second boat, or more sophisticated fish location equipment; often those very individuals before the spill had been the less successful and the less knowledgeable fishermen. The unfairness of this irritated many people who were concerned about the disruption of their community. Another example of this disruption would be the acquisition of a considerable amount of money by a teenager, a person normally without financial

advantage or power. In part some of these issues are touched upon by the following comment:

"There was a situation where a whole lot of money was thrown around and a whole lot of people's values were turned around because of that, or they found out what their real values were; found out what their neighbor's values were. There was a lot of reality thrown around that people weren't ready to deal with. There was a lot of sense of violation in it. It started at the level of the community versus the oil company and very quickly ended up filtering down to our neighbors and friends, you know, the individuals within the community."

Many people allege that this factionalism and inequity resulted from an over-all strategy of Exxon. Many local government officials and residents assert that Exxon felt threatened by the sense of community solidarity among the residents and therefore set out purposely to create factionalism and social disruption by "spreading" money around the community to divide the opposition. Many individuals felt resentment that Exxon took over their volunteer cleanup effort, and because of the way in which this was done, they felt that the oil company had invaded their community. Others contend that Exxon threw its weight around upsetting the local government and the Borough MAC group to the point that the community lost control over central issues. A small minority felt that Exxon demonstrated itself to be more powerful than the federal government. One local government official expressed it this way: "Your appeals are gone once you find out the oil companies are bigger than the federal government."

While many spoke of how well the Homer community came together, uniting various factions and political camps prior to the take-over of the cleanup by Exxon, they bemoan the collapse of that solidarity after the arrival of the oil company. Some point with pride to the residual sense of community solidarity which led to the organizing of the volunteer effort in Morris Cove. For many, this exception demonstrated the sense of volunteerism and independence which many Homer residents cherish. The volunteer effort enabled them to preserve their self-image.

The majority of those responding felt that the community had changed as a result of the spill. Some say the experience hardened people and made people more suspicious of one another. Others spoke of how the quality of life had changed. Many people said that it was as if the community had been "violated" or "raped" and that it would take a long time to recover. One person stated, "it is not quite the nice little place it was to live before [the spill]." Some felt that the community was politically more aware and that people were now

politically better informed about state and federal politics. Others spoke of the community in terms of the environment and said that the environment has been "spoiled."

Way of Life

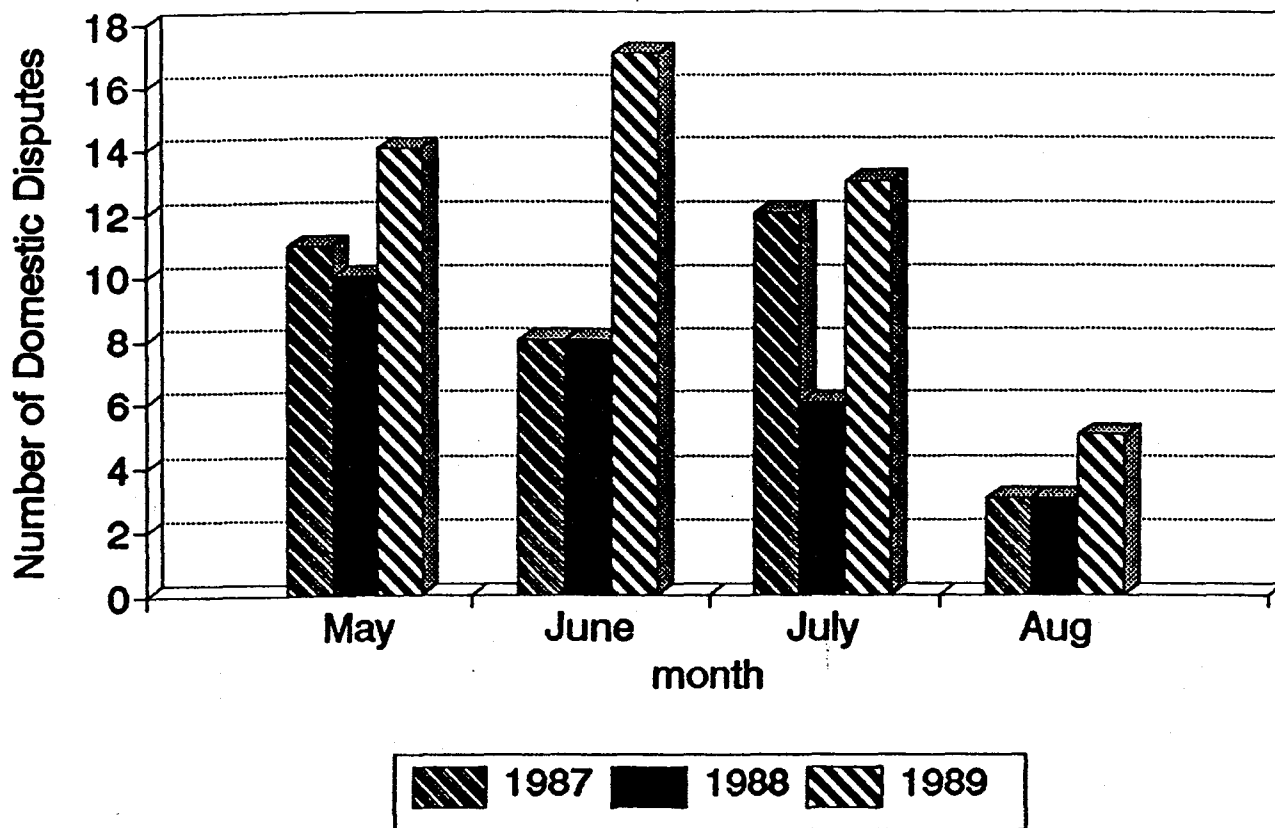
Because commercial fishing was suspended, the normal seasonal fishing cycles were disrupted along with many of the seasonal tourist and recreational activities. Several informants said that a number of small businesses were so adversely affected that they were going out of business. The artificial economy created by the influx of people and the VECO salary scales resulted in an increase in cost of rents, food, and transportation. Many small businesses were reported to have a difficult time hiring workers because they could not compete with VECO salaries. A recurrent complaint made by many residents was that the spill disrupted their normal summer recreational and vocational activities. Many stated that they were looking forward to the resumption of a normal summer.

Family

While child-care was often cited as an issue in many communities, it was mentioned less as a central issue in Homer. In fact, the director of the largest child-care facility stated that during the summer there were actually fewer children enrolled in her program than during the previous winter and spring. Nonetheless, the effects on many families will be discussed below in the section on mental health. According to the magistrate's records, both separations and divorces rose significantly in the fall of 1989 over the previous two years. Individuals stated that they knew of many couples whose relationships suffered because of the stress of the disaster. As the following figure indicates, domestic disputes, according to the Homer Police Department statistics, increased during the months of May through August 1989 signaling a strain in domestic relations. That stress was due to increased financial problems, uncertainty about the future or long absences from the home because one, or both, of the spouses were working on spill-related activities.

Homer Police Statistics

Domestic Disputes 1987-1989



Mental Health

By all accounts, the psychological effects seem to be significant. All three agencies that provide mental health services in Homer reported significant increases in their case loads. The Cook Inlet Council on Drug and Alcohol Abuse stated that the number of participants in their program rose from a total of 153 in 1988 to a total of 217 in 1989 (a 41% increase; DWI arrests soared proportionally). Shortly after the spill the center began administering a new stress scale indicator to all their new clients. Since the scale had never been used in the community before, it was difficult to tell if there was any significant increase. However, the majority of people who were tested scored in the 150-300 range which means those individuals are at a higher risk of incurring health problems. Some people they screened scored as high as 600. The agency's intake participant level for 1990 remains abnormally high. This past January alone the agency handled more ASAP screenings than they did during the entire first quarter of the previous year.

Prior to the spill, the trend at the Homer Mental Health Center was toward program development for chronically, mentally ill adults and children and emotionally disturbed children. After the spill the services at the center declined but in October services started to increase as they were asked to do more in the community such as providing educational services at the schools and working with the division of family and youth services. Around that same period of time they also had more requests for family interventions which centered around problems between spouses or children acting out. They also saw an increase in drug and alcohol abuse. Prior to October of 1989, the clinic delivered between 250 and 275 direct client contacts in an average month. By November that number increased to 500. Since then it has delivered, from 475 to 525 client contacts monthly. To meet this increase in demand they have had to prioritize their services and give preference to the severely disabled. For instance, people with a psychosis problem were given priority over someone with a family problem.

Fortunately, around the same time, they were given additional funding from the state to provide additional services. This additional funding allowed them to send a part-time counselor to Seldovia and place a counselor in the school. Measured in terms of the direct client contacts, the staff of the Homer Mental Health Clinic worked much harder than usual and were exposed to evidence of the social impacts on their community from the oil spill.

Moreover, prior to the spill the mental health center flew two clinicians a month to the nearby Native villages of Port Graham and English Bay. However, after the spill both these communities requested that non-Native outsiders stay out of the villages for a period of a couple of months because villagers were wary of outsiders. The same request was made of the Southern Kenai Women's Center. Although the center complied with the request they were able to maintain telephone contact with their Native clients.

The Southern Kenai Women's Center, unlike the Homer Mental Health Center, experienced a dramatic increase in client load almost immediately. Most of this increase is attributable to domestic violence. One of the counselors pointed out that the amount of stress most people in the community experienced was significant and that domestic violence was closely tied with the ability to deal with stress. According to the director of the center the counselors saw a significant and alarming increase in "the degree of lethality" of these cases. Moreover, they saw what they believe to be an acceleration of the domestic violence continuum in which people with little previous history of violent behavior apparently became very violent. Reportedly, a significant number of these domestic violence cases included the use of a weapon such as a knife or a gun. In June there was a domestic violence-related death which shocked the community. As a result of this increase, the case load almost doubled for a time. While in previous summers the center has had an increase in its transient client load, the summer of 1989 saw fewer transient clients. Like the mental health center, the women's center had to prioritize its services and cut back on its outreach, educational programs, and other services in order to deal with the increase in crisis intervention cases. Unfortunately, during this same period the center lost about 40% of the volunteers it relied upon for maintaining their 24 hour crisis line and shelter program. Over-time for the full-time staff increased by about 25%. This overtime, coupled with the staff's own anger, grief, and frustration over the oil spill and its impact had a significant toll on the staff according to center informants. The director noted that by the late fall all the staff experienced some form of burn-out at one point or another and that this stress was still being felt by early spring 1990.

Medical

The South Kenai Peninsula Hospital was affected by the spill and the cleanup effort. They experienced an increased patient load especially in the emergency room, the laboratory and the X-Ray facilities. This increase in cases was compounded by a loss of much their volunteer staff and by a shortage of an adequate nursing staff. In keeping with the national trend, the hospital had difficulty hiring nurses prior to the spill itself, but this difficulty was exacerbated by the spill. The hospital found it nearly impossible to recruit nurses because of the high VECO salary scale with which they could not compete. Moreover, they could not find people willing to do gardening and maintenance work during the summer. The gardening didn't get done, the lawn didn't get mowed, the buildings didn't get painted and the parking lot didn't get cleaned. Furthermore, they sometimes experienced difficulties and delays in getting medical supplies delivered because most shippers were excessively busy shipping supplies for VECO. Nonetheless, the director maintains that patient care itself did not suffer.

Like many other medical facilities, the South Kenai Peninsula Hospital witnessed an increase in upper respiratory infections, hypothermia, accident injuries, burns, and, on at least one occasion, exposure to toxic fumes. Most cases of these health problems were

directly related to the oil spill. The hospital serves not only the community of Homer, but the communities of Port Graham, English Bay. Seldovia, Halibut Cove, Ninilchik, and Anchor Point. According to the former acting director, the Native communities expressed a lot of concern for their health since many of them were working on cleanup crews and their communities were more heavily oiled. Many individuals were concerned about toxic fumes and the possible contamination of their subsistence foods

Changes in Personal Experience

A great many people reported changes in their lifescape in one form or another. Many said that their experience with the oil spill has made them question whether various levels of government always operate in the best interest of the public good. Others questioned whether the risks of modern technology are worth the potential long-term risks. Coupled with that doubt, many of these same people questioned the reliability of the scientific community whether it be NOAA, U.S. Fish and Game, or Exxon scientists. Other individuals stated that their experience in dealing with both Exxon and state and federal agencies as well as residents in the community made them more suspicious of everyone in general. Some expressed their suspicions in terms of being less willing to trust people and more skeptical about people's statements. Still others spoke about how they perceive the natural world in a new light - as more vulnerable, "tainted" or "ruined." Finally, there were people who stated there were no significant changes in their worldview.

City of Seldovia

Seldovia is an unincorporated first-class city located on the southern tip of the Kenai Peninsula. The small community of approximately 450 people is almost totally surrounded by water. The land area of the city is less than one half square mile and is not connected by road to the rest of the peninsula, but can be reached by air or by the Alaska Marine Highway system. The ethnic composition of the city is approximately 70% non-Native and 30 % Native. The Native population is composed of Eskimo, Aleut, and Athabascan ethnic groups.

The majority of Seldovia's economy is based on commercial fishing and processing. According to a 1986 Alaska Department of Fish and Game report, slightly more than one third of its households are directly involved in commercial fishing. Since the 1960s, logging has played a small role in the community's economy. There are two hotels and two or three restaurants which provide employment opportunities and support a small, growing tourist industry.

The waters and shores adjacent to the community were oiled to varying degrees. Two places in particular were heavily oiled - Morse Cove and Tuka Bay. Both areas are considered extremely important to the residents. Many of the people interviewed described the damage to the environment "severe" and "devastating."

Response Effort

The residents of Seldovia initially responded to the spill with "shock," "anger," "grief" and "outrage." Early on, as the spill advanced in Prince William Sound, residents met with both the Coast Guard and Exxon and expressed their concern for the establishment of preventative measures and a response plan. While many community members were sure the oil was coming to their community the Coast Guard assured them that the oil would not approach their shores. Both the Coast Guard and Exxon were said to be unresponsive to the pleas for help. A number of community members became anxious to establish a response plan in the event that the spill would eventually reach the waters surrounding Seldovia. Emergent leaders concerned that the city had not prepared itself properly for the likelihood of such an event approached the city manager during the first week in April. The city manager responded by appointing the fire chief as the Emergency Operations Officer and an Emergency Operations Center (EOC) was established. Concerned community members established a resource data base. Within two days after the meeting with the city manager, a public information meeting was held. The community decided not to wait for outside help and began to organize a volunteer effort to protect their shores and waters. One hundred and fifty people signed up as volunteers. The group composed a resource list of people, equipment, boats, office space and warehouse space in preparation for their response effort. The Director of Public Works was chosen as Seldovia's representative on

the Homer Multi-Agency Coordinating (MAC) Committee. The group also decided that they needed to learn more about bird and mammal recovery techniques.

The day after the meeting Seldovians began searching their backyards and storage areas for materials that would assist them in their effort. Fishermen met to discuss the waters and tides surrounding the community. People began to volunteer their skiffs and boats as vessels that could be used to place booms. Because they were told there was no commercial boom available, the residents quickly taught themselves of how to construct boom and what kind of materials could be used in their construction. The Coast Guard had originally offered to provide typart and booms, but the community never received the materials. Complex engineering tasks were solved by common citizens who had no previous experience in the construction and deployment of booms but took it upon themselves to acquire the technical expertise required to design and build boom. The residents formed into units with each unit responsible for a specific task. Booms, logs, cables, and other materials were gathered by loggers and heavy equipment operators. Women formed work groups to sew typart for boom material. The school set aside two days for the teachers and students to volunteer their time and labor in order to assist in the construction of boom and conducting shoreline impact surveys. Traditional gender roles were abandoned as both men and women unloaded boats, ran cranes and constructed boom and worked in the warehouse. An incident response team arrived from Colorado to assist the volunteer efforts. When the team left five days later they pronounced the response plans and efforts as "workable." These plans were later ignored by Exxon and VECO.

In a public meeting attended by both the Coast Guard and Exxon, the city received a promise from Exxon that they would give them \$15-20,000 in support of their effort. A few days later VECO was reported to have visited the community and said that they thought the city had a worthwhile project and that they would like to take over the response effort. One informant reported VECO came in and stated they were going to take over the response operation in Seldovia whereupon they gave the response office a telephone number in Homer and left promptly. In the midst of the construction of booms the project came to a sudden halt because the VECO representative in Homer would not return their calls. Moreover, the materials VECO promised to send never arrived.

Another resident, who worked closely with the response effort, stated that "once VECO took over it took two weeks to get the same items, because of the paperwork that you had to fill out." When VECO stepped in, there was already a workable structure in place and a plan that had been approved by the incident response team. But VECO, according to several sources, was not interested in the organization or the plan. They replaced the grassroots organization with a strict, bureaucratic structure that lacked faith in the ability of the residents and ignored local expertise. One Seldovian stated that "they were not interested in what we were doing. Actually, they would liked to have had us disappear."

VECO and its operations were viewed as "disruptive" by some residents who criticized their lack of planning, slowness, and impact on the community social structure. Thus, some saw the cleanup as more disruptive than the actual spill itself.

While Seldovians suffered little from the influx of strangers from the outside, there was a considerable influx of cash from the cleanup effort. The infusion of this money is viewed as both positive and negative. For one thing, as stated above, some residents thought it was morally wrong to work for VECO and resented some of their fellow citizens for doing so. Many said they were insulted by being offered money for doing what they were willing to do as volunteers. There were several who thought the introduction of such large salaries created strife and dissension among community members. Many stated that prior to the spill there were several factions in the community such as "bar" people and "church" people and fishermen versus professionals and those who lived "out the road" as opposed to those who lived in the community. According to these people, the response effort united all these groups and promoted a sense of solidarity which that was unprecedented. These people felt VECO's take over of their cleanup effort and the introduction of large sums of money broke down the sense of community solidarity and created additional factionalism that did not exist prior to the spill. Others were less critical and said that VECO and Exxon brought a necessary economic boost to the town which helped off-set the financial losses incurred by the shutting down of the fishing industries. One individual stated that prior to the spill the town was "poor" after the oil spill and offered few job opportunities. According to him, after the spill things changed for the better: "During the spill period it was the happiest I saw this town. All the dogs were not fighting over one bone. There were lots of bones to chew."

Local Government

The city government was affected by the increased demands on its offices and personnel. The unsalaried mayor, the city manager, the police chief, the fire chief, the treasurer's office, the harbormaster's office, and public works were especially hard hit. The heads of all these departments reported that they worked numerous, unpaid hours of overtime. As mentioned above, the fire chief was appointed the head of the emergency response effort and until VECO took over the response effort his duties were severely affected. The new city manager, who assumed his position in mid August, stated there was "widespread disruption" in the normal running of municipal affairs. The public works department was also hard hit since it normally only has a couple of employees and the director was appointed the city's representative on the MAC team in Homer. His appointment left one person to do all the work. The public works department had at least three projects they had to complete during this period. The department faced additional problems because all the available adult labor was committed to the cleanup effort. In order to continue with the projects, they had to hire teenagers as laborers. The replacement of the water and sewer lines was not completed last summer as they were suppose to be and is way behind schedule and at one point risked loosing its funding grant from the state. Even the library reported increased demands on

its services. One volunteer librarian complained that many parents would "dump" their children at the library when it was open because there was insufficient child-care. Moreover, the multi-room at the library, which also houses their office, was used by VECO and others making it difficult to conduct business and creating "too much commotion for a library atmosphere." As hard hit as the city was by the spill, they were unable to attend the oiled-mayors conferences because the city could not afford to send its mayor to the meetings.

Furthermore, Seldovia was beset by political factionalism in the community and within city hall. Many people were critical of the city's failure to anticipate the approach of the spill and their reluctance to design a response plan. In this mood, several concerned citizens met with the city manager in the above mentioned meeting in an attempt to force the issue. It was not the elected officials that took the lead in organizing a response team but private citizens such as a local businesswomen, a fisherman, and others. The city manager became the focus of considerable criticism for allegedly playing old time politics and refusing to take a decisive stand. There were also criticisms of the use of the specially allocated spill monies released through the Borough Exxon fund. At the center of this controversy was the purchase of \$17,000 worth of computer equipment for the city out of funds that were designated to be used in the response effort. Many seemed to feel that the computer purchase was inappropriate and special equipment and supplies necessary for response to the spill should have purchased instead. By July, the manager resigned from his office. As of spring of 1990, the computer equipment remained a controversy within city hall where municipal workers squabble over which office should have access to the equipment. The city council members were also criticized for their lack of response. Four of six city council members were replaced in recent elections. There was also considerable controversy, which still simmers, over the rise to prominence of the head of public works in his role as a MAC team member. In Homer, this man was chosen by the Governor to represent the demands of the Borough communities to Exxon officials. The money this man obtained for the boroughs from his demands to Exxon almost elevated him to the role of hero in some people's eyes. His outspokenness and prominent role made him unpopular with some, especially in city hall. In a dispute with the city manager this person was fired briefly before being re-instated.

Even though the city experienced increased factionalism after the take over of their response effort by VECO they have been able to channel much of what they learned in designing and creating a response team and to preserve sufficient community interest and participation to form a regional oil response team and plan for future, potential spills. Save Our Sound (SOS) has gained widespread community support and has invited members of the nearby communities of Port Graham, English Bay, and Homer to participate in the formation of such a plan. Alyeska has offered to sponsor Incident Command System training and oil spill response training for team members. As of late February, 53 people have completed the Health and Safety for the Oil Spill Worker training course in Seldovia. Six people have passed the Coast Guard exam and another 16 people were training for it. While the plan

has not gained full acceptance among the Native communities it has been recognized by all the adjacent communities as a viable and important plan.

During the initial days of the spill period, the city of Seldovia experienced considerable frustration in communicating and dealing with Exxon officials. First, as already mentioned, the city was unable to convince Exxon of the real threat that the spill posed for the community. Later, when Exxon recognized the threat and began making promises to help, the city experienced more frustration. Not long after obtaining the special funds of \$15,000 for their response effort the response team realized that they were woefully under-funded and had already exceeded the allotted amount by several thousand dollars. The fire chief, who was placed in charge of the emergency response effort called the regional Exxon spokesperson and demanded that he come to town with his check book and give them the necessary money needed to cover the cost of the response effort. The Exxon official was told that if he failed to comply the fire chief would issue a warrant for his arrest. When the Exxon official was unresponsive the Fire Chief called the Governor's office. A state marshal appeared on the scene and the fire chief called back the Exxon official and stated, according to one witness, "I hate to be crass, but if you don't get your ass in town, checks in hand today, I'm going to issue a warrant for your arrest. Now I have the emergency power to do so, and it will happen!" When the official hesitated, the fire chief stated he would get back to him and then hung up. Five minutes later he returned the call with the mayor and a city councilman on a conference call. Once again he made his demand and hung up. According to the witness a half and hour later a chopper appeared with some Exxon officials. While it is uncertain what occurred in the meeting with city officials shortly thereafter, the fire chief resigned. The witness blamed this confrontation and the loss of the fire chief on the city's failure to support the community's effort.

Changes in Community

The introduction of VECO into the community eventually eroded the community-wide effort:

"The people were really put together in the beginning, because it was an all volunteer group . . . It was an efficient volunteer group and they worked hard, long hours and worked very well together. It was like the whole community really worked hard. When VECO came in and started offering money, there were some people who would not work for wages, or who would not take money for what they were doing. They didn't want to work for VECO therefore they didn't work . . . And that kind of started a division at that point, but I think even before then

there was this . . . undercurrent of anger at what was happening and the helplessness of not being able to really do anything."

There was also a pervasive belief in the community that Seldovia was not treated equally with other communities, most notably the city of Homer which received three full-time staff members for their oil spill response office. Some people also cited the fact that the Homer Mental Health program received funding that Seldovia did not. However, Seldovia did receive a part-time mental health counselor from the Homer Mental health Clinic. Many residents felt that because Homer was an outspoken and well known community they were given preferential treatment over Seldovia, Port Graham, and English Bay. The convening of the MAC team in Homer and the large public meetings which the Governor and state senators attended was cited as an example of the special importance of Homer as a political entity that received special attention.

Family

Many people in Seldovia thought children were the ones who suffered the most during the cleanup period. There is a wide-spread consensus on this among both men and women, professionals and laymen. Considerable stress was placed on families because people worked long hours and families were without mothers and/or fathers and often without either parent for long periods of time. As in many other communities, child-care became a difficult problem. A number of children went unsupervised for long periods. Moreover, there was considerable stress on the parent, whether husband or wife, that stayed home to take care of the family while their spouse worked. The community M.D. attributed at least a couple of divorces to the stress of the oil spill. Children were very concerned about the events in the community and frustrated by not being able to spend more time with their parents or be able to do anything to help the community. According to the principal of the school the children that suffered the most were the young children left at home alone. He stated that a significant number of children exhibited "cranky, acting-out behavior" at school. Some of these children required counseling which was provided by the mental health counselor from Homer who spent a good portion of her time at the school working with these children. The counselor stated that many children were disturbed by the uncertainty of whether they would be with their mother or father and their uncertainty over their future security in general.

Mental Health

Almost everyone interviewed emphasized the considerable stress they experienced during the first several months of the crisis period. A part-time counselor from the Homer Mental Health Center was sent to the community to assist those who felt most troubled by the spill.

While the bulk of her load consisted of children, she also counseled many adults whose depression and anxiety was often couched in terms of anxiety about the uncertainty of the future; the possible long-effects on the fisheries; the lawsuits growing out of the spill; worries about being able to continue to make payments on their boats; and the difficulty of having to take care of a family alone while a spouse worked long hours on the cleanup effort. Many clients simply stopped by to discuss their spill-related concerns and seek validation for their anxiety. Moreover, the counselor cited an increase in alcohol and substance abuse and an attendant increase in domestic violence and child abuse. When the interview with the counselor was conducted in March, she expressed concern over the termination of her emergency funding which was scheduled to expire in the near future. She expressed concern over her clients ability to receive help once her position was terminated since many of her clients could not afford the time and money to fly to Homer to receive counseling.

SKIAP, a non-profit agency that deals with drug and alcohol abuse among Natives in the communities of Seldovia, Port Graham, and English Bay suffered severe impairments on their delivery of services. All of their staff but the director and the business manager quite their jobs to work for VECO. Because it was impossible to compete with VECO pay scales, it wasn't until late August that they were able to begin to replace the staff they lost. The agency's activities were brought almost to a standstill during a period when their services were desperately required. Not only was SKIAP unable to adequately provide services, but they were severely hampered from applying for future funding and making policy decisions about the future.

Medical

According to the Director of the Seldovia Medical Clinic, the spill and cleanup effort placed minimal demands upon the delivery of services because most medical problems pertaining to the spill were dealt with directly by VECO. According to the director, the impact of the spill was more psychological than physical as far as his patients were concerned. Many of his patients could not talk about it without breaking into tears. He observed that a number of patients expressed excessive concern about their physical problems which was inconsistent with their diagnosis and seemed to indicate a general sense of anxiety and uncertainty.

Changes in Personal Experience

Many Seldovians from all walks of life stated that a primary reason why they moved to the community was that it was isolated and unreachable by road. For many of these people the isolation from the larger world had an appeal. Some individuals who chose to be even more isolated lived "out the road," where there are fewer neighbors and no electricity, running water, or telephones. The spill, and the events that followed, changed the perspective of many of these people. A number of people reported that once the spill occurred they

realized they could not totally escape from the world and its technological hazards, nor could they any longer afford to be politically apathetic. These people now feel that they have to be active politically on a local, state, and even global level. Many who were active in organizing the grassroots response are still active today either working with SOS or lobbying legislators in Juneau or considering running for local office. While encouraged to participate more in the electoral process, many expressed skepticism about the politics in general. Some people feel that the spill demonstrated how inept state and federal agencies are and how, for some, the federal government seems to be more interested in accommodating private industry than protecting the environment and serving the interests of the people. Many people spoke in terms of the community and its environment having been violated. Many more spoke of how VECO and Exxon literally came in and "took over" the community, particularly the spill response effort while ignoring the community's achievements and its desire to determine its own fate. Almost all the elected officials and department heads discussed the extreme levels of stress and how they "never wanted to live through another summer like that again." Amidst all this depression and skepticism, a sense of optimism could also be detected. People spoke of how the spill raised people's consciousness about the need to protect the environment and the need for Seldovians to become more involved in regional and state affairs. Certainly the organization of the SOS team is a positive example of this increased awareness and sense of responsibility.

Village of Port Graham

The village is located on the southern end of the Kenai Peninsula, approximately twenty four miles southwest of Homer and fifteen miles southwest of Seldovia. The community is accessible by boat or plane. A four mile trail connects Port Graham with the village of English Bay. Port Graham is a Native village with a population of approximately 195 people. The village lies within the jurisdiction of the Kenai Borough and is unincorporated. The governing body of the community is the Village Council. Like many villages, it has a mixed cash-subsistence economy. The residents rely primarily on commercial fishing for their cash income. There is a cannery in the village which is owned by the village corporation and leased to the Chugach Corporation. The cannery employs approximately 30-40 people on a seasonal basis. Other businesses in the village include two stores, a video-renting store, and a bed and breakfast. Subsistence activities are a significant part of the villages' cultural heritage and still play a vital role in the lives of most villagers.

Response Effort

At first, the residents of Port Graham, like other residents on the lower Kenai Peninsula, felt there was little chance the oil spill would directly affect their community. However, once it became apparent that the spill was headed for their shores they became quite alarmed. The mood of the villagers shifted dramatically. According to one observer, the residents were numbed by the news and normal activities were suspended: "People were in shock and no one knew what to do....there was a lot of fear." Many people asked outsiders what they were going to do if the spill should hit the community. Many people were greatly concerned about the threat the spill posed to their subsistence way of life.

A number of villagers who were concerned about the impact of the oil on chitons ("bidarkies"). So, before the oil reached the community, they got together and collected as many as they could. Once they were gathered, the bidarkies were washed, bagged and distributed to families throughout the village. Many wondered how many years it would be before they would be able to collect chitons again.

As in other villages in the North Pacific Rim, VECO and Exxon came into Port Graham and hired all adult residents able to work. The village administrator, the Village Corporation president, the VPSO and the village health aide were also hired to work for VECO. VECO leased the community hall and its kitchen facilities, as well as a small conference room. Phones were installed in the VECO facilities and a fax machine was given to the village by the Borough.

By the middle of June, Exxon began laying off most of the VECO workers in the village and curtailing cleanup activities on the Outer Coast even though there were almost 200 miles of coastline that had not been cleaned. One village official complained to the Coast Guard

that this "behavior is entirely unacceptable and unethical." Discouraged with the way the cleanup was going the Village Council president stated in a letter to Admiral Robbins, of the United States Coast Guard,: "We no longer think there is any time to ask Exxon nicely to do anything. We feel that the Coast Guard should demand that Exxon take these immediate measures...It is clear that Exxon has a deliberate strategy to limit cleanup operations in the area."

Moreover, the Village Council became dissatisfied with both their "under-representation" on the Homer MAC team and their indirect communications with Exxon. The Council informed Exxon that a direct communication link between Exxon and the villages of Port Graham and English Bay should be established. The Council also objected to the cleanup of the Outer Coast area being directed out of Homer. While they thought it appropriate that Homer be the base of operations for the cleanup in the Kachemak Bay area, they thought it most inappropriate that cleanup and containment activities for the Outer Coast be directed out of anywhere other than Port Graham and English Bay. The Village Council pointed out that the villages were three hours closer to the outer coast than the city of Homer and that, given the expensive hourly charter rate for vessels involved in the cleanup and containment, using the village of Port Graham could save Exxon a considerable amount of money. They also argued that having the cleanup activities centered in Homer would be "detrimental" to Homer's tourist industries.

Along with the VECO organization came the influx of some outsiders. However, the influx of relatives hoping to get jobs on the cleanup effort may have had a greater impact on the community: because there is a shortage of housing, the villagers were forced to house their relatives. By September the majority of these outsiders left, but a significant number of families stayed on during the winter with the hope of getting jobs on the spring cleanup effort. This created somewhat of a hardship in the village, increased the school enrollment levels and created some discord among villagers.

Local Government

As mentioned above, much of the government infrastructure was hired to work for VECO. This placed a considerable strain on the daily operations of the government. The village administrator's assistant filled in for her while she worked for VECO during the day. The administrator stated that she often worked on the average of four hours each evening in order to devote her attention to village affairs.

Some villagers had serious misgivings about VECO hiring village officials. They allege that the normal operations of the local government and the delivery of services were adversely affected by the loss of these village personnel. Some stated that they thought that it was a conflict of interest for village officials to be working for Exxon. Even some of the village officials that worked for VECO admit that VECO's presence in the community was

disruptive. An example of the impact on services was cited by one official: the village normally hires someone to use the village truck to gather firewood and water. During the cleanup period they couldn't find anyone interested in driving the truck. This was a loss of an essential service since the elderly in particular are very dependent on such services. Moreover, the village had a public project going on their dam and could not get anyone to work on it. Eventually, outsiders were brought in to complete the task. Furthermore, the writing of grants was postponed or neglected because of the excessive demands on the village government officials. They had an ANA grant for a dock study that was suppose to be conducted during the summer but had to be postponed until the fall.

The village council felt that the spill and the presence of VECO was responsible for the loss of community control. Reportedly, they were split in their reaction when VECO came in and took over without going through the village council. Some alleged that Exxon and VECO lacked sufficient knowledge to deal with Native communities. The council wanted to have their contacts with Exxon through the Rim and have their communications filtered down, but the village president, who was on VECO's payroll, opposed the idea. Several persons stated that there was a lot of miscommunication with VECO and Exxon. Eventually, the village council, like that in English Bay, came to distrust all outsiders. Counselors from the Homer Mental Health Center and the women's center in Homer were asked not to come into the communities during the summer. It was early fall before the villagers welcomed outsiders back into the village. The council is still wary of outsiders. The S.O.S. project organized in the neighboring community of Seldovia is recognized conceptually as a good plan for dealing with future oil spills. However, the villagers are leery of getting involved because they feel that they have not been offered an equal voice in the running of the organization. One village official feels that the village council should have had tighter controls since the inception of the cleanup effort. This individual believes that the council should have been better able to monitor the coming and going of all outsiders as well as "who was doing what." It is thought by some that if they had able to do this they would have been able to minimize the impact of the spill and cleanup on the villagers and their families. The following statement by one villager best summarizes the attitude that the village lost control over its own destiny:

"There was no control, it would seem like there was just some loss . . . loss in all those areas where we thought there should have been . . . but it was almost next to impossible to take control . . . by the time we got to thinking about it in those terms . . . one of the things that I noticed and the council talked about in their meetings was those people that were given the jobs that paid a little more than the ordinary laborer on the cleanup . . . maybe a little bit of authority handed to them, really, really cut into how people related to one another and it really concerned us that again going back to the split within our community . . . the gaps are so huge and things haven't healed over and mended yet and I doubt that a lot of them ever do

because a lot of words were exchanged, a lot of hard feelings and a lot of favoritism and priorities were set to individuals' families where it should have been met in the throughout the whole community and everybody looked upon as equal . . . and you didn't get that support even if you voiced that concern to Exxon officials, it didn't matter to them, all they were worried about were their own problems."

