



SOCIAL INDICATORS IN COASTAL ALASKA: ARCTIC COMMUNITIES

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Social Indicators in Coastal Alaska: Arctic Communities

Final Report

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No. M11PC00032
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Social Indicators in Coastal Alaska: Arctic Communities

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List of Acronyms

ADF&G	Alaska Department of Fish and Game
AEWC	Alaska Eskimo Whaling Commission
AHDR	Arctic Human Development Report
ANMB	Alaska Native Management Board
ANOVA	Analysis of Variance
AOSIS	Alaska OCS Social Indicators System
ASI	Arctic Social Indicators
BOEM	Bureau of Ocean Energy Management
EEC	European Economic Community
ESP	Environmental Studies Program
GDP	Gross Domestic Product
HH	Head of Household/Household Head
ICAS	Iñupiat Community of the Arctic Slope
ICC	Inuit Circumpolar Conference
ISER	Institute of Social and Economic Research
ISQOLS	International Society for Quality of Life Research
ISR	Institute for Social Research
MAP	Man in the Arctic Program
MMS	Minerals Management Service
NASA	National Aeronautics and Space Administration
NEPA	National Environmental Policy Act
NPR-A	National Petroleum Reserve -Alaska
NRC	National Research Council
NSB	North Slope Borough
NSMB	North Slope Management Board
NSSIS	North Slope Social Impact Study
O&G	Oil and Gas
OCS	Outer Continental Shelf
OECD	Organization for Economic Cooperation and Development
OMB	Office of Management and Budget
PRS	Paperwork Reduction Act
SDWG	Sustainable Development Working Group
SI	Social Indicators
SICAA	Social Indicators in Coastal Alaska: Arctic Communities
SLiCA	Survey of Living Conditions in the Arctic
SOW	Statement of Work
SPSS	Statistical Package for the Social Sciences
SRB&A	Stephen R. Braund & Associates
UNESCO	United Nations Economic, Scientific, and Cultural Organization
UNHDI	United Nations Human Development Index
UNRISD	United Nations Research Institute for Social Development
USDOI	U.S. Department of the Interior
USGS	U.S. Geological Survey

Executive Summary

In 2011, the U.S. Department of the Interior (USDOI), Bureau of Ocean Energy Management (BOEM) contracted Stephen R. Braund & Associates (SRB&A) to develop and implement a social indicator (SI) system which would provide baseline data on the well-being of residents on the North Slope of Alaska. The title of this study is *Social Indicators in Coastal Alaska: Arctic Communities* (SICAA). The scope of work for the study called for the identification of a set of SIs—variables which measure the well-being and life quality of a given population. These SIs would be nested under a discrete set of social domains (or categories of SIs) and collected through a household survey in the six coastal North Slope communities (Point Hope, Point Lay, Wainwright, Utqiagvik [formerly Barrow], Nuiqsut, and Kaktovik).

Between January 8 and March 9, 2016, SRB&A interviewed 684 randomly selected heads of household (HHs) in the selected North Slope communities. The purpose of the interviews was to develop a baseline understanding of the well-being of North Slope residents before major offshore oil and gas (O&G) development activity. The interview, which took about an hour, used structured questions to measure SIs of well-being in seven domains: economic well-being, physical environment, health and safety, cultural continuity, education, local control, and overall well-being. The interview also included a suite of questions about the type, timing, cause, and appropriate mitigation action associated with any impacts of O&G exploration and development on subsistence activities in the prior year. The survey questions were reviewed by the North Slope Management Board, a group of North Slope residents formed to oversee the study. The survey was approved by the federal Office of Management and Budget as well as BOEM. Seventy-nine percent of the selected HHs completed the interview. Results are reliable within a range of plus or minus 5 percentage points at a 95 percent level of confidence.

Following a section reporting O&G impacts on subsistence activities, this study reports data for the seven domains under the following four data comparison groups:

- by community (2016),
- by gender (2016),
- for North Slope Iñupiat over time (1977, 1988, 2003, and 2016) (“Indigenous Time Series”), and
- across regions and countries (the three Iñupiat regions of Alaska; Greenland; the Chukotka and Kola Peninsula regions of Russia, Sweden; and Norway) (“International Comparisons”).

Oil and Gas Impacts

Petroleum exploration and development, primarily onshore, has been a fact of life on the North Slope since the 1970s and is therefore part of the baseline environment. The SICAA survey documented subsistence activities in which the respondent had participated in the past 12 months (2015), and then asked whether the respondent had personally experienced the impacts of oil and gas development during any of those activities. Respondents were asked to describe the source of the impact, the timing and location of the impact, and to identify potential mitigation measures that would have prevented or lessened the impact.

Twenty-two percent of all heads of household in all of the six communities experienced an impact of oil development on a subsistence activity in 2015. Nuiqsut, located closest to oil development heads of household reported experiencing the highest frequency of impacts of oil development: 46 percent of respondents. Utqiagvik heads of household were the second most likely to have experienced impacts of oil and gas development (24 percent), followed by Kaktovik (19 percent), Point Lay (15 percent), Wainwright (12 percent), and Point Hope (10 percent). The principal subsistence activities affected by oil development were hunting of terrestrial mammals (54 percent of Nuiqsut caribou, moose, or sheep harvesters compared to 29 percent or less in other communities) and whaling (33 percent of Nuiqsut crew members and 25 percent or less of other communities' whaling crew members). The principal cause of impacts to caribou hunting was aircraft— primarily helicopters—small planes. In the case of whaling, the principal cause of impacts was marine vessels and barges¹.

Part of the reason for including questions on impacts in the SICAA survey was to test whether SIs vary in response to impact exposures. The results show that proximity to development significantly increases residents' chance of experiencing the impacts of development. Nuiqsut heads of household were more likely than those residing in the other five communities to report pollution from industrial development, more likely to report that fish or animals may be unsafe to eat, and more likely to have avoided eating some subsistence foods in the last year because they believed they were contaminated.

Social Indicators by Community

On a community level, some measures seem to be correlated with proximity to development or impact experiences. As noted above HHs in Nuiqsut, the community closest to North Slope oil and gas development, were more likely in 2016 to report impact experiences during subsistence activities, more likely than those residing in the other five communities to report pollution from industrial development, more likely to report that fish or animals may be unsafe to eat, and, other than Kaktovik, were more likely to have avoided eating certain subsistence foods in the last year because they believed they were contaminated. However, on other potentially relevant measures (e.g., satisfaction with fish and game availability and with opportunities to hunt and fish), Nuiqsut heads of household were as or more satisfied as other communities. Other differences were evident when comparing across communities, particularly when it came to impact experiences and measures of economic well-being (employment rates, income, and housing quality) and cultural continuity (participation in subsistence activities and learning of traditional skills). However, on measures of overall well-being, responses across communities were similar. A majority (58 percent) of heads of household in the six communities as an aggregate were “very satisfied” with their life as a whole in 2016.

¹ It is important to note that impacts were documented over the course of the respondents' lifetime. In recent years, impacts to whaling related to industry vessels and barges have been minimized or eliminated due to the presence of conflict avoidance agreements between whalers and industry. However, impacts from other commercial vessels and barges (not bound to conflict avoidance agreements) have still been reported (Galginaitis 2014).

Indigenous Time Series

To get an idea of how the well-being of North Slope residents is changing over time, the research team merged individual interview records from surveys conducted in 1977, 1988, and 2003 with the 2016 interview records. The consistency of SIs of well-being among Iñupiat HHs over almost 40 years was remarkable, particularly given the magnitude of onshore O&G development and the increasing exposure to the technology and culture of the western world.

Perhaps most striking is the fact that most 2016 SIs are as positive or more positive than they were in 1977. Wage working time has increased and participation in most subsistence activities has increased or remained at about the same level. The percentage of people who prefer a lifestyle that is combination of wage work and harvesting or processing their own food has increased. Satisfaction with local goods available and transportation to and from the community has stayed about the same. Education levels have increased markedly, as has satisfaction with the quality of local education. North Slope Iñupiat are just as likely to vote. There has been a drop in the percentage of people who think that their village corporation, the regional corporation and the NSB are meeting their needs, but a majority still think so. Even the percentages of residents who think the state and federal governments are meeting their needs has barely decreased. Overall, the percentage of North Slope Iñupiat who are “very satisfied” with the quality of life in their community increased from 22 percent in 1977 to 40 percent in 2017.

Social Indicators by Gender

With some exceptions, male and female Iñupiat HHs did not differ substantially on measures of well-being. Men reported a higher satisfaction with economic well-being, their standard of living, and their ability to make ends meet. However, they scored lower than women in their ability to understand, speak, read, and write Iñupiaq; and they had lower high school graduation rates. Women, on the other hand, were more likely to identify fish or animals unsafe to eat, pollution, disruption of views, and to avoid eating subsistence foods out of concerns of contamination. They were also more likely to report family health problems and lower satisfaction with their own health.

Social Indicators Across the Arctic

How do living conditions of North Slope Iñupiat compare with living conditions of indigenous peoples elsewhere in the Arctic? This is the question addressed by the Survey of Living Conditions in the Arctic (SLiCA). The SLiCA database consists of 7,910 records based on interviews conducted in the three Iñupiat settlement regions of Alaska (North Slope, Northwest Arctic, Bering Straits); the four Inuit settlement regions of Canada (Inuvialuit, Nunavik, Nunavut, and Labrador); Greenland; Saami (Laplander) settlement regions including the Kola Peninsula of Russia, northern Norway and Sweden; and the indigenous peoples of Chukotka, in Russia’s Far East. The research team merged 3,492 individual interview records from SLiCA with the 2016 North Slope Survey (Canada’s records are not included; they are only accessible in Statistics Canada analytic laboratories).

The SICAA survey was intentionally designed to take advantage of the SIs included in SLiCA by repeating a subset of the same measures. Of special interest are two comparisons. First, how do living conditions on the North Slope compare with living conditions in the neighboring Iñupiat

settlement regions of the Northwest Arctic and Bering Straits; and second, how do living conditions on the North Slope compare with living conditions in culturally and climatically similar regions elsewhere in the Arctic?

When comparing across Arctic regions and countries, there is a wider degree of variation than with community, temporal, and gender comparisons. In terms of economic well-being, North Slope Iñupiat scored higher than most other regions on measures related to subsistence participation and harvests; satisfaction with the availability of fish and game; housing quality; and satisfaction with household income and standard of living. Under the domain of physical environment, North Slope Iñupiat were more likely than most other regions to have concerns that fish or animals were not safe to eat. North Slope Iñupiat were within the range of other regions on measures pertaining to health and safety, although they were more likely than most regions to indicate problems related to drugs or alcohol in their home today.

In terms of cultural continuity, North Slope Iñupiat, in addition to the other Iñupiat regions of Alaska, were higher than all of the other Arctic regions on measures such as participation in subsistence activities and number of traditional skills learned. North Slope Iñupiat were more likely to be very satisfied with the formal schooling and training they had received, and with the quality of formal education in their community. They had fewer persons reporting vocational or college degrees than other countries. Under the domain of local control, North Slope Iñupiat were more likely to be satisfied with influence over natural resources, wildlife, and reducing environmental problems. They also had a higher index of political engagement. Finally, in terms of overall well-being, North Slope Iñupiat were as or more likely to be “very satisfied” with the quality of life in their community and life as a whole, when compared to other Arctic regions.

Discussion

The consistency of SIs of well-being among Iñupiat heads of household over almost 40 years was remarkable, particularly given the magnitude of onshore petroleum development and the increasing exposure to the technology and culture of the western world. Residents who had a petroleum related job in 2015 were slightly less likely to be satisfied with the combination of activities they do for a living, and slightly less satisfied with their household income. There was no significant relationship between having a petroleum related job and satisfaction with job opportunities in the community. Results indicate that, while communities closest to oil and gas development (e.g., Nuiqsut) are more likely to have experienced the negative impacts of development on subsistence activities, the existing extent of impacts of petroleum development on subsistence has not yet reached the point of negatively affecting satisfaction with the amount of fish and game available locally or of the satisfaction with opportunities to hunt and fish.

In 2016, the domains of local control, economic well-being, and cultural continuity showed a higher correlation with overall well-being than the other domains of physical environment, health and safety, and education. However, it is best to think of all the domain-level measures of satisfaction as potentially important. Future time series comparisons will reveal any significant changes in each of these measures and help to explain any changes in satisfaction with life as a whole.

Chapter 1: Introduction

Over the last four decades, oil and gas (O&G) exploration and development has been the primary industry on the North Slope of Alaska, a vast expanse of land extending from the Brooks Range north to the Arctic Ocean. The Iñupiat have occupied this area for thousands of years and use both the onshore and offshore environment for subsistence harvests of marine mammals, terrestrial mammals, fish, birds, and vegetation. O&G development has brought both benefits and impacts to residents living on the North Slope. While most North Slope residents have experienced the economic benefits of O&G development through increased revenue, dividend checks, and capital improvements, many have also experienced the negative impacts of O&G development, particularly on traditional subsistence activities. In recent years, concerns about the sociocultural impacts of development have increased as interest in offshore O&G exploration and development has intensified.

The U.S. Department of the Interior (USDOI) Bureau of Ocean Energy Management (BOEM) is the federal agency responsible for managing O&G development of U.S. Outer Continental Shelf (OCS) energy and mineral resources. Management of these resources includes conducting OCS lease sales, monitoring adverse impacts associated with offshore exploration, and identifying potential impacts and mitigation associated with O&G development and production through National Environmental Policy Act (NEPA) analyses. In 2011, Stephen R. Braund & Associates (SRB&A) was contracted by BOEM to develop and implement a SIs system on the North Slope of Alaska, which would draw on prior SIs research and provide baseline data on the well-being of North Slope residents. The title of this study is *Social Indicators in Coastal Alaska: Arctic Communities* (SICAA).

The study team included Stephen Braund of SRB&A, Jack Kruse of the Institute of Social and Economic Research (ISER) at the University of Alaska Anchorage, and Dr. Joan Nymand Larsen of the Stefansson Arctic Institute at the University of Akureyri in Iceland. Dr. Larsen's involvement in this research study was related to her involvement in the Arctic Social Indicators (ASI) project, which developed a set of social domains and indicators relevant to monitoring well-being in the Arctic. Simply put, SIs are a set of variables which help measure the well-being and life quality of residents within a given population. The selection of SIs is often prefaced by the identification of a set of social domains, or categories under which individual SIs are nested. In its Statement of Work (SOW) for this study, BOEM referenced the ASI study and its identified domains as being consistent with the goals of the project. Hence, the study team reviewed the work of the ASI project and consulted Dr. Larsen during its O&G development of the theoretical framework and selection of SIs for this study. Consistency with the ASI, in addition to other SI research where applicable, was a priority of the study team during research and survey design.

BOEM has long recognized the importance of measuring and monitoring well-being in communities potentially affected by OCS O&G development, sponsoring SI studies through its Environmental Studies Program (ESP) as early as the 1980s. This study was based on the understanding, referenced above, that O&G exploration and development can bring both benefits (in the form of revenue streams and employment) and impacts (particularly impacts or

fear of impacts on subsistence activities) to North Slope communities, and these benefits and impacts can affect overall well-being. Much of the data illustrating the impacts and benefits of O&G address onshore development, as offshore development in Alaska has been relatively limited to date. However, one can hypothesize that—similar to onshore development—offshore development could have positive or negative effects on overall well-being (i.e., SIs) depending on a combination of factors. The primary hypothesis of this study, discussed in further detail in Section 3.2 (Development of Theoretical Framework) is as follows:

The net effect of offshore exploration and development on the comprehensive array of social indicators is dependent on the multivariate effects of the size of the indirect benefit stream, the prevalence of unmitigated disruptions of subsistence, and the fear of future effects of offshore exploration and development on subsistence.

Toward the aim of gathering data to test the above hypothesis, this study included (1) a literature review, (2) development of a theoretical framework, (3) assessment and selection of a set of SIs under six social domains, (4) development of a survey instrument, (5) review and recommendations from a locally-based North Slope Management Board (NSMB), (6) obtaining an Office of Management and Budget (OMB) control number for the survey instrument in accordance with the Paperwork Reduction Act (PRA), and (7) implementation of a household survey in six North Slope coastal communities (Point Hope, Point Lay, Wainwright, Utqiagvik [formerly Barrow], Nuiqsut, and Kaktovik; Figure 1-1).

A key component of this study was the creation of the NSMB—a board of local residents who would advise the study team and review the research design, survey instrument, and study results. The NSMB was formed by the study team with the assistance of Taqulik Hepa of the North Slope Borough (NSB) Department of Wildlife Management, and included one representative from each study community in addition to a representative from the Alaska Eskimo Whaling Commission (AEWC). After receiving input from the NSMB regarding selection of SIs, SRB&A submitted a draft questionnaire to BOEM in May 2012. The study questionnaire subsequently underwent review by BOEM, USDOT, and OMB, a process which took approximately two years (see Section 3.6, Pretest and OMB Review). In the winter of 2016, the study team administered the survey with 684 households in the six study communities. The survey results provide SIs which are nested under the following seven social domains: (1) economic well-being, (2) physical environment, (3) health and safety, (4) cultural continuity, (5) education, (6) local control, and (7) overall well-being.

This final report provides an overview of prior SI research, the methods for developing and implementing the current study, and the results of the household survey in the form of aggregated data and data discussion. Finally, this report discusses the potential for connections between well-being and offshore O&G exploration and development. The data collected for this study are quantifiable and replicable, which are key to providing comparative time series data (see Appendix I for the SICAA survey questionnaire). The data were also collected from enough households in each community that they are representative of the sample population (HHs) within the study communities and study region (coastal North Slope). The baseline data presented in this report will therefore allow for the monitoring of changes in human

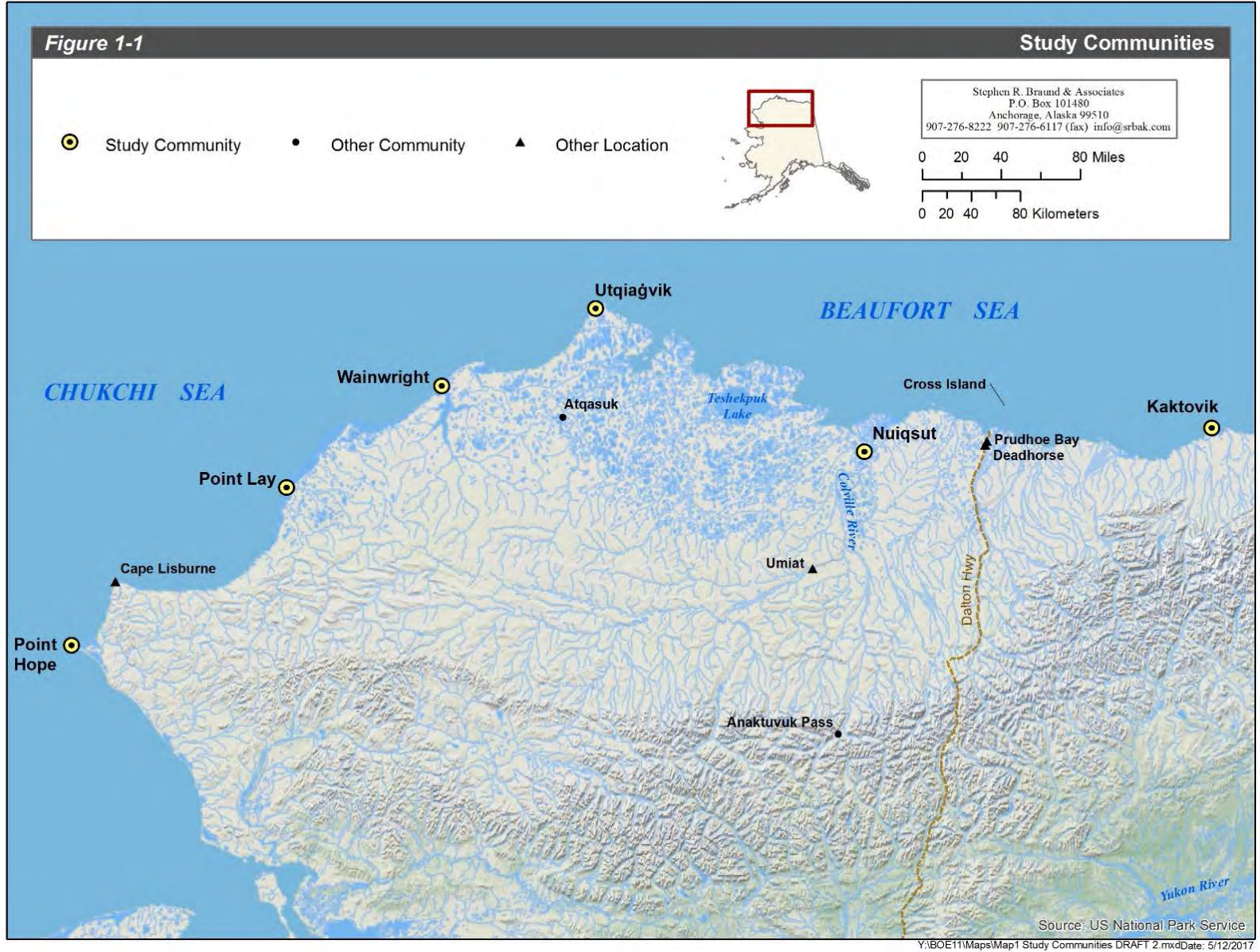


Figure 1-1: SICAA study communities

well-being in coastal North Slope communities and the identification of potential impacts to well-being resulting from offshore O&G exploration and development. The ability to monitor well-being in these communities will allow BOEM to assess the resiliency and vulnerability of the Iñupiat in the face of continuing O&G exploration and development on the North Slope. Documentation of well-being is particularly important at this nexus between onshore and offshore development in the Arctic.

1.1 Objectives

BOEM is responsible for promoting “energy independence, environmental protection and economic development through responsible, science-based management of offshore conventional and renewable energy and marine mineral resources” (BOEM 2016). The mandates of the 1953 (amended 1978) Outer Continental Shelf Lands Act and the 1969 National Environmental Policy Act require that the federal government monitor and assess the impacts of O&G development on the human environment and that social science research informs major policy decisions. As such, BOEM anticipates, monitors, and mitigates the adverse impacts of offshore O&G exploration and development.

BOEM commissioned the current study to “provide updated sociocultural and economic baseline data for analysis of potential local and regional impacts from offshore exploration and development activities that may occur in federal waters off the North Slope of Alaska” (BOEM 2011). To meet this goal, BOEM called for the design of a SI system which would include the identification of a set of social domains (categories or clusters of SIs), and within each domain, a nested set of quantitative indicators of human well-being, referred to as “social indicators” (SIs). The SIs were to be measured through a household survey conducted in the six coastal North Slope communities of Kaktovik, Nuiqsut, Utqiagvik, Wainwright, Point Lay, and Point Hope.

Thus, the objective of this study is *to identify a set of social domains and collect baseline data on key SIs within each domain to enable the monitoring of human well-being in coastal communities on the North Slope of Alaska*. The purpose of monitoring human well-being in these communities is to identify and evaluate changes in socioeconomic conditions, to explore potential linkages to offshore O&G exploration and development, and to develop mitigation strategies to address any adverse effects of O&G exploration and development. Data on well-being can also inform future leasing and planning decisions by government agencies and officials as well as over-arching government policy.

This study is thus an integral component of BOEM’s mission to oversee the safe and environmentally responsible development of energy and mineral resources in federal waters off the North Slope of Alaska. By meeting the objective stated above, this study will contribute to BOEM’s ability to:

1. Describe living conditions in a manner that changes can be tracked over time and compared with other Arctic regions.
2. Systematically incorporate subsistence user observations of changes in the environment so that potential causes of such changes can be identified, examined, and mitigated.

3. Understand the relationships between household-level differences in experience with O&G development and living conditions.

1.2 Organization of Report

The report is organized under four main chapters: Overview of Prior Social Indicators Research, Methods, Results, Discussion, and Conclusions. The Overview of Prior Social Indicators Research chapter provides the background necessary to understand the need for this research, the development of study hypotheses, the selection of domains and SIs, and development of the survey instrument.

The Methods chapter covers the following topics: (1) implications of reviewed literature for the study design, (2) development of theoretical framework, (3) community involvement, (4) selection of SIs, (5) sample design, (6) pretest and OMB review, (7) community approvals, (8) survey administration, (9) survey respondent characteristics, (10) data processing, (11) database construction, and (12) choice of aggregate data comparison groups.

The Results chapter provides the aggregated data, and a discussion of those data, under the following five categories:

1. Impacts by Community (2016)
2. SIs by Community (2016)
3. SIs for North Slope Iñupiat Over Time (1977, 1988, 2003, 2016)
4. SIs by Gender (2016)
5. SIs for Arctic Indigenous Peoples Across Regions and Countries (2003 and 2016)

The first set of data results (Impacts by Community) presents O&G development impact measures by community as experienced in the past 12 months. These data provide the context for understanding baseline SIs and as a test of measures to be applied if offshore O&G development in federal waters becomes a major potential driver of change. The purpose of providing impact measures by community is to identify if there are differences in impacts by community and to subsequently determine if there are related differences in well-being by community. Thus, the reason for presenting the impact measures before the SI measures is to test the hypothesis about the relationship between O&G development and well-being.

The second set of results (SIs by Community) provides 2016 SIs for each of the six study communities. Location of communities relative to the location of O&G development activities is hypothesized to be the single most important predictor of impacts. Comparing SIs by community can help test this hypothesis by examining differences in well-being experienced by residents of different North Slope communities based on their proximity to onshore (O&G) development, before substantial offshore development occurs (Figure 1-2).

In this case, proximity to onshore O&G development is used as a proxy for proximity to offshore development, with the assumption that onshore and offshore O&G development would result in

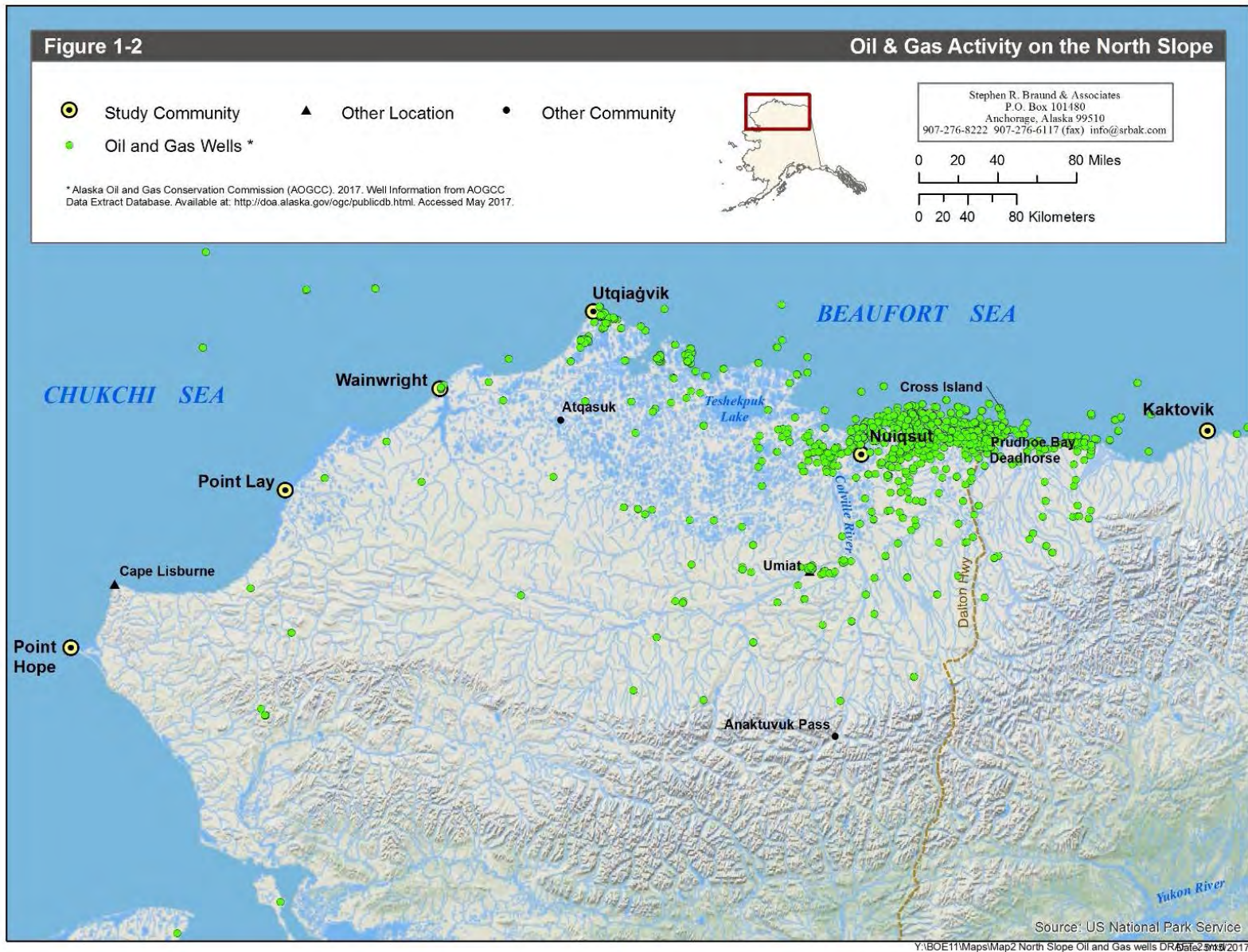


Figure 1-2: Oil and gas activity on the North Slope

similar impact experiences. In fact, most offshore O&G development would be associated with onshore facilities which may be closer to the community. Still, there would likely be differences in impact experiences depending on whether a community is closer to onshore or offshore O&G development. For example, offshore O&G development may be more likely to have an effect based on proximity to offshore subsistence use areas, rather than the community itself (e.g., Nuiqsut Cross Island whaling grounds, which are located at a substantial distance from the community).

The third, fourth, and fifth sets of aggregate data (see above) are intended to further strengthen an understanding of baseline well-being on the North Slope. The third set (SIs for North Slope Iñupiat Over Time) compares SIs for North Slope Iñupiat from four previous SI studies (1977, 1988, 2003, and 2016). Time-depth analyses can help address two major questions: (1) is there an indication that onshore O&G development has affected well-being; and (2) are there any indications of general trends in well-being over time?

The fourth set of data (SIs by Gender) compares 2016 SIs for Iñupiat men and women. Members of the NSMB indicated that they recognized that men and women may have had different experiences and hence may differ in their well-being.

Finally, the fifth set of data (SIs for Arctic Indigenous Peoples Across Regions and Countries) compares SIs for North Slope Iñupiat with other Arctic indigenous populations, including other Alaska regions, Greenland, Chukotka and Kola Peninsula regions of Russia, Sweden, and Norway. Data on Arctic indigenous populations, including the Iñupiat of the North Slope, are available from the 2003 Survey of Living Conditions in the Arctic (SLiCA) study. While these data are over a decade old, comparing data on North Slope residents between the 2003 and 2016 study years can provide insight into changes that may be occurring with other Arctic populations.

The final chapter of this report (Discussion and Conclusions) provides a discussion of overall well-being SIs including a multivariate analysis to examine how they are influenced by other SIs. In addition, this chapter includes a discussion of the implications of existing SI studies for the design of future studies and a summary of key study findings.

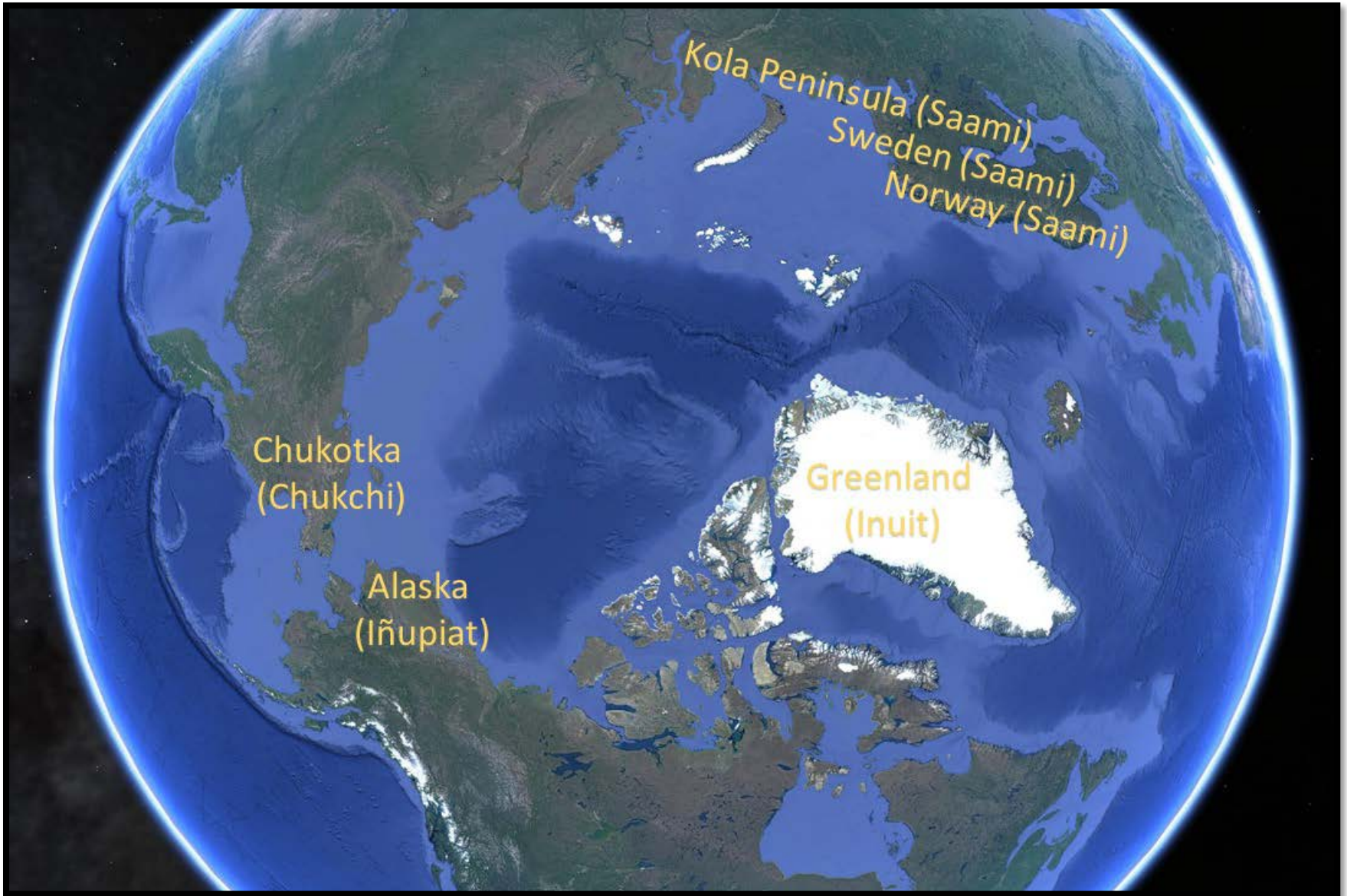


Figure 1-3: SLiCA sample regions

Chapter 2: Overview of Social Indicators Research

The Federal government has funded over 40 years of sociocultural research in Alaska through the BOEM Alaska OCS Region's ESP, including the development and implementation of previous SI studies conducted in various coastal communities throughout Alaska, including the North Slope, dating back to the 1980s. In fact, one of the earlier studies sponsored by BOEM's Alaska Region ESP (Louis Berger and Associates 1983a, 1983b, 1983c) was the first of the four SI research efforts BOEM has sponsored since the 1980s.

Subsequent SI research sponsored by BOEM included an OCS impact monitoring study published in 1985 (SRB&A, ISER, and University of Michigan Institute for Social Research [ISR] 1985), a SI study of Alaskan coastal villages (including North Slope villages) which coincided with the Exxon-Valdez Oil Spill and was published in five volumes starting in 1992 (Human Relations Area Files 1994), and the current (SICAA) study. These 40 years of sustained SI research reflects BOEM's commitment to assessing the effects of offshore O&G development on the well-being of residents of the North Slope.

In *A Social Indicators System for OCS Impact Monitoring*—the second of three SI studies sponsored by BOEM (previously Minerals Management Service [MMS]) in the 1980s—Dr. Frank Andrews of the University of Michigan ISR provided an overview of the historical development and key concepts of the modern SI movement (SRB&A, ISER, and ISR 1985). What follows is a brief summary of Dr. Andrew's key points, followed by a discussion of individual SI studies relevant to SI research in Alaska (see Appendix II for a more detailed discussion of the history of SI research).

Interest in human well-being and quality of life dates to the times of the ancient Greek philosophers. In fact, the United States Declaration of Independence lists the “pursuit of happiness” as an unalienable right of human beings, one which governments are designed to protect. However, while interest in human happiness has a long history, the measurement and study of well-being is a more recent phenomenon. Modern SI research in the United States can be traced to the 1930s, when President Herbert Hoover commissioned a study on social trends and social stress in the United States. In the 1950s, research was undertaken by the United Nations to assess how basic human needs were being met in different societies. Around the same time, the need for specific SIs to assess well-being was identified by the National Aeronautics and Space Administration (NASA) which aimed to document the positive secondary effects of funding a space program—benefits which included educational initiatives in addition to the development of new industrial products and processes.

During the first half of the twentieth century, measures to assess life quality were generally limited to statistical data focused on monitoring economic status and change. The modern SI movement recognized that these measures were inadequate to characterize overall well-being and set about addressing these inadequacies through the development of SI monitoring systems. The 1970s saw rapid growth in the field of SI research with the support of various

international organizations including the Organization for Economic Cooperation and Development (OECD); the United Nations Economic, Scientific, and Cultural Organization (UNESCO); the United Nations Research Institute for Social Development (UNRISD); and the European Economic Community (EEC).

Quality of life, well-being, and SIs are concepts whose definitions have evolved over time. Quality of life is a broader term that encompasses all aspects of life, whereas well-being is an evaluation of individual life quality based on either the individual's own perception or expert opinion. SIs help measure well-being and quality of life and have been defined as "a limited yet comprehensive set of coherent and significant indicators which can be monitored over time, and which can be disaggregated to the level of the relevant social unit" (SRB&A, ISER, and ISR 1985). Since the 1970s, various research studies have aimed to develop and implement SI systems in the Arctic. Shared themes across many of these studies include the need for both subjective and objective measures of well-being, in addition to global-level (e.g., life as a whole) and individual concern-level SIs. Mainstream SI research has also emphasized the importance of collecting SIs that are available at both the individual and aggregate (e.g., household, community, region) level.

A core component of SI systems is the development of domains, or categories under which individual SIs are identified. Domains have been developed using one (or both) of the following two approaches: the expert/logical approach and the empirical/statistical approach. The expert/logical approach of domain development seeks agreement by experts on concerns that are common across populations, while the empirical/statistical approach documents concerns by individuals within a given population, analyzes statistical overlaps in those concerns, and then groups concerns into domain clusters. The results of both approaches often closely resemble one another.

Because the SOW for this study called for close alignment with domains already established under the ASI, the current study employed the expert/logical approach. The study team reviewed prior SI research to inform development of domains and selection of SIs. The following sections provide a brief overview of prior research with an emphasis on their relevance to the SICAA study. A more detailed description of the study methods and results associated with previous SI research is provided in the literature review for this study (Appendix II).

Previous SI research relevant to this study dates to the 1970s. As noted above, BOEM's (formerly MMS) ESP (Environmental Sciences Program) funded several SI studies prior to SICAA, which are described below. Other research reviewed for this study includes the National Science Foundation supported "Man in the Arctic Program" (MAP), SLiCA, Arctic Social Indicators (ASI), the North Slope Social Impact Study (NSSIS), and the Report by the Commission of the Measurement of Economic Performance and Social Progress.

2.1 National Science Foundation 'Man in the Arctic Program' (MAP)

In 1973, the National Science Foundation awarded ISER a grant to assess the impacts of O&G development in Alaska (Kresge, Seiver, Goldsmith, and Scott 1984). The research designed and implemented a SI survey in the Fairbanks North Star Borough, which led to a similar effort in

1977 on the North Slope (with assistance from the NSB). The primary difference between the two surveys was the inclusion of questions in the North Slope questionnaire that specifically addressed subsistence.

MAP Surveys were conducted in five of the six SICAA study communities (excluding Point Lay). The NSB has retained a subset of the questions from the 1977 MAP survey in subsequent census surveys on the North Slope, including surveys from 1988, the early 1990s, 2003, 2010, and 2015. Thus, there is a legacy of comparative SIs that begin with the 1970s MAP surveys and continue to present day.

For this project, the study team only had access to the microdata from the 1977 MAP survey and the 1988 NSB census survey. In addition, while the MAP survey did not follow a systematic process of identifying SI domains, the data from this research were later published by Kruse (2010) under the six domains identified in the ASI report (published in 2010), which are closely associated with the seven domains selected under SICAA. Table 2-1 shows the SIs compared between 1977 and 2003 organized by the seven SI domains included in the SICAA study (referred to as “SICAA domains”). During the process of identifying domains and SIs for the SICAA project, the study team recognized the value of this comparative data set as a tool which would provide SIs over time in the context of oil and gas development activities and enhance future monitoring of well-being on the North Slope. Thus, SICAA includes SIs which were comparable to these early and ongoing studies.

Table 2-1: Comparable social indicators of living conditions on the North Slope: 1977 and 2003

SICAA Domain	Common Social Indicators - 1977 and 2003
Economic Well-being	Work for pay
	Number of subsistence activities
	Satisfaction with job opportunities
	Satisfaction with kinds of things you can buy in stores
	Satisfaction with cost of living
	Lifestyle preference
	Satisfaction with health services
	Perception of drinking, drugs, fighting, stealing
Cultural Continuity	Satisfaction with sharing and helping
Local Control	Voting behavior
	Satisfaction with influence over oil development
Education	Education - years completed
	Satisfaction with education services
Physical Environment	Proportion food from subsistence
	Satisfaction with amount of fish and game available locally
	Satisfaction with opportunities to hunt and fish
Overall Well-being	Satisfaction with village life

Stephen R. Braund and Associates, 2017

2.2 Social Indicators for OCS Impact Monitoring

In the early 1980s, MMS funded the first of several SI studies in Alaska. Entitled *Social Indicators for OCS Impact Monitoring*, the study was for the design of a SI system whose primary purpose would be to monitor the impacts of OCS O&G development (Louis Berger & Associates 1983). Thus, the study differed from the SICAA in its geographic focus and data collection methods. Unlike SICAA and other more recent SI studies, this research did not include a systematic household survey. Instead, *Social Indicators for OCS Impact Monitoring* focused on a combination of existing data, field observations, and key informant interviews. It focused on the Arctic, the Aleutian-Pribilof region, and NANA regions (Northwest Alaska).

This first MMS SI study compiled existing data at the regional and community levels under two domains: (1) mental health, mortality, and morbidity; and, (2) economic and social welfare. Rather than identifying individual SIs prior to fieldwork, the key informant interviews, which provided insight into various topics including economics, religion, politics, and domestic life, were used to inform the selection of 57 SI variables. The SIs were primarily identified using an empirical/statistical approach. The 57 variables were analyzed using smallest space analysis² to identify covariation between and among variables, resulting in the identification of four variable clusters and 16 individual variables which appeared to be SIs of community well-being. The study team also identified additional community-level and regional-level variables from existing data, for a total of 22 SIs. Table 2-2 displays the combined set of 22 SIs by SICAA domain.

Table 2-2: *Social Indicators for OCS Impact Monitoring* indicators by BOEM domain

SICAA Domain	<i>Social Indicators for OCS Impact Monitoring</i> Indicator
Economic Well-being	Household income
	Percentage of total income earned
	Percentage of total income unearned
	Proportion of total earned income derived from government sources
	Proportion of total earned income derived from private sources
	Stability of earned income
	Stability of unearned income
	Income pooling, labor and resource sharing
	Investment of percentage of total income in subsistence harvest expenses
	Employment and wages
	Welfare payments
	Social welfare caseloads
	Employment by sector (regional-level)
Health and Safety	None
Cultural Continuity	Household size
	Domestic functions and child rearing practices
	Household dynamics

² Smallest Space Analysis allows one to analyze the relationships between a large number of variables without any specific assumptions. The purpose of the smallest space analysis in this study was to “identify the most conspicuous clusters of variables, and distinguish the variables that best serve as indicators of the larger clusters of variables” (Louis Berger & Associates 1983).

Table 2-2: Social Indicators for OCS Impact Monitoring indicators by BOEM domain, continued

SICAA Domain	Social Indicators for OCS Impact Monitoring Indicator
Local Control	Residents perceptions of the locus of control over institutions
	Native participation in formal village institutions
	Sodality membership overlaps among institutional and village leaders
	Village size
Education	School enrollments
Physical Environment	None
Overall Well-being	Internal growth rate
	External growth rate
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2.3 A Social Indicators System for OCS Impact Monitoring

The second SI study funded by MMS in the 1980s was entitled *A Social Indicators System for OCS Impact Monitoring* (SRB&A, ISER, and ISR 1985). It resulted in a questionnaire and system referred to as *Alaska OCS Social Indicators System* (AOSIS).

The research design for the AOSIS study was based on previous SI studies, but differed from previous SI studies because the researchers recognized that Alaska Native culture was unique. Researchers found it necessary to check the “concern areas” identified in previous SI systems to ensure their relevance to Alaska Native communities. This check was conducted through a combination of the expert/logical and empirical/statistical approaches to identify and assess domains and SIs. They started with a list of four social goals which had been identified by the OECD, and then reviewed Alaska Native Claims Act (ANCSA) regional planning documents, newspapers, and local testimony across five ANCSA regions (North Slope, NANA, Bering Straits, Bristol Bay, and Aleutian/Pribilof) to assess the importance and relevance of the OECD goals in each region. The study team identified four social goal families (equivalent to domains) which were shared across all regions and which correspond with four of the SICAA and Arctic Social Indicator (ASI) domains (Table 2-2). These common domains are cultural continuity, health and safety, economic well-being, and local control.

The team then validated and revised the goal families (domains), and subsequently identified goals and sub-goals, in two ways: (1) fieldwork in all five regions; and, (2) comparison of major regional issues identified through secondary sources. Researchers first reviewed existing sources of data to select SIs (e.g., U.S. Census Bureau, Alaska Department of Labor) with the following criteria in mind:

1. Be available on a subregional or place-by-place basis.
2. Should distinguish between levels of well-being of Alaska Natives and non-Natives.
3. Should be collected at least every five years.
4. Should meet the general rules for SIs³.

³ This study summarized the general rules used in development of social indicators as follows: 1) There must be at least one social indicator for each subgoal; 2) The meaning of each indicator should correspond to the meaning of one and only one subgoal; 3) The indicator must directly measure individual well-being; 4) The indicator must accurately reflect reality; 5) The indicator must be sensitive to actual change; 6) Indicators should be expressed both as averages and as distributions of well-being; and 7) Where possible, each subgoal should be described by both objective and subjective measures (SRB&A, ISER, and ISR 1985).

Table 2-3: AOSIS sub-goals by SICAA domain

SICAA Domain	AOSIS Goal Family ¹	AOSIS Sub-Goal		
Economic Well-being	Command over goods and services	All households receiving minimum income required to meet basic needs		
		Most households experiencing real income growth		
		Sufficient number of local jobs		
		Sufficient opportunities for preferred jobs		
		Affordable housing opportunities		
		Satisfactory physical living space		
		Sufficient food available		
		Affordable food		
		Sufficient availability of goods and services		
		Affordable price for goods and services		
		Satisfactory public services and facilities		
		Satisfactory physical environment		
		Health and Safety	Individuals and families that are able to function well in society	Physically healthy individuals
				Mentally healthy individuals
Individuals who are safe from harm by others				
Individuals who are safe from harm caused by their own actions				
Individuals have received a basic education				
Adults have the education and skills necessary to obtain employment				
Prevalence of families as the primary social unit				
Healthy social relationships within families				
Adequate opportunities to interact informally w/ friends, family				
Adequate opportunities to participate in recreational activities				

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Identification of SIs documented through primary data collection (i.e., household surveys), was based upon review of previous work (Andrews and Withey 1976). Then, subjective measures (e.g., satisfaction with the amount of fish and game available) were added under the domain of cultural continuity regarding use of renewable resources. The sub-goals to be measured in the survey questionnaire, by SICAA domain, are provided in Table 2-3. Individual SIs are provided in Appendix II.

The final step in the project was the preparation and submission of a final questionnaire, research design and justification to the federal OMB. Called the Alaska OCS Social Indicators System, the submission was approved by OMB in 1986.

Table 2-3: AOSIS sub-goals by SICAA domain, continued

SICAA Domain	AOSIS Goal Family ¹	AOSIS Sub-Goal
Cultural Continuity	Continued existence of traditional culture	Healthy wildlife population
		Interest in and use of renewable resources
		Continued cooperative activities
		Continued sharing/renewable resource products and equipment
		Continued extended family relationships
		Continued respect for elders
		Intervillage social relationships
		Continued use of Native language
		Continued oral history tradition
		Continued production of arts & crafts
Local Control	Social opportunities and participation	Sense of local control
		Confidence in institutions and leaders
		Participation in routine processes of government
Education	None	None
Physical Environment	None	None
Overall Well-being	None	None
1 Although there were no corresponding social goal families for education, physical environment, and overall well-being, the AOSIS questionnaire did include SIs relevant to these domains.		