In July the council took a stand when they realized that people weren't going to be treated fairly. According to one informant , it demanded that Exxon use the local resources with the men and boats that were knowledgeable about the area. They objected to the boom being built by outsiders and felt that the materials could be transported to the village and the booms constructed by the villagers.

To some degree the villagers feel as if they have not been treated as fairly as those in other communities. For instance,all winter they were trying to obtain some money from the borough Exxon fund (money that was given by Exxon on behalf of the Kenai Borough). Seldovia, Homer and Seward all have received funds from the special fund. Only two communities have not received money from the fund: Port Graham and English Bay. As of April they still have not received a response from the borough about their request. One official had the understanding that because Seldovia has been trying to get the villages to join S.O.S. the villages aren't going to receive any money; the borough wants the villages to go through Seldovia for the funding and apparently is reluctant to give the money directly to the village because they don't think that arrangement will work. The village is frustrated trying to work with the Kenai Borough and feels that they are unresponsive. There is some resentment over the fact that, of all the communities in the Borough only English Bay and Port Graham were heavily hit by the oil and yet they are the only two communities not to have received money from the fund.

Changes in the Community

The village has had other difficulties with outsiders. During the initial period of the cleanup effort some VECO employees were reported to have made racist remarks about the villagers. Comments were made on the beaches and over the marine radio about the "laziness" of Natives and racist/sexist comments were said to have be made about Native women. The village complained to Exxon about these remarks and apparently Exxon took the appropriate measures to prevent these remarks from being repeated in the future. However, cleanup workers report that on the beaches there were still some racist attitudes expressed by white workers and they complained that natives were sometimes given the worse jobs. Others complained that while the Homer boats would often sit idle until spotter planes flew over head the Natives boats continued to work.

Perhaps the worse racist incidents reported were the abuses Native men endured while on leave in the city of Homer. The men were sometimes subject to racial remarks and on two occasions men from Port Graham and English Bay were set upon and beaten up in a Homer bar. Some allege that these beatings occurred because the white men objected to the employment of Natives or jealous because they themselves had not been hired by VECO.

As noted above, many villagers felt as if the community had been invaded and taken over by Exxon and VECO. Many people talked in terms of a "loss of control" not only on a community level but on a personal level. Social disruption also occurred because of the influx of large sums of money and the creation of a new social hierarchy by the VECO organizational structure. In some cases members of the younger generation were given authority over members of the older generation. Some villagers assert that those people given managerial roles began to relate differently to former friends and relatives. This disruption of the social hierarchy has created gaps that have yet to heal according to many individuals. One resident spoke of how he believed the social cohesion of the village had been eroded by the introduction of a lot of money and the superimposition of an alien, corporate social hierarchy on the village social organization.

One elder spoke of the intergenerational conflicts that have resulted from the cleanup effort. This person cited the case of one fisherman who couldn't go fishing last year because of the oil spill and due to his age will probably not be able to go fishing the coming year. Some of his children made a lot of money working for Exxon but have squandered it on substance abuse and alcohol and they now expect to depend on their parents.

The breakdown of the social cohesion is often spoken of in terms of people no longer speaking to one another because of resentments and jealousies over who made money off of the spill. Others complained that people are touchy and irritable and difficult to get along with. Behavior like this is illustrative of the significant levels of stress that are still being felt more than one year after the spill. To some degree people also complained over how greedy and inward people have become because of their increased earnings. One individual blamed the new satellite dishes and televisions for keeping people in their houses and preventing them from socializing with their neighbors, while others complained that people are now more reluctant to share their material belongings with others.

The impact on the community has not been entirely negative. The village council and many of the villagers have stated that the oil spill crisis has helped to highlight the need for the community to take control of its destiny and image and forged a new identity. According to certain accounts they have been able to sit down and talk about where they want to go from here and have discussed strengthening their cultural heritage and cultivating village reunification. An example of this will be provided below in the section on mental health. It does appear from talking with many villagers and leaders that the village of Port Graham is determined to control its own future and build a positive, healthy community. The fact

that it has managed to hold on to these goals and to begin recovery by implementing certain of them is an indication of how resilient and determined this village is in shaping its future.

During the cleanup period the village VPSO remained within the village and worked for VECO, but also managed to work for the village as well. The VPSO was also the village representative to the MAC team in Homer. Consequently, he had numerous demands upon his job.

The subject of crime is difficult to discuss in many of the Native villages because the villagers are somewhat reluctant to have outside interference with their internal affairs. Furthermore, the reporting mechanisms that the VPSOs submit to the North Pacific Rim and the public safety office are somewhat superficial regarding detail. Nevertheless, there has been a reported increase of crime in the village of Port Graham that has been documented by VPSO reports and state trooper oversight reports. The reported increase in crime began last summer and continued through the winter. Many of these crimes were centered around drug and alcohol abuse as well as domestic violence. The state trooper oversight reports have blamed the increase in alcohol and drug abuse on the influx of spill money into the villages.

However, the latest reports reveal a decline in the crime rate. Despite this reported decrease it is felt that the real impacts of the spill are only really beginning to hit. There is a general consensus on this both within and beyond the village. The true extent and nature of these impacts have yet to manifest themselves. Nevertheless those familiar with the problem feel that it warrants serious attention.

Way of Life

The spill upset the village's yearly cycles. The contamination of many of their subsistence foods and the closing of the fisheries severely disrupted their subsistence way of life. However, this disruption goes beyond merely upsetting subsistence activities since subsistence activities are closely tied to the social cohesion of the community and to the community's cultural identification. Many individuals spoke of how the villagers look forward to the spring and summer as a time when many villagers spend more time outdoors and with one another participating in gathering bidarkies or in the collection of kelp or fishing. The spill and the disruption of the cleanup effort prevented the villages from participating in these social activities during the spring and summer of 1989.

All the villagers were deeply concerned about the future of subsistence in their community. The uncertainty over the long-term impact of the spill on the environment was a source of considerable stress and worry. The importance of subsistence to both their survival and their cultural identity was best summarized by the following quote:

"I would say that for me subsistence is a kind of hub and lots of things surround that. Subsistence to me specifically is important . . . it is something that I derive a lot of pleasure and satisfaction from not only in the act of doing it but also in the act of passing it on to my children . . . I feel whole when I am doing subsistence . . . over-all subsistence is a hub; its a hub for me as a Native person and its a hub for our Native community because everything revolves around that. Everything is related to it. You know, our language is a descriptive language, it describes animals, the things that animals do . . . and that in itself says a lot about, you know, subsistence being at the center."

Since the community is largely dependent on commercial fishing for its cash economy, the closing down of fishing had an economic impact. Many of the areas in which the villagers got their heavier poundage in past years were heavily oiled. This, in itself, has created a great deal of anxiety about the economic impact of the spill in future years. The cannery which has employed as many as 200 people during the summer only employed about 25 people last summer, and this summer it was unable to obtain contracts because of the uncertainty of contamination.

The spill has affected the village economy in other ways. For example, for the past year the clinic has been trying to hire an additional health aide, but has been unable to do so because potential employees are waiting to see if there will be cleanup jobs available during the summer. Obviously, in this instance the impact is not only on the economy but on the delivery of health services to the village.

Family

Family life has not only been disrupted by factionalism and quarreling over the change in social hierarchy and the redistribution of money but also by the impact the spill has had on the children. The recurrent observation that the spill has affected mostly the children in communities is repeated in Port Graham as well.

A lot of women chose to stay and work in the community at the boat cleaning station in order to be near their children and maintain some semblance of normalcy. The women who worked on the beaches were gone for two or three weeks at a time and when they returned they found it hard to re-establish relationships with their children. Men spoke of having the same difficulty and couples spoke of how difficult it was to reunite with one another after weeks of separation. One women reported that her grandchildren still cling to their parents because they are afraid that they are going to disappear. Other parents also spoke of their children's lingering insecurity. In cases where both the parents worked children often lacked proper supervision. The children also suffered in another sense because the younger ones were unable to understand why their parents were absent for long periods of time and could not fully comprehend the reasons behind the disruption of daily village life.

Children, however, were not the only generation to suffer severely. The elders who could not work were often neglected and could not find a meaningful role to play in helping their village restore itself. Elders who depended on others to chop wood, haul water, supplement their diet with subsistence foods or do other things for them felt neglected and had a more difficult time coping.

Mental Health

Prior to the oil spill, the village of Port Graham was often cited as an Alaskan Native community that had made great strides in reducing alcoholism, family violence, and sexual abuse. The spill and the cleanup effort that followed dealt these efforts a serious blow.

It is difficult to ascertain just how much domestic violence increased after the spill. For one thing, as was reported above, the counselors from the women's center in Homer were asked not to come into the village during the crucial period of last summer. Moreover, it is difficult to get people to talk about these problems because of denial, issues of privacy and distrust of outsiders. According to outsiders, there has been a significant increase in domestic violence. In fact, it has been reported that there was at least one documented case in early summer of this year involving a gun. While these problems seem to persist and are difficult to measure accurately, it is thought that the increasing willingness of individuals and the village to deal with domestic violence problems is a healthy indication of the community's ability to resolve this problem.

Even though the community had made considerable improvement in substance and alcohol abuse the problem returned to the fore after the spill. This pre-existing problem was compounded by the introduction of large sums of money, but also by the considerable stress placed on the lives of the villagers. The uncertainty over their economic and cultural future and the stress of working long hours away from home set the stage for increased abuse. SKIAP, the Seldovia based agency that provides counseling services and educational programs on drug and alcohol abuse, was hard hit by the spill. All of SKIAP's staff but the director and the office manager resigned in order to work for VECO. This meant that the village counselors were no longer available to the villagers at a time when they needed them the most.

Prior to the spill the village of Port Graham and SKIAP had planned to hold a two week treatment program to be conducted in Port Graham. The spill and the events surrounding it delayed the implementation of this plan; however, this past spring (a year after the spill) they were able to hold the program. People from Port Graham, English Bay, Chenega Bay and Tatitlek participated, in all 25 adults and 10 children. The village council donated money and the corporation store donated supplies. The program focused on the problems of domestic violence, substance and alcohol abuse and the forging of a positive Aleut

identity predicated on their cultural heritage. The program was considered successful and is being considered as a treatment model for the entire state. The success of this program is not only a testament to the work of SKIAP but also to the commitment of Port Graham and the other North Pacific Rim communities in overcoming social problems. Some people assert that the spill only reinforced the determination of the villagers to shape their future in more positive terms.

There were at least two or three attempted suicides in recent months within the village. Because attempted suicides are often covered-up by family members it is difficult even for health providers within the village to know about the extent of the problem. The village of Port Graham has an active suicide prevention program which is attempting to cope with the problem and prevent suicide attempts through non-conventional programs based more on cultural and social resources than on conventional therapy. For more conventional therapeutic approaches they rely on the coordination of several mental health agencies in the region.

The village program maintains a community center that is open on a regular basis to both children and adults. The center is run by the suicide prevention coordinator and provides a variety of activities such as video games, sports, and various other recreational activities for community members. Resources include a fairly large library with a variety of reading material including self-help books and tapes. They also conduct workshops on substance abuse, parenting, and communication skills. Moreover, at the center social mixing is encouraged by holding pot luck dinners based on traditional subsistence foods. They also conduct traditional activities such as kelp gathering to reinforce their cultural heritage and to provide people with social outlets and opportunities for social exchanges that help to combat isolation and depression.

Medical

The health aide and director of the clinic worked for VECO for approximately one week and resigned because she didn't care for the job. Although, the clinic wanted to hire an additional health aide it was unable to do so because it could not get anyone to take the position. It simply could not compete with the VECO salary scale. During the initial stages of the cleanup response, clinic personnel were busy assembling first aid kits for the boats for which they were later reimbursed by VECO. This activity put a strain on the clinic's resources for a while.

The clinic saw a sharp increase in the number of upper respiratory infections including pneumonia. They treated more leg, foot, and hand injuries. They also had an increase in burn cases and skin rashes. Patients also came to the clinic and consulted the health aide about their emotional suffering. The director stated that people who had previously never

shared anything with her would stop her on the road and tell her about the pain, the grief and the guilt that they were suffering from.

Changes in Personal Experience

Many individuals spoke of severe sadness, depression, and disillusionment. The following two accounts are indicative of the kinds of experiences recounted by villagers: One man was very excited about the thought of being employed on the cleanup effort and the ability to make large sums of money. He was so excited he could barely contain himself and hurried everywhere in anticipation of the prospect. Finally, they put him on a boat and brought him to a heavily oiled beach. He eagerly jumped out of the boat and sank in oil to his knees. He was surrounded by death and destruction. There were dead birds and animals lying about the beach. He fell to his knees and cried and he became deeply depressed when he realized that his elderly father would probably never live to see a clean beach or go fishing in that area again. The thought of this stayed continually in his mind.

Another woman had a different view of the spill and its impact on people. She worked as a cook on a boat for the summer and she witnessed people in various states of agony, depression and unhappiness. In doing so she watched people fluctuate radically from one mood to another. For instance one moment people would be extremely high and the next moment they would be extremely depressed. She never thought she would ever witness such extreme mood swings.

Other people spoke of how difficult they felt it was to exert control over anything in their lives. They felt so out of control and feelings of helplessness and dependency resulted. Some people spoke of extreme rage and frustration about the spill and their inability to influence the events around them. One person said the spill caused him to challenge the assumption that experts know what is best. He concluded that federal, state, and corporate experts didn't know what they were talking about and were unable to lend any sense or meaning to the events surrounding the spill. He spoke mainly in terms of the lack of reliable and definitive information on the potential toxic pollution of foodstuff in the environment.

Village of English Bay

The village of English Bay is located on the southwestern end of the Kenai Peninsula. It is approximately twenty-four miles from Homer and is reachable by plane or boat. A four mile trail connects the community with Port Graham. This predominately Aleut community of a little over 200 people is unincorporated and within the jurisdiction of the Kenai Peninsula Borough. The village is governed by the Village Council and is presently seeking IRA status. The village has a mixed cash-subsistence economy but is still very dependent on subsistence activities for much of its food and for the preservation of its cultural heritage. There is an airstrip and one small store located in the village.

Response Effort

When the news of the spill first reached the village most residents did not think the oil would ever endanger their community. Their initial reaction was sadness for their relatives and friends living in the Prince William Sound Region. Approximately a week after the spill occurred various state and federal authorities such as DEC, the Department of Health and Social Services, and the Coast Guard began contacting the community about the approaching spill. These calls were followed by inquiries from the North Pacific Rim, the Chugach Corporation, and VECO. When the villagers realized the potential harm to their community, some of them got together and discussed what emergency measures they could take in advance of the oil reaching their subsistence grounds. Their reaction was to go clam digging and hunting in order to stock their freezers and set aside food before their subsistence resources were heavily damaged.

However, not everyone was responsive and decisive. According to one leader there was a lot of "unclear" thinking. Some residents just assumed a "wait and see" attitude. As the oil was advancing closer some villagers went by boat to visit an oiled beach. On their return they appeared stunned and dazed. They didn't say very much or smile and they appeared depressed. They told the villagers they were sickened by the sight of the impact. Nobody knew what to do. Nobody knew how to build booms. When the oil finally reached their waters they were heavily contaminated with oil. Within a short time all of the traditional and vital subsistence areas of the community were oiled severely. The damage was extensive. Areas like Port Chatham, Windy Bay, and Elizabeth Island were hit extremely hard and oiled repeatedly. The mortality rate of wildlife in these areas was high. Eventually, even the beaches in front of the village were oiled.

In the second week of April, VECO representatives appeared in the village and stated they would hire every available adult until the middle of September. They also said they would send cleanup materials in the near future. The materials arrived late and were considered inadequate for the task. Many villagers were resentful that the nearby community of Port Graham and the city of Homer received cleanup materials some time before English Bay.

This angered the villagers because the community had been given priority since it was in the direct path of the oncoming oil. Some people thought they were over-looked because the MAC group in Homer and the city of Homer had more political influence and power than their small village.

One leader asserted that they were the first village to know how to build booms adapted to the situation. The construction, however, involved a lot of guess work because they had received no instruction on how to build booms from VECO. Nevertheless, they taught themselves to construct the boom. What knowledge they did have however, they felt was unappreciated by VECO and Exxon. The skiff operators possessed considerable information about the weather and the tides which they thought was important to the response effort. Rather than take advantage of this knowledge, the villagers claim Exxon suppressed it. They think Exxon more or less implied that the villagers didn't know what they were doing. This caused a considerable amount of anger, frustration, and resentment. Furthermore, they felt "strangled" by VECO and resented having to get approval from Anchorage and Homer. They strongly disliked having to be supervised by outsiders.

Although VECO promised the village that they would employ workers until the middle of September, by late July they began cutting back on the cleanup crews and terminated everyone by the middle of August. Many felt this was just one of many instances in which VECO broke its promises to the community.

Villagers also complained about their relations with other outside groups and agencies. Most complained about poor communications. With the exception of VECO, the outside representatives changed so frequently that it was difficult to establish effective communication with them.

People also had difficulty with the constant flow of outsiders into the community. People were always coming and going and, more often than not, much to the annoyance of the village, they arrived unannounced. Villagers also became irritated with the constant press of the media and their "endless" questions. Although there was a constant influx of strangers into the community, most villagers felt the impact of the long term visitors was minimized because the village established a set of conditions which visitors had to consent to in order to stay there.

Local Government

The arrival of VECO in the village had the same consequences for the operation of local government it had for many communities. One leader stated that VECO "literally took over the town . . . they strangled us." One man made an analogy with the Federal government's American Indian policy during the 19th century. He said the government was allowing oil interests to act in their own best interests over and above the interests of the Natives just

as the government once allowed American business interests to over run the American Indian. Another individual compared VECO's "take over" as similar to the former Russian policy toward the Natives.

Because the entire village worked on the cleanup effort, the Village Council found it difficult to carry on business as usual. Local governmental operations were over run by the excessive demands of the spill. Prior to the spill, the Village Council was involved in the lengthy and complicated process of applying for IRA status for the village. The events resulting from around the spill and cleanup detracted severely from these efforts and the project continues to lag behind because the village government is still preoccupied with spill-related issues. The village administrator stated that the overwhelming majority of his mail is spill-related and he has not been able to keep up with it at the rate it has been arriving. He expressed concern about how this work load continues to hinder the IRA application process.

The spill was responsible for the delay of several projects. For instance the land- fill started to over flow because of the additional waste produced by Exxon and VECO. Prior to the spill, the village had a funding contract with the Borough to underwrite the cost of keeping the site clean. Once the spill occurred, the village fell behind in billing the Borough for the cleanup costs. Moreover, the spill-related activities prevented them for applying for future funding for various administrative grants because they could not take the time to write the grants. The village also had to delay upgrading and repairing the air strip as a result of the spill. Finally, the spill put excessive demands on school facilities. VECO took over the pre-school for their command center and displaced the young children. The children had to be moved to a home in the community that was inadequate to the task and caused hardship on both the teachers and the children. The K-12 school also suffered inconveniences. The principal reported that there were as many as ten new children in the school which stretched their limited resources. Families who had moved into the village to get jobs on the cleanup crews had remained through the winter with the hope of obtaining jobs in the spring. VECO had also rented tents and computer equipment from the school. The payment for this rental was not made until eleven months after they signed the agreement and only after a prolonged process of billing. The school district finally had to go the district attorney's office in Anchorage to seek assistance in obtaining the payment.

While the village of English Bay was fairly unified in its response to the oil spill and in its dealings with outsiders there existed some dissension and controversy over the fact that the Village Council president was on the VECO payroll and remained on the payroll for some time after the cleanup activities ceased. One person said that some people in the village despised the president for his willingness to work for VECO and for his passive attitude toward Exxon.

Changes in Community

The influx of large amounts of money and the introduction of the VECO organizational hierarchy had negative consequences for the social organization of the village. The additional money was to blame, in part, for the increased consumption of alcohol and substance abuse and for the switch from pot smoking to cocaine use. The money has also been blamed for increased materialism, greed, and the breakdown of social relations. Many people reported that having "so much money was stressful." They reported they were unused to having a discretionary surplus and felt a sense of dread having to manage large sums of money. On the other hand the money also enabled many community members to pay off their bills, pay for home improvements and purchase new or larger skiffs which are indispensable in a community which depends so heavily on accessibility to the ocean.

As in Port Graham, the presence of the VECO organization created considerable social tension and resentment. At times, social roles were reversed as young people were placed in charge of their elders. People were given authority over their relatives and neighbors and some were reported to have assumed an arrogant role. People resented being ordered around by their life long friends or sibling. Competition between individuals and families increased and ruptured the social fabric. One villager said it was unnatural for a community member to be arrogant among fellow villagers but the VECO organizational structure resulted in people behaving in just that manner.

Despite these social re-arrangements people also spoke in terms of closeness and social solidarity. The village administrator thought the spill would make the village a lot stronger and closer in the long run. Another informant stated that the "positive side" of the spill was that it made the community realize that, no matter what they go through, they have got to help one another out. One person described life on the cleanup crews as a time of closeness. She noted that working on a remote beach with her fellow villagers was distinctly different from the more bureaucratic setting of the village. Although the work was often arduous and difficult and at times depressing it was also a time for families and friends to be together. Sometimes there would be over twenty people at a camp where people took turns cleaning and cooking, and people spent time sharing and talking.

The village of English Bay experienced both negative and positive interactions with other communities. Cleanup workers on leave in Homer were spit upon and beaten up on a couple of occasions. Some people explain these incidents as primarily racist while others explain that many people in Homer had a deep-seated hatred of Exxon and anything or anyone who had anything to do with them.

On a more positive note, the village of Tyonek shipped salmon to English Bay to be distributed to each of the families and the village of Angoon in Southeast Alaska sent the

villagers seal meat and sea weed. Frozen fish were also donated by the Chugach Corporation.

The VPSO in the village took a leave of absence to work for VECO and left the community for a time. There were occasions when he was out of the community and his services were needed. According to trooper oversight reports, by September there was a "marked rise in the number of alcohol-related activities." By the end of the month the VPSO had responded to approximately 30 calls for assistance. According to the North Pacific Rim coordinator for the VPSO program, the real impact of the spill is only beginning to manifest itself in the villages as reports of alcohol abuse and family violence increase. The level of violence has risen to such a level in English Bay that the VPSO's life and the lives of his family members have been threatened by one individual. While this increase in crime is significant, it by no means indicates that there is widespread criminal activity or social disfunction, but it is a serious indicator of prolonged stress.

Way of Life

Unfortunately, the spill occurred at probably the worst point in the yearly subsistence cycle, when resources from the past year were exhausted and just before the spring harvesting of shellfish, the gathering of kelp and herring roe, and the beginning of the salmon runs. In addition, with the approach of spring, the villagers were looking forward to the social sharing and exchanges that occur during subsistence activities. The villagers felt deprived of what for many is their favorite time of the year when the whole village can socialize with one another and renew their cultural heritage which has come to be centered almost solely around subsistence activities.

The villagers fear that the long-term impact of the spill will sharply curtail their subsistence activities and deprive them of much of the food on which they depend for survival and the maintenance of their culture. The uncertainty of this situation has caused considerable stress and depression among all the villagers. As in all the other Native villages in the North Pacific Rim, they feel their way of life has been threatened by the spill. They blame this threat on the white world which in the past has been responsible for robbing them of most of their culture. Commercial fishing issues are inextricably linked to this issue. Were they to lose their fisheries they would lose most of their cash income and jeopardize their way of life as well. Their cash income has already been affected by the closing down of the fishing and the nearby cannery in Port Graham last year and by the closing of the cannery this year. The residents of English Bay are as dependent on the cannery as are the residents of Port Graham. There is fear that the cannery will have additional difficulty next year in obtaining contracts from buyers. All of these fears contribute to a terrible sense of uncertainty and anxiety.

Family

As mentioned above, the disruption of the spill upset the yearly cycle and family life. One villager described the disruption as follows;

It was very stressful because, you know, in the summertime that's when a lot of the elderly or a lot of the women are left behind to tend to their family, tend to their children. This is a time to share, a time to gather. This is how you show them this is how you survive in a village. You go down to the reef and you pick the bidarkies, you pick seaweed, you eat snails, you taught your kids the way life used to be . . . this summer you couldn't do that.

Instead, the elderly and the children were left behind and often neglected because most of the villagers were out of the village working on the cleanup. The elderly were left alone and had less help with chores for which they required assistance. The children were often left unsupervised. There weren't enough baby-sitters in the village and often the oldest child was left in charge of its siblings. One observer said;

The kids just went wild, they were just free, you know, nobody was really there to watch them. People that were in the community like the office workers, they would keep an eye on them as much as they could, but we weren't out there actually baby-sitting, we were just keeping an eye on them. But the village kids were just able to kind of run wild.

Mental Health

English Bay, like the neighboring village of Port Graham, had been recognized before the spill as a village that had made significant progress in reducing the incidence of domestic violence, sexual abuse, and drug and alcohol abuse. This progress was hindered by the spill disaster.

According to service providers from North Pacific Rim and domestic violence counselors from outside the community, there has been an increase in domestic violence and sexual abuse. At one point, it was reported that domestic violence was so serious that young children were using their friends houses as safe houses in order to avoid abuse in their homes. The extent of this practice and when it began to get serious is unknown for several

reasons. First, as previously mentioned, counselors from outside the village were asked to stay out of the community during the summer. Second, many were reluctant to discuss the topic with outsiders, even service providers. It is clear that domestic violence increased to some degree during the fall after the cleanup ceased. The VPSO and North Pacific Rim sources have noted that many of the social effects of the spill are just beginning to emerge. These include an upswing in domestic violence incidents.

There are certainly more widespread and substantiated accounts of the recurrence of drug and alcohol abuse problems in the community. According to state trooper oversight reports, VPSO reports, informants, and reports from SKIAP, there has been a marked increase in such abuse. The problem was exacerbated by the resignation of all the SKIAP counselors in the village and the relapse of one of the abuse counselors who had been perceived as a role model because he had maintained sobriety for several years before that time. Once the SKIAP program collapsed, the problem seemed to escalate swiftly.

Many blame the increase in drug and alcohol abuse on the introduction of large sums of money into the community. Others blame it on the stress imposed by the spill. One individual pointed out that it was difficult for people to attend AA meetings because they were working 12 hours a day, 7 days a week. He also blamed, in part, the stress of being "dictated to" by the VECO managers, something which they are not use to experiencing.

According to mental health counselors in Homer and other service providers, residents have been seeking support services and are striving to reverse abuse. Moreover, a number of residents participated in the two-week workshop for recovery that was held in Port Graham during the spring of 1990.

Medical

The village medical clinic was severely affected by the events of the spill. One of the health aides resigned because the stress was too much. One health aide described the situation as "awful and too stressful . . . boats and planes were always bringing in patients." Because many small children were unsupervised there were more accident injuries that had to be treated. Cleanup crew workers suffered from skin rashes and burns, and the incidence of respiratory infections rose dramatically. The people working at the clinic were overwhelmed by the excessive demand for services. Moreover, the health aide reported that many people came to the clinic simply to seek reassurance for their fears, anxiety, and depression. A number of these patients reported fears about the uncertainty of the future and of suffering from chronic depression. The excessive demands on medical personnel in the village were compounded by the fact that the village doesn't have any EMTs or ETTs to assist the health aides. Other villages like Port Graham, for example, have approximately 25 EMTs. There are individuals that have some emergency medical training, but according to the Rim coordinator none of these people is certified.

Changes in Personal Experience

Many residents expressed disillusionment with the motives and efficacy of outside groups, whether public or private. Residents also seemed to be suffering from profound depression about the uncertainty of the ability to continue pursuing their subsistence activities and their commercial fishing activities. Furthermore, like the residents in the other Native villages, residents of English Bay had not received any confirmation or reassurance about the safety of edible food gathered from their environment. Many villagers perceive scientific experts as waffling on this issue leading the villagers to doubt the motives and expertise of the scientists.

THE PRINCE WILLIAM SOUND: REGIONAL OVERVIEW

For the purposes of this study, the Prince William Sound region encompasses five communities. These are the two home rule cities of Valdez and Cordova, the second class city of Whittier, and the villages of Chenega Bay and Tatitlek. The region covers an area of about 20,000 square miles of water, ice, and land. Valdez is the only community among these four to have road access to the rest of Alaska. All the communities are accessible by air or water and all have dock and harbor facilities.

The region has a bountiful supply of a variety of fish, shellfish, and marine mammals. To some degree all of these marine animals are an important part of the lifestyle of the people of the Prince William Sound region. In addition, the area is considered to be a unique pristine wilderness that is highly suited for outdoor recreation, adventure and travel.

The populations of four of these communities, in 1987, were as follows: Valdez/Outlying 3,384, Cordova/Outlying 2,870, Chenega Bay, 27, and Tatitlek 127. These figures were 1,693 persons greater than the 1980 federal census count of 5,627, which represents approximately a 4% annual growth rate. The city of Whittier had a population of 206 permanent residents in 1989.

The communities in the region depend on various economic activities although all communities rely significantly on their marine resources. Valdez's economy is largely dependent on the oil industry as it is the terminus of the Trans-Alaska Pipeline. However, commercial fishing and fish processing are also important industries. In contrast, the economy of Cordova is almost completely tied to the commercial fishing, principally salmon, industry. Residents of Whittier work in the public sector as city employees and for the state of Alaska as employees for the Alaska Railroad, as longshoremen, commercial fishermen, and there are a few private businesses. Most of those service the heavy tourist season in the summer. Chenega Bay and Tatitlek are both Native communities that do not have any industries as do Valdez, Cordova, and Whittier. The inhabitants of Chenega Bay and Tatitlek rely primarily on subsistence practices for their livelihood, although participating in subsistence is far more than an economic activity.

City of Valdez

Valdez is a seaside community located on an 800 foot deep channel in the Prince William Sound. The community is nestled among a steep snow-capped mountains yet it is also a vital port of entry into the interior of Alaska with a first-class, two-lane highway connecting it to Fairbanks, 365 miles north, and Anchorage, 305 miles east. In addition to the road, Valdez is accessible by the Alaska Marine Highway on a year-round basis and air travel by three different airlines as weather permits.

The population of Valdez fluctuates on a seasonal basis with an average of 3,000 residents during the winter months and 4,500 during the summer. Most of Valdez's residents are non-Native.

The City is the southern terminus of the Trans-Alaska Pipeline, which supplies about 20 percent of the nation's domestic oil. As such, a large part of Valdez's economy rests on this industry in terms of tax revenue and employment. However, Valdez is also home-port to a large commercial fishing fleet that harvests fin and shellfish in Prince William Sound. state, federal, and local government account for the largest share of employment in Valdez, followed by the transportation industry which includes employees at the Alyeska Marine Terminal.

Response Effort

Exposure to the Oil Spill

According to the city manager, in the first few days after the spill, "we were still not sure whether the oil [movement] or the winds could change or whatever, and the oil might come this way . . . whether we were going to be concerned with . . . defending the Narrows or trying to deal with . . . crude oil [coming] in our direction, but it became clear that that was not going to happen, after maybe the first couple of weeks . . ." According to the mayor at the time of the spill, "we were ground zero and I mean it was immediate and within a day, within 24 hours we had the most ungodly impact in our community."

Local Response Effort

Valdez saw a great deal of informal or volunteer response effort in addition to the official response effort described in greater detail below. The Prince William Sound Conservation Alliance (PWSCA), a volunteer group formally organized in September 1988, was the entity that acted as the formal coordinator for volunteer efforts. According to the director of the organization, it's major role was to "tell volunteers not to come [to Valdez]." The volunteer response center was funded by Exxon initially through the end of 1989, but extensions were

obtained at least through the first months of 1990. While PWSCA is a local group, it draws a significant number of members from other Prince William Sound communities and nationwide. PWSCA acted as the only information center on the spill, and this created strains on the volunteers who had to live "other lives" -- their "real" jobs -- particularly if those other jobs were themselves threatened by the spill. PWSCA also had help from other agencies, including Greenpeace, but there were fundamental problems with would-be volunteers that remained unsolved, including having no housing, no food, and no transportation for volunteers. According to the director of PWSCA, one of the biggest organizational difficulties was having the priorities of the Association ordered by others; the local membership did not feel in control, and perhaps 50% of the organization's staff time was spent responding to reporters and studies and not on actions to address the spill. Further, to the frustration of PWSCA a tremendous amount of time was spent on insurance and safety plan issues; the contract with the City alone was a 31-page document, and the organization was forced into a reactive rather than its normally proactive role. PWSCA obtained a winter (1989-90) cleanup contract with the city, and remained the local oil spill information office through the winter. Fundamental difficulties facing the organization also included moving from a non-profit private advocacy group to being expected to assume the role of a public agency.

Additional problems encountered by this volunteer group were:

- influx of innumerable outside experts with no local geographic knowledge
- staff members having to hold regular jobs and being needed as volunteers around the clock
- having no office space, no phones, no regular staff
- clogging of phone systems at various agencies; PWSCA was to act as the clearinghouse for would-be volunteer's calls
- untrained volunteers became part of the problem rather than a solution, unless they could fill a specified need -- typically they had no place to live, no money, and inadequate clothing.
- maintaining a list of volunteers and placing them as needed
- operating as a missing persons bureau -- anxious relatives called regarding missing persons and runaways hoping for information that the missing person had made their way to Valdez

In keeping with a PWSCA philosophy to act in the capacity of providing support services to the spill response, and that any volunteer response must comply with the same rules followed by Exxon, materials were developed and permission was obtained to mount a volunteer cleanup effort that lasted from mid-August through September 15, 1990.

Interaction with Outside Responders

The ex-mayor of Valdez characterized the difficulties in dealing with outside responders and the lack of lead time in the following way:

"You know, we talk about Exxon being arrogant, but there were lots of agencies that were arrogant. Those that thought, felt, they were saving us from ourselves; those that came in that 'had the answer.' . . . some of the state agencies were asking for variances on codes. That presented a major headache for us, because if we gave it to them what . . . were we going to do for everyone [else]? At any rate, dealing with each entity was frustrating because each one . . . thought they were the answer to the whole problem and the City initially started off trying to be very cooperative . . . In retrospect, had we had the time [like Seward] . . . I think Seward did a much better job than we did . . . Seward had weeks really to plan . . . [and see] what's Valdez and Cordova doing right and wrong . . ."

Exposure to the VECO/Exxon Cleanup Effort

According to city leaders, communication with Exxon was difficult the period immediately following the spill, but this was soon resolved. According to the city manager, after a chaotic initial period,

"Exxon was fairly accessible . . . [but] they had other things, bigger priorities to worry about that didn't involve the city, but they knew we were here, and that is what we were trying to transmit to them, that we were here and we wanted to assist . . . They made it clear we could get to them. They gave out phone numbers of people we should be trying to contact. My feeling really was not to bother them, to tell them once 'hey here we are, if you need us, here is my number,' but they were . . . concerned with getting the oil off the tanker, and the whole thing was going to hell in a handbasket with the storm that had come up, so they had lots of other problems."

The sentiment that Exxon had bigger problems was one that was not often heard in other communities, and would seem to indicate an understanding of the company and the situation developed by a long-term working relationship.

One of the primary frustrations in dealing with VECO/Exxon was a seemingly constant turnover in personnel. According to the mayor, there was the "aggravation of never dealing with the same person twice -- it became really, really frustrating."

Influx of Strangers

According to city leaders, the first crush was the media. There were hundreds of people calling for information, and the mayor acted as a spokesperson for the city. In the words of the city manager, "the first invasion was the media, of course, and all the hotel rooms . . . were taken by them . . . that was the first invasion of people sleeping in cars and needing access to the different things. So when that calmed down, then the city was really impacted when the [other] people started arriving and not having accommodations and putting demands on city services . . . Exxon [was] . . . hiring people faster than they could house them, and that created pressures on the city. I would say that day-to-day operations [of the City were] at least 60 or 70%, probably, consumed with oil spill stuff." When asked why the city did not hire special personnel to handle the oil spill related matters to free the administration to concentrate more on day-to-day operations, the city manager replied "in hindsight a lot of people asked 'well, why didn't you hire a special guy or do something'. . . but this thing just evolved so . . . gradually, and it's not like an earthquake or some other disaster where it just hits, this thing was an incremental disaster."

One city official described the problem with the influx of people in terms of the type of people who came to town to look for work. He attributed many of the social problems experienced to a process by which VECO would take the employable persons, and just leave the rest in town -- those were the ones who would cause difficulties, people without ties to the community and frustrated at the lack of employment, and there were simply too many of them to be assimilated into a community the size of Valdez.

Local Government

According to the city manager, the city experienced "incredible and almost indescribable burdens on City services. The maintenance of basic sanitation, safety, and health was the immediate problem during April, and as the oil spill response evolved with the population peaking at an estimated 11,000, the demands on the City changed.

Soon after the spill, it became obvious that the City of Valdez would incur significant expenses associated with spill and response effort. Action was taken to manage the financial ends of the city response through the creation a separate department within the city. This "paper department" was an entity through which to track revenues and expenditures.

Increased workload was felt within the city almost immediately after the spill. Initial demand included snow removal, crash fire rescue services, police services, and public works services. An agreeable arrangement for reimbursement was worked out with Exxon. The first billing was paid in full, and an additional \$100,000 requested to assist in helping with up-front costs was granted, and according to the finance director, "we were reimbursed on

a monthly basis for everything we put through." This lasted through August, when Exxon began to more carefully scrutinize billings. Since that period, again according to the finance director "two or three percent of our billings have been set aside." One expense that Exxon did not pay for was attorney fees, not wanting to potentially support legal action against itself. For the most part, the City did not submit legal fees for reimbursement (although these were a significant oil-related expense). Most of the set-aside billings are legal-related matters that the City feels clearly were necessary and unrelated to any potential for a lawsuit against Exxon, and City staff feel that given enough time, these probably will be paid by Exxon. Of the \$1,393,202 that was billed during 1989, \$1,379,056 was paid by year's end (98.9% of claims), and an additional \$842,142 in capital projects for the city were funded by Exxon.

No staff members were added to the financial department, but the workload increased considerably. According to the finance director, everyone in the department was extremely busy, and "our accounts receivable clerk was almost overwhelmed with the number of additional hookups to water and sewage. . . especially at the small boat harbor."

According to one department head, whose comments were representative of several others, it was "a matter of deferring a lot of the stuff that you normally have to do. . . we had to do a lot of that, we didn't try to put in extra hours if we could get away with it, because we don't have a budget to handle that . . . some things fell through the cracks . . . [for example] we didn't get our monthly grant reports on time." While planning functions slipped in most departments, one of the departments frequently mentioned that had things "put on hold" was the Planning Department itself. The Comprehensive Development Plan was not completed as scheduled, the comprehensive flood mitigation program was not prepared as scheduled, and municipal land selection entitlements were not completed. According to the city manager, "In many ways we sort of lost the year, in doing things like our comprehensive plan, and things like that, I think, are necessary for the overall development of the city."

According to the finance director, it was clear that there were, "some indirect costs somewhere in there that we didn't recover without a doubt, but it's hard to put your thumb on it . . ." One type of cost that was not as obvious as some others was the absorption of "comp time" in the period following the spill and clean-up. Employees who built up "comp time" instead of overtime took that time off when things got slow, which meant that specific areas were functioning below full staffing for those times. For some salaried individuals, such as department heads, there was no compensation. According to one administrator, "if you went and had to hire a new person, or you had to pay overtime, that would be fine" but salaried people are not technically eligible for overtime. According to this administrator, there was a strong feeling that the city council did not want to set a precedent for paying overtime for salaried city workers, no matter who would be paying the tab in this particular instance. Clearly, however, there was a cost to the city of salaried persons such as department heads not being able to do their regular jobs. Regular tasks were not performed that save the city money in the long run. According to the director of public works, very

little of the routine maintenance that is schedule for the summer could be accomplished. Roads were not cleaned, repaired, and lines repainted, snow removal machinery was not overhauled, and so on. It is anticipated that this will result in some costs down the line, both in terms of additional work load in the future, and in terms of accelerated wear caused by less than optimal maintenance.

Hiring new persons for City jobs presented its own problems. According to the city manager, hiring new employees is "not always a great thing, because there is training involved, and you have somebody here now who is a representative of the City, and if they screw up, you could get a million dollar lawsuit . . . hiring new people . . . seems simple enough, but there is a lot more to it than that. Trying to make that person feel committed to the city, to do a good job for the city . . . there is a down side to just picking someone off the streets and [making them] . . . a city employee . . . he can make a mistake."

One department that experienced sustained impact over the course of the cleanup was the Department of Emergency Services, in large part because they were responsible for the crash fire rescue services at the airport. The tremendous increase in activity at the airport necessitated crash fire rescue services far and above normal demand. This came on top of increases in activity due to the increased number of people in town. At the time of the spill, Valdez had a Department of Emergency Services that combined the functions of fire services, emergency medical services, and law enforcement services into a single department. In other words, the same people who had to handle the increased crash fire rescue demand at the airport also had to handle the increased demand for law enforcement services in a community that more than doubled and perhaps tripled in population at the peak of the cleanup. Increased demand was also felt in the harbor, and in the recreation department. The recreation department, because of its overview of the parks and campgrounds, was also hit early by the influx of people into Valdez. The library also experienced significant demands.

The only department that appeared to be anticipating sustained impacts into the summer of 1990 was the harbor. It was expected that the harbor would have an increased amount of traffic, but additional staff hiring was not planned. Demands on departments may be summarized (from information provided by the city manager and individual departments) as follows:

Administration/City Clerk/Finance had to address operational, governmental, liaison, media, negotiation, and managerial demands over a seven month crisis period. Information demand from inside and outside the city was very high. Hundreds of letters and packages containing everything from messages of sympathy and blame to destroyed Exxon credit cards and suggestions (and products) for cleaning up oil had to be answered; the city had to provide space, security, and people to Exxon initially; the press demanded phone and power service; hundreds of calls were handled regarding establishing residency (to qualify for local

hire); and the staff was forced to a large extent to react to the situation and "put out fires" rather than plan a response. The clerk's office was still "far behind" in filing and paperwork as of the spring of 1990, as "people became a priority" rather than keeping up with paperwork during the crisis.

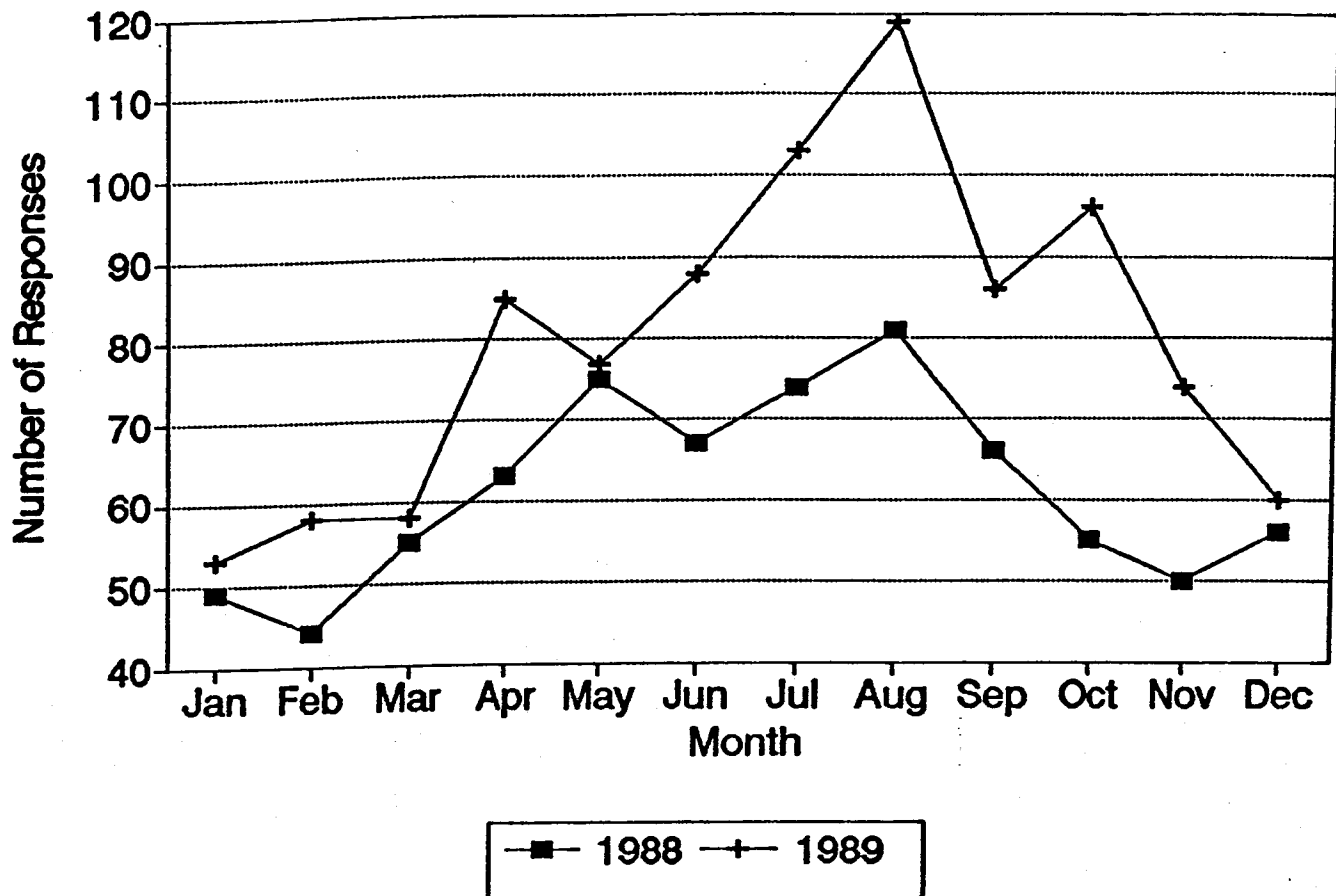
Public Safety during the period was undergoing a transition from a combined department to separate fire and police departments. Activity levels jumped dramatically for police, fire, and EMS services. These statistics are presented below: public safety statistics appear in the section on crime; fire and EMS statistics appear in the section on health. In order to keep up with increased demand on officer's time, three additional community service officers were hired to help with the workload caused by parking, camping, and animal control enforcement. The hiring of additional full-fledged peace officers was not deemed in the best interests of the city; Exxon provided between \$40,000 and \$50,000 worth of equipment to help with strained department resources. To help with coordination, weekly security meetings were held between public safety, the Coast Guard, Alyeska, the State Troopers, the Airport Police, and Exxon, although Exxon did not actively participate after the first few meetings. Being a full department of public safety, law enforcement was stretched thin by the needs that were brought about by demand on the fire and emergency medical aspects of the department. Requests for medical assistance were very heavy during the early part of the spill before a coordinated medical response system was organized; crash fire rescue demands at the airport drew off personnel as well. Effects of the spill were still evident on the system in January 1990; \$8,000 of the \$20,000 police overtime budget for the year was used in one month alone primarily due to the court time from the increased case load. It is also important to note that police statistics do not reflect the entire range of social disturbances -- significant numbers of persons were not arrested for relatively minor incidents simply because there was no way to house them in the jail facility.

In his annual report to the City of Valdez, the animal control officer stressed that activity in his department increased substantially. Many Alaskans who came to Valdez to work on the cleanup allegedly brought their pets, typically unvaccinated, with them. These pets were infrequently on leashes and could found roaming the streets of the city and often needed to be picked up. Although the Animal Control department did not provide data on the number of animal complaints or pick-ups for years prior to 1989, the Police Department did retain a record of animal calls. A comparison of such calls for 1988 and 1989 appear on the following graph.

In addition animal call responses, the Animal Control department had to deal with increased numbers of animal cremations. The animals brought to the department were found by oil cleanup workers and considered to have died a "natural" death. (Those animals who died as a result of the oil spill were taken elsewhere.) However, because of the increasing numbers of dead animals found and the consequent strain on department resources, an Exxon representative to the animal control department arranged for the animals to be incinerated elsewhere.

Valdez Police Dept. Officer Response

Animal Calls, 1988-1989



Library/Museum activity was mixed. Library activity was up dramatically, and may be gauged by the issuance of 1,488 new library cards during 1989, topping the old record of 795 cards issued during 1981 (an increase of 87.2%). The library also set a new gate count record for the year, exceeding the old count by over 4,950. One key area of impact, one that is not quantitatively tracked, is the number of requests for information received by the library. There was a tremendous volume of requests during the spill summer, with newspaper reporters having a major impact early, and requests for scientific resources having an impact later on. The museum activity, like tourist activity in the community in general, was down for the year. Reductions were significant in both patron counts and donations. Donations in 1989 fell to \$13,539.50 from \$17,762.23 in 1988. A guest count for the museum is presented in the following table.

The Valdez Museum Guest Count					
Month	1986	1987	1988	1989	Change 1988-1989
January	121	60	closed	closed	NA
February	69	194	closed	closed	NA
March	145	860	348	108	<240>
April	390	380	424	577	153
May	2139	2360	2346	1940	<406>
June	7507	6805	7932	5670	<2,262>
July	12726	12758	12503	7849	<4,654>
August	10134	12272	10273	5546	<4,727>
September	2899	2369	3107	2146	<961>
October	415	270	305	closed	<305>
November	264	295	247	81	166
December	76	213	208	266	58
Total	37,062	38,836	37,693	24,183	<13,510>

Source: Valdez Museum Records

The museum attendance records may be taken as an indicator of tourism in general in Valdez during 1989. How such a dramatic drop-off during 1989 will influence tourism in subsequent years is a matter of much discussion in the community.

Engineering/Community Development/Utilities activities were significantly impacted by spill-related demands. Engineering impacts included building code enforcement, mobile home installation, building permit requests, sewer treatment plant operations, and water demand. Residential and commercial construction permits issued more than doubled between 1988 and 1989 (104 and 217 respectively). The community development department was hampered by new businesses, itinerant merchants, zoning questions, temporary structures, land leases, land use permits, a myriad of issues presented by a rapidly growing population, and the need to coordinate with state and federal agencies on a wide range of subjects. The community development department was involved in tracking the population increase over the summer months, resulting in a DCRA certified population of 7,193 for 1989, approximately double the normal population for the community. It is estimated by the city government that this will result in an approximate 45% increase in state aid monies (an additional \$450,000), at least for the short term. There were several projects that were slated to be completed by the planning department that would have required public input; these were tabled for the year due to the fact that there was no way possible to collect such input.

Key aspects of city infrastructure was strained during the spill period. Both water and sewer capacities were strained during the summer; the limits of the sewer system were exceeded by the additional demand, and the system required remedial repairs. Water demand may be characterized by millions of gallons per day (MGD). Increased activity averaged .5 MGD over base levels; peak demands were much higher over 1989 figures. In potable water usage, the 1989 peak flow was 3.6 MGD; the previous peak flow was 2.5 MGD. Peak flows consistently exceeded the 3.2 MGD ceilings. Figures for in-town usage over a four year period are presented in the following table.

Valdez Potable Water Usage In-Town Usage				
Quarter	1986	1987	1988	1989
1st Quarter	1.4	1.3	1.1	1.8
2nd Quarter	1.4	1.4	1.6	2.1
3rd Quarter	1.3	1.9	1.6	2.1
4th Quarter	1.4	1.3	1.3	1.3
Total Yearly Average/Day	1.4	1.5	1.4	1.8

Source: City of Valdez

During the spill period, the Loop Road water system was heavily used to supply ships and local camps via the Container Terminal distribution system and tanker trucks. Figures for the Loop system are shown in the following table; the South Central and Robe River systems were both affected by oil spill demand, but to a lesser degree than either the in-town or the Loop Road systems.

Valdez Potable Water Usage Loop Road System Usage				
Quarter	1986	1987	1988	1989
1st Quarter	.017	.011	.028	.019
2nd Quarter	.027	.024	.023	.046
3rd Quarter	.026	.021	.019	.079
4th Quarter	.020	.012	.017	.059
Total Yearly Average/Day	.023	.017	.022	.051

Source: City of Valdez

Sewage treatment facilities were also overloaded at this time; signs of the overloading appeared in May 1989, and operations at the plant were not adequate again until the middle of August. The following table presents loading figures for 1988 and 1989.

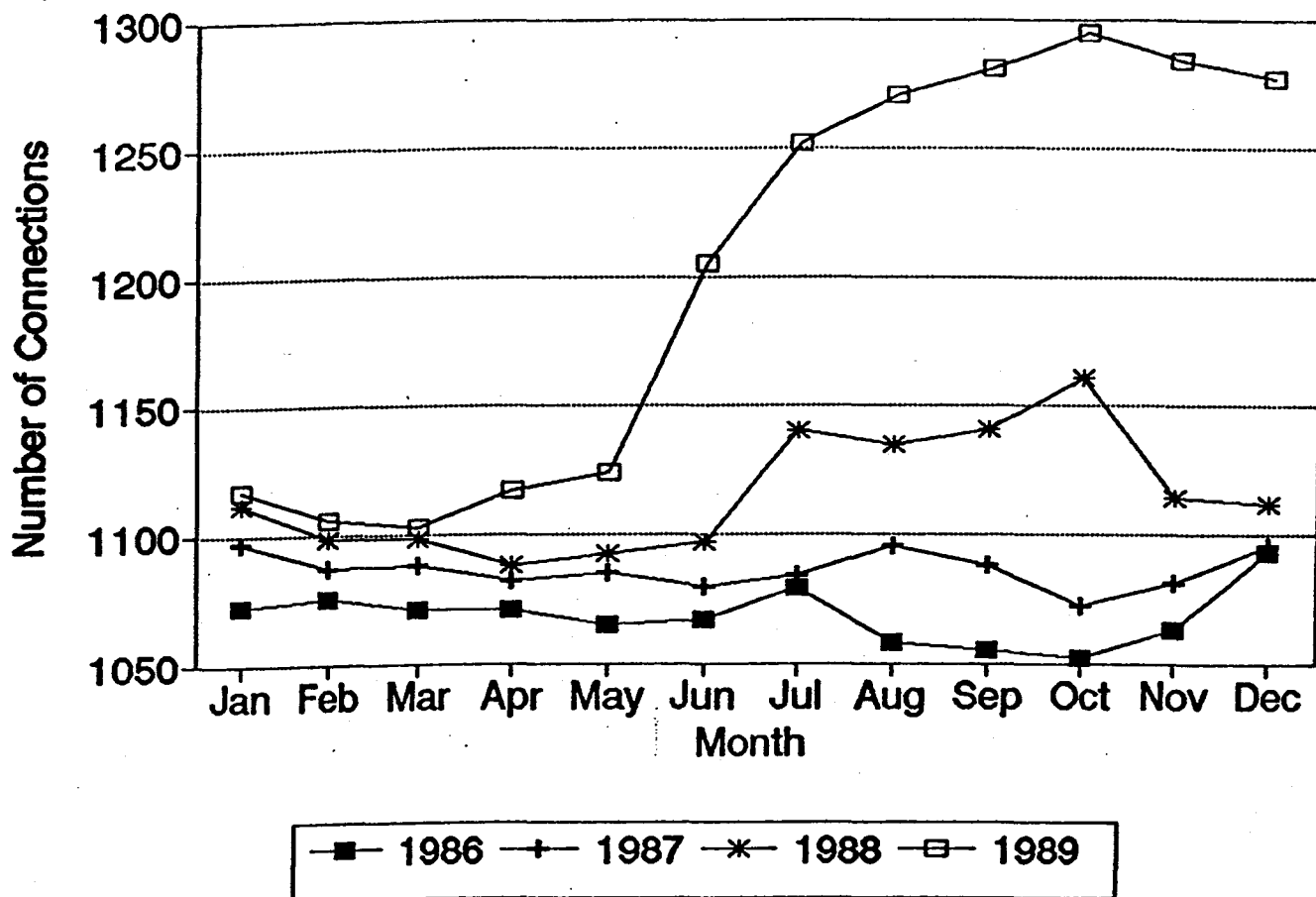
Month	Hydraulic Loading Million Gallons per Day			Solids Loading Pounds per Day		
	1988	1989	% Increase 1988-89	1988	1989	% Increase 1988-89
April	.550	.810	47.3%	367	980	167.0%
May	.670	.830	23.9%	525	1,322	151.8%
June	.490	.750	53.1%	417	1,532	267.4%
July	.490	.690	41.0%	699	1,266	81.1%
August	.600	.600	0.0%	676	1,006	48.8%
September	.610	.900	49.3%	930	1,208	29.9%

Source: Valdez City Manager's Office

Copper Valley Electric Company, while not a local government department, was a utilities department that experienced increased demand for services over the prior three years. As seen by comparing the following two graphs, the large majority of the total connections for 1989 were for private residences. This data could indicate that the many of the people who came into Valdez following the oil spill were accommodated by annexes to pre-existing residences.

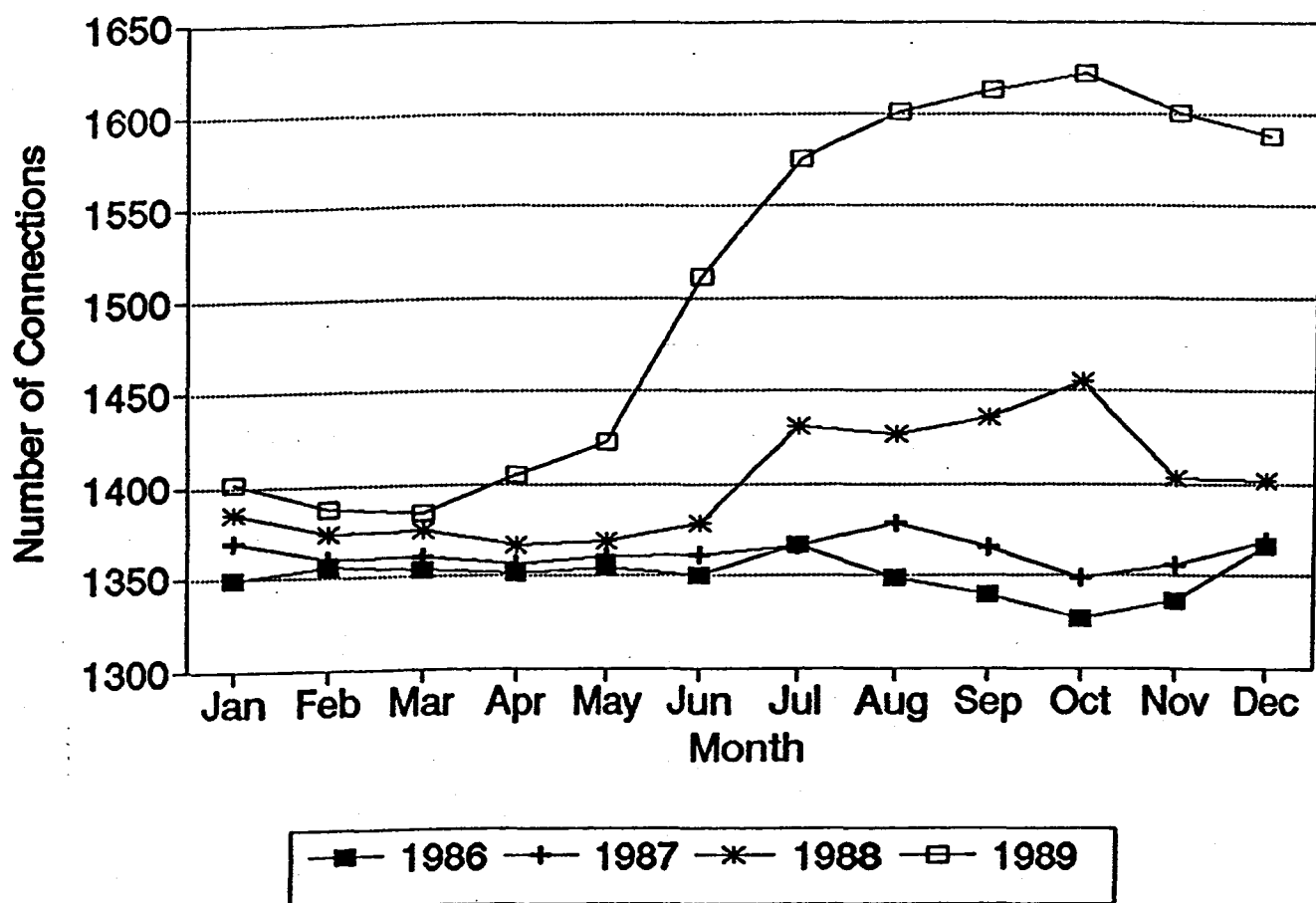
Copper Valley Electric

Valdez Residential Concntrs, 1986-1989



Copper Valley Electric

Valdez Total Connections, 1986-1989



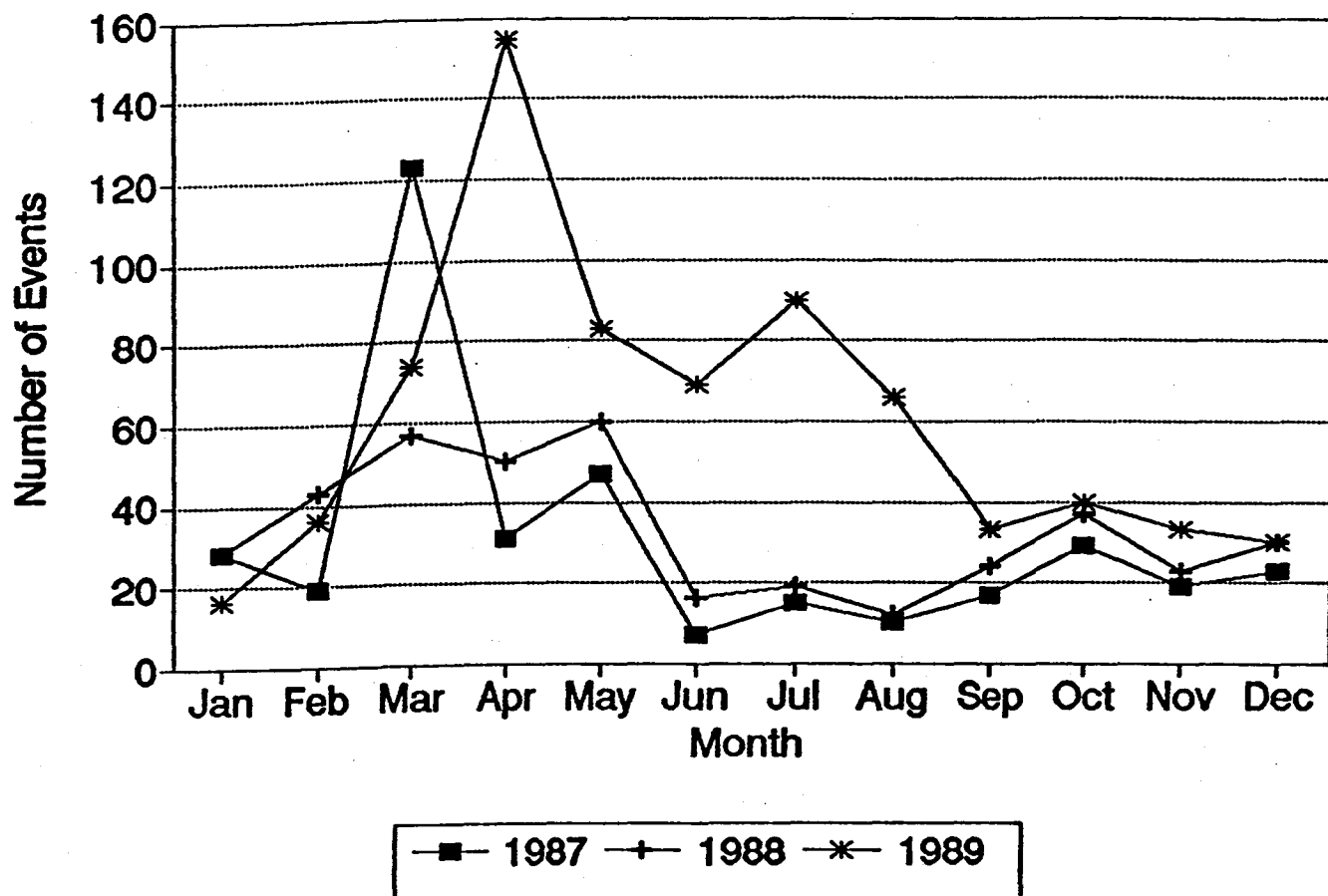
Parks and Recreation department was burdened with an especially heavy demand on its normal services due to the increase in the population associated with the oil spill. In addition, the department (along with public works, engineering, and community development) was responsible for establishing temporary campgrounds with showers and toilets to handle the surge of transient oil spill workers. The department was also extended its summer child recreation/supervision programs in response to increased demand. The Civic Center, in particular, was a locus of oil spill activity, from being the site of early conferences for the international press to a later congressional hearing. Scientific meetings were held daily throughout the period. The following table and figure illustrate the increase in activity at the Civic Center. According to one staff member, use during the summer ran from 7:30 in the morning until midnight "just about every night."

Valdez Civic Center Activity Levels, 1988 - 1989			
Activity	1988	1989	1988-1989 % Increase
Events	398	725	82.2%
Attendance	26,699	47,804	79.0%
Rental Revenues	\$14,227	\$54,134	280.5%
Catering Revenues	\$8,855	\$10,050	13.5%
Movie Revenues	\$0	\$8,340	--
Total Revenues	\$23,082	\$72,524	214.2%

Source: Valdez City Manager's Office

Valdez Civic Center

Number of Events, 1987-1989



Counseling Center/Hospital activities were significantly affected by the oil spill. Increased caseloads led to obtaining an increase in state grants to hire an additional counselor and a secretary at the Counseling Center. Counseling center statistical information is presented in the section on mental health, below.

Public Works Department was involved in oil spill response in a number of ways. This included providing assistance with the temporary campgrounds, providing water and sewer services under conditions of unprecedented demand, managed the collection and disposal of solid waste four to five times the normal volume, and various support services. No normal maintenance was performed on the city streets during the summer of 1989 -- sweeping, painting, washing, sealing and repair -- which is anticipated to double work load in 1990 when it can be done. Building maintenance needs increased dramatically with the wear and tear on buildings created by the crowded conditions, but again no routine or preventative maintenance was able to be performed. Wear and tear on other aspects of the public works/infrastructure system are hard to quantify, such as the need to overhaul a number of fire hydrants that were damaged when used as water supply, and so on. According to the director of public works, five to six years worth of landfill space was used during 1989, exceeding the permitted area. Routine maintenance was not performed on vehicles, particularly on snow removal equipment that is normally maintained during the summer, so the city fell behind on that, and older vehicles experienced a disproportionate number of problems. Routine maintenance was not performed on the sewer system, and that caused problems during the winter following the spill. According to the director, during the summer of 1989 "everyone had an emergency" and the department was seen as a source of information and parts for Exxon, VECO, and Norcon. This created a considerable strain as it seemed that these three were not communicating with each other, so there were a large number of redundant requests, "as if they were almost competing with each other."

Ports/Harbor was the area of city operations that was probably most directly and immediately impacted by the oil spill, through the ports, docks, harbor, and airport. The Valdez Container Terminal was shared with Exxon and its subcontractors as a "staging area, storage space, and flexible dock facilities to support the armada of barges, ships, flotels, and boats used to clean up oil and support the effort." According to one staff member, activity at the container terminal increases a hundred fold over normal levels. The harbor operated at extended hours during the summer; it acted as a "nerve center" for the cleanup operations as a dispatch center for crews and vessels. According to port statistics, transient mooring agreements for the years 1987 and 1988 combined totalled 834; 1989 alone saw a total of 850 agreements. Boat lifts went from 385 in 1988 to 674 in 1989, and increase of 75.1%. The airport was heavily impacted as flight loads increased by a whopping 2400%, from a normal 12 flights per day to an average exceeding 300 operations per day. At one time a

staff member counted a total of 30 helicopters on the ground. Eventually a crew was brought down from Elmendorf AFB to help with the load.