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2.4 Social Indicators Study of Alaskan Coastal Villages

In the late 1980s, MMS sponsored a third phase of its SI program (Social Indicators Study of Alaskan Coastal Villages), which was a hybrid of the first two phases. The contract called for the development of two separate SI systems. The first system would be based on the AOSIS questionnaire (see Section 2.3), while a second system was to be based on a key informant protocol implemented by the key investigators. The study also used informal anthropological observation to supplement the two systems. A primary methodological approach was the use of multiple methods and data sets to compensate for weaknesses in one system through the strength of another.

While the research domains identified for the study corresponded to the 2016 SICAA domains, the study departed from the other SI studies addressed in this report in two ways. First, it used SIs as inputs into a multivariate analysis, rather than treating SIs as outputs. Second, the results incorporated both questionnaire responses and ethnographic observation. In reporting the results of the AOSIS questionnaire, the study examined the relationships among SIs (through smallest space analysis) rather than reporting the averages and distributions of individual SIs. Hence, this study, while a valuable contribution to social science in Alaska, did not provide SIs as a baseline to which more recent SI research (including SICAA) can be compared.

2.5 Survey of Living Conditions in the Arctic (SLiCA)

SLiCA was borne out of a 1994 survey of living conditions conducted in Greenland, which prompted researchers to reexamine theoretical assumptions, particularly the assumption that domains which had been identified as important to Scandinavian, southern, and urban populations would apply equally well to Greenlanders. Analysis of the 1994 data resulted in the conclusion that the selection of SIs should be done in the context of the place being studied and

with the input of the people being studied, so that the lives and priorities of the study respondents are reflected. It was crucial to the research effort that representatives of the respondents, the indigenous peoples, were included as partners in the process.

The SLiCA research design was based on various previous studies on living conditions and SI research, but incorporated new SIs based on its consultation with experts and indigenous steering committees. Some key changes implemented by the SLiCA study team included the following:

- Expansion of economic SIs to include all economic production (not just income), including household production and mixed cash-subsistence economies;
- Inclusion of SIs which were identified as important to the Arctic, including family relations, spirituality, social adjustment and support, and ethnic identity; and,
- Inclusion of both subjective and objective measures.

The research design and questionnaire were reviewed and approved by indigenous steering committees and at a conference of international experts in living conditions. The final questionnaire included 950 SI variables which formed 398 analytic variables (see Appendix II). Fieldwork was conducted between 2001 and 2006 and included surveys in three Iñupiat regions of Alaska including the North Slope. This report uses the mid-point of data collection (2003) when referring to the SLiCA results. SLiCA fieldwork occurred concurrently with the work of the ASI project and during the analysis and reporting phase, SLiCA researchers drew on the work of ASI. One key way in which SLiCA aligned with ASI was the reporting of SLiCA indicators under the six ASI domains (upon which the SICAA domains are based):

- Material Success
- Health
- Education
- Cultural Continuity
- Fate Control
- Ties with Nature

Table 2-4 shows the SLiCA sub-domains organized by SICAA domain. Individual SLiCA SIs are provided in Appendix II.

A large international team of researchers and indigenous partners identified the survey-based SIs used in SLiCA. The design was favorably reviewed in April 2001 in Nuuk Greenland by international experts in SI research, notably the leadership of the International Society for Quality of Life Research, or ISQOLS.

Table 2-4: SLiCA sub-domains organized by SICAA domains

SICAA Domain	SLiCA Sub-Domain
Economic Well-being	Household economy
	Employment
	Harvest
	Income and expenses
Health and Safety	Physical and mental health
	Safety and justice
	Family relationships
	Leisure
Cultural Continuity	Identity
	Spirituality
	Language
Local Control	Resource management
	Political resources
Education	Formal education
	Traditional education
Physical Environment	Housing
	Environmental health
	Technology
	Community viability
Overall Well-being	Mobility
	Subjective well-being overall

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2.6 Arctic Social Indicators (ASI)

At the 2002 Arctic Council Ministerial Meeting, Iceland was called upon to lead an effort to assess the state of human development in the Arctic. This culminated in the Arctic Human Development Report (AHDR) in 2004 (AHDR 2004). AHDR researchers focused on the United Nations Human Development Index (UNHDI), which is a composite of three measures: life expectancy at birth, a combination of adult literacy and school enrollments, and gross domestic product (GDP) per capita. One of the key findings of the AHDR was that the UNHDI measures are not linked to self-reported well-being. In fact, the AHDR found that Arctic residents may rank low on the UNHDI but high in overall well-being.

The AHDR concluded that measures of well-being should be developed in a way that takes into account regional conditions. As an example, AHDR (2004) stated, “School enrollments, for example, may not be a good measure of education in societies where subsistence hunting and gathering remain important and knowledge is passed on from one generation to another through experiential learning.” The AHDR recommended that a set of SIs be developed to monitor well-being in the Arctic, and identified several domains which had not been adequately addressed in past research. These included fate control - guiding one’s destiny; cultural integrity - belonging to a viable local culture; and contact with nature - interacting closely with the natural world (AHDR 2004:11).

The ASI project was initiated by the Arctic Council’s Sustainable Development Working Group (SDWG) in response to the recommendations of the AHDR. A working group representing eight

Arctic countries and seven social science disciplines came together and concluded that SIs should be selected under six domains. The six domains listed in the BOEM SOW, with comparable ASI domains in parentheses, are provided in Table 2-5:

Table 2-5: SICAA and ASI Domains

SICAA Domain	ASI Domain
Economic Well-being	Material Well-being
Health and Safety	Health/Population
Cultural Continuity	Cultural Well-being
Local Control	Fate Control
Education	Education
Physical Environment	Closeness to Nature
Overall Well-being	None

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Originally ASI thought it possible to identify a small set of SIs covering all these domains based on existing data. However, ASI teams discovered that it is difficult to meet all data quality criteria using SIs based on existing data. In the first ASI report, Arctic Social Indicators (Larsen, Schweitzer, and Fondahl [eds] 2010), the following SIs were identified:

1. Infant Mortality (Health/Population domain)
2. Net-Migration (Health/Population and Material Well-being domains)
3. Consumption/Harvest of Local Foods (Closeness to Nature and Material Well-being domains)
4. Ratio of Students Successfully Completing Post-Secondary Education (Education domain)
5. Language Retention (Cultural Well-being domain)
6. Fate Control Index (Fate Control domain)

The ASI team concluded, however, that SIs available through existing data are largely unavailable (or not applicable) at a community level or are not collected at a frequency sufficient to detect change. ASI recommended the following objectives for further design and testing of a SI system:

1. Data are available at a regional level (due to lack of existing data at community level)
2. Data are available separately for indigenous and non-indigenous populations
3. Data are available on at least a five-year reporting period.

Following the publication of the 2010 report, ASI work focused on testing the feasibility of applying the chosen key SIs in a regional comparison using four case study regions: (1) the Sakha Republic in Russia; (2) the Northwest Territories in Canada; (3) the West-Nordic Region composed of the Faroe Islands, Greenland, Iceland, and coastal Western Norway; and (4) the three Iñupiat settlement regions of Alaska. The results of this work were published as Arctic Social Indicators, ASI II: Implementation (Larsen, Schweitzer, and Petrov (eds) 2014).

The ASI project was fundamental in developing the SICAA theoretical framework. As noted earlier, the SICAA study team included Dr. Joan Larsen, who worked on the ASI project and was closely involved in development of the ASI domains and SIs in addition to the SIs selected for the SICAA study. The primary way in which ASI and SICAA align is that their domains are

essentially identical. This is not a coincidence but rather by design. However the SICAA and ASI indicators could not align because the ASI indicators are based on existing data that are not available at the community level, and the SICAA study was intentionally designed to produce data at the community level.

The ability to observe differences by community is critical to the goal of differentiating impacts of O&G development from the effects of other forces for change. Thus, because the goals of the SICAA project require reporting at the community level, the ASI provided a limited set of SIs which would be appropriate for assessment by the SICAA study team. Because of this, the set of ASI indicators could not be used as a baseline for the purposes of measuring the impacts of offshore O&G development.

2.7 North Slope Social Impact Study (NSSIS)

This section addresses the North Slope Social Impact Study (SRB&A 2009), or NSSIS, which is one of the four primary components of the theoretical framework for SICAA (see Section 3.2, Development of Theoretical Framework). While the NSSIS is not a mainstream SI study, BOEM's responsibility to monitor the impacts of O&G development and, if possible, mitigate these impacts, is the basis for the inclusion of the NSSIS as part of the theoretical framework and in this discussion. Monitoring SIs over time is a critical component of an impact monitoring and mitigation program, but should not be the sole component of such a program. Documentation of the impacts experienced by local residents from both onshore and offshore O&G activities is key to identifying, monitoring, and mitigating impacts, including impacts to well-being.

The NSSIS was funded by State of Alaska, Department of Community and Economic Development, Division of Community Advocacy under the National Petroleum Reserve -Alaska (NPR-A) Impact Program through a grant to the NSB. The NSB contracted with SRB&A to conduct the study, which was designed to document Utqiaġvik, Nuiqsut, Wainwright, and Atqasuk active harvesters' experiences and perceptions of impacts and benefits of O&G development (SRB&A 2009). The focus of the NSSIS was on documenting the impacts and benefits of O&G development on active subsistence harvesters.

The NSSIS included a survey of 215 active hunters from Utqiaġvik, Nuiqsut, Atqasuk, and Wainwright, which documented harvester experiences and concerns with different impacts and benefits related to O&G development. SRB&A developed the questionnaire based on a review, compilation, and analysis of over 1,000 records of North Slope testimony addressing impacts and benefits of O&G development.

The NSSIS interview with active hunters included 11 SIs on subjective well-being, which were also included in the SLiCA questionnaire (2003) and the MAP survey (1977) (see Table 2-6). The NSSIS study included a comparative analysis of SIs for 1977 and 2003 and a comparative analysis of 2003 SI data for the North Slope with data for the Northwest Arctic and Bering Straits regions, and with Greenland, Chukotka, and the Inuit settlement regions of Canada.

The NSSIS study included a comparative analysis of SIs for 1977 and 2003 and a comparative analysis of 2003 SI data for the North Slope with data for the Northwest Arctic and Bering Straits regions, and with Greenland, Chukotka, and the Inuit settlement regions of Canada.

Table 2-6: NSSIS social indicators by SICAA domain

SICAA Domain	Social Indicator
Economic Well-being	Satisfaction with job
	Satisfaction with amount fish and game available locally
Health and Safety	Depression index
	How satisfied with the health of the environment in your area
Cultural Continuity	None
Local Control	How satisfied with influence indigenous people have on management of natural resources like fish and caribou
	How satisfied with influence indigenous people have on management of natural resources like oil, gas, and minerals
	How satisfied with influence indigenous people have to reduce environmental problems in your area
Education	None
Physical Environment	How satisfied with opportunities to hunt and fish
	How satisfied with amount of fish and game available locally
Overall Well-being	How satisfied with the quality of life in this community
	How satisfied with life as a whole

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The SI comparisons over time and space suggest that, on balance, the benefits of O&G exploration and development on the North Slope as of 2003 outweighed the impacts. It is important to note that the benefits were indirect, resulting from the Iñupiat’s successful initiative to form a regional government and tax energy development facilities.

Interviews with active harvesters in 2007 documented widespread personal experiences observed as impacts (and in two areas benefits) of O&G exploration and development. Primary impacts experienced by active harvesters were related to difficulty hunting, displacement or disruption of wildlife, contamination and extraction of materials, dividend benefits, and employment.

The 2003 SI and 2007 impact results appear to be contradictory. One would expect that widespread personal experiences with impacts of O&G exploration and development would be reflected in comparatively lower SIs on the North Slope. To understand these results, NSSIS researchers compared SI data for active harvesters in 2003 and 2007. They observed a statistically significant decrease in satisfaction with the amount of fish and game available locally, and Iñupiat influence over management of fish and game and reduction of environmental problems. While the study found an increase in satisfaction with local job opportunities, active hunters in 2007 scored higher than those in 2003 on the depression index (i.e., more likely to be depressed).

Thirty-four percent of the impact experiences mentioned by active harvesters in 2007 started after 2003. Taken together, the above results suggest that cumulative onshore O&G development impacts started to outweigh development benefits as reflected in declines of the abovementioned SIs between 2003 and 2007.

2.8 Report by the Commission of the Measurement of Economic Performance and Social Progress

Other contributions to the field of SIs were made after the design of ASI and SLiCA. Most important among these more recent contributions is the Report by the Commission of the Measurement of Economic Performance and Social Progress (Stiglitz, Sen, and Fitoussi 2009). This report is relevant because a primary purpose was to, “consider what additional information [to GDP measures] might be required for the production of more relevant indicators of social progress” (Stiglitz, Sen, and Fitoussi 2009).

A number of recommendations and conclusions of the study were relevant to the design of this study. These included emphasizing household-level measures; including income, consumption, production, and non-market activities as measures of economic well-being; and allowing for the assessment of links between various well-being domains for each individual (Stiglitz, Sen, and Fitoussi 2009:12-18).

Chapter 3: Methods

The discussion of methods for SICAA is divided into 12 sections: (1) implications of reviewed literature for the study design, (2) development of theoretical framework, (3) community involvement, (4) selection of indicators, (5) sample design, (6) pretest and OMB review, (7) community approvals, (8) survey administration, (9) survey respondent characteristics, (10) data processing, (11) database construction, and (12) choice of aggregate data comparison groups. The intent of this and the previous section is to provide a comprehensive description of the evolution of SI research on the North Slope and to describe, in detail, the methods used in the SICAA study, so that future researchers can understand, replicate, and build on this study.

3.1 Implications of Reviewed Literature for the Study Design

3.1.1 Domains

The correspondence of domains across the reviewed literature is remarkable. The domains listed in the BOEM scope of work also match the literature well. The study team was therefore confident that selecting the six BOEM domains, and including SIs under each of these domains, would result in a reasonably comprehensive set of domains and SIs. Researchers found that including overall measures of well-being in SLiCA, the NSSIS, and the MAP survey was important to understanding the relative contributions of each domain to overall well-being. Therefore, a seventh domain, overall well-being, was added. Thus, the goal was to develop a set of SIs within each of the following domains: 1) Economic well-being, 2) Health and safety, 3) Cultural continuity, 4) Local control, 5) Education, 6) Physical environment, and 7) Overall well-being.

3.1.2 Reporting Level

While the focus of ASI was on regional level SIs, the study goal of monitoring the effects of offshore O&G exploration and development require reporting at the community level, as communities' impact experiences may vary depending on their proximity to O&G development.

3.1.3 Sources of Data

Previous Alaska SI studies concluded that few SIs can be feasibly based on existing data (SRB&A, ISER, and ISR 1985; Louis Berger and Associates 1983a). The ASI project focused on selecting SIs from existing data, but these SIs are unavailable at a community level or are not collected at a frequency sufficient to detect change. The Stiglitz Report (Stiglitz, Sen, and Fitoussi 2009) concluded that links between various quality-of-life domains should be considered when documenting effects of O&G exploration and development and designing mitigation measures. While in some Arctic countries (such as Sweden, Norway, and Greenland) administrative data can be linked across domains at the individual level, such links are not possible in the United States. This fact coupled with the general lack of existing data sources at the community level underscore the need to focus the design on survey-based SIs at the HH level and report aggregation of data at the community level.

3.1.4 Rules for Selecting Indicators

As discussed above, the *AOS/S* study (SRB&A, ISER, and ISR 1985) suggested rules for selecting SIs. The SICAA study applied the rules in the selection of SIs. ASI applied a similar set of rules in selecting SIs. Stiglitz et al.'s (2009) recommendations and conclusions also included guidelines for SI selection. Finally, the BOEM SOW for this study provided guidelines for the selection of indicators (BOEM 2011). These contributions are brought together under the SICAA SI assessment criteria as interpreted in the Social Indicator Assessment deliverable (Appendix III). The criteria for selecting SIs fall under the following six categories: utility, validity, reliability, precision, feasibility, and applicability. See Section 3.4 for further discussion of how these criteria were applied during the selection of SICAA SIs.

Utility

- ***Limited yet comprehensive.*** A small number of SIs that together account for what is most important to well-being (SRB&A, ISER, and ISR 1985; Larsen et al, 2010; BOEM 2011).
- ***Understandable as important to people.*** SIs that are meaningful to people within the society being studied (SRB&A, ISER, and ISR 1985; Larsen et al, 2010; Stiglitz et al. 2009)
- ***Global-level and concern-level measures.*** Including global-level as well as concern-level measures (SRB&A, ISER, and ISR 1985).
- ***Available for the past and reasonably foreseeable future.*** SIs with an established time series are more valuable than new SIs, providing they meet other criteria (SRB&A, ISER, and ISR 1985).

Validity

- ***Measures of outputs of social system.*** Measures that are directly related to well-being at the household level (SRB&A, ISER, and ISR 1985; Stiglitz et al. 2009).
- ***Meaningful at the household level.*** Measures which can be disaggregated at the level of the most relevant social unit, the household (SRB&A, ISER, and ISR 1985; Stiglitz et al. 2009).
- ***Include both objective and subjective measures.*** Both types of measures are needed to understand changes in well-being (SRB&A, ISER, and ISR 1985; Stiglitz et al. 2009).

Reliability

- ***Sensitive to variations between people and over time.*** Need for substantial variation between individuals for a SI to reflect change over time (SRB&A, ISER, and ISR 1985; BOEM 2011).

Precision

- ***Reflects concern with a high degree of precision.*** Precision is important to detecting change over time (SRB&A, ISER, and ISR 1985; BOEM 2011).

Feasibility

- **Available at a reasonable cost.** While usually this criterion is a code phrase for basing SIs on existing data, in this case it is best applied as a test of response burden (i.e., available through reasonable or minimal burden to the respondent) (BOEM 2011).

Applicability

- **Available reporting for Alaska Natives.** Importance of reporting data specific to Alaska Natives, and the importance of understanding inequalities, for which purpose comparisons between Alaska Native and other populations may be critical (SRB&A, ISER, and ISR 1985; Larsen et al. 2010; Stiglitz et al. 2009).
- **Available at the village level.** Certain SIs are more useful at the community level and can be aggregated to a regional level. The importance of community-level data in distinguishing impacts and well-being by community is apparent in the NSSIS results (SRB&A, ISER, and ISR 1985; SRB&A 2009).
- **Linked data.** Importance of understanding relationships between domains of well-being. Linked data at the individual level is the only way to examine these relationships. (Stiglitz et al. 2009)
- **Available at least every five years.** Importance of the time interval of data availability (SRB&A, ISER, and ISR 1985).
- **Levels and distributions.** Importance of understanding the distribution of well-being as well as its average (SRB&A, ISER, and ISR 1985; Stiglitz et al. 2009)

3.2 Development of Theoretical Framework

This study developed a theoretical framework based on three complementary science initiatives: ASI, SLiCA, and the NSSIS. The final component of the SICAA theoretical framework is the study hypothesis. The SICAA theoretical framework is discussed in further detail in sections herein and in the SICAA Research Plan (SRB&A 2011).

3.2.1 Arctic Social Indicator Development (ASI)

As described above (Section 2.6, Arctic Social Indicators), the goal of ASI was to identify a small set of measures that collectively indicate the well-being of Arctic residents. The ASI team reviewed and adopted the six domains recommended in the AHDR report (Larsen, Schweitzer, and Fondahl 2010), which closely parallel the six domains in the BOEM SOW. The BOEM SOW cited the ASI work, noting that the goal of the working group was “to develop and achieve concurrence on a small suite of domains and SIs that are stable, can be measured empirically, can be generalized, are easy to measure in a broadly acceptable manner, and suitable for use in longitudinal analyses.” The SOW went on to indicate that the social domains identified by ASI “are consistent with the effort expected in this project” (BOEM 2011). The six SICAA domains with comparable ASI domains are provided in Table 2-5.

ASI provided a foundation for the selection of domains for the SICAA project. As discussed in Section 2.6, the ASI focused on selection of SIs based on existing data and available at a regional level. Because the goals of the SICAA project require reporting at the community level,

the ASI provided a limited set of SIs which would be appropriate for assessment by the SICAA study team.

3.2.2 Survey of Living Conditions in the Arctic (SLiCA)

SLiCA was the second of three science initiatives which make up the SICAA theoretical framework (see Section 2.5). As discussed above, SLiCA was conceived by Birger Poppel of Statistics Greenland as a method of measuring living conditions in Arctic communities that is relevant to life in the Arctic, as opposed to traditional methods applied in western Europe and the United States (Anderson and Poppel 2002). SLiCA SIs were the result of four years of work by an international team of Arctic social scientists and indigenous partners and were obtained through household surveys (Kruse et al. 2009). SLiCA was a primary source of the SIs selected for the SICAA study.

Researchers working with SLiCA data have learned much about the strengths and limitations of the SLiCA measures. This knowledge was systematically applied to a selection of key SLiCA measures for this study. Inclusion of SLiCA measures in this study has three advantages: (1) the measures were originally selected by an international team of social scientists and indigenous partners; (2) the study team can assess the quality of each measure based on empirical evidence (over 7,000 SLiCA interviews); and, (3) SLiCA measures included in the current study can be compared over at least a decade on the North Slope (2003 - 2016). Furthermore, it is possible to compare some SLiCA measures for the North Slope to data collected as early as 1977.

3.2.3 North Slope Social Impact Study (NSSIS)

A third foundation of the SICAA theoretical framework is the NSB-funded NSSIS (described in Section 2.7), which documented the impacts and benefits of O&G development for active harvesters in four North Slope communities. O&G development is not the only potential source of impacts on well-being. Other forces for change in the Arctic include climate change, government spending, marine transportation, tourism, commercial fishing (in Arctic countries other than the U.S.), and hard rock mining (Berman 2011).

In the absence of data on the impacts of offshore O&G development, impacts related to onshore development can be used as a proxy. The inclusion in NSSIS of a small set of SIs from the SLiCA study, in addition to the documentation of O&G impacts in the NSSIS study, allowed for the exploration of linkages between well-being and O&G development. The documentation of O&G impacts was carried forward into the SICAA study. Of particular importance on the North Slope is the certainty that any offshore O&G exploration and development will occur in the context of continued onshore development. Infrastructure and equipment associated with offshore and onshore O&G exploration and development, such as roads, staging areas, and aircraft services, are likely to be located near each other, shared, or overlap one another.

To facilitate future differentiation between onshore and offshore forces for change, a key design feature of the SICAA project is to collect and report SI data by community. Each community may

experience the impacts of O&G development differently for various reasons, including the community's proximity to onshore and/or offshore exploration and development.

To help address linkages between well-being and O&G development, the SICAA study team incorporated into the research design questions from the NSSIS regarding the impacts of oil industry activities on subsistence activities within the past 12 months. The combination of SI measures and key impact measures in the design of the questionnaire in this study coupled with a sampling design to produce community-level results will make it possible to test hypotheses about the association of offshore and onshore O&G exploration and development experiences with well-being should offshore development take place.

The principal differences between the NSSIS (2007) and SICAA (2016) methods are (1) respondents were given three different opportunities to recall and report on impact experiences in 2007, and (2) in 2007 respondents were asked which subsistence activities were "affected," which could have given rise to reports of impacts that the respondent knew about but did not personally experience. In addition, the 2007 study sampled active harvesters only, while the 2016 study sampled HHs.

Thus, both surveys included questions regarding impacts on subsistence activities in the past 12 months, although the SICAA survey focused on personal experiences of impacts. It is likely that during the NSSI survey, some respondents interpreted the question more generally (i.e., the subsistence activity as a whole was affected by O&G development, even if the respondent was not present at the time and place of the impact).

Because the coding of impacts and benefits in the two studies is not identical, and because the sample also differs (i.e., active harvesters versus HHs) it is impractical to merge the microdata, and the results of the two studies are not directly comparable. Nonetheless, NSSIS provided a valuable component of the SICAA theoretical framework by documenting impacts of industry activities on subsistence activities.

3.2.4 Hypothesis

As previous research on the North Slope has shown, the Iñupiaq-initiated regional government of the NSB has successfully turned tax revenues from O&G facilities into streams of benefits for NSB residents. The extent to which these benefit streams continue is dependent upon the facilities being located on state, borough, local, or private lands (i.e., not federal) and hence taxable by the NSB. Because offshore federal leases are likely to involve facilities not taxable by the NSB, the benefit stream of offshore O&G exploration and development is likely to be smaller than that from a comparably sized development located on non-federal lands (or inshore waters within the three-mile State limit).

As results of interviews with active harvesters in the NSSIS have shown (see Section 2.7), expanding onshore O&G exploration and development activities have begun to interfere with subsistence activities, particularly on caribou hunting as a result of anthropogenic noise from helicopters, small aircraft, drones, and seismic testing. There have also been effects from pipelines not elevated sufficiently to allow easy passage of caribou or hunters, and the presence

of outsiders in hunting areas. While various mitigation measures have been implemented to reduce impacts on subsistence, they do not eliminate impacts altogether. Offshore O&G exploration and development is likely to increase air and marine traffic and expand the number of onshore pipelines. The extent to which offshore O&G exploration and development increases impacts to subsistence is dependent on the effectiveness of mitigation measures, as well as the timing and location of the activity, the nature and duration of the activity, and the distance offshore.

Offshore O&G development is viewed by the Iñupiat as qualitatively different from onshore development. The National Research Council (NRC) Committee on Cumulative Environmental Effects of O&G Activities on Alaska's North Slope concluded that the fear of impacts related to offshore O&G development is an impact in itself and a key issue for the Iñupiat (NRC 2003: 134).

More recently, fear of offshore O&G exploration and development was evident in the NSSIS study, with the following concerns volunteered and discussed by North Slope active harvesters (SRB&A 2009):

- Displacement of offshore wildlife
- Disruption of offshore wildlife
- Effects of noise (drilling onshore and offshore, pipeline construction, offshore seismic activities) on Arctic cisco
- Reduced health of offshore wildlife
- Offshore waste
- Offshore contaminants
- Impact on ability to hunt offshore wildlife
- Difficulty hunting offshore wildlife
- Cumulative effects of onshore and offshore projects on subsistence activities
- Effects of climate change on offshore development

Fear of the impacts of offshore O&G exploration and development on subsistence will tend to lower North Slope SIs even in the absence of realized impacts on subsistence.

The principal SICAA hypothesis is based on three observations: (1) the size of the benefit streams is dependent on the location of energy facilities on taxable land; (2) the disruption of subsistence activities is dependent on the effectiveness of mitigation measures; and, (3) fears of the effects of offshore O&G exploration and development will tend to lower SIs.

We can therefore state our principal hypothesis:

The net effect of offshore exploration and development on the comprehensive array of social indicators is dependent on the multivariate effects of the size of the indirect benefit stream, the prevalence of unmitigated disruptions of subsistence, and the fear of future effects of offshore exploration and development on subsistence.

Figure 3-1 summarizes hypothesized relationships. The principal hypothesized benefit stream is the tax revenues received by the NSB based on the value of oil development facilities. The NSB has aggressively used these revenues to improve living conditions in all North Slope communities. NSB expenditures create jobs and housing opportunities (economic well-being), improve medical care and public safety (health and safety), protect subsistence hunting areas (physical environment), enhance local control; promote cultural continuity, and provide education opportunities. Benefit streams are therefore associated with all SI domains and hence overall well-being. In addition, O&G development brings direct benefits such as employment, mitigation funds, use of facilities and equipment (e.g., assisting in the transport of bowhead from Cross Island to Nuiqsut), and support and funding for various cultural and educational activities at the local and regional scales (Galginaitis 2014; SRB&A 2009, 2012). Differences in benefits by community are therefore less likely than differences in impacts by community.

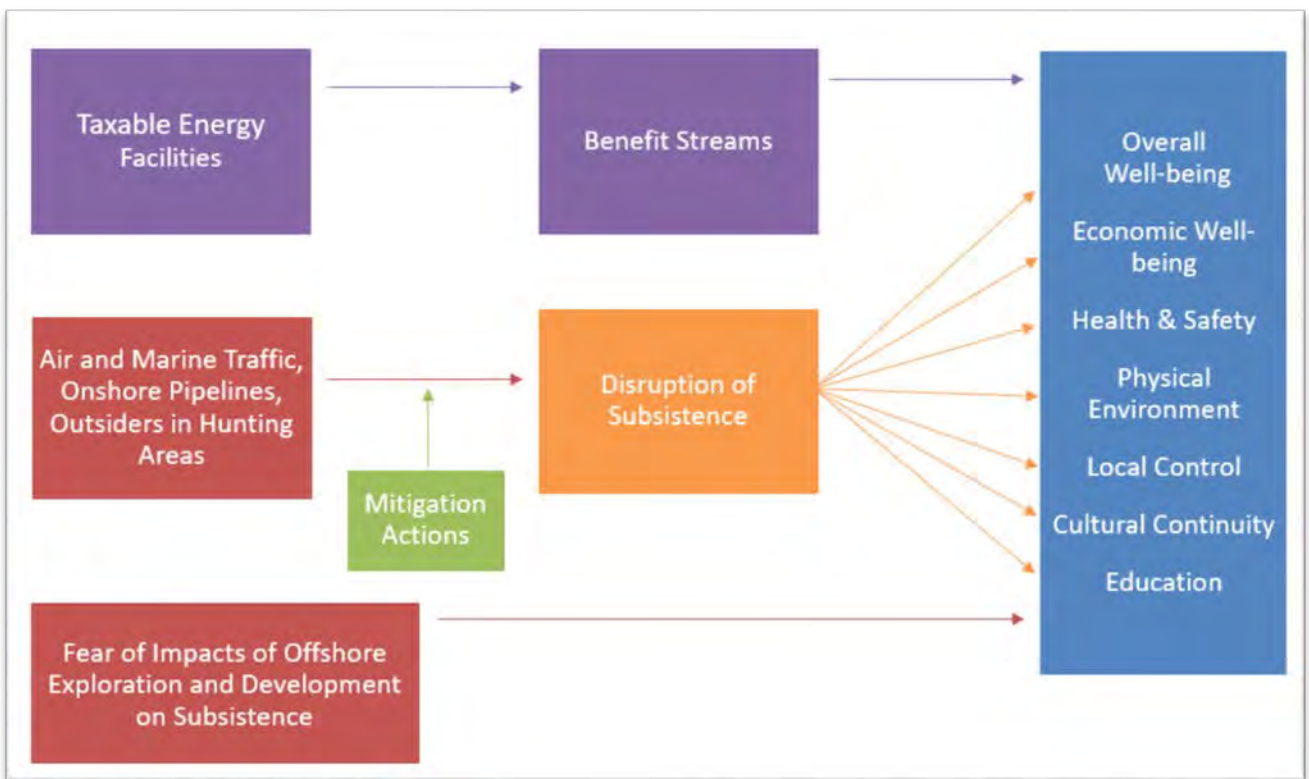


Figure 3-1: Summary of hypothesized relationships

Disruption of subsistence likely increases the effort required for successful harvests (physical environment), contributes to social stress (human health and safety), and decreases a sense of local control. Fear of impacts of offshore O&G exploration and development on subsistence likely decreases overall well-being with attendant effects on each SI domain. O&G development does not only impact subsistence activities but can have social impacts related to the imbalances in benefits between and within communities, perceived or real impacts on health due to changes in air quality, and other sociocultural impacts. These can also affect the overall well-being of local residents.

Individual differences in experience with benefit streams, disruption of subsistence, and fears of impacts of offshore O&G exploration and development on subsistence are likely to occur. While exposure to impacts and benefits varies by individual, individuals residing in the same community are more likely to have similar experiences, hence community differences in SIs are likely to be associated with differences in community exposure to offshore O&G exploration and development activities.

3.3 Community Involvement

The model used in the SICAA study for the involvement of local residents was the Alaska Native Management Board (ANMB) in SLiCA study (Kruse et al. 2009). Prior to starting SLiCA in Alaska, the research team invited representatives of the three Iñupiat settlement regions (North Slope, Northwest Arctic, and Bering Sea) to form an oversight board, the ANMB. SLiCA's approach to community engagement was based on the recognition that researchers bring to the project funding and technical expertise. These resources create an unequal power relationship. By explicitly establishing a community-based advisory authority in the project, the power relationship is more equal. Applying this approach in SLiCA resulted in a strong community engagement and improvement in the study design and implementation (Kruse et al. 2009). In addition to implementation of a regional advisory board, the SICAA study coordinated directly with community entities including tribal and city councils to gain community approval for the study; to coordinate fieldwork in their communities; and to review study results. Outreach efforts included letters and meetings to introduce the study; the use of a study website to disseminate information about the study; and the development of outreach flyers, handouts, and posters (Appendix IV) to disseminate study results.

3.3.1 North Slope Management Board (NSMB)

Over the course of the SLiCA study, the ANMB reviewed and gave final approval for research design and questionnaire protocols, reviewed preliminary tabulations, and reviewed pre-publication articles. The arrangement explicitly transferred decision making authorities from the researchers to the ANMB (applied to this project, the NSMB was an advisory board whose decisions were subject to approval by BOEM and OMB).

To meet the challenge of producing SIs that are viewed as relevant and reliable by residents of the region, the study team invited Taqulik Hepa, Director of the NSB Department of Wildlife Management, to chair the NSMB. The study team had worked with Ms. Hepa in the past on research related to subsistence and O&G impacts on the North Slope. Ms. Hepa invited representatives from each of the six SICAA study communities as well as a representative from the AEWC.

Ms. Hepa met with the research team in Anchorage on February 9, 2012 to plan for the establishment of the NSMB and a meeting of the NSMB in Utqiagvik to decide on the set of SIs to be submitted to BOEM. The Utqiagvik meetings took place on April 4-5, 2012 (Appendix III). Representatives from the communities of Utqiagvik, Point Lay, Kaktovik, Nuiqsut, Wainwright, and Point Hope agreed to participate. Last minute difficulties prevented the representatives from Wainwright and Point Hope from coming to Utqiagvik. The Executive Director of the AEWC also participated. The NSMB reviewed the process followed by the research team to come up with a

recommended set of SIs. The Board then reviewed a draft questionnaire, making several changes, additions, and deletions (see Section 3.4, Selection of Indicators). The BOEM, DOI, and OMB reviews of the questionnaire resulted in changes which were subsequently reviewed and approved by the NSMB.

3.3.2 North Slope Survey Website

A second component to engage communities involvement was a study website: <http://www.arctichost.net/NSSI/>. The experience of SLiCA demonstrated the value of a website to community engagement (see www.arcticlivingconditions.org). The timing of when interest in a study arises is unpredictable. The website provided answers on a timeframe suited to the individual resident. A key to the effectiveness of a website is updating the content on a regular basis. The research team designed and constructed a simple website which would allow the research team to add content without depending on website specialists. The website includes all current study products as well as reports from previous North Slope studies.

3.3.3 Community Coordination

The study team sought approval of the SICAA study from entities in each community from city and tribal entities. Researchers started the community approval process with the City of Kaktovik in July 2015, and then continued coordination efforts with the remaining communities through February 2016. The study team sent introductory letters (Appendix V) to the following entities in each of the six study communities:

- City of Point Hope
- Native Village of Point Hope
- Native Village of Point Lay
- City of Wainwright
- Native Village of Wainwright
- City of Barrow (now Utqiagvik)
- Native Village of Barrow (Utqiagvik)
- City of Nuiqsut
- Native Village of Nuiqsut
- City of Kaktovik
- Native Village of Kaktovik
- NSB

After sending introductory letters, the study team contacted each entity by phone and/or email to confirm receipt of the letter, discuss the proposed study, request that the study be placed on the agenda for the following council meeting, and ask for the community's support of the study. A summary of the study team's coordination efforts and community approvals in the six study communities is as follows:

- **Kaktovik:** After discussing coordination efforts with the NSMB representative from Kaktovik, the study team sent an introductory letter to the City of Kaktovik requesting that the project be placed on the upcoming city council meeting agenda, and sent an informative letter to the Native Village of Kaktovik. Members of the research team joined the Kaktovik City Council meeting by telephone in July 2015. The council approved the

survey and indicated that January and February was the best period in which to conduct the survey in Kaktovik.

- **Utqiagvik:** The study team consulted with the Utqiagvik representative of the NSB regarding coordination efforts in that community. Based on that consultation, the study team offered to meet with the NSB Mayor's office, coordinated community approval with the City of Utqiagvik, and sent an informative letter to the Native Village of Utqiagvik. SRB&A attended the November 24, 2015 Utqiagvik city council meeting via teleconference and presented SICAA. The council voted unanimously to approve the study.
- **Point Hope:** SRB&A attended the November 12, 2015 city council meeting via teleconference and presented SICAA. The council asked that SRB&A email project materials, including the final questionnaire, to review before making a final decision. The study team re-sent these materials to the council on December 28, 2015 after speaking with a council representative, and received telephone confirmation on February 18, 2016 that the city council had passed a resolution supporting the study. The Native Village of Point Hope tribal council reviewed SRB&A's letter at their November 2015 council meeting and requested that SRB&A send them the questionnaire for their review. The study team received telephone confirmation on February 4, 2016 that the tribal council had approved the study.
- **Point Lay:** The Native Village of Point Lay tribal council reviewed SRB&A's letter at their November 2015 council meeting and voted to approve the study. There is no municipal government in Point Lay.
- **Wainwright:** The City of Wainwright reviewed SRB&A's letter at their November 2015 city council meeting and voted to approve the study. SRB&A attended the November 12, 2015 Wainwright Traditional Council meeting via teleconference and presented the SICAA Study. The council voted unanimously to approve the study.
- **Nuiqsut:** SRB&A attended the November 2, 2015 city council meeting via teleconference and presented the SICAA Study. The council voted unanimously to approve the study. A member of the study team spoke with the president of the Native Village of Nuiqsut regarding the NSSIS over the telephone. He expressed concern that the Native Village of Nuiqsut was unaware of the study, and asked for copies of the questionnaire and other materials to review. These were provided to the Native Village of Nuiqsut on December 10, 2015 for review, paving the way for surveys in February 2016.

3.4 Selection of Indicators

The study team reviewed previous SI studies to identify potential sources of SIs for inclusion in the SICAA questionnaire. As noted in Section 3.2.2, the SLiCA study was a primary source of SIs for the SICAA study. The SLiCA SIs offered the best starting point for this study, because: (1) they were approved by oversight boards in the U.S. (the ANMB), Canada, Greenland, Russia, Norway, and Sweden; (2) they were approved by international experts in SI research; (3) they were tested across the Arctic in both rural and urban settings among men and women aged 16 and over; and (4) they provide comparable data that can be used to help understand changes in well-being on the North Slope over time. There are 129 SLiCA SIs, many of which

are based on multiple questions. These SIs form the core set of potential SIs which were assessed for use in this study.

The literature review identified another SI study warranting inclusion as a source of potential SIs: the 1977 MAP survey (Section 2.1). As previously noted, this study was a collaboration of the NSB and the University of Alaska. The timing of the 1977 study is important to the goals of the current study. It took place at the construction stage of the first wave of onshore O&G development on the North Slope, before most of the village developments made possible by taxation of O&G facilities. The 1977 MAP survey is close to being a baseline study for all O&G development. Forty-nine questions included in the survey were repeated or closely approximated in SLiCA as well as in NSB census surveys conducted between 1977 and 2015. Twenty-four questions included in the survey were included in the present study.

A third source of potential SIs was derived from the work of the ASI project as described above. ASI is a project of the Arctic Council. The intent of ASI is to develop regional-level SIs for all regions in the Arctic. BOEM referenced the ASI project in its SOW for this project, indicating that the ASI goals and domains were consistent with the goals of the current study. One of the two persons leading ASI, Dr. Joan Larsen of the Stefansson Arctic Institute in Akureyri Iceland, was part of the SICAA project team. Dr. Larsen met with the study team in Anchorage, Alaska and identified 49 ASI indicators to include in the SICAA SI assessment.

The final source of potential measures for the SICAA study was the NSSIS (see Section 2.7). Commissioned by the NSB, the NSSIS documented the experiences of 215 active harvesters in Utqiagvik, Nuiqsut, Atkasuk, and Wainwright with the impacts and benefits of O&G development. The measures developed in this study were relevant to identifying the impacts of offshore O&G exploration and development thus enabling analysis of the linkages between well-being and O&G impacts. There are multiple sources of impacts on well-being, including onshore O&G exploration and development, offshore O&G exploration and development, climate change, changes in government spending, and increasing tourism that informed the questions developed for the NSSIS and helped differentiate among these potential impact sources.

3.4.1 Application of Rules for Assessing Social Indicators

As described in Section 3.1, the Literature Review yielded a set of rules for assessing SIs for inclusion in the SICAA questionnaire. To apply these rules, the research team developed methods for rating each SI under each of the assessment criteria, which are depicted in Table 3-1.

Table 3-1: Methods for rating individual social indicator assessment criteria

Criterion	Values	Value Label	Value Rule
Understandable as Important	5	Highest	Among most important Iñupiat values
	4	High	Among important universal human values
	3	Medium	Probably an indirect measure of important value
	1	Low	Not understandable as important
Available for Past and Reasonably Foreseeable Future	5	Highest	Available from 1977 MAP survey
	4	High	Available from SLiCA or Harvest Surveys
	3	Medium	Available from Census
	1	Low	Not available for past nor from reasonably foreseeable future
Measure of Output of Social System	5	High	Clearly a social outcome important to individuals
	3	Medium	Probably an indirect measure of individual well-being
	1	Low	Cannot be assumed to indicate well-being at the individual level
Meaningful at the Household Level	5	High	Meaningful at the individual level as well as household level
	3	Medium	Meaningful at the community level
	1	Low	Not meaningful below the regional level
Sensitive to Variations Between People and Over Time	5	Highest	Demonstrated variability between people and over time
	3	Medium	Based on pretests likely to be sensitive to variations between people and over time
	1	Low	Unlikely to be sensitive to variations between people and/or over time
Reflects Concern with a High Degree of Precision	5	Highest	Based on multiple solid count measures of respondent's own experience
	4	High	Based on solid count measure of respondent's own experience
	3	Medium	Based on ordinal measure of respondent's own experience
	2	Low	Based on respondent's perception of other household member experience
	1	Lowest	Based on respondent's perception of community-level condition
Available at a Reasonable Cost (reasonable response burden)	5	Highest	Based on single, easy to answer item
	4	High	Based on simple set of questions answerable in less than 5 minutes
	3	Medium	Based on extended set of questions answerable in 5 - 10 minutes
	1	Low	Based on extensive set of questions answerable in more than 10 minutes
Available Reporting for Alaska Natives	5	Highest	Yes, including prior data
	3	Medium	Yes, no prior data
	1	Low	No
Available at the Village Level	5	Highest	Yes, and considered an accurate representation of community resident well-being
	3	Medium	Yes, but of questionable accuracy
	1	Low	Not available at the village level
Available at Least Every Five Years	5	Highest	Available at intervals of five years or less
	3	Medium	Available as often as survey conducted
	1	Low	Not available at intervals of five years or less

Table 3-1: Methods for rating individual social indicator assessment criteria, continued

Criterion	Values	Value Label	Value Rule
Levels and Distributions	5	Highest	Available as percentage distributions and means
	3	Medium	Available as distributions
	1	Low	Available as means only
Linked Data	5	Highest	Linked survey data with comparable prior linked data
	4	High	Linked survey data
	1	Low	Unlinked data
Overall Assessment	5	Recommend	High or highest on most values including output measure and availability of levels and distributions; no values below medium; or ASI indicator
	4	Recommend with reservations	Doesn't meet recommend criteria but 1977 comparable data

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3.4.2 NSMB Review and Social Indicator Assessment

Researchers developed a numeric scale for each of the assessment criteria that were applicable at the individual SI level. SIs from SLiCA, ASI, and the NSSIS were assessed. The SIs were organized by domain, recognizing that some SIs apply to more than one domain. The indicator, “count of comparable subsistence activities,” for example, applies both to the Cultural Continuity domain and the Physical Environment domain. Based on the assessment of 174 SIs, 78 were recommended to the NSMB and 29 were recommended with reservations. Nineteen of the 29 SIs recommended with reservations were ASI indicators that apply at the regional but not the community level. The remaining SIs recommended with reservations each had some measurement deficiency but had the value of contributing comparable data from the 1977 MAP survey or the 2003 SLiCA survey.

These recommended SIs, along with a draft questionnaire containing the questions that are the basis of the recommended SIs were reviewed by the NSMB in April 2012. The NSMB decided to drop one SI, change two SIs, and add two SIs, resulting in a revision of the assessment matrix. The team also revised the draft questionnaire accordingly. The final results of the SICAA SI assessment, including application of the assessment criteria (Table 3-1) to potential SIs from previous SI studies and the two additional SIs identified by the NSMB, are provided in Appendix III. Those SIs with an overall assessment score of 4 or 5 are those recommended by the NSMB following their review of the study team’s initial recommendations.

3.4.3 Recommended Social Indicators

Based on the preceding analysis and review, the NSMB and the research team recommended the following SIs under the seven SICAA domains (Table 3-2). It should be noted that a number of the SIs listed below are relevant to multiple domains and their placement in the questionnaire was based on providing the most logical sequence of questions. Thus, their placement in the questionnaire may differ from their placement under the domains below.

Table 3-2: Recommended SICAA Domains and Social Indicators

SICAA Domains	SICAA Social Indicators
Cultural Continuity	# of subsistence activities pursued in past 12 months
	# of months spent 5 days or more on subsistence activities
	# of traditional skills learned as a child
	Ability to understand, speak, read, and write Iñupiaq
	Proportion of meat and fish consumed that is traditional food ¹
	Proportion of meat and fish consumed that is harvested by HH
	Proportion of meat and fish consumed that was harvested and shared by another HH
	Index of importance of cultural values
	Index of satisfaction with community promotion of cultural values
	Preference for type of work: subsistence, working on a wage job, or both
Economic Well-being	Number of subsistence activities pursued in past 12 months (see above)
	Pounds of traditional food harvested for top ten species harvested by community
	Shares of bowhead whale received for household participation in whaling
	Weeks worked in past 12 months (total, longest job, related to O&G, related to offshore petroleum)
	Occupation and industry of longest job
	Months in last year did not have a wage job and wanted one
	Total personal income in past 12 months
	Household income by major source (wages, self-employment, arts & crafts, transfers)
	Index of satisfaction with economic well-being items
	Ability of household to make ends meet
	Proportion of meat and fish consumed that is traditional food (see above)
	Proportion of meat and fish consumed that is harvested by household (see above)
	Proportion of meat and fish consumed that was harvested and shared by another HH (see above)
	House problem index
	House feature index
Education	Number of traditional skills learned as a child (see above)
	Highest level of school completed
	Satisfaction with education and training received
	Satisfaction with education services

Table 3-2: Recommended SICAA Domains and Social Indicators, continued

SICAA Domains	SICAA Social Indicators
Local Control	Count of votes placed in local, regional, state, and national elections
	Count of six institutions meeting needs or not
	Satisfaction with influence Iñupiat have on management of natural resources like oil, gas, and minerals
	Satisfaction with influence Iñupiat have on management of natural resources like fish and caribou
	Satisfaction with influence Iñupiat have to reduce environmental problems in their area
	Index of political motivation
Health and Safety	Self-reported health
	Satisfaction with their health
	Satisfaction with health services
	Satisfaction with public safety services
	Victimization summary
	Depression index
	Social support index
Physical Environment	Problems related to alcohol or drugs in HH today
	Number of subsistence activities pursued in the past 12 months (see above)
	Number of outdoor activities pursued in the past 12 months
	Satisfaction with amount of fish and game available locally
	Local environmental problem index
	Satisfaction with the health of the environment in one's area
	Satisfaction with recreational facilities in community
	Pounds of traditional food harvested for top ten species harvested by community (see above)
Proportion of meat and fish consumed that is traditional food (see above)	
Overall Well-being	Proportion of meat and fish consumed that is harvested by household (see above)
	Satisfaction with life in this community
	Satisfaction with life as a whole
Impacts of O&G Development	Considered moving from community and reasons for staying or moving
	Identification of any subsistence activities affected by oil industry activities in the last year
	Description of each activity affected
	Description of location of activity affected
	Description of associated industry activity
Identification of actions that could have avoided or reduced impact	

¹ Wild foods harvested through traditional subsistence harvesting activities which are core component of Alaska Native culture.

Stephen R. Braund & Associates, 2017.

3.5 Sample Design

BOEM called for a census of households in Kaktovik, Nuiqsut, Wainwright, Point Lay, and Point Hope and concurred with the study team’s proposal to sample one-third of households in Utqiagvik. Table 3-3 shows the estimated number of households in each community, the estimated number of completed interviews, and the maximum estimated sampling errors. The team assumed an 80 percent response rate. The maximum estimated sampling errors are based on a 95 percent level of confidence and take into account the finite population correction factor which applies when sampling over 20 percent of households.