Changes in the Political Context

One of the casualties of the spill was efficient communications within the city government. According to the city manager, one of the "things that suffered was [my] regular . . . communication with the city council people, and they sort of let me know that they thought they were being ignored and, again in hindsight, that probably . . . should have been the one thing that . . . I should have done more of."

Communications with other jurisdictions would have been desired, but were not possible at the time. According to the city manager, "I don't know what's happening in other places . . . it would have been nice . . . to have been able to go to Seward and Cordova and some other places to see what was happening over there, but we really didn't do that . . . we were sort of . . . [overwhelmed] . . . here, and in the other communities . . . while they were being impacted by the spill, and some of them were actually having oil hit their beaches, they were not hammered as much as we were, and they had more time to go to these meetings and go back to Washington, D.C. to lobby for oil spill legislation . . . we were a little bit behind the curve on that."

Political change as a result of the oil spill was evident in Valdez. The mayor at the time of spill has since moved on to other political arenas. According to one city official, "I think it has divided the community a little bit . . . Valdez has always been thought of as pro-development for oil and all that, but you know we can't speak too disparagingly of the oil and gas industry, because it's so important to the community, so much of our tax base. And we have an environmental community . . . before they were more subtle, but now they are more visible . . . it puts the city administration in the middle . . . Alyeska and some of their folks want to become more involved in the city now . . ." At the time of field research, two Alyeska employees were on the city council. Prior to the previous election, one of the two had announced that he was not going to run for reelection; at the last moment he ended up filing for reelection and retained his seat. According to one city leader, "I think that the company [Alyeska] wanted him to remain on the council, and he basically said as much."

According to several sources in other communities, fishing communities, people were pretty well united. Valdez, being an oil and gas community, had a very difficult political situation. According to one official, in Valdez "you have a road [connected], but fairly isolated little town here in Alaska, with magnificent scenery and a lot of attraction there, but it's a pretty concentrated industrial site as well, with 20 to 25% of the nation's oil being pumped through this port, and trying to weigh the whole environmental and developmental issue. I mean it gets boiled down right here in Valdez . . . it's a microcosm of a lot of different things, it's a microcosm of the state, the fact that we are depending on the oil well, we are trying to

do other things to diversify our economy by using this one-time well. And in some ways on the whole issue of development versus environmental preservation . . . the rubber meets the road in Valdez."

One major shift in the operations of the government of Valdez was the change in the role of the mayor in the operations of the City. In an emergency situation the role of the mayor assumes greater importance than is otherwise the case, and staff support of mayoral functions increases as well.

Changes in Community

Community Overwhelmed

The city manager's 1989 Annual Report to the Valdez City Council describes how the year changed for the city with the grounding of the *Exxon Valdez* and the subsequent oil spill and the "media feeding frenzy; wildlife cleaning; invasion of all fashion of laborer, vendor, bureaucrat, scientist, dignitary, fast-buck artist, social scientist, EXXON/VECO/NORCON executive, etc. The City was in the middle of a world class 'Chinese fire drill' . . ." As noted elsewhere, the tide of media and workers combined with the housing shortage made the community seem overwhelmed to many residents.

As one community leader summed up the problem, Valdez is normally a "town of 3,000. Now, all of a sudden, you got 11,000 or 12,000 people, [but] you've still got the same amount of grocery stores, you've still got the same amount of restaurants, you've still got the same amount of bars, so where do you put all of the extra people? . . . then even the locals get tired of waiting in lines. . . you get tired of waiting at the post office, and you get tired of not being able to go to your favorite bar and have a drink because all the spill workers are in, or whatever . . . that creates a little bit of a problem . . ."

Estimates drawn from a housing structure survey done by the City in February 1990 indicate that there were approximately 4,000 people still in Valdez, an increase of several hundred residents. Much of that increase is attributed to two factors. First is the new escort vessel policy that created approximately 109 new jobs in the community; the other is the fact that otherwise transient residents stayed over the winter in hopes of qualifying as residents for preferential hire for whatever activities would take place in the summer of 1990.

One can get an idea of the magnitude of transient influx from camping statistics. In the summer of 1989, there were approximately 100 camping spaces in Valdez for transient workers (this does not include the Glacier Creek campground which is designated for tourists staying 14 days or less). Further, the primary site for 1989, Dock Point, consisting of approximately 60 spaces was not available in 1990 due to environmental and zoning concerns. Several campsite counts were made during the summer of 1989. Data collected

on May 17 and 19 indicated 516 units in approximately 10 different locations. These units consisted of 142 tents, 158 trailers, and 216 motorized units. Another count was taken on May 30 outside of the downtown area: 297 units were counted in an area that had contained 216 on May 17 and 19 -- an increase of 81 units in just over a week. Of the sum total, approximately 200 units were in the city's two private campgrounds -- which left another 400 or so units in unauthorized areas or areas not yet finalized for camping. This total exceeded by 200 or so the capacity of areas planned as designated sites; this situation was alleviated somewhat with Exxon's decision to move site of hire to Anchorage, but people still came to Valdez looking for employment. This crush of oil spill related campers, obviously, made the accommodation of "regular" seasonal workers all the more problematic.

Change in Social Relations

According to community leaders, the oil spill was a very divisive issue in Valdez. According to a community leader, being an oil and gas based community, the community had to walk a fine line of indignation at what the oil companies had done, versus their efforts to clean it up -- for better or worse, the nation needs oil. Further, oil and gas industries are important to the state, so the community had to really try to have a balanced view of things.

According to one city official, "economically, of course, I think there were a lot of businesses that were really borderline, that may have been about to go under, that got saved by this thing [the spill]. It provided a shot in the arm . . . it led to a lot of improvements in some of the businesses around town. But again, it kind of knocked us off our game I think in some ways, and I think that we are going to have to rebuild our business industry, our careerism. I would have to say that some of the things, and some of the businesses did, they had to had to have made their own choices, but they were in my mind fairly short sighted, and that they provided accommodations maybe for oil spill related people, and canceled out tour groups and other things like that, so . . . to the extent that we are going to have to try to work hard to bring that back, [that] will be a challenge."

Crime

Activity levels of the police department, as discussed previously, were up considerably as a result of the activity associated with the oil spill. Summary statistics are provided in the following table. Statistics are presented for the years 1988 and 1989, along with a percentage increase comparison of those two years. Comparable statistics for the year 1976 are presented as well. 1976 is considered a benchmark year for law enforcement in the community, as that year was at the peak of the "pipeline days." While all categories presented increased from 1988 to 1989, it may be noted that in some categories law enforcement demand of the spill cleanup boom exceeded that of the pipeline boom days, in other categories it did not.

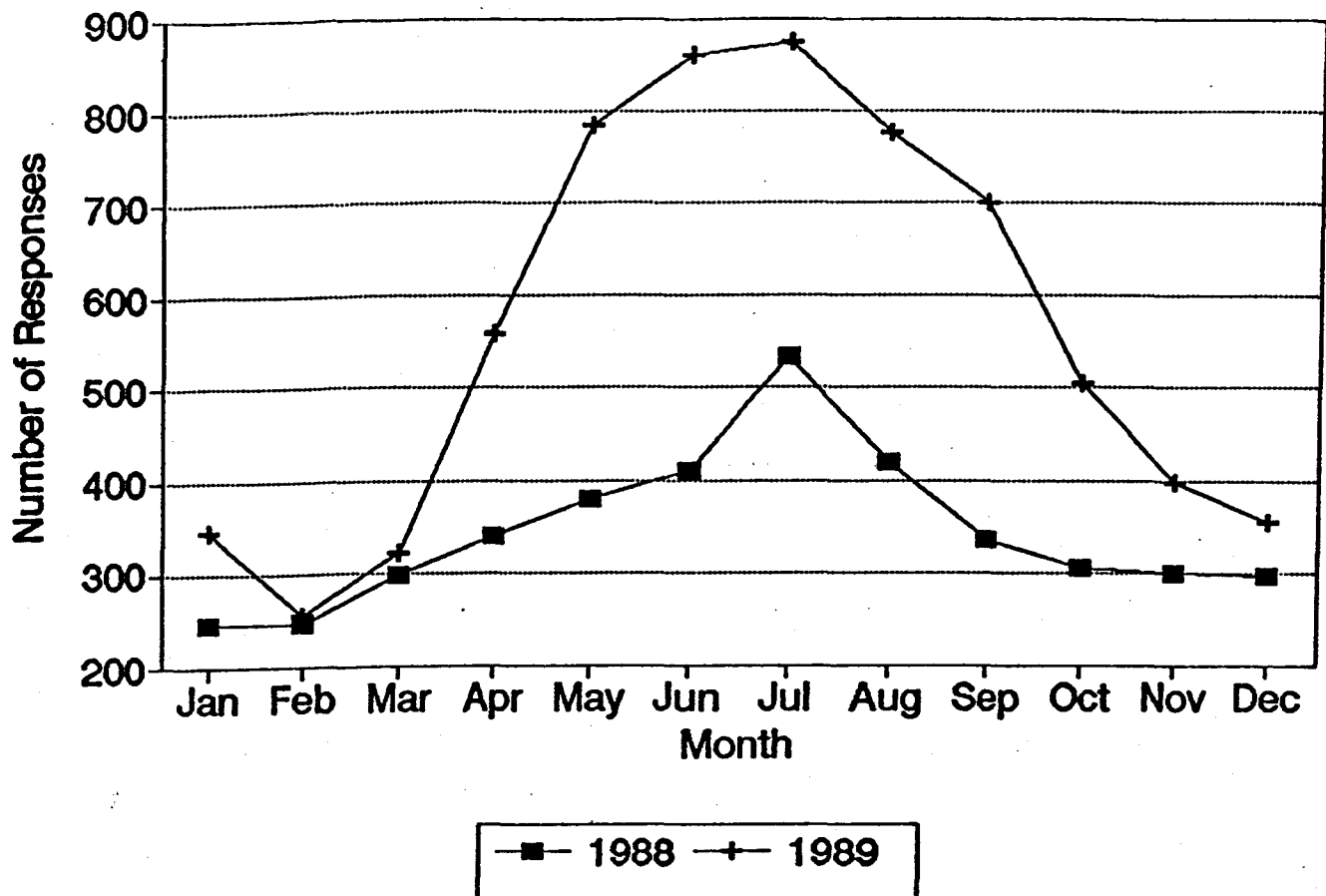
Valdez Police Department Crime and Officer Statistics 1976, 1988, and 1989 Compared				
Activity	1976	1988	1989	1988-89 % Increase
Assaults	96	34	58	70.6%
Accidents	469	112	298	166.1%
Bar Disturbances	205	56	130	132.1%
Disturbances	54	149	359	140.9%
Driving While Intoxicated	NA	76	153	101.3%
Man-Days in Jail	520	1,845	2,660	44.2%
Traffic Tickets	1,079	200	456	128.0%
Arrests	346	301	673	123.6%
Officer Responses	4,762	4,111	6,734	63.8%

Source: Valdez City Manager's Office

Following are selected figures from the above table which graphically illustrate the dramatic increases in crimes. All of the figures are based on the number of police responses in a particular category. The figures on actual charges appear in the figures from the Valdez Superior Court. It is clear from these figures that crimes involving substance abuse significantly increased over 1988. Such findings are corroborated by reports from the Valdez Mental Health Clinic which treats Alcohol Safety Action Program (ASAP) clients.

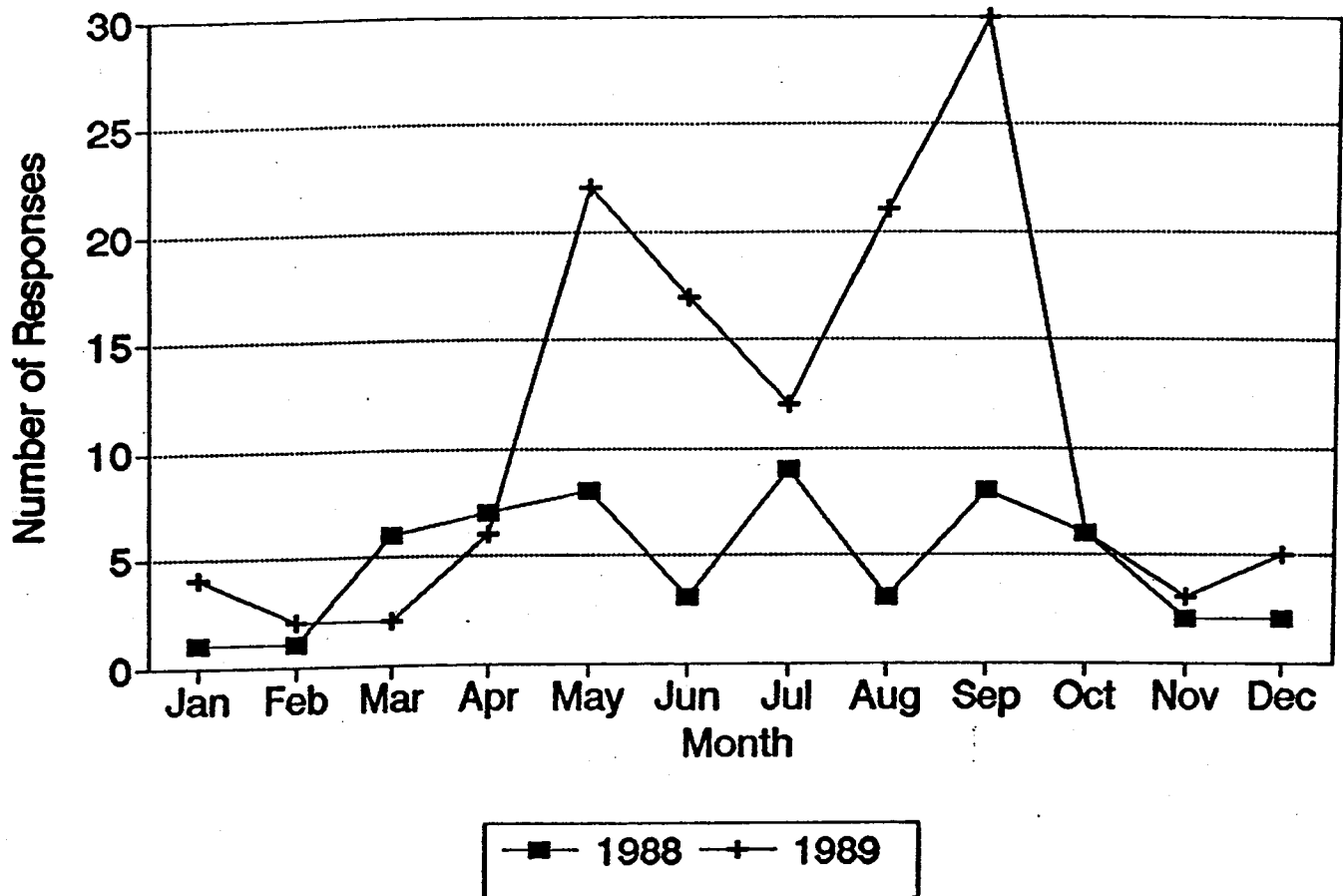
Valdez Police Dept. Officer Response

Total Police Responses, 1988-1989



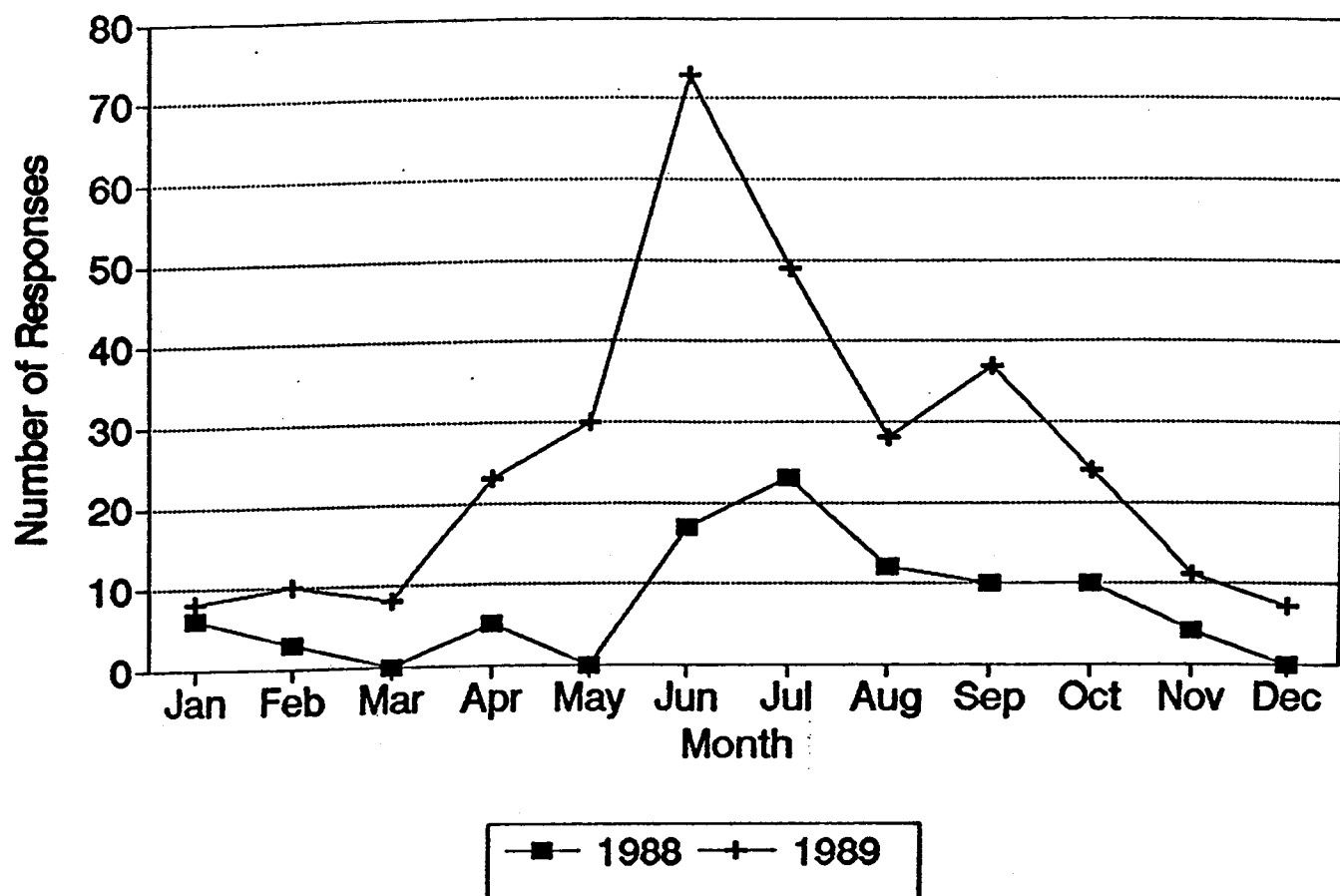
Valdez Police Dept. Officer Response

Bar Disturbances, 1988-1989



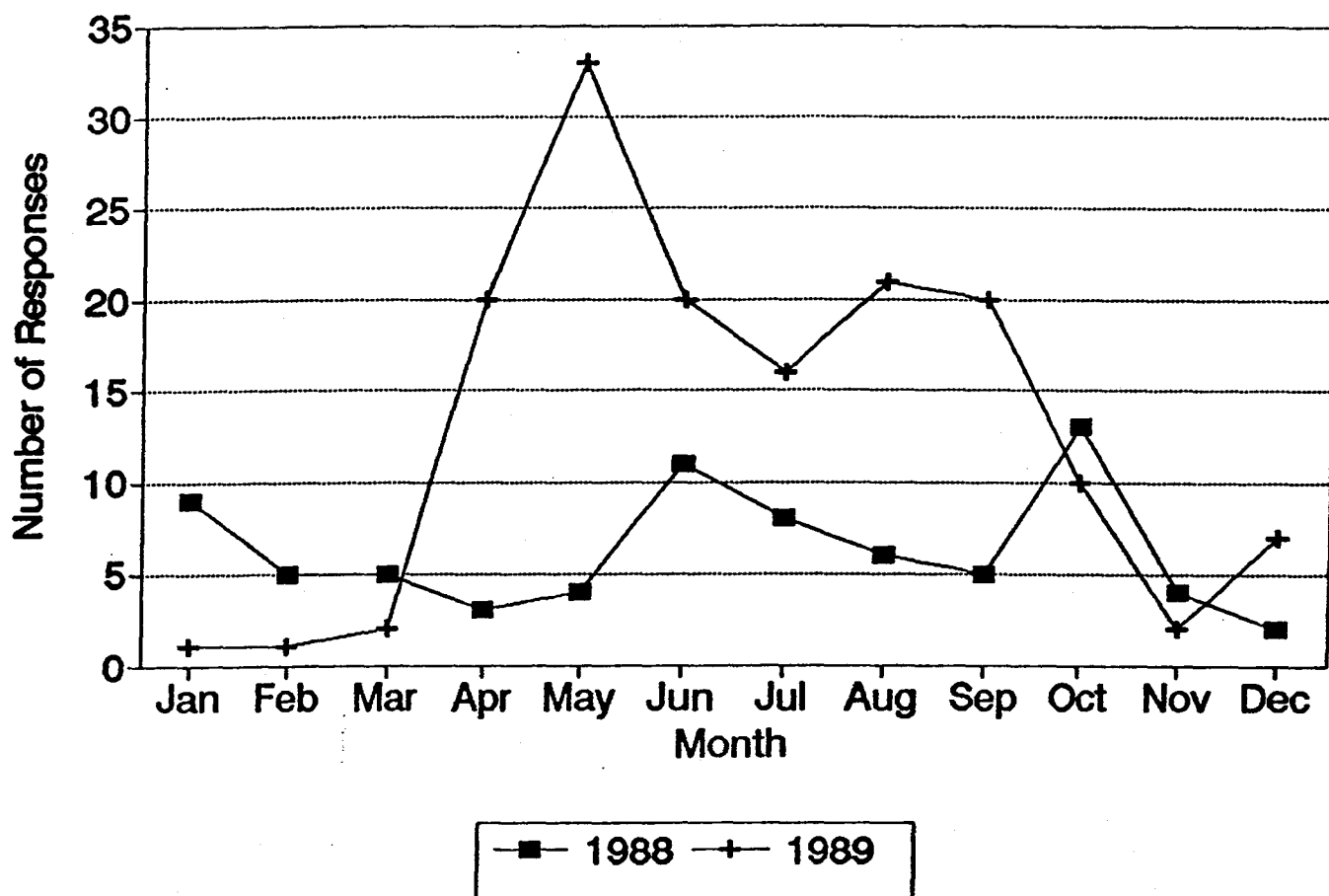
Valdez Police Dept. Officer Response

Disturbances, 1988-1989



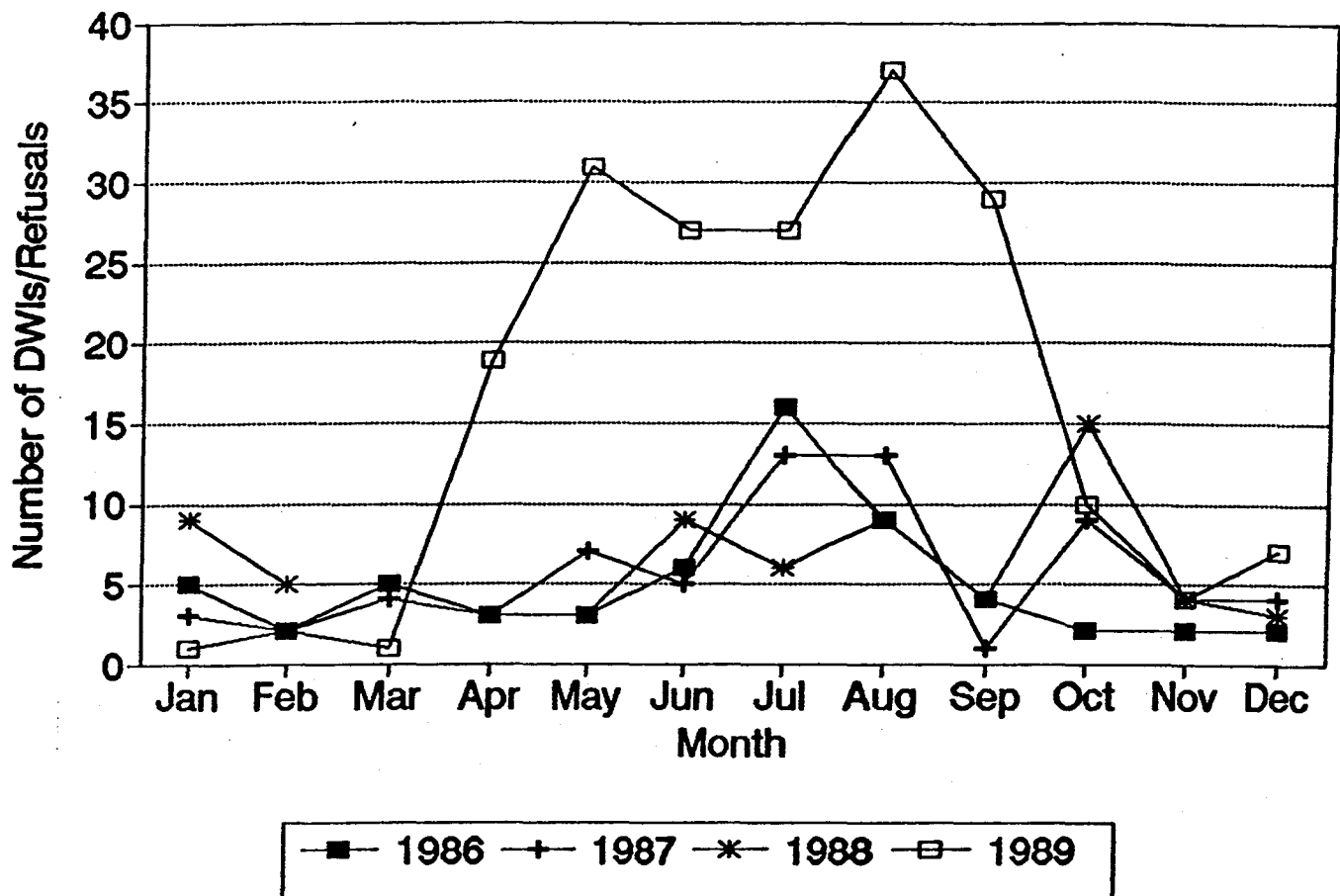
Valdez Police Dept. Officer Response

DWIs, 1988-1989



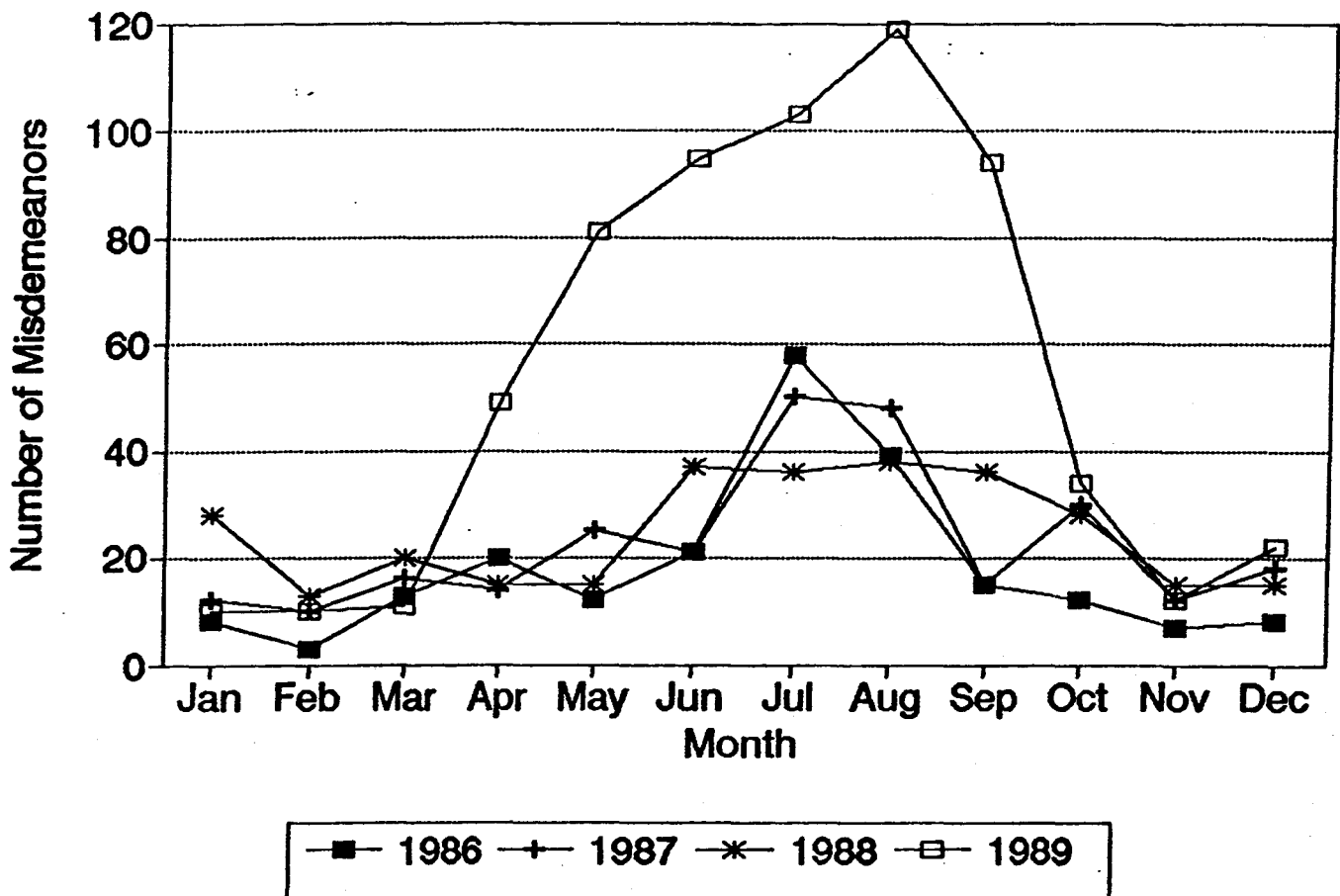
Valdez Superior Court, 1986-1989

Number of DWIs/Refusals



Valdez Superior Court, 1986-1989

Number of Misdemeanors



There were other causes of increased work load on the legal system in Valdez in addition to increased crime. There were a significant number of persons who came to Valdez looking for work who had outstanding warrants elsewhere; when these people were arrested in Valdez their statistical tracking goes to the jurisdiction within which the original warrant was issued. According to the magistrate's office, this increase in work load was significant, but does not show up in local statistics. At times during the summer, according to the magistrate's office, there sometimes ten arraignments per day, whereas a previously normal figure would have been two per day. The court system was clogged, and according to staff, it was frustrating trying to serve the public while being "overrun."

During the winter of 1989-90, the effects of the spill were still being felt on the local legal system. In March 1990, the jail count was still running at 6.6 persons per day, up from an average of 4.6 the previous year. At the height of activity after one drug sweep there were 22 persons in a 16 person jail, so they were forced to "hot sheet" prisoners for a period. Two extra jailers were funded by Exxon for the peak period. According to the police chief, although Exxon was very responsive to requests for additional personnel and equipment, "no matter how you do it, there are still hidden costs that you never think about that come up later, so, we got stuck with all that too. . ."

Additional help was requested of the State Troopers, because in the words of the police chief, "we just got so big so fast." There were problems with the imbalance of a limited number of resources and expanding criminal problems: in the words of a senior staff member "when we finally did get some troopers down here to help us, we did the drug roundup, we got arrest warrants for 35 people and all we [were able to] hit were the street people. I mean [we got] the guys on the corner . . . that's all we got, we never got anybody big. I mean, we just didn't have the time, [and] we didn't have the personnel to go any deeper."

Way of Life

One of the aspects of life that changed during the oil spill and cleanup was recreation in the community. According to the director of Parks and Recreation, the department is getting more involved in organizing leagues than players used to. "A lot of people are just really burned out from all of the work this past year [1989] and they don't want to give any more energy toward anything. They'll show up and play every now and then but [they have the attitude] 'don't make me organize anything'." Attendance was down at the structured activities, such as softball, which instead of a usual four to eight tournaments per season did not have any tournament during 1989. According to the director, "our usage of all programs went up dramatically -- from an open basketball program that would get maybe 15 people a night went to 95 people using it." There was also a huge demand on public shower facilities, and additional units were installed.

One particularly charged recreational issue in Valdez was the closure of the swimming pool for a month and a half during the summer of 1989. This was directly related to the oil spill. A part that went down normally could have been repaired within the community had to be sent outside, because the local resources were contracted to Exxon. Swimming is a valued recreational activity, and like the gym is an "open" rather than an organized activity -- just the type that was being used during the spill period.

Camping is a seasonal activity in Valdez, but during the spill year, the Department of Parks and Recreation "went into the camping business -- we were severely impacted trying to provide accommodations for people to camp." Camping spaces normally used by seafood processing workers were taken by oil spill workers, and a new campground had to be constructed and existing facilities expanded.

Within recreational programming, at least, the spirit of volunteerism is down in the community following the oil spill. This has carried over into 1990, with respect to getting volunteers to help out with youth programming. Organized recreational league participation is down significantly as well -- basketball and volleyball leagues were "flops."

According to one resident, an important change in the way of life of the community was a change in feelings of security. He reported that "people were locking doors during the day - - when they were at home." He further stated that the greatest concern was that "we were not in control of our community." This control extended even to one's own property -- we had "no control over who was going to camp in our backyard and piss in our bushes." According to one city administrator, armed guards in front of several of the buildings in town, and the general level of activity of Exxon and the media "created a state of siege" in the community. One of the cleanup facilities on the waterfront was fenced in with barbed wire, and this added to the perception. Further, one official spoke of the frustration of not having emergency zoning regulations to better control the exponential temporary growth.