Table 3-3: 2016 sample design summary

Community	Estimated Number of Households	Target Number of Completed Interviews	Maximum Estimated Sampling Error
Utqiagvik	1,280	338	4%
Point Hope	186	149	5%
Wainwright	147	118	6%
Nuiqsut	114	91	7%
Kaktovik	72	58	9%
Point Lay	60	48	9%
Total	1,859	802	3%

Stephen R. Braund and Associates, 2017

3.6 Pretest and OMB Review

The research team submitted the NSMB-approved questionnaire to BOEM in May 2012. After several rounds of revisions based on BOEM comments, the study team submitted a revised draft instrument to BOEM in August 2012. Upon BOEM’s approval of the draft survey instrument, the study team conducted pre-tests of the SICAA survey with North Slope residents. This section summarizes the results of these pre-tests.

The study team coordinated with members of the NSMB to identify potential pre-test respondents. Both the chairman of the NSMB and the NSMB’s AEWC representative assisted the study team in contacting respondents. The study team traveled to Utqiagvik twice to conduct pre-tests and also conducted pre-tests in Anchorage with North Slope residents from Point Lay and Wainwright who were in Anchorage for meetings.

OMB restricts pretesting to nine or fewer respondents. For all but one pre-test (i.e., eight pre-tests), two study team members were present. Prior to beginning the questionnaire, interviewers provided the respondent with a summary of key points, including the confidentiality of survey results, the estimated survey length, and the opportunity for respondents to say “pass” if they chose not to answer a question. One interviewer read the survey questions (with the exception of the self-administered section on Health), while the other took notes on a laptop computer or on a printed copy of the questionnaire. The note-taker documented when the respondent had difficulty answering a question; when the respondent asked for clarification or asked the

interviewer to repeat the question; when an error was noted on the questionnaire form by the study team; and additional observations about the flow or content of the questionnaire. In a number of cases, respondents provided final comments about the survey after completion; these comments were documented as well. Upon completion of each pre-test, the respondent received an honorarium in the amount of \$30. In three cases, respondents chose not to receive the honorarium.

After four pre-tests were conducted in Utqiagvik, a number of initial revisions were made to the questionnaire. The remaining five pre-tests were conducted using the revised questionnaire. Following completion of the nine pre-tests, the study team reviewed pre-test notes and identified questions that frequently raised questions from the respondent or that were identified by interviewers as problematic. The study team flagged these questions and made the appropriate edits to the questionnaire. In a number of cases, examples or clarification were added to a question to assist the respondents in understanding the question's intent. Other revisions were meant to aid the interviewer and facilitate the flow of the interview.

As a result of the pre-tests, one list item was removed, and one question was added. The study team reworded nine questions and added examples and cues to a number of questions or list items to provide more clarity for respondents. A notable revision that resulted from the pre-tests was a new interview burden estimate of one hour (revised from .5 hours) based on an average pre-test length of 54 minutes. In addition, the study team adjusted the honorarium to \$50 instead of the previous honorarium of \$30 due to the added length of the interview.

The revised questionnaire and related materials were submitted to the COR in November 2012. The Alaska office of BOEM subsequently submitted the questionnaire and supporting documentation to its Washington D.C. office. The approval process called for review by BOEM's central office, followed by the DOI, and finally the federal OMB. Also required were 30 and 60 day notices published in the Federal Register and a Privacy Act assessment.

Further minor revisions to the questionnaire were required by Washington D.C. reviewers. The major reason for the suggested revisions was to ensure that the answers given by respondents could not be used to identify respondents, even by analysts with access to the raw data. The study team requested that the NSMB review the changes made in Washington DC. It took from November 2012 to February 2015 to receive word from BOEM that all the necessary federal approvals and funding were in place.

The study team worked with the NSMB chair to inform the NSMB members about the changes in the questionnaire. NSMB members were asked to let the study team know by June 2015 if they had any concerns. No concerns were transmitted to the team.

From previous experience in conducting surveys on the North Slope, both the study team and the NSMB chair agreed that the fieldwork should be scheduled to avoid conflicts with subsistence activities, at the time of year residents are most likely to be home and have time to complete an interview, and agreed upon conducting the survey between January and February 2016.

3.7 Survey Administration

Prior to survey administration, interviewers prepared field materials, coordinated with study communities, and trained field staff. Preparation of field materials included finalizing and printing survey forms, preparing interviewer packets, and developing community outreach materials (posters, flyers). Interviewer packets included a cover sheet, consent form, questionnaire form, and extra forms as necessary. Each packet also included a separate print-out of the self-administered questionnaire, which contained potentially sensitive questions, with an attached envelope. An interviewer packet included a copy of the questionnaire (for notes), pencils, and a calculator (to assist the respondent with questions about income or harvest numbers).

Community coordination included establishing field bases in each community, working with community organizations to inform the community of the upcoming surveys, and obtaining community maps and household lists. On January 4 and 5, 2016, the study team held a two-day training with field staff which covered the purpose of the study, guidelines for conduct, steps for sampling households and for selecting respondents, record keeping, and practice interviews.

The study team began implementation of the survey in Utqiagvik on January 8, 2016, followed by Kaktovik, Wainwright, Nuiqsut, Point Lay, and Point Hope. There was a continuous presence of field staff on the North Slope until March 9, 2016. In Utqiagvik, every third occupied household in each map section was included in the sample. In all other communities, all occupied households in the community were included in the sample. To be eligible for inclusion in the survey, a household not only had to be occupied during the field period, but the selected respondent (head of HH) had to be present/available during the field period (Table 3-4). The study team did not include special living places in its sample of eligible households, such as temporary worker housing, dormitories, or nursing homes.

BOEM asked the research team to sample HHs. The team met this request by asking the first adult contacted in each household to identify which adults living in the household they considered a HH. To randomly select among the adults mentioned (if more than one adult was mentioned), the interviewer then asked to speak with the HH with the next birthday. Upon first contact with the respondent, the interviewer introduced the project and read the consent form out loud to the respondent. If the respondent agreed to be interviewed, the interviewer proceeded to the survey. The interviewer read each question aloud, and used cue cards so that the respondent could answer by selecting a letter indicating their response choice. Interviewers recorded all responses on the survey form and wrote detailed, verbatim responses on the form to provide context during data entry. In some cases, after multiple failed attempts to interview a respondent in person, the respondent agreed to fill the survey out on their own, which the interviewer picked up at a later date. Potentially sensitive questions were answered by the respondent on a self-administered form which was then sealed in an envelope so that the interviewer could not see the responses. Upon completion of the survey, each respondent received a \$50 cash honorarium.

In summary, the study team completed interviews with 684 households between January 8, 2016 and March 9, 2016, for an overall response rate of 79 percent. The highest response rate was in Nuiqsut, at 86 percent, and the lowest response rate was in Kaktovik, at 70 percent.

Table 3-4: 2016 North Slope survey administration summary

Community	Households Listed as Occupied	Eligible Households Sampled	Completed Interviews	Response Rate	First Interview	Last Interview
Utqiagvik	1,122	340	258	76%	1/8/2016	3/9/2016
Kaktovik	76	66	46	70%	1/12/2016	2/18/2016
Wainwright	137	130	105	81%	1/19/2016	1/30/2016
Nuiqsut	111	104	89	86%	2/8/2016	2/17/2016
Point Lay	56	50	42	84%	2/9/2016	2/15/2016
Point Hope	184	177	144	81%	2/24/2016	3/8/2016
Total	1,686	868	684	79%	1/8/2016	3/9/2016

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Maximum estimated sampling errors range from plus or minus 5 percentage points for the sample as a whole to plus or minus 14 percentage points for Kaktovik (see Table 3-5).

Table 3-5: 2016 North Slope survey sampling errors and confidence intervals

Community	Adjusted Sampling Error	Confidence Intervals at 95% Level of Confidence (plus or minus %)
Utqiagvik	0.04	9%
Kaktovik	0.07	14%
Wainwright	0.04	7%
Point Lay	0.06	12%
Nuiqsut	0.03	7%
Point Hope	0.03	7%
Total	0.02	5%

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3.8 Survey Respondent Characteristics

Table 3-6 displays the gender, age, and ethnicity of the sample. Fifty-two percent of the HHs were male, and 48 percent were female. Approximately 20 percent of the sample fell into each of four age ranges: 25-34, 35-44, 45-54, 55-64. Seventy-four percent consider themselves to be Iñupiat in the six communities as an aggregate, but Utqiagvik and the smaller villages differ in the ethnic mix of residents, with 64 percent of Utqiagvik respondents considering themselves Iñupiat compared with about 90 percent in each of the other communities.

Table 3-6: Survey respondent characteristics

		Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Gender	Male	52%	54%	61%	57%	56%	47%	52%
	Female	48%	46%	39%	43%	44%	53%	48%
	Total	100%	100%	100%	100%	100%	100%	100%
Age	16-24	3%	0%	10%	7%	8%	3%	4%
	25-34	22%	24%	16%	31%	30%	26%	23%
	35-44	20%	13%	22%	18%	10%	17%	19%
	45-54	23%	30%	22%	24%	19%	17%	22%
	55-64	26%	24%	23%	13%	21%	22%	24%
	65 and older	7%	9%	7%	7%	11%	15%	8%
	Total	100%	100%	100%	100%	100%	100%	100%
Ethnicity	Iñupiat	64%	91%	98%	91%	91%	88%	74%
	Non-Iñupiat	36%	9%	2%	9%	9%	12%	26%
	Total	100%	100%	100%	100%	100%	100%	100%
Number of Heads of Household		258	46	105	42	89	144	684

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3.9 Data Processing

Interviews were conducted using a paper questionnaire administered as a face-to-face interview. Following the interview each paper questionnaire was scanned and uploaded to a secure server. The scanned questionnaires were reviewed for legibility, edited for complete and correct interviewer recording of responses, and open-ended responses were assigned numeric codes.

Prior to data entry, two Statistical Package for the Social Sciences (SPSS, version 18) databases were prepared including missing data values, value labels, and variable labels. The first database contained responses to all sections of the questionnaire except *Section I: Impacts on Subsistence Activities*. This first database contains one record per respondent (N=684). Each record has 354 variables. The second database contains the responses to Section I, with one record per impact reported (N=253). Each record has 35 variables.

Questionnaire responses were entered directly into the SPSS database. For open-ended responses, such as for questions on subsistence impacts where respondents were asked to describe the impact that occurred, the study team coded the responses based on the written notes on the survey form. Following data entry, frequencies for each variable were reviewed for invalid codes, which were corrected using the scanned questionnaires. Ten percent of the data entries were then replicated to calculate an error rate, which was 0.04 percent.

The first raw data SPSS database was developed into an analytic database using 458 lines of SPSS syntax. Primary analytic data development tasks included reversal of scales so that positive values indicate positive levels of well-being, and multi-item scale construction. The first analytic database contains 534 variables. The second raw data SPSS database (Impacts) was developed into a restructured analytic database containing one record per respondent using 193 lines of SPSS syntax. The second analytic SPSS database contains 206 variables. The first and second analytic SPSS databases were then merged to create a single analytic database with 684 records and 739 variables.

3.10 Multi-Survey Database Construction

A goal of the 2016 SICAA survey was to create a baseline of SIs of well-being. As part of this baseline, the study team incorporated data from previous SI research. Virtually all SIs are measured on scales which have a positive-negative direction with respect to well-being (i.e. interval or ordinal) but do not have an absolute value. Even income measures are relative since there are differences in cost of living over time and space. SIs of well-being also vary over time for a multitude of reasons aside from the projected effects of offshore O&G development. Thus, understanding how SIs vary over time and space (e.g. other Arctic regions) lends meaning to current measures and strengthens the baseline. Additionally, providing SIs of well-being on the North Slope over time offers an opportunity to see how onshore O&G development has affected well-being. While there are important differences between the projected potential effects of onshore and offshore O&G development (e.g. local tax revenues), there are similarities as well (e.g. employment and potential effects on subsistence resources). Thus, information about the impacts of onshore O&G development on well-being can be used to project how offshore development may affect well-being in the future.

Members of the research team have directed SI studies on the North Slope since 1977. As described in “Review of Prior Research,” three studies with data available to the research team have produced SIs of well-being: the 1977 MAP survey, the 1988 NSB Census, and the 2003 SLiCA. While the study team has access to a small set of SI data from the 2007 NSSIS questionnaire, the sample for the NSSIS was active harvesters only (with no data indicating HH status), and therefore these data are not comparable to HHs as a whole.

SPSS databases containing the original individual records for each of the SI surveys listed above have been archived by the research team. Not only are the microdata available, there is also a substantial overlap in SIs. The overlap is the result of a systematic attempt by the SICAA study team to build on prior studies. The 2016 baseline data can therefore be compared to a 39-year span of SIs. Since the microdata for each study is available, it is possible to test the statistical significance of observed changes. The following sections describe how the 1977, 1988, and 2003 data overlapped with and were incorporated into the SICAA study.

3.10.1 1977 MAP Survey (1977)

The 1977 MAP survey was conducted under a grant from the National Science Foundation as part of the University of Alaska ISER’s “Man in the Arctic Program” (Kruse, Kleinfeld, and Travis 1981) (see Section 2.1). The MAP survey included the study communities of Utqiagvik (formerly

Barrow), Wainwright, Nuiqsut, Kaktovik, Anaktuvuk Pass, and Point Hope. The sample included 50 percent of Utqiagvik households and a census of households in the remaining communities. The study randomly selected an adult in each household to complete the survey. While some non-Iñupiat households were surveyed, the sample was not adequate to be representative of all non-Iñupiat households. In total, 290 Iñupiat HHs were surveyed with a 754 percent response rate.

The 2016 SICAA survey sampled HHs. The 1977 MAP survey sampled adults, aged 18 and over. To increase the comparability of the two samples, the 1977 sample was filtered to include only “heads” and “spouses of heads” of household, since 51 percent of the 2016 survey sample were women and in 1977 the concept of “head of household” was commonly interpreted to apply to males. Starting with the 1977 archived SPSS file the research team developed 233 lines of SPSS syntax to create SIs and a sample comparable to those in 2016.

3.10.2 NSB Census (1988)

The 1977 MAP survey was a collaboration of the NSB and the University of Alaska. One result of this collaboration was a decision of the NSB to include some of the 1977 SIs in subsequent borough censuses, including the 1988 census. The collaboration between the NSB and the University of Alaska continued with the borough sharing microdata from its 1988 census with the University of Alaska, resulting in a paper published comparing living conditions on the North Slope in 1988 with those in 1977 (Kruse 1991).

The 1988 census microdata file includes 5,667 records corresponding to one record per individual. All households in the eight North Slope communities were included in the census sample. As in the case of the 1977 survey, the team filtered records to include only those of a “head” or “spouse of head”. Due to the fact that the primary purpose of the census was to obtain a population count, the overlap in SI variables with the 2016 survey is relatively small, but does include measures of subsistence activity, jobs, and income. The team developed 141 lines of SPSS syntax to create comparable variables.

3.10.3 Survey of Living Conditions in the Arctic Survey (SLiCA) (2003)

SLiCA was an international collaborative effort of researchers and indigenous residents to measure well-being in a way relevant to Arctic lifestyles (see Section 2.5). The study began in 1998. Interviews were conducted between 2001 (Canada) and 2006 (Norway). Arctic indigenous settlement regions in northern Alaska (Northwest Arctic, Bering Straits, and North Slope), northern Canada (Inuvialuit, Nunavut, Nunavik, Labrador), Greenland, Russia (Kola Peninsula, Chukotka), Norway, and Sweden were ultimately included. The cumulative number of interviews approached 8,000 (7,910).

Statistics Canada administered SLiCA in Canada. SLiCA data for Canada is protected by Canadian law and therefore only accessible through StatCan sponsored statistical laboratories. The SLiCA team brought data from Alaska, Greenland, Kola Peninsula, and Chukotka to Canada in order to produce the major release of results in March 2007.

The major SLiCA data release did not include data for Saami (Laplander) residents interviewed in Norway and Sweden. Few results from these data have been published. The 2016 research team confirmed with researchers in Norway and Sweden that they do not object to publication in this study.

SLiCA randomly sampled adults 16 years of age and over (15 years of age and over in Greenland and Canada). To make the data comparable to the 2016 SICAA data, SLiCA data were filtered to exclude those adults less than 30 years old living with an older adult, based on the assumption that the older adult was more likely to be claimed as a HH. Since the Canadian microdata are no longer available to the research team, SLiCA variables were transformed to match 2016 analytic variables using 374 lines of SPSS syntax.

3.11 . Choice of Aggregate Data Comparison Groups

This report contains five aggregate data comparison groups: 1) impacts by community; 2) SIs by community; 3) SIs for North Slope Iñupiat over time; 4) SIs by gender; and 5) SIs for Arctic indigenous peoples across regions and countries.

3.11.1 Impacts by Community

As discussed in Hypothesis, Section 3.2.4, the major potential impacts and benefits of North Slope O&G development in general are: (1) disruption of subsistence, (2) fear of offshore impacts to marine subsistence resources, and (3) NSB tax revenues. Disruption of subsistence can take many forms. As experience with onshore O&G development has shown (SRB&A 2009), subsistence impacts vary by community. Nuiqsut's proximity to O&G development is clearly associated with increased disruption of subsistence compared with other communities. For this reason, the most important baseline comparisons are by community. The 2016 SICAA survey was designed to produce reliable SIs of well-being as well as impact measures at the community level. Data on past 12 month impacts are provided first, in order to place subsequent data comparison groups in the context of O&G impacts.

In the beginning of the SICAA interview, respondents were shown a list of subsistence activities and asked to identify any activities they personally engaged in during the past 12 months. Near the end of the interview, respondents were shown the list of their activities and asked:

Looking at the subsistence activities you mentioned earlier, please tell me the letter of any of the activities in which you personally experienced impacts of oil industry activities in the last 12 months.

Respondents were asked to describe the impact, the month, the related oil industry activity, how the oil industry activity caused the impact, if anyone could have done something different to avoid the experience or make it better, who could have done something different, and what they could have done. This information, and, indeed, the respondent's experience, is not always sufficient to differentiate an onshore O&G development impact from an offshore development impact. Offshore O&G development requires associated onshore industry activities. Furthermore, onshore O&G development involves helicopters and aircraft that may disrupt

offshore subsistence activities. The same helicopter contractor may work for onshore and offshore industry operations.

The time frame for respondent reports of impacts corresponds, within a couple of months, to the calendar year 2015. The Alaska Department of Natural Resources, Division of Oil and Gas (2016) published a map of 2014, 2015, and 2016 North Slope O&G activity onshore and offshore between Harrison Bay and Point Thompson. The 2015 O&G activity (see Figure 3-2) shows activity was confined solely to onshore O&G development. However, offshore activities from Shell exploratory drilling were occurring in the Chukchi during 2015. Furthermore, while there were no new offshore O&G developments in the Beaufort Sea in 2015, several nearshore developments were ongoing including Oooguruk, Endicott, Northstar, and Liberty. The reported impacts are therefore best considered as part of the baseline environment which includes onshore O&G development and limited offshore development activities.

3.11.2 Social Indicators by Community

As noted above, the most important baseline comparisons are by community. Thus, the second section of aggregate data is organized by community for the seven SICAA domains: economic well-being, physical environment, health and safety, cultural continuity, education, local control, and overall well-being. The order of presentation of the domains is intended to reflect hypothesized causal relationships. Potential increases in tax revenues and employment opportunities are hypothesized to affect economic well-being. Potential impacts of industry activities are hypothesized to affect the physical environment, including subsistence resources. Potential impacts of industry activities may also affect human health. Potential disruptions of subsistence may in turn affect cultural continuity. Effects on education are likely to be more indirect and over a longer period of time. Also indirectly affected could be perceptions of local control, especially over resources, and ultimately in willingness to engage in civic and community activities. Overall well-being is hypothesized to be affected by all the domains.

The database used for the comparison of SIs by community is composed of the responses to 684 interviews conducted in the six North Slope study communities in January through March 2016. As shown above in Section 3.9 (Survey Respondent Characteristics), the makeup of survey respondents was almost equally male (52 percent) and female (48 percent); while the percentage of Iñupiat HHs was around 90 percent in the smaller villages; in Utqiagvik, a lower percentage of respondents considered themselves Iñupiat (64 percent).

3.11.3 Social Indicators for North Slope Iñupiat Over Time

Major onshore O&G development on the North Slope began in the 1970s and continues. It is part of the baseline environment for North Slope Iñupiat. In addition, over the past 40 years major changes in living conditions have taken place on the North Slope. The infrastructure of telecommunications, air travel, education, local utilities, health, retail food and household goods, indoor recreation, and cross-country travel all have had potential effects on well-being. With these facts in mind, SI comparisons over the baseline period help us understand if there are trends in well-being. Is the baseline changing or is it stable?

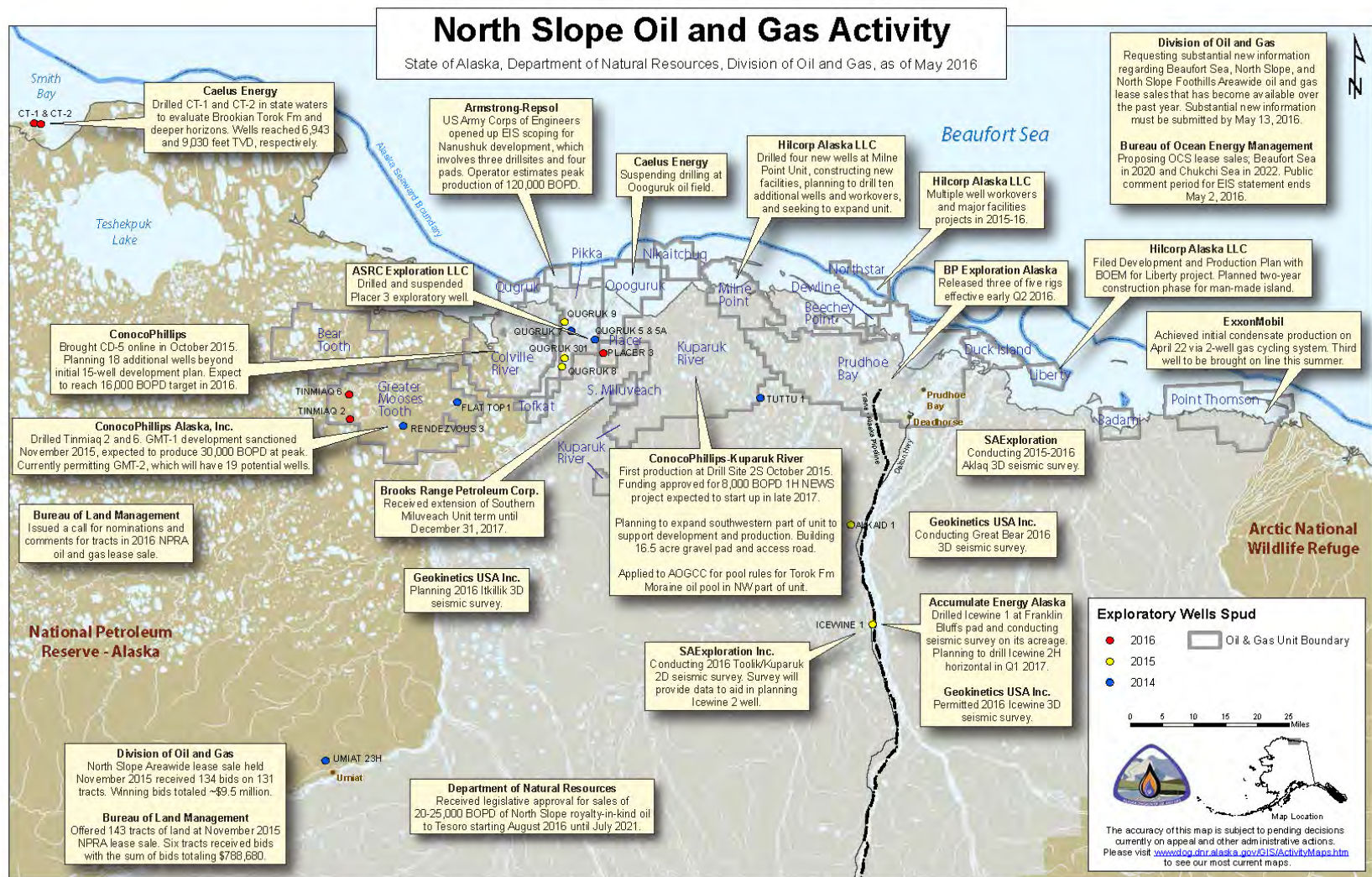


Figure 3-2: Map of 2014, 2015, and 2016 North Slope oil and gas activity (State of Alaska Division of Oil and Gas, 2016)

The database used for comparisons over time is composed of Iñupiat HH records for the six communities surveyed in 2016 merged with four surveys (where data are available): (1) the 1977 MAP survey; (2) the 1988 NSB Census; (3) the 2003 SLiCA survey; and, (4) the 2016 SICAA Survey. The concept of HH in 1977 was largely limited to men; 84 percent of the HHs in the 1977 survey were male (Table 3-7). The age distributions in the four samples are remarkably similar, with a somewhat larger proportion of 25-34-year-olds in the 1977 and 1988 and conversely a somewhat larger proportion of 55-64-year-olds in 2016.

Table 3-7: Characteristics of database used in time comparisons, North Slope Iñupiat

		Study Year				
		1977	1988	2003	2016	Total
Gender	Male	84%	49%	44%	49%	48%
	Female	16%	51%	56%	51%	52%
	Total	100%	100%	100%	100%	100%
Age	16-24	4%	8%	6%	4%	6%
	25-34	31%	29%	18%	23%	23%
	35-44	26%	24%	26%	18%	24%
	45-54	17%	16%	23%	21%	20%
	55-64	10%	13%	16%	24%	17%
	65 and older	13%	10%	10%	10%	10%
	Total	100%	100%	100%	100%	100%
Ethnicity	Iñupiat	100%	100%	100%	100%	100%
Number of Heads of Household		227	1,417	172	538	2,354

Stephen R. Braund and Associates, 2017

3.11.4 Social Indicators by Gender

As reported in 1982 (Kruse, Kleinfeld, and Travis 1982), the creation of the NSB in 1972 opened new opportunities in general government operations that attracted Iñupiat women into the labor force. By 1977, the percentage of Iñupiat women in the labor force was comparable to that of women elsewhere in the United States. Also changing was the technology available for subsistence. Snowmachines and four-wheelers became essential components of the subsistence lifestyle. Men could work in town and hunt and fish after work and on weekends. Sixty percent of all subsistence activities in 1977 took place after work or on weekends (Kruse, Kleinfeld, and Travis 1982).

The Iñupiat are, of course, aware of these changes and aware of the changes in household roles and responsibilities that often attend changes in employment and subsistence. Differences in the experience of men and women on the North Slope may mean that the impacts and benefits of offshore O&G development could affect men and women differently as well. Interest in gender differences among members of the NSMB advising this study is a major reason for inclusion of this data comparison set.

The database used for gender comparisons consists of the 538 interviews with Iñupiat HHS conducted in 2016. Remarkably, and itself a statement about the evolving concept of HH, the distribution of the sample by gender is almost evenly divided, with 275 Iñupiat men and 260 Iñupiat women (Table 3-8).

Table 3-8: Characteristics of database used in gender comparison, North Slope Iñupiat

		Male	Female	Total
Age	16-24	6%	2%	4%
	25-34	23%	24%	23%
	35-44	18%	19%	19%
	45-54	22%	20%	21%
	55-64	23%	24%	23%
	65 and older	8%	11%	10%
	Total	100%	100%	100%
Ethnicity	Iñupiat	100%	100%	100%
Number of Heads of Household		275	260	535

Stephen R. Braund and Associates, 2017

3.11.5 Social Indicators for Arctic Indigenous Peoples across Regions and Countries

The idea behind the SLiCA study was that comparisons of Arctic indigenous peoples living in similar environments using SIs relevant to Arctic populations would be more meaningful than comparisons of Arctic indigenous peoples with southern populations using indicators relevant to those southern populations. The SLiCA data are 8 to 15 years old, depending on the study area, and are arguably dated. However, the 2016 and 2003 North Slope data offer a “bridge” to data for the other study areas included in SLiCA: Bering Straits, Northwest Arctic, Greenland, Chukotka, Kola Peninsula, and Norway, and Sweden (Sápmi, otherwise known as Lapland). To the extent that North Slope results are similar in 2003 and 2016, it is more likely that results for other study areas are also still comparable to 2016 North Slope results.

The database used in geographic comparisons contains 3,492 records of indigenous HHS in the eight Arctic regions listed above (Table 3-9). Overall, 56 percent of the sample is female, ranging from 69 percent in Chukotka to 51 percent in the 2016 North Slope sample. The age distributions are similar.

Table 3-9: Characteristics of database used in geographic comparisons

		North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	Total
Gender	Male	49%	44%	45%	42%	46%	31%	36%	53%	48%	44%
	Female	51%	56%	55%	58%	54%	69%	64%	47%	52%	56%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Age	16-24	4%	6%	4%	8%	8%	8%	6%	1%	2%	7%
	25-34	23%	19%	19%	18%	17%	19%	15%	19%	12%	18%
	35-44	18%	25%	31%	29%	29%	31%	24%	21%	16%	28%
	45-54	21%	22%	20%	20%	26%	24%	29%	21%	33%	24%
	55-64	24%	15%	8%	8%	11%	14%	14%	18%	24%	12%
	65 and older	10%	12%	18%	16%	10%	5%	12%	20%	13%	11%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Ethnicity	Indigenous	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Number of Heads of Household		538	183	227	178	961	487	288	218	412	3,492

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3.11.6 Summary

Thus far, this report has provided an overview of previous SIs research relevant to the SICAA research and survey design and a description of study methods. The SICAA study was based on a rigorous review of previous research which informed the development of a theoretical framework; selection of domains and SIs; development of a community engagement plan; and development and administration of a household survey. Analysis of SIs data from the SICAA study and previous SIs research was preceded by construction of a multi-survey database which ensured comparability over time and across comparison groups. The following sections provide the results of this comprehensive analysis which allow for comparison by community, over time, by gender, and across the Arctic.

Chapter 4: Results

4.1 Aggregated Data Discussion

This section discusses the aggregated data results, which are provided separately in the following Section 4.2. The tabular presentations of results in this report are separate from the text summarizing results. This separation is intended to reflect the fact that the primary value of a baseline study is the aggregate data, not interpretations of the data. The SIs were developed to be meaningful in and of themselves. In other words, the measures mean what they say they mean. To expedite simultaneously viewing text and related tables, the tables are contained as a separate PDF file in electronic form on the web (see www.arctichost.net/NSSI).

Throughout the results chapter, percentages are rounded to the nearest whole percent to properly reflect the precision of estimates (i.e. tenths of percentages are not meaningful due to the size of the sample). Because each percentage is rounded separately, the sum of percentages in a column may not add to 100 percent. Tables present percentage distributions. Means are included for the few SIs that are continuous distributions (e.g., pounds of subsistence harvest). The best way to compare percentages is across columns of a single row. Differences in such percentages can be expected due to chance. Another random sample of HHs could be expected to produce slightly different results.

The chi-square test of significance compares observed responses with responses that would be expected if the two variables being compared have no empirical relationship (it uses the row and column totals to estimate each cell of a table). That is, chi-square estimates the probability that the observed differences between cells are not due to the random selection of respondents. The “p” value reported for chi-square is the probability that the observed differences are not due to chance (i.e., the differences are “significant”). The significance threshold was set at 0.05. It is important to keep in mind, however, that a significant difference may not be an important difference. In a large survey sample, small differences are still likely to be significant (i.e. “real”). A good rule of thumb is to ignore differences of less than 10 percentage points. For interpreting differences in means, a conservative assumption is to use a difference of two whole numbers between means as a threshold for considering the difference to be potentially important.

The significance of differences in observed mean values is based on a different statistical test: analysis of variance (ANOVA). ANOVA compares the variation in SI values for respondents living in the same community with the variation in values for the same SI for respondents living in different communities. The “p” value for ANOVA can be interpreted in the same way as the “p” value for chi-square. Both chi-square and ANOVA measures are based on the application of weights which maintain the absolute size of the sample so as to not artificially make it “look” to the test that the sample is larger than it really is. Finally, the number of households, or HHs, reflects the actual count contributing to the reported result. Differences in the number responding occur due to questions that apply to only a part of the sample or due to respondents responding with “don’t know,” or who declined to answer the question.

The aggregated results (and discussion) are organized into five sections. The first section provides the results of the O&G impact questions from the 2016 SICAA survey (see Section 3.12.1). The remaining four sections provide SIs collected for the 2016 SICAA under the following four data comparison groups (see Sections 3.12.2 through 3.12.5 for a description of each data comparison group): 1) SIs by community; 2) SIs for North Slope Iñupiat over time; 3) SIs by gender; and 4) SIs for Arctic indigenous people across regions and countries. During the SICAA survey, respondents were often asked to report on the “past 12 months” rather than a specific set of months. In theory, then, a respondent interviewed in March 2016 would report on the period March 2015 to February 2016. In practice, however, we know that when interviews occur close to the beginning of a calendar year, respondents often think in terms of the previous calendar year. If they experienced an impact after the calendar year but before the interview they are likely to include that experience as well. It is therefore best to interpret the “past 12 months” in this study as roughly the calendar year 2015 but with up to two additional months. Forty-seven percent of the interviews took place in January and 30 percent took place in February. For the sake of simplicity, the reporting of results for “past 12 months” refers to the reporting period “2015.” The reporting of all other SICAA results refers to the reporting period “2016.”

4.1.1 Comparisons of 2016 Impact Results by Community

This is not an impact study; rather, it is intended to establish a baseline against which future impacts can be measured. The primary objective of the SICAA study is to provide a baseline of well-being on the North Slope (see Section 1.1). One of the goals of such a baseline—one which BOEM explicitly states in its SOW for this study—is to explore potential linkages between well-being and offshore O&G exploration and development. In order to provide data that would help enable such an analysis, the SICAA survey documented any impacts of O&G development personally experienced by respondents in the past 12 months.

The purpose of this section is twofold. First, a baseline is best seen as a dynamic system. The well-being of North Slope residents can be expected to change over time in the absence of major offshore O&G development. In the absence of offshore O&G development, part of what may contribute to changes in the baseline over time is the impacts of onshore development. By including measures of resident experiences with O&G development impacts we can test for hypothesized relationships between impacts of O&G development and well-being as measured by SIs.

Second, inclusion of a section on impacts in the SICAA survey is intended to be replicated as part of future SI surveys. Including impact questions in this baseline survey provides an opportunity to monitor impacts experiences with O&G development over time. The SICAA survey documented subsistence activities in which the respondent had participated in the past 12 months (2015), and then asked whether the respondent had personally experienced the impacts of O&G development during any of those activities. Respondents were asked to describe the source of the impact, the timing and location of the impact, and to identify potential mitigation measures that would have prevented or lessened the impact.

Twenty-two percent of all HHs in the six communities directly experienced an impact of O&G development on a subsistence activity in the past 12 months (Table 4-1). Forty-six percent of Nuiqsut HHs experienced an impact on a subsistence activity. Trapping had the greatest percentage of harvesters reporting an impact for the region as a whole (27 percent average for the six study communities), although the number of individuals who participated in the activity was relatively low (approximately 50 respondents) compared to other activities such as whaling crew member (several hundred respondents).

Whaling captains were, on average, the next most likely to report an impact at 26 percent for the region. In Kaktovik, one of two interviewed whaling captain respondents, one (50 percent) reported an impact, and in Nuiqsut 45 percent of whaling captain respondents reported an impact. On the crew member level, between 6 and 33 percent of whaling crew members in the six survey communities reported some form of impact of O&G development on their activity (Table 4-1). This included 33 percent of Nuiqsut whaling crew members and 25 percent or less of the remaining communities' whaling crew members, for an average of 20 percent for the region.

For all six communities, one-quarter of caribou, moose, or sheep harvesters reported an impact of O&G development on their harvest activity. Fifty-four percent of Nuiqsut caribou, moose, or sheep harvesters experienced an impact compared with 29 percent or less in the other five communities. As hypothesized, then, at least for this specific subsistence activity, O&G development impacts are more likely to be experienced by residents of the community closest to development activities, Nuiqsut.

Other subsistence activities with reported impacts included wolf and wolverine hunting (23 percent), polar bear hunting (18 percent), and walrus hunting (15 percent); all other activities had 14 percent or fewer HHs reporting an impact. At least one harvester in one community reported an O&G related impact on every subsistence activity.

The next sections provide additional details regarding the type of impact, the type of industry activity affecting the harvest activity, identification of who could mitigate the impact, what could be done to mitigate the impact, and the months that the impact occurred. These details are only provided for the top three impacted activities: caribou/moose/sheep hunting impacts, whaling crew member impacts, and "all subsistence activity" impacts. "All subsistence activity" impacts include responses where the respondent did not identify a specific subsistence activity that was impacted but rather indicated that all or multiple of their 2015 subsistence activities were impacted, with the same impact source. The remainder of impacts (with a cut off of two or more impacts) and their additional details are provided in Appendix VI.

4.1.1.1 Caribou, Moose, and Sheep Hunting Impacts

The data indicate that caribou, moose, or sheep hunting is a subsistence activity that has been affected by O&G development activity. The principal types of impacts on caribou, moose, or sheep hunting were auditory disruptions, displacement of wildlife, difficulty hunting, disruption of

wildlife, need to travel farther, and ability to hunt (Table 4-2). Again, Nuiqsut HHs reported more impact experiences while caribou, moose, or sheep hunting. Utqiagvik results show the second largest number of reports; of course, it is also a much larger community.

The principal type of industry activity affecting caribou, moose, or sheep hunting was aircraft—primarily helicopters, small planes, and (more recently) drones (Table 4-3). HHs offered a diverse list of organizations that could mitigate reported impacts, reflecting the complex chain of organizations involved in aircraft flights: oil companies, contractors, regulatory organizations, and individual operators, among others (Table 4-4).

When asked what could be done to mitigate impacts to their caribou/moose/sheep harvesting activities, HHs most commonly recommended the following: (1) honor the convention with subsistence hunters not to disrupt traditional activities, (2) fly at a higher altitude over harvest areas when hunters are present, (3) be more responsive to hunter needs, (4) avoid seismic, drilling, barge, and overflight activities during hunting seasons, (5) better communication, and (6) collaboration among companies to reduce flights over hunting areas (Table 4-5). For a comprehensive examination of mitigation activities undertaken on the North Slope (particularly as they relate to Nuiqsut subsistence), see the BOEM-funded report, *Aggregate Effects of Oil Industry Operations on Iñupiaq Subsistence Activities, Nuiqsut, Alaska: A History and Analysis of Mitigation and Monitoring* (SRB&A 2013).

The most frequently reported months in which impacts on caribou, moose, or sheep hunting occurred were July (63 percent of impact observations) and August (60 percent) (Table 4-6). Nuiqsut reported impacts extended to every month of the year, while in most other communities, impacts were primarily confined to the June through September time frame.

4.1.1.2 Whaling Impacts

The principal types of reported impacts on subsistence whaling in 2015 were disruptions to migration, auditory disruptions, difficulty hunting, and the need to travel farther (Table 4-7). The principal categories of industry activity that caused impacts to subsistence whaling in 2015 were marine vessels and barges; various types of aircraft; and drilling (Table 4-8). Oil companies were the principle organization which HHs thought should mitigate whaling related impacts, followed by boat, vessel, and aircraft pilots (Table 4-9). The principle methods to mitigate impacts, as recommended by HHs, were (1) honoring the convention with subsistence hunters not to disrupt traditional subsistence activities, (2) avoiding seismic, drilling, barge, and overflight activities during hunting periods, (3) being more responsive to hunters' needs, and (4) no development activities in subsistence hunting areas/ocean (Table 4-10). Whaling impacts were reported from March through October, with almost half (48 percent) of reports of impacts during the fall hunting month of September (Table 4-11).

4.1.1.3 All Subsistence Activity Impacts

Utqiagvik, Wainwright, Nuiqsut, and Point Hope provided detailed reports of impacts to their general “all subsistence activities.” The principal types of reported impacts on subsistence activities in 2015 were auditory disruptions, effects of O&G development on wildlife, effects of development on people, and displacement of wildlife (Table 4-12). The principal categories of

industry activity that caused general subsistence impacts in 2015 were industry development - all aspects, helicopters and other aircraft, and oil spills and cleanup (Table 4-13). Oil companies were most frequently mentioned as being the ones who could mitigate the impacts (Table 4-14). The primary methods to mitigate impacts proposed by these individuals were for industry to (1) honor convention with subsistence hunters to not disrupt traditional hunting, and (2) be more responsive to hunters' needs (Table 4-15). General impacts to subsistence activities occurred year-round in Utqiagvik and from June to August in Nuiqsut (Table 4-16).

4.1.2 Comparisons of 2016 Social Indicator Results by Community

Results for the Social Indicators by Community data comparison group are presented by well-being domain, starting with the economic domain (Table 4-17). Regional totals are weighted to take into account the different sampling fraction used in Utqiagvik (one-third of all households rather than a census). Both Iñupiat and non-Iñupiat HHs are included. As noted above, 74 percent of HHs consider themselves to be Iñupiat in the six communities as an aggregate, but Utqiagvik and the smaller villages differ in the ethnic mix of residents, with 64 percent of Utqiagvik respondents considering themselves Iñupiat compared with about 90 percent in each of the other communities.

4.1.2.1 Economic Indicators

Subsistence is part of the mixed-economy of the North Slope. Subsistence is also central to the culture of the Iñupiat. In the SICAA questionnaire, questions about subsistence activities and harvests were included under the economic domain. In recognition of the dual importance of subsistence to the domains of economic and cultural well-being, subsistence harvest and diet indicators (i.e., measures that describe the material and nutritional aspects of subsistence) are reported within the economic domain, and subsistence activity indicators (i.e., measures that describe the social and cultural aspects of subsistence) are reported in the cultural continuity domain.

The design of the subsistence harvest component of the SICAA survey represents a compromise between the goal of measuring overall community harvests and the goal of keeping the interview a manageable length. An earlier analysis of 641 community-specific comprehensive harvest surveys showed that using the top 10 harvested species in each community yields a total harvest estimate that is 90 percent of the total when all species are included (Kruse 2011). With this result in mind, the team reviewed existing data on harvests in the six communities and included 14 resource categories that collectively account for the top 10 harvested resources in the six communities. The resulting estimates can be assumed to reflect about 90 percent of the total harvest if a comprehensive harvest survey had been undertaken. The SICAA study was not designed to duplicate a harvest study; rather, its goal was to provide individual measures of well-being. The value of the harvest data is largely that all the SIs can be linked to individual harvest amounts (e.g., shares of bowhead and satisfaction with amount of subsistence resources).

In 2016, the mean annual household harvest of the 14 subsistence resources for the six communities was 2,578 pounds. With two exceptions, harvest amounts in pounds are estimated

based on converting the number harvested for each resource category to a number reflecting the edible pounds per harvested unit as estimated by the Alaska Department of Fish and Game Subsistence Division for the Arctic region (ADF&G 2011). In its Arctic conversion database, the ADF&G estimate for edible pounds per caribou is 136; however, for this report the study team used the conversion factor of 117 used by ADF&G in their most recent caribou harvest survey on the North Slope (Braem et al. 2011). Converting shares of bowhead received to estimated pounds for an entire community is difficult, as share weights vary by whale taken, and much of a harvested whale is not distributed through participatory shares but at community feasts (e.g., *Nalukataq*) or by the captain directly. For further discussion of sharing and sharing networks on the North Slope, see Kofinas et al. (2016).

The estimated pounds for bowhead whale likely do not reflect the overall pounds used by the community as they do not include non-participatory shares. However, estimating pounds of bowhead received through participatory shares is still a useful SI on the individual level. A study of share weights was conducted by SRB&A (TR149 North Slope Subsistence Study Barrow, 1987, 1988 and 1989 Appendices) (SRB&A 1993:D46). The SRB&A team measured the weights of crew shares for 11 whales in 1988 and calculated an average share weight in usable pounds of 481.5. The range of observed crew share weights was 111 to 1,365 pounds. The study team used a rounded average of 500 as a conversion factor from shares to pounds. Estimating harvest amounts for beluga whales based on individual reports is also difficult, because these harvests are generally taken during a communal hunt, and therefore the beluga harvest estimate may be high due to duplicate reporting of harvests by multiple households. Again, while the estimates for beluga may be high, they are still useful SIs on the individual level.

Total household subsistence harvests in 2015 varied from 2,002 pounds per household in Nuiqsut to 3,496 in Wainwright (Table 4-17). North Slope communities differ in their proximity and access to different resources. Because one goal of this study is to test the relationships between impacts and SIs, however, it makes sense to look at the relative harvests of resources among the six communities. On average, the three resources contributing most to the total subsistence harvest in North Slope communities in the past 12 months, in terms of mean household pounds, were bowhead whale (1,231 mean household pounds), caribou (407 pounds), beluga (375 pounds), walrus (185 pounds), bearded seal (151 pounds), and other whitefish (65 pounds). Among the six study communities, Nuiqsut had the highest mean household harvest of caribou, cisco and other whitefish, moose, and geese. Utqiagvik had the highest mean household harvest of bowhead whale; Kaktovik had the highest mean harvest of Arctic char and Dall sheep; Wainwright had the highest mean harvest of walrus, polar bear, and ducks; Point Lay had the highest mean harvest of beluga; and Point Hope had the highest mean harvest of bearded seal, other seal, and salmon.

As discussed above, Nuiqsut reported the highest rate of impacts on caribou, moose, or sheep hunting (54 percent) among the six communities; the next highest rate of 29 percent was reported by Utqiagvik. Nuiqsut whaling crew members reported a rate of impacts (33 percent) above that of Utqiagvik, Kaktovik, and Point Lay whaling crew members. Eleven percent of

Nuiqsut fish harvesters reported impacts compared with 17 percent of Utqiagvik, and six percent of Point Hope fish harvesters. Looking at harvest amounts for these impacted resources, there are no observable relationships between rates of impacts and relative harvest amounts for these three resource categories.

North Slope households rely heavily on wild or “traditional” food⁴ as part of their diet. Over half (59 percent) of HHs indicated that half or more than half of the food they consume is traditional food (Table 4-18). In several communities, this percentage was even higher—between 77 and 81 percent in Wainwright, Point Lay, Nuiqsut, and Point Hope. The traditional diets of Nuiqsut households were within the range of the other five communities, with 48 percent reporting that more than half of the meat and fish they consume is traditional food. In Utqiagvik, with its larger non-Native population, the comparable figure was 33 percent, while in Point Hope over half of its households (56 percent) reported that over half the meat and fish they eat is traditional food. When asked about the proportion of meat and fish harvested by the household, 30 percent of Nuiqsut harvesters reported that they harvest more than half of the meat and fish consumed, higher than in other communities. North Slope communities were equally likely to have received meat and fish from other households: 84 percent reported they received at least some meat and fish from other households, with Point Lay respondents most likely to have received some of their meat and fish (98 percent) and Utqiagvik respondents the least likely (79 percent).

Satisfaction with resource availability and harvesting opportunities was relatively high in the study communities, with 74 percent of North Slope HHs somewhat or very satisfied with the availability of fish and game, and 77 percent somewhat or very satisfied with the opportunities to hunt and fish (Table 4-19). Satisfaction levels were similar across communities, although slightly lower among Utqiagvik respondents.

While the first set of SIs under the Economic domain were related to subsistence harvesting, the second set of SIs were related to employment and income (Table 4-20). Seventy-four percent of North Slope HHs had a job in the past 12 months (2015). Employment rates were lowest in Wainwright (59 percent) and highest in Kaktovik (82 percent). North Slope HHs worked an average of 42 weeks in the past 12 months. Across communities, this number ranged from 32 weeks (Point Lay) to 44 weeks (Utqiagvik). Nuiqsut had the highest percentage of respondents (27 percent) working a job related to O&G development followed by Utqiagvik (16 percent); all other communities had fewer than 12 percent working an O&G development related job in the past 12 months. At 10 percent, Utqiagvik HHs had the highest rate of employment related to offshore O&G development, followed by 8 percent in Wainwright; 7 percent in Point Hope, Point Lay, and Nuiqsut; and 3 percent in Kaktovik. More than half of North Slope respondents (68 percent) indicated that there were no months in which they wanted a job and did not have one. Consistent with the reported employment rates, respondents in Wainwright and Point Lay were more likely to have not had a job and wanted one. Rounded to the nearest month, the mean

⁴ Wild foods harvested through traditional subsistence harvesting activities which are core component of Alaska Native culture.

number of months in which a HH wanted a job but did not have one ranged from 3 months in Kaktovik, Point Lay and Wainwright to 2 months in Utqiagvik, Nuiqsut, and Point Hope. These figures are statistically significantly different, but the differences are small.

About two-thirds of HHs in each community were “very satisfied” with the job they held the longest in the last year (Table 4-21). However, satisfaction with job opportunities in their community was lower, at 28 percent that were “very satisfied”. Two-thirds of Utqiagvik HHs (68 percent) were at least “somewhat satisfied” with local job opportunities compared with HHs in other communities ranging from 40 percent in Point Hope to 65 percent in Point Lay.

Household employment incomes varied more among the six communities than months worked (Table 4-20, Table 4-22). Over half of Utqiagvik households (61 percent) earned more than \$50,000 from wage jobs compared with 16 percent of Point Lay and 17 percent of Wainwright households. Point Hope (30 percent), Nuiqsut (35 percent), and Kaktovik (39 percent) households were within the range of other communities when it comes to the percentage earning over \$50,000. Wainwright households were most likely to have earned \$1,500 or less from wage employment. Earnings from self-employment and from sales of carvings, crafts, and similar goods generally fell under \$1,500 for all communities. For all income categories combined, Utqiagvik remained the highest with just over half of households reporting income above \$50,000 followed by Kaktovik, Point Lay, Nuiqsut, Point Hope, and Wainwright.

In addition to questions about subsistence, employment, and income, to understand how the quality of housing may vary across the North Slope, the SICAA survey asked about the presence of 26 different housing features ranging from electricity and cold running water to a connection to the internet and a carbon monoxide detector (Table 4-23). Overflow housing (e.g., outbuildings not intended as housing) likely accounts for the few instances in which basic utilities were reported lacking. Point Lay households were more likely to lack some basic utilities compared to the other communities: 64 percent have hot running water and an indoor flushing toilet, compared to between 82 percent and 96 percent in the other communities. On average, North Slope households reported having 16 of the 19 housing features documented in the SICAA survey. This average ranged from 14 in Point Lay to 17 in Kaktovik.

Housing quality was also measured by a set of 15 questions about possible housing problems. Drafts from doors and windows, for example, was a problem experienced by over half the households (62 percent) in the six communities (Table 4-24). All other housing problems were reported by fewer than half of households. Seventeen percent of Nuiqsut households reported 5 or more housing problems compared with a range of 19 percent in Kaktovik to 31 percent in Point Lay. The average number of people living in households did not vary between communities, with a mean of 4 per household in each of the six communities (Table 4-25). Between 10 and 19 percent of households have at least one person on a waiting list for housing.

Each domain included “objective” and “subjective” SIs. Objective SIs are usually counts of things, like housing features. Objective SIs tell parts of the story of well-being, but they are inevitably small pieces of a larger puzzle. Subjective SIs provide a view of the bigger picture.

Through subjective measures, people are able to integrate all their experiences into overall expressions of satisfaction about a major part of their lives. In the economic domain, there were six measures of economic satisfaction (not counting those related to subsistence): household income, availability of goods in local stores, transportation to and from the community, costs of living, standard of living, and ability to make ends meet (Table 4-26). Among the six communities as a whole, 43 percent of households were “very satisfied” with their household income whereas approximately 10 percent were very satisfied with the availability of goods in local stores and with the cost of living. The percentage of households very satisfied with transportation to and from the community (21 percent) and their standard of living (26 percent) was within the range of the other satisfaction measures. Point Lay respondents were less likely to be very satisfied with their household income (25 percent compared to between 31 percent and 47 percent in the other communities), and with transportation to and from their community (9 percent compared to between 16 and 31 percent in other communities). Point Lay also had the lowest percentage of respondents who said that they could make ends meet “very easily” (9 percent compared to between 15 percent and 23 percent in other communities). Overall, 21 percent of households in the six communities reported that it is “very easy” to make ends meet, while nearly half (46 percent) indicated they made ends meet “with some difficulty” or “with great difficulty”. The six measures of economic satisfaction were combined to form an index of economic satisfaction. The mean level of satisfaction on this index of 1-24 (1 indicating the lowest level of satisfaction and 24 being the highest) is 19, varying only by 1 point among the communities.

4.1.2.2 Physical Environment Indicators

The Physical Environment domain includes SIs related to outdoor and indoor activities as well as environmental problems. Because the purpose of the baseline is ultimately to measure impacts that may take place in the future due to offshore O&G development, the presence of environmental problems may become an early indicator of impacts on living conditions across domains of well-being.

The principal environmental concern shared by HHs in the six surveyed communities was climate change, with 85 percent observing that climate change is a problem for their community (Table 4-27). Climate change as an environmental problem was followed closely by erosion of coastal areas or riverbanks (79 percent of HHs). Of particular interest to this study is the percentage of HHs who report pollution from industrial development in this region. Sixty-five percent of Nuiqsut HHs reported pollution from industrial development compared with a range of 13 to 40 percent in other communities. Thus, the baseline indicates that the community nearest industrial development, Nuiqsut, is more likely to report pollution from industrial development.

Nuiqsut HHs were also more likely to report that fish or animals that may be unsafe to eat is a problem for their community: 64 percent compared with between 19 and 46 percent in the other five communities (Table 4-27). Nuiqsut HHs were more likely to report pollution from landfills as a problem (46 percent versus between 19 and 33 percent in the five other communities), possibly reflecting concerns in that community related to military and industrial landfills and dump sites in the region that have not been remediated (e.g., Umiat). Other environmental

problems varied less among the communities. On average the number of environmental problems identified by each household only differed by 1 with between 4 and 5 mean problems mentioned per household among the six study communities.

Fifty-four percent of Kaktovik HHs avoided eating subsistence foods in the last year because they believed they were contaminated (Table 4-28). A similar percentage of Nuiqsut HHs (47 percent) avoided eating subsistence foods. Between 22 and 26 percent of the HHs in the other four communities avoided eating subsistence foods in the last year because they believed they were contaminated.

Nuiqsut's experience with environmental problems extended to their satisfaction with the health of the environment in their area: 14 percent of HHs were very satisfied compared with 22 to 35 percent in the other communities (Table 4-29). Furthermore, 25 percent of Nuiqsut respondents were somewhat or very dissatisfied with the health of the environment in their area, compared to between 4 percent (Wainwright) and 13 percent (Utqiagvik) in the other study communities.

As mentioned above, the Physical Environment domain also included outdoor and indoor activities. These activities may be indirectly affected by O&G development. On the one hand, NSB tax revenues may be partly used to improve outdoor and indoor recreational facilities or to fund cultural events. On the other hand, residents could participate less in these activities if they have less time due to employment or if these activities are impacted by O&G activities. The SICAA survey asked about 15 different activities, including 4 Native activities and 6 outdoor activities (Table 4-30). Survey responses were combined into three indices: all activities, Native activities, and outdoor activities. The similarities among communities were greater than the differences. The mean number of all activities in which HHs participated in the past 12 months ranged from 7 to 9 (out of 15). Native activities averaged 2 or 3 (out of 4), as did outdoor activities (out of 6). Participation in activities were similar across communities. Using a difference of at least 10 percentage points as a threshold for importance, Nuiqsut HHs were relatively more likely to participate in boating or kayaking than heads in other communities and less likely to participate in sports. Wainwright HHs were more likely to have gone snowmachining or dog sledding in the last year. Point Hope and Point Lay respondents were more likely to "be out in the country," and Point Hope respondents were more likely to have gone to a sports event.

The Physical Environment domain included questions on respondent satisfaction with recreational facilities in their community. Just over half (53 percent) of North Slope HHs were either somewhat or very satisfied with recreational facilities in their community (Table 4-31). There does appear to be a difference in the percentage of heads satisfied (i.e. "somewhat" plus "very" satisfied) by community, with 69, 66, and 61 percent of Kaktovik, Wainwright, and Point Lay heads satisfied with recreational facilities in their communities compared with 53 percent in Utqiagvik, 44 percent in Nuiqsut, and 41 percent in Point Hope.

4.1.2.3 Health and Safety Indicators

Fifteen percent of HHs in the six surveyed communities rated their health as “excellent” (Table 4-32). Another 26 percent rated their health “very good” and 36 percent “good,” for a cumulative 77 percent of respondents rating their health as good to excellent. Keeping in mind Nuiqsut as the community located closest to baseline O&G development, 15 percent of Nuiqsut HHs rated their health “excellent” and 66 percent rated their health good to excellent.

Twenty-nine percent of HHs in the six communities reported being “very satisfied” with their health and 77 percent were at least “somewhat satisfied” with their health (Table 4-33). These responses were similar across communities, with between 76 and 79 percent of HHs indicating they were satisfied with their health.

Health is more than an individual characteristic; people often think of their family members when they consider the health of their communities. When asked whether any of 11 different health problems had affected a family member (anyone they consider family), 71 percent in all study communities mentioned cancer, 62 percent arthritis, and 50 percent alcoholism or drug addiction (Table 4-34). Other reported health problems included diabetes (47 percent), heart disease (42 percent), obesity (37 percent), accidental injury (37 percent), lung disease (34 percent), joint and bone diseases (28 percent), mental illness (28 percent), and eye disease (26 percent). Some variation between the types of health issues reported by community are evident in the results. For all but 1 health problem, the percentage of Utqiagvik HHs with family members affected was above the six-community aggregate. This was the case for only 3 of 11 health problems in Kaktovik, no health problems in Wainwright, 3 health problems in Point Lay, 4 health problems in Nuiqsut, and 1 health problem in Point Hope. For five of the 11 health problems (diabetes, obesity, joint and bone diseases, mental illness, and eye disease), the percentage of Nuiqsut HHs with families affected were at least 10 percentage points lower than the six-community aggregate result. This was the case for 4 health problems in Wainwright (alcoholism, obesity, injury, and mental illness), 3 in Point Hope (arthritis, diabetes, and mental illness), 2 in Point Lay (cancer, diabetes), and 1 in Kaktovik (obesity).

In a self-administered part of the interview, HHs were asked if they had personally been the victim of theft, sexual assault, domestic violence, elder abuse, or other abuse in the past 12 months. Twenty-two percent of the HHs in the six communities reported being a victim of one or more of these offenses in the past 12 months (Table 4-35). Thirty-one percent of Nuiqsut HHs reported being a victim of one or more offenses, the highest rate among the six communities; the lowest was in Point Hope (14 percent). Despite having the highest rate of victimization for one or more offenses, Nuiqsut results did not differ significantly the other communities in each of the individual victimization categories Table 4-35. Differences among the six communities for domestic violence and elder abuse are not significant, and the incidence of sexual assault is low or absent. It therefore appears that the difference in the aggregate category of victim of one or more offenses between Nuiqsut and the aggregate total is that greater number of Nuiqsut HHs reported being a victim of multiple offenses.

Respondents were also asked in the self-administered portion of the interview if their household has any problems with alcohol or drugs. Four percent of the aggregate total of the six communities reported that their household often has such problems, and 26 percent indicated that their household sometimes has such problems (Table 4-36). More than half of HHs (ranging from 54 percent in Kaktovik to 73 percent in Wainwright) indicated there were never problems with drugs or alcohol in their household.

Health SIs included five questions which were used to construct an index of the relative likelihood of depression. The questions were:

- How much of the time in the last month have you been a nervous person?
- How much of the time in the last month have you felt calm and peaceful?
- How much of the time in the last month have you felt downhearted and blue?
- How much of the time in the last month have you been a happy person?
- How much of the time in the last month have you felt so down nothing could cheer you up?

The response categories ranged from “all the time” to “not at all.” The numeric version of the response categories (1 to 5) were reversed on the second and fourth questions above to allow summing of the responses to create a single index ranging from 5 to 25. The higher the sum, the more likely the respondent is experiencing depression. The mean value on the depression index was 10 (on a scale of 5 to 25) for the six communities as an aggregate. Keeping in mind that this index is not a diagnostic tool (it does not medically establish whether the person is depressed or not), relative differences among communities could indicate different rates of potential depression. The observed differences in the mean of the index by community are significant but not important (Table 4-37). By that we mean two things: first, the probability that the observed differences of 1 (i.e., between 9 and 10 across all communities) in the mean score are due to the chance is small—less than 1 in a 1,000; and second, the difference of 1 point on a scale of 5 to 25 is too small to mean anything important.

A second index, this one of social support, was constructed using the same response categories as the previous scale from the following questions about how often the respondent experienced the certain types of support when they need it:

- Someone you can count on to listen to you when you need to talk
- Someone you can count on when you need advice
- Someone who shows you love and affection
- Someone to have a good time with
- Someone to confide in or talk about yourself and your problems
- Someone to get together with for relaxation
- Someone to do something enjoyable with

Because it is made up of responses to seven questions, each with five response categories, the social support scale varies from 7 to 35. The social support index for 30 percent of HHs in the six communities is the maximum of 35 (Table 4-38). Fifty-two percent have a social support

index value of 30 or above. The mean value on the social support scale is 29 for the six communities and ranges from 29 to 30 among individual communities; these differences in the mean across communities are neither significant nor important.

The final three SIs in the health domain are measures of satisfaction. In 2016, 21 percent of HHs in the six communities were very satisfied with the quality of health services in their community; 22 percent were very satisfied with public safety services; and 12 percent were very satisfied with courts on the North Slope (Table 4-39). Satisfaction (i.e., somewhat or very satisfied) with health services was somewhat lower in Utqiagvik and Point Hope (47 percent of HHs) compared to the other communities (between 62 and 84 percent).

4.1.2.4 Cultural Continuity Indicators

Engagement in subsistence activities was documented on the SICAA survey under the economic domain; however, these variables are also the basis of the most important objective measures of cultural continuity and are therefore presented here. Respondents were asked whether they engaged in any of following 22 subsistence activities in the past 12 months:

1. Help whaling crews by cooking, giving money or supplies, cutting meat
2. Fish
3. Preserve meat or fish
4. Skin and butcher a caribou
5. Hunt caribou, moose, or sheep
6. Member of a whaling crew
7. Pick berries
8. Hunt waterfowl
9. Skin and butcher a seal
10. Hunt seal or ugruk (bearded seal)
11. Skin and butcher another animal
12. Make Native handicrafts
13. Sew skins, make parkas and kamiks (boots)
14. Gather greens, roots, or other plants
15. Make sleds or boats,
16. Gather eggs
17. Hunt walrus
18. Hunt ptarmigan
19. Hunt wolf or wolverine
20. Hunt polar bear
21. Captain a whaling crew
22. Trap

The above activities are listed in order from highest participation rates to lowest participation rates. Half or more of the HHs in the six communities engaged in the top four activities listed above (helped whaling crews, fished, preserved meat or fish, and skinned and butchered a caribou) (Table 4-40). A third or more of HHs engaged in each of the following: skinned and butchered a seal, hunted waterfowl, picked berries, was a member of a whaling crew, and

hunted caribou, moose, or sheep. Approximately one-quarter either made Native handicrafts or sewed skins, or made parkas and kamiks (boots). Twenty percent gathered greens, roots or other plants or made sleds or boats. Six percent were whaling captains. Over a third of HHs in the six communities engaged in 5 or more subsistence activities. Differences in participation rates between communities may reflect differences in key resources targeted. For example, Nuiqsut, who harvested the greatest amount of caribou (in terms of mean household pounds) also had the highest rates of participation in hunting caribou, moose, or sheep. The mean number of subsistence activities varied from 3 in Utqiagvik (keeping in mind its larger proportion of non-Native households) to 5 in Wainwright and Point Hope.

Participation in subsistence activities by HHs was highest in July and August (over one-third of households spending five or more days); peak participation times were relatively similar across communities with some variation. Nine percent of HHs in the six communities were active (i.e., spent five or more days on subsistence activities) during nine or more months during the previous year (Table 4-41). Twenty-two percent of HHs in the six communities were active during 5 or more months, compared with 32 percent in Point Hope, 29 percent in Nuiqsut, 28 percent in Wainwright and Kaktovik, 19 percent in Utqiagvik, and 18 percent in Point Lay. Across all communities, HHs engaged in subsistence (i.e., five or more days) during a mean of 3 months out of the past 12.

Traditional education—learning the skills and knowledge necessary for subsistence and other cultural activities—is both an indicator of cultural continuity and a part of the education domain. HHs were asked about 20 different skills and types of knowledge, some general and some specialized. Specialized skills and knowledge included navigating at sea, knowing Iñupiaq names for different types of snow, fixing a snowmachine, and making sleds and boats. Approximately one-third (32 percent) of HHs in the six communities had learned at least 16 of the 20 skills and knowledge types (Table 4-42). Percentages of HHs learning 16 or more skills and knowledge types varied from 26 percent in Utqiagvik to between 42 and 47 percent (statically identical results) in the other five villages.

Understanding, speaking, reading, and writing Iñupiaq are also indicators of cultural continuity. Fifty-two percent of Nuiqsut HHs reported being able to understand Iñupiaq “very well,” followed by 43 percent in Wainwright, 27 percent in Utqiagvik (including non-Native households), 22 and 23 percent in Point Lay and Point Hope, and 18 percent in Kaktovik (Table 4-43). The ability to speak Iñupiaq was somewhat lower in each community, but showed the same relative differences. There were smaller differences between communities on the ability to read or write Iñupiaq.

The SI “Proportion of Food That Is Traditional” is presented under the economic domain but also pertains to the cultural continuity domain (Table 4-18). Two additional sets of SIs in the cultural continuity domain are: (1) the importance of specific values to maintaining identity; and, (2) a report card on how satisfied the respondent is about the job their community is doing to promote these values. The study team used the responses to create indexes referring to the following 16 values:

1. Use of Iñupiaq
2. Sharing and helping
3. Respect for others
4. Cooperation
5. Respect for elders
6. Love for children
7. Hard work
8. Knowledge of your family tree
9. Avoidance of conflict
10. Respect for nature
11. Spirituality
12. Humor
13. Family roles
14. Eating traditional or wild foods
15. Hunting and fishing
16. Preserving of traditional (wild) foods

There is no question that most HHs in the six communities think all of the 16 values are “very important” (Table 4-44). In particular, at least 80 percent of HHs believe that respect for others, respect for elders, love for children, hard work, and respect for nature are “very important” values. There is little difference in the responses across communities, although for most values a smaller percentage of Utqiaġvik respondents rated the values as “very important” (likely due to the lower percentage of Iñupiat residents). On the whole, most HHs were at least somewhat satisfied with the job their community is doing to promote this set of values: the mean on the index of satisfaction is 4 in every community (on a scale of 1-5, Table 4-45). There are, however, differences on some specific values. At least half of Wainwright HHs were very satisfied with 14 of the 16 values, compared with Nuiqsut where at least half of respondents were very satisfied with the job their community is doing to promote 6 of the 16 values.

The final SI of cultural continuity is a measure of lifestyle preference. In the SICAA questionnaire, the question read, “If you could choose, which lifestyle would you prefer: working on a wage job, harvesting or processing your own food, or both?” Almost three-quarters (70 percent) of HHs in the six communities reported a preference for a combination of working on a wage job and harvesting or processing one’s own food (Table 4-46). Eighty percent of Wainwright, Point Lay, Nuiqsut, and Point Hope HHs chose “both” compared with 93 percent of Kaktovik HHs and 65 percent of Utqiaġvik HHs.

4.1.2.5 Education Indicators

As previously explained, SIs are primarily measures of outputs of a social system (SRB&A, ISER, and ISR 1985). Education as a domain is better described as an input rather than an output. Education is a resource that people use to achieve their lifestyle goals. But, education is such a critical human resource that measures of education are traditionally included in a comprehensive set of SIs. Educational attainment is as much a question of opportunity as it is personal achievement. Differences in opportunity may in turn be reflected in differences by age and ethnicity.

This section describes the community-level results of the SICAA survey under the education domain, which included SIs related to the attainment of and satisfaction with formal education in the study communities. Utqiagvik, with its substantial non-Native population is a special case, since 24 percent of HHs have attained a college or university degree (Table 4-47). There are differences among the remaining five communities with college or university degrees varying from 2 to 14 percent among HHs. There are also differences in vocational training or associates degrees, with 19 percent attaining such degrees in Point Hope and between 7 and 11 percent in the other four communities. In Nuiqsut, 13 percent of HHs have a vocational, associates, college, or university degree compared with 9 percent in Point Lay, 14 percent in Wainwright, 22 percent in Kaktovik, 33 percent in Point Hope, and 46 percent in Utqiagvik. Traditional education is also a critical human resource to lifestyles that include subsistence activities. Levels of traditional education in the cultural continuity domain are reported above (see Table 4-42).

Almost half of HHs in the six communities reported being “very satisfied” with the education they received (Table 4-48). Variations among communities are statistically significant but not large enough to be important. HHs in the six communities were less likely to be very satisfied with the quality of formal education in their community (as opposed to the education they received). Again, the differences among communities are not large.

At BOEM’s request, the research team added a series of questions about children’s enrollment in school. In 2016, half of the households in the six communities reported having a child enrolled in a K-12 school (Table 4-49). Nearly 90 percent of these children were enrolled in a North Slope community, 9 percent elsewhere in Alaska and 3 percent outside Alaska. Almost half of HHs (43 percent) helped at school in the past 12 months. Responses to questions about children’s school enrollment did not vary substantially by community.

4.1.2.6 Local Control Indicators

The domain of Local Control dates to work conducted in the mid-1980s for BOEM (SRB&A, ISER, and ISR 1985) and even earlier in the work of the OECD (see Section 2.3). More recently, the AHDR identified “fate control” as one of the domains critical to understanding human development in the Arctic (AHDR 2004).

The first SI of local control seeks to measure political engagement and is based on three questions:

- How knowledgeable would you say you are about politics in general, very knowledgeable, somewhat knowledgeable, not very knowledgeable, or not at all knowledgeable?
- How much do you agree or disagree with the following statement: so many people vote at a national election that it does not make any difference if I vote or not vote (completely agree, partly agree, partly disagree, completely disagree)
- How interested would you say you are in politics in general: very interested, interested, or not interested?

While only 16 percent of HHs in the six communities reported being “very knowledgeable” about politics in general, 67 percent reported being at least “somewhat knowledgeable” (Table 4-50). Forty-one percent completely disagreed with the statement that it makes no difference to vote in a national election; this percentage was highest in Utqiaġvik (47 percent compared to between 17 and 35 percent in the other communities). Over half (58 percent) were interested or very interested in politics in general. Point Lay respondents were the least likely to be “very interested” in politics, but were as likely to be at least “interested” as most other communities.

Respondents were asked about eight different election types: city council, tribal council (or Native village council), ANCSA village corporation, Alaska Native regional corporation formed under ANCSA, NSB, Iñupiat Community of the Arctic Slope (ICAS), state, and national. Approximately one-quarter of HHs had participated in all eight of the elections measured (Table 4-51). Participation (at least 60 percent of respondents) was most common in NSB and state elections. There was little variation in voting participation across communities.

Respondents were then asked about whether each of the above institutions were meeting their needs (Table 4-52). Half or more of the HHs in the six communities as an aggregate reported that the following institutions are meeting their needs: Native regional corporation (63 percent), North Slope Borough (63 percent), ANCSA village corporation (50 percent). Certain institutions showed a wider range of satisfaction between communities; the percentage of respondents who believed the ANCSA village corporation was meeting their needs, for example, ranged from 16 percent in Point Lay to 75 percent in Wainwright. Out of all institutions, ICAS had the lowest regional percentage of HHs reporting that the institution was meeting their needs (29 percent).

Fifteen percent of HHs in the six communities were “very satisfied” in 2016 with the influence the Iñupiat have on the management of natural resources like oil, gas, and minerals (Table 4-53). Fifty-two percent were at least somewhat satisfied; among communities this percentage ranged from 51 percent (Nuiqsut) to 64 percent (Wainwright). Thirty-four percent of HHs in the six communities were “very satisfied” with the influence Iñupiat have on the management of natural resources like fish and caribou and, in a separate question, 34 percent of HHs were “very satisfied” with the management of natural resources like marine mammals. The pattern of satisfaction with influence over natural resources was similar for the influence Iñupiat have to reduce environmental problems in their area: 17 percent were very satisfied and 53 percent were at least somewhat satisfied. Respondents in Point Lay were somewhat more likely to be satisfied with this measure (80 percent compared to between 48 percent and 68 percent in the other study communities).

4.1.2.7 Overall Well-being Indicators

The intention to move away from a community is an indirect SI of quality of life. There are, of course, an infinite number of reasons for moving: education, health, jobs, climate, housing, cost of living, and family to name a few. There are attractive attributes of other communities and unattractive attributes of one’s current home community. In 2016, half of North Slope HHs (52 percent) had considered moving away from their community in the last five years (Table 4-54). About the same percentage of HHs in Nuiqsut, Point Hope, Point Lay, and Utqiaġvik had

considered moving away (approximately half). HHs in Wainwright (35 percent) and Kaktovik (41 percent) were less likely to have considered moving. Across all communities, the most common reasons given by HHs for wanting to move included general mention of wanting a change, climate, medical reasons, cost of living, and a desire for more things to do.

Approximately one-third (35 percent) of HHs in the six communities as an aggregate were “very satisfied” with the quality of life in their community in 2016 (Table 4-55). Eighty percent were at least somewhat satisfied. HHs had about the same distribution of levels of satisfaction across the six communities. The similarity in satisfaction across communities extends to life as a whole. With the possible exception of Utqiagvik (55 percent with a confidence interval of plus or minus 9 percentage points), more than 60 percent of the HHs in 2016 were “very satisfied” with their life as a whole.

4.1.2.8 Summary of Impact and Social Indicator Comparisons by Community

There are many reasons for comparing SIs by community. They can help institutions like the NSB to serve its residents. SIs can help residents to set priorities for their communities. It is appropriate to leave the interpretation of SIs for these purposes to others. This study has just two goals: to establish a baseline of SIs and to test ideas about how potential impacts are related to well-being. One of the values of comparing SIs by community is that one can assess SIs for communities that are more or less likely to be affected by O&G development (i.e., communities closer to or farther from development). The starting point for addressing the second goal (testing how potential impacts are related to well-being) was to compare existing (that is, baseline) impacts of O&G development by community (see Section 4.1.1). Based on those data, Nuiqsut is the community most affected by existing O&G development activity. Differences in SIs between Nuiqsut and the other communities is therefore of special interest to the goal of testing how potential impacts are related to well-being. It is important to keep in mind that the severity and even type of impacts may vary greatly in the future from what has taken place over the past 40 years.

- Twenty-two percent of all HHs in the six communities experienced an impact of O&G development on a subsistence activity in 2015. Forty-six percent of Nuiqsut HHs experienced an impact on a subsistence activity.
- Fifty-four percent of Nuiqsut caribou harvesters experienced an impact of O&G development in the past 12 months on their harvest activity compared with 29 percent or less of the caribou, moose, or sheep harvesters in the other five communities.
- Fifteen to 33 percent of whaling crew members in the communities of Nuiqsut, Utqiagvik, Kaktovik, and Point Lay whaling crew members reported some form of impact of O&G development on their activity in the past 12 months.
- The principal types of impacts on caribou hunting were auditory disruptions, displacement of wildlife, difficulty hunting, disruption of wildlife, need to travel farther, and ability to hunt. The principal type of industry activity affecting caribou was aircraft, primarily helicopter and small planes.

- Subsistence harvests were large in 2015, varying from 2,002 pounds per household in Nuiqsut to 3,496 in Wainwright. The three resources contributing most to the total subsistence harvest in Nuiqsut in 2015 were caribou, bowhead, and other whitefish. Nuiqsut had the highest mean household harvest of caribou among the six communities, the lowest mean household harvest of bowhead (based on shares), and the highest mean household harvest of other whitefish. The traditional diets of Nuiqsut households were within the range of the other five communities, with 48 percent reporting that more than half of the meat and fish they consume is traditional food.
- Forty-three percent of Nuiqsut HHs were “very satisfied” with the amount of fish and game available locally and 43 percent were “very satisfied” with opportunities to hunt and fish. The results are not substantially different for the four other villages, while Utqiagvik was slightly lower.
- About two-thirds of HHs in each community were “very satisfied” with the job they held the longest in the last year. Satisfaction with job opportunities in their community is lower. Two-thirds of Utqiagvik HHs (68 percent) were at least “somewhat satisfied” with local job opportunities compared with HHs in Point Lay (65 percent), Kaktovik (59 percent), Nuiqsut (57 percent), Wainwright (56 percent), and Point Hope (40 percent).
- Wage earnings for Nuiqsut households for the past 12 months were in the middle of the range among communities. Over half of Utqiagvik households (61 percent) earned more than \$50,000 from wage jobs compared with 16 percent of Point Lay and 17 percent of Wainwright households.
- Sixty-five percent of Nuiqsut HHs reported pollution from industrial development compared with 40 percent in Utqiagvik, 30 percent in Kaktovik, 21 percent in Point Hope, 19 percent in Wainwright, and 13 percent in Point Lay.
- Nuiqsut HHs were also more likely to report that fish or animals that may be unsafe to eat is a problem for their community: 64 percent compared with between 19 and 46 percent in the other five communities
- About half of Kaktovik (54 percent) and Nuiqsut (47 percent) HHs avoided eating subsistence foods in the last year because they believed they were contaminated compared with between 22 and 26 percent of the HHs in the other four communities.
- Thirty-four percent of Nuiqsut HHs rated their own health as “very good” or “excellent” compared with: Utqiagvik (42 percent), Kaktovik (41 percent), Wainwright (39 percent), Point Hope (42 percent), and Point Lay (38 percent). Of the 11 health problems affecting families, the percentage of Nuiqsut HHs with family members affected were at least 10 percentage points lower than the six-community aggregate result for 5 health problems (diabetes, obesity, joint and bone diseases, mental illness, and eye disease) and were at least 8 percentage points higher for 1 health problem (arthritis). The remaining 5 health problems were statistically identical between the six-community aggregate result and Nuiqsut.

- Thirty percent of the aggregate total of the six communities reported that their household at least “sometimes” has problems with alcohol or drugs, compared with 35 percent of Nuiqsut HHs. The difference is not statistically significant.
- Nuiqsut HHs were relatively more likely than the six communities as a whole to be satisfied with their health services and public safety services. They were slightly more likely to be satisfied with the courts on the North Slope.
- Half or more of the HHs in the six communities helped a whaling crew, fished, preserved meat or fish, and skinned and butchered caribou during the past 12 months. The mean number of subsistence activities varied from 3 in Utqiagvik (keeping in mind its larger proportion of non-Iñupiat households) to 5 in Wainwright and Point Hope. Nuiqsut had a mean of 4 – significantly different but not an important difference.
- A third of HHs in the six communities learned at least 16 of the 20 traditional skills and knowledge types. Percentages of HHs learning 16 or more skills and knowledge types varied from 26 percent in Utqiagvik to between the statistically identical results of 42 and 47 percent in the other five villages.
- More than half of Nuiqsut HHs reported being able to understand Iñupiaq “very well” followed by 43 percent in Wainwright, 27 percent in Utqiagvik (including non-Native households), 22 and 23 percent in Point Lay and Point Hope, and 18 percent in Kaktovik.
- On the whole, most HHs were at least somewhat satisfied with the job their community is doing to promote traditional values: the mean on the index of satisfaction was 4 in every community.
- In 2016, almost half of HHs in the six communities were “very satisfied” with the education they received. Variations among communities are statistically significant but not large enough to be important. HHs in the six communities were less likely to be very satisfied with the quality of formal education in their community. Again, the differences among communities are not large.
- Nuiqsut HHs were as likely to rate local institutions as meeting their needs as HHs in the six communities as an aggregate. Borough, state, and federal institutions were rated less likely to meet Nuiqsut needs as the six-community aggregate.
- Fifteen percent of HHs in the six communities were “very satisfied” with the influence Iñupiat have on the management of natural resources like oil, gas, and minerals. Fifty-two percent were at least somewhat satisfied. In Nuiqsut, the comparable figures were 20 percent and 51 percent.
- Thirty-four percent of HHs in the six communities were “very satisfied” with the influence Iñupiat have on the management of natural resources like fish and caribou and, in a separate question, 34 percent of HHs were “very satisfied” with the management of natural resources like marine mammals. Nuiqsut HHs were somewhat more likely to be very satisfied with those two measures than other communities, with 47 percent very satisfied with the management of natural resources like fish and caribou and 49 percent very satisfied with the management of natural resources like marine mammals.

- In 2016, 17 percent of HHs in the six communities were very satisfied with the influence Iñupiat have to reduce environmental problems in their area and 53 percent were at least somewhat satisfied. In Nuiqsut, the comparable figures were 22 and 63 percent.
- A third (35 percent) of HHs in the six communities as an aggregate were “very satisfied” with the quality of life in their community in 2016. Eighty percent were at least somewhat satisfied. Nuiqsut HHs had about the same distribution of levels of satisfaction as the HHs in the other five communities. The similarity in satisfaction across communities extends to life as a whole. With the possible exception of Utqiagvik (55 percent with a confidence interval of plus or minus 9 percentage points), more than 60 percent of HHs were “very satisfied” with their life as a whole.

The 2016 baseline on the North Slope clearly includes impacts of O&G development on subsistence activities in the experience of HHs, especially in Nuiqsut. These impact experiences are related to differences in SIs including: perceptions of pollution from industrial development, and the choice not to eat some subsistence foods thought to be contaminated. On the large array of SIs in the economic, physical, health, cultural continuity, and local control domains, however, the well-being of Nuiqsut HHs is within the range of the five other communities. The three overall measures of well-being are similar for all six communities. These results indicate that either Nuiqsut residents are resilient and able to limit the effects of O&G development on their lives or that the impacts have so far not been so severe as to cascade through people’s lives. To provide more perspective on the baseline of SIs, the following section provides a comparison of North Slope SIs over time.

4.1.3 Comparisons of 1977, 1988, 2003, and 2016 Results for Iñupiat Heads of Household

Time series comparisons address the question of whether baseline conditions are changing over time, and comparable data are available for the 1977, 1988, 2003, and 2016 time periods. The time span of 1977 to 2016 also corresponds closely to the period over which onshore O&G development on the North Slope has taken place. The population being compared in this section is composed of Iñupiat HHs in Utqiagvik, Kaktovik, Nuiqsut, Wainwright, Point Lay, and Point Hope. The characteristics of the sample are described above (see Section 3.12.3). Comparing the sample characteristics, the concept of “head of household” has changed over time. In the 1977 sample, 84 percent of HHs were male compared with 49 percent in the 2016 sample (Table 3-7). In the 2016, it was possible to identify more than one HH which may explain in part the increase in female HHs.

Some variables in the 2016 North Slope Survey are not included in any of the other comparison data sets. In these instances, the 2016 results are nevertheless reported, as results for the Iñupiat population are of critical importance to the goal of monitoring and mitigating impacts of offshore O&G development. The samples in the 1977 and 2003 surveys, however, were not designed to produce reliable estimates for individual communities other than Utqiagvik. For this reason, time series results are reported for the six villages as an aggregate.

4.1.3.1 Economic Indicators

In 2016, marine mammals constituted four of the top five subsistence species harvested by Iñupiat households, in terms of mean household pounds; land mammals, specifically caribou, accounted for one of the top 5 species (Table 4-56). Bowhead whale provided a mean of 1,519 pounds per Iñupiaq household, followed by caribou (533 pounds), beluga (533 pounds), walrus (241 pounds), and bearded seal (204 pounds). Comparable data are not available from previous SI studies.

The proportion of all subsistence meat and fish consumed by Iñupiat households did not change significantly between 2003 and 2016, although the observed percentages of households reporting that more than half their household's meat and fish comes from traditional sources is somewhat lower in 2016 (47 percent) compared to 2003 (64 percent) (Table 4-57). The apparent decrease in the percentage of Iñupiat households harvesting more than half of the meat and fish consumed by the household (from 35 percent in 2003 to 23 percent in 2016) is also not statistically significant. Important to the question of the persistence of the cultural practice of sharing is the result that 36 percent of Iñupiat HHs in 2016 reported receiving half or more of the meat and fish they consumed from other households.

Iñupiat HHs were less satisfied with the amount of fish and game available locally in 1977 than they were in 2003 or 2016 (Table 4-58). In 1977 the ADF&G had set a quota on hunting of caribou from the Western Arctic Caribou Herd based on the biologists' estimates of herd size, which may have affected responses to this SI. Iñupiat HHs were not asked in 1977 about their satisfaction with opportunities to hunt and fish. Respondents were therefore unable to provide answers that distinguished between their own assessment of herd size and the availability of caribou in the face of a harvest restriction. Their lower satisfaction with the amount of fish and game available locally likely reflected their reaction to the harvest restriction, at least in part. There is some indication of a decline in satisfaction with the amount of fish and game available locally between 2003 and 2016, but the change is not statistically significant. The apparent decline in satisfaction with opportunities to hunt and fish between 2003 and 2016 is also not significant. The sample size in 2003 is not sufficient to compare 2003 and 2016 results by community, but we do know that in 2016 Nuiqsut levels of satisfaction for both satisfaction measures did not differ substantially from those for the other five communities (see above Table 4-19).

Iñupiat HHs were as likely to have had a job in the past 12 months in 2016 as they were in 1977 (Table 4-59). Keep in mind that half of the 2016 sample was composed of Iñupiat women compared with 16 percent of the sample in 1977 (see Section 4.1.4 for comparisons by gender). Employment rates among household were substantially higher in 1988 (94 percent compared to 66 percent in 2016) and only slightly higher in 2003 (71 percent). On average, Iñupiat HHs worked more weeks of the year in 2016 than in 1977 but about the same number of weeks as in 1988. Forty-three percent worked at least 37 weeks in 2016 compared with 22 percent in 1977.

Sixteen percent of Iñupiat HHs reported working on a job related to O&G development (Table 4-59). Nine percent of Iñupiat HHs reported working on a job related to offshore O&G development. Such jobs were defined in the survey as follows:

By jobs associated with oil and gas development, I mean any jobs working for a company or organization that is part of the permitting, exploration, production, transportation, or servicing of oil or gas, including office jobs as well as field jobs, and including such jobs as subsistence coordinator, subsistence advisor, or marine mammal observer.

The mean number of weeks worked on the longest job increased from 31 in 1977 to 36 in 2016, while the mean number of months in which a person wanted a job but did not have one was slightly less in 2016 (3 months) than in 1977 (4 months) and less than half that in 1988 (7 months) (Table 4-59).

Job satisfaction was about the same in 2016 as it was in 2003; 64 percent of Iñupiat HHs were “very satisfied” with the job they held the longest in 2016 compared with 57 percent in 2003 (Table 4-60). Satisfaction with job opportunities in the community is consistent over time: 18 percent of Iñupiat HHs were “very satisfied” with job opportunities in their community in 1977 compared with 11 percent in 2003 and 24 percent in 2016.

Iñupiat earnings from sales of carvings, skin clothing, furs, crafts, ivory and similar goods in 2016 was comparable to 2003 and possibly, but not significantly, higher than in 1977 (Table 4-61). Earnings from self-employment were similar in 2016 compared to 2003 but were also significantly higher than in 1977. In 2016 dollars, wage earnings among Iñupiat households appear to have slightly decreased between 2003 (50 percent earning over \$50,000) and 2016 (38 percent earning over \$50,000). The 2016 distribution of wage earnings was similar to that in 1977.

The complicated category of non-wage earnings is defined as “dollars received for pensions, dividend checks, public assistance, shareholder dividends, student aid, disaster relief.” Results for 2016 are similar to 2003 and much higher than in 1977 (Table 4-61). Seventy-two percent of Iñupiat HHs in 1977 reported receiving \$1,500 or less (including zero) compared with 3 percent in 2003 and 5 percent in 2016.

Personal (as opposed to household) income may have changed significantly between 2003 and 2016: 18 percent of Iñupiat HHs reported receiving \$1,500 or less from all sources in 2016 compared with 1 percent in 2003 (Table 4-61). On the other hand, 34 percent of HHs received above \$50,000 in 2016 compared with 35 percent in 2003.

Overall housing quality as measured by the presence of 19 different features did not change substantially between 2003 and 2016 (Table 4-62), but a notable change is the percentage of households with a connection to the internet: 43 percent in 2003 and 73 percent in 2016. Other features substantially more present in Iñupiat households in 2016 included a carbon monoxide detector (from 42 percent to 78 percent), a place to sit outside (from 51 to 69 percent), and a

generator (from 33 percent to 48 percent). The average number of features in each household rose between 2003 and 2016, with 53 percent of households having between 16 and 19 housing features in 2003 compared to 73 percent in 2016. Overall housing quality as measured by experiences with 13 different housing problems appears to have declined slightly; 19 percent reported no problems in 2003 compared with 10 percent in 2016 (Table 4-63). However, the mean number of problems experienced remained the same, at 4.

At an average of 4 people per household, the mean number of people living in Iñupiat households remained the same between 1988 and 2016 and was slightly less than in 1977 (5 per house) (Table 4-64). It may be, however, that the reason why household size has remained as constant as it has is a shortage of new housing. Eighteen percent of Iñupiat households in 2016 had at least one person on a waiting list for housing.

In 2016, 38 percent of Iñupiat HHs were very satisfied with their household income compared with 30 percent in 2003 (Table 4-65). Satisfaction with availability of goods in local stores has apparently not kept pace with rising expectations: 44 percent of Iñupiat HHs were at least somewhat dissatisfied with the availability of goods in local stores compared with 26 percent in 2003 and 22 percent in 1977. There is also some indication of decreasing satisfaction with transportation to and from the community: 47 percent were at least somewhat satisfied with transportation to and from the community in 2016 compared with 64 percent in 2003 and 66 percent in 1977. While the cost of living is a common target for complaint throughout rural Alaska, among Iñupiat HHs, satisfaction with the cost of living appeared to be lower in 2016 and 1977 than it was in 2003. Similarly, satisfaction with the standard of living appeared to be somewhat lower in 2016, with 64 percent of Iñupiat HHs at least somewhat satisfied, compared to in 2003 when 77 percent were at least somewhat satisfied. Differences in assessments of how easy it is to make ends meet, however, did not change significantly between 2003 and 2016. Finally, the index of economic satisfaction significantly decreased from 2003 to 2016.

4.1.3.2 Physical Environment Indicators

Among the environmental problems examined, a principal interest is pollution from industrial development in the region. A similar percentage of Iñupiat HHs cited pollution from industrial development in the region as an environmental problem in 2016 (39 percent) compared to 2003 (35 percent) (Table 4-66). The only substantial change in the percentage of Iñupiat HHs identifying an environmental problem in the region was the percentage identifying climate change as a problem, which rose from 70 percent in 2003 to 85 percent in 2016.

There are no comparable data from earlier data sets on the percentage of Iñupiat HHs who have avoided eating subsistence foods because they believed them contaminated. In 2016, 32 percent of Iñupiat HHs avoided eating subsistence foods because they believed them contaminated compared with 28 percent of all HHs (Table 4-67, Table 4-28).

There was no significant difference in the percentage of Iñupiat HHs who were at least somewhat satisfied with the health of the environment: 74 percent in 2016 and 75 percent in 2003 (Table 4-68).

Past 12 month participation in activities overall as well as participation in Native activities remained constant between 2003 and 2016 with the major exception of taking part in a Native festival (57 percent in 2003 compared with 82 percent in 2016, see Table 4-69). Satisfaction with recreational facilities declined somewhat: 32 percent of Iñupiat HHs were “very satisfied” in 2003 compared with 22 percent in 2016 (Table 4-70).

4.1.3.3 Health and Safety Indicators

No significant change occurred in how Iñupiat HHs assess their health between 2003 and 2016 (Table 4-71). However, there was a decline in satisfaction with health: 28 percent of Iñupiat HHs were “very satisfied” with their health in 2016 compared with 42 percent in 2003 (Table 4-72). The only health problem affecting families to have significantly changed is arthritis: 67 percent of Iñupiat HHs identified arthritis as a problem affecting their family in 2016 versus 51 percent in 2003 (Table 4-73). The change may be explained by the aging of the population: in 2003, 26 percent of the sample of Iñupiat HHs was 55 or older compared with 34 percent in 2016 (Table 3-7).

The percentage of Iñupiat HHs who were a victim of theft or a victim of sexual assault in the past 12 months did not significantly change between 2003 and 2016 (Table 4-74). Likewise, there was no significant change between 2003 and 2016 in the percentage of Iñupiat HHs who said that their household experienced problems related to drugs or alcohol (Table 4-75). The index of depression remained unchanged (9 on a scale of 1 to 25) between 2003 and 2016 (Table 4-76), while the index of social support significantly increased in 2016 (from 27 to 29 on a scale of 7 to 35) (Table 4-77).

Eighteen percent of Iñupiat HHs were “very satisfied” and 57 percent were “somewhat satisfied” with health services in 1977 (Table 4-78). The percent “very satisfied” increased to 27 percent in 2003 and remained similar in 2016 at 24 percent. However, the percent of Iñupiat HHs “very dissatisfied” with health services changed from 5 percent in 2003 to 16 percent in 2016. Interviewers noted that a number of respondents voiced their frustration that the new hospital in Utqiagvik is understaffed. This view may explain the change in the percentage of Iñupiat HHs who were very dissatisfied with health services.

Satisfaction with public safety services has remained relatively unchanged between 2003 and 2016 (Table 4-78). Meanwhile, satisfaction with courts on the North Slope has declined: 61 percent of Iñupiat HHs were at least “somewhat satisfied” with courts on the North Slope in 2003 compared with 40 percent in 2016.

4.1.3.4 Cultural Continuity Indicators

The principal SI of cultural continuity is the persistence of engagement in subsistence activities. In 1977, Iñupiat HHs (mostly men at that time) engaged in a mean of 3 of 7 subsistence activities measured (Table 4-79). In 1988 the mean remained 3. In 2003 and 2016, the mean number of subsistence activities engaged in by Iñupiat HHs was 5. There has been a significant increase in participation in subsistence activities over the past 39 years.

The number of months in which Iñupiat HHs engaged in subsistence activities (i.e., spent five or more days) has remained remarkably consistent over the past 39 years; the mean number of months was 4 in 1977 and 3 in 2016 (Table 4-80). The largest decreases in activity by month were in April, May, June, and December. There were no significant changes by month from August to November and in January and February.

The mean number of traditional skills learned as a child at least stayed constant, if not increased slightly, between 2003 and 2016 (Table 4-81). Some of the traditional skills which increased between 2003 and 2016 (more than 10 percentage points difference) included hunting seal, knowing when the berries are ripe and where to find them, fixing a snowmachine, and reading the weather.

Iñupiaq language abilities show more mixed results, characterized by a decline in understanding and speaking Iñupiaq between 2003 and 2016 (Table 4-82). In 2003, 61 percent of Iñupiaq HHs said that they understood Iñupiaq “very well” compared with 40 percent in 2016. In 2003, 55 percent of Iñupiat HHs said that they could speak Iñupiaq “very well” compared with 34 percent in 2016. Iñupiat HHs did not change in the percentage who read or write Iñupiaq “very well.” Iñupiat HHs have also retained the importance they attach to use of the Iñupiaq language: 75 percent rated use of the Iñupiaq language “very important” in 2003 compared with 71 percent in 2016 (Table 4-83). Iñupiat HHs were not significantly less satisfied with how their community is promoting the use of the Iñupiaq language: 37 percent were “very satisfied” in 2003 compared with 33 percent in 2016 (Table 4-84).

Of the 7 Iñupiat values measured in both studies, Iñupiat HHs rated a mean of 5 as “very important” in 2003 compared with 6 in 2016 (Table 4-83). The only value in which there was a significant change between 2003 and 2016 is how satisfied they were with “promoting avoidance of conflict” (26 percent “very satisfied” in 2003 compared with 37 percent in 2016, Table 4-84).

Evidence of the persistence of the mixed economy is contained in the comparison of the lifestyle preference of Iñupiat HHs. Asked to choose between working on a wage job, harvesting or processing their own food, or both, in 2016 79 percent said “both” compared with 64 percent in 2003 and 67 percent in 1977 (Table 4-85). A somewhat smaller percentage in 2016 preferred working on a wage job alone (9 percent) when compared to previous study years (25 percent in 2003 and 17 percent in 1977).

4.1.3.5 Education Indicators

The change in education opportunities on the North Slope likely accounts in large part for the increase in the percentage of Iñupiat HHs who have graduated from high school (Table 4-86). In 1977, 35 percent of Iñupiat HHs had graduated from high school compared with 55 percent in 1988, 71 percent in 2003, and 87 percent in 2016. During the same period, the percentage completing a college or university degree increased from 1 percent in 1977 to 7 percent in 2016.

The percentage of Iñupiat HHs who were “very satisfied” with the formal schooling and training they received did not change significantly between 2003 and 2016 (Table 4-87). Satisfaction

with the quality of formal education in their community has changed for Iñupiat HHs since the 1970s: 12 percent were “very satisfied” in 1977 compared with 42 percent in 2003 and 33 percent in 2016. The percentage of HHs assisting at the school was virtually unchanged at 33 and 38 percent for the 2003 and 2016 time periods (Table 4-88).

4.1.3.6 Local Control Indicators

Knowledge and interest in politics remained virtually constant between 2003 and 2016 (Table 4-89). The mean number of elections in which Iñupiat HHs voted also remained constant—at three elections—between 1977, 2003, and 2016 (Table 4-90). While the percentage of Iñupiat HHs assessing any given institution as meeting their needs declined somewhat between 1977 and 2016, the mean number of institutions assessed as meeting their needs has remained the same at 3 (Table 4-91). Overall, in 2016, more than half of Iñupiat HHs believed that the Arctic Slope Regional Corporation, the NSB, and their tribal/Native council are meeting their needs, and at least a third believed that ICAS, the State of Alaska, and the federal government are meeting their needs.