Other residents spoke of the changes in the community services brought about by the number of transients. One community leader was bothered by having to stand in long lines at the post office and the grocery store, and having a large portion of the goods in the store sold out in any event. He reported that with the crush of people one didn't see friends and familiar faces, and one of the nice things about the slow down in the winter was running into friends and neighbors again around town.

Family

Individuals in Valdez often discuss the impact of the spill on family life. The immediacy of the problems associated with the spill were often all-consuming. According to the city manager, "you had less time to spend with your families, obviously, [and] any ideas of going on vacation were wiped out, you just had to stay here and work on it." Later in the summer,

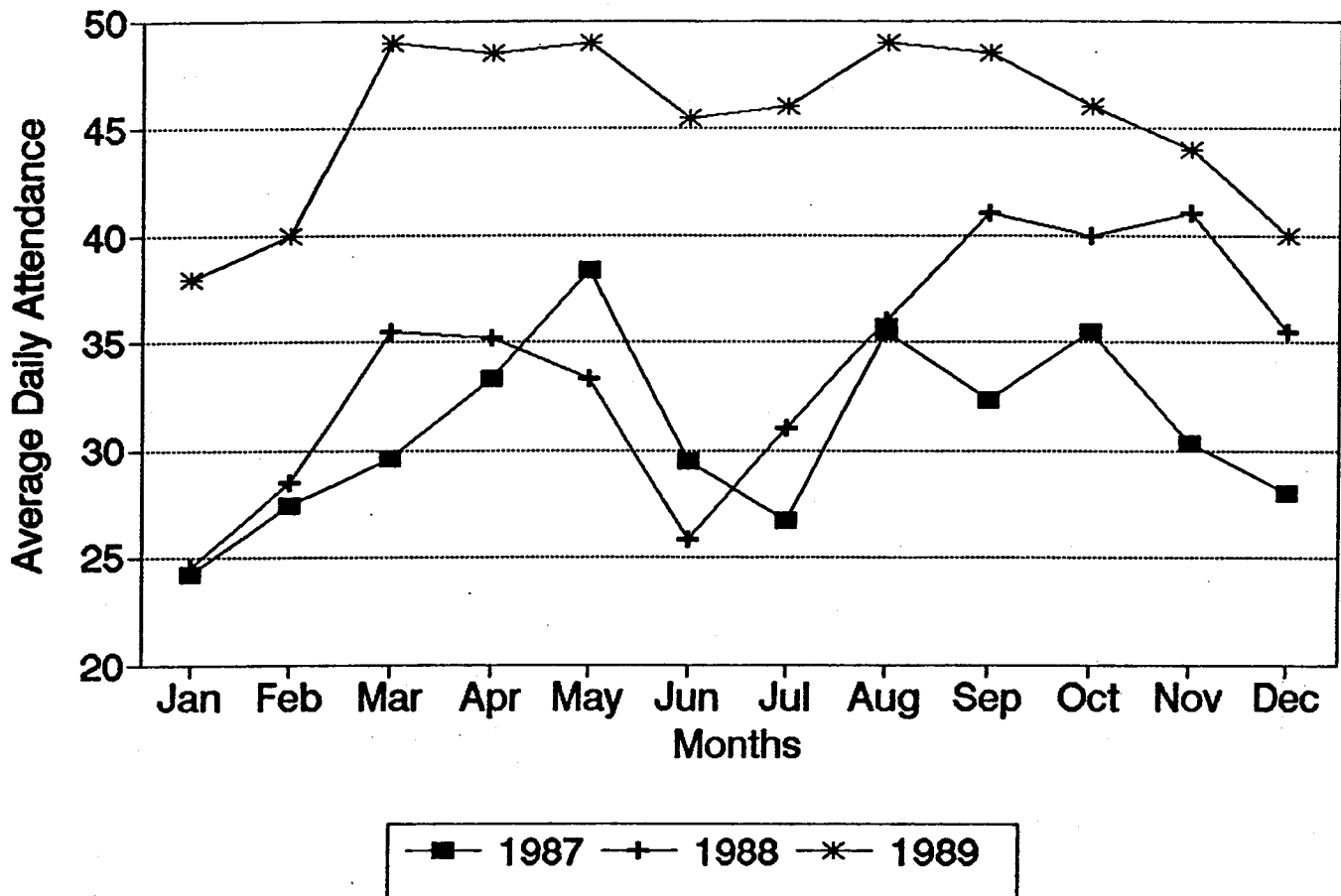
it became obvious that things had to change. According to the city manager, it "just kind of became a blur after awhile, just activity . . . I tried to tell my staff pretty early on, that you need to take some time off, get out of town for a couple of days, and that this thing [the oil spill] . . . nothing's going to change, this thing is still going to be here. I took some time off with my family . . . at the end of August . . . after a while it became apparent that this was not a hundred yard dash type of event, that it was going to be a marathon, so to speak, that we had to start pacing ourselves, and telling people to knock off and go on home, not only to leave, but leave town . . . go camping or something and get out of town, the problems would be here when you get back. . ."

Parks and Recreation children's programming extended hours during the cleanup summer. Normally running from 9:00 a.m. until noon, an afternoon program was added "because so many of the kid's parents, both parents, were working, so we were trying to provide a structured, safe program for kids . . . [to] keep them away from downtown where . . . the traffic was a real major problem here this summer [1989]. . ." Staff turnover was high in the lower pay category jobs, and the department was forced to hire younger employees than would otherwise have been the case. According to one staff member, "typically we try to hire not younger than 16 for our day camp, but we had several fourteen and fifteen year old kids," who were available because they were not old enough to qualify for spill-related work. Overall, according to senior department personnel, youth recreation programs suffered for a lack of volunteers due to high employment on cleanup work.

Day care was impacted because of the spill as well. Of the two regular day care centers, one shut down entirely. At the second center, employees threatened to quit for hire wages working on cleanup, and according to the director of the day care center, if it wasn't for the otter cleaning program, the day care center would have folded. Shortly after the spill the otter cleaning program started up, and Exxon approached the center to supply day care for the volunteers working at the otter center. Day care employee pay was supplemented by Exxon to keep them on the job. Day care hours were normally 6:00 a.m. to 6:00 p.m.; during the height of the cleanup Exxon paid to keep the center open an additional six hours until midnight. Three additional workers had to be added, and this lasted through the months of April and May before the otter center closed down. (Supplemental funding continued through the end of June, but following the end of funding there was an almost complete turnover in employees.) According to care providers, the children were irritable and cranky from being unused to being away from their families for so many hours at a stretch, and this was, in turn, hard on the staff. According to the director, 50% of the children were spending 12-13 hours per day in day care whereas before the spill they were spending 7 or 8 hours per day in day care. While no records exist, it has been estimated that twelve to fifteen in-home, non-licensed day care centers were established during the spill period. Difficulties were created at the one remaining licensed center because of demand: license restrictions dictate a maximum number of children at any one time, and there was no place to send the additional children once that ceiling was reached. The following graph is from one of the Valdez day care centers. It shows that average daily

Valdez Day Care

Average Daily Attendance, 1987-1989



attendance at the center in 1989 was consistently higher than the previous two years, which is consistent with informants' reports. The higher attendance record for January through March of 1989, before the oil spill, was unaccounted for.

Demand for emergency social services was high during the spill. The demand for services provided by the Valdez Emergency Assistance and Foodbank "was incredible." Two volunteers were needed full-time at the food bank. The shelter run by the Lutheran Church had 25-60 people during the summer; a soup kitchen was available daily during the summer. The Baptist church offered free meals on Friday nights; at the peak between 400 and 500 people were fed in a single night. Fortunately for the community, the structure for feeding many people was in place due to the fact that the community experiences a seasonal influx of seafood processing workers, however, the level of demand created by the spill was unprecedented and severely taxed the system. Two groups that were credited with filling the increased demand for volunteers were local homemakers and seniors.

Education at the community schools was reportedly not greatly affected during the cleanup period, however there were strains on the staff due to involvement in other activities. For example, a significant number of staff members were involved in the otter rescue work in their off-duty time. There were at least three individuals who left school to work on the oil spill. At least one of those persons finished their education by means of obtaining a GED certificate. The community Teen Center showed a marked increase in activity during the summer of 1989. Monthly statistics are presented in the following table.

**Valdez Teen Center
Monthly Attendance Statistics, 1988-
1989**

Month	1988	1989	Change 1988-1989
Jan	1682	1242	<440>
Feb	1254	1548	294
Mar	1360	1477	117
Apr	1332	1592	260
May	1555	1962	407
Jun	1235	1426	191
Jul	1269	2048	779
Aug	1087	1907	820
Sep	1177	2068	891
Oct	1772	1745	<27>
Nov	1275	1403	128
Dec	1804	1733	<71>
Total	16,802	20,152	3,350

Enrollments at the local branch of Prince William Sound Community College were greatly impacted by the spill. Summary statistics are presented in the following table:

Valdez Enrollments Prince William Sound Community College 1986 - 1989					
Semester	1986	1987	1988	1989	% Change 1988-89
Spring	309	314	258	160	<61.2%>
Summer	137	108	139	32	<334.4%>
Fall	325	365	272	308	13.2%

Source: Prince William Sound Community College

The facilities of the college were heavily impacted by the spill. Buildings were used for a variety of purposes, and the college was reimbursed for their use, but it was an extremely disruptive time. It is also important to note that the president of the college was also the mayor of Valdez at the time of the spill. Normally a limited tax on his time, the mayor's position was a consuming one during the spill period. The college also lost a significant number of staff through individuals resigning to work on the cleanup for higher wages.

Mental Health

According to the director of the Valdez Counseling Center, the sheer number of clients rose dramatically as did emergency calls. Although exact figures are not available, many of the client calls were from old clients who either returned to counseling after a hiatus, or continuing clients who increased their number of visits. Again, although exact numbers are not available, the director is of the impression that most of the increase in load is attributable to local residents while, on the other hand, emergency calls were mainly caused by the influx of marginal people into the community who often caused problems. The police would often call the counseling center for help, which was a need to be filled, but according to the director this took a lot of time away from other tasks that were also necessary. Summary statistics are found in the following table; a discussion of a study conducted by the Counseling Center is found in the section treating the results of the household survey.

Valdez Counseling Center New Clients 1987 - 1989					
	1987	1988	1989	% Change 1987-88	% Change 1988-89
New Clients	64	82	149	28.1%	81.7%
Average New Clients Per Month	5.33	6.83	12.42		
New ASAP Cases	105	0*	263		
Average New ASAP Cases Per Month	8.75	0*	21.90		
* No Alcohol Safety Action Program during 1988.					

Source: Valdez Counseling Center

During the cleanup period, and in the period following, there has been a "real demand" by junior and senior high school students as clients in the after-school hours due to behavior problems. This difficulty was predicted by the director, and it came to fruition. Overall, patient load in all age groups was up to the point that while no one was actually turned away, people sometimes had to wait two weeks for an appointment. Clearly, this was not a desirable situation; before the spill the wait for an appointment was two days or less.

In terms of particular difficulties, an increase in problems in relationships between people was noted. According to the director, problems with depression or anxiety were present, but not to the degree of the difficulties in relationships, and "many couples required counseling." While many of the problems couples experienced may well have had their roots before the spill, "undoubtedly the spill greatly aggravated their problems and caused considerable stress" and many of these couples are still working on the difficulties.

The director of the center sees many of the mental and emotional problems that people have been experiencing as long-term difficulties. To this end, the center has been conducting a long-term study in both Valdez and Cordova. This study is designed to measure social support, stress, anxiety, and depression. The study took measures during the active cleanup period, the winter following, and one year after the spill. The findings after one year support the hypothesis that, "the oil spill was an extreme stressor that could cause emotional problems for area residents." Cordovans were found to have a higher incidence,

intensity, and duration of stress than residents in Valdez. In this same vein, Valdez residents perceived social support to mediate stress, while Cordovans did not. The following figures (next page) were developed from data from the Valdez Mental Health Clinic. They compare the number of ASAP cases by month for 1987 and 1989 (data were unavailable for 1988) and new clients by month for 1987-1989. The general trend emerging from these figures is an increase in both new clients and clients with alcohol abuse problems in the year following the oil spill.

One of the difficulties with the counseling services during the cleanup was the fact that Exxon took office space in the building across the hall from the counseling center. Exxon posted armed guards in and around the building, and some clients complained about the presence of the guards and of being challenged to identify themselves, and so on. Although numbers are not available, it is thought that the guards and the presence of Exxon may have deterred some clients entirely.

Advocates for Victims of Violence (AVV), a group that provides shelter, advocacy, crisis intervention, counseling, referral, education, and outreach programs in Valdez also experienced a large increase in demand for services during the spill cleanup period. Utilization of crisis lines increased dramatically, and according to the director, the issues that people manning the crisis lines heard were mainly people needing to talk about what was going on -- they were depressed about the situation and "it was like listening to people grieve." Selected summary statistics are presented in the following table.

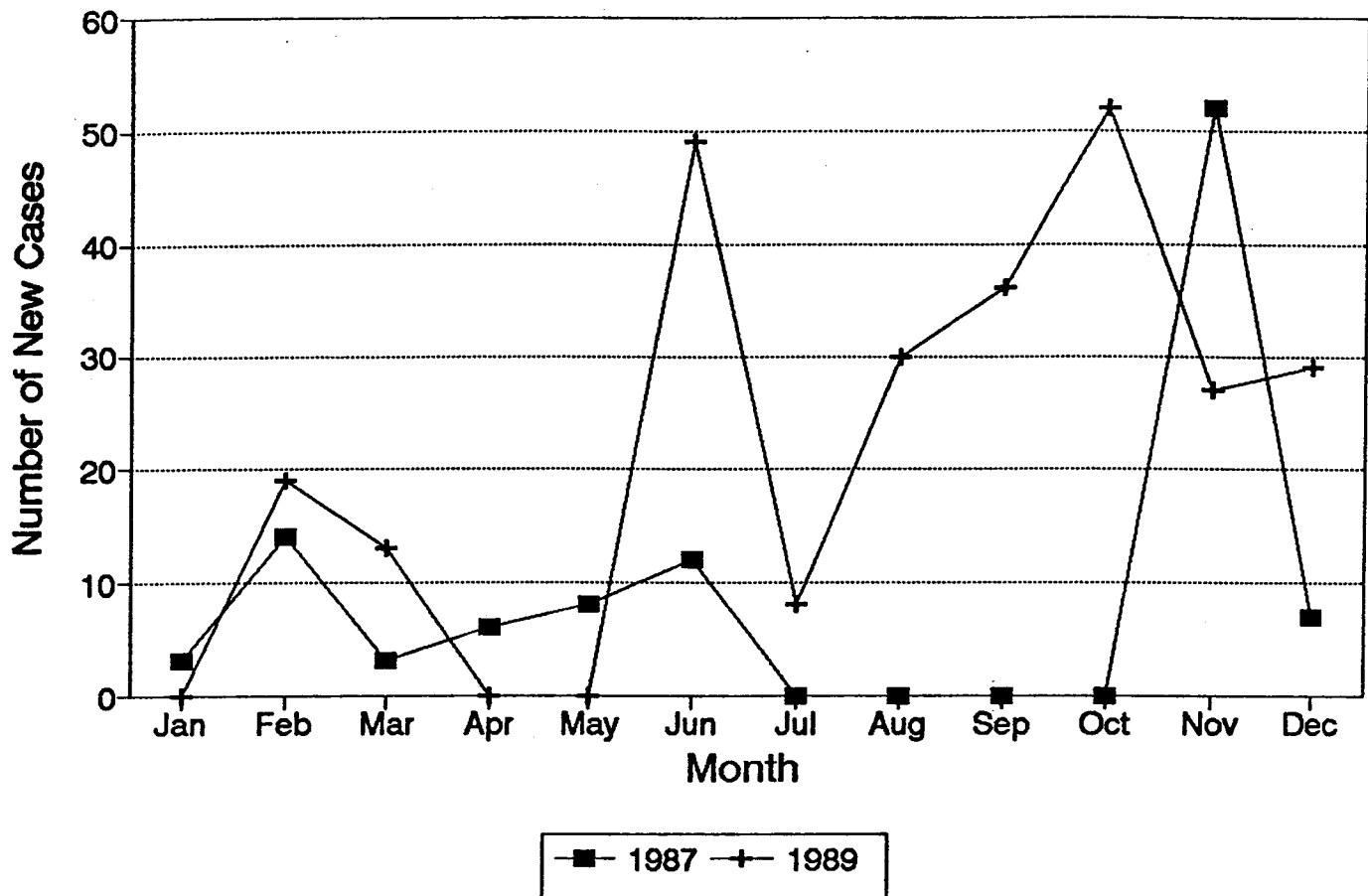
Advocates for Victims of Violence (Valdez) Selected Statistics, 1988-1989			
Type of Service	March - Sept. 1988	March - Sept. 1989	% Change 1988-1989
New Clients	82	179	+118.3%
Shelter Nights	154	264	+71.4%
Crisis Calls	36	217	+502.7%

Source: Advocates for Victims of Violence

The largest increase in a short period of time was in the category of shelter nights for the months of July and August. During this period in 1988 there were 11 shelter nights; during the same period in 1989 there were a total of 226 shelter nights.

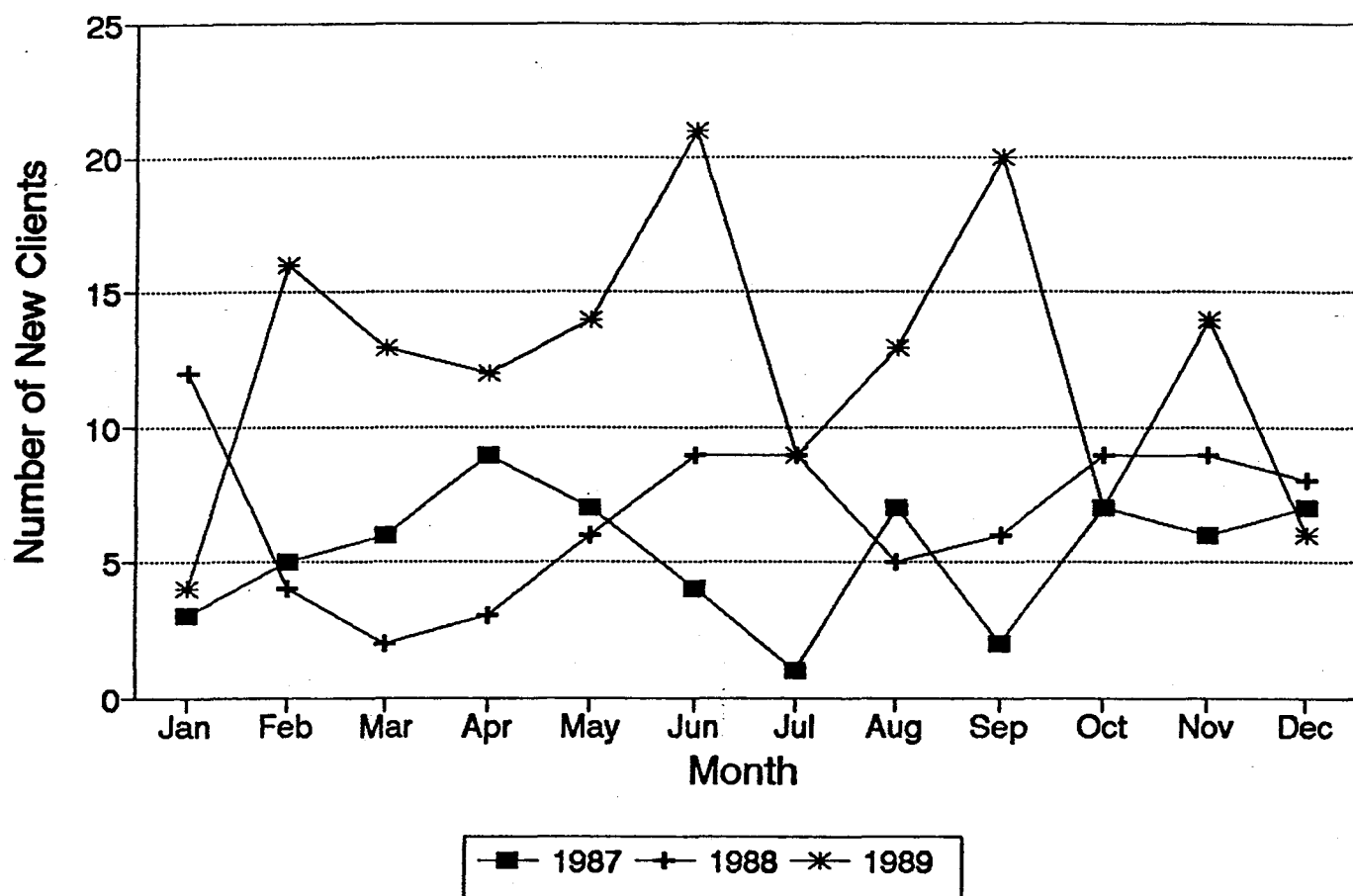
Valdez Mental Health Clinic

Number of ASAP Cases Per Month by Year



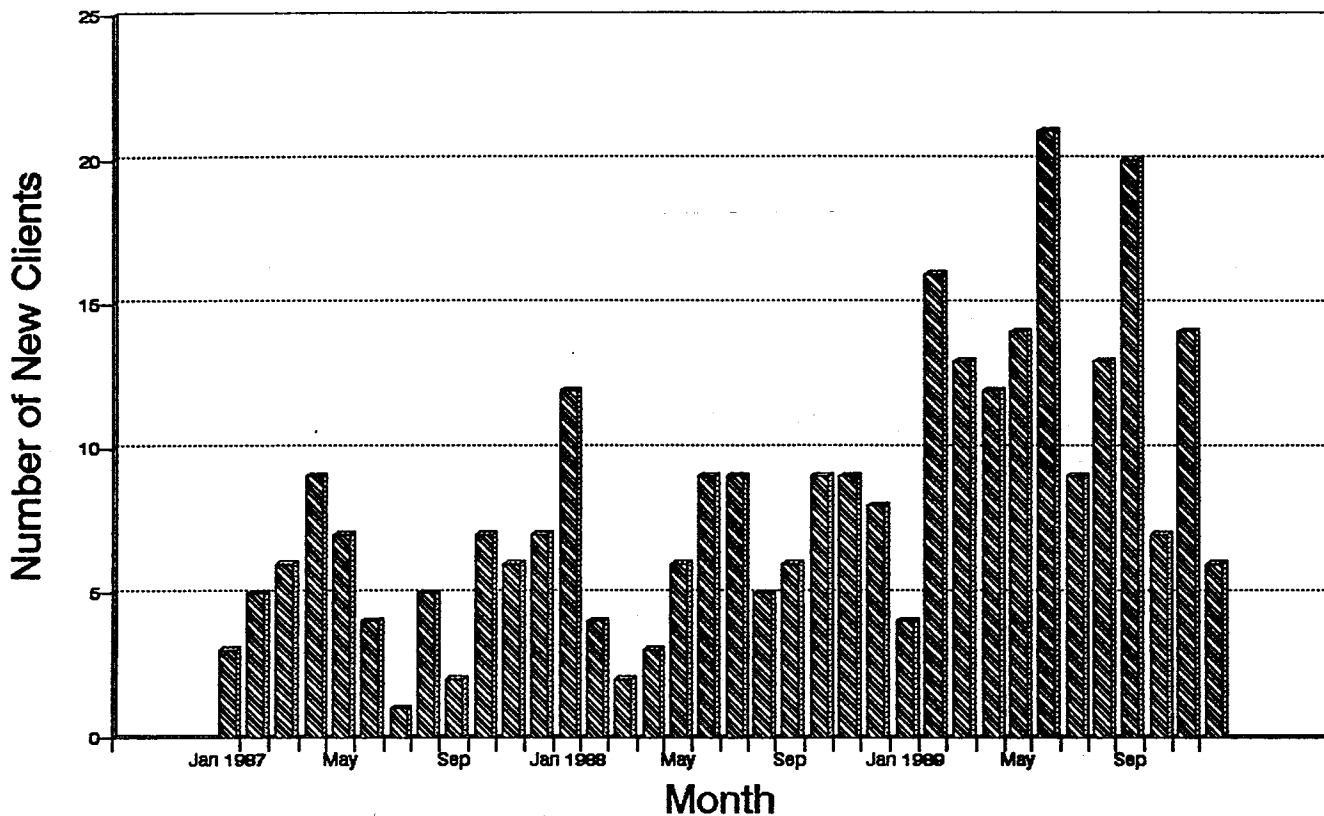
Valdez Mental Health Clinic

Number of New Clients Per Month by Year



Valdez Mental Health Clinic

Number of New Clients Per Month by Year



AVV also serves clients who come from Cordova and Tatitlek, and "their lethality assessment was extremely high," according to the director, and the women who sought help from those communities were in dangerous situations. The director also stated that there was a direct increase in sexual assault and rape attributable to conditions surrounding the spill and cleanup. There were family disruptions and "a lot of tension, a lot of violence." Children were in need of services because, according to staff, a lot of single mothers and fathers came with their children to work on the oil spill.

Specific problems at AVV included:

- A loss of crisis line volunteers. Prior to the spill there were 25 volunteers; at one point during the cleanup they were down to 6. (It is also important to note that new volunteers were lacking in training as well, even when replacements were found).
- Shelter and advocacy staff decreased while demand increased.
- Counseling, outreach, and education were not as available as before the oil spill, as the crisis situation demanded priority attention.

There is some resentment in Valdez over what is perceived to be a situation of "blaming the victim." In the words of one long-term resident, it was very difficult when "people thought we had done this to ourselves." According to this person, the "propaganda machinery has made this the Valdez oil spill rather than the Exxon Valdez oil spill." One of the first t-shirts to be appear in town after the spill carried the words "No Finger Pointing, We're All to Blame."

Medical

Service Provision

As noted earlier, there was a marked increase in demand at the Valdez Community Hospital associated with the oil spill. Summary statistics, comparing 1988 and 1989, are presented in the following table.

Valdez Community Hospital Selected Statistics, 1988 - 1989			
	1988	1989	% Change 1988-89
Outpatient Procedures	5,000	10,000	100%
Emergency Room Visits	1,505	3,371	124%
Revenues	\$871,635	\$1,279,194*	47%*
Expenses	\$1,381,727	\$1,799,040*	30%*
Percent of Occupancy	21.53%	23.90%*	11%*
* Estimated			

Source: Valdez City Manager's Office

There were other sources of increased demand for services as well. The hospital acted as a broker for medical supplies for VECO, as they had no network for acquiring them. According to staff, this caused a significant increase in workload. The hospital was also used as a source for medical supplies for the care of oiled otters.

In addition to overall increases, there were times of peak demand where capacity for expeditious care was exceeded. According to one senior staff member, there were times when there were 30-50 people waiting in the emergency room for care, and there were periods when the number of inpatients tripled and the number of emergency room visits and demand for X-Ray services quadrupled. At the height of activity, there were up to six emergency medical transport helicopter landings per day landing at the hospital; previously there had been around one per year, and on one occasion there were two landing simultaneously. Personnel were lost to oil spill work; to partially offset demand it was arranged through the office of Emergency Preparedness to have Public Health Service physicians help on a rotating basis, and assistance through provision of a lab tech was obtained as well.

Increase in patient load was characterized by staff as being primarily male 18-45 year old oil spill workers. Some people who would have otherwise sought services decided not to as they "didn't want to wait 5-6 hours for service." There were public health problems

associated with the conditions surrounding the spill that had staff concerned. According to one senior staff member, there was a "horrible bronchitis" that went through town, and there were some people who had to be hospitalized for pneumonia. From the public health perspective this was worrisome, because there were "people living outside, in cars, under bridges" and so on.

According to hospital staff, to help with the health care load, VECO established a clinic in the latter part of May, 1989, and staffed it with two nurse practitioners and two nurses who did initial assessments. A barge clinic was later set up for triaging patients on the water, but the initial clinic was "totally overwhelmed." Doctors rotated in, but coverage was not continuous. Reportedly coordination between the hospital and Exxon was good, but coordination between private doctors and Exxon was nonexistent.

According to a senior staff member, most of the oil spill cleanup-related care was directed toward assorted injuries, cuts, broken bones, and skin rashes. There was a large number of sufferers of what was termed the "Valdez Crud" -- a relatively severe upper respiratory infections.

Funding

Managed under contract by Lutheran Health Services, the hospital at the time of field research carried over a large balance of accounts receivable from 1989 into 1990, due in large part to the effects of the oil spill. On the other hand, donations were higher than in any past year. These included, by donor, the following items:

Exxon:

- Three hand-held radios
- Computer upgrade system
- Hypothermia blanket system
- One-half laboratory cost
- Equipment for processing CBC's

Fairbanks Memorial Hospital:

- Ultrasound machine

United Way:

- Televisions for patient rooms

Emergency Medical Services

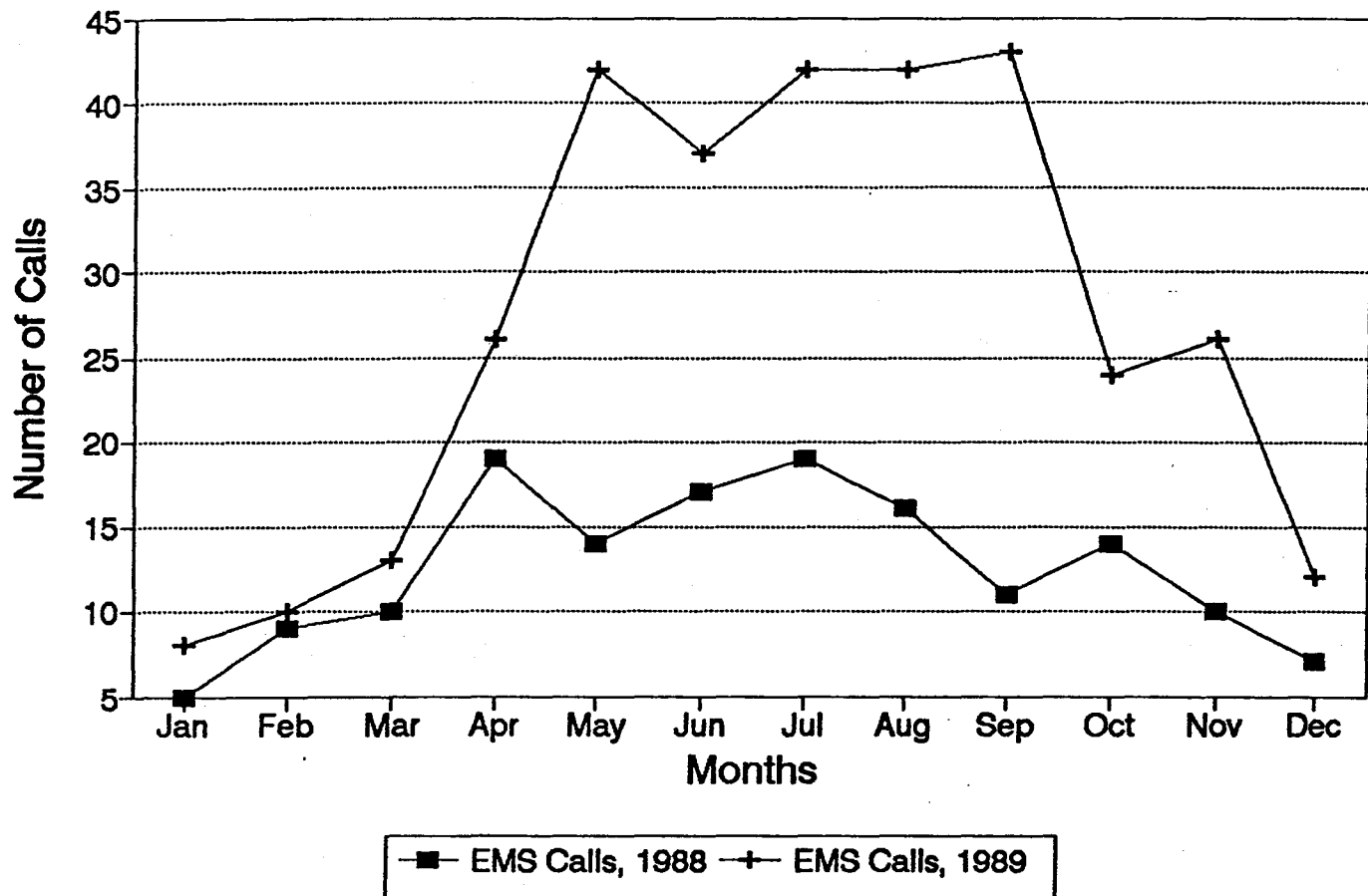
Summary statistics for fire and EMS calls are presented in the following table and figures. As shown in these figures, emergency response was the major activity of fighters and EMTs following the oil spill. Fire and EMS service provision are discussed elsewhere under the treatment of the Department of Public Safety.