Satisfaction with the influence Iñupiat have on the management of natural resources like oil, gas, and minerals significantly decreased between 2003 and 2016 (Table 4-92). Twenty-six percent of Iñupiat HHs were “very satisfied” with the influence Iñupiat have on the management of natural resources like oil, gas, and minerals in 2003 compared with 17 percent in 2016. Furthermore, the percentage of respondents that were at least “somewhat satisfied” decreased from 66 percent in 2003 to 52 percent in 2016. The percentage of Iñupiat HHs who were “very satisfied” with the influence Iñupiat have on the management of natural resources like fish and caribou also decreased from 56 percent to 39 percent. There was no significant change between 2003 and 2016 in the satisfaction with the influence Iñupiat have to reduce environmental problems in their area.

4.1.3.7 Overall Well-being Indicators

Iñupiat HHs were slightly more likely to have considered moving from their community in the last five years: 47 percent in 2016 compared to 36 percent in 2003 (Table 4-93). When comparing satisfaction with the quality of life in their community, Iñupiat HHs were more likely to be “very satisfied” in 2016 and 2003 (40 percent and 38 percent, respectively) compared to 1977 (22 percent) (Table 4-94). Considering the most overall SI of well-being—satisfaction with your life as a whole—the mean level of satisfaction did not significantly differ between 2016 and 2003.

4.1.3.8 Summary of Social Indicator Comparisons Over Time

The consistency of SIs among Iñupiat HHs over almost 40 years is remarkable, particularly given the magnitude of onshore O&G development and the exposure to western technology and culture. Iñupiat households still harvest over 2,000 pounds of subsistence food per year. Iñupiat HHs engage in nearly double the subsistence activities measured in 2016 (5 activities) as they did in 1977 (3 activities). Iñupiat HHs in 2016 were more satisfied with the amount of fish and game available locally than in 1977 (the reasons likely having to do with caribou harvest restrictions at the time of the 1977 survey). Meanwhile, Iñupiat HHs worked more weeks of the

year in 2016 than in 1977. Their satisfaction with their job was about the same as in 2003 and their satisfaction with local job opportunities is about the same in 2016 as it was in 1977.

Environmental conditions, as experienced by Iñupiat HHs, have not changed substantially between 2003 and 2016 except for an increasing awareness of the effects of climate change. The percentage of Iñupiat HHs citing pollution from industrial development in the region as an environmental problem was virtually the same in 2016 as in 2003 (35 percent and 39 percent respectively).

The consistency of living conditions over the past 13 years extends to health. No significant change occurred in how Iñupiat HHs assess their health between 2003 and 2016, although fewer were “very satisfied” with their health in 2016. The index of depression remained unchanged between 2003 and 2016 while the index of social support significantly increased.

While Iñupiaq language speaking and understanding abilities declined between 2003 and 2016, Iñupiaq reading and writing abilities did not. The importance attached to Iñupiat values also did not change significantly. Asked to choose between working on a wage job, harvesting, herding, or processing their own food, or both, in 2016 79 percent of Iñupiat HHs said “both”, compared with 64 percent in 2003 and 67 percent in 1977.

More Iñupiat HHs had a high school degree in 2016 (87 percent) than in 1977 (35 percent), and more had a college or university degree (1 percent compared with 7 percent).

Measures of political engagement (knowledge, interest, voting) all remained as high in 2016 as they did when last measured in 2003 or 1977. The two SIs of local control that do show some decline among Iñupiat HHs are the influence that Iñupiat have over the management of natural resources including O&G, and wildlife like fish and caribou.

Survey respondents are best suited to integrate all aspects of their living conditions into overall assessments of well-being. Iñupiat HHs were more likely to be “very satisfied” with the quality of life in their community in 2016 and 2003 than they were in 1977. And finally, considering the most overall SI of well-being—satisfaction with your life as a whole—the mean level of satisfaction did not significantly differ between 2016 and 2003.

4.1.4 Comparisons of 2016 Results for Male and Female Iñupiat North Slope Heads of Household

As noted earlier, there are many different uses of SI data besides the goals of monitoring and mitigating the impacts of offshore O&G development. A principal reason for including comparisons by gender in this report is to respond to the general interest of the Iñupiat (including members of the NSMB) in differences in the well-being of Iñupiat women and men. It is also possibly the case that the potential impacts of offshore O&G development may differ among Iñupiat women and men. In this section, we offer minimal interpretations of the data, simply noting where there are substantial differences among Iñupiat women and men. All the

data presented in this section are for the 2016 study year (with a 2015 reporting period for questions addressing the “past 12 months”).

4.1.4.1 Economic Indicators

In 2016, Iñupiat men were slightly more likely than women to be “very satisfied” with the amount of fish and game available locally (43 percent of men versus 35 percent of women) (Table 4-95). Iñupiat men and women were just as likely to have had a job in the past 12 months (2015) and equally likely to have worked, including vacations, 52 weeks a year (Table 4-96). Iñupiat women were less likely to have not had a job and wanted one, and both were equally as likely to have worked a job related to O&G development (approximately 17 percent). Iñupiat women were more likely to be “very satisfied” with their job while Iñupiat men and women were equally likely to be “somewhat satisfied” with job opportunities in their community (Table 4-97). Personal incomes were distributed among Iñupiat women and men about equally (Table 4-98). Iñupiat women and men did not substantially differ in their satisfaction with household income, with the availability of goods in local stores, with transportation to and from the community, or with the cost of living in their community (Table 4-99). Iñupiat women were slightly less satisfied than Iñupiat men with their standard of living and with their household’s ability to make ends meet. Overall, Iñupiat women had a slightly lower score on the economic satisfaction index.

4.1.4.2 Physical Environment Indicators

Iñupiat men and women generally had the same perceptions of environmental problems in 2016, as shown by the same mean on the index of environmental problems (Table 4-100). Iñupiat women were, however, more likely to identify environmental problems for all 12 categories except pollution of offshore waters, pollution from other countries, and pollution from landfills. Overall, Iñupiat men and women were equally satisfied with the health of the environment in their area (Table 4-102).

Iñupiat men and women differed in their participation in specific activities during the past 12 months (Table 4-103). Iñupiat men were more likely to have gone snowmobiling or dog sledding, participated in sports, boated or kayaked, gone biking, played basketball, or been out in the country in 2015. Iñupiat women were more likely to have taken part in a Native dance. On all other measures, male and female participation was similar. Looking at overall activities, Iñupiat women and men participated, on average, in almost the same number of activities (8 for men and 7 for women), about the same number of Native activities (2 for men and 3 for women), and about the same number of outdoor activities (3 for men and 2 for women). They were not substantially different in their satisfaction with recreational facilities in their community (Table 4-104).

4.1.4.3 Health and Safety Indicators

Iñupiat women were significantly (statistically) but not substantially lower in how they assessed their health (Table 4-105) and their satisfaction with their health (Table 4-106). Iñupiat women appeared to be more aware in 2016 of the incidence of family health problems (Table 4-107). They were also more likely to have been a victim of domestic violence in the last year (14 percent of women compared with 8 percent of men), while Iñupiat men were more likely to be victims of theft (Table 4-108). Iñupiat women and men were equally likely to have been a victim

of one or more offenses in 2016. They also did not differ substantially in their perception of whether drugs or alcohol were a problem in their home in 2016 (Table 4-109).

On average, Iñupiat women scored slightly higher than men on the index of depression indicators (10 versus 9 on a scale of 5-25, see Table 4-110). However, women scored, on average, slightly higher than men on the index of social support indicators (30 versus 28 on a scale of 7-35, see Table 4-111).

Iñupiat women were less likely than Iñupiat men in 2016 to be satisfied with health services and with public safety services in their community (Table 4-112). Iñupiat men and women were equally likely to be satisfied with courts on the North Slope (13 percent “very satisfied” and 27 percent “somewhat satisfied”).

4.1.4.4 Cultural Continuity Indicators

When comparing SIs of cultural continuity between men and women, there are clear gender role differences evident in the results for participation in subsistence activities (Table 4-113). Previous lists of subsistence activities upon which the 2016 list was based did not necessarily include an equal number of traditionally male and female subsistence activities. The count of subsistence activities by gender is therefore not gender neutral. Perhaps the most important result is that 89 percent of Iñupiat women and 90 percent of Iñupiat men reported engaging in at least 1 subsistence activity during the previous year. Over half of Iñupiat men and women engaged in at least 3 subsistence activities (77 percent of Iñupiat men and 66 percent of Iñupiat women). As the number of subsistence activities increases, the gap between male and female participation also increases; however, as noted above, much of this could be due to an unequal treatment of traditionally male and female activities in the list of subsistence activities. For several subsistence activities, female participation rates were equal to or higher than male participation. These include helping whaling crews by cooking, giving money or supplies, and cutting meat; sewing skins; making parkas and kamiks (boots); preserving meat and fish; picking berries; and making Native handicrafts. Participation in subsistence activities by month was similar between males and females (Table 4-114).

As with the above, the 2016 list of traditional skills was not a gender-neutral list. Given the list of 20 traditional skills included in the 2016 SICAA survey, 63 percent of Iñupiat women and 87 percent of Iñupiat men learned at least 11 traditional skills as a child (Table 4-115). While Iñupiat men were more likely to have learned a majority of skills on the list provided, Iñupiat women were more likely to have learned the following skills: take care of and sew skins; cook and prepare traditional foods; know the names of past generations of Iñupiat relatives; make and repair traditional clothing; learn traditional dances and drumming; and learn traditional songs.

Iñupiat women in 2016 were slightly more likely than Iñupiat men to understand, speak, read, and write Iñupiaq (Table 4-116). They did not differ substantially from men on the number of Iñupiat values they consider “very important,” although on almost all measures women were slightly more likely to rate a value as “very important” (Table 4-117). In addition, Iñupiat men and women were similar in how satisfied they are with the job their community is doing to promote

Iñupiat values (Table 4-118). They were also identical in their distribution of lifestyle preferences, with 80 percent preferring a lifestyle that involves both a wage job and harvesting or processing their own food (Table 4-119).

4.1.4.5 Education Indicators

Iñupiat women were slightly (two percentage points) more likely than Iñupiat men in 2016 to have graduated from high school (Table 4-120). Twenty-seven percent of Iñupiat men reported having a vocational, associates, or college degree compared with 23 percent of Iñupiat women. Iñupiat women and men did not differ substantially in their satisfaction with their own formal schooling or with the quality of formal education in the community (Table 4-121).

4.1.4.6 Local Control Indicators

On questions measuring political engagement, Iñupiat women and men did not differ substantially and had the same score on the political engagement index (10 on a scale of 3 to 11) (Table 4-122). Iñupiat women and men were equally likely to have voted in recent elections, although women were somewhat more likely (61 percent compared to 51 percent of men) to have voted in at least 4 elections (Table 4-123). Iñupiat women and men had the same average count of 3 institutions meeting their needs (Table 4-124). In addition, they did not differ substantially in their view of the influence Iñupiat have on management of natural resources like oil, gas, and minerals; with natural resources like fish and caribou or marine mammals; or with the influence Iñupiat have to reduce environmental problems in their area (Table 4-125).

4.1.4.7 Overall Well-being Indicators

In 2016, Iñupiat women were slightly more likely than Iñupiat men to have considered moving from their community in the last five years (50 percent compared with 44 percent, see Table 4-126). Iñupiat women and men did not differ substantially in how satisfied they are with the quality of life in their community (37 percent of women and 42 percent of men “very satisfied”), nor did they differ in how satisfied they are with their life as a whole (58 percent of women and 61 percent of men “very satisfied”) (Table 4-127).

4.1.4.8 Summary of Social Indicator Comparisons by Gender

Comparing the 2016 interview results between male and female Iñupiat HHs reveals differences and similarities in well-being. When it comes to the domain of economic well-being, the primary ways in which men and women differed were in relation to their satisfaction with their standard of living and their ability to make ends meet. Iñupiat women were slightly less satisfied than Iñupiat men with their standard of living and with their household’s ability to make ends meet. They also had a slightly lower score on the economic satisfaction index. Iñupiat men and women did not differ substantially when it came to employment rates, personal income, and satisfaction with the availability of goods, transportation, and the cost of living in their community.

Under the physical environment domain, Iñupiat women were more likely to identify fish or animals that may be unsafe to eat, pollution of local lakes and streams, and disruption of views and landscapes as problems for their community. They were also more likely to have avoided eating subsistence foods because they thought they were contaminated. However, Iñupiat men

and women scored similarly on the index of environmental problems and were equally satisfied with the health of the environment in their area.

Under the health and safety domain, Iñupiat women were more likely to report family health problems and less likely to be satisfied with their health. They were also more likely to have been a victim of domestic violence in the last year. Iñupiat women scored slightly higher than men on the index of depression indicators. However, women scored slightly higher than men on the index of social support indicators. On other health and safety measures, male and female Iñupiat did not differ substantially.

Under the domain of cultural continuity, the primary differences between Iñupiat men and women pertained to language and traditional skills. Iñupiat women were slightly more likely than Iñupiat men to understand, speak, read, and write Iñupiat. Given a list of 20 traditional skills, Iñupiat women were somewhat less likely than men to have learned more than 15 traditional skills as a child; this difference could have to do with the list of traditional skills not being gender neutral. A nearly equal percent of Iñupiat women and men engaged in at least 1 subsistence activity in the previous year, and their responses regarding Iñupiat values and lifestyle preference were similar.

In terms of education, Iñupiat women were slightly more likely than Iñupiat men to have graduated from high school. On other measures, such as satisfaction with their schooling or formal education in their community, Iñupiat women and men were similar. On measures related to local control, such as interest in or knowledge of politics and satisfaction with Iñupiat influence over the management of natural resources, Iñupiat women and men did not differ substantially.

When it comes to overall well-being, Iñupiat women were slightly more likely than Iñupiat men to have considered moving from their community in the last five years. However, on other measures—satisfaction with life as a whole and satisfaction with life in their community—their responses were similar.

4.1.5 Comparisons of 2016 Results and 2003 SLiCA Results for Other Arctic Regions

The 2003 results for the SLiCA study are 13 years old. Much could have changed in the survey regions around the Arctic over those 13 years. Comparing the 2003 SLiCA and 2016 SICAA results for the North Slope can provide some insight as to the speed of change we might expect in the other regions.

Three Iñupiat settlement regions were included in the SLiCA sample: the North Slope, the Northwest Arctic, and the Bering Straits regions. Culturally the most similar, these three regions differ in their regional economies. Without going into detail, the order of increasing economic activity starts with the Bering Straits followed by the Northwest Arctic and the North Slope. Because Canada owns the SLiCA data for Canada, and the study team does not have access to those data, this study cannot compare results by HH for the four Canadian Inuit settlement regions included in SLiCA.

Greenland offers a valuable comparison of Inuit living conditions with its large urban center, Nuuk, and dispersed villages. Living conditions in Chukotka were critically important to document in SLiCA because its population was under severe stress following the collapse of the Soviet Union. Chukotka results are also valuable as a test of the concept of SIs: do SIs appear to reflect the severe conditions obviously existent in Chukotka at the time of SLiCA, or do people tend to quickly adjust their standards to what they see around them? Three regions - the Kola Peninsula, Norway, and Sweden offer yet another valuable comparison. The Saami residing in these regions are more dispersed among the general population, yet many families still have active ties to reindeer herding and fishing. It should be noted that the response categories for the Chukotka and Kola Peninsula surveys did not include the same five response scale (only had four) on the satisfaction questions so comparisons of percentages with those regions should keep this in mind.

The SLiCA results included in this report have not been published elsewhere as the study team applied a filter of HHs to the SLiCA results to make them more comparable to the 2016 SICAA results. The SLiCA regional samples were filtered to include only those who are likely to be a HH. The North Slope SLiCA results from 2003 also include HHs from the communities of Anaktuvuk Pass and Atkasuk in addition to the six communities surveyed in 2016. The BOEM technical report series of which this report is a part are permanently archived and available on the internet. Thus, the SLiCA results published here will be available to researchers and policy makers for the foreseeable future. The primary focus of this section is on comparing 2003 North Slope data to 2003 data for other regions and identifying, where applicable, when North Slope data show a change from 2003 to 2016.

4.1.5.1 Economic Indicators

As reported above (Section 4.1.3.1), the apparent change in the proportion of meat and fish eaten that is traditional for the North Slope from 66 percent reporting “more than half” in 2003 to 47 percent in 2016 is not statistically significant (Table 4-128, Table 4-57). Either figure is within the range of results for the other regions (Table 4-128). The proportion of meat and fish harvested by households in 2016 are also within the range of reported values for the 2003 comparison regions.

In 2003 there was a large variation in satisfaction with the amount of fish and game available locally, with less than 10 percent of Greenland, Chukotka, and Kola Peninsula Indigenous HHs “very satisfied,” compared with a quarter of Bering Straits Indigenous HHs, over a third of North Slope and Norway HHs, and 63 percent of Northwest Arctic Indigenous HHs (Table 4-129). This continued to be the case on the North Slope in 2016, with over one-third of households “very satisfied” with the availability of fish and game.

In 2003, approximately two-thirds of North Slope HHs had a job in the past 12 months compared with a low of 59 percent of Saami HHs living on the Kola Peninsula in Russia, and a high of 98 percent of Inuit in Greenland and Saami in Norway (Table 4-130). North Slope Iñupiat HHs in 2003 were as likely to be “very satisfied” with their jobs as their counterparts in the Bering Straits

and Northwest Arctic regions of Alaska and in Norway, and more likely to be “very” satisfied” with their jobs than Indigenous HHs in Greenland, Chukotka, the Kola Peninsula, and Sweden (Table 4-131). North Slope Iñupiat households were at least as likely in 2003 as Indigenous households in all the other regions to have income from the sales of carvings, skin clothing, furs, crafts, ivory and other similar goods (Table 4-132). A smaller percentage of Iñupiat households on the North Slope had wage earnings above \$50,000 compared to Saami households in Norway, but earnings in 2003 were on the high range of the other two Iñupiat settlement regions and Greenland. Personal incomes on the North Slope in 2003 were similar to Greenland, higher than in the Bering Straits and Northwest Arctic, and lower than in Norway. Although the percentage of North Slope households earning over \$50,000 from wage employment earnings was lower in 2016 compared to 2003, the percentage earning over \$50,000 from all sources of income remained the same at 34 percent.

Turning to housing quality, in 2003 North Slope Iñupiat households had an average of 15 of 19 measured housing features, slightly higher than in the other two Iñupiat settlement regions and Greenland, substantially higher than in the Kola Peninsula, Chukotka, and Sweden, and lower than Norway (Table 4-133). The average number of 12 measured housing problems on the North Slope was four in 2003, about the same as in all other regions except Sweden and Norway where it was substantially lower with an average of 1 housing problem reported (Table 4-134). The average size of North Slope Iñupiat households—4 in 2003—was the same as that for Chukotka, higher than that for Sweden, Norway, Greenland, and the Kola Peninsula, and lower than that for the Bering Straits and Northwest Arctic (Table 4-135). Comparisons of housing quality indicators on the North Slope between 2003 and 2016 show little change over time.

Approximately one-third of North Slope Iñupiat HHs (29 percent) were “very satisfied” with their household income in 2003, compared with about a third of Bering Straits and Northwest Arctic Iñupiat households, and 46 percent of Norway Saami households (Table 4-136). In contrast, only 1 percent of Kola Peninsula Saami households were “very satisfied,” followed by 6 percent (Chukotka), 13 percent (Greenland), and 14 percent (Sweden). Mean satisfaction with household income was virtually identical in all regions (e.g., mean of 4 equaling somewhat satisfied) except Chukotka and the Kola Peninsula where it was substantially lower. There was little change in income satisfaction on the North Slope between 2003 and 2016. On the economic satisfaction index, all regions for which data are available scored between 19 and 20 (out of 24) except for Chukotka and Kola Peninsula (12); in 2016 the North Slope economic satisfaction index was 18.

North Slope Iñupiat in 2003 were less likely to be “very satisfied” with the availability of goods in local stores than Saami in Norway and Sweden (where communities are located on the road system), and about equally satisfied as Indigenous households in all other regions except Chukotka, where 38 percent of Indigenous HHs were very dissatisfied with the availability of goods (Table 4-136). In contrast, North Slope Iñupiat were more likely to be “very satisfied” with transportation to and from their community (28 percent) compared with between 2 and 13 percent of indigenous residents in regions outside of Alaska. Unlike the economic indicators discussed above, satisfaction with goods and services and with transportation to and from one’s

community do show change between 2003 and 2016. While the mean of satisfaction with goods in local stores was similar in 2003 and 2016 (3), respondents were more likely in 2016 to be somewhat or very dissatisfied (44 percent) compared to 2003 (28 percent). Satisfaction with transportation to and from the community appears to have declined (from an average of 4 to 3 on a scale of 5) on the North Slope between 2003 and 2016, and a substantially higher percentage (22 percent in 2016 versus 7 percent in 2003) indicated they were “very dissatisfied” with this measure. Mean satisfaction with transportation on the North Slope in 2016 is the same as it was in Greenland and Sweden in 2003, and higher than it was in Chukotka, Kola Peninsula, and Norway.

Few respondents across the Arctic regions chose to say that they were “very satisfied” with the cost of living in 2003. The 2003 results for the North Slope are comparable to the 2003 results for the Bering Straits and Northwest Arctic region, with fewer North Slope Iñupiat heads being “very dissatisfied” than Indigenous HHs in Chukotka (51 percent) and the Kola Peninsula (71 percent). However, the percentage of North Slope Iñupiat HHs reporting that they are “very dissatisfied” with the cost of living increased from 23 percent to 35 percent between 2003 and 2016 (Table 4-136).

When compared to other Arctic regions, Norwegian Saami in 2003 were substantially more satisfied with their standard of living (65 percent “very satisfied”) and their ability to “make ends meet” (48 percent “very easily,” Table 4-136). North Slope Iñupiat were substantially more likely to be satisfied on these measures than Indigenous HHs in Chukotka or the Kola Peninsula, and had the same average on both measures as Iñupiat HHs in the Bering Straits and Northwest Arctic regions. North Slope Iñupiat in 2016 were less likely to be somewhat or very satisfied with their standard of living (64 percent of respondents) compared to 2003 (77 percent); however, on a mean scale of 1 to 5 they scored the same (4) during both years.

4.1.5.2 Physical Environment Indicators

Pollution from industrial development in the region was more likely to be reported by North Slope Iñupiat HHs (32 percent in 2003) than Indigenous HHs living in Norway (18 percent), Bering Straits (20 percent), and Northwest Arctic (27 percent) in 2003, but less likely than Indigenous HHs in Kola Peninsula (83 percent), Chukotka (66 percent), Greenland (54 percent), and Sweden (43 percent, Table 4-137). These comparisons continued to hold true for North Slope Iñupiat in 2016, with 39 percent reporting pollution from industrial development.

Regional differences in the percentage of Indigenous HHs concerned that fish or animals may not be safe to eat are large as well (Table 4-137). Chukotka (70 percent) and Kola Peninsula (62 percent) Indigenous heads were most concerned about contaminated fish and animals in 2003, followed by the Iñupiat on the North Slope (44 percent), Bering Straits (48 percent), and Northwest Arctic (40 percent), with Greenland (28 percent), Norway (20 percent), and Sweden (11 percent) least concerned. North Slope Iñupiat were equally if not slightly more concerned in 2016 (49 percent compared to 44 percent in 2003). Looking at cumulative concerns about six environmental problems, a mean of 3 concerns applied to the Iñupiat settlement regions as well

as Greenland, with Saami in Norway and Sweden reporting a mean of 2, Saami living on the Kola Peninsula reporting a mean of 5, and Chukotka Indigenous HHs reporting a mean of 4.

North Slope Iñupiat HHs in 2003 were as likely to be “very satisfied” with the health of the environment in their area as the Indigenous HHs in the Northwest Arctic and Norwegian comparison regions (Table 4-138). Indigenous heads living in Chukotka or the Kola Peninsula were much less likely to be satisfied, with 75 percent and 87 percent at least “somewhat dissatisfied,” respectively.

Recreation facilities and community activity opportunities are potentially indirectly related to the general level of economic activity in a region. The mean level of satisfaction with recreational facilities among North Slope Iñupiat HHs (4 in 2003) was the same as that of the Saami in Sweden (4) and Norway (4); and slightly higher than that of Iñupiat HHs living in the Bering Straits (3), Northwest Arctic (3), Chukotka (2), and Kola Peninsula (2) (Table 4-138). The mean for North Slope Iñupiat declined slightly in 2016 (from 4 to 3). In 2003, North Slope Iñupiat HHs were as likely as their counterparts in at least most other regions to take part in a Native festival, participate in a Native dance, or take part in Native traditional games (Table 4-139). North Slope Iñupiat HHs were substantially more likely to have taken part in a Native festival in 2016 (82 percent compared to 59 percent in 2003) but on all other measures were relatively similar to 2003.

4.1.5.3 Health and Safety Indicators

In 2003, 47 percent of North Slope Iñupiat HHs rated their health as “very good” or “excellent” compared with 77 percent of Indigenous HHs in Greenland, 56 percent in Sweden, 49 percent in Norway, 45 percent in the Bering Straits region, 41 percent in the Northwest Arctic, and 18 percent in Chukotka (Table 4-140). Satisfaction with health appeared more similar among the comparison regions in 2003, with 85 percent of Greenland Inuit HHs being “somewhat” or “very” satisfied with their health compared with 82 percent of Saami HHs in both Sweden and Norway, 84 percent of Iñupiat HHs in the Northwest Arctic and Bering Straits regions, and 88 percent of Iñupiat HHs on the North Slope (Table 4-141). Aside from a slight decrease in the percentage of Iñupiat HHs rating their health as “very good” or “excellent” (from 47 percent in 2003 to 36 percent in 2016), there were no substantial changes in the self-reported health or satisfaction with health for North Slope Iñupiat between 2003 and 2016.

North Slope Iñupiat were more likely in 2003 to report cancer, arthritis, and alcoholism or drug abuse as affecting a family member than Indigenous heads in most other comparison regions, but as or less likely to report eye disease, mental illness, accidental injury, or joint and bone diseases (Table 4-142). All identified health problems saw an increase in reports among Iñupiat HHs between 2003 and 2016. North Slope Iñupiat in 2003 were no more or less likely to have been a victim of theft or sexual assault in the past 12 months compared to other Arctic regions (Table 4-143). North Slope Iñupiat were no more likely to say that there are problems related to drugs or alcohol in their home today than Iñupiat HHs in the Bering Straits or Northwest Arctic regions or Indigenous heads in Chukotka, but were more likely than Indigenous HHs in the Kola Peninsula, Sweden, Norway, and Greenland (Table 4-144). On the depression index, North

Slope Iñupiat scored a mean of 9 on a scale of 1-25 compared with higher values in the Bering Straits (10), Northwest Arctic (10), Sweden (10), the Kola Peninsula (12), and Chukotka (13), an equal mean score in Norway (9) and a higher mean score than in Greenland (8) (Table 4-145). North Slope Iñupiat scores on the social support index were high in 2003 (27 on a scale of 7-35) as were the scores for all other regions (Table 4-146). On all the above health measures (except for reported health problems affecting families), the responses of North Slope Iñupiat HHs showed little change between 2003 and 2016.

Other than their Northwest Arctic and Bering Straits counterparts in Alaska, North Slope Iñupiat HHs in 2003 were more satisfied with the health system in their community than HHs in the other analysis regions (Table 4-147). In regards to public health and safety services, North Slope Iñupiat, at 53 percent satisfied, were less satisfied than all other regions except Chukotka and Kola Peninsula (each 30 percent). North Slope Iñupiat HHs were more likely to be satisfied with courts in their region than other regions except Bering Straits, Greenland, and Norway. Except for satisfaction with public safety services which stayed relatively similar, the percentage of Iñupiat satisfied with the health system in their community and with the courts declined substantially between 2003 and 2016.

4.1.5.4 Cultural Continuity Indicators

Especially in Alaska (and Canada), the mixed economy usually involves the harvesting of a wide variety of resources. Thus, a relevant measure of cultural continuity is the number of different subsistence activities pursued. In Greenland, the form taken by the mixed economy is shaped by government regulations for professional and recreational hunting and by the large proportion of the population living in Nuuk. Reindeer herding in Norway, Sweden, the Kola Peninsula, and Chukotka shapes the form of the mixed economy in those regions. These different forms of the mixed economy lower the relevance in these regions of the number of different subsistence activities pursued as a measure of cultural continuity. The measure is nevertheless still relevant and warrants comparison, especially among the three Iñupiat regions in Alaska. In 2003, North Slope and Bering Straits Iñupiat engaged in the most subsistence activities on average (5), followed by Indigenous HHs in the Northwest Arctic (4); Chukotka and Norway (3); and Greenland, the Kola Peninsula, and Sweden (2) (Table 4-148). The mean number of subsistence activities for North Slope Iñupiat remained the same between 2003 and 2016.

The measure of the number of traditional skills learned as a child has the same caveat as the number of subsistence activities pursued. All three Alaska Iñupiat regions show a mean of 12 (14 on the North Slope in 2016) traditional skills learned (of 19 measured), with an average of 10 for the Chukotka and Norway, 9 for Kola Peninsula and Greenland, and 8 for Sweden (Table 4-149).

Differences in the history of contact with non-indigenous groups has greatly affected the status of Indigenous language use in the Arctic. In Greenland, for example, Greenlandic remains the primary language of everyday life, while in Alaska, missionaries and teachers in the twentieth century discouraged or prohibited Iñupiaq from being spoken by children in school. Keeping this context in mind, 60 percent of North Slope Iñupiat HHs in 2003 assessed their ability to

understand Iñupiat as “very well”, compared with 33 percent in the Bering Straits Region and 48 percent in the Northwest Arctic (Table 4-150). Comparable figures for the other regions varied from 75 percent in Greenland and 70 percent in Norway to 22 percent in Sweden. North Slope Iñupiat HHs in 2016 show a decline in their ability to understand Iñupiat, at 40 percent of respondents (compared to 60 percent in 2003).

North Slope Iñupiat HHs attached “very important” to an average of 5 of the 7 traditional values also measured in SLiCA (increasing to 6 in 2016) (Table 4-151). Other regions in 2003 had mean values between 3 (Norway, Sweden, Greenland), 4 (Bering Straits), and 5 (Chukotka and Northwest Arctic). When asked to evaluate their community’s promotion of values, the mean satisfaction score was 4 in all regions except Chukotka and the Kola Peninsula, where it was 3 (Table 4-152).

Two-thirds or more of North Slope, Bering Straits, and Northwest Arctic Iñupiat HHs in 2003 reported preferring a lifestyle that involves both wage work and harvesting, herding, or processing their own food (Table 4-153). This lifestyle preference was more strongly held in the three Alaska comparison regions than in any other region in the Arctic. The percentage of North Slope Iñupiat preferring “both” was higher in 2016 than in 2003. The difference in North Slope results for lifestyle preferences between 2003 and 2016 - working a wage job; harvesting, herding, or processing your own food; or both - is noteworthy. The 2016 results for the North Slope look more similar to the 2003 results for the Bering Straits and Northwest Arctic regions (9 percent, 8 percent, and 10 percent indicating, respectively, that they prefer working a wage job) than for the North Slope (24 percent in 2003). While there is a difference in the gender distribution of the 2003 and 2016 samples, the 2016 comparison of lifestyle preferences by gender shows no difference (Table 4-119).

4.1.5.5 Education Indicators

This section focuses on formal education in the study communities. Note that traditional education is discussed above under cultural continuity (see Table 4-149).

The increase in high school education opportunities on the North Slope starting in the 1970s is reflected in the increasing percentage of Iñupiat HHs with a high school education (Table 4-154). The percentage of North Slope HHs with a high school diploma was substantially higher in 2016 (62 percent) than in 2003 (38 percent). However, during both 2003 and 2016, the percentage of Iñupiat HHs with a vocational or college degree still lagged behind that of the international comparison regions in 2003.

In 2003, about half of Iñupiat HHs in all three Alaska regions were “very satisfied” with the formal schooling and training that they received compared with 31 percent of Saami HHs in Norway and 15 percent of Saami HHs in Sweden (Table 4-155). Iñupiat HHs were more likely to be very satisfied with the quality of formal education in their community with 42 percent of North Slope Iñupiat and 32 percent of Bering Straits Iñupiat HHs “very satisfied”, compared with 22 percent

in the Northwest Arctic and less than 20 percent in the international comparison regions. North Slope Iñupiat responses were similar between 2003 and 2016.

4.1.5.6 Local Control Indicators

North Slope Iñupiat HHs in 2003 scored higher than Indigenous HHs in the comparison regions except Greenland and Norway on an index of political engagement based on their assessment of knowledge, interest, and attitude toward voting. In 2016, however, they scored higher than any 2003 region with an index of 10 out of 11 (Table 4-156). North Slope Iñupiat also voted in an average of 3 elections in the previous year, more than Indigenous HHs in the comparison regions (Table 4-157). This remained unchanged for North Slope Iñupiat in 2016.

In 2003, 27 percent of North Slope Iñupiat HHs were “very satisfied” with the influence Iñupiat have on the management of natural resources like oil, gas, and minerals (Table 4-158). Over two-thirds (67 percent) of North Slope Iñupiat HHs were at least “somewhat satisfied” in 2003, compared with 61 percent in the Northwest Arctic, 42 percent in Bering Straits, 43 percent in Greenland, and 15 percent or less in Chukotka, Kola Peninsula, and Norway. Among North Slope Iñupiat, this percentage was slightly lower in 2016 (52 percent) than in 2003 (67 percent), but still within the range of the other regions.

North Slope Iñupiat HHs were more satisfied with the influence Iñupiat have on the management of natural resources like fish and caribou than any other region. Fifty-six percent of North Slope Iñupiat HHs in 2003 were “very satisfied” compared with 42 percent in the Northwest Arctic, 19 percent in Bering Straits, and 10 percent or less in the international comparison regions (Table 4-158). In 2016, the percentage was slightly lower (39 percent) but still similar to or higher than other regions.

Similar to the above, North Slope Iñupiat HHs were more satisfied with their ability to reduce environmental problems than any other comparison region. Seventy-four percent of North Slope Iñupiat HHs were at least somewhat satisfied with the influence Indigenous people have to reduce environmental problems in their area compared with 70 percent in the Northwest Arctic, 60 percent in Bering Straits, 46 percent in Greenland, 29 percent in Norway, 20 percent in Chukotka, and 9 percent in the Kola Peninsula (Table 4-158). For North Slope Iñupiat, this percentage was somewhat lower in 2016 (59 percent) than it was in 2003.

4.1.5.7 Overall Well-being Indicators

In 2003, the percentage of Indigenous HHs on the North Slope and in the comparison regions who had considered moving from their community in the last five years ranged from 29 percent on the Kola Peninsula to 41 percent in the Bering Straits region (Table 4-159). On the North Slope in 2016, this percentage was somewhat higher (47 percent). However, while these differences are statistically significant, they are not large. Other than in Chukotka and the Kola Peninsula, in 2003 there was no widespread dissatisfaction with the quality of life in any other region (Table 4-160). North Slope Iñupiat HHs were nearly as likely to be very satisfied with the quality of life in their community as the Indigenous HHs in the Northwest Arctic and Norway and more likely than the Indigenous HHs in all other comparison regions. Responses among North

Slope Iñupiat regarding the quality of life in their community in 2016 were virtually the same in as in 2003.

The indicator of overall well-being extends to satisfaction with life as a whole (Table 4-160). Sixty-eight percent of North Slope Iñupiat HHs were “very satisfied” (60 percent in 2016). Ninety-five percent in 2003 were at least somewhat satisfied (identical to 2016). These percentages are comparable to those in the Northwest Arctic and Bering Straits regions and to the Saami in Sweden (the study team believes the lower percentage of Inuit HHs in Greenland who stated they were “very satisfied” may be an artifact of the interpretation they gave to the Greenlandic translation of “very”). Thus, the bottom line of comparisons between the North Slope and other Indigenous settlement regions in Alaska and across the Arctic is that overall well-being was higher on the North Slope than anywhere else in 2003, and that on most counts, these measures did not change substantially between 2003 and 2016.

4.1.5.8 Summary of Social Indicator Comparisons by Region

Similar to other comparison groups, comparing SIs between North Slope Iñupiat and indigenous people in other regions of Alaska and the Arctic reveals both similarities and differences.

Under the domain of economic well-being, measures related to subsistence harvests indicate that North Slope Iñupiat in 2003 were similar to other Alaskan regions and to indigenous residents in Norway and Sweden; these measures declined somewhat for North Slope Iñupiat in 2016; however, their reliance on subsistence foods was still higher than in Greenland and Chukotka in 2003. There is a large variation in satisfaction with the amount of fish and game available locally, with less than 10 percent of Greenland, Chukotka, and Kola Peninsula Indigenous HHs “very satisfied” in 2003 compared with over a third of North Slope HHs, and 63 percent of Northwest Arctic HHs. On employment and income-related measures, North Slope Iñupiat were within the range of other regions. A smaller percentage of Iñupiat households on the North Slope had wage earnings above \$50,000 than Saami households in Norway, but earnings in 2003 were in the range of the other two Iñupiat settlement regions and Greenland. Turning to housing quality, North Slope Iñupiat households had an average of 15 of 19 measured housing features in 2003, slightly higher than in the other two Iñupiat settlement regions and Greenland, substantially higher than in the Kola Peninsula, Chukotka, and Sweden, and less than in Norway. North Slope Iñupiat satisfaction with household income and standard of living was generally higher than or equal to other Arctic regions.

Under the physical environment domain, perceptions of environmental problems ranged widely. Pollution from industrial development in the region was more likely in 2003 to be reported by North Slope Iñupiat HHs than Indigenous HHs living in Norway, Bering Straits, and Northwest Arctic, but less likely than Indigenous HHs in the Kola Peninsula, Chukotka, Greenland, and Sweden. Regional differences in the percentage of Indigenous HHs concerned that fish or animals may not be safe to eat were large as well; North Slope Iñupiat were less likely than Indigenous HHs in Chukotka and Kola Peninsula, but more likely than all other regions, to have concerns that fish or animals are not safe to eat. When it comes to satisfaction with the health of the environment, North Slope Iñupiat HHs were within the range of other Arctic regions.

When it comes to health and safety, less than half of North Slope Iñupiat HHs in both 2003 and 2016 rated their health as “very good” or “excellent,” similar to some other regions in 2003 but lower than in Greenland and Sweden. North Slope Iñupiat were more likely to report cancer, arthritis, and alcoholism or drug abuse as affecting a family member than Indigenous heads in the comparison regions, but as or less likely to report eye disease, accidental injury, mental illness, or joint and bone disease. North Slope Iñupiat were no more or less likely than Indigenous heads in other regions to have been a victim of theft or sexual assault in the past twelve months. North Slope Iñupiat were more likely to say that there are problems related to drugs or alcohol in their home today, when compared to Indigenous HHs in the Kola Peninsula, Greenland, Sweden, and Norway; however, their responses were similar to those in the other Alaskan regions and in Chukotka.

Under the domain of cultural continuity, North Slope and Bering Straits Iñupiat engaged in the most subsistence activities on average (5) compared to the comparison regions (between 2 and 4). All three Alaska Iñupiat settlement regions show a mean of 12 (14 on the North Slope in 2016) traditional skills learned (of 19 measured), with an average of 10 for the Kola Peninsula and Norway, 9 for Chukotka and Greenland, and 8 for Sweden.

Under the education domain, about half of Iñupiat HHs in all three Alaska regions were “very satisfied” with the formal schooling and training that they received, substantially higher than in Norway and Sweden. Iñupiat HHs were also more likely than many other regions to be very satisfied with the quality of formal education in their community.

On measures related to local control, North Slope Iñupiat HHs in 2003 scored as high as Indigenous HHs in the comparison regions, except Greenland and Norway, on an index of political engagement based on their assessment of knowledge, interest, and attitude toward voting. North Slope Iñupiat HHs were more satisfied with the influence Iñupiat have on the management of natural resources like fish and caribou than any other region. Similarly, North Slope Iñupiat HHs were more satisfied with their ability to reduce environmental problems than any other comparison region.

In general, measures of overall well-being are as high on the North Slope as anywhere else. In 2003, the percentage of Indigenous HHs who had considered moving from their community in the last five years ranged from 29 percent on the Kola Peninsula 41 percent in the Bering Straits region. On the North Slope in 2016, this percentage was somewhat higher. Other than in Chukotka and the Kola Peninsula, there was no widespread dissatisfaction with the quality of life in their community. North Slope Iñupiat HHs were nearly as likely to be very satisfied with the quality of life in their community as the Indigenous HHs in the Northwest Arctic and Norway and more likely than the Indigenous HHs in all other comparison regions.

4.2 Aggregated Data

The following sections provide the table results that correspond with the discussion presented in Section 4.1. Results are organized under the following comparison groups:

1. Impact Comparison Tables
2. SIs by Community
3. Indigenous Time Series
4. Gender
5. International Comparisons

4.2.1 Impact Comparison Tables

Table 4-1: Percentage of heads of household in each activity reporting impact in the year by community, 2016

Type of Subsistence Activity in Past 12 Months	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Any subsistence activity	62 (24%)	9 (19%)	12 (12%)	6 (15%)	41 (46%)	14 (10%)	144 (22%)
Trapped	7 (39%)			1 (50%)	1 (9%)	1 (9%)	10 (27%)
Captained a whaling crew	5 (27%)	1 (50%)			4 (45%)	3 (29%)	13 (26%)
Hunted caribou, moose, or sheep	27 (29%)	4 (18%)	4 (6%)	2 (11%)	30 (54%)	4 (7%)	71 (25%)
Hunted wolf or wolverine	8 (40%)			1 (17%)	3 (19%)	1 (4%)	13 (23%)
Was a member of a whaling crew	23 (25%)	3(15%)	3 (6%)	3 (15%)	11 (33%)	6 (8%)	49 (20%)
Hunted polar bear	5 (30%)			1 (50%)	1 (13%)		7 (18%)
Hunted walrus	9 (20%)		1 (2%)	1 (17%)	1 (9%)	4 (10%)	16 (15%)
Hunted seal or ugruk	12 (19%)	1 (9%)	2 (5%)		6 (16%)	4 (7%)	25 (14%)
Gather greens, roots, or other plants	10 (20%)				2 (13%)	4 (7%)	16 (14%)
Make sleds or boats	10 (22%)				1 (6%)	2 (6%)	13 (14%)
Hunted ptarmigan	7 (20%)				3 (18%)		10 (13%)
Make Native handicrafts	11 (17%)			1 (8%)	1 (3%)	3 (6%)	16 (12%)
Hunted waterfowl	14 (18%)		1 (1%)		6 (12%)	3 (6%)	24 (12%)

Table 4-1: Percentage of heads of household in each activity reporting impact in the year by community, 2016, continued

Type of Subsistence Activity in Past 12 Months	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Fished	20 (17%)				7 (11%)	5 (6%)	32 (12%)
Skinned and butchered a caribou	18 (18%)		2 (3%)		5 (9%)	3 (4%)	28 (11%)
Help whaling crews by cooking, giving money or supplies, cutting meat	20 (15%)		2 (3%)		4 (9%)	2 (3%)	28 (11%)
Sew skins, make parkas and kamiks (boots)	9 (14%)				1 (4%)	3 (7%)	13 (11%)
Picked berries	12 (19%)	1 (6%)	1 (1%)		3 (7%)	4 (4%)	21 (10%)
Skinned and butchered another animal	8 (13%)				5 (18%)	2 (4%)	15 (9%)
Skinned and butchered a seal	9 (12%)		1 (1%)		4 (14%)	2 (3%)	16 (9%)
Preserved meat or fish	11 (9%)				4 (8%)	4 (4%)	19 (7%)
Gathered eggs	4 (10%)					3 (6%)	7 (7%)

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Table 4-2: Type of impact on caribou/moose/sheep harvest activity by community, 2016

Type of Impact	Number Reported for All Impact Observations - Past 12 Months						Total
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	
Auditory disruptions	9	3	3	1	19	2	37
Displacement of wildlife	7		3		19		29
Difficulty hunting	5		1	2	4		12
Disruption of wildlife	3		1		1	3	8
Need to travel farther	2				3	1	6
Ability to hunt	3						3
Movement impediments					2		2
Diminished subsistence harvests	1			1			2
Uncomfortable hunting environment					1		1
Nesting/denning/shelter sites at facilities					1		1
Hunting safety					1		1
Effects of development on wildlife		1					1
Diminished access to subsistence sites		1					1
Total	17	4	4	2	26	3	56

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Table 4-3: Type of industry activity affecting caribou harvest activity by community, 2016

Number Reported for All Impact Observations - Past 12 Months							
Type of Industry Activity	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Helicopters/small plane/drone activities	15	3	4	1	23	3	49
Drilling	2				1		3
Bridges/roads/ice roads/causeways					3		3
Industry vessels/barges				1	1		2
Seismic testing					1		1
Exploration	1						1
Oil spills/cleanup					1		1
Infrastructure/ facilities/ vehicles					1		1
Industry development - all aspects		1					1
Ship activity	1						1
Total	16	4	4	2	26	3	55

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Table 4-4: Who could mitigate impact affecting caribou harvest activity by community, 2016

Number Reported for All Impact Observations - Past 12 Months							
Who Could Mitigate Impact	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Oil companies	5		1		2		8
Helicopter operators/pilots	2	2		1	1	1	7
Conoco Phillips					4		4
NSB			1		2		3
ADF&G			1		1		2
Shell	2						2
Unspecified-- anyone--us-- everyone					2		2
State/ legislature/ governor	1						1
Navy/ military	1						1
FAA	1						1
Presidents of corporations					1		1
Industry	1						1
Boat and vessel operators				1			1
Don't know	3						3
Total	11	2	2	2	11	1	29

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Table 4-5: What could mitigate impact on caribou harvest activity by community, 2016

What Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Honor convention with subsistence hunters to not disrupt traditional hunting	4		1	1	9	1	16
Fly higher over harvest areas	5	2	2		1		10
Be more responsive to hunter needs	5		1		2		8
Avoid seismic/ drilling/ barge/ overflight activities during hunting/ whaling/ fishing season (spring/summer/fall)	1			1	4		6
Better communication			2		4		6
Collaboration among companies to reduce flights over hunting areas; fly higher	2			1	1	1	5
Consolidate development areas to minimize widespread impacts	2						2
Use more water building roads				1			1
Communication between industry and harvesters on location of wildlife					1		1
Avoid nesting/calving areas for all development activities during breeding/calving season	1						1
Stricter regulations-- follow through on adherence					1		1
Listen to local peoples' suggestions and concerns					1		1
Keep public informed throughout development process					1		1

Table 4-5: What could mitigate impact on caribou harvest activity by community, 2016, continued

What Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Assist with cost of fuel needed to travel farther distance for harvest / lower cost					1		1
Use past experiences to influence change					1		1
Hunt moose in winter; do not compete with subsistence hunters					1		1
Total	14	2	3	2	19	1	41

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Table 4-6: Month caribou harvest impact experienced by community, 2016

Month Impact Experienced	Percent Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
January					8%		4%
February					8%		4%
March	6%				15%		9%
April					4%		2%
May	6%				4%		4%
June	31%		50%	50%	16%		23%
July	75%	75%	75%	100%	52%		63%
August	63%	100%	75%	50%	52%		60%
September	19%		50%	50%	12%		17%
October	6%				4%		4%
November	6%				12%	100%	9%
December					8%		4%

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Table 4-7: Type of impact on whaling activity by community, 2016

Type of Impact	Number Reported for All Impact Observations - Past 12 Months						Total
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	
Bowhead migration impacts	2	2	2		4	2	12
Auditory disruptions	3			1	2		6
Difficulty hunting	3			2	1		6
Need to travel farther		1	1		3		5
Disruption of wildlife		2		1	1		4
Contamination of wildlife	3						3
Release of contaminants	1					2	3
Effects of development on wildlife	2	1					3
Displacement of wildlife		1			1		2
Decrease in habitat	2						2
Cultural impacts	2						2
Decline of wildlife populations				1			1
Reduced health of wildlife	1						1
Ability to hunt	1						1
Uncomfortable hunting environment	1						1
Conflicts between oil companies and local residents	1						1
Total	14	4	2	3	7	2	32

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Table 4-8: Type of industry activity affecting whaling activity by community, 2016

Number Reported for All Impact Observations - Past 12 Months							
Type of Industry Activity	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Industry vessels/barges		2	2		4	1	9
Helicopters/ small plane/ drone activities	2			2	2		6
Drilling	2		1		1	1	5
Exploration	2		1				3
Industry development --all aspects	1	1		1			3
Seismic testing	1	1					2
Oil spills/cleanup	1	1					2
Pumping/ production	1						1
Graywater discharge/muds						1	1
Public hearings	1						1
Ship activity	1						1
Monitoring of marine mammals, waterfowl, and fisheries					1		1
Total	10	4	2	3	7	2	28

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Table 4-9: Who could mitigate impact affecting whaling activity by community, 2016

Number Reported for All Impact Observations - Past 12 Months							
Who Could Mitigate Impact	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Oil companies	4	2		1	1		8
Boat and vessel operators	1	2					3
Helicopter operators--pilots	1			1			2
Agencies					1		1
Industry	1						1
Shell	1						1
Unspecified-- anyone--us-- everyone	1						1
Total	8	3		2	2		15

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Table 4-10: What could mitigate impact on whaling activity by community, 2016

What Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						Total
	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	
Honor convention with subsistence hunters to not disrupt traditional hunting	3	2			3	1	9
Avoid seismic/ drilling/ barge/ overflight activities during hunting/ whaling/ fishing season (spring/ summer/fall)	2	1		1	1		5
Be more responsive to hunters' needs	3					1	4
No development activities in subsistence hunting areas / ocean	1			1	1	1	4
Collaboration among companies to reduce flights over hunting areas; fly higher; further out over ocean	1			2			3
Stay away from drilling in Chukchi Sea / ocean	1	1				1	3
Better communication	1				1		2
Wait until after freeze-up		1					1
Establish quiet zones					1		1
Total	9	3		3	4	2	21

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Table 4-11: Month whaling impact experienced by community, 2016

Month Impact Experienced	Percent Reported for All Impact Observations - Past 12 Months						Total
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	
January							
February							
March	9%						4%
April	45%	67%					28%
May	36%						16%
June	36%		100%	33%			24%
July	27%			67%			20%
August	27%				29%		20%
September	36%	33%			100%		48%
October	45%						20%
November							
December							

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Table 4-12: Type of impact on all subsistence activities by community, 2016

Type of Impact	Number Reported for All Impact Observations - Past 12 Months						Total
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	
Auditory disruptions	2				3		5
Effects of development on wildlife	3					1	4
Effects of development on people					2	1	3
Displacement of wildlife	1				2		3
Climate-development effects	2		1				3
Diminished subsistence harvests	2						2
Cumulative effects	2						2
Disruption of wildlife	1						1
Bowhead migration impacts	1						1
Decline of wildlife populations	1						1
Decrease in habitat	1						1
Reduced health of wildlife	1						1
Release of contaminants	1						1
Spoiled subsistence resources	1						1
Difficulty hunting	1						1
Economic impacts	1						1
Total	13		1		4	1	19

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Table 4-13: Type of industry activity affecting all subsistence activities by community, 2016

Type of Industry Activity	Number Reported for All Impact Observations - Past 12 Months						Total
	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	
Industry development --all aspects	4				1		5
Helicopters/small plane/drone activities	1				2		3
Oil spills/cleanup	1					1	2
Seismic testing	1						1
Surveying	1						1
Exploration	1						1
Drilling	1						1
Industry vessels/barges	1						1
Pumping/production	1						1
Infrastructure/facilities/vehicles	1						1
Ship activity	1						1
Total	8				3	1	12

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Table 4-14: Who could mitigate impact affecting all subsistence activities by community, 2016

Who Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						Total
	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	
Oil companies	3				2		5
State/legislature/governor	1						1
People of the NS--local people	1						1
City of Utqiaġvik /communities	1						1
Unspecified--anyone--us--everyone	1						1
Total	6				2		8

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Table 4-15: What could mitigate impact on all subsistence activities by community, 2016

What Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						Total
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	
Honor convention with subsistence hunters to not disrupt traditional hunting	2				2		4
Be more responsive to hunters' needs	3						3
Avoid seismic/ drilling/ barge/ overflight activities during hunting seasons	1				1		2
Stay away from drilling in Chukchi Sea / ocean	1					1	2
Better communication	2						2
No development activities in subsistence hunting areas / ocean	2						2
Stop seismic testing altogether	1						1
Clean up (55-gallon gas drums/oil spills from 4-wheelers)	1						1
Develop and demonstrate new technology capable of managing drilling	1						1
Establish quiet zones	1						1
Listen to local municipalities and corporations					1		1
Total	8				2	1	11

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Table 4-16: Month all subsistence activity impact experienced by community, 2016

Month Impact Experienced	Percent Reported for All Impact Observations - Past 12 Months						Total
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	
January	22%						17%
February	22%						17%
March	33%						25%
April	56%						42%
May	56%						42%
June	67%				67%		67%
July	67%				100%		75%
August	89%				100%		92%
September	56%						42%
October	44%						33%
November	33%						25%
December	22%						17%

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4.2.2 Social Indicators by Community Tables

4.2.2.1 Economic Indicators

Table 4-17: Number and pounds of major subsistence resources harvested per household, six communities, 2016

Resource Harvested in Past 12 Months	Number/ Mean Pounds	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Caribou	None	56%	49%	33%	32%	29%	46%	50%
	1-5	31%	22%	30%	34%	35%	40%	32%
	6-10	6%	18%	21%	30%	18%	11%	10%
	11-20	5%	11%	9%	2%	16%	2%	6%
	over 20	3%		7%	2%	2%	1%	3%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean Pounds	356	455	667	605	687	277	407
Chi-square p = 0.00, ANOVA p = 0.00								
Moose	None	96%	97%	98%	100%	90%	98%	96%
	1-5	4%	3%	2%		10%	2%	4%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean Pounds	24	12	10	0	73	15	23
Chi-square p = 0.00, ANOVA p = 0.00								
Dall Sheep	None	99%	85%	100%	100%	100%	98%	98%
	1-5	1%	13%				2%	2%
	11-20		3%					<1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean Pounds	2	69	0	0	0	3	5
Chi-square p = 0.00, ANOVA p = 0.00								
Bearded Seal	None	76%	85%	53%	62%	75%	62%	73%
	1-5	20%	15%	46%	38%	25%	29%	24%
	6-10	4%		1%		1%	7%	3%
	11-20	<1%					2%	<1%
	over 20			1%				<1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean Pounds	128	38	250	147	99	295	151
Chi-square p = 0.00, ANOVA p = 0.00								

Table 4-17: Number and pounds of major subsistence resources harvested per household, six communities, 2016, continued

Resource Harvested in Past 12 Months	Number/ Mean Pounds	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Beluga	None	97%	81%	81%	71%	100%	69%	91%
	1-5	3%	19%	14%	23%		22%	7%
	6-10			2%	3%		7%	1%
	11-20			2%	3%		2%	1%
	over 20	<1%		1%				<1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean Pounds	131	216	1,015	1,695	0	1,389	375
	Chi-square p = 0.00, ANOVA p = 0.00							
Seal	None	83%	87%	76%	60%	77%	61%	79%
	1-5	17%	13%	22%	38%	22%	31%	20%
	6-10	<1%		2%	2%	1%	7%	1%
	11-20						2%	<1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean Pounds	29	14	40	74	43	108	40
	Chi-square p = 0.00, ANOVA p = 0.00							
Walrus	None	85%	100%	83%	93%	100%	87%	87%
	1-5	15%		17%	7%		13%	13%
	6-10						1%	<1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean Pounds	206	0	293	128	0	182	185
	Chi-square p = 0.00, ANOVA p = 0.00							
Polar Bear	None	97%	97%	93%	98%	96%	97%	97%
	1-5	3%	3%	7%	2%	4%	3%	3%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean Pounds	15	24	39	18	13	13	17
Chi-square p = 0.00, ANOVA p = 0.00								
Arctic Char or Dolly Varden	None	87%	45%	92%	87%	68%	73%	83%
	1-5	5%	3%	2%	2%	11%	2%	5%
	6-10	4%	7%	3%		5%	2%	4%
	11-20	2%	13%	2%	6%	6%	6%	3%
	over 20	2%	32%	1%	6%	11%	16%	5%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean Pounds	9	158	13	15	16	66	23
	Chi-square p = 0.00, ANOVA p = 0.00							

Table 4-17: Number and pounds of major subsistence resources harvested per household, six communities, 2016, continued

Resource Harvested in Past 12 Months	Number/ Mean Pounds	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Cisco	None	91%	56%	92%	100%	78%	95%	90%
	1-5	2%	7%	1%		2%	1%	2%
	6-10	1%	7%	1%			1%	1%
	11-20	2%	16%	4%		2%	1%	3%
	over 20	3%	14%	3%		18%	3%	4%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean Pounds	10	17	1	0	170	4	19
	Chi-square p = 0.00, ANOVA p = 0.00							
Other Whitefish	None	74%	82%	81%	70%	67%	70%	74%
	1-5	6%	12%	2%	6%	2%	3%	6%
	6-10	3%		3%	6%	6%	6%	3%
	11-20	5%		3%	8%	6%	5%	5%
	over 20	12%	6%	10%	10%	19%	17%	12%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean Pounds	36	11	46	103	360	93	65
	Chi-square p = 0.00, ANOVA p = 0.00							
Salmon	None	72%	83%	78%	75%	74%	53%	71%
	1-5	12%	13%	7%	7%	16%	5%	11%
	6-10	4%		4%	5%	1%	10%	5%
	11-20	4%		2%	7%	5%	13%	5%
	over 20	8%	4%	9%	5%	5%	20%	9%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean Pounds	16	4	17	10	7	60	19
	Chi-square p = 0.00, ANOVA p = 0.00							
Duck	None	67%	85%	56%	62%	77%	70%	67%
	1-5	14%	3%	7%	9%	7%	11%	12%
	6-10	4%	4%	10%	7%	7%	8%	5%
	11-20	6%	3%	13%	15%	4%	6%	7%
	over 20	9%	6%	15%	7%	6%	5%	9%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean Pounds	10	5	15	8	6	6	9
	Chi-square p = 0.00, ANOVA p = 0.00							

Table 4-17: Number and pounds of major subsistence resources harvested per household, six communities, 2016, continued

Resource Harvested in Past 12 Months	Number/ Mean Pounds	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Geese	None	70%	64%	51%	51%	47%	75%	66%
	1-5	10%	7%	11%	15%	10%	12%	10%
	6-10	4%	13%	14%	13%	15%	5%	7%
	11-20	7%	9%	12%	19%	12%	4%	8%
	over 20	9%	7%	13%	2%	16%	5%	9%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean Pounds	40	38	40	21	59	15	38
	Chi-square p = 0.00, ANOVA p = 0.00							
Bowhead shares	None	41%	15%	16%	22%	32%	26%	35%
	1-5	44%	85%	80%	78%	68%	69%	55%
	6-10	11%		3%			5%	8%
	11-20	2%					1%	1%
	over 20	1%		1%				1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean Number Shares	3	2	2	1	1	2	2
	Mean Pounds	1,398	967	1,102	571	536	1,040	1,231
Chi-square p = 0.00, ANOVA p = 0.00								
Total subsistence harvest	Mean Pounds	2,345	2,026	3,496	2,774	2,002	3,452	2,541
Number of Heads of Household		252	46	105	41	88	143	675

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Table 4-18: Proportion of meat and fish that is traditional, six communities, 2016

Contribution of Subsistence Foods								
Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total	
Proportion of all meat and fish consumed that is traditional food	More than half	33%	38%	48%	43%	48%	56%	38%
	About half	18%	26%	33%	37%	31%	21%	21%
	Less than half	36%	36%	18%	19%	19%	18%	31%
	None	13%		1%	2%	2%	5%	9%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Proportion of all meat and fish that is harvested by household	More than half	16%	18%	20%	17%	30%	23%	18%
	About half	16%	13%	28%	25%	21%	21%	18%
	Less than half	33%	49%	31%	44%	30%	28%	33%
	None	35%	20%	20%	13%	19%	29%	30%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Proportion of all meat and fish consumed that was received from other households	More than half	15%	13%	13%	2%	10%	29%	16%
	About half	13%	12%	28%	23%	16%	22%	16%
	Less than half	52%	69%	47%	74%	64%	38%	52%
	None	21%	6%	12%	2%	9%	11%	17%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Number of Heads of Household		253	45	100	42	88	141	669

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Table 4-19: Satisfaction with amount of fish and game available locally and opportunities to hunt and fish, six communities, 2016

Satisfaction Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Satisfaction with amount of fish and game available locally	Very satisfied	32%	44%	47%	54%	43%	39%	36%
	Somewhat satisfied	37%	42%	41%	36%	37%	44%	38%
	Neither satisfied nor dissatisfied	15%	10%	11%	5%	10%	10%	13%
	Somewhat dissatisfied	11%	4%	1%	5%	8%	5%	9%
	Very dissatisfied	4%				1%	3%	3%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p=0.000							
Satisfaction with opportunities to hunt and fish	Very satisfied	39%	49%	64%	55%	43%	53%	44%
	Somewhat satisfied	35%	32%	23%	23%	37%	30%	33%
	Neither satisfied nor dissatisfied	14%	13%	5%	15%	11%	6%	12%
	Somewhat dissatisfied	9%	4%	7%	8%	6%	9%	8%
	Very dissatisfied	3%	3%	1%		4%	2%	3%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p=0.000							
Number of Heads of Household		227	43	96	42	83	135	626

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Table 4-20: Employment experience of household heads, six communities, 2016

Employment Measure for Past 12 Months	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Had a job in past 12 months	Yes	76%	82%	59%	74%	72%	71%	74%
	No	24%	18%	41%	26%	28%	29%	26%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Weeks worked in past 12 months	52 weeks	51%	56%	23%	22%	31%	38%	45%
	37-51 weeks	10%	3%	9%	9%	11%	4%	9%
	21-36 weeks	5%	12%	11%	24%	12%	13%	8%
	1-20 weeks	8%	12%	16%	19%	19%	17%	11%
	None	24%	18%	41%	26%	28%	29%	26%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean	44	43	35	32	37	38	42
Chi-square p = 0.00, ANOVA p = 0.0								
Weeks worked on jobs related to oil and gas development	52 weeks	6%	6%	1%		7%	5%	6%
	37-51 weeks	2%	3%	1%		1%		2%
	21-36 weeks	2%	3%	1%	2%	4%	1%	2%
	1-20 weeks	5%		7%	5%	16%	7%	6%
	None	84%	89%	91%	93%	73%	88%	85%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean	32	44	18	21	27	26	31
Chi-square p = 0.00, ANOVA p = 0.0								

Table 4-20: Employment experience of household heads, six communities, 2016, continued

Employment Measure for Past 12 Months	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Weeks worked on jobs related to offshore petroleum development	52 weeks	2%		1%		5%	2%	2%
	37-51 weeks	<1%	3%					<1%
	21-36 weeks	2%			2%	1%	1%	1%
	1-20 weeks	6%		7%	5%	1%	5%	5%
	None	90%	97%	92%	93%	93%	93%	91%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean	22	40	14	20	43	20	22
	Chi-square p = 0.00, ANOVA p = 0.0							
Months wanted a job but did not have one	12 or more	10%	11%	10%	8%	2%	5%	9%
	6-11	8%	9%	14%	19%	13%	12%	10%
	1-5	13%	6%	21%	17%	19%	15%	14%
	None	70%	73%	55%	57%	66%	69%	68%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean	2	3	3	3	2	2	2
	Chi-square p = 0.00, ANOVA p = 0.0							
Number of Heads of Household		252	46	101	42	89	142	671

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Table 4-21: Satisfaction with job held longest and job opportunities in community, six communities, 2016

Satisfaction Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Satisfaction with job held longest	Very satisfied	66%	61%	61%	63%	59%	69%	65%
	Somewhat satisfied	23%	36%	29%	24%	28%	21%	24%
	Neither satisfied nor dissatisfied	6%		9%	10%	3%	2%	6%
	Somewhat dissatisfied	3%	3%		2%	9%	5%	4%
	Very dissatisfied	2%		1%		1%	3%	2%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.000							
Satisfaction with job opportunities in your community	Very satisfied	32%	25%	17%	27%	24%	17%	28%
	Somewhat satisfied	36%	34%	39%	38%	33%	23%	35%
	Neither satisfied nor dissatisfied	14%	4%	18%	10%	18%	12%	13%
	Somewhat dissatisfied	10%	34%	15%	19%	12%	28%	14%
	Very dissatisfied	8%	3%	11%	6%	12%	20%	10%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.000							
Number of Heads of Households		191	39	58	32	65	105	490

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Table 4-22: Income by type, six communities, 2016

Type of Household Income in Past 12 Months	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Wage employment	\$1,500 or under	16%	18%	34%	23%	18%	14%	18%
	\$1,501 to \$5,000	2%		3%	2%	4%	8%	3%
	\$5,001 to \$8,000	2%	5%	8%			1%	2%
	\$8,001 to \$12,000	1%	4%	3%	9%	6%	8%	3%
	\$12,001 to \$16,000	1%	5%	8%	2%	2%	8%	3%
	\$16,001 to \$23,000	3%	5%	6%	2%	7%	6%	4%
	\$23,001 to \$28,000	4%	4%	3%	2%	8%	5%	4%
	\$28,001 to \$37,000	5%	4%	8%	16%	10%	6%	6%
	\$37,001 to \$50,000	5%	16%	12%	27%	11%	14%	8%
	Above \$50,000	61%	39%	17%	16%	35%	30%	50%
	Total	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00								
Self-employment	\$1,500 or under	79%	87%	79%	90%	90%	88%	82%
	\$1,501 to \$5,000	6%		4%	2%	5%	3%	5%
	\$5,001 to \$8,000	3%	3%	3%	2%	1%	2%	3%
	\$8,001 to \$12,000	1%			2%		2%	1%
	\$12,001 to \$16,000	1%		3%		1%		1%
	\$16,001 to \$23,000	1%					3%	1%
	\$23,001 to \$28,000	<1%	3%	1%			1%	1%
	\$28,001 to \$37,000	<1%		3%			1%	1%
	\$37,001 to \$50,000	2%	4%	3%	2%	1%	1%	2%
	Above \$50,000	5%	3%	3%	2%	2%	1%	4%
	Total	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00								

Table 4-22: Income by type, six communities, 2016, continued

Type of Household Income in Past 12 Months	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Sales of carvings, skin clothing, furs, crafts, ivory and other similar goods	\$1,500 or under	91%	90%	90%	96%	90%	87%	91%
	\$1,501 to \$5,000	4%	7%	6%	2%	7%	8%	5%
	\$5,001 to \$8,000	2%	3%	2%	2%	1%	2%	2%
	\$8,001 to \$12,000	1%						1%
	\$12,001 to \$16,000					1%	2%	<1%
	\$16,001 to \$23,000						1%	<1%
	\$28,001 to \$37,000						1%	<1%
	\$37,001 to \$50,000	2%		1%				1%
	Above \$50,000					1%	1%	<1%
	Total	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00								
Pensions, dividend checks, public assistance, shareholder dividends, student aid, disaster relief	\$1,500 or under	12%	11%	6%	2%	2%	6%	9%
	\$1,501 to \$5,000	20%	8%	10%	20%	12%	15%	17%
	\$5,001 to \$8,000	16%	14%	17%	8%	16%	11%	16%
	\$8,001 to \$12,000	12%	14%	17%	16%	12%	15%	13%
	\$12,001 to \$16,000	8%	11%	11%	16%	14%	5%	9%
	\$16,001 to \$23,000	9%	14%	10%		11%	17%	10%
	\$23,001 to \$28,000	10%		8%	14%	10%	8%	9%
	\$28,001 to \$37,000	5%	11%	13%	14%	10%	8%	7%
	\$37,001 to \$50,000	4%	15%	6%	2%	8%	6%	5%
	Above \$50,000	5%	5%	2%	6%	8%	8%	5%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00								

Table 4-22: Income by type, six communities, 2016, continued

Type of Household Income in Past 12 Months								
Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total	
Other sources	\$1,500 or under	77%	91%	79%	94%	87%	83%	80%
	\$1,501 to \$5,000	6%		3%	2%	6%	6%	6%
	\$5,001 to \$8,000	2%	3%	3%		2%	1%	2%
	\$8,001 to \$12,000	1%	3%	3%		1%	2%	2%
	\$12,001 to \$16,000	4%		3%	2%	1%	3%	3%
	\$16,001 to \$23,000	1%	3%	1%	2%	1%	2%	2%
	\$23,001 to \$28,000	<1%		1%			2%	1%
	\$28,001 to \$37,000	1%		5%				1%
	\$37,001 to \$50,000	2%		1%			1%	2%
	Above \$50,000	4%		3%		2%		3%
	Total	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00								
All sources	\$1,500 or under	12%		32%	12%	5%	14%	13%
	\$1,501 to \$5,000	2%		8%	10%	5%	6%	3%
	\$5,001 to \$8,000	2%	12%	7%	2%	2%	5%	3%
	\$8,001 to \$12,000	3%		6%	12%	5%	11%	5%
	\$12,001 to \$16,000	5%	12%	6%	2%	11%	11%	6%
	\$16,001 to \$23,000	4%	3%	13%	7%	6%	6%	5%
	\$23,001 to \$28,000	3%		5%		6%	4%	3%
	\$28,001 to \$37,000	6%	9%	3%	10%	16%	5%	6%
	\$37,001 to \$50,000	8%	17%	7%	12%	13%	13%	9%
	Above \$50,000	54%	47%	13%	32%	31%	25%	45%
	Total	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00								
Number of Heads of Household	225	40	89	39	85	121	599	

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Table 4-23: Housing features, six communities, 2016

Housing Features	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Electricity	98%	100%	97%	95%	100%	98%	98%
Refrigerator	98%	100%	90%	87%	95%	95%	97%
Stove for cooking	98%	97%	90%	91%	94%	96%	97%
Television	94%	91%	95%	98%	96%	94%	94%
Cold running water	96%	97%	90%	76%	88%	93%	94%
Central heating or electric	96%	91%	90%	84%	99%	87%	94%
View to check the weather	93%	96%	96%	87%	93%	91%	93%
Freezer	94%	85%	90%	91%	88%	90%	92%
Bath or shower	95%	94%	88%	62%	81%	88%	92%
Telephone	93%	100%	85%	69%	88%	92%	92%
Hot running water	96%	96%	83%	64%	82%	84%	91%
Indoor flushing toilet	94%	96%	83%	64%	83%	84%	90%
Full kitchen	91%	85%	84%	85%	83%	91%	90%
Smoke detector	90%	87%	88%	74%	87%	80%	88%
Place to cut meat and fish	83%	96%	90%	95%	91%	95%	86%
Septic tank, sewer connection	87%	96%	81%	64%	83%	88%	86%
Double glass windows	84%	91%	81%	87%	88%	82%	84%
Store room	81%	82%	83%	78%	76%	88%	81%
Fire exit	82%	75%	84%	67%	73%	77%	80%
Connection to the internet	84%	87%	70%	50%	61%	65%	79%
Carbon monoxide detector	77%	87%	80%	62%	84%	69%	77%
Natural gas hook-up	97%	31%	18%	26%	90%	21%	76%
Electronic gaming device	74%	84%	79%	81%	79%	76%	76%
Place to sit outside	65%	56%	80%	74%	62%	70%	66%
Generator	50%	46%	36%	24%	39%	35%	45%
Ice cellar	25%	26%	28%	15%	30%	30%	26%
Number of Features							
10 or fewer	4%	<1%	10%	19%	11%	11%	6%
11-15	20%	25%	27%	39%	28%	21%	22%
16-19	76%	75%	64%	43%	60%	68%	72%
Total	100%	100%	100%	100%	100%	100%	100%
Mean	16	17	16	14	15	16	16
Number of Heads of Household	258	46	104	42	88	142	680
Chi-square p = 0.00, ANOVA p = 0.00							

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Table 4-24: House problems, six communities, 2016

Type of Housing Problem	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Draft from doors or windows	56%	74%	83%	67%	73%	69%	62%
Frost on the windows	46%	53%	55%	57%	53%	44%	48%
Cold floors	43%	54%	58%	60%	46%	49%	46%
Too little space	36%	33%	34%	53%	34%	39%	37%
House shifts from active permafrost	33%	50%	50%	67%	40%	24%	36%
Drafts from places other than doors or windows	30%	37%	37%	55%	28%	38%	32%
Mold or mildew	28%	35%	20%	43%	34%	40%	29%
Water leaking from the ceiling	26%	38%	23%	38%	28%	28%	27%
Generally cold*	21%	25%	25%	24%	21%	24%	22%
Stale air*	19%	18%	20%	22%	19%	24%	19%
Air vent plugged with ice	17%	18%	22%	22%	17%	12%	17%
Dampness	14%	26%	17%	26%	21%	24%	17%
Water that is not safe to drink at least some times a year	8%	6%	13%	13%	6%	19%	10%
Number of Housing Problems							
None	13%	12%	6%	2%	10%	10%	12%
1-3	43%	38%	42%	26%	34%	44%	42%
4-6	24%	31%	27%	41%	39%	20%	26%
5 or more	20%	19%	25%	31%	17%	26%	21%
Total	100%	100%	100%	100%	100%	100%	100%
Mean	4	4	4	5	4	4	4
Chi-square p = 0.00 except * = not significant; ANOVA p = 0.0							
Number of Heads of Household	250	45	101	42	88	137	663

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Table 4-25: Persons per household and housing waiting list, six communities, 2016

Housing Measure	Number of People	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Number living in household	1	12%	19%	15%	15%	16%	13%	13%
	2	23%	24%	17%	17%	23%	21%	22%
	3 - 4	32%	24%	31%	24%	24%	21%	29%
	5 - 6	22%	17%	22%	28%	21%	28%	22%
	7 - 8	8%	10%	14%	9%	10%	14%	10%
	9 or more	4%	5%	1%	7%	5%	3%	3%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean	4	4	4	4	4	4	4
Number on waiting list for housing	0	81%	90%	86%	89%	90%	90%	84%
	1	9%	4%	9%	2%	6%	4%	8%
	2	5%	3%	3%	7%	2%	4%	5%
	3	1%	4%			1%		1%
	4	2%		2%		1%	1%	2%
	5	2%						1%
	6					1%	2%	<1%
	8				2%			<1%
	Total	100%	100%	100%	100%	100%	100%	100%
Number of Heads of Household	256	46	104	42	89	144	681	

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Table 4-26: Economic satisfaction measures, six communities, 2016

Satisfaction Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Household income	Very satisfied	47%	31%	36%	25%	41%	37%	43%
	Somewhat satisfied	33%	47%	35%	57%	45%	39%	36%
	Neither satisfied nor dissatisfied	7%	10%	17%	9%	6%	11%	8%
	Somewhat dissatisfied	6%	10%	11%	8%	4%	9%	6%
	Very dissatisfied	8%	3%	1%	2%	4%	5%	6%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean	4	4	4	4	4	4	4
	Chi-square p = 0.00, ANOVA p = 0.00							

Table 4-26: Economic satisfaction measures, six communities, 2016, continued

Satisfaction Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Availability of goods in local stores	Very satisfied	11%	9%	7%	9%	7%	6%	10%
	Somewhat satisfied	29%	39%	42%	33%	29%	27%	31%
	Neither satisfied nor dissatisfied	13%	11%	13%	16%	13%	19%	14%
	Somewhat dissatisfied	31%	39%	30%	29%	25%	27%	30%
	Very dissatisfied	16%	3%	8%	13%	27%	22%	16%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean	3	3	3	3	3	3	3
	Chi-square p = 0.00, ANOVA p = 0.00							
Transportation to and from community	Very satisfied	20%	16%	24%	9%	31%	22%	21%
	Somewhat satisfied	30%	26%	20%	30%	34%	30%	29%
	Neither satisfied nor dissatisfied	11%	4%	11%	7%	10%	10%	10%
	Somewhat dissatisfied	21%	35%	16%	15%	13%	18%	20%
	Very dissatisfied	17%	19%	29%	39%	13%	20%	19%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean	3	3	3	3	4	3	3
	Chi-square p = 0.00, ANOVA p = 0.00							
Cost of living in community	Very satisfied	6%	4%	9%	2%	10%	8%	7%
	Somewhat satisfied	13%	19%	29%	29%	23%	15%	16%
	Neither satisfied nor dissatisfied	14%	22%	13%	22%	8%	11%	14%
	Somewhat dissatisfied	30%	42%	29%	31%	23%	26%	30%
	Very dissatisfied	37%	13%	19%	16%	36%	40%	34%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean	2	3	3	3	2	2	2
	Chi-square p = 0.00, ANOVA p = 0.00							

Table 4-26: Economic satisfaction measures, six communities, 2016, continued

Satisfaction Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Standard of living	Very satisfied	28%	10%	27%	15%	24%	26%	26%
	Somewhat satisfied	36%	61%	37%	40%	46%	34%	38%
	Neither satisfied nor dissatisfied	14%	10%	15%	22%	13%	16%	15%
	Somewhat dissatisfied	12%	20%	14%	18%	7%	15%	13%
	Very dissatisfied	9%		7%	5%	10%	9%	9%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean	4	4	4	3	4	4	4
	Chi-square p = 0.00, ANOVA p = not significant							
Ability to make ends meet	Very easily	23%	19%	16%	9%	15%	19%	21%
	Fairly easily	33%	43%	37%	34%	38%	28%	34%
	With some difficulty	39%	32%	44%	55%	40%	44%	40%
	With great difficulty	5%	7%	3%	2%	8%	10%	6%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean	3	3	3	3	3	3	3
	Chi-square p = 0.00, ANOVA p = 0.00							
Economic Satisfaction Index (1-24)	Mean	19	19	19	18	19	18	19
	ANOVA p = 0.00							
Number of Heads of Household		252	46	103	42	86	141	670

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4.2.2.2 Physical Environment Indicators

Table 4-27: Environmental problems, six communities, 2016

Environmental Problem	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Climate change	84%	78%	85%	78%	89%	90%	85%
Erosion of coastal areas or riverbanks	80%	84%	71%	64%	85%	72%	79%
Fish or animals that may be unsafe to eat	46%	42%	32%	19%	64%	43%	45%
Local contaminated sites	44%	57%	35%	43%	40%	39%	43%
Disposal of hazardous waste	45%	38%	30%	19%	25%	32%	40%
Pollution from industrial development	40%	30%	19%	13%	65%	21%	36%
Pollution of local lakes and streams	40%	30%	22%	22%	43%	22%	35%
Pollution of offshore waters	37%	19%	20%	22%	35%	33%	33%
Disposal of sewage	34%	30%	40%	32%	35%	18%	33%
Pollution from other countries	35%	19%	26%	19%	11%	33%	31%
Pollution from landfills	28%	33%	24%	19%	46%	25%	29%
Disruption of views and landscapes	28%	16%	16%	9%	29%	16%	24%
Mean	5	5	4	4	5	4	4
Chi-square p = 0.00, ANOVA p = 0.0							
Number of Heads of Household	212	43	87	42	81	125	590

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Table 4-28: Avoidance of subsistence foods, six communities, 2016

Avoided eating subsistence foods in last year because they might be contaminated	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Yes	26%	54%	24%	22%	47%	24%	28%
No	74%	46%	76%	78%	53%	76%	72%
Total	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00							
Number of Heads of Household	241	46	101	42	87	136	653

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Table 4-29: Satisfaction with health of the environment in your area, six communities, 2016

Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Very satisfied	24%	25%	35%	31%	14%	22%	24%
Somewhat satisfied	48%	57%	52%	56%	40%	50%	49%
Neither satisfied nor dissatisfied	15%	12%	9%	5%	22%	17%	15%
Somewhat dissatisfied	10%	6%	4%	5%	17%	9%	10%
Very dissatisfied	3%			2%	8%	2%	3%
Total	100%	100%	100%	100%	100%	100%	100%
Mean	4	4	4	4	3	4	4
Chi-square p = 0.0, ANOVA p = 0.00							
Number of Heads of Household	249	45	103	42	86	137	662

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Table 4-30: Participation in activities, six communities, 2016

Participated in Past 12 Months	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Visit neighbors, friends, or family	95%	96%	90%	91%	90%	95%	94%
Take part in Native festival	75%	74%	84%	87%	72%	85%	77%
Hike, run, jog or walk	67%	69%	67%	78%	67%	77%	69%
Go to a sports event	60%	61%	61%	55%	51%	72%	61%
Be out in the country	54%	59%	68%	84%	70%	81%	60%
Listen to or tell a Native story	58%	53%	63%	57%	65%	68%	59%
Take part in Native traditional game	38%	59%	60%	47%	64%	60%	45%
Take part in Native dance	40%	53%	56%	47%	47%	62%	45%
Go snowmobiling or dog sledding	40%	44%	69%	53%	47%	47%	44%
Boat or kayak	38%	46%	54%	53%	64%	47%	43%
Participate in sports	33%	39%	40%	38%	19%	31%	33%
Go sledding or snowboarding	27%	33%	35%	43%	27%	37%	30%
Swim	30%	19%	13%	24%	22%	25%	27%
Play basketball	21%	22%	40%	40%	29%	32%	25%
Go biking	20%	13%	22%	16%	21%	27%	20%
Index of 15 activities (mean)	7	7	8	8	8	9	7
Index of 4 Native activities (mean)	2	2	3	2	2	3	2
Index of 6 outdoor activities (mean)	2	2	3	3	3	3	2
Chi-square p = 0.00, ANOVA p = 0.0							
Number of Heads of Household	254	46	103	42	89	142	676

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Table 4-31: Satisfaction with recreational facilities in your community, six communities, 2016

Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Very satisfied	20%	20%	26%	16%	20%	14%	20%
Somewhat satisfied	33%	49%	40%	45%	24%	27%	33%
Neither satisfied nor dissatisfied	14%	13%	13%	7%	18%	11%	14%
Somewhat dissatisfied	17%	13%	15%	18%	17%	20%	17%
Very dissatisfied	16%	4%	6%	13%	23%	28%	16%
Total	100%	100%	100%	100%	100%	100%	100%
Mean	3	4	4	3	3	3	3
Chi-square p = 0.0, ANOVA p = 0.00							
Number of Heads of Household	250	45	103	42	85	139	664

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4.2.2.3 Health and Safety Indicators

Table 4-32: How do you feel about your health in general, six communities, 2016

Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Excellent	15%	16%	23%	7%	15%	14%	15%
Very good	27%	25%	16%	31%	19%	28%	26%
Good	37%	44%	39%	36%	29%	30%	36%
Fair	18%	12%	19%	24%	33%	20%	19%
Poor	4%	4%	3%	2%	4%	8%	4%
Total	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00							
Number of Heads of Household	251	45	104	42	87	142	671

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Table 4-33: How satisfied are you with your health, six communities, 2016

Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Very satisfied	28%	33%	38%	31%	29%	30%	29%
Somewhat satisfied	49%	43%	41%	46%	47%	47%	48%
Neither satisfied nor dissatisfied	12%	6%	16%	9%	13%	9%	12%
Somewhat dissatisfied	7%	15%	5%	6%	11%	9%	8%
Very dissatisfied	4%	3%		7%	1%	4%	3%
Total	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00							
Number of Heads of Household	250	46	100	41	87	137	661

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Table 4-34: Percentage of households with families affected by health problem, six communities, 2016

Health Problem	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Cancer	69%	91%	67%	58%	74%	78%	71%
Arthritis	63%	62%	61%	58%	70%	50%	62%
Alcoholism or drug addiction	52%	62%	29%	57%	52%	50%	50%
Diabetes	51%	47%	40%	32%	35%	35%	47%
Heart disease	45%	38%	33%	39%	41%	33%	42%
Obesity	43%	26%	20%	34%	25%	29%	37%
Accidental injury	41%	29%	23%	30%	28%	34%	37%
Lung disease	37%	31%	26%	30%	35%	31%	34%
Joint and bone diseases	31%	22%	19%	32%	15%	24%	28%
Mental illness	34%	20%	11%	22%	11%	17%	28%
Eye disease	27%	29%	22%	34%	16%	24%	26%
Chi-square p = 0.00							
Mean	5	5	4	4	4	4	5
ANOVA p = 0.00							
Number of Heads of Household	252	45	102	41	88	139	667

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Table 4-35: Head of household victim, six communities, 2016

Victim Measure for Past 12 Months	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Theft	15%	8%	8%	14%	15%	7%	13%
Domestic violence*	9%	5%	7%	8%	9%	9%	9%
Other abuse	6%	3%	3%	8%	7%	5%	6%
Elder abuse*	3%		1%		1%	2%	2%
Sexual assault	1%		3%			1%	1%
Victim of one or more offenses	24%	15%	16%	18%	31%	14%	22%
Chi-square p < 0.01 except * not significant							
Number of Heads of Household	233	35	100	38	78	126	610

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Table 4-36: Problems related to drugs or alcohol in home today, six communities, 2016

Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Yes often	4%	7%	4%		4%	4%	4%
Yes sometimes	24%	38%	23%	41%	31%	27%	26%
No never	72%	54%	73%	59%	65%	69%	70%
Total	100%	100%	100%	100%	100%	100%	100%
Chi-square p < 0.05							
Number of Heads of Household	238	40	102	39	84	130	633

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Table 4-37: Indicators of depression, six communities, 2016

Depression Measure	Response Category	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
How much of the time in the last month have you been a nervous person	All the time	1%	5%	1%				1%
	Most of the time	3%	3%	6%	2%	1%	3%	3%
	Some of the time	19%	27%	22%	18%	17%	16%	19%
	Very seldom	30%	24%	26%	27%	31%	27%	29%
	Not at all	47%	41%	45%	53%	51%	54%	48%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
How much time in last month have you felt calm and peaceful	All the time	20%	14%	29%	25%	26%	31%	22%
	Most of the time	56%	67%	51%	56%	57%	49%	55%
	Some of the time	16%	11%	16%	15%	13%	16%	16%
	Very seldom	3%	5%	4%	2%		2%	3%
	Not at all	5%	5%	1%	2%	4%	2%	4%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
How much time in last month have you felt downhearted and blue	All the time	<1%	3%	1%		1%	2%	1%
	Most of the time	4%	5%	6%		4%	5%	4%
	Some of the time	29%	40%	31%	21%	26%	24%	28%
	Very seldom	33%	31%	25%	42%	36%	35%	33%
	Not at all	34%	22%	38%	38%	33%	35%	34%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							

Table 4-37: Indicators of depression, six communities, 2016, continued

Depression Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
How much time in last month have you been a happy person	All the time	25%	27%	40%	27%	35%	32%	33%
	Most of the time	55%	52%	53%	57%	51%	57%	54%
	Some of the time	16%	15%	5%	13%	10%	7%	9%
	Very seldom	2%	3%		3%	1%	2%	2%
	Not at all	2%	3%	2%		2%	2%	2%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
How much time in last month have you felt so down nothing could cheer you up	All the time	<1%		3%		2%	2%	1%
	Most of the time	6%	5%	4%		5%	2%	5%
	Some of the time	11%	11%	18%	17%	16%	8%	12%
	Very seldom	21%	23%	22%	35%	19%	33%	23%
	Not at all	61%	61%	52%	48%	58%	55%	59%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Index of Depression Indicators (5-25)	ANOVA p < 0.001	10	10	9	9	9	9	10
Number of Heads of Household		226	37	93	38	70	125	589

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Table 4-38: Indicators of social support, six communities, 2016

Social Support Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Someone you can count on to listen to you when you need to talk	All the time	50%	60%	40%	44%	43%	45%	48%
	Most of the time	32%	25%	41%	32%	27%	33%	32%
	Some of the time	13%	7%	15%	20%	20%	14%	14%
	Very seldom	4%	4%	3%	2%	8%	6%	4%
	Not at all	1%	3%	1%	2%	2%	2%	2%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Someone you can count on when you need advice	All the time	43%	48%	34%	43%	42%	44%	43%
	Most of the time	36%	33%	48%	31%	31%	36%	36%
	Some of the time	16%	11%	11%	20%	19%	13%	15%
	Very seldom	5%	3%	6%	6%	6%	6%	5%
	Not at all	<1%	5%	1%		2%	2%	1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Someone who shows you love and affection	All the time	57%	57%	55%	56%	52%	59%	57%
	Most of the time	27%	32%	37%	31%	33%	27%	28%
	Some of the time	11%	3%	7%	13%	9%	9%	10%
	Very seldom	4%	3%			4%	3%	3%
	Not at all	2%	5%	1%		2%	2%	2%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Someone to have a good time with	All the time	45%	45%	50%	49%	54%	53%	47%
	Most of the time	37%	42%	37%	41%	25%	24%	35%
	Some of the time	11%	3%	8%	10%	18%	18%	11%
	Very seldom	6%	7%	2%		2%	2%	5%
	Not at all	2%	3%	2%		1%	2%	2%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							

Table 4-38: Indicators of social support, six communities, 2016, continued

Social Support Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total	
Someone to confide in or talk about yourself and your problems	All the time	44%	48%	38%	45%	34%	46%	43%	
	Most of the time	32%	21%	39%	24%	26%	33%	32%	
	Some of the time	15%	13%	10%	24%	26%	11%	15%	
	Very seldom	5%	10%	7%	6%	9%	6%	6%	
	Not at all	4%	7%	6%	2%	6%	3%	4%	
	Total	100%	100%	100%	100%	100%	100%	100%	
	Chi-square p = 0.00								
Someone to get together with for relaxation	All the time	40%	47%	38%	41%	41%	49%	41%	
	Most of the time	36%	33%	45%	33%	24%	25%	35%	
	Some of the time	15%	8%	8%	24%	22%	15%	15%	
	Very seldom	7%	8%	3%	2%	9%	8%	6%	
	Not at all	3%	5%	6%		4%	3%	3%	
	Total	100%	100%	100%	100%	100%	100%	100%	
	Chi-square p = 0.00								
Someone to do something enjoyable with	All the time	44%	48%	50%	45%	47%	52%	46%	
	Most of the time	35%	36%	38%	35%	26%	25%	34%	
	Some of the time	13%	8%	10%	14%	20%	13%	13%	
	Very seldom	4%	5%	2%	6%	5%	8%	5%	
	Not at all	3%	3%	1%		1%	2%	3%	
	Total	100%	100%	100%	100%	100%	100%	100%	
	Chi-square p = 0.00								
Index of availability of social supports - grouped values (7-35)	35	31%	31%	23%	34%	25%	32%	30%	
	30-34	20%	28%	32%	24%	23%	23%	22%	
	25-29	31%	28%	34%	20%	30%	25%	30%	
	19-24	13%	8%	8%	20%	15%	14%	13%	
	18 or less	4%	5%	3%	2%	7%	6%	5%	
	Total	100%	100%	100%	100%	100%	100%	100%	
	Chi-square p = 0.00								
	Mean	29	30	30	29	29	29	29	
ANOVA p = not significant									
Number of Heads of Household		224	40	95	39	78	123	599	

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Table 4-39: Satisfaction with health, public safety, and court services, six communities, 2016

Satisfaction Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Satisfaction with quality of health services in your community	Very satisfied	19%	31%	37%	25%	30%	16%	21%
	Somewhat satisfied	28%	31%	47%	49%	36%	31%	31%
	Neither satisfied nor dissatisfied	16%	9%	8%	6%	18%	17%	15%
	Somewhat dissatisfied	19%	22%	6%	18%	8%	13%	17%
	Very dissatisfied	18%	6%	2%	2%	8%	23%	16%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Satisfaction with public safety services	Very satisfied	21%	29%	32%	34%	19%	18%	22%
	Somewhat satisfied	36%	47%	46%	49%	41%	30%	37%
	Neither satisfied nor dissatisfied	17%	12%	12%	9%	18%	21%	17%
	Somewhat dissatisfied	15%	9%	8%	8%	10%	14%	13%
	Very dissatisfied	11%	4%	2%		11%	16%	10%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Satisfaction with courts on the North Slope	Very satisfied	11%	15%	22%	16%	11%	13%	12%
	Somewhat satisfied	27%	16%	26%	35%	32%	28%	27%
	Neither satisfied nor dissatisfied	24%	35%	34%	24%	18%	24%	25%
	Somewhat dissatisfied	19%	19%	11%	14%	15%	16%	18%
	Very dissatisfied	19%	15%	7%	10%	23%	19%	18%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Number of Heads of Household		247	45	100	41	82	139	654

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4.2.2.4 Cultural Continuity Indicators

Table 4-40: Participation in subsistence activities, six communities, 2016

Participation Measure	Subsistence Activity in Past 12 Months	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Participation in Activity	Help whaling crews by cooking, giving money or supplies, cutting meat	55%	72%	66%	60%	53%	63%	57%
	Fish	48%	65%	65%	53%	64%	63%	53%
	Preserve meat or fish	49%	50%	57%	55%	56%	63%	52%
	Skinned and butchered a caribou	43%	54%	71%	71%	67%	57%	50%
	Hunt caribou, moose, or sheep	37%	50%	59%	50%	63%	40%	42%
	Member of a whaling crew	38%	44%	47%	47%	37%	53%	41%
	Pick berries	24%	41%	78%	71%	54%	73%	38%
	Hunt waterfowl	32%	41%	50%	43%	54%	36%	36%
	Skinned and butchered a seal	29%	24%	49%	40%	32%	50%	33%
	Hunt seal or ugruk	26%	31%	47%	40%	38%	39%	30%
	Skinned and butchered another animal	24%	41%	43%	33%	30%	40%	29%
	Make Native handicrafts	25%	24%	23%	19%	30%	35%	26%
	Sew skins, make parkas and kamiks (boots)	26%	31%	23%	7%	25%	30%	26%
	Gather greens, roots, plants	17%	28%	21%	29%	16%	37%	21%
	Make sleds or boats	16%	13%	34%	16%	15%	26%	19%
	Gather eggs	13%	11%	17%	64%	8%	34%	17%
	Hunt walrus	15%	4%	30%	13%	7%	25%	16%
	Hunted ptarmigan	13%	28%	10%	31%	21%	15%	15%
	Hunted wolf or wolverine	6%	19%	12%	13%	16%	12%	9%
	Hunted polar bear	4%	6%	10%	2%	6%	15%	6%
	Captained a whaling crew	5%	4%	7%	13%	9%	7%	6%
Trap	5%	9%	9%	2%	9%	6%	6%	
Chi-square p < 0.05								
	Number of Heads of Household	256	46	104	42	89	144	681

Table 4-40: Participation in subsistence activities, six communities, 2016, continued

Participation Measure	Subsistence Activity in Past 12 Months	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Number of Subsistence Activities	5 or more	32%	43%	57%	45%	43%	50%	38%
	3-4	19%	15%	15%	25%	23%	21%	19%
	1-2	23%	30%	24%	16%	22%	19%	23%
	None	26%	11%	4%	13%	11%	10%	20%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
	Mean	3	4	5	4	4	5	4
	ANOVA p = 0.00							
	Number of Heads of Household	258	46	105	42	89	144	684

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Table 4-41: Subsistence participation by month, six communities, 2016

Participation Measure	Month Participation in Past 12 Months				Point Lay	Nuiqsut	Point Hope	Total
	Utqiagvik	Kaktovik	Wainwright					
Participation by Month	January	11%	4%	19%	9%	18%	21%	13%
	February	11%	4%	10%	13%	16%	22%	12%
	March	15%	13%	10%	9%	10%	29%	16%
	April	27%	22%	33%	36%	15%	42%	29%
	May	25%	19%	39%	29%	21%	37%	27%
	June	22%	19%	24%	26%	28%	43%	25%
	July	33%	50%	39%	38%	37%	43%	36%
	August	33%	39%	57%	43%	49%	47%	38%
	September	25%	41%	41%	24%	45%	37%	30%
	October*	23%	15%	26%	19%	26%	26%	23%
	November	12%	11%	15%	9%	16%	24%	14%
	December	11%	4%	13%	15%	12%	20%	12%
Chi-square p = 0.00, except * < p = 0.05								
Number of Months	No months	45%	46%	21%	39%	34%	33%	41%
	1-4 months	36%	26%	51%	43%	37%	35%	37%
	5-8 months	11%	24%	21%	9%	19%	13%	13%
	9-12 months	8%	4%	7%	9%	10%	19%	9%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean	2	2	3	3	3	4	3
ANOVA p = 0.00								
Number of Heads of Household		246	46	104	42	89	144	671

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Table 4-42: Traditional education, six communities, 2016

Skill Measure	Traditional Skill	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Individual Skill	Cook and prepare traditional Native foods	71%	85%	90%	93%	85%	85%	76%
	Hunt and fish	69%	87%	87%	87%	92%	88%	75%
	Know the names of past generations of Iñupiat relatives	70%	78%	82%	78%	79%	83%	74%
	Preserve meat and fish	65%	81%	87%	87%	92%	82%	72%
	Drive a snowmachine	64%	87%	91%	91%	87%	84%	72%
	Learn stories passed on by parents, grandparents	65%	81%	84%	84%	85%	77%	71%
	Overnight on the land	64%	81%	87%	78%	84%	79%	70%
	Protect land and resources	64%	76%	69%	74%	82%	75%	68%
	Skin and butcher a caribou	58%	78%	85%	81%	81%	72%	65%
	Read the weather	57%	81%	75%	64%	79%	76%	64%
	Know when berries are ripe and where to find them	45%	69%	93%	93%	75%	87%	58%
	Skin and butcher another animal	50%	74%	75%	74%	71%	72%	58%
	Learned to serve on a whaling crew	48%	67%	72%	57%	73%	73%	55%
	Skin and butcher a seal	47%	67%	72%	78%	60%	68%	54%
	Hunt seal	39%	67%	67%	71%	61%	64%	48%
	Learn traditional dances and drumming	41%	56%	58%	64%	64%	63%	48%
	Learn traditional songs	41%	54%	58%	62%	60%	62%	47%
	Make Native arts and crafts	39%	39%	44%	74%	60%	58%	44%
	Fix a snowmachine	38%	59%	64%	53%	51%	40%	43%
	Take care of and sew skins	37%	47%	47%	50%	49%	53%	41%
Navigate at sea	36%	53%	56%	57%	50%	44%	41%	
Repair traditional clothing	36%	47%	45%	60%	49%	51%	40%	
Know Iñupiaq names of different types of snow	35%	41%	45%	38%	48%	46%	38%	