City of Valdez Fire and EMS Statistics 1988 and 1989			
Call-Outs	1988	1989	1988-1989 % Increase
Ambulance Call-Outs	151	325	115.2%
Fire Call-Outs	63	95	50.8%
Fire Alarm Call-Outs	60	113	88.3%

Source: Valdez City Manager's Office

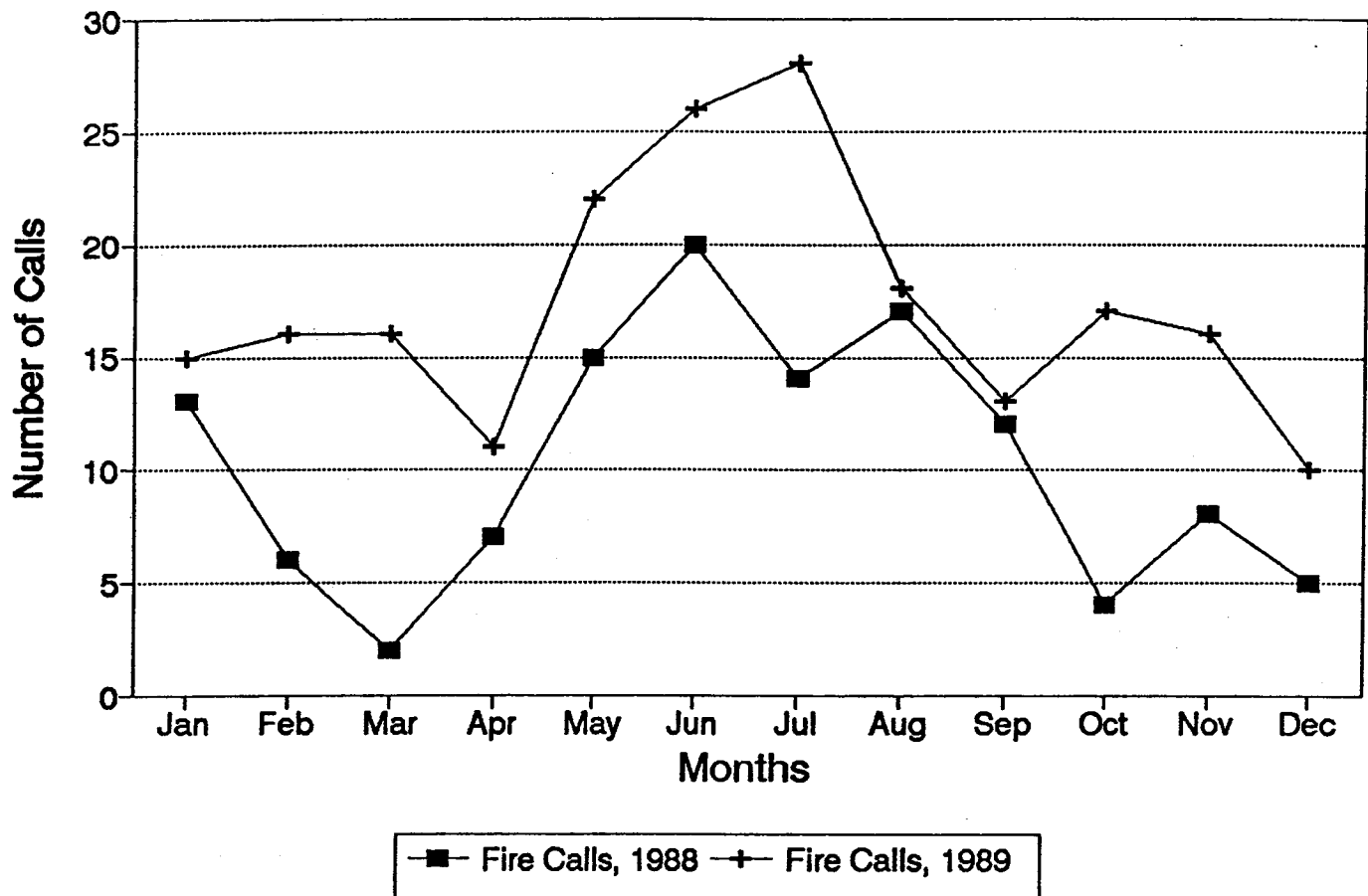
Valdez, Alaska

EMS Calls, 1988 & 1989



Valdez, Alaska

Total Calls to the Fire Dept, 1986-1989



City of Cordova

Cordova is a small city located south and east of Bligh reef, where the *Exxon Valdez* spilled oil in the Spring of 1989. Cordova was incorporated in about 1909 as a second class city. The annual budget of city government is about 4 million dollars and between 30% and 50% of these funds derive from fishing industry-related taxes. The city council and the mayor, an unpaid position, have policy and statutory responsibilities while the city manager presides over the day-to-day operations of the community. Cordova has a population of about 2,500 persons, including a number of Native Alaskans. Some of Cordova's population consists of seasonal residents who live in Seattle or elsewhere during the winter, but reside in Cordova for the summer fishing season. There is no road to Cordova. The community is accessible by air during the winter months and there is a ferry that connects Cordova to Valdez, Whittier and other parts of Alaska during the summer.

Cordova is a fishing town. There are rich Salmon, Herring, and other resources in nearby Prince William Sound and the Copper River Delta. The significance of fishing for Cordova is indicated by the number of limited entry permits in the community. As the table below indicates, Cordova has more limited entry permits than the other major towns near Prince William Sound.

Community	1988 Permits
Cordova	634
Anchorage	174
Valdez	85
Homer	83
Seward	50

The significance of fishing is also indicated by a thriving salmon aquaculture business developed in Cordova. The Prince William Sound Aquaculture Corporation built several hatcheries around the Sound and fish released from these hatcheries have a significant part in the local fishing economy. Cordova also has several fish processing plants that employ significant numbers of workers during the fishing season. Importantly, Cordovans are also self-identified fishermen. As one Cordovan observed, "As professional fishermen, our lifestyle is made up of fishing and living in Prince William Sound. Our choice, as it is every year, is to fish; not clean up oil spills for a living. Now, however, cleaning up the oil spill and the eco-system of Prince William Sound is the only choice we've got."

Cordova is also a town that has a history of opposing oil development, asserting that oil poses fundamental threats to the fishing industry in Alaska and especially in the Sound. Cordovans have been active in their opposition to oil development, promoting legislation and initiating legal actions that were intended to insure the safety of fishing that supports the economy of this community. Despite some successes in their efforts, the worst nightmares of Cordovans occurred on March 24, 1989 when the "big one" finally happened. Even though the event was for some not unexpected, the actual magnitude of the event brought home the realization that this nightmare was of horrific scope.

Response Effort

Exposure to the Oil Spill and Cleanup

Even though Cordova was not directly oiled, it was exposed to the direct effects of the spill because of damage to areas used by local fishermen and it was also exposed to the effects of the cleanup by the role the community played in responding to the spill. These two different exposure routes are important because they represent two separate types of impacts, each with its own demands and stresses. Some features of these different exposure routes for Cordova are briefly summarized below:

- (1) The spill directly damaged the commercial fishing areas used by Cordovans as well as areas that have aesthetic and recreational importance for the community.
- (2) Residents were among the first to realize the scope of the spill, the death of wildlife, and damage to beaches and shorelines in areas valued by the community for aesthetic and economic reasons. The realization of actual and potential damages was transmitted from those with direct experience to others in the community early in the event resulting in a breadth of exposure within the community. This exposure to the direct consequences of the event plus the uncertainty of potential consequences persisted for an extended period of time.
- (3) Closure of salmon and herring fishing resulted in threats to the viability of the unidimensional economy of Cordova which is "almost 100% dependent upon fishing." Actual and perceived damages to the fishery also resulted in broad exposure within the community to the direct effects of the spill.

(4) Cordovans were among the first to initiate volunteer cleanup efforts and later the community became the homeport for the "mosquito fleet" that was active in responding to wildlife injured by the spill.

(5) The cleanup exposed the community to disruptions from outsiders seeking employment with VECO and Exxon. Housing shortages, increased demands for local goods and services, as well as the social demands of responding to new persons in a small community resulted in exposure to social disruptions that would not otherwise have occurred.

(6) The cleanup exposed local residents to social disruptions and economic impacts resulting from how the cleanup was implemented, i.e. the institutionalization of the cleanup by Exxon and VECO infused relatively large sums of money into some segments of the local economy and not others resulting in changes in economic patterns and social disruptions related to the distribution of cleanup resources.

Common aspects of exposure to the effects of the oil spill experienced by many communities are illustrated by the experience of Cordova. However, the specific economic and social structure of Cordova's economy resulted in a particular exposure pattern in which broad segments of the community were exposed for extended periods of time to both the direct effects of the spill as well as the direct effects of the cleanup.

Local Response Effort

The geographical isolation of the community and the absence of any road into the town seemed to heighten the perception among Cordovan's that they were the "forgotten city" whereas Valdez was in the spotlight, but not threatened in the same way as Cordova. Perhaps because of this heightened sense of isolation as well as the identity of Cordovans as "independent," a diverse community-based response effort quickly developed. This response effort was operational in diverse activities such as: (1) protecting fish hatcheries that might be damaged by the oil; (2) facilitating a claims process for those economically damaged by the spill; (3) establishing the community's interests as affected by the oil spill despite no direct oiling; (4) garnering business from the cleanup effort that might assist with off-setting economic damage done by the oil spill; and (5) participating in responding the injuries to wildlife caused by the oil spill. Among other reasons, these efforts were spurred on by perceptions that Cordovans needed to help themselves if the damage to the community was to be contained, and part of this self-help was to loudly proclaim that

Cordova was "different" and that it had unique needs that Exxon, the state, and others were not recognizing.

Two important aspects of Cordova's ability to field such a diverse and early response effort were (1) a pool of local leadership talent and (2) various public and private organizational entities to organize resources and implement actions. Cordova prides itself on the quality of its citizens and especially the level of literacy that exists within the community. Observations in the community early in the spill indicate that at least four major leaders were active in organizing community efforts. The quality of this leadership is indicated in the recognition by two national publications that Cordovans made major contributions to the total oil spill cleanup effort. Furthermore, organizations such as the Chamber of Commerce, Prince William Sound Aquaculture Corporation, and Cordova District Fishermen United (a local fishermen's union) represent significant organizational resources with access to boats, businesses, and labor that can be organized with effective leadership. For example, certain members of CDFU were among the first to travel to the spill site and Valdez to express the concern of Cordovans and offer the help of the fishing fleet to contain the oil. Once it was realized that boom to contain the oil was not on hand, CDFU members became partners with DEC and others to stop the oil from damaging hatcheries. CDFU organized almost 20 boats for immediate deployment for such a potential effort. Furthermore, the leadership of CDFU and other groups in Cordova were successful in getting the attention of outside agencies and political leaders regarding the threat the spill posed to the community. At one of the first press conferences in Valdez by Alaska's Governor, no representative from Valdez stood on the stage with the Governor, but a CDFU official was there representing the interests of the fishermen of Prince William Sound. The existence of such leadership and organizational resources was an important element in the ability of the community groups to respond to the effects the spill.

In the first few weeks of the spill an Oil Spill Response Office was organized with a Steering Committee that was to oversee its operations. What began as a volunteer effort was quickly institutionalized by the City and offices were located in City Hall and funds for operation were provided. Yet, there remained for a period of time in which individuals contributed volunteer labor to staff the office. This oil spill response office along with CDFU became important focal points in the response effort. The spill response office acted as an information center. It published a "Fact Sheet," organized public meetings to share information and discuss spill related issues. This office functioned as "information central" for rumor control and response to inquiries about the oil spill. In general, the attitude among most Cordovans during the early days of the spill was one of, "How do I help" What Can I do?" and this was expressed in the local support offered to the spill response office and by CDFU fishermen who were willing to use their resources to do whatever needed to be done. However, shortly after the oil spill occurred Exxon, through its contractor VECO, took control of spill response work and thereafter the attitudes, if not the actions, about spill response work changed.

Cordovans can easily describe the changes in the community after Exxon/VECO took charge: greed, factionalism, frustration, and increased concerns about the uncertainty of the effects of the spill multiplied. The influx of cash from lucrative boat contracts contributed to divisiveness and other such consequences that will be discussed in more detail later in this report. However, here it is important to note that some key informants suggest that the spill response effort in Cordova became mired in the Exxon bureaucracy and the problems that accompanied its organizational approach to the cleanup. That is, although there was and is a continuing effort within Cordova to respond to the demands placed on the community by the spill and the cleanup, the initiative, leadership, and resources of community efforts were overwhelmed by the locus of control of the cleanup effort being with Exxon and VECO rather than with local or state government. Furthermore, Cordovan's knowledge of local conditions and experience with the ocean was ignored, indeed some would say spurned, by Exxon and VECO.

Local officials and informal leaders throughout the community reported and immediate need for information about what happened at Bligh Reef and how serious the consequences might be. Numerous telephone calls were made from residents to anyone in official or unofficial leadership positions in the community. Additionally, media sources such as CNN and the public radio station in Valdez became important channels. Information seeking by formal and informal leaders was initiated by telephone calls to DEC, the Coast Guard, Alyeska, and any other potential source of information about the seriousness of the event. Clearly, Cordovans felt in the dark about what was happening and this resulted in efforts by the mayor and others to develop more knowledge about the event in any way possible.

The result was that several different groups of Cordovans traveled to Valdez to listen to and participate in press conferences by Alyeska and Exxon about the accident. Information was passed back and forth through friendship networks and formal channels, and eventually the Cordova Vanguard published a special edition, a historical first, about the spill. Soon, public meetings were organized by the spill response committee and the Fact Sheet detailing spill news was circulated to all Cordovans. These information channels plus news exchanged at gathering places such as the CDFU hall became highly significant sources of information that satisfied what were felt to be urgent needs for information about the spill. Generally, Cordovans evaluated the public meetings as serving important supportive and information needs and the Fact Sheet established a regular route for information transmission. Furthermore, the oil spill response office offered another source of news for those who wished to drop by or call. Despite what would seem to be sufficient information sources, many Cordovans remained anxious about access to the most current news and rumors about the spill and cleanup.

Another theme in the early response effort by Cordovans was the concern that they were the forgotten city and that other communities, especially Valdez, were receiving more attention and information than they were. There was an insistence among Cordovans that the spill would have "special" circumstances for them. As an informant emphatically stated,

'Cordova is unique. It is absolutely unique. We are the only place that will be affected by this that is 100 percent fishing. Valdez isn't going to be affected the way we are.' Yet, despite considerable concern that Cordova was being ignored and that its unique position was going un-noticed, as a community, Cordova was able to establish important political and other contacts that became available for various purposes. A representative from the Governor's office came from Juneau and was stationed across the hall from the spill response office. Cordova's Senator and Representative were in contact with local officials and at one point there was a representative from the Senator's office also in Cordova. And after some 42 days after the spill, even Exxon recognized the "unique" character of Cordova's fishing economy and agreed to consider claims from businesses that were not directly involved in fishing. The vocal character of Cordovans and their willingness to pursue information and demand answers seems to have resulted in access to external resources that helped the community to pursue its concerns. As Cordovans were fond of saying, "The squeaky wheel gets the oil."

Local Government

The City Manager and Public Works Director both left their positions, for reasons unrelated to the spill, shortly after March 24, 1989. In a small city government the loss of two management positions places large demands on a relatively small staff. Added to this burden, the oil spill occurred, resulting in some specific demands which further burdened city government. The demands the oil spill placed on Cordova were not unlike those experienced by other communities in Prince William Sound and Kodiak, although how the characteristics of the event intersect with the conditions in Cordova do give the process of local government operation during the spill a unique character. Consequently, in this brief discussion of non-fiscal local government impacts, the focus is on some of the significant impacts to local government without necessarily fully developing the process of impact occurrence.

It is important to remember that the scope and circumstances of the oil spill and cleanup place this event outside the normal range of usual circumstances people experience in their lives and certainly outside of the response capabilities of a small municipality. In these extraordinary circumstances the spill had certain impacts on local government which, as noted above, are generally shared with other communities in this study. These impacts are: (1) usual government business was displaced by oil spill response work; workload increased; (2) responsibilities and duties of staff were changed, usually with results for increased workload; (3) labor was either in short supply or the quality of labor presented problems as some staff left for cleanup jobs; and, (4) there was the experience of increased stress, work-overload, and burnout because of increased responsibilities, long work hours and no time for vacations. Each of these issues is briefly developed below.

The Displacement of City Business with Oil Spill Response Activity

The scope and duration of the *Exxon Valdez* event resulted in the focus of city staff and elected officials work and attention being directed in one area: deal with state and federal agencies, VECO, Exxon, the media, concerned citizens, researchers, and others who for one reason or another required information about the spill or some other official act in relationship to responding to the spill. Furthermore, once the cleanup became institutionalized by Exxon and VECO, the city had to respond to the administrative and accounting demands of these organizations even to get reimbursed for expenses incurred as part of the cleanup. In a relatively modest budget, the cash flow issues inherent in providing services and procuring needed supplies and equipment and then waiting for reimbursement from Exxon or VECO resulted in the disruption of usual city business. Furthermore, the need to establish different administrative and accounting procedures resulted in momentum being lost regarding preparation of budgets and other the administrative activity required to maintain efficient and effective operations. The oil spill grabbed the attention of the city and thereby dominated the issues and daily concerns in local government operations. Usual business was set aside to attend to more immediate demands that invaded the most fundamental level of city operations. As one informant observed, ". . . Things just got slowed down. People were running around asking people to do this and there were thousands of phone calls. Can I use your computer. Can I copy this? Do you have anything on this? Can I talk to you about this issue?" The information in the interviews with city officials and staff illustrate that there were really few choices that people felt they could make about their work. Instead, they simply had to attended to the immediate demands from their coworkers, citizens, and others who were focused on oil spill issues. As another person observed, "It was all there was time to do . . ."

Elected officials, including the mayor, the vice mayor, and members of the City Council were engaged in numerous meeting about the spill with each other, with citizens, or with representatives from groups or agencies from outside the community. In fact, the demands for information became an important component of how the spill occupied the focus of city activity, and especially the activities of several elected officials. Initially local citizens looked to local government as a source of information about what happened at Bligh Reef and what it meant for Cordova. Local citizens called government offices to seek out what was known and information about what threats the spill posed to the interests of Cordova. Within a week or so of the spill, the national and international news media discovered Cordova and shortly thereafter there were requests from a multitude of media sources for information about the spill and its effects on the community. Later, various state agencies made either fact finding visits or telephone requests to Cordova requesting briefings or other official statements about the effects of the spill. And, there were various private groups, e.g., National Wildlife Federation, and other fact finding groups, e.g. researchers, who also made demands on local government staff for time and information regarding the spill and its effects.

There are also several other areas in which city business was displaced:(1) planning and development tasks usually performed by management staff were interrupted or postponed; (2) usual contracting activities were superseded by oil spill work because contractors were either involved in spill response work or contract labor was unavailable because of competition with cleanup wages; and (3) maintenance on equipment was put in abeyance because of the demands of responding to the spill.

Increased Workload and Changed Duties and Responsibilities

Elected officials and city staff expanded the range of their duties and responsibilities in response to the demands of the spill and cleanup. The mayor became a major spokesperson for the city and this usually part-time unpaid job swelled into one that was full-time. Some of the same types of pressures were placed on other elected officials in city government. For these individuals the consequences for their personal lives were often negative. Business involvement was diminished and time with families and friends was also affected. In their work as city officials, workload increased so greatly that their personal lives were disrupted or strained. Similarly, among paid city staff, the vacancies in City manager and public works director positions resulted in one city staff person doing his own job as well as parts the city manager's job because the demands of both oil spill cleanup pressures. Not only did duties and responsibilities change, but usually the workload of many staff increased substantially. Every department head interviewed in Cordova reported that they worked increased hours and did a wider variety of work than before the oil spill. Gradually, there became less and less time for usual business as the demands and attentions focused on the spill and cleanup process.

Labor Consequences

Although there was not a massive exodus of city staff for high paying cleanup positions, there was turnover in some departments and there was a labor shortage in some temporary positions. The pattern of turnover in most departments was the loss of less skilled labor. Many department heads reported on the loyalty of most employees, yet at the same time many staff experienced pressures to join the cleanup effort and make the short-term, but high paying wages. Nonetheless, turnover often resulted in severe strains because of the time and effort of having to train each replacement person and also because many replacements were not of the same quality as previous employees. One staff person observed that retention of these lesser qualified persons might have longer term consequences, "If you begin to water-down the qualifications of the people that you're hiring, going lower and lower in the labor pool, you're going to have a long term impact that may or may not be measurable for years to come." Also, there is often seasonal employment that relies upon a pool of available labor to complete the work, but the competition with the cleanup resulted in this pool being unavailable. Ultimately, work in certain city departments

either was not completed or else the existing staff increased their workload to accommodate the tasks.

Overload, Stress and Burnout

Almost without exception, every interview with city staff mentions personal stress, overload, and burnout as a consequence of the event. In this context, we are not reporting on objective measures of stress, but rather on the subjective experiences of individuals. Objectively, certain key elected officials and city staff were under increased pressures because of the new and additional responsibilities plus long work hours that kept them away from their usual support networks. Also, most department heads worked long hours for extended periods of time, without vacations and other forms of support and activity that could buffer the effects of job stress. Objectively, these would seem to be conditions that could result in objective findings of "stress" in individuals. Staff in departments in which it would not be expected that the oil spill or cleanup would make excessive demands on either workload or duties and responsibilities did report stress and burnout. The unexpected reporting of stress among city staff where such findings would not be predicted is accounted for when the general turmoil of city government operations is considered: nothing operated as usual. There was extensive disruption to administrative and management routines and procedures and there were significant examples of usual roles and statuses being modified to meet the demands of the oil spill. The disruption of the usual system of doing business for an extended period of time appears to have increased the general level of distress and experience of personal "stress" and burnout.

Changes in Community

Once the volunteer cleanup gave way to a cleanup for pay, VECO employment and boat contracts with Exxon became an important source of impacts that affected the "community" of Cordova more immediately than did the oil spill itself. In this report two specific types of impacts to "community" are of concern: (1) quality of life impacts and (2) community integration impacts. Quality of life impacts addresses issues such as in and out migration, housing availability, cost of living, and income changes. Community integration impacts address changes in social relationships within the community and the effects on the availability of social support resources. Impact issues in each of these two categories are briefly developed below.

Quality of Life Changes

At different points in time Cordova both gained and lost in population as a result of the cleanup. However, the story is not so much in the absolute numbers of losses and gains as

it is in the actual types of individuals coming into and leaving Cordova. Initially, there was an in-migration composed of individuals seeking cleanup employment, VECO staff working on the spill, various state and federal agency personnel, and miscellaneous voyeurs of the event. Cordova did not experience the same degree of population influx as did Valdez, but a relatively small increase was highly significant for Cordovans. This increase in population, while not extensive, was experienced as a negative change in the usual pattern of Cordova life. As one informant observed, "The ones that came to town were not the same caliber of people we usually have here . . . We always have people hanging around town, but they are our fishermen and last summer they were out working and instead we had these other people who were around." Implied in this statement is an intimation about how social interactions changed in Cordova: strangers around town for extended periods of time altered how people interacted with one another and this sometimes resulted in interpersonal discomfort. This is not to imply that Cordovans are inhospitable. They are. However, the issue is that "transients" who remain for long periods of time were perceived to alter the social environment of the town negatively. Some of these "transients" worked on the spill, made their money, and then moved away from Cordova. Others did not. There were also longer term Cordova residents who moved away after making oil spill income. Another informant observed, "I kept track for awhile of all the families that moved out, bought houses elsewhere and maybe now only have a warehouse here for their fishing equipment. They are here, but they aren't, their kids are gone from school, they don't shop here anymore, and that changes things. I stopped keeping track at about 30 families." Other data indicate that in fact there was a decrease in school enrollments after the oil spill and this may be accounted for by the out-migration by those community residents who moved away after earning oil spill money.

A consequence of the in-migration was a decrease in the availability of housing. This was the result of at least two different factors. First, the 600 or so available units to accommodate travelers to Cordova quickly filled up and a shortage of temporary housing ensued. This shortage persisted for long periods of time, resulting in some new bed and breakfast business ventures. Also, there was some temporary housing established in the Bidariki Center, but for most of the summer temporary housing remained a problem. Second, once the summer cleanup was over and many of the outsiders left town, there were shortages of rental units because the people who made money in the spill paid rent on empty apartments and houses in anticipation of the 1990 cleanup. Furthermore, others who moved elsewhere put local builders to work building warehouses to store fishing gear, thus tying up local construction resources.

The quality of life in Cordova was also affected by increases in the cost of living. Gas, food, rent and other basic living expenses increased in price over the summer cleanup period and beyond. The cost of getting into and out of Cordova also spiraled because of increased competition for the limited number of aircraft available. For those who were working on the cleanup, these increased costs were a temporary nuisance, but for those who were the

longer term residents without cleanup jobs, these increased costs were a hardship in a town that is already known for its relatively high cost of living.

Real and potential income shifts are also an important quality of life change in Cordova. Those who leased boats to Exxon or who worked for VECO sometimes made relatively large sums of money that were used for both personal and business purposes. This usually resulted in the perception of an increased quality of life in Cordova. For others, there was also a perceived threat from the consequences of the spill that raised questions about the long term viability of a fishing way of life in Cordova. If fishing was damaged and if this damage was long term, then clearly there was no need to buy a new house or plan to raise a family in the community. The only thing to do was to make short term money and leave. Early in the spill these fears were palpable. Later these concerns were still expressed in statements about the uncertainty of long term effects and expectations about the effects of the spill lasting well into the future. Clearly, for some Cordovans the possibility of continuing a fishing way of life, of the community event continuing to exist was in question. As one informant observed, "If the fishing goes this town will just slide down into the harbor and the trees will take over again."

Effects on Community Integration

The literature about disasters reports that usually there is a "therapeutic community" that develops in response to catastrophic circumstances. The essence of the idea of a therapeutic community is that people help one another to recover the damage they have experienced. In Cordova there were the beginnings of this type of response. As one informant observed, "The people were amazing . . . they were great . . . The people in this town got right together. I mean every organization volunteered people, I mean if you needed 14 volunteers they were there . . . and when the town got together to have a town meeting the TOWN would be there. " Interviews with Cordovans also indicate that there was a substantial amount of volunteerism, cooperation and mutual concern that helped the community in the early days. For example, there was a Sound Love program in Cordova in which children and others that cut out paper hearts to paste on walls and doors and to give to friends and neighbors. The intent of these hearts was to remind Cordovans of the need to pull together to overcome the effects of the spill and save the Sound. Also, there were plans to enclose letters in the food and other packages sent out to oil spill workers as a way to thank them for the work they were doing. A children's task force was also organized to address the special needs of children and to provide support for parents who worked long hours on the spill. There efforts were the threads of cooperativeness that tied Cordova together throughout the spill effort, but alongside this there was also divisiveness and conflict that segmented Cordova.

A dominant theme in interviews about the effects of the oil spill on Cordova mentions the conflicts that developed from participation in the cleanup effort organized by Exxon and

executed by VECO. One source of conflict was value based and the other economically based. In regards to the value conflicts, there were individuals who took the stance that working for Exxon or VECO was improper, if not immoral. Part of this opposition was based in historical antagonism against the oil companies, but much of it derives from feelings that the cleanup was busy work or that it was not meaningful. Some examples from informants give the flavor of these perceptions: "There was a lot of frustration because most of the work that was done was quite ineffective. For show. Most of it was standing around and uh, 'Go anchor there and stay out of sight till we call ya. You'll get paid anyway.'" And, "Well, I got my check today. There's three kinds of money-getting handed out here. There's clean up money, there's contract money for boats, and then there's blood money. Of all things I got my blood money . . ." Other Cordovans resented any cooperation or participation with the VECO cleanup because they believed this effort to be corrupt and anyone who was involved had "sold out to Exxon." Others took a different moral view that "soaking Exxon" was as wrong as taking cleanup money for not doing cleanup work. These different moral positions resulted in divisiveness and conflicts within Cordova. A consequence of these conflicts and divisiveness was an erosion of a developing "therapeutic" community that could provide support to its members.

The economic aspect of conflicts is a pervasive theme about the effects of the spill and cleanup on the community. For example, one Cordovan observed "A lot of greed took over and people's outlooks and perceptions of friends and material things changed. Big money made the change." Part of the problem was the perception that there was differential access to the opportunities to make big money based on "who you were or who you knew." Differential access to these monies in a time when there were and are fundamental questions about the long term viability of fishing resulted in intense concern about and attention to who was getting the lucrative cleanup jobs and boat contracts. As one informant observed, "It . . . quickly became very competitive as to who was going to get to go out and start earning money . . . (there was) fear and anger about the possible loss of their livelihood for a year at least and possibly for as much as ten years. Everybody's imagination went wild and the worst case scenario came to the surface."

The results of these animosities varied from the severing of friendships and the alterations of social networks to a deep sense of conflict and divisiveness within the community. These kinds of feelings and the segmentation of the community have important implications for support networks within Cordova.

Mental Health

The occurrence of different types of psychosocial problems such as crime, substance abuse, and domestic violence is deferred to a future time in favor of a brief presentation of preliminary findings about symptoms of psychological impacts in Cordova.

Sub-clinical problems with stress, anger, frustration, anxiety, fear, and other such emotions were and are part of the experience of Cordovans with the oil spill. Interviews with varieties of informants reveal comments on the levels of stress and upset that the community experienced. Indeed, interviews conducted in the summer of 1990 in Cordova suggest that some individuals are only now beginning to experience the psychological consequences of the spill. As one informant observed, "Last year I was just too wrapped up in what was going on, too busy to sit down and think. That went on for a long time and its only now that it is hitting me. I sit on my boat a lot now and just try to keep out of the way. Its the stress . . ." Another person observed, 'I just don't have the reserves to deal with the usual things in my life. now. I can't give my kids the attention they need, I can't give my husband the attention he needs. He just sat me down the other day and told me that this is really upsetting everyone, how I am reacting. The other day for the first time in my life I slapped someone. It was my girlfriend. I have never done that before. It was the first time in my life. I guess the emotions are just too close to the surface right now.' Similarly, another person commented that many of his friends experience anger and frustration over the lack of control they had over their lives the last year because of the disruption of fishing and the way the cleanup was managed. These comments and observations do not suggest psychopathology. However, they do suggest that individuals continue to experience personal distress that disrupts their lives and affects their abilities to function as workers, parents and friends. These are issues that have consequences for the ability of a community to repair itself and move ahead with the reintegration of its citizens into a supportive community.

Other possible indicators of psychological impacts related to the oil spill and cleanup are (1) mental health clinic statistics, (2) findings from our household survey, and (3) findings from a study conducted by the Valdez Counseling Center that compared Cordova and Valdez for symptoms of depression and post traumatic stress disorder (PTSD). Before briefly reviewing these issues, a word of methodological caution is in order. First, clinic statistics can be misleading regarding the occurrence of psychological symptoms because, among other reasons, not everyone who experiences distress seeks counseling. Furthermore, in the case of Cordova, there are a limited number of mental health counselors and they already had substantial case loads before the spill thus it was unlikely that large numbers of new cases could be accommodated. Consequently, clinic statistics can only be a rough indicator of psychological impacts. Second, the Valdez Counseling Center is to be commend for its study, but it should be remembered that the use of a mail (as done by the Valdez Counseling Center) often results in the self-selection of responses and this may skew findings. Third, the findings from the Oiled Mayor's household survey are still preliminary and require much further analysis to be used as a valid indicator of psychological impacts in the community. With these words of caution in mind, the discussion below briefly develops the issues from these various data sources.

The Valdez Counseling Center study sampled residents in Cordova and Valdez for the symptomology related to depression and PTSD. This longitudinal study sampled 43 Cordovans (20 males and 23 females) and 50 Valdez residents (16 males and 34 females)

at three different points in time. The table below displays percentages for scores in each of the four categories at three different sampling points.

	Time 1		Time 2		Time 3	
PTSD	Cord.	Vald.	Cord.	Vald.	Cord.	Vald.
None	51.16	50.0	46.51	58.0	55.81	70.0
Mild	27.91	32.0	30.23	26.0	27.91	20.0
Moderate	11.63	10.0	20.93	12.0	11.63	6.0
Severe	9.30	8.0	2.33	4.0	4.65	4.0

What is indicated in this table is that ptsd symptomology steadily decreased in Valdez but not in Cordova. More ptsd symptomology occurs in Cordova than in Valdez, and over-all the symptomology is more severe in Cordova.

The Valdez Counseling Center also used the CESD scale for measuring depression. Mean scores for depression symptomology at two different points in time are 6.48 and 10.47 for Valdez and 9.023 and 8.88 for Cordova. These numbers are roughly comparable to the findings using the same instrument in the Oiled Mayors household survey. As we reported earlier, Cordova and Kodiak were among the highest scoring communities for depressive symptomology in our preliminary findings. What these statistics about depressive symptomology suggest is that there are some psychological conditions in Cordova that require attention. Also, the relationship of these symptoms of depression and PTSD to the oil spill and cleanup needs careful consideration.

Our preliminary examination of statistics from the Cordova Mental Health Center indicates no substantial increase in the number of client visits during the actual cleanup period and in the fall months immediately following the end of the cleanup. However, interviews with clinic staff do suggest that existing clients sometimes consumed more staff time than usual and that clinic cases were more severe during this period. And, whereas there would usually be only 1 or so referrals to inpatient facilities outside of Cordova, during the period of the spill and cleanup there were about six such referrals and at least three of these were oil spill related. Given the findings from the surveys conducted in Cordova and our preliminary examination of client visits in Cordova, it would appear that there are unmet mental health needs in the community. That is, survey findings suggest that there are more individuals with potential symptoms of psychological distress in the community than are receiving treatment. Again, these are preliminary findings that require more intensive consideration in future analyses.

City of Whittier

Whittier is unique for many reasons which make it problematic to classify with other communities in the study. Whittier is located on the Kenai Peninsula at the head of Passage Canal on Prince William Sound, 75 miles southeast of Anchorage. Paradoxically, although the community is close to Anchorage, the largest city in Alaska, in many respects it remains isolated. This is because there is no road access to Whittier. Besides boat, the only other year-round access Whittier is via the Alaska Railroad from Portage, a twenty minute ride about two thirds of which is in a tunnel that runs beneath the mountains and Glaciers that deny Whittier road connection. There is a small airstrip in town but it is not maintained throughout the winter.

Whittier was created as a port and petroleum delivery center in 1948 by the U.S. government to create an efficient transportation link with military bases farther north. Since the military and federal government relinquished direct control of Whittier, it has become a fishing and recreational port. The population of Whittier is about 206, composed mainly of non-Natives. Residents live in either of two buildings that were constructed at the time Whittier was created. In addition to the relatively small number of residents, a significant number of transients seasonally inflate the population. The harbormaster estimated that 300,000 people pass through Whittier every summer. Whittier's harbor is 685 feet deep and can accommodate large ships such as cruise liners and barges. Whittier receives some revenue from this source. Very little of Whittier's revenue comes from property owners since a large percentage of the city is owned by the state or federal government.

Whittier has a stable fleet nearly as large as its population, but out of 200 permanent boats in the harbor, only six have Whittier addresses. These boats belong to recreational owners, charter boat operators, and fishermen. While some of them own a condominium or rent an apartment during the summer months in Whittier, this figure indicates that a substantial portion of the private sector revenue in Whittier comes from people who do not live in town on a year round basis. This had important implications for the distribution of impacts resulting from the oil spill.