Table 4-42: Traditional education, six communities, 2016, continued

Skill Measure	Traditional Skill	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Individual Skill	Make traditional clothing	35%	39%	35%	50%	43%	48%	38%
	Make and maintain an ice cellar	31%	39%	50%	45%	50%	47%	36%
	Makes sleds and boats	32%	31%	51%	53%	49%	40%	36%
	Take care of and handle a dog team	20%	31%	35%	36%	19%	39%	24%
	Chi-square p = 0.00							
Number of traditional skills learned	Five or less	29%	15%	4%	5%	8%	12%	22%
	6-10	22%	6%	20%	22%	13%	17%	20%
	11-15	23%	33%	33%	25%	35%	30%	26%
	16-20	26%	46%	44%	47%	44%	42%	32%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean	10	13	14	14	14	13	11
	ANOVA p = 0.00							
Number of Heads of Household		256	46	104	42	89	144	681

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Table 4-43: Understanding, Speaking, and Reading Iñupiaq, Six Communities, 2016

Language Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Ability to understand Iñupiaq	Very well	27%	18%	43%	22%	52%	23%	29%
	Relatively well	17%	33%	18%	22%	10%	20%	18%
	With effort	13%	13%	12%	25%	16%	19%	14%
	A few words	32%	33%	25%	29%	21%	33%	31%
	Not at all	11%	4%	2%	2%	1%	4%	8%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Ability to speak Iñupiaq	Very well	26%	9%	38%	14%	38%	16%	25%
	Relatively well	8%	13%	14%	7%	10%	11%	9%
	With effort	14%	33%	12%	36%	16%	22%	16%
	A few words	34%	39%	27%	38%	32%	45%	35%
	Not at all	18%	6%	9%	5%	4%	5%	14%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Ability to read Iñupiaq	Very well	21%	9%	25%	13%	24%	17%	20%
	Relatively well	14%	24%	15%	14%	27%	17%	16%
	With effort	12%	24%	23%	16%	15%	16%	14%
	A few words	26%	22%	22%	36%	24%	29%	26%
	Not at all	28%	22%	15%	21%	10%	22%	24%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Ability to write Iñupiaq	Very well	20%	9%	20%	7%	21%	13%	19%
	Relatively well	9%	6%	14%	7%	17%	14%	10%
	With effort	10%	28%	13%	14%	13%	18%	12%
	A few words	26%	19%	26%	36%	25%	27%	26%
	Not at all	34%	37%	27%	36%	24%	27%	33%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Number of Heads of Household		255	46	104	42	88	143	678

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Table 4-44: Importance of Iñupiat values, six communities, 2016

Iñupiaq Value Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
How important is use of Iñupiaq language	Very important	54%	56%	64%	62%	71%	63%	58%
	Important	26%	39%	32%	31%	25%	26%	27%
	Not very important	10%	3%	4%	5%	2%	9%	9%
	Not at all important	10%	3%		2%	2%	2%	7%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
How important is sharing and helping	Very important	78%	81%	78%	84%	79%	80%	79%
	Important	20%	19%	22%	16%	21%	18%	20%
	Not very important	2%					2%	2%
	Not at all important							
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
How important is respect for others	Very important	88%	85%	87%	93%	92%	91%	88%
	Important	11%	15%	13%	7%	8%	9%	11%
	Not very important	1%						1%
	Not at all important							
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
How important is cooperation	Very important	78%	74%	81%	84%	77%	85%	79%
	Important	21%	26%	19%	16%	22%	15%	20%
	Not very important	1%				1%		1%
	Not at all important							
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							

Table 4-44: Importance of Iñupiat values, six communities, 2016, continued

Iñupiaq Value Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
How important is respect for elders	Very important	87%	91%	93%	95%	95%	96%	90%
	Important	11%	9%	7%	5%	5%	4%	9%
	Not very important	1%						1%
	Not at all important	<1%						<1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
How important is love for children	Very important	85%	91%	95%	98%	93%	97%	89%
	Important	14%	9%	5%	2%	7%	3%	11%
	Not very important	<1%						<1%
	Not at all important	<1%						<1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
How important is hard work	Very important	79%	82%	78%	76%	77%	86%	80%
	Important	18%	18%	19%	18%	23%	14%	18%
	Not very important	3%		3%	5%		1%	2%
	Not at all important	<1%						<1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
How important is knowledge of family tree	Very important	67%	62%	70%	80%	73%	78%	69%
	Important	26%	35%	28%	19%	23%	19%	26%
	Not very important	6%	4%	2%	2%	4%	3%	5%
	Not at all important	<1%						<1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							

Table 4-44: Importance of Iñupiat values, six communities, 2016, continued

Iñupiaq Value Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
How important is avoidance of conflict	Very important	52%	62%	60%	64%	71%	70%	57%
	Important	37%	34%	34%	24%	25%	23%	34%
	Not very important	9%	4%	6%	13%	4%	5%	8%
	Not at all important	2%					1%	2%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
How important is the way I view nature	Very important	84%	88%	90%	81%	92%	94%	87%
	Important	16%	12%	10%	19%	8%	5%	13%
	Not very important						1%	<1%
	Not at all important							
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
How important is religious and spiritual beliefs	Very important	71%	61%	73%	69%	64%	76%	71%
	Important	23%	37%	24%	31%	33%	21%	24%
	Not very important	5%	3%	3%		2%	3%	4%
	Not at all important	1%				1%		1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
How important is humor	Very important	73%	74%	71%	76%	71%	82%	74%
	Important	24%	26%	28%	24%	29%	16%	24%
	Not very important	3%		1%			2%	2%
	Not at all important							
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							

Table 4-44: Importance of Iñupiat values, six communities, 2016, continued

Iñupiaq Value Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
How important are family roles	Very important	67%	72%	80%	78%	82%	78%	71%
	Important	27%	26%	20%	16%	17%	20%	24%
	Not very important	6%	3%		5%	1%	3%	5%
	Not at all important					1%		<1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
How important is the Iñupiaq food I eat	Very important	57%	72%	78%	78%	76%	76%	64%
	Important	25%	22%	20%	16%	22%	20%	24%
	Not very important	13%	6%	2%	5%	2%	4%	10%
	Not at all important	5%						3%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
How important is the hunting and fishing I do	Very important	62%	81%	84%	80%	81%	79%	68%
	Important	22%	15%	13%	13%	13%	18%	20%
	Not very important	10%	4%	3%	7%	5%	2%	8%
	Not at all important	5%				1%	1%	4%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
How important is preserving of Iñupiat foods	Very important	63%	85%	76%	85%	80%	86%	69%
	Important	24%	13%	23%	13%	19%	12%	22%
	Not very important	10%	3%	1%	2%	1%	2%	7%
	Not at all important	3%						2%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Count of "Very Important" Values	Mean	12	12	13	13	13	13	12
	ANOVA p = 0.00							
Number of Heads of Household		254	46	104	42	87	143	676

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Table 4-45: Satisfaction with community's promotion of Iñupiat values, six communities, 2016

Satisfaction Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
How satisfied with job community doing promoting use of Iñupiaq language	Very satisfied	29%	28%	44%	29%	29%	24%	29%
	Somewhat satisfied	40%	34%	37%	46%	33%	38%	39%
	Neither satisfied nor dissatisfied	13%	21%	12%	13%	16%	18%	14%
	Somewhat dissatisfied	15%	17%	6%	13%	17%	15%	14%
	Very dissatisfied	2%		1%		5%	5%	3%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.0							
How satisfied with job community doing promoting sharing and helping	Very satisfied	42%	53%	66%	60%	42%	55%	46%
	Somewhat satisfied	40%	33%	23%	33%	46%	28%	37%
	Neither satisfied nor dissatisfied	12%	12%	10%	5%	6%	9%	11%
	Somewhat dissatisfied	7%	3%	1%	2%	4%	8%	6%
	Very dissatisfied	<1%		1%		2%		<1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.0							
How satisfied with job community doing promoting respect for others	Very satisfied	38%	42%	50%	47%	40%	44%	40%
	Somewhat satisfied	30%	40%	37%	38%	34%	32%	32%
	Neither satisfied nor dissatisfied	18%	12%	7%	9%	13%	10%	15%
	Somewhat dissatisfied	10%	6%	6%	5%	12%	12%	10%
	Very dissatisfied	3%		1%		2%	2%	3%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.0							

Table 4-45: Satisfaction with community's promotion of Iñupiat values, six communities, 2016, continued

Satisfaction Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
How satisfied with job community doing promoting cooperation	Very satisfied	33%	53%	51%	43%	38%	40%	37%
	Somewhat satisfied	41%	31%	35%	50%	38%	41%	40%
	Neither satisfied nor dissatisfied	14%	12%	5%	7%	10%	7%	12%
	Somewhat dissatisfied	9%	4%	6%		6%	10%	8%
	Very dissatisfied	3%		2%		8%	2%	3%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.0							
How satisfied with job community doing promoting respect for elders	Very satisfied	56%	74%	77%	81%	66%	60%	60%
	Somewhat satisfied	25%	20%	15%	17%	23%	23%	24%
	Neither satisfied nor dissatisfied	10%		1%	2%	5%	4%	7%
	Somewhat dissatisfied	6%	4%	7%		2%	11%	6%
	Very dissatisfied	3%	3%			5%	2%	3%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.0							
How satisfied with job community doing promoting love for children	Very satisfied	51%	64%	77%	71%	69%	61%	57%
	Somewhat satisfied	27%	27%	17%	24%	23%	24%	25%
	Neither satisfied nor dissatisfied	10%	4%	3%		2%	9%	8%
	Somewhat dissatisfied	10%	3%	3%	5%	5%	4%	8%
	Very dissatisfied	2%	3%			1%	2%	2%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.0							

Table 4-45: Satisfaction with community's promotion of Iñupiat values, six communities, 2016, continued

Satisfaction Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
How satisfied with job community doing promoting hard work	Very satisfied	38%	38%	56%	47%	38%	44%	41%
	Somewhat satisfied	22%	29%	30%	31%	36%	29%	25%
	Neither satisfied nor dissatisfied	16%	16%	7%	16%	15%	9%	15%
	Somewhat dissatisfied	18%	6%	5%	5%	5%	12%	15%
	Very dissatisfied	6%	12%	2%		6%	5%	5%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.0							
How satisfied with job community doing promoting knowledge of their family tree	Very satisfied	40%	49%	58%	47%	44%	44%	43%
	Somewhat satisfied	34%	27%	32%	38%	37%	31%	33%
	Neither satisfied nor dissatisfied	18%	20%	7%	15%	12%	19%	17%
	Somewhat dissatisfied	7%	4%	3%		4%	4%	6%
	Very dissatisfied	1%				2%	2%	1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.0							
How satisfied with job community doing promoting avoidance of conflict	Very satisfied	29%	40%	44%	36%	25%	31%	31%
	Somewhat satisfied	32%	38%	37%	39%	34%	33%	33%
	Neither satisfied nor dissatisfied	18%	14%	13%	14%	24%	12%	17%
	Somewhat dissatisfied	15%	4%	7%	5%	11%	16%	14%
	Very dissatisfied	6%	4%		5%	7%	7%	6%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.0							

Table 4-45: Satisfaction with community's promotion of Iñupiat values, six communities, 2016, continued

Satisfaction Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
How satisfied with job community doing promoting respect for nature	Very satisfied	44%	51%	64%	62%	55%	51%	48%
	Somewhat satisfied	24%	31%	23%	29%	31%	32%	26%
	Neither satisfied nor dissatisfied	14%	9%	9%	7%	5%	6%	11%
	Somewhat dissatisfied	14%	6%	4%		7%	9%	12%
	Very dissatisfied	4%	3%	1%	2%	2%	2%	4%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.0							
How satisfied with job community doing promoting spirituality	Very satisfied	44%	36%	53%	46%	41%	49%	45%
	Somewhat satisfied	29%	43%	30%	41%	31%	30%	30%
	Neither satisfied nor dissatisfied	20%	13%	9%	9%	12%	12%	17%
	Somewhat dissatisfied	5%	4%	5%	2%	11%	8%	6%
	Very dissatisfied	2%	4%	2%	2%	5%	1%	2%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.0							
How satisfied with job community doing promoting humor	Very satisfied	44%	41%	63%	56%	43%	49%	46%
	Somewhat satisfied	37%	47%	32%	33%	43%	29%	37%
	Neither satisfied nor dissatisfied	12%	7%	4%	9%	12%	15%	12%
	Somewhat dissatisfied	5%	3%	1%	2%	2%	7%	4%
	Very dissatisfied	2%	3%				1%	1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.0							

Table 4-45: Satisfaction with community's promotion of Iñupiat values, six communities, 2016, continued

Satisfaction Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
How satisfied with job community doing promoting family roles	Very satisfied	39%	45%	58%	49%	42%	44%	42%
	Somewhat satisfied	33%	36%	33%	36%	43%	35%	34%
	Neither satisfied nor dissatisfied	18%	9%	5%	13%	8%	10%	15%
	Somewhat dissatisfied	7%	7%	3%	2%	5%	7%	7%
	Very dissatisfied	3%	4%	1%		1%	4%	3%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.0							
How satisfied with job community doing promoting eating traditional or wild foods	Very satisfied	50%	56%	76%	73%	75%	64%	57%
	Somewhat satisfied	35%	35%	20%	22%	14%	26%	31%
	Neither satisfied nor dissatisfied	10%	6%	3%	5%	10%	4%	9%
	Somewhat dissatisfied	4%	3%	1%		2%	4%	3%
	Very dissatisfied	<1%					2%	<1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.0							
How satisfied with job community doing promoting hunting and fishing	Very satisfied	48%	66%	80%	73%	69%	67%	56%
	Somewhat satisfied	36%	31%	16%	22%	22%	21%	31%
	Neither satisfied nor dissatisfied	10%	3%	3%	5%	4%	8%	8%
	Somewhat dissatisfied	5%		1%		5%	4%	4%
	Very dissatisfied	<1%				1%		<1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.0							

Table 4-45: Satisfaction with community's promotion of Iñupiat values, six communities, 2016, continued

Satisfaction Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
How satisfied with job community doing promoting preserving of traditional or wild foods	Very satisfied	48%	60%	71%	72%	67%	67%	54%
	Somewhat satisfied	34%	34%	27%	26%	25%	22%	31%
	Neither satisfied nor dissatisfied	11%	4%	2%	2%	7%	6%	9%
	Somewhat dissatisfied	6%	3%			1%	5%	5%
	Very dissatisfied	2%				1%		1%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.0							
Satisfaction with Community Promotion of Values (1-5)	Mean	4	4	4	4	4	4	4
	ANOVA p = 0.00							
Number of Heads of Household		252	45	102	42	88	139	668

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Table 4-46: Which lifestyle would you prefer, six communities, 2016

Lifestyle Measure	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Working on a wage job	25%	7%	10%	13%	8%	11%	20%
Harvesting or processing own food	10%		10%	6%	10%	7%	9%
Both	65%	93%	81%	81%	82%	82%	71%
Total	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00							
Number of Heads of Household	247	45	96	41	88	139	656

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4.2.2.5 Education Indicators

Table 4-47: Level of formal education completed, six communities, 2016

Education Measure	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Less than elementary school	<1%	<1%	1%	2%	2%	2%	1%
Elementary school	5%	18%	17%	31%	23%	9%	9%
High school	48%	60%	68%	57%	63%	57%	53%
Vocational or associates degree	22%	11%	10%	7%	8%	19%	19%
College or university degree	24%	11%	4%	2%	5%	14%	19%
Total	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00							
Number of Heads of Household	254	46	102	42	87	143	674

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Table 4-48: Satisfaction with formal schooling and formal education in community, six communities, 2016

Satisfaction Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Satisfaction with formal schooling and training you received	Very satisfied	50%	44%	48%	38%	40%	40%	48%
	Somewhat satisfied	38%	47%	41%	36%	39%	42%	39%
	Neither satisfied nor dissatisfied	8%	4%	7%	7%	10%	10%	8%
	Somewhat dissatisfied	3%	3%	3%	16%	7%	5%	4%
	Very dissatisfied	2%	3%		2%	5%	3%	2%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Satisfaction with quality of formal education in your community	Very satisfied	32%	31%	31%	31%	23%	24%	30%
	Somewhat satisfied	41%	47%	49%	53%	43%	34%	41%
	Neither satisfied nor dissatisfied	12%	9%	9%	2%	11%	19%	12%
	Somewhat dissatisfied	12%	13%	10%	13%	14%	12%	12%
	Very dissatisfied	4%			2%	8%	12%	4%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Number of Heads of Household		253	45	97	42	88	141	666

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Table 4-49: Children's education location and participation, six communities, 2016

Education Measure	Response Category	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Child enrolled in a K-12 school	Yes	48%	50%	53%	67%	50%	56%	50%
	No	52%	50%	47%	33%	50%	44%	50%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p =< 0.01							
Child enrolled in K-12 school in a North Slope community	Yes	86%	92%	96%	97%	91%	97%	89%
	No	14%	8%	4%	3%	9%	3%	11%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p =< 0.01							
Child enrolled in K-12 school elsewhere in Alaska	Yes	10%	8%	4%	3%	11%	12%	9%
	No	90%	92%	96%	97%	89%	88%	91%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p =< 0.01							
Child enrolled in K-12 school outside Alaska	Yes	5%	5%		3%		1%	3%
	No	95%	95%	100%	97%	100%	99%	97%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p =< 0.01							
In past 12 months helped out at the school	Yes	41%	47%	37%	60%	42%	50%	43%
	No	59%	53%	63%	40%	58%	50%	57%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p =< 0.01							
Number of Heads of Household		253	45	97	42	88	141	666

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4.2.2.6 Local Control Indicators

Table 4-50: Knowledge and interest in politics, six communities, 2016

Political Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
How knowledgeable about politics in general	Very knowledgeable	17%	13%	13%	13%	18%	15%	16%
	Somewhat knowledgeable	51%	63%	52%	50%	44%	45%	51%
	Not very knowledgeable	23%	20%	28%	19%	23%	23%	23%
	Not at all knowledgeable	8%	4%	7%	19%	15%	17%	10%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
So many people vote in national elections it does not make difference if I vote or not	Completely disagree	47%	29%	26%	17%	28%	35%	41%
	Partly disagree	17%	31%	13%	31%	10%	24%	18%
	Partly agree	25%	26%	48%	33%	38%	25%	28%
	Completely agree	11%	14%	13%	19%	24%	17%	13%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
How interested are you in politics in general	Very interested	20%	22%	17%	5%	21%	14%	19%
	Interested	41%	39%	30%	53%	28%	39%	39%
	Not interested	39%	39%	53%	42%	51%	47%	42%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Index of Political Engagement (3-11)	Mean	10	11	10	9	10	10	10
	ANOVA p = 0.00							
Number of Heads of Household		250	45	98	42	87	139	661

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Table 4-51: Voting Participation, Six Communities, 2016

Voting Participation Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Vote in city election	Yes	56%	67%	53%		65%	55%	57%
	No	44%	33%	47%		35%	45%	43%
	Total	100%	100%	100%	NA	100%	100%	100%
	Chi-square p = 0.00							
Vote in traditional council election	Yes	40%	33%	47%	60%	53%	55%	43%
	No	60%	67%	53%	40%	47%	45%	57%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Vote in village corporation election	Yes	45%	54%	71%	33%	58%	66%	51%
	No	55%	46%	29%	67%	42%	34%	49%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Vote in Native regional corporation election	Yes	52%	74%	74%	71%	77%	71%	59%
	No	48%	26%	26%	29%	23%	29%	41%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Vote in North Slope Borough election	Yes	68%	81%	70%	67%	70%	64%	68%
	No	32%	19%	30%	33%	30%	36%	32%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Vote in ICAS election	Yes	33%	42%	47%	31%	51%	45%	37%
	No	67%	58%	53%	69%	49%	55%	63%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							

Table 4-51: Voting Participation, Six Communities, 2016, continued

Voting Participation Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Vote in state election	Yes	65%	69%	67%	61%	69%	65%	65%
	No	35%	31%	33%	39%	31%	35%	35%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = not significant							
Vote in national election	Yes	60%	61%	44%	46%	63%	61%	59%
	No	40%	39%	56%	54%	37%	39%	41%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Number of Elections Voted	0	21%	14%	12%	15%	13%	16%	19%
	1	5%		5%	2%	1%	4%	4%
	2	8%	7%	13%	13%	13%	14%	9%
	3	8%	4%	9%	15%	2%	6%	7%
	4	17%	10%	6%	19%	2%	4%	13%
	5	6%	14%	8%	13%	16%	8%	8%
	6	7%	17%	8%	8%	10%	8%	8%
	7	5%	17%	6%	13%	16%	11%	7%
	8	24%	14%	32%		28%	31%	24%
	Total	100%	100%	100%	100%	100%	100%	100%
	Mean	4	5	5	4	5	5	4
	ANOVA p = 0.00							
	Number of Heads of Household		253	46	99	42	87	139

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Table 4-52: How institutions are meeting needs, six communities, 2016

Institution Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
City council meeting needs	Yes	39%	58%	48%		44%	39%	41%
	No	61%	42%	52%	100%	56%	61%	59%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Tribal council or Native village meeting needs	Yes	41%	50%	53%	69%	47%	62%	46%
	No	59%	50%	47%	31%	53%	38%	54%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Village corporation meeting needs	Yes	47%	65%	75%	16%	52%	57%	50%
	No	53%	35%	25%	84%	48%	43%	50%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Native regional corporation meeting needs	Yes	60%	67%	71%	74%	63%	74%	63%
	No	40%	33%	29%	26%	37%	26%	37%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
North Slope Borough meeting needs	Yes	64%	73%	63%	71%	61%	54%	63%
	No	36%	27%	37%	29%	39%	46%	37%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
ICAS meeting needs	Yes	30%	10%	43%	46%	32%	20%	29%
	No	70%	90%	57%	54%	68%	80%	71%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							

Table 4-52: How institutions are meeting needs, six communities, 2016, continued

Institution Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
State government meeting needs	Yes	51%	42%	39%	37%	29%	43%	47%
	No	49%	58%	61%	63%	71%	57%	53%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Federal government meeting needs	Yes	40%	26%	34%	43%	29%	35%	38%
	No	60%	74%	66%	57%	71%	65%	62%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Number of Institutions Meeting Needs	Mean	3	3	3	2	2	3	3
	ANOVA p = 0.00							
Number of Heads of Household		225	43	83	39	81	138	609

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Table 4-53: Satisfaction with management of natural resources, six communities, 2016

Natural Resource Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
How satisfied with influence Iñupiat have on management of natural resources like oil, gas, and minerals	Very satisfied	16%	7%	19%	14%	20%	13%	15%
	Somewhat satisfied	36%	39%	45%	42%	31%	40%	37%
	Neither satisfied nor dissatisfied	20%	20%	23%	20%	20%	26%	21%
	Somewhat dissatisfied	17%	24%	6%	16%	16%	10%	16%
	Very dissatisfied	12%	10%	7%	8%	12%	11%	11%
	Total	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00								
How satisfied with influence Iñupiat have on management of natural resources like fish and caribou	Very satisfied	32%	32%	36%	41%	47%	34%	34%
	Somewhat satisfied	39%	47%	43%	53%	37%	34%	40%
	Neither satisfied nor dissatisfied	13%	4%	12%	6%	6%	14%	12%
	Somewhat dissatisfied	13%	13%	6%		8%	7%	11%
	Very dissatisfied	3%	3%	3%		1%	10%	4%
	Total	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00								
How satisfied with influence Iñupiat have on management of natural resources like marine mammals	Very satisfied	30%	38%	45%	46%	49%	35%	34%
	Somewhat satisfied	39%	45%	34%	52%	34%	37%	39%
	Neither satisfied nor dissatisfied	16%	7%	15%		7%	13%	14%
	Somewhat dissatisfied	11%	10%	4%	2%	5%	10%	10%
	Very dissatisfied	4%		2%		4%	6%	4%
	Total	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00								
How satisfied with influence Iñupiat have to reduce environmental problems in your area	Very satisfied	17%	17%	14%	34%	22%	15%	17%
	Somewhat satisfied	31%	51%	53%	46%	41%	45%	36%
	Neither satisfied nor dissatisfied	27%	13%	22%	18%	15%	23%	24%
	Somewhat dissatisfied	18%	20%	7%	2%	17%	8%	16%
	Very dissatisfied	7%		3%		4%	9%	6%
	Total	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00								
Number of Heads of Household		246	40	101	39	81	133	640

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4.2.2.7 Overall Well-being Indicators

Table 4-54: Considered moving from community, six communities, 2016

Moving from Community Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Considered moving away from community in last 5 years	Yes	55%	41%	35%	50%	53%	49%	52%
	No	45%	59%	65%	50%	47%	51%	48%
	Total	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00							
Number of Heads of Household		251	46	102	42	87	140	668

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Table 4-55: Satisfaction with life in community and life as a whole, six communities, 2016

Satisfaction Measure	Response Category	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total	
Satisfaction with quality of life in this community	Very satisfied	32%	50%	37%	48%	40%	39%	35%	
	Somewhat satisfied	45%	44%	50%	50%	46%	42%	45%	
	Neither satisfied nor dissatisfied	10%	6%	9%		4%	5%	9%	
	Somewhat dissatisfied	9%		4%	2%	9%	9%	8%	
	Very dissatisfied	4%				1%	4%	3%	
	Total	100%	100%	100%	100%	100%	100%	100%	
	Chi-square p = 0.00								
	Mean		4	4	4	4	4	4	4
	ANOVA p = 0.00								
Satisfaction with your life as a whole	Very satisfied	55%	61%	64%	62%	64%	64%	58%	
	Somewhat satisfied	38%	37%	29%	36%	33%	32%	36%	
	Neither satisfied nor dissatisfied	5%	3%	6%	2%	2%	3%	4%	
	Somewhat dissatisfied	2%		1%		1%	1%	1%	
	Very dissatisfied	<1%					1%	<1%	
	Total	100%	100%	100%	100%	100%	100%	100%	
	Chi-square p = not significant								
	Mean		4	5	5	5	5	5	5
	ANOVA p = not significant								
Number of Heads of Household		250	46	102	42	88	142	670	

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4.2.3 Native Time Series

4.2.3.1 Economic Indicators

Table 4-56: Subsistence harvest, six villages combined, Ifupiat households, 2016

Resource Harvested in Past 12 Months	Number					Total	Mean Pounds per Household	Number of Heads of Household
	None	1-5	6-10	11-20	Over 20			
Bowhead Shares	20%	68%	9%	1%	1%	100%	1,519	519
Caribou	37%	38%	14%	8%	3%	100%	533	530
Beluga	88%	9%	1%	0%	1%	100%	533	529
Walrus	83%	17%	0%	0%	0%	100%	241	529
Bearded Seal	64%	31%	4%	1%	0%	100%	204	529
Other Whitefish	67%	6%	4%	6%	17%	100%	87	511
Seal	71%	27%	2%	0%	0%	100%	55	528
Geese	58%	12%	9%	10%	12%	100%	51	527
Arctic Char/ Dolly Varden	79%	6%	4%	4%	7%	100%	32	528
Moose	96%	4%	0%	0%	0%	100%	22	515
Salmon	69%	13%	5%	5%	9%	100%	22	514
Cisco	87%	2%	2%	4%	6%	100%	22	510
Polar Bear	96%	4%	0%	0%	0%	100%	21	523
Duck	60%	12%	7%	9%	11%	100%	12	520
Dall Sheep	98%	2%	0%	0%	0%	100%	6	521

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Table 4-57: Proportion of meat and fish that is traditional, six communities combined, Iñupiat households, 2003, 2016

Contribution of Subsistence Foods	Response Category	2003	2016
Proportion of all meat and fish that is traditional food	More than half	64%	47%
	About half	21%	28%
	Less than half	13%	24%
	None	2%	1%
	Total	100%	100%
	Chi-square p - not significant		
	Number of Heads of Household	159	527
Proportion of all meat and fish harvested by household	More than half	35%	23%
	About half	23%	24%
	Less than half	32%	33%
	None	10%	21%
	Total	100%	100%
	Chi-square p - not significant		
	Number of Heads of Household	157	525
Proportion of all meat and fish consumed received from other households	More than half		16%
	About half		20%
	Less than half		55%
	None		9%
	Total		100%
	Number of Heads of Household		528

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Table 4-58: Satisfaction of Iñupiat heads of household with amount of fish and game available locally and opportunities to hunt and fish, six villages combined, 1977, 2003, 2016

Satisfaction Measure	Response Category	Study Year		
		1977	2003	2016
Satisfaction with amount of fish and game available locally	Very satisfied	5%	47%	39%
	Somewhat satisfied	19%	38%	41%
	Neither satisfied nor dissatisfied	37%	8%	9%
	Somewhat dissatisfied	23%	4%	9%
	Very dissatisfied	16%	2%	2%
	Total	100%	100%	100%
	Chi-square p = 0.00			
Satisfaction with opportunities to hunt and fish	Very satisfied		60%	48%
	Somewhat satisfied		30%	35%
	Neither satisfied nor dissatisfied		6%	8%
	Somewhat dissatisfied		2%	7%
	Very dissatisfied		2%	2%
	Total		100%	100%
	Chi-square p = not significant			
Number of Heads of Households		221	164	510

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Table 4-59: Employment experience, Iñupiat heads of household, six villages combined, 1977, 1988, 2003, 2016

Employment Measure for Past 12 Months	Response Category	1977	1988	2003	2016
Had a job in the past 12 months	Yes	63%	94%	71%	66%
	No	37%	6%	29%	34%
	Total	100%	100%	100%	100%
	Chi-square p = 0.00				
	Number of Heads of Household	201	1,340	162	523
Weeks worked in past 12 months	52 weeks	22%	38%		34%
	37-51 weeks				9%
	21-36 weeks	12%	16%		9%
	1-20 weeks	24%	13%		14%
	None	41%	33%		34%
	Total	100%	100%		100%
	Chi-square p = 0.00				
	Mean	37	39		39
	ANOVA p = 0.00				
	Number of Heads of Household	179	1,041		523
Weeks worked on jobs related to oil and gas development	52 weeks				5%
	37-51 weeks				2%
	21-36 weeks				2%
	1-20 weeks				7%
	None				84%
	Total				100%
	Mean				29
	Number of Heads of Household				531
Weeks worked on jobs related to offshore petroleum development	52 weeks				2%
	37-51 weeks				<1%%
	21-36 weeks				1%
	1-20 weeks				6%
	None				91%
	Total				100%
	Mean				21
	Number of Heads of Household				528
Weeks worked on longest job	52 weeks	22%			31%
	37-51 weeks	2%			7%
	21-36 weeks	5%			9%
	1-20 weeks	26%			17%
	None	46%			36%
	Total	100%			100%
	Chi-square p = 0.00				
	Mean	31			36
	ANOVA p = 0.005				
	Number of Heads of Household	200			510

Table 4-59: Employment experience, Iñupiat heads of household, six villages combined, 1977, 1988, 2003, 2016, continued

Employment Measure for Past 12 Months	Response Category	Study Year			
		1977	1988	2003	2016
Months wanted a job but did not have one	12 or more	10%	29%		11%
	6-11	25%	27%		12%
	1-5	12%	30%		14%
	None	52%	15%		63%
	Total	100%	100%		100%
	Chi-square p = 0.00				
	Mean	4	7		3
	ANOVA p = 0.005				
	Number of Heads of Household	201	647		513

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Table 4-60: Satisfaction with job held longest and job opportunities in community, six villages combined, Iñupiat households, 1977, 2003, 2016

Satisfaction Measure	Response Category	Study Year		
		1977	2003	2016
Satisfaction with job held longest	Very satisfied		57%	64%
	Somewhat satisfied		34%	23%
	Neither satisfied nor dissatisfied		4%	8%
	Somewhat dissatisfied		3%	4%
	Very dissatisfied		1%	2%
	Total		100%	100%
	Chi-square p = not significant			
Satisfaction with job opportunities in your community	Very satisfied	18%	11%	24%
	Somewhat satisfied	49%	26%	34%
	Neither satisfied nor dissatisfied	23%	20%	15%
	Somewhat dissatisfied	6%	21%	16%
	Very dissatisfied	3%	21%	12%
	Total	100%	100%	100%
	Chi-square p = 0.000			
Number of Heads of Household		219	162	495

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Table 4-61: 2016 adjusted income by type, six villages combined, Iñupiat households, 1977, 1988, 2003, 2016

Type of Household Income in Past 12 Months	Response Category	1977	1988	2003	2016	
Sales of carvings, skin clothing, furs, crafts, ivory and other similar goods	\$1,500 or under	96%		84%	89%	
	\$1,501 to \$5,000	2%		9%	7%	
	\$5,001 to \$8,000	1%		3%	2%	
	\$8,001 to \$12,000			1%	1%	
	\$12,001 to \$16,000			<1%	<1%	
	\$16,001 to \$23,000	<1%		1%	<1%	
	\$23,001 to \$28,000					
	\$28,001 to \$37,000	<1%			<1%	
	\$37,001 to \$50,000				1%	
	Above \$50,000			2%	<1%	
	Total	100%		100%	100%	
	Chi-square p = not significant					
		Number of Heads of Household	201		144	492
Self-employment	\$1,500 or under	98%		89%	82%	
	\$1,501 to \$5,000	<1%		4%	5%	
	\$5,001 to \$8,000			1%	2%	
	\$8,001 to \$12,000	1%		2%	1%	
	\$12,001 to \$16,000			2%	1%	
	\$16,001 to \$23,000			1%	1%	
	\$23,001 to \$28,000				1%	
	\$28,001 to \$37,000	1%		1%	1%	
	\$37,001 to \$50,000				2%	
	Above \$50,000			2%	3%	
	Total	100%		100%	100%	
	Chi-square p = 0.00					
		Number of Heads of Household	201		124	470

Table 4-61: 2016 adjusted income by type, six villages combined, Iñupiat households, 1977, 1988, 2003, 2016, continued

Type of Household Income in Past 12 Months	Response Category	1977	1988	2003	2016	
Wage employment	\$1,500 or under	30%		11%	24%	
	\$1,501 to \$5,000	<1%			4%	
	\$5,001 to \$8,000	1%		3%	3%	
	\$8,001 to \$12,000	2%		2%	4%	
	\$12,001 to \$16,000	1%		4%	4%	
	\$16,001 to \$23,000	3%		6%	5%	
	\$23,001 to \$28,000	1%		5%	4%	
	\$28,001 to \$37,000	4%		7%	6%	
	\$37,001 to \$50,000	11%		12%	8%	
	Above \$50,000	45%		50%	38%	
	Total	100%		100%	100%	
	Chi-square p = 0.00					
	Number of Heads of Household		201		145	455
Pensions, dividend checks, public assistance, shareholder dividends, student aid, disaster relief	\$1,500 or under	72%		3%	5%	
	\$1,501 to \$5,000	5%		6%	10%	
	\$5,001 to \$8,000	2%		13%	17%	
	\$8,001 to \$12,000	2%		17%	12%	
	\$12,001 to \$16,000	4%		20%	12%	
	\$16,001 to \$23,000	11%		15%	12%	
	\$23,001 to \$28,000	1%		9%	12%	
	\$28,001 to \$37,000	<1%		3%	8%	
	\$37,001 to \$50,000	1%		7%	7%	
	Above \$50,000			7%	6%	
	Total	100%		100%	100%	
	Chi-square p = 0.00					
	Number of Heads of Household		201		156	468

Table 4-61: 2016 adjusted income by type, six villages combined, Iñupiat households, 1977, 1988, 2003, 2016, continued

Type of Household Income in Past 12 Months	Response Category	1977	1988	2003	2016	
Other sources	\$1,500 or under			90%	80%	
	\$1,501 to \$5,000	88%		1%	6%	
	\$5,001 to \$8,000	4%		1%	2%	
	\$8,001 to \$12,000	1%		1%	1%	
	\$12,001 to \$16,000	2%		<1%	4%	
	\$16,001 to \$23,000	2%		1%	2%	
	\$23,001 to \$28,000	1%			<1%	
	\$28,001 to \$37,000	<1%		3%	1%	
	\$37,001 to \$50,000	<1%		1%	1%	
	Above \$50,000	<1%		1%	3%	
	Total	100%		100%	100%	
	Chi-square p = 0.00					
		Number of Heads of Household	201		112	459
All sources	\$1,500 or under			1%	18%	
	\$1,501 to \$5,000			9%	3%	
	\$5,001 to \$8,000			4%	5%	
	\$8,001 to \$12,000			8%	6%	
	\$12,001 to \$16,000			6%	8%	
	\$16,001 to \$23,000			11%	6%	
	\$23,001 to \$28,000			3%	3%	
	\$28,001 to \$37,000			8%	6%	
	\$37,001 to \$50,000			14%	10%	
	Above \$50,000			35%	34%	
	Total			100%	100%	
	Chi-square p = 0.00					
		Number of Heads of Household			136	446

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Table 4-62: Housing features, six communities combined, Iñupiat households, 2003, 2016

Housing Measure	Housing Features	2003	2016
Housing Features	Electricity	99%	98%
	Stove for cooking	95%	95%
	View to check the weather	92%	93%
	Cold running water	93%	92%
	Central heating or electricity	90%	92%
	Place to cut meat and fish	85%	92%
	Telephone	89%	90%
	Bath or shower	90%	89%
	Hot running water	88%	89%
	Smoke detector	87%	87%
	Indoor flushing toilet	85%	87%
	Double glass windows	88%	86%
	Septic tank or sewer connection	81%	83%
	Fire exit	81%	80%
	Store room	83%	79%
	Carbon monoxide detector	42%	78%
	Connection to the internet	43%	73%
	Place to sit outside	51%	69%
	Generator	33%	48%
	Refrigerator		96%
	Television		95%
	Freezer		91%
	Full kitchen		86%
Electronic gaming device		78%	
Natural gas hook-up		70%	
Ice cellar		29%	
Number of Features	10 or fewer	8%	8%
	11-15	39%	20%
	16-19	53%	73%
	Total	100%	100%
	Chi-square p = 0.00		
	Mean	15	16
	ANOVA p = 0.00		
Number of Heads of Household		161	532

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Table 4-63: House problems, six communities combined, Iñupiat households, 2003, 2016

Housing Measure	Type of Housing Problem	2003	2016
Individual house problem	Draft from doors or windows	65%	66%
	Cold floors	48%	49%
	Frost on the windows	40%	48%
	Shifts from active permafrost	31%	40%
	Too little space	42%	39%
	Drafts from places other than doors or windows	36%	36%
	Mold or mildew	13%	29%
	Water leaking from the ceiling	25%	28%
	Generally cold	15%	24%
	Dampness	13%	20%
	Stale air	28%	19%
	Air vent plugged with ice	18%	18%
	Water that is not safe to drink at least some times of the year	14%	11%
	Number of Housing Problems	None	19%
1-3		34%	39%
4-6		28%	29%
5 or more		19%	22%
Total		100%	100%
Chi-square p = 0.00			
Mean		4	4
ANOVA p = 0.003			
Number of Heads of Household		163	530

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Table 4-64: Persons per household and housing waiting list, six communities combined, Iñupiat households, 1977, 1988, 2003, 2016

Housing Measure	Number of People	1977	1988	2003	2016
Number living in household	1	12%	10%	7%	11%
	2	11%	13%	13%	21%
	3 - 4	30%	34%	44%	28%
	5 - 6	21%	29%	25%	26%
	7 - 8	17%	11%	9%	10%
	9 or more	7%	4%	1%	4%
	Total	100%	100%	100%	100%
	Chi-square p = 0.00				
	Mean	5	4	4	4
	ANOVA p = 0.00				
Number on waiting list for housing	0				82%
	1				8%
	2				6%
	3				1%
	4				2%
	5				1%
	6				<1%
	8				<1%
	Total				100%
Number of Heads of Household		201	1340	163	537

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Table 4-65: Economic satisfaction measures, six communities combined, Iñupiat households, 1977, 2003, 2016

Satisfaction Measure	Response Category	1977	2003	2016
Household income	Very satisfied		30%	38%
	Somewhat satisfied		42%	38%
	Neither satisfied nor dissatisfied		8%	11%
	Somewhat dissatisfied		15%	7%
	Very dissatisfied		6%	6%
	Total		100%	100%
	Chi-square p < 0.05			
	Mean		4	4
	ANOVA p < 0.05			
Availability of goods in local stores	Very satisfied	11%	19%	10%
	Somewhat satisfied	38%	39%	31%
	Neither satisfied nor dissatisfied	29%	15%	15%
	Somewhat dissatisfied	16%	15%	29%
	Very dissatisfied	6%	11%	15%
	Total	100%	100%	100%
	Chi-square p = 0.00			
	Mean	3	3	3
	ANOVA p = 0.00			
Transportation to and from community	Very satisfied	18%	30%	20%
	Somewhat satisfied	47%	34%	27%
	Neither satisfied nor dissatisfied	21%	16%	11%
	Somewhat dissatisfied	8%	14%	19%
	Very dissatisfied	7%	7%	22%
	Total	100%	100%	100%
	Chi-square p = 0.00			
	Mean	4	4	3
	ANOVA p = 0.00			
Cost of living in community	Very satisfied		10%	6%
	Somewhat satisfied	3%	24%	17%
	Neither satisfied nor dissatisfied	20%	15%	12%
	Somewhat dissatisfied	27%	28%	30%
	Very dissatisfied	50%	22%	35%
	Total	100%	100%	100%
	Chi-square p = 0.00			
	Mean	2	3	2
	ANOVA p = 0.00			

Table 4-65: Economic satisfaction measures, six communities combined, Iñupiat households, 1977, 2003, 2016, continued

Satisfaction Measure	Response Category	1977	2003	2016
Standard of living	Very satisfied		33%	26%
	Somewhat satisfied		44%	38%
	Neither satisfied nor dissatisfied		15%	13%
	Somewhat dissatisfied		6%	15%
	Very dissatisfied		2%	9%
	Total		100%	100%
	Chi-square p = 0.00			
	Mean		4	4
	ANOVA p = 0.00			
Ability to make ends meet	Very easily		23%	15%
	Fairly easily		31%	33%
	With some difficulty		38%	45%
	With great difficulty		7%	6%
	Total		100%	100%
	Chi-square p = not significant			
	Mean		3	3
	ANOVA p = not significant			
Economic Satisfaction Index (1-24)	Mean		20	18
	ANOVA p = 0.00			
Number of Heads of Household		198	159	525

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4.2.3.2 *Physical Environment Indicators*

Table 4-66: Environmental problems, six communities combined, Iñupiat households, 2003 and 2016

Environmental Problem	2003	2016
Climate change	70%	85%
Erosion of coastal areas or riverbanks*	76%	81%
Fish or animals that may be unsafe to eat*	45%	49%
Local contaminated sites	50%	45%
Pollution from industrial development*	35%	39%
Pollution of local lakes and streams	46%	38%
Pollution from other countries*	34%	32%
Disposal of hazardous waste		36%
Pollution of offshore waters		35%
Disposal of sewage		34%
Pollution from landfills		31%
Disruption of views and landscapes		25%
Chi-square $p < 0.05$, * = not significant		
Mean of Index of 7 environmental problems	3	3
ANOVA $p =$ not significant		
Number of Heads of Household	144	474

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Table 4-67: Avoidance of subsistence foods, six communities combined, Iñupiat households, 2016

	Percentage of Heads of Household	
	Yes	32%
Avoided eating subsistence foods in last year because they might be contaminated	No	68%
	Total	100%
Number of Heads of Household		517

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Table 4-68: Satisfaction with health of the environment, six communities combined, Iñupiat households, 2003 and 2016

Response Category	2003	2016
Very satisfied	20%	26%
Somewhat satisfied	55%	48%
Neither satisfied nor dissatisfied	14%	14%
Somewhat dissatisfied	10%	10%
Very dissatisfied	2%	2%
Total	100%	100%
Mean	4	4
Chi-square p = not significant, ANOVA p = not significant		
Number of Heads of Household	153	523

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Table 4-69: Participation in activities, six communities, combined, 2003, 2016

Participated in Past 12 Months	2003	2016
Take part in Native festival	57%	82%
Hike, run, jog or walk	68%	68%
Be out in the country*	51%	65%
Listen to or tell a Native story	62%	64%
Go snowmobiling or dog sledding	50%	53%
Take part in Native traditional games	53%	52%
Boat or kayak	51%	50%
Take part in Native dance	48%	50%
Participate in sports	28%	30%
Visit neighbors, friends, or relatives		94%
Go to sports events		58%
Go sledding or snowboarding		32%
Play basketball		26%
Swim		25%
Go biking		21%
Chi-square p = not significant, * p = 0.00		
Index of 9 activities (mean)	5	5
Index of 4 Native activities (mean)	2	2
ANOVA p = 0.00		
Number of Heads of Household	162	533

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Table 4-70: Satisfaction with recreational facilities in your community, six communities combined, Iñupiat households, 2003 and 2016

Response Category	2003	2016
Very satisfied	32%	22%
Somewhat satisfied	35%	33%
Neither satisfied nor dissatisfied	12%	15%
Somewhat dissatisfied	11%	15%
Very dissatisfied	9%	16%
Total	100%	100%
Mean	4	3
Chi-square p = 0.00, ANOVA p = 0.00		
Number of Heads of Household	159	524

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4.2.3.3 Health and Safety Indicators

Table 4-71: How do you feel about your health in general, six communities combined, Iñupiat households, 2003 and 2016

Response Category	2003	2016
Excellent	23%	13%
Very good	26%	23%
Good	32%	36%
Fair	18%	23%
Poor	1%	6%
Total	100%	100%
Chi-square p = not significant		
Number of Heads of Household	162	528

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Table 4-72: How satisfied are you with your health, six communities combined, Iñupiat households, 2003 and 2016

Response Category	2003	2016
Very satisfied	42%	28%
Somewhat satisfied	48%	47%
Neither satisfied nor dissatisfied	5%	14%
Somewhat dissatisfied	4%	7%
Very dissatisfied	2%	4%
Total	100%	100%
Chi-square p < 0.005		
Number of Heads of Household	158	520

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Table 4-73: Percentage of households with families affected by health problem, six communities combined, Iñupiat households, 2003 and 2016

Health Problem	2003	2016
Cancer	61%	76%
Arthritis*	51%	67%
Alcoholism or drug addiction	45%	57%
Accidental injury	28%	40%
Joint and bone diseases	20%	29%
Mental illness	14%	28%
Eye disease	24%	26%
Heart disease		43%
Diabetes		41%
Lung disease		39%
Obesity		33%
Chi-square p = not significant, except * p< 0.05		
Mean	2	3
ANOVA p = 0.001		
Number of Heads of Household	158	524

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Table 4-74: Head of household victim, six communities combined, Iñupiat households, 2003 and 2016

Victim Measure for Past 12 Months	2003	2016
Theft	17%	13%
Sexual assault	<1%	1%
Domestic violence*		11%
Other abuse		7%
Elder abuse*		3%
Victim of theft or sexual assault	17%	14%
Chi-square p = not significant		
Number of Heads of Household	149	475

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Table 4-75: Problems related to drugs or alcohol in home today, six communities combined, Iñupiat households, 2003 and 2016

Response Category	2003	2016
Yes often	6%	5%
Yes sometimes	28%	32%
No never	66%	63%
Total	100%	100%
Chi-square p = not significant		
Number of Heads of Household	144	495

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Table 4-76: Indicators of depression, six communities combined, Iñupiat households, 2003 and 2016

Depression Measure	Response Category	2003	2016
How much of the time in the last month have you been a nervous person	All the time	1%	1%
	Most of the time		2%
	Some of the time	12%	19%
	Very seldom	20%	28%
	Not at all	67%	50%
	Total	100%	100%
	Chi-square p < 0.05		
How much time in last month have you felt calm and peaceful	All the time	42%	24%
	Most of the time	29%	55%
	Some of the time	16%	14%
	Very seldom	5%	2%
	Not at all	9%	5%
	Total	100%	100%
	Chi-square p < 0.05		
How much time in last month have you felt downhearted and blue	All the time	1%	1%
	Most of the time	7%	4%
	Some of the time	27%	27%
	Very seldom	26%	32%
	Not at all	39%	36%
	Total	100%	100%
	Chi-square p = not significant		
How much time in last month have you been a happy person	All the time	49%	29%
	Most of the time	29%	55%
	Some of the time	14%	13%
	Very seldom	3%	1%
	Not at all	5%	2%
	Total	100%	100%
	Chi-square p < 0.05		
How much time in last month have you felt so down nothing could cheer you up	All the time	3%	1%
	Most of the time	<1%	5%
	Some of the time	16%	14%
	Very seldom	16%	24%
	Not at all	64%	56%
	Total	100%	100%
	Chi-square p < 0.05		
Index of Depression Indicators (1-25)		9	9
ANOVA p = not significant			
Number of Heads of Household		133	478

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Table 4-77: Indicators of social support, six communities combined, Iñupiat households, 2003 and 2016