Employment in Whittier comes from the city government, the Alaska Railroad, commercial fishing, and a few private businesses. There is also a substantial amount of seasonal employment in Whittier. The two fish processing plants hire between 50 and 80 people in the summer and there are a number of commercial fishing-related jobs.

Response Effort

Exposure to the Oil Spill

Passage Canal, the head of which is where Whittier is located, was not oiled. According to a number of local residents, this was a miracle because the typical spring winds head straight into town. However, areas in the sound outside of Passage Canal were fishing areas for many of Whittier's boat owners. Oil threatened to contaminate, or did contaminate, many of those areas.

Local Response Effort

In Whittier, the local response effort consisted primarily of members of two groups. Significantly, both of these groups emerged after the oil spill. The first to organize was the Emergency Operations Committee (EOC). (This group officially joined the ranks of VECO on April 5th but its membership remained intact.) The EOC was made up of six community volunteers. Most had worked, or were working, in community service positions. The second group to organize was the Deckhands' Association (DA). Like the EOC, they were formed in direct response to the oil spill. However, unlike the EOC, their organization had an explicit political agenda. The group was composed, at least at its inception, solely of displaced workers from the fishing boats and the two seafood processors in town. Together with the city government, these disparate groups worked in pursuit of mutual interests.

The EOC set up phones and a fax machine in the fire station/public safety department building within the first week of the spill. The committee members were natural candidates for participation in the EOC since many of them held public service posts and were active and knowledgeable about the community. On April 5, 12 days after the spill, a VECO "area manager" came to Whittier to coordinate the hire of employees and boats for the cleanup. She immediately hired the six members of the EOC each of whom worked six hours per day, seven days per week. Consequently, the EOC was disbanded and former members became VECO "resource data collectors." Their job was to gather all the necessary employment information from the many hopeful VECO applicants.

The Deckhands' Association was organized on a small scale March 29, 1989 by displaced workers from fishing boats and the seafood processing industry. While most of the boat *owners* were able to lease their vessels to Exxon, and thereby recover some of their losses from not fishing, the deckhands and processing workers were unemployed and apparently without recourse, until they organized with specific goals and an agenda. Their most immediate concern was to seek recognition by the Exxon Claims representative for loss of employment. Members of the group were successful in obtaining compensation for lost wages as long as they could get verification from their skipper or foreman that they were working at the time of the spill, and were terminated because of it.

In addition, the Deckhands were concerned about protecting the nearby waters. They believed that as deckhands they possessed a repository of specialized knowledge of the coastline, wildlife habitats, and spawning streams in the area and could provide valuable assistance in the cleanup. So members of the Deckhands' Association became involved in requests made by the Whittier city council for protective booming. In December 1989, on behalf of "local fishermen, charter operators, and recreational boaters of the Whittier areas," the Deckhands Association produced a boom plan for Passage Canal, Cochrane Bay, Culross Pass, Port Nellie Juan, Ester Passage, and Port Wells. The boom plan details the locations of spawning streams and the amount of boom that would be necessary to adequately protect them. The Deckhands requested that the necessary amount of boom be stored in Whittier so that it is on hand in the event of another emergency. All residents of Whittier are united in the hope that information of the type included in the Deckhands' Boom Plan will encourage Alyeska and the state to recognize Whittier as a vital resource in any future emergency.

The Deckhands' Association remained intact into the winter because,

after the September demobilization of VECO/Exxon personnel there was no location in Whittier to get information about spill-related activities and no forum in which to voice our concerns. We found that many people in the community still worried about how prepared we were in our area to respond to a future spill that may again threaten our livelihoods and the Prince William Sound environment.

Whittier Volunteer Oil Spill Response Group - Proposal letter for funding from the Alaska Conservation Foundation.

The group worked throughout the winter with Alyeska on developing a community response center in Whittier. The Deckhands also made a strong showing at the public hearing on Alyeska's oil spill contingency plan. According to the VECO representative who later became Whittier's Department of Environmental Conservation (DEC) Winter Program Coordinator, 29 residents turned out for those hearings, more than in any other Prince William Sound community.

The efforts of the Deckhands' Association to make Whittier a nucleus for any future cleanup operations dovetailed with the goals of the mayor, the city council, and the majority of the community. Whittier was not recognized by VECO, Exxon, the state or federal government, or other Prince William Sound communities as a potential center of operations or even as a community that needed to be informed and updated on the spill response. Such recognition is seen by the community as critical to Whittier's economic development. As the DEC Winter Program Coordinator said, "... oil spill response as an industry is a growth

industry in Alaska and . . . there are opportunities for economic development in oil spill prevention and response plans that Whittier, because of its location and . . . its accessibility [to] Anchorage, is in a position to benefit from."

Exposure to VECO/Exxon

The person who dealt directly with Exxon on behalf of the community was the city manager of Whittier. He was not at that position when fieldwork was conducted, in March of 1990, so information in this regard is limited. However, during the first week after the spill when the city manager was out of town, the mayor called Exxon to inquire about obtaining boom to protect their waters and "...they said there wasn't any oil in our immediate area so they didn't figure this was a priority - well to us it was a priority because it was hitting our fishing spots . . ." That was viewed by the city as an uncooperative and antagonistic response by Exxon.

One interaction that was potentially fruitful between Exxon and the city of Whittier was Exxon's interest in leasing the local incinerator to burn oily debris. Exxon did pay to use the incinerator a few times but would not sign a lease until the incinerator was approved by DEC as environmentally sound. When DEC personnel visited the site and found contaminated soil around the incinerator, Exxon halted use of it. The City has requested DEC specify what will be needed to make the incinerator operable. The City then plans to raise the necessary funds to clean it up and perhaps lease it as a source of city revenue.

During the cleanup period VECO had an important presence in Whittier, despite running very few cleanup operations directly from there. One reason for this was that all six members of the EOC were hired as VECO employees. Hence, VECO, as an outside institution, was immediately integrated in to the folds of the community. Another reason was that the VECO "area manager" was very interested in harnessing the expertise of the local people. She believed that a successful cleanup operation was impossible without the contribution of their knowledge of the land and community.

The Whittier VECO office served as a resource for the VECO's Valdez operations center. People and boats were hired from Whittier and then sent on various task forces. The VECO representative reported that she would receive an order from Valdez that 60 people would be needed in the next two days. She would put up an announcement for these openings and "everybody would quit their jobs and apply." This was a problem for the few private businesses in Whittier and the city government in particular. (The representative suggested that employers pay their employees \$16.69 per hour and later file a claim to Exxon for losses incurred as a result. Those problems will be discussed in the section under local government.)

Because so many of the people in Whittier affected by the spill were not year round residents, such as charter boat owners, fishermen, deckhands, and processing workers, there was a lot of discussion among members of the community, VECO, and Exxon about what the residency requirements would be for hiring. A classification called "transient residents" was set up to accommodate this large segment of Whittier's economic base and allow for fair hiring.

Local Government

Lack of Communication/Information

One of the main constraints on Whittier's ability to function smoothly was the lack of information coming into the community, especially in the first few days after the spill. Daily newspapers are not available in the community. The only telecommunications service received by Whittier is the Rural Alaska Television Network (RATNET) station. However, the RATNET reception was sporadic during the days immediately following the oil spill so the main sources of information for residents came from Seattle newspapers arriving in Whittier on boats responding to the spill. In addition to the lack of information from the news media, the mayor was not notified by any authority, formally or informally, about the spill. The onus was on the mayor to find out what was happening with spill response and this initial insensitivity to the needs of the community was a source of resentment. However, the mayor was a member of the soon-formed Oiled Mayor's committee and, as such, was kept informed about the concerns and problems of other mayors from affected communities. The mayor also reported no problems in her contacts with the state or federal agencies and, in fact, met with Admiral Yost of the Coast Guard several times.

Contributing to the initial constraints on effective local government functioning was the absence of the city manager in the first week of the spill. This put pressure on the mayor to make executive decisions that normally would have been made by the city manager. Reportedly, caution in decision-making was seen at times as ineffectiveness by the community. For example, local residents wanted the mayor to grant them permission to cut timber for log booms. After calling DEC to make inquiries about its legality, ultimately the mayor refused to allow the timber in question to be cut because it stood in the Chugach National Forest. As a result, some people accused her of not doing enough.

Excessive Demands on Local Government

Everyone in Whittier's city government worked long hours in the months following the oil spill. Because the city manager was necessarily devoting most of his time to oil spill-related work, the normal city business went undone. In order to address this, the city council waived the ordinance that prohibited the mayor from receiving compensation, and Exxon

agreed to pay her as an administrative assistant to the city manager. She essentially ran the city in place of the city manager for the first two or three months after the spill. There were quite a few additional city jobs created in response to the oil spill. Evidence of these new positions was found in the added work done by Whittier's payroll person. There were twice as many paychecks during those months. Almost a year after the spill the burden of these added employees was felt when the payroll person made out the annual W2 forms. Whereas there were typically 20 city employees and 20 W2 forms to send, 70 W2s were sent for 1989. The 350% increase in the number of W2s occupied a significant amount of the payroll person's time.

The demands on the city government were also felt outside the payroll office. In a report to the mayor and city council of Whittier, the police chief summarized the activity of the Department of Public Safety for calendar year 1989 and 1988. Jumps in service levels, in nearly every category, were attributed to oil spill-related circumstances. The summary included all police, fire, and emergency medical service calls and is reproduced below:

<u>Classification of Event</u>	<u>1988</u>	<u>1989</u>	<u>Increase or <Decrease></u>
Total calls for service (a)	337	1,357	302.67%
Felony arrests	4	3	<25.00%>
Misdemeanor arrests	35	87	148.57%
Felony cases reported	8	5	<37.50%>
Misdemeanor cases reported	71	163	129.57%
Detoxification holds	(b)	54	
Incidents (noncriminal)	157	215	36.94%
Medical assistance	52	101	94.23%
Fire Calls	10	8	<20.00%>
Alcohol-related calls	10	70	268.42%
Domestic violence calls	3	12	300.00%
Disturbances	14	76	442.85%
Motor vehicle accidents	8	26	225.00%
Traffic citations	(b)	99	
Outside agency assist	11	22	100.00%

Notes: (a) Total calls for service will not equal the total of all other reported events, as some calls were unclassified.
 (b) Statistics not available for calendar year 1988.

All of this activity added up to a large number of overtime hours. At a base pay of \$28,000, one of the patrol officers earned \$40,000 in 1989 because of overtime hours. That increase resulted from 594 hours of overtime most of which was worked between May and

September of 1989. The amount of overtime worked was corroborated by reports from one of Whittier's patrol officers who reported working six ten-hour shifts per week. Between 10:00 p.m. and 2:00 a.m. two to three officers would be on duty. Between May and September the department received eight to fifteen calls on a typical day shift and one to two calls during the evening hours. In contrast, the department typically received an average of five calls per *week* in the winter.

Another city department that was affected by increased activity from the oil spill was the Whittier Medical Clinic. The Whittier Medical Clinic is staffed by a physician's assistant (PA) and a receptionist who is also the captain of the volunteer Emergency Medical Service (EMS). Although the increased activity was not necessarily apparent from the clinic records, the PA reported an unprecedented workload and job-related stress. One of the main reasons for the increased load was that the receptionist was frequently called out on emergencies in her capacity as an Emergency Medical Technician (EMT) II. Consequently, the PA was left to run the clinic on her own. In addition, she was on call 24 hours per day. Although this is not unusual, the number of call-outs she was receiving during the night was. Because of the continuous demands on her time, the PA was unable to maintain record keeping, which is why an analysis of the clinic records does not reveal the high level of activity. At least half the overtime worked was not tracked because the clinic was too busy.

During the active phase of the cleanup, the demand for the PA's services came primarily in the form of injuries and accidents. Often these problems were the result of people's "bizarre behavior" caused by alcohol or drugs. Although some of these injuries affected locals, most of the patients were not from Whittier. After the summer, the bulk of cases seen at the medical clinic were mental health-related. The PA was unable to provide the mental health services demanded by the community because she had neither the time nor the qualifications. Although there are qualified professionals that come into Whittier twice a month to counsel clients, there is frequent turnover in these positions. The PA reported that the lack of adequate mental health care has been a problem in Whittier for a long time but the situation has become critical because of the effects of the oil spill. The mayor expressed the same concerns.

The EMS did not lose any volunteers but a few firemen were lost to VECO. Immediate replacement of the firefighters was impossible since there is no training during the summer. During the winter of 1989 interest in EMT certification was high and the EMS captain trained nine EMTs, but the captain expressed concern that those people recently trained will leave to work for Exxon in the summer. The city invests a lot of money in training people, so it would be a loss if the new EMTs did not provide services for the community.

The harbor was another department that suffered excessive demands following the oil spill. Typically, the city hires temporary help in the summer because the harbor gets so busy, but because of the high wages paid by VECO on the cleanup, the harbor was unable to find employees. This alone added to the work load at the harbor. In addition to this, the

department lost two trained permanent employees to VECO on July 4. Exxon offered to pay for two replacements but the harbormaster refused to train and supervise employees who would be earning a salary greater than his. Consequently, those who remained at the harbor worked long hours. They were scheduled six days per week, ten hours per day. The harbormaster worked for five straight weeks after the spill without a day off. Exxon reimbursed the city for his overtime.

Aside from staff problems, the harbor was more crowded than usual. This was not due to and increase in the number of vessels. Rather, it was because of the larger size of the boats needing to enter the harbor which was only designed for small fishing boats. There were three times as many 38' to 58' boats in the harbor as usual because most of the smaller boats were leased to Exxon. Consequently, a line built up outside the breakwater. These boats would anchor while waiting for a slip. A few times the harbor employees had problems with the anchors slipping and unmanned boats drifting off. Finally, there were some problems with people washing their oily boats in the harbor area, which was against city ordinances.

Loss of Staff/Council Members

In addition to the two harbor employees mentioned, the magistrate was the only other public employee to resign to work for VECO on the cleanup. Although three positions seems like a small number, the losses were significant to the city administration. They were so significant that the city passed an ordinance at the time which said anyone quitting his job at the city to work for Exxon, VECO, or any other contractor was prohibited from ever working for the city again. This ordinance reflected the bitterness felt toward those people who left their \$12 an hour jobs with the city to take \$16.69 an hour jobs with the cleanup.

Loss of Grants and Interruption of Projects/Regular Functions

There was quite a bit of work that was deferred by municipal departments as a result of the oil spill and cleanup activities. In the harbor area, building improvements, cleaning up of the grounds, and other routine maintenance was not completed as planned. At the camper park, the brush was never cut back. Routine road maintenance was not done. The roof of the utility shop went unrepaired. The mayor expressed concern the following spring that the weight of the winter's snow might have caused the weak roof to cave in. The visitor's center was supposed to have been painted. According to the mayor, "VECO decided they would do that for us. Well they never finished it, so it sits there half painted and the shop crew couldn't get to it."

In addition to work that was deferred, there were a number of grants that the city was unable to apply for because personnel were tied up with oil spill-related work. These were

grants that would have helped fund improvements to the camper park, which is important for city revenue, and the medical clinic.

Interactions with Extra-Community Institutions (Political and Corporate)

Although the members of the EOC, who later became VECO resource data collectors, were not affiliated with any formal institution following the demobilization of VECO, many of the former members remained active in the DEC Winter Cleanup Program. This program was coordinated by the same person who had been VECO's area manager for Whittier. Her affiliation with VECO ended July 15 and she left the community. When she returned to Whittier in September she was invited by the city to be the DEC local response coordinator.

Interactions with Exxon employees were not cordial in the fire hall/public safety department building. According to one officer, although Exxon had rented some of the space in the building, they proceeded to take over more than their share. Oil spill equipment such as boats and cars belonging to Exxon and VECO were left in front of the ambulance and fire truck. During one call-out these blocked the emergency vehicles. Further, when Exxon (and VECO) demobilized they reportedly left their rented area "in shambles."

Changes in Community

Community Overwhelmed

The general routine of life in Whittier during the summer is busy. But the summer after the oil spill was not like any residents had experienced before, especially those residents who were employed in city service jobs such as harbormaster and patrol officer. Those individuals worked long shifts, were often on call 24 hours a day, and went for weeks without a day off. The presence of those seeking employment on the cleanup was felt acutely by the patrol officers in the building that houses the fire hall, the public safety department, and, for that spring and summer, housed VECO and Exxon. According to one of the patrol officers, 40-50 people a day were coming into the building. It soon became known as the "VECO/Exxon office" - not the public safety office. In the beginning there was a rotation of oil spill workers, but toward the end of the summer there were not as many people going out to work causing the number of people in the building to increase. They waited in the day room and even slept there waiting to be hired. The officers found transients sleeping in the jail room. For a month after the demobilization transients loitered in the building and watched TV.

Changes in Social Relations

Perhaps the most dramatic change in social relations resulting from the oil spill was caused by those individuals who spontaneously left their jobs to earn higher wages working on the cleanup. According to one city official, this "created a lot of ill will" and, as mentioned above, the city passed an ordinance prohibiting those who left city jobs to work for VECO from returning to work. Obviously private employers had no such recourse for venting their anger, but tensions were reportedly high.

On the positive side, a number of informants noted that the community pulled together during the crisis. People were surprised at the solidarity that was achieved. Formerly unrelated, distinct groups suddenly found themselves with mutual interests and worked together to achieve them. Interest in assuring that Whittier is prepared for any sort of emergency in the future is now one of the primary goals of all facets of the community.

Crime

Total calls for law enforcement services were up from 337 in 1988 to 1,357 in 1989, a 302.67% increase, indicating crime was a big problem in Whittier during the summer following the oil spill. Although the statistics from the public safety department are not broken down by month, the reports from patrol officers make it clear that the bulk of the increase in crimes occurred between May and September of 1989. The category of "disturbances" increased most dramatically in 1989. They went from 14 in 1988 to 76 in 1989, an increase of 442.85%. These statistics testify to the chaotic atmosphere of the community that many informants commented upon.

Way of Life

There were a number of commercial fishermen who fished out of Whittier who expressed concern about the future of the Prince William Sound fisheries. One couple reported having bought a commercial fishing license just prior to the oil spill. Like a number of other fishermen, even though they were able to lease their boat to Exxon and made a substantial amount of money, they expressed the strong opinion that they would rather have fished and that a great deal of uncertainty about the future of the fisheries remains.

Whittier is a hub for the transport of hazardous materials and the site for storage of large quantities of fuel. The oil spill and ensuing chaos surrounding the cleanup raised questions in residents' minds about their own response capability to hazardous materials accidents and emergencies. A number of informants believed that the response to the Exxon *Valdez* oil spill was proof that the community is not prepared for an emergency within its own city limits. Lack of road access into the community was cited as contributing to Whittier's lack

of preparedness. Whittier has an Environmental Commission and it is their responsibility to keep informed about the status of environmental issues in the community. For example, the Environmental Commission is in charge of getting the incinerator in safe working condition.

Mental Health

Domestic Violence

Most informants did not discuss domestic violence specifically as a problem. The PA did comment that many instances of domestic violence go unreported. However, referring to the Public Safety activity report above, domestic violence calls went from three calls in 1988 to 12 in 1989, an increase of 300%.

Drug and Alcohol Abuse

The EMS received a lot of 3:00 a.m. and 4:00 a.m. calls that were drug and alcohol related. One EMT believes that the town went from excitement about the financial opportunities created by the oil spill to drug and alcohol abuse. From her vantage point she commented, "we have only begun to see the social impact of the oil spill as people spend their loot from the summer." Others echoed this belief. These observations are corroborated by the statistics from the Public Safety activity report above which shows that alcohol-related calls were up 268.42% from 1988. The PA attributed the rise in part to the large amounts of money earned by residents from working on the cleanup.

Service Provision

As discussed above, the provision of mental health services in Whittier was mentioned as a serious problem. According to the PA the demand for counseling has been unusually high since the oil spill and her ability to provide such services herself almost impossible. There is a professional counselor who comes to Whittier every two weeks, but the frequent turnover in personnel reduces the clients' willingness to continue with therapy.

Stress/Depression

Stress was reportedly high among individuals from all sectors of the community. City employees reported suffering from burn-out from working many consecutive 60+ hour weeks. Fishermen reported feeling depressed and anxious because of the uncertainty of the future of their livelihood. And an EMT reported that morale among fishermen was very

low. The impact of these feelings on residents was evidenced in the increased demand for counseling services.

Medical

Evidence of the increased activity in the community was reflected in the demand for various services during the summer of 1989. The PA has her own small lab and a portable x-ray machine. Demand for use of this equipment was higher than usual, based on reports by two of the medical officers. Things physically couldn't be taken care of at the medical clinic because of the large volume. The increased demand is also revealed in the public safety statistics which report an increase of 94.23% in medical assistance calls over 1988.

Village of Chenega Bay

This small community of approximately eighty-four people is located on Evans Island thirty miles south of Bligh Reef where the *Exxon Valdez* ran aground. This predominately Native community has approximately ten non-Native residents. The community has no airstrip, but it has a small boat dock and is accessible only by float plane and boat. Chenega Bay is an unincorporated community governed by a Village Council. The villagers are dependent on a mixed cash-subsistence economy. The former community of Chenega, located on Chenega Island, was totally destroyed and one third of its inhabitants killed by a tsunami after the 1964 earthquake. The community was abandoned immediately thereafter and was not re-established at its new site until 1984.

Response Effort

Most residents became aware of the spill from television news broadcasts. At first, many were not concerned because the spill seemed far away, but residents who knew the tides realized that their community was in danger. As the spill neared Knight Island, everyone realized the spill would hit their shores before long. Within three or four days after the spill, press from all over the world began landing in helicopters in front of the community center. By March 27th, Evans Island was surrounded by the oil. Chenega Bay was the first community hit by oil from the spill. All of the waters and shores of the village were oiled. It was a devastating blow to a community that relies heavily on subsistence activities for their food and the continuance of their cultural traditions.

About twenty volunteer boats from the Cordova District Fishermen's Union (CDFU) arrived by Tuesday in an effort to protect the waters of the nearby hatchery. It wasn't long before the villagers looked out on the bays surrounding their community and saw over one hundred boats in their waters. The majority of these boats were hired from the fishing community of Cordova to help protect the nearby Sawmill Fish Hatchery. Most villagers resented the non-Native boats being in their "front yard" earning money that they felt should be earned by those most seriously threatened. Their resentment stemmed from the fact that they were deprived of the opportunity to earn money as well as the opportunity to protect their waters. They felt they knew the bays and the tides better than outsiders and could best coordinate the cleanup effort. There was also considerable resentment that the focus of the cleanup activities was the protection of the nearby hatchery. Many people had a sense that if it were not for the presence of the hatchery, there would have been less effort to protect the waters surrounding their community. "They cared more about the fish than they did the humans," was a sentiment often expressed by villagers. However, there were other villagers who expressed appreciation for the early efforts of the Cordova fishermen in saving their waters.

Within this same time frame, representatives from a multitude of state and federal agencies began arriving in the community. In their initial discussions with the Office of Emergency

Preparedness and DEC, the villagers were pleased and optimistic about the assistance they would receive. A few days later they were informed by the state that Chenega Bay was being assigned low priority. Astounded by the decision, the community had representatives from the North Pacific Rim exert considerable political pressure until they were re-assigned a high priority status.

Shortly thereafter, VECO came to Chenega Bay and literally "took over." The villagers became very disturbed by this turn of events. They were "intimidated" by the corporate response to the oil spill. VECO hired many villagers and placed them on standby status. Meanwhile DEC set up headquarters in a village house and brought in boom and other materials. When DEC attempted to hire a few local people to assist them in setting up operations, the people were informed by VECO that, because they were on standby, they could not be employed by DEC. The dispute resulted in a costly delay of the DEC cleanup effort.

Almost twenty days after the tanker accident, VECO still had not delivered all the necessary cleanup equipment to the village. After a lengthy process, some twenty people succeeded in getting hired by VECO. The villagers' attempts to get their boats leased was an even more protracted struggle. It was early May before five boats were hired; but the controversy surrounding the boats did not cease. A number of villagers felt the leaders of the community were more concerned with getting their relative's boats hired than insuring all villagers had a fair chance to lease their boats. Some allege that the villagers had a difficult time getting their boats leased because of the powerful influences of the CDFU. While it is unclear why there was such a delay in hiring the boats, resentment over the process continues to linger. During the winter of 1989, someone is alleged to have taken an axe to the mooring of one of the boats that was leased. There is also continuing resentment over the employment of outsiders in the area. People continue to resent the fact that individuals from the lower forty-eight were given jobs on the cleanup crews when many regional people, both Native and non-Native were not employed.

Within a short time, the community grew from a small village of some 84 inhabitants to over 250 people. The permanent population increased by 24% and, according to one leader, "literally thousands of people passed through the community." Another villager described the experience as, "well, it just was like living in an apartment and then all of a sudden there are ten people that you don't know who come and live with you."

The majority of villagers felt that many of the negative impacts that resulted from the spill were due to the presence of the cleanup crews that frequented the community. Part of the influx was created because the community provided water and fuel at their docks. The villagers felt so uneasy about the enormous number of strangers that they began locking their doors, something that most residents on this small island community had never done before.

The community's interactions with VECO and Exxon were also troublesome to many community members, especially the leaders. The leaders wanted to be a part of the decision making process and often felt excluded by VECO and Exxon. Aside from being concerned about the village proper the leaders were very concerned about their subsistence areas and their sites. The village representatives spent a lot of time working with the state office for historic restoration on this latter concern. On several occasions villagers discovered cleanup crews on historic lands without the proper authorization. For instance, the villagers were extremely upset to learn that cleanup crew workers had vandalized the historic site of old Chenega including spray-painting the site. There were also many reports about cleanup crews looting artifacts from archaeological sites. On Knight Island a cave burial was uncovered and the skeleton of a young man was removed. It was only after an outcry from the villagers that the remains were redeposited to their original site. The village also complained of cleanup workers making fires on their community beaches and trespassing on their land. Some cleanup sites were littered with garbage that had been thrown into the trees or into shrubs. One village official stated she thought Exxon was very "insensitive to our cultural needs." Even though the village insisted on being kept up-to-date on where the cleanup crews were working on their lands they claim they were given little cooperation along these lines.

Local Government

The impact of the spill and the cleanup operations on the local government was overwhelming. One administrator said he felt the community had been taken over by outside forces and that the community lost considerable control over decisions that seriously affected its future. He thought both corporate and agency officials were insensitive to the importance of their way of life and desire to maintain autonomy. He cited one elder, who said that during the early days of the crisis, the cleanup effort was "like having a beast coming down on you." Another villager said of the villages' role in the cleanup effort that "it was like being the bottom rung on a ladder."

The influx of many people into the community strained the local infrastructure. School enrollments went up 55%. Several community projects were adversely affected by the demands of the spill and cleanup effort. For example, the community had to shelve, for at least two years, plans to develop tourism in the area. They were also unable to give any attention to their Alaska Native Claims Settlement Act (ANCSA) land planning obligations and the mariculture program they had started with help from the North Pacific Rim. The test sites they had established outside their island were completely destroyed by the oil from the spill. The village administrator said that the loss of the project was a "major blow to a project into which they were putting all their hopes." The village land dump was also severely impacted by the cleanup effort. According to one village official the excessive tonnage from the cleanup efforts "cut the life [of the landfill] down by several years."

Changes in Community and Way of Life

The village of Chenega Bay was not only the first community to be hit by the oil from the spill, it was also one of the most heavily oiled communities in the state. The impact of the spill on Chenega Bay's subsistence areas and the social impact on their community were severe. "Invasion" and "loss of control" were terms with which the villagers repeatedly discussed the oil spill events. The *Exxon Valdez* oil spill disaster resonates with special meaning and impact for the residents of Chenega Bay because the spill occurred 25 years to the day on which their former community was devastated by a tidal wave from the 1964 earthquake. The present village of Chenega Bay was reestablished 20 years after that disaster with hopes of reconstituting their former village and way of life. Since the oil spill, elders have expressed great doubt they will be able to attain their dream of re-establishing their traditional lifestyle. One resident expressed his disappointment as follows:

We were just getting back to, you know, like after you move in a new house it doesn't feel comfortable for a while, but you know, a couple of years later, you can definitely call it home, so around that time we were really . . . feeling comfortable about the place and then all of a sudden Exxon does this thing in Bligh Reef that turned everything upside down again.

After almost twenty years of living in various communities such as Cordova, Anchorage, Tatitlek and Seattle the villagers were able to come together again on Evans Island. One elder said the spill was, in some ways, a worse disaster than the quake since the quake, while it did claim twenty three lives, did not destroy the environment or wildlife for perhaps generations to come.

While speaking of subsistence, one resident pointed to the bay and said, "look, there is nothing out there any longer. It is dead. Where are the ducks, the birds, the fish, the marine mammals . . . this time of year the bay should be alive with wildlife activity. Now there is nothing and we are still finding dead otters, birds and seals." According to the hunters, seals in the past could have been easily obtained within two miles of the village, but this past winter the villagers had to journey 18 miles just to obtain a couple of seals for NOAA samples. One woman said she felt insulted her fellow subsistence users were reduced to hunting for a federal agency rather than for themselves. She said, "it breaks my heart to see a beautiful seal that I would love to eat be stuffed in a plastic bag and shipped to a lab in Oregon." A youth expressed the fear that "our culture will be lost . . . no one will be doing what we did before." Another villager expressed her concerns about subsistence and culture this way: "When we worry about our subsistence way of life we worry about losing our identity . . . it's [culture] that spirit that makes you who you are, makes you think the way you do and act the way you do and how you perceive the world and relate to the

land. 95% of our cultural tradition now is subsistence . . . it's what we have left of our tradition."

In discussing changes in the community and its way of life other villagers noted that people no longer trusted one another and were suspicious of one another now. People mentioned things like "back-stabbing" and "finger-pointing." A common complaint was that people never help one another since the spill. In the past, they claimed families would do anything for one another and that neighbors "were always there for one another." One woman explained this change in behavior as a result of people being "stressed-out" from the spill and not having any energy to deal with others.

Family

The enormous stress and social upheaval caused by the spill placed considerable strain on families. The cleanup crew workers were often absent from it for long periods of time even though they did not relocate from the village. As a result children often lacked appropriate supervision. Many of the children hung out on the docks and interacted with the thousands of strangers that came into the community. Some residents believe that some of the children were exposed to negative influences from these interactions. The school administrator reported that absenteeism went up because of a lack of parental supervision.

Family life is also said to have suffered from the excessive alcohol and drug abuse practiced by some individuals. The accumulated stress and strains from social disruption is also said to have weakened several relationships.

Mental Health

While there have been reports of an increase in domestic violence and drug and alcohol abuse, it is difficult to measure precisely the degree of these increases. The village of Chenega Bay is presently without a VPSO and is remotely situated in Prince William Sound. Its remoteness is increased by the often inclement weather which prohibits flights in and out of the community. Even the North Pacific Rim, which provides a variety of services to the community, has great difficulty in reaching it on a regular basis. The community seldom receives services from the Cordova Mental Health Clinic for the same reason. According to the village community health representative, there is a fairly pervasive alcohol abuse problem now in the village, but because of "denial" she has had great difficulty establishing an AA group. Moreover, some assert that the village leadership itself has not been supportive enough of attempts to remedy the problem.

Medical

The community health aide (CHA) also claims that the village leadership has not been responsive enough to the needs of the community. This past spring the clinic was closed temporarily because the North Pacific Rim would not allow it to stay open until the village made essential repairs to the facilities. The CHA also complained that, during the cleanup period, she was the only CHA in the North Pacific Rim not to have been hired. The cleanup operation placed an increased demand on her services. Prior to the spill she had an average of 70 patients a quarter. After the spill that number increased to about 273 patients. She attributes this increase to both the increased confidence in her ability and the necessity for her skills since the spill. Many of the patients she treated were cleanup crew workers, but to date she has been unsuccessful in getting reimbursed for services because she has been told by Exxon that she lacks sufficient documentation. She maintains that she was too overwhelmed by her duties to document all the patients she treated and that, furthermore, some of the information Exxon has demanded for reimbursement violates client confidentiality.

Changes in Personal Experience

In talking with many villagers one has an impression of despair, disbelief, and disillusionment. For the elders it seems their dream of restoring their former community is now an impossible task and they worry that the younger generation will be unable to undertake the task because of the uncertainty surrounding the environmental impact. Other adults sense apathy. Among the younger adults, one hears of a concern for the dashing of their elders dreams. The young people feel cheated of an opportunity to live the lifestyle of their parents and their ancestors. One woman said, "just when we stopped grieving for our loss from the quake we have to start grieving again." The former tragedy of the 1964 quake is entangled with the recent tragedy of the spill. One elder said:

All that is left of the former village is a lone school house on the hill above the beach where the community once stood. Since most of those who died were swept out to sea, the beach itself is the only memorial to their lives and the place where Chenegans return to pay their tribute to their deceased relatives. Now that beach, that memorial to our loved ones is blackened with oil. It's as if someone picked a scab off an old wound that will not heal.

Village of Tatitlek

Tatitlek is located approximately twenty-five miles southwest of Valdez and forty miles northwest of Cordova. The community is accessible only by sea and air. The village has an airstrip and a small boat dock but lacks a store. This predominantly Native village of approximately 120 people is an unincorporated community governed by a Village Council. Villagers rely mostly on subsistence and commercial fishing for their livelihood. The village is the oldest and most continuously occupied community in Prince William Sound.

Response Effort

The village of Tatitlek is located about six miles from Bligh Reef where the *Exxon Valdez* went aground. Most of the villagers learned of the accident that morning while listening to public radio or *GOOD MORNING AMERICA*. Within a few short hours after this, the leaking fumes from the ship could be smelled in the village. Since the tanker was so close to their community, many villagers wanted to take immediate protective measures to safeguard their subsistence areas and the waters of Prince William Sound. They felt they had considerable knowledge of the tides in the region and could make a substantial contribution to the clean up effort. However, their early offers to help were rebuffed. The village council president spent the first day calling Exxon, the Coast Guard, and other federal agencies offering to help and seeking help for the village. The Coast Guard told him to "stand by" and that they would contact them. The Coast Guard never did get back to them. On the second day, they were able to speak with the right official at Exxon. The Exxon spokesperson told the village president to send the village boats to Valdez to await assignment. Once the boats arrived in Valdez they had to wait around for their names to be called before they could work. Most boats were eventually assigned work, but some boats had a difficult time getting chosen and some villagers think that they were singled out because they were Native.

On the second day, an oil sheen on the water reached the shores of the village. On the third day, a huge cloud of black smoke appeared in the sky and began to drift toward the village. At first the villagers were afraid that the tanker had caught on fire. When the fumes overtook the village many villagers suffered respiratory difficulties, nausea, and a burning sensation in their eyes. The village became greatly concerned for the pregnant women and the elderly. Later, the villagers learned that Exxon had set fire to some of the oil on the water as an experiment. Villagers were irate that no precautionary measures were taken for their health and safety. Later they were disturbed when Exxon crews sprayed dispersant on the oil without notifying them.

A few days after the spill Exxon placed every available adult on the payroll but for more than a month, the villagers had little work to perform. The villagers were upset that they could not play a more central role in the cleanup effort since the accident happened in the

vicinity of their community. One village official stated that "Exxon more or less told us to 'get lost'". Eventually all the boats succeeded in getting jobs but some boats were restricted to hauling garbage. Other crew workers complained of bad living quarters and the fact that the Native crews were often made to work in cold water up to their waist most of the day. Others reported hearing racist remarks being made over the marine radio about Native women and "lazy" Native workers. Still others complained that Exxon made "a lot of promises they did not keep." For instance, Exxon is said to have promised the village wet suits and other response equipment that they allegedly never received.

The villagers of Tatitlek were further insulted by two other incidents. Instead of sending normal salt to help the villagers preserve fish, Exxon, apparently by mistake, sent a shipment of salt that had been chemically treated to de-ice roads. On another occasion, they sent a barge full of crab and shrimp. A number of villagers who consumed the seafood suffered food poisoning. As it turns out, the barge of crab and shrimp was unfit for human consumption and was intended as food for the rescued otters. The villagers were outraged and some perceived this event as demonstrating that Exxon treated the people little better than animals.

Because the village was located so close to the accident site, and was only a short distance from Valdez, the village was inundated with outsiders coming into the community. Reportedly, the first outsiders to arrive were lawyers who are said to have flown into the community only a couple days after the disaster occurred seeking clients. Most villagers reacted negatively to these aggressive tactics. Other residents complained of the media persons who "invaded" the village constantly and sought villagers' response to the events. Residents complained that they were tired of having strangers come to their door and "invade their privacy." The population of the village increased by about fifty people as relatives of the villagers came to seek employment on the cleanup crews.

Local Government

While the village officials think that the state was more responsive than Exxon and VECO, they insist they had a very difficult time communicating with any outside group. Maintaining consistent communications with any agency was often extremely difficult. The village relied a good deal on telephone calls from Valdez because it was the nearest city and because it became the command center of the spill. However, the telephone service to Valdez was often inadequate and communications with various groups in that city became very problematic.

The spill and the cleanup operations were extremely disruptive to local government. Everyone, including the village administrator and the Council president, worked for VECO and attempted to perform their village roles in their spare time. Local government operations were all but suspended. As a result, a community development grant and one

from the BIA for the coming year were not written and the village's suicide prevention grant was suspended. Village projects throughout the community were suspended. Furthermore, the village was unable to qualify for a large DEC winter cleanup grant because villagers didn't have the required "six-pack" licenses. The council president thought this was extremely unfair since most villagers have, in his estimation, a formidable knowledge of the waterways surrounding the community. He believes the "six-pack" license test is biased toward non-villagers since most villagers have little experience studying for exams with standard test formats. Despite all these difficulties, the council president believes the village government was "fairly successful in maintaining local control" over events.

Finally, the village has experienced considerable difficulty in getting full reimbursement from Exxon for expenses incurred because they were unable to document all of their expenses during the crisis period. Residents consider this unfair because the City lacked the manpower and bookkeeping precedent.

Changes in Community

Many villagers feel Exxon, VECO, the media, and the outside world invaded their village and disrupted their way of life. The spill and the events that followed created an enormous amount of social disruption which persists almost a year and a half later. The employment opportunities provided by the cleanup activities appear to have had both positive and negative impacts. While the jobs provided cash in lieu of traditional subsistence activities and commercial fishing, it also enabled many to indulge in alcohol and drug abuse. On the other hand the spill money also enabled some villagers to pay off bills and make home improvements. Unlike other villages, there were no reported complaints about the inequity of spill money distribution or complaints about factionalism engendered by the spill.

It would appear from outside sources, including trooper oversight reports and the North Pacific Rim VPSO coordinator, that there was some increase in crime, though the actual rate of increase is difficult to assess. One reason it is difficult to accurately discuss the crime rate is that the VPSO did not live in the village until quite recently because of a housing shortage. Alcohol abuse and domestic violence did increase, at least for a while. Moreover, there has been at least one rape reported within the last year and there have been several allegations of child abuse. However, the North Pacific Rim VPSO coordinator believes villagers are beginning to deal with their problems and have made considerable progress in recent weeks, "They've come around one hundred and eighty degrees and I'm very hopeful because they are getting involved, the people are taking the time to get involved . . . and making decisions and it's very healthy."

Way of Life

"I wish the oil spill never, never, never, happened. It disrupted people's lives throughout the entire sound area. It screwed up everybody . . . upset everything . . . upset our way of life."

Tatitlek

resident.

Most residents identify the major impact of the spill as curtailing almost completely their subsistence activities. While villagers rely on subsistence to varying degrees, it plays a significant role in the life of most of them. Concern for their subsistence way of life was a salient concern of all the villagers. Several expressed dismay over the absence of crab and shellfish from their shores. One person said that they could no longer find ducks, shellfish, seals, and octopus. While many of the younger generation were very concerned about the potential toxicity of what foods they could find, it seems most elders continued to eat whatever shellfish they could.

In speaking of the threat to their subsistence way of life, one woman made the following analogy, "The effect on our hunters I would compare to say a farmer who has raised all his own cattle and then is forced to witness some stranger slowly kill off all their livestock." On the curtailment of their subsistence activities this person also commented, "I think it is a lot like what has been happening to us all along. When the Russians came in they said we could no longer have our own language and our old ways. Our language and traditions are going down . . . the oil spill was like the final stab in the back and now you can't even find food."

The village health aide also expressed her concern about the displacement of subsistence foods in the village diet. She believes the increased dependence on "a Western diet" is bad for the health of the community. She contended that a traditional diet is much healthier than "Western" foods that have additives, artificial ingredients, and are high in sugar and salt.

Not only have the villagers been denied the consumption of their traditional foods, but the cost of store-bought food has risen significantly since groceries have to be shipped in at great expense by plane. Exxon did send some barges of food to the community but many were dissatisfied with the food they contained. Other than the contaminated shellfish, Exxon sent what many, including a public health official, consider "junk food." They also sent chicken, which the villagers are not used to eating and generally dislike. Exxon also sent a barge of frozen fish in August. One elderly couple said they were grateful for the food but were somewhat unsettled by being given a type of salmon they do not ordinarily consume at that point in the year. The arrival of the salmon disrupted their sense of the subsistence cycle. For some, these inappropriate foods that Exxon shipped seem to symbolize Exxon's insensitivity to their needs and their lifestyle.

The reduction of hunting and fishing activities has damaged their cash income as well. One woman stated that her husband normally makes a good living selling seal hides. This past year he was only able to kill about a third of the seals he normally would because so many seals had disappeared from the Sound area. People in the village, especially the elderly, also depend on this gentleman to provide seal meat. He has not been able to provide very much meat during this past winter due to the shortage of marine mammals.

Because of the scarcity of safe marine life, villagers express concern about their future economy and the long-term prospects of pursuing a subsistence way of life. This uncertainty was at the heart of much anxiety and depression throughout the village. Even a year after the spill, it was the most frequently discussed topic among the villagers.

Family

All the people interviewed felt the children of the village suffered most from the cleanup activities. As in other communities, both Native and non-Native, children were often under-supervised as both parents worked on the cleanup crews. Additional stress was placed on families where one parent stayed home to take care of the family and had to endure a spouse's long absence from the home. Childcare was often left to grandparents who could not work on the spill. One woman said that, because of the lack of proper supervision, drinking became a problem among some teenagers. At one point the problem became so severe that a state trooper had to be called into the community. Many said they thought a number of relationships suffered severe strain and at least a couple of divorces could be attributed to spill-induced stress. Increased alcohol and drug abuse as well as domestic violence also placed strains on families.

In April, out of concern for the children, the village proposed to Exxon that they be granted forty thousand dollars to provide for hiring people to supervise the children. When after a month there was no response from Exxon, the village administrator complained to the state. Even after various state offices and the North Pacific Rim complained to Exxon about their lack of responsiveness, the village still failed to secure the funds for the program. The village administrator was indignant and said that "it was pretty incredible that Exxon would spend eighty-thousand dollars to save an otter but they weren't willing to spend any money on the children."

Mental Health

There are conflicting reports on the increase of domestic violence in the community. The village health aide claims that there has not been significant increase, and the abuses are restricted to a few families with a prior history of abuse. In contrast, the counselors at the Cordova Mental Health Clinic and other outside observers stated that there had been a

great increase in domestic violence. The Cordova clinic, which serves Tatitlek, has a difficult time serving the community on a regular basis because frequent bad weather that prohibits flying. Moreover, the village of Tatitlek, when offered counseling support, requested visits from the Russian Orthodox priest instead since they felt such assistance was more in keeping with their cultural tradition. It was only since the fall of 1989 that they were able to send a counselor to the community on a regular basis. In fact, one villager complained that from the early days of the spill she sought counseling and told many agency representatives who passed through the community that she needed counseling. She was unable to receive any help until the fall.

The increase in drug and alcohol abuse is also difficult to measure. One village official stated that the increase was much less than they anticipated and was restricted to a few individuals. A health official stated that there was an increase in marijuana and cocaine abuse in the past year, but relatively little increase in alcohol abuse. The official recognized that alcohol abuse had long been a problem in the community but insisted that the spill did not greatly exacerbate the problem. However, the Cordova clinic reported that alcohol abuse has risen 300% since the spill.

It is even more difficult to obtain accurate information on the increase in suicides or attempted suicides. Some people in the village claim that there have been at least two attempts in recent months, but a local health official denied any knowledge of the alleged attempts.

Medical

The community health aide worked a number of overtime hours during the cleanup period. She stated she had so much work that she lost her ability to keep track of overtime hours and has not made an attempt to be reimbursed for the extra hours as a result. When she stopped keeping track of her overtime hours, she had already worked over 200 hours of overtime the summer following the oil spill. Moreover, days were often quite long because cleanup crew boats would often arrive in the village between 11 pm or 2 am in the morning. She reported a substantial increase in the number of upper respiratory infections, chronic colds, and pneumonia.

Changes in Personal Experience

Within the village there is pervasive concern about the uncertainty of the impact of the spill on the environment. One woman spoke at great length about how drastically the immediate environment appears to have changed. She has the distinct impression that her external world is vastly different than it was before the disaster. For her, the ocean and the land around her appears stressed and transformed.

A number of individuals were very concerned about the dying out of the mussels in their bay during the past winter and were reluctant to accept the State Department of Fish and Game's explanation that the shellfish died as the result of a severely cold winter. They expressed suspicions that the Fish and Game scientists were in "collusion" with Exxon because test results taken on samples from the bay during the first weeks of the disaster were suppressed. One person said she was appalled that "so-called experts" could not decisively state whether the food in their environment was safe to consume.

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APPENDIX

The following appendix contains a series of tables referred to in the text of this Report. These tables are included as preliminary results for illustrative purposes. The first five of these tables contains materials that are organized to compare community responses to particular questions. The remaining tables present community-specific data for the questions indicated.

	Q31-11: How have family relationships changed as a result of the spill and its aftermath?									
	English Bay	Tatitlek Chenega Bay	Cordova	Akhiok Karluk Larsen Bay	Valdez	Seward	Kodiak	Chignik Bay	Angoon	Petersburg
Not at all	37.5%	40.0%	49.0%	50.0%	56.9%	63.3%	72.3%	77.4%	83.1%	86.3%
Somewhat	29.2%	16.0%	20.4%	20.5%	15.4%	13.3%	13.4%	9.7%	11.9%	2.9%
Moderately	4.2%	20.0%	14.3%	11.4%	13.8%	8.3%	8.4%	6.5%	3.4%	2.9%
A Lot	29.2%	24.0%	12.2%	9.1%	7.7%	10.0%	2.5%	3.2%	1.7%	2.0%
No response	---	---	2.0%	6.8%	6.2%	3.3%	2.5%	3.2%	---	2.9%
Missing	---	---	2.0%	2.3%	---	1.7%	0.8%	---	---	2.9%
	Q6-How long will it take for the effects of the oil spill to go away?									
	English Bay	Tatitlek Chenega Bay	Cordova	Akhiok Karluk Larsen Bay	Valdez	Seward	Kodiak	Chignik Bay	Angoon	Petersburg
>1 Year	---	---	---	---	---	---	0.8%	---	---	---
1-2 Years	---	---	---	2.3%	1.5%	3.3%	4.2%	9.7%	3.4%	3.9%
3-5 Years	12.5%	4.0%	6.1%	11.4%	12.3%	10.0%	11.8%	19.4%	11.9%	19.6%
>5 Years	29.2%	72.0%	61.2%	47.7%	50.8%	61.7%	52.1%	29.0%	78.0%	50.0%
Unknown	37.5%	12.0%	20.4%	27.3%	23.1%	13.3%	22.7%	29.0%	1.7%	15.7%
Don't Know	20.8%	12.0%	8.2%	11.4%	3.1%	3.3%	1.7%	3.2%	---	---
No Response			4.1%		9.3%	8.0%	6.7%	9.7%	5.1%	10.8%

Infrequent responses excluded	Q4-What community specific changes happened as a result of the spill and its aftermath?									
	English Bay	Tatitlek Chenega Bay	Cordova	Akhiok Karluk Larsen Bay	Valdez	Seward	Kodiak	Chignik Bay	Angoon	Petersburg
No Changes	---	20.0%	---	11.4%	1.5%	16.7%	9.2%	6.5%	35.6%	29.4%
Specific Social Problems	12.5%	---	---	6.8%	---	---	---	---	---	---
Subsistence	8.3%	24.0%	8.2%	13.6%	3.1%	5.0%	30.3%	25.8%	18.6%	8.8%
Cleanup Related	25.0%	28.0%	34.7%	11.4%	26.2%	28.3%	16.8%	16.1%	3.4%	3.9%
General Negative	4.2%	4.0%	10.2%	15.9%	1.5%	13.3%	3.4%	9.7%	3.4%	4.9%
Changed Values	---	4.0%	14.3%	---	13.8%	11.7%	15.1%	9.7%	11.9%	20.6%
Increased Community Readiness	---	4.0%	8.2%	---	6.2%	---	8.4%	9.7%	---	5.9%
Increased Oil Readiness	---	---	---	---	15.4%	---	---	---	---	---
Neutral or Positive	8.3%	8.0%	6.1%	20.5%	15.4%	10.0%	5.0%	3.2%	13.6%	---
Balance (+ and -)	16.7%	---	---	13.6%	10.8%	11.7%	4.2%	3.2%	---	10.8%
No Comments	16.6%	---	6.1%	6.8%	3.1%	1.7%	5.1%	12.9%	6.8%	2.0%

Responses >5%	Q10-What will be the effects of the oil spill in the community in five years?									
	English Bay	Tatitlek Chenega Bay	Cordova	Akhiok Karluk Larsen Bay	Valdez	Seward	Kodiak	Chignik Bay	Angoon	Petersburg
Negative on fisheries & revenue	12.5%	4.0%	38.8%	22.7%	3.1%	30.0%	31.1%	19.4%	15.3%	24.5%
Negative, economy	---	4.0%	2.0%	---	10.8%	11.7%	7.6%	---	11.9%	3.9%
Negative, subsistence	8.3%	8.0%	---	4.5%	1.5%	---	0.8%	---	5.1%	
Negative, lifestyle	12.5%	---	---	---	1.5%	---	---	---	---	
Negative, general	---	12.0%	2.0%	11.4%	15.4%	8.3%	2.5%	3.2%	3.4%	2.0%
Positive, Eco Dev	---	---	---	---	13.8%	---	---	---	---	
Increased care of nature	---	---	16.3%	2.3%	3.1%	6.7%	---	6.5%	5.1%	8.8%
Positive effects	---	---	---	---	10.8%	10.0%	4.2%	---	3.4%	3.9%
Unspecific effects	4.2%	24.0%	14.3%	4.5%	6.2%	1.7%	8.4%	---	1.7%	2.9%
None	4.2%	12.0%	6.1%	27.3%	20.0%	15.0%	21.8%	58.1%	30.5%	36.3%
Uncertain, Unknown	12.5%	16.0%	12.2%	4.5%	7.7%	6.7%	10.1%	9.7%	5.1%	6.9%
Don't know	37.5%	16.0%	8.2%	20.5%	4.6%	10.0%	4.2%	3.2%	13.6%	9.8%

	Q9-What will the effects of the oil spill be on your family in five years?									
	English Bay	Tatitlek Chenega Bay	Cordova	Akhiok Karluk Larsen Bay	Valdez	Seward	Kodiak	Chignik Bay	Angoon	Petersburg
Negative, economic	8.3%	20.0%	10.2%	13.6%	7.7%	13.3%	21.8%	19.4%	23.7%	21.6%
More regulation	---	---	---	---	---	---	2.5%	3.2%	---	2.9%
More care for nature	---	---	4.1%	2.3%	---	1.7%	4.2%	3.2%	6.8%	4.9%
Psycho-social	4.2%	4.0%	2.0%	---	---	---	---	6.5%	---	1.0%
Lifestyle	8.3%	12.0%	12.2%	4.5%	4.6%	6.7%	5.9%	3.2%	---	2.9%
Health	20.8%	8.0%	---	9.1%	1.5%	1.7%	---	---	3.4%	---
General Negative	4.2%	4.0%	4.1%	2.3%	---	8.3%	1.7%	---	---	1.0%
General Positive	4.2%	---	---	---	1.5%	1.7%	2.5%	3.2%	---	---
Uncertain	16.7%	4.0%	22.4%	11.4%	7.7%	13.3%	8.4%	16.1%	6.8%	3.9%
Unspecific	---	12.0%	12.2%	6.8%	10.8%	5.0%	6.7%	6.5%	3.4%	1.0%
None	4.2%	12.0%	18.4%	36.4%	61.5%	33.3%	38.7%	25.8%	39.0%	50.0%
Don't know	16.7%	24.0%	14.3%	11.4%	3.1%	15.0%	7.6%	12.9%	16.9%	10.8%
No response	12.5%	---	---	2.3%	1.5%	---	---	---	---	---

Responses >10% of sample	Q3-What is the one thought about the oil spill and cleanup that comes to your mind?									
	English Bay	Tatitlek Chenega Bay	Cordova	Akhiok Karluk Larsen Bay	Valdez	Seward	Kodiak	Chignik Bay	Angoon	Petersburg
Anger, disgust	20.8%	12.0%	10.2%	20.5%	3.1%	13.3%	5.9%	16.1%	20.3%	26.5%
Despair, sadness	29.2%	20.0%	16.3%	6.8%	3.1%	10.0%	3.4%	---	6.8%	13.7%
Negative subsistence effects	16.7%	12.0%	---	11.4%	---	---	0.8%	6.5%	3.4%	---
Negative industry	8.3%	12.0%	2.0%	2.3%	1.5%	23.3%	13.4%	9.7%	16.9%	14.7%
General negative	4.2%	16.0%	28.6%	6.8%	49.2%	6.7%	24.4%	12.9%	1.7%	4.9%
Negative wildlife	---	8.0%	8.2%	11.4%	3.1%	15.0%	7.6%	3.2%	8.5%	10.8%
Other Neutral	8.3%	---	---	6.8%	20.0%	1.7%	5.0%	---	1.7%	2.9%
Disaster	---	---	8.2%	6.8%	3.1%	11.7%	16.8%	9.7%	16.9%	14.7%
Negative economic	---	---	6.1%	---	---	1.7%	8.4%	25.8%	10.2%	1.0%

Valdez

VALDEZ	Q38- Did spill affect household subsistence?	Q32-Problems with spill newcomers?	Q33-Did friends stop being friends because of the spill?
Yes	27.7%	36.9%	23.1%
No	56.9%	63.1%	76.9%
Not Applicable	13.8%		
No Response	1.5%		

VALDEZ	Have you argued about the spill with:	
	Q20A-a household member?	Q20B-any other friend or relative?
Yes	12.3%	29.2%
No	81.5%	70.8%
Not Applicable	6.2%	

VALDEZ	Q30 - Since the spill, the children in the household:				
	Have problems sleeping	Have improved grades	Get upset when spill mentioned	Spill had no real effect	During spill, child care was a problem
Agree	3.0%	6.2%	4.6%	17.0%	12.3%
Disagree	30.8%	21.6%	33.9%	21.5%	18.5%
Neutral	3.1%	4.6%	—	1.5%	3.1%
Not applicable	13.8%	18.5%	12.3%	10.8%	16.9%
Missing	49.2%	49.2%	49.2%	49.2%	49.2%

VALDEZ	Since the oil spill,		
	families fight physically	people drink	people use drugs
Less than before	—	1.5%	1.5%
About the same	18.2%	27.3%	21.5%
More than before	22.7%	37.9%	30.8%
Don't Know	54.5%	31.8%	46.2%
No response	3.0%	—	—
Missing	1.5%	1.5%	1.5%

Chignik Bay

CHIGNIK BAY	Q38- Did spill affect household subsistence?	Q32-Problems with spill newcomers?	Q33-Did friends stop being friends because of the spill?
Yes	35.5%	12.9%	32.3%
No	58.1%	83.9%	64.5%
Not Applicable	3.2%	---	---
No Response	3.2%	3.2%	3.2%

CHIGNIK BAY	Have you argued about the spill with:	
	Q20A-a household member?	Q20B-any other friend or relative?
Yes	12.9%	32.3%
No	80.6%	64.5%
Not Applicable	6.5%	3.2%

CHIGNIK BAY	Q30 - Since the spill, the children in the household:				
	Have problems sleeping	Have improved grades	Get upset when spill mentioned	Spill had no real effect	During spill, child care was a problem
Agree	6.5%	13.0%	12.9%	58.1%	12.9%
Disagree	54.9%	41.9%	45.2%	9.7%	48.4%
Neutral	3.2%	9.7%	9.7%	—	—
Not applicable	3.2%	3.2%	—	—	6.5%
No response	3.2%	3.2%	3.2%	3.2%	3.2%
Missing	29.0%	29.0%	29.0%	29.0%	29.0%

CHIGNIK BAY	Since the oil spill,		
	families fight physically	people drink	people use drugs
Less than before	3.2%	16.1%	12.9%
About the same	51.6%	51.6%	38.7%
More than before	6.5%	19.4%	3.2%
Don't Know	35.5%	9.7%	41.9%
No response	3.2%	3.2%	3.2%

Cordova

CORDOVA	Q38- Did spill affect household subsistence?	Q32-Problems with spill newcomers?	Q33-Did friends stop being friends because of the spill?
Yes	40.8%	40.8%	32.7%
No	46.9%	59.2%	67.3%
Not Applicable	12.2%	---	---

CORDOVA	Have you argued about the spill with:	
	Q20A-a household member?	Q20B-any other friend or relative?
Yes	8.2%	36.7%
No	77.6%	63.3%
Not Applicable	14.3%	---

CORDOVA	Q30 - Since the spill, the children in the household:				
	Have problems sleeping	Have improved grades	Get upset when spill mentioned	Spill had no real effect	During spill, child care was a problem
Agree	4.1%	2.0%	6.1%	16.3%	12.2%
Disagree	20.4%	8.2%	20.4%	16.3%	16.3%
Neutral	8.2%	10.2%	4.1%	---	---
Not applicable	4.1%	16.3%	6.1%	4.1%	8.2%
Missing	63.3%	63.3%	63.3%	63.3%	63.3%

CORDOVA	Since the oil spill,		
	families fight physically	people drink	people use drugs
Less than before	1.4%	8.7%	5.8%
About the same	17.4%	29.0%	24.6%
More than before	11.6%	31.9%	21.2%
Don't Know	65.2%	26.1%	47.0%
Missing	4.3%	4.3%	4.3%

Kodiak

KODIAK	Q38- Did spill affect household subsistence?	Q32-Problems with spill newcomers?	Q33-Did friends stop being friends because of the spill?
Yes	43.7%	32.8%	21.0%
No	41.2%	66.4%	77.3%
Not Applicable	15.1%	0.8%	1.7%

KODIAK	Have you argued about the spill with:	
	Q20A-a household member?	Q20B-any other friend or relative?
Yes	9.2%	29.4%
No	77.3%	69.7%
Not Applicable	10.9%	---
No Response	2.5%	0.8%

KODIAK	Q30 - Since the spill, the children in the household:				
	Have problems sleeping	Have improved grades	Get upset when spill mentioned	Spill had no real effect	During spill, child care was a problem
Agree	0.8%	2.5%	6.7%	23.6%	3.3%
Disagree	30.2%	17.6%	23.5%	20.3%	19.4%
Neutral	4.2%	8.4%	6.7%	1.7%	5.0%
Not applicable	6.7%	13.4%	5.0%	2.5%	14.3%
No response	0.8%	0.8%	0.8%	0.8%	0.8%
Missing	57.1%	57.1%	57.1%	57.1%	57.1%

KODIAK	Since the oil spill,		
	families fight physically	people drink	people use drugs
Less than before	---	5.8%	7.5%
About the same	28.3%	39.2%	25.8%
More than before	25.0%	36.7%	26.7%
Don't Know	44.2%	16.7%	37.5%
No response	1.7%	0.8%	1.7%
Missing	0.8%	0.8%	0.8%

Seward

SEWARD	Q38- Did spill affect household subsistence?	Q32-Problems with spill newcomers?	Q33-Did friends stop being friends because of the spill?
Yes	30.0%	36.7%	23.3%
No	56.7%	63.3%	76.7%
Not Applicable	11.7%		
Missing	1.7%		

SEWARD	Have you argued about the spill with:	
	Q20A-a household member?	Q20B-any other friend or relative?
Yes	6.7%	21.7%
No	78.3%	76.7%
No Response	15.0%	1.7%

SEWARD	Q30 - Since the spill, the children in the household:				
	Have problems sleeping	Have improved grades	Get upset when spill mentioned	Spill had no real effect	During spill, child care was a problem
Agree	1.7%	3.4%	8.3%	30.0%	21.7%
Disagree	28.4%	15.0%	26.6%	16.7%	15.0%
Neutral	6.7%	10.0%	3.3%	---	---
Not applicable	13.3%	21.7%	11.7%	3.3%	13.3%
Missing	50.0%	50.0%	50.0%	50.0%	50.0%

SEWARD	Since the oil spill,		
	families fight physically	people drink	people use drugs
Less than before	1.6%	---	---
About the same	37.7%	42.6%	29.5%
More than before	13.1%	45.9%	45.9%
Don't Know	45.9%	9.8%	23.0%
Missing	1.6%	1.6%	1.6%

Akhiok, Karluk, and Larsen Bay

AKHIOK KARLUK LARSEN BAY	Q38- Did spill affect household subsistence?	Q32-Problems with spill newcomers?	Q33-Did friends stop being friends because of the spill?
Yes	65.9%	31.8%	43.2%
No	25.0%	68.2%	56.8%
Not Applicable	9.1%		

AKHIOK KARLUK LARSEN BAY	Have you argued about the spill with:	
	Q20A-a household member?	Q20B-any other friend or relative?
Yes	13.6%	36.4%
No	79.5%	63.6%
Not Applicable	6.8%	

AKHIOK KARLUK LARSEN BAY	Q30 - Since the spill, the children in the household:				
	Have problems sleeping	Have improved grades	Get upset when spill mentioned	Spill had no real effect	During spill, child care was a problem
Agree	4.6%	9.1%	4.5%	34.0%	18.2%
Disagree	50.0%	22.7%	43.2%	15.9%	36.4%
Neutral	9.1%	20.5%	18.2%	13.6%	6.8%
Not applicable		11.4%			2.3%
No response	6.8%	6.8%	4.5%	6.8%	6.8%
Missing	29.5%	29.5%	29.5%	29.5%	29.5%

AKHIOK KARLUK LARSEN BAY	Since the oil spill,		
	families fight physically	people drink	people use drugs
Less than before	0.0%	6.4%	4.3%
About the same	51.1%	31.9%	25.5%
More than before	23.4%	51.1%	29.8%
Don't Know	10.6%	0.0%	19.1%
No response	6.4%	4.3%	12.8%
Missing	6.4%	6.4%	6.4%

Angoon

ANGOON	Q38- Did spill affect household subsistence?	Q32-Problems with spill newcomers?	Q33-Did friends stop being friends because of the spill?
Yes	8.5%	5.1%	1.7%
No	88.1%	94.9%	98.3%
Not Applicable	3.4%		

ANGOON	Have you argued about the spill with:	
	Q20A-a household member?	Q20B-any other friend or relative?
Yes	3.4%	5.1%
No	89.8%	94.9%
Not Applicable	6.8%	

ANGOON	Q30 - Since the spill, the children in the household:				
	Have problems sleeping	Have improved grades	Get upset when spill mentioned	Spill had no real effect	During spill, child care was a problem
Agree	5.1%	6.8%	15.3%	45.8%	3.4%
Disagree	44.1%	33.9%	37.3%	11.9%	40.7%
Neutral	5.1%	13.6%	6.8%	3.4%	6.8%
Not applicable	16.9%	16.9%	11.9%	10.2%	20.3%
Missing	28.8%	28.8%	28.8%	28.8%	28.8%

ANGOON	Since the oil spill,		
	families fight physically	people drink	people use drugs
Less than before	9.8%	11.5%	8.2%
About the same	63.9%	75.4%	62.3%
More than before	3.3%	4.9%	8.2%
Don't Know	16.4%	4.9%	16.4%
No response	3.2%	1.6%	1.6%
Missing	3.3%	1.6%	3.2%

Chenega Bay and Tatitlek

CHENEGA BAY TATITLEK	Q38- Did spill affect household subsistence?	Q32-Problems with spill newcomers?	Q33-Did friends stop being friends because of the spill?
Yes	84.0%	40.0%	12.0%
No	16.0%	56.0%	88.0%
No Response		4.0%	

CHENEGA BAY TATITLEK	Have you argued about the spill with:	
	Q20A-a household member?	Q20B-any other friend or relative?
Yes	16.0%	16.0%
No	80.0%	84.0%
No Response	4.0%	

CHENEGA BAY TATTILEK	Q30 - Since the spill, the children in the household:				
	Have problems sleeping	Have improved grades	Get upset when spill mentioned	Spill had no real effect	During spill, child care was a problem
Agree	4.0%	32.0%	8.0%	44.0%	32.0%
Disagree	56.0%	12.0%	36.0%	24.0%	40.0%
Neutral	12.0%	16.0%	20.0%	12.0%	---
Not applicable	8.0%	20.0%	16.0%	---	8.0%
Missing	20.0%	20.0%	20.0%	20.0%	20.0%

CHENEGA BAY TATTILEK	Since the oil spill,		
	families fight physically	people drink	people use drugs
Less than before	6.7%	13.3%	6.7%
About the same	20.0%	40.0%	13.3%
More than before	---	13.3%	6.7%
Don't Know	53.3%	20.0%	53.3%
No response	13.3%	6.7%	13.3%
Missing	6.7%	6.7%	6.7%

English Bay

ENGLISH BAY	Q38- Did spill affect household subsistence?	Q32-Problems with spill newcomers?	Q33-Did friends stop being friends because of the spill?
Yes	100.0%	58.3%	37.5%
No	0.0%	41.7%	54.2%
Unknown			8.4%

ENGLISH BAY	Have you argued about the spill with:	
	Q20A-a household member?	Q20B-any other friend or relative?
Yes	29.2%	33.3%
No	66.7%	66.7%
No Response	4.2%	

ENGLISH BAY	Q30 - Since the spill, the children in the household:				
	Have problems sleeping	Have improved grades	Get upset when spill mentioned	Spill had no real effect	During spill, child care was a problem
Agree	16.7%	16.7%	25.0%	29.2%	62.5%
Disagree	33.3%	25.0%	33.6%	45.8%	8.3%
Neutral	16.7%	16.7%	4.2%	4.2%	4.2%
Not applicable	8.3%	16.7%	12.5%	---	4.2%
Don't Know	4.2%	4.2%	4.2%	---	---
Missing	20.8%	20.8%	20.8%	20.8%	20.8%

ENGLISH BAY	Since the oil spill,		
	families fight physically	people drink	people use drugs
Less than before	4.0%	---	---
About the same	16.0%	12.0%	24.0%
More than before	20.0%	80.0%	24.0%
Don't Know	52.0%	4.0%	44.0%
No response	4.0%	---	4.0%
Missing	4.0%	4.0%	4.0%

Petersburg

PETERSBURG	Q38- Did spill affect household subsistence?	Q32-Problems with spill newcomers?	Q33-Did friends stop being friends because of the spill?
Yes	2.9%	2.0%	2.9%
No	78.4%	98.0%	97.1%
Not Applicable	18.6%		

PETERSBURG	Have you argued about the spill with:	
	Q20A-a household member?	Q20B-any other friend or relative?
Yes	2.0%	14.7%
No	89.2%	84.3%
Not Applicable	6.9%	1.0%
Missing	2.0%	---

PETERSBURG	Q30 - Since the spill, the children in the household:				
	Have problems sleeping	Have improved grades	Get upset when spill mentioned	Spill had no real effect	During spill, child care was a problem
Agree	1.0%	3.9%	9.8%	28.4%	
Disagree	18.6%	12.7%	15.7%	7.8%	
Neutral	7.8%	9.8%	3.9%	3.9%	
Not applicable	27.5%	28.4%	25.5%	14.7%	
Missing	45.1%	45.1%	45.1%	45.1%	

PETERSBURG	Since the oil spill,		
	families fight physically	people drink	people use drugs
Less than before	—	13.6%	5.8%
About the same	62.1%	64.1%	58.3%
More than before	1.9%	3.9%	2.9%
Don't Know	32.0%	16.5%	31.1%
No response	1.9%	—	—
Missing	2.0%	2.0%	2.0%