Social Support Measure	Response Category	2003	2016
Someone you can listen to you when you need to talk	All the time	36%	42%
	Most of the time	31%	35%
	Some of the time	21%	16%
	Very seldom	10%	5%
	Not at all	1%	2%
	Total	100%	100%
	Chi-square p = 0.05		
Someone you can count on when you need advice	All the time	30%	38%
	Most of the time	34%	37%
	Some of the time	25%	17%
	Very seldom	10%	6%
	Not at all	2%	1%
	Total	100%	100%
	Chi-square p = 0.05		
Someone who shows you love and affection	All the time	62%	54%
	Most of the time	21%	31%
	Some of the time	11%	11%
	Very seldom	4%	3%
	Not at all	2%	1%
	Total	100%	100%
	Chi-square p = 0.05		
Someone to have a good time with	All the time	43%	46%
	Most of the time	32%	37%
	Some of the time	18%	12%
	Very seldom	6%	4%
	Not at all	2%	1%
	Total	100%	100%
	Chi-square p = 0.05		
Someone to confide in or talk about yourself and your problems	All the time	25%	42%
	Most of the time	27%	33%
	Some of the time	28%	15%
	Very seldom	13%	7%
	Not at all	7%	4%
	Total	100%	100%
	Chi-square p = 0.05		

Table 4-77: Indicators of social support, six communities combined, Iñupiat households, 2003 and 2016, continued

Social Support Measure	Response Category	2003	2016
Someone to get together with for relaxation	All the time	32%	40%
	Most of the time	27%	36%
	Some of the time	29%	15%
	Very seldom	8%	6%
	Not at all	4%	3%
	Total	100%	100%
	Chi-square p = 0.05		
Someone to do something enjoyable with	All the time	44%	45%
	Most of the time	31%	37%
	Some of the time	19%	13%
	Very seldom	4%	3%
	Not at all	3%	1%
	Total	100%	100%
	Chi-square p = 0.05		
Index of availability of social supports - grouped values (7-35)	35	10%	27%
	30-34	34%	24%
	25-29	22%	31%
	19-24	27%	14%
	18 or less	7%	4%
	Total	100%	100%
	Chi-square p = 0.05		
	Mean	27	29
	ANOVA p = 0.00		
Number of Heads of Household		156	466

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Table 4-78: Satisfaction with health, public safety, and court services, six communities combined, Iñupiat households, 1977, 2003, 2016

Satisfaction Measure	Response Category	1977	2003	2016
Satisfaction with quality of health services in your community	Very satisfied	18%	27%	24%
	Somewhat satisfied	57%	42%	30%
	Neither satisfied nor dissatisfied	15%	11%	15%
	Somewhat dissatisfied	8%	14%	15%
	Very dissatisfied	2%	5%	16%
	Total	100%	100%	100%
	Chi-square p = 0.00			
Satisfaction with public safety services	Very satisfied		14%	20%
	Somewhat satisfied		43%	35%
	Neither satisfied nor dissatisfied		18%	18%
	Somewhat dissatisfied		14%	14%
	Very dissatisfied		11%	12%
	Total		100%	100%
	Chi-square p = not significant			
Satisfaction with courts on the North Slope	Very satisfied		14%	13%
	Somewhat satisfied		47%	27%
	Neither satisfied nor dissatisfied		19%	27%
	Somewhat dissatisfied		10%	16%
	Very dissatisfied		9%	17%
	Total		100%	100%
	Chi-square p = 0.00			
Number of Heads of Household		200	160	515

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4.2.3.4 Cultural Continuity Indicators

Table 4-79: Participation in subsistence activities, six communities combined, Iñupiat households, 1977, 1988, 2003, 2016

Participation Measure	Subsistence Activity in Past 12 Months	1977	1988	2003	2016	
Participation in Activity	Help whaling crews by cooking, giving money or supplies, cutting meat	39%	50%	74%	69%	
	Fish	38%	47%	67%	60%	
	Pick berries	23%	17%	32%	47%	
	Hunt seal or ugruk	30%	38%	43%	41%	
	Make sleds or boats	16%	24%	35%	25%	
	Hunt walrus	17%	27%	29%	22%	
	Trap	12%	10%	9%	7%	
	Make Native handicrafts	10%		42%	31%	
	Sew skins, make parkas and kamiks (boots)	22%		40%	29%	
	Hunt caribou, moose, or sheep		41%	48%	52%	
	Preserve meat or fish			76%	64%	
	Skinned and butchered a caribou*			61%	62%	
	Hunt waterfowl*			44%	46%	
	Gather greens, roots, or other plants*			26%	25%	
	Gather eggs*			19%	21%	
	Was a member of a whaling crew				55%	
	Skinned and butchered a seal				44%	
	Skinned and butchered another animal				36%	
	Hunted ptarmigan				18%	
	Hunted wolf or wolverine				11%	
	Hunted polar bear				8%	
	Captained a whaling crew				8%	
	Chi-square p < 0.05					
	Number of Heads of Household	201	1,175	145	537	
Number of Subsistence Activities	5 or more	32%	38%	55%	50%	
	3-4	17%	11%	19%	21%	
	1-2	29%	10%	14%	19%	
	None	21%	42%	12%	10%	
	Total	100%	100%	100%	100%	
	Chi-square p < 0.05 except * = not significant					
		Mean number of 7 subsistence activities	3	3	5	5
	ANOVA p = 0.00					
		Number of Heads of Household	201	1,340	163	538

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Table 4-80: Subsistence participation by month, six communities combined, Iñupiat households, 1977 and 2016

Participation Measure	Month Participation in Past 12 Months	1977	2016	
Participation by Month	January*	21%	16%	
	February*	19%	15%	
	March	26%	20%	
	April	49%	38%	
	May	51%	35%	
	June	42%	32%	
	July	32%	44%	
	August*	45%	47%	
	September*	44%	37%	
	October*	26%	29%	
	November*	22%	17%	
	December	25%	15%	
	Chi-square p = 0.00 except * = not significant			
	Number of Heads of Household		201	530
Number of Months	No months	29%	29%	
	1-4 months	31%	42%	
	5-8 months	25%	16%	
	9-12 months	14%	12%	
	Total	100%	100%	
	Chi-square p = 0.00			
	Mean	4	3	
	ANOVA p < 0.005			
	Number of Heads of Household		201	538

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Table 4-81: Traditional education, six communities combined, Iñupiat households, 2003 and 2016

Skill Measure	Traditional Skill	2003	2016	
Individual Skill	Cook and prepare traditional Native foods*	89%	90%	
	Hunt and fish*	87%	87%	
	Drive a snowmachine	78%	87%	
	Preserve meat and fish*	86%	85%	
	Know the names of past generations of Iñupiat relatives*	81%	83%	
	Overnight on the land*	81%	81%	
	Hunt seal	52%	65%	
	Skin and butcher a caribou*	77%	82%	
	Learn stories passed on by parents, grandparents	71%	78%	
	Learned to serve on a whaling crew*	74%	75%	
	Read the weather	52%	71%	
	Know when berries are ripe and where to find them	56%	69%	
	Learn traditional dances and drumming	50%	58%	
	Make Native arts and crafts*	53%	57%	
	Take care of and sew skins*	52%	53%	
	Know Inupiaq names of different types of snow*	42%	52%	
	Fix a snowmachine	40%	52%	
	Navigate at sea*	41%	51%	
	Make traditional clothing*	54%	48%	
	Makes sleds and boats	39%	47%	
	Protect land and resources		74%	
	Skin and butcher a seal		73%	
	Skin and butcher another animal		70%	
	Learn traditional songs		57%	
	Repair traditional clothing		52%	
Make and maintain an ice cellar		50%		
Take care of and handle a dog team		29%		
Chi-square p <0.05 except * = not significant				
Number of Heads of Household		161	537	
Number of traditional skills learned	Five or less	8%	7%	
	6-10	24%	18%	
	11-15	38%	31%	
	16-20	30%	44%	
	Total	100%	100%	
	Chi-square p = 0.00			
	Mean	13	14	
	ANOVA p < 0.000			
Number of Heads of Household		160	536	

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Table 4-82: Understanding, speaking, and reading Iñupiaq, six communities combined, Iñupiat households, 2003 and 2016

Language Measure	Response Category	2003	2016
Ability to understand Iñupiaq	Very Well	61%	40%
	Relatively well	11%	24%
	With effort	11%	16%
	A few words	16%	20%
	Not at all	1%	1%
	Total	100%	100%
	Chi-square p = 0.00		
Ability to speak Iñupiaq	Very Well	55%	34%
	Relatively well	10%	13%
	With effort	12%	21%
	A few words	22%	29%
	Not at all	2%	3%
	Total	100%	100%
	Chi-square p = 0.00		
Ability to read Iñupiaq	Very Well	31%	28%
	Relatively well	22%	20%
	With effort	15%	18%
	A few words	17%	23%
	Not at all	16%	10%
	Total	100%	100%
	Chi-square p = not significant		
Ability to write Iñupiaq	Very Well	24%	26%
	Relatively well	18%	14%
	With effort	13%	16%
	A few words	21%	26%
	Not at all	25%	19%
	Total	100%	100%
	Chi-square p = not significant		
Number of Heads of Household		161	535

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Table 4-83: Importance of Iñupiat values, six communities combined, Iñupiat households, 2003 and 2016

Iñupiaq Value Measure	Response Category	2003	2016
How important is use of Iñupiaq language	Very important	75%	71%
	Important	20%	26%
	Not very important	3%	3%
	Not at all important	2%	<1%
	Total	100%	100%
	Chi-square p = 0.00		
How important is sharing and helping	Very important		82%
	Important		18%
	Not very important		1%
	Not at all important		
	Total		100%
How important is respect for others	Very important		89%
	Important		10%
	Not very important		1%
	Not at all important		
	Total		100%
How important is cooperation	Very important		79%
	Important		21%
	Not very important		1%
	Not at all important		
	Total		100%
How important is respect for elders	Very important		94%
	Important		6%
	Not very important		<1%
	Not at all important		<1%
	Total		100%
How important is love for children	Very important		91%
	Important		9%
	Not very important		<1%
	Not at all important		<1%
	Total		100%
How important is hard work	Very important		78%
	Important		18%
	Not very important		3%
	Not at all important		<1%
	Total		100%
How important is knowledge of family tree	Very important	57%	75%
	Important	37%	22%
	Not very important	4%	3%
	Not at all important	2%	<1%
	Total	100%	100%
	Chi-square p = 0.00		
How important is avoidance of conflict	Very important		60%
	Important		31%
	Not very important		8%
	Not at all important		<1%
	Total		100%

Table 4-83: Importance of Iñupiat values, six communities combined, Iñupiat households, 2003 and 2016, continued

Iñupiaq Value Measure	Response Category	2003	2016
How important is the way I view nature	Very important	61%	89%
	Important	34%	11%
	Not very important	4%	<1%
	Not at all important	1%	<1%
	Total	100%	100%
	Chi-square p = 0.00		
How important is religious and spiritual beliefs	Very important	51%	73%
	Important	37%	22%
	Not very important	9%	3%
	Not at all important	3%	1%
	Total	100%	100%
	Chi-square p = 0.00		
How important is humor	Very important		78%
	Important		21%
	Not very important		1%
	Not at all important		
	Total		100%
How important are family roles	Very important		76%
	Important		21%
	Not very important		3%
	Not at all important		<1%
	Total		100%
How important is the Iñupiaq food I eat	Very important	82%	77%
	Important	16%	20%
	Not very important	2%	3%
	Not at all important		<1%
	Total	100%	100%
Chi-square p = not significant			
How important is the hunting and fishing I do	Very important	71%	82%
	Important	27%	15%
	Not very important	3%	3%
	Not at all important		1%
	Total	100%	100%
Chi-square p = 0.00			
How important is preserving of Iñupiat foods	Very important	77%	82%
	Important	19%	16%
	Not very important	4%	2%
	Not at all important	1%	<1%
	Total	100%	100%
Chi-square p = 0.00			
Count of 7 "Very Important" Values	Mean	5	6
	ANOVA p = 0.001		
	Number of Heads of Household	163	525

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Table 4-84: Satisfaction with community's promotion of Iñupiat values, six communities combined, Iñupiat households, 2003 and 2016

Satisfaction Measure	Response Category	2003	2016
How satisfied with job community doing promoting use of Inupiaq language	Very satisfied	37%	33%
	Somewhat satisfied	46%	40%
	Neither satisfied nor dissatisfied	7%	11%
	Somewhat dissatisfied	5%	14%
	Very dissatisfied	5%	3%
	Total	100%	100%
	Chi-square p = not significant		
How satisfied with job community doing promoting sharing and helping	Very satisfied	57%	53%
	Somewhat satisfied	37%	36%
	Neither satisfied nor dissatisfied	4%	8%
	Somewhat dissatisfied	1%	3%
	Very dissatisfied	<1%	1%
	Total	100%	100%
	Chi-square p = not significant		
How satisfied with job community doing promoting respect for others	Very satisfied	48%	47%
	Somewhat satisfied	37%	30%
	Neither satisfied nor dissatisfied	8%	14%
	Somewhat dissatisfied	6%	6%
	Very dissatisfied	1%	2%
	Total	100%	100%
	Chi-square p = not significant		
How satisfied with job community doing promoting cooperation	Very satisfied	44%	41%
	Somewhat satisfied	44%	40%
	Neither satisfied nor dissatisfied	5%	10%
	Somewhat dissatisfied	6%	5%
	Very dissatisfied	1%	3%
	Total	100%	100%
	Chi-square p = not significant		
How satisfied with job community doing promoting respect for elders	Very satisfied	64%	66%
	Somewhat satisfied	30%	22%
	Neither satisfied nor dissatisfied	1%	4%
	Somewhat dissatisfied	3%	5%
	Very dissatisfied	2%	2%
	Total	100%	100%
	Chi-square p = not significant		
How satisfied with job community doing promoting love for children	Very satisfied	70%	64%
	Somewhat satisfied	24%	23%
	Neither satisfied nor dissatisfied	4%	7%
	Somewhat dissatisfied	2%	5%
	Very dissatisfied	1%	1%
	Total	100%	100%
	Chi-square p = not significant		

Table 4-84: Satisfaction with community's promotion of Iñupiat values, six communities combined, Iñupiat households, 2003 and 2016, continued

Satisfaction Measure	Response Category	2003	2016
How satisfied with job community doing promoting hard work	Very satisfied	51%	47%
	Somewhat satisfied	38%	27%
	Neither satisfied nor dissatisfied	7%	13%
	Somewhat dissatisfied	4%	9%
	Very dissatisfied	<1%	3%
	Total	100%	100%
	Chi-square p = not significant		
How satisfied with job community doing promoting knowledge of their family tree	Very satisfied	41%	49%
	Somewhat satisfied	35%	31%
	Neither satisfied nor dissatisfied	15%	12%
	Somewhat dissatisfied	7%	7%
	Very dissatisfied	1%	1%
	Total	100%	100%
	Chi-square p = not significant		
How satisfied with job community doing promoting avoidance of conflict	Very satisfied	26%	37%
	Somewhat satisfied	39%	34%
	Neither satisfied nor dissatisfied	25%	15%
	Somewhat dissatisfied	7%	10%
	Very dissatisfied	3%	4%
	Total	100%	100%
	Chi-square p < 0.05		
How satisfied with job community doing promoting respect for nature	Very satisfied	54%	56%
	Somewhat satisfied	34%	24%
	Neither satisfied nor dissatisfied	6%	9%
	Somewhat dissatisfied	5%	8%
	Very dissatisfied	1%	2%
	Total	100%	100%
	Chi-square p = not significant		
How satisfied with job community doing promoting spirituality	Very satisfied	46%	52%
	Somewhat satisfied	38%	29%
	Neither satisfied nor dissatisfied	14%	12%
	Somewhat dissatisfied	1%	6%
	Very dissatisfied	1%	2%
	Total	100%	100%
	Chi-square p = not significant		
How satisfied with job community doing promoting humor	Very satisfied	50%	53%
	Somewhat satisfied	34%	34%
	Neither satisfied nor dissatisfied	11%	9%
	Somewhat dissatisfied	4%	4%
	Very dissatisfied	<1%	1%
	Total	100%	100%
	Chi-square p = not significant		

Table 4-84: Satisfaction with community's promotion of Iñupiat values, six communities combined, Iñupiat households, 2003 and 2016, continued

Satisfaction Measure	Response Category	2003	2016
How satisfied with job community doing promoting family roles	Very satisfied	54%	48%
	Somewhat satisfied	35%	34%
	Neither satisfied nor dissatisfied	6%	10%
	Somewhat dissatisfied	3%	5%
	Very dissatisfied	2%	3%
	Total	100%	100%
	Chi-square p = not significant		
How satisfied with job community doing promoting eating traditional or wild foods	Very satisfied		66%
	Somewhat satisfied		26%
	Neither satisfied nor dissatisfied		5%
	Somewhat dissatisfied		3%
	Very dissatisfied		1%
	Total		100%
How satisfied with job community doing promoting hunting and fishing	Very satisfied		65%
	Somewhat satisfied		26%
	Neither satisfied nor dissatisfied		5%
	Somewhat dissatisfied		3%
	Very dissatisfied		1%
	Total		100%
How satisfied with job community doing promoting preserving of traditional or wild foods	Very satisfied		63%
	Somewhat satisfied		28%
	Neither satisfied nor dissatisfied		5%
	Somewhat dissatisfied		4%
	Very dissatisfied		1%
	Total		100%
Satisfaction with community Promotion of Values	Mean	4	4
	ANOVA p = not significant		
Number of Heads of Household		157	526

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Table 4-85: Which lifestyle would you prefer, six communities combined, Iñupiat households 2016

Lifestyle Measure	1977	2003	2016
Working on a wage job	17%	25%	9%
Harvesting, herding or processing own food	16%	11%	11%
Both	67%	64%	79%
Total	100%	100%	100%
Chi-square p = 0.00			
Number of Heads of Household	175	150	519

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4.2.3.5 Education Indicators

Table 4-86: Level of formal education completed, six communities combined, Iñupiat households, 1977, 1988, 2003, 2016

Education Measure	1977	1988	2003	2016
Less than elementary school	23%	45%	5%	1%
Elementary school	41%		24%	12%
High school	19%	51%	38%	62%
Vocational or associates degree	15%	2%	30%	18%
College or university degree	1%	2%	3%	7%
Total	100%	100%	100%	100%
Chi-square p = 0.00				
Number of Heads of Household	201	1286	161	531

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Table 4-87: Satisfaction with formal schooling and formal education in community, six communities combined, Iñupiat households, 1977, 2003, 2016

Satisfaction Measure	Response Category	1977	2003	2016
Satisfaction with formal schooling and training you received	Very satisfied		52%	45%
	Somewhat satisfied		36%	40%
	Neither satisfied nor dissatisfied		6%	9%
	Somewhat dissatisfied		4%	4%
	Very dissatisfied		1%	2%
	Total		100%	100%
	Chi-square p = not significant			
Satisfaction with quality of formal education in your community	Very satisfied	12%	42%	33%
	Somewhat satisfied	56%	40%	42%
	Neither satisfied nor dissatisfied	21%	8%	10%
	Somewhat dissatisfied	6%	7%	11%
	Very dissatisfied	6%	3%	4%
	Total	100%	100%	100%
	Chi-square p = 0.00			
Number of Heads of Household		181	160	514

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Table 4-88: Children's education location and participation, six communities combined, 2003 and 2016

Education Measure	Response Category	2003	2016
Child enrolled in a K-12 school	Yes		56%
	No		44%
	Total		100%
	Number of Heads of Household		534
Child enrolled in K-12 school in a North Slope community	Yes		91%
	No		9%
	Total		100%
	Number of Heads of Household		307
Child enrolled in K-12 school elsewhere in Alaska	Yes		9%
	No		91%
	Total		100%
	Number of Heads of Household		307
Child enrolled in K-12 school outside Alaska	Yes		2%
	No		98%
	Total		100%
	Number of Heads of Household		307
In past 12 months helped out at the school	Yes	33%	38%
	No	67%	62%
	Total	100%	100%
	Chi-square p < 0.005		
	Number of Heads of Household	162	520

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4.2.3.6 Local Control Indicators

Table 4-89: Knowledge and interest in politics, six communities combined, Iñupiat households, 2003 and 2016

Political Measure	Response Category	2003	2016
How knowledgeable about politics in general, recoded	Very knowledgeable	19%	15%
	Somewhat knowledgeable	44%	48%
	Not very knowledgeable	25%	26%
	Not at all knowledgeable	12%	11%
	Total	100%	100%
	Chi-square p = not significant		
So many people vote in national elections it does not make difference if I vote or not	Completely disagree	36%	36%
	Partly disagree	13%	18%
	Partly agree	31%	31%
	Completely agree	20%	15%
	Total	100%	100%
	Chi-square p < 0.05		
How interested are you in politics in general	Very interested	20%	16%
	Interested	41%	38%
	Not interested	39%	46%
	Total	100%	100%
	Chi-square p = not significant		
Index of Political Engagement (3-11)	Mean	7	10
	ANOVA p = 0.00		
Number of Heads of Household		149	520

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Table 4-90: Voting participation, six communities combined, Iñupiat households, 1977, 2003, 2016

Voting Participation Measure	Response Category	1977	2003	2016
Vote in city election	Yes	80%	86%	62%
	No	20%	14%	38%
	Total	100%	100%	100%
	Chi-square p = not significant			
Vote in traditional council election	Yes		51%	58%
	No		49%	42%
	Total		100%	100%
	Chi-square p = not significant			
Vote in village corporation election	Yes	82%	71%	68%
	No	18%	29%	32%
	Total	100%	100%	100%
	Chi-square p = 0.00			
Vote in Native regional corporation election	Yes	81%	83%	80%
	No	19%	17%	20%
	Total	100%	100%	100%
	Chi-square p = not significant			
Vote in North Slope Borough election	Yes	84%		74%
	No	16%		26%
	Total	100%		100%
	Chi-square p = 0.00			
Vote in ICAS election	Yes			50%
	No			50%
	Total			100%
Vote in state election	Yes		86%	67%
	No		14%	33%
	Total		100%	100%
	Chi-square p = 0.00			
Vote in national election	Yes		74%	58%
	No		26%	42%
	Total		100%	100%
	Chi-square p = 0.00			
Number of Elections Voted	0	11%	10%	15%
	1	3%	6%	5%
	2	9%	17%	12%
	3	14%	22%	12%
	4	62%	45%	56%
	Total	100%	100%	100%
	Mean	3	3	3
	ANOVA p = 0.00			
Number of Heads of Household		192	160	527

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Table 4-91: How institutions are meeting needs, six communities combined, Iñupiat households, 1977, 2016

Institution Measure	Response Category	1977	2016
Tribal council or Native village meeting needs	Yes		58%
	No		42%
	Total		100%
Village corporation meeting needs	Yes	81%	62%
	No	19%	38%
	Total	100%	100%
	Chi-square p = 0.00		
Native regional corporation meeting needs	Yes	84%	75%
	No	16%	25%
	Total	100%	100%
	Chi-square p = 0.00		
North Slope Borough meeting needs	Yes	83%	61%
	No	17%	39%
	Total	100%	100%
	Chi-square p = 0.00		
ICAS meeting needs	Yes		36%
	No		64%
	Total		100%
State government meeting needs	Yes	48%	41%
	No	52%	59%
	Total	100%	100%
	Chi-square p = 0.00		
Federal government meeting needs	Yes	47%	33%
	No	53%	67%
	Total	100%	100%
	Chi-square p = 0.00		
Number of institutions meeting needs	Mean	3	3
	ANOVA p = not significant		
Number of Heads of Household		147	481

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Table 4-92: Satisfaction with management of natural resources, six communities combined, Iñupiat households, 2003, 2016

Natural Resource Measure	Response Category	2003	2016
How satisfied with influence Iñupiat have on management of natural resources like oil, gas, and minerals	Very satisfied	26%	17%
	Somewhat satisfied	40%	35%
	Neither satisfied nor dissatisfied	19%	20%
	Somewhat dissatisfied	8%	16%
	Very dissatisfied	7%	11%
	Total	100%	100%
	Chi-square p = 0.001		
How satisfied with influence Iñupiat have on management of natural resources like fish and caribou	Very satisfied	56%	39%
	Somewhat satisfied	32%	38%
	Neither satisfied nor dissatisfied	6%	8%
	Somewhat dissatisfied	4%	12%
	Very dissatisfied	1%	3%
	Total	100%	100%
	Chi-square p = 0.001		
How satisfied with influence Iñupiat have on management of natural resources like marine mammals	Very satisfied		39%
	Somewhat satisfied		38%
	Neither satisfied nor dissatisfied		10%
	Somewhat dissatisfied		10%
	Very dissatisfied		2%
	Total		100%
How satisfied with influence Iñupiat have to reduce environmental problems in your area	Very satisfied	24%	20%
	Somewhat satisfied	50%	39%
	Neither satisfied nor dissatisfied	14%	22%
	Somewhat dissatisfied	11%	14%
	Very dissatisfied	2%	6%
	Total	100%	100%
Chi-square p = not significant			
Number of Heads of Household		151	512

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4.2.3.7 Overall Well-being Indicators

Table 4-93: Considered moving away from community in last five years, six communities combined, Iñupiat households, 2003, 2016

Moving from Community Measure	Response Category	2003	2016
Considered moving away from community in last 5 years	Yes	36%	47%
	No	64%	53%
	Total	100%	100%
	Chi-square p = 0.005		
Number of Heads of Household		159	528

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Table 4-94: Satisfaction with life in community and life as a whole, six communities combined, Iñupiat households, 1977, 2003, 2016

Satisfaction Measure	Response Category	1977	2003	2016
Satisfaction with quality of life in this community	Very satisfied	22%	38%	40%
	Somewhat satisfied	51%	46%	43%
	Neither satisfied nor dissatisfied	14%	10%	8%
	Somewhat dissatisfied	12%	4%	6%
	Very dissatisfied	1%	3%	3%
	Total	100%	100%	100%
	Chi-square p = 0.000			
	Mean	4	4	4
	ANOVA p = 0.00			
	Satisfaction with your life as a whole	Very satisfied		68%
Somewhat satisfied			26%	35%
Neither satisfied nor dissatisfied			3%	4%
Somewhat dissatisfied			1%	1%
Very dissatisfied			2%	<1%
Total			100%	100%
Chi-square p = 0.005				
Mean			5	5
ANOVA p = not significant				
Number of Heads of Household		199	159	528

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4.2.4 Gender

4.2.4.1 Economic Indicators

Table 4-95: Satisfaction of Iñupiat male and female household heads with amount of fish and game available locally and opportunities to hunt and fish, six communities combined, 2016

Satisfaction Measure	Response Category	Male	Female	Total
Satisfaction with amount of fish and game available locally	Very satisfied	43%	35%	39%
	Somewhat satisfied	41%	40%	41%
	Neither satisfied nor dissatisfied	7%	11%	9%
	Somewhat dissatisfied	7%	10%	9%
	Very dissatisfied	1%	4%	2%
	Total	100%	100%	100%
	Chi-square p = 0.005			
Satisfaction with opportunities to hunt and fish	Very satisfied	45%	52%	49%
	Somewhat satisfied	43%	28%	35%
	Neither satisfied nor dissatisfied	6%	10%	8%
	Somewhat dissatisfied	6%	8%	7%
	Very dissatisfied	1%	4%	2%
	Total	100%	100%	100%
	Chi-square p = 0.000			
Number of Heads of Household		263	244	507

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Table 4-96: Employment experience of Iñupiat male and female household heads, six communities combined, 2016

Employment Measure for Past 12 Months	Response Category	Male	Female	Total
Had a job in the past 12 months	Yes	68%	65%	66%
	No	32%	35%	34%
	Total	100%	100%	100%
	Chi-square p = not significant			
Weeks worked in past 12 months	52 weeks	33%	36%	35%
	37-51 weeks	10%	8%	9%
	21-36 weeks	10%	8%	9%
	1-20 weeks	15%	13%	14%
	None	32%	35%	34%
	Total	100%	100%	100%
	Mean	38	39	39
	Chi-square p = not significant, ANOVA p = 0.05			

Table 4-96: Employment experience of Iñupiat male and female household heads, six communities combined, 2016, continued

Employment Measure for Past 12 Months	Response Category	Male	Female	Total
Weeks worked on jobs related to oil and gas development	52 weeks	3.7%	6.1%	4.9%
	37-51 weeks	2.5%	2.0%	2.3%
	21-36 weeks	3.0%	1.4%	2.2%
	1-20 weeks	6.9%	7.3%	7.1%
	None	83.9%	83.2%	83.5%
	Total	100.0%	100.0%	100.0%
	Mean	27	31	29
	Chi-square p = 0.009, ANOVA p = .001			
Weeks worked on jobs related to offshore petroleum development	52 weeks	2.0%	1.5%	1.7%
	37-51 weeks		.3%	.2%
	21-36 weeks	1.1%	1.9%	1.5%
	1-20 weeks	3.8%	7.5%	5.7%
	None	93.2%	88.8%	90.9%
	Total	100.0%	100.0%	100.0%
	Mean	25	19	21
	Chi-square p = 0.0000, ANOVA p = .368			
Weeks worked on longest job	52 weeks	30.1%	32.0%	31.1%
	37-51 weeks	7.9%	6.6%	7.3%
	21-36 weeks	8.7%	9.6%	9.2%
	1-20 weeks	18.1%	16.8%	17.4%
	None	35.1%	35.0%	35.0%
	Total	100.0%	100.0%	100.0%
	Mean	36	37	36
	Chi-square p = 0.015, ANOVA p = .024			
Months wanted a job but did not have one	12 or more	12%	10%	11%
	6-11	15%	9%	12%
	1-5	16%	13%	14%
	None	58%	67%	63%
	Total	100%	100%	100%
	Mean	3	2	3
	Chi-square p = 0.01, ANOVA p = 0.001			
Number of Heads of Household		270	258	528

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Table 4-97: Satisfaction with job held longest and job opportunities in community, Iñupiat male and female household heads, six communities combined, 2016

Satisfaction Measure	Response Category	Male	Female	Total
Satisfaction with job held longest	Very satisfied	57%	69%	63%
	Somewhat satisfied	32%	20%	26%
	Neither satisfied nor dissatisfied	7%	4%	5%
	Somewhat dissatisfied	3%	6%	5%
	Very dissatisfied	2%	1%	1%
	Total	100%	100%	100%
	Chi-square, p = 0.000			
Satisfaction with job opportunities in your community	Very satisfied	19%	23%	21%
	Somewhat satisfied	35%	31%	33%
	Neither satisfied nor dissatisfied	17%	13%	15%
	Somewhat dissatisfied	17%	19%	18%
	Very dissatisfied	11%	14%	13%
	Total	100%	100%	100%
	Chi-square, p = 0.002			
Number of Heads of Household		254	238	492

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Table 4-98: Past 12 Months income Iñupiat male and female heads received from all sources, six communities combined, 2016

Response Category	Male	Female	Total
\$1,500 or under	15%	20%	18%
\$1,501 to \$5,000	4%	3%	3%
\$5,001 to \$8,000	4%	5%	5%
\$8,001 to \$12,000	5%	7%	6%
\$12,001 to \$16,000	6%	9%	8%
\$16,001 to \$23,000	10%	3%	6%
\$23,001 to \$28,000	4%	2%	3%
\$28,001 to \$37,000	8%	4%	6%
\$37,001 to \$50,000	11%	9%	10%
Above \$50,000	32%	37%	35%
Total	100%	100%	100%
Chi-square p = 0.00			
Number of Heads of Household	224	219	443

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Table 4-99: Economic satisfaction measures for Iñupiat male and female household heads, six communities combined, 2016

Satisfaction Measure	Response Category	Male	Female	Total
Household income	Very satisfied	39%	36%	38%
	Somewhat satisfied	36%	41%	38%
	Neither satisfied nor dissatisfied	14%	8%	11%
	Somewhat dissatisfied	6%	8%	7%
	Very dissatisfied	5%	8%	6%
	Total	100%	100%	100%
	Mean	4	4	4
	Chi-square p = 0.00, ANOVA p < .01			
Availability of goods in local stores	Very satisfied	12%	7%	9.5%
	Somewhat satisfied	34%	27%	30.5%
	Neither satisfied nor dissatisfied	18%	13%	15.4%
	Somewhat dissatisfied	25%	34%	29.8%
	Very dissatisfied	11%	18%	14.8%
	Total	100%	100%	100.0%
	Mean	3	3	3
	Chi-square p = 0.00, ANOVA p < .01			
Transportation to and from community	Very satisfied	23%	16%	20%
	Somewhat satisfied	31%	24%	27%
	Neither satisfied nor dissatisfied	8%	14%	11%
	Somewhat dissatisfied	18%	20%	19%
	Very dissatisfied	20%	25%	23%
	Total	100%	100%	100%
	Mean	3	3	3
	Chi-square p = 0.00, ANOVA p < .01			
Cost of living in your community	Very satisfied	7%	5%	6%
	Somewhat satisfied	21%	13%	17%
	Neither satisfied nor dissatisfied	11%	12%	11%
	Somewhat dissatisfied	30%	30%	30%
	Very dissatisfied	31%	40%	35%
	Total	100%	100%	100%
	Mean	2	2	2
	Chi-square p = 0.00, ANOVA p < .01			
Standard of living	Very satisfied	25%	25%	25%
	Somewhat satisfied	40%	36%	38%
	Neither satisfied nor dissatisfied	14%	13%	13%
	Somewhat dissatisfied	17%	13%	15%
	Very dissatisfied	4%	13%	9%
	Total	100%	100%	100%
	Mean	4	3	4
	Chi-square p = 0.00, ANOVA p < .01			

Table 4-99: Economic satisfaction measures for Iñupiat male and female household heads, six communities combined, 2016, continued

Satisfaction Measure	Response Category	Male	Female	Total
Ability to make ends meet	Very easily	19%	11%	15%
	Fairly easily	36%	30%	33%
	With some difficulty	41%	50%	46%
	With great difficulty	4%	9%	6%
	Total	100%	100%	100%
	Mean	3	2	3
	Chi-square p = 0.00, ANOVA p < .01			
Economic Satisfaction Index (1-24)	Mean	19	17	18
	ANOVA p = 0.00			
Number of Heads of Household		268	255	523

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4.2.4.2 Physical Environment Indicators

Table 4-100: Environmental problems, six communities combined, by gender, Iñupiat, 2016

Environmental Problem	Male	Female	Total
Climate change*	83%	87%	85%
Erosion of coastal areas or riverbanks	80%	82%	81%
Fish or animals that may be unsafe to eat*	42%	55%	49%
Local contaminated sites	44%	45%	44%
Pollution from industrial development*	37%	39%	38%
Pollution of local lakes and streams*	32%	43%	37%
Disposal of hazardous waste	35%	37%	36%
Pollution of offshore waters	36%	35%	36%
Disposal of sewage*	32%	35%	34%
Pollution from other countries	34%	30%	32%
Pollution from landfills	33%	30%	32%
Disruption of views and landscapes*	20%	30%	25%
Chi-square $p < 0.05$, * = not significant			
Mean	5	5	5
ANOVA $p =$ not significant			
Number of Heads of Household	243	213	456

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Table 4-101: Avoidance of subsistence foods, six communities combined, by gender, Iñupiat, 2016

Avoided eating subsistence foods in last year because they might be contaminated	Male	Female	Total
Yes	29%	36%	32%
No	71%	64%	68%
Total	100%	100%	100%
Chi-square $p = 0.00$			
Number of Heads of Household	263	251	514

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Table 4-102: Satisfaction with health of the environment in your area, six communities combined, by gender, Iñupiat, 2016

Response Category	Male	Female	Total
Very satisfied	26%	25%	26%
Somewhat satisfied	44%	51%	48%
Neither satisfied nor dissatisfied	18%	11%	15%
Somewhat dissatisfied	11%	8%	10%
Very dissatisfied	1%	4%	3%
Total	100%	100%	100%
Mean, ANOVA p = 0.00	4	4	4
Chi-square p = 0.00			
Number of Heads of Household	267	254	521

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Table 4-103: Participation in activities, six communities combined, by gender, Iñupiat, 2016

Participated in Past 12 Months	Male	Female	Total
Visit neighbors, friends, or relatives*	93%	95%	94%
Take part in Native festival*	81%	82%	82%
Hike, run, jog or walk	68%	67%	68%
Be out in the country	71%	59%	65%
Listen to or tell a Native story*	63%	65%	64%
Go to sports events	57%	59%	58%
Go snowmobiling or dog sledding	65%	41%	53%
Take part in Native traditional games*	53%	50%	52%
Boat or kayak	65%	37%	51%
Take part in Native dance	45%	55%	50%
Go sledding or snowboarding*	33%	32%	33%
Participate in sports	36%	24%	30%
Play basketball	32%	20%	26%
Swim*	26%	24%	25%
Go biking	27%	15%	21%
Chi-square p = 0.00, except * = not significant			
Index of 15 activities (mean)	8	7	8
Index of 4 Native activities (mean)	2	3	2
Index of 6 outdoor activities (mean)	3	2	3
ANOVA p = 0.00			
Number of Heads of Household	272	258	530

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Table 4-104: Satisfaction with quality of recreational facilities in this community, six communities combined, by gender, Iñupiat, 2016

Response Category	Male	Female	Total
Very satisfied	26%	17%	22%
Somewhat satisfied	32%	33%	33%
Neither satisfied nor dissatisfied	15%	15%	15%
Somewhat dissatisfied	15%	15%	15%
Very dissatisfied	12%	20%	16%
Total	100%	100%	100%
Chi-square p = 0.00			
Mean, ANOVA p = 0.00	3	3	3
Number of Heads of Household	267	254	521

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4.2.4.3 Health and Safety Indicators

Table 4-105: How do you feel about your health in general, six communities combined, by gender, Iñupiat, 2016

Response Category	Male	Female	Total
Excellent	15%	12%	13%
Very good	25%	20%	23%
Good	33%	38%	35%
Fair	22%	24%	23%
Poor	5%	6%	6%
Total	100%	100%	100%
Chi-square p = 0.00			
Number of Heads of Household	268	249	517

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Table 4-106: How satisfied are you with your health, six communities combined, by gender, Iñupiat, 2016

Response Category	Male	Female	Total
Very satisfied	31%	27%	29%
Somewhat satisfied	46%	47%	47%
Neither satisfied nor dissatisfied	14%	12%	13%
Somewhat dissatisfied	5%	10%	8%
Very dissatisfied	4%	4%	4%
Total	100%	100%	100%
Chi-square p = 0.00			
Number of Heads of Household	268	253	521

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Table 4-107: Percentage of Iñupiat households with families affected by health problem, six communities, 2016

Health Problem	Male	Female	Total
Cancer	71%	82%	76%
Arthritis	64%	70%	67%
Alcoholism or drug addiction	50%	64%	57%
Heart disease *	41%	44%	43%
Diabetes	38%	44%	41%
Accidental injury *	40%	40%	40%
Lung disease*	36%	42%	39%
Obesity	24%	43%	34%
Joint and bone diseases	30%	29%	30%
Mental illness	24%	30%	27%
Eye *	23%	30%	26%
Chi-square $p < 0.01$, except * = not significant			
Mean, ANOVA $p = 0.00$	4	5	5
Number of Heads of Household	269	253	522

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Table 4-108: Iñupiat head of household victim, six communities combined, by gender, 2016

Victim Measure for Past 12 Months	Male	Female	Total
Theft	15%	11%	13%
Domestic violence	8%	14%	11%
Other abuse	6%	8%	7%
Elder abuse	1%	5%	3%
Sexual assault*	1%	1%	1%
Victim of one or more offenses	25%	26%	25%
Chi-square $p < 0.05$, except * = not significant			
Number of Heads of Household	240	232	472

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Table 4-109: Problems related to drugs or alcohol in Iñupiat home today, six communities combined, by gender, 2016

Response Category	Male	Female	Total
Yes often	3%	8%	5%
Yes sometimes	34%	30%	32%
No never	63%	62%	62%
Total	100%	100%	100%
Chi-square $p < 0.05$			
Number of Heads of Household	250	242	492

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Table 4-110: Indicators of depression, six communities combined, by gender, Iñupiat, 2016

Depression Measure	Response Category	Male	Female	Total
How much of the time in the last month have you been a nervous person	All the time	1%	1%	1%
	Most of the Time	2%	3%	2%
	Some of the Time	19%	20%	19%
	Very Seldom	25%	30%	28%
	Not at all	53%	47%	50%
	Total	100%	100%	100%
	Chi-square p = not significant			
How much time in last month have you felt calm and peaceful	All the time	26%	20%	23%
	Most of the Time	55%	56%	55%
	Some of the Time	12%	17%	14%
	Very Seldom	3%	2%	3%
	Not at all	4%	5%	5%
	Total	100%	100%	100%
	Chi-square p = 0.00			
How much time in last month have you felt downhearted and blue	All the time	<1%	1%	1%
	Most of the Time	4%	4%	4%
	Some of the Time	21%	32%	27%
	Very Seldom	32%	33%	32%
	Not at all	43%	31%	36%
	Total	100%	100%	100%
	Chi-square p = 0.00			
How much time in last month have you been a happy person	All the time	29%	29%	29%
	Most of the Time	56%	53%	55%
	Some of the Time	11%	14%	13%
	Very Seldom	2%	1%	1%
	Not at all	1%	2%	2%
	Total	100%	100%	100%
	Chi-square p = 0.00			
How much time in last month have you felt so down nothing could cheer you up	All the time	2%	1%	1%
	Most of the Time	5%	5%	5%
	Some of the Time	14%	14%	14%
	Very Seldom	18%	29%	24%
	Not at all	61%	51%	56%
	Total	100%	100%	100%
	Chi-square p = 0.00			
Index of Depression Indicators (5-25)	ANOVA p = 0.00	9	10	9
Number of Heads of Household		241	235	476

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Table 4-111: Indicators of social support, six communities combined, by gender, Iñupiat, 2016

Social Support Measure	Response Category	Male	Female	Total
Someone you can count on to listen to you when you need to talk	All the time	33%	49%	42%
	Most of the time	40%	33%	36%
	Some of the time	19%	14%	16%
	Very seldom	7%	3%	5%
	Not at all	2%	2%	2%
	Total	100%	100%	100%
Someone you can count on when you need advice	All the time	32%	44%	38%
	Most of the time	40%	35%	37%
	Some of the time	20%	14%	17%
	Very seldom	8%	5%	6%
	Not at all	<1%	1%	1%
	Total	100%	100%	100%
	Chi-square p = 0.00			
Someone who shows you love and affection	All the time	46%	61%	54%
	Most of the time	36%	27%	31%
	Some of the time	15%	8%	12%
	Very seldom	2%	3%	3%
	Not at all	1%	1%	1%
	Total	100%	100%	100%
	Chi-square p = 0.00			
Someone to have a good time with	All the time	37%	54%	46%
	Most of the time	40%	35%	37%
	Some of the time	17%	8%	12%
	Very seldom	4%	3%	4%
	Not at all	2%	1%	2%
	Total	100%	100%	100%
	Chi-square p = 0.00			
Someone to confide in or talk about yourself and your problems	All the time	32%	50%	41%
	Most of the time	35%	31%	33%
	Some of the time	21%	10%	15%
	Very seldom	7%	7%	7%
	Not at all	6%	2%	4%
	Total	100%	100%	100%
	Chi-square p = 0.00			

Table 4-111: Indicators of social support, six communities combined, by gender, Iñupiat, 2016, continued

Social Support Measure	Response Category	Male	Female	Total
Someone to get together with for relaxation	All the time	33%	47%	40%
	Most of the time	37%	36%	36%
	Some of the time	22%	11%	16%
	Very seldom	6%	6%	6%
	Not at all	3%	1%	2%
	Total	100%	100%	100%
	Chi-square p = 0.00			
Someone to do something enjoyable with	All the time	38%	51%	45%
	Most of the time	43%	33%	38%
	Some of the time	14%	12%	13%
	Very seldom	4%	3%	3%
	Not at all	2%	1%	1%
	Total	100%	100%	100%
	Chi-square p = 0.00			
Index of availability of social supports - grouped values (7-35)	35	20%	33%	27%
	30-34	20%	25%	23%
	25-29	37%	27%	32%
	19-24	18%	11%	14%
	18 or less	6%	3%	4%
	Total	100%	100%	100%
	Chi-square p = 0.00			
	Mean, ANOVA p = 0.00			
Number of Heads of Household		227	237	464

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Table 4-112: Satisfaction with health, public safety, and court services, six communities combined, by gender, Iñupiat, 2016

Satisfaction Measure	Response Category	Male	Female	Total
Satisfaction with quality of health services in your community	Very satisfied	28%	21%	24%
	Somewhat satisfied	31%	29%	30%
	Neither satisfied nor dissatisfied	18%	11%	14%
	Somewhat dissatisfied	14%	16%	15%
	Very dissatisfied	10%	23%	17%
	Total	100%	100%	100%
	Chi-square p = 0.00			
Satisfaction with public safety services	Very satisfied	20%	20%	20%
	Somewhat satisfied	43%	28%	35%
	Neither satisfied nor dissatisfied	14%	21%	18%
	Somewhat dissatisfied	12%	16%	14%
	Very dissatisfied	10%	15%	13%
	Total	100%	100%	100%
	Chi-square p = 0.00			
Satisfaction with courts on the North Slope	Very satisfied	14%	13%	13%
	Somewhat satisfied	27%	27%	27%
	Neither satisfied nor dissatisfied	32%	22%	27%
	Somewhat dissatisfied	16%	17%	16%
	Very dissatisfied	12%	22%	17%
	Total	100%	100%	100%
	Chi-square p = 0.00			
Number of Heads of Household		265	248	513

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4.2.4.4 Cultural Continuity Indicators

Table 4-113: Participation in subsistence activities, six communities combined, by gender, Iñupiat, 2016

Participation Measure	Subsistence Activity in Past 12 Months			
	Male	Female	Total	
Participation Activity	Help whaling crews by cooking, giving money or supplies, cutting meat *	68%	69%	68%
	Preserve meat or fish	62%	66%	64%
	Skinned and butchered a caribou	70%	55%	63%
	Fish	69%	53%	61%
	Was a member of a whaling crew	59%	51%	55%
	Hunt caribou, moose, or sheep	70%	35%	52%
	Pick berries *	47%	47%	47%
	Hunt waterfowl	61%	32%	46%
	Skinned and butchered a seal	46%	43%	45%
	Hunt seal or ugruk	56%	27%	41%
	Skinned and butchered another animal	42%	30%	36%
	Make Native handicrafts *	28%	35%	32%
	Sew skins, make parkas and kamiks (boots)	15%	44%	29%
	Make sleds or boats	40%	11%	25%
	Gather greens, roots, or other plants *	21%	28%	25%
	Hunt walrus	33%	12%	22%
	Gather eggs	22%	20%	21%
	Hunted ptarmigan	24%	13%	18%
	Hunted wolf or wolverine	18%	5%	11%
	Number of Subsistence Activities	Captained a whaling crew	12%	5%
Hunted polar bear		13%	4%	8%
Trap		9%	5%	7%
5 or more		61%	40%	50%
3-4		16%	26%	21%
1-2		13%	23%	18%
None		10%	11%	10%
Total		100%	100%	100%
Chi-square p < 0.01, except * = not significant				
Mean	5	4	5	
ANOVA p = 0.00				
Number of Heads of Household		275	260	535

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Table 4-114: Iñupiat subsistence participation by month, six communities combined, by gender, 2016

Participation Measure	Month Participation in Past 12 Months			
	Male	Female	Total	
Participation by Month	January	18%	15%	17%
	February	17%	14%	15%
	March	23%	17%	20%
	April	42%	34%	38%
	May	39%	30%	34%
	June	32%	31%	32%
	July	45%	43%	44%
	August	53%	40%	47%
	September	40%	34%	37%
	October	31%	27%	29%
	November	19%	16%	17%
	December	14%	16%	15%
Number of Months	No months	24%	34%	29%
	1-4 months	44%	41%	42%
	5-8 months	19%	14%	16%
	9-12 months	14%	11%	12%
	Total	100%	100%	100%
	Chi-square p = 0.00			
	Mean, ANOVA p = 0.00			
Number of Heads of Household				
	272	255	527	

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Table 4-115: Traditional education, six communities combined, by gender, Iñupiat, 2016

Skill Measure	Traditional Skill	Male	Female	Total
Individual Skill	Cook and prepare traditional Native foods	88%	92%	90%
	Hunt and fish	95%	79%	87%
	Drive a snowmachine	92%	83%	87%
	Preserve meat and fish	87%	83%	85%
	Know the names of past generations of Iñupiat relatives	82%	84%	83%
	Skin and butcher a caribou	89%	76%	82%
	Overnight on the land	90%	72%	81%
	Learn stories passed on by parents, grandparents	82%	75%	78%
	Learned to serve on a whaling crew	83%	67%	75%
	Protect land and resources	80%	68%	74%
	Skin and butcher a seal	78%	68%	73%
	Read the weather	87%	55%	71%
	Skin and butcher another animal	80%	61%	70%
	Know when berries are ripe and where to find them	73%	66%	69%
	Hunt seal	84%	46%	65%
	Learn traditional dances and drumming	52%	64%	58%
	Make Native arts and crafts	60%	54%	57%
	Learn traditional songs	51%	62%	57%
	Fix a snowmachine	80%	26%	53%
	Take care of and sew skins	53%	54%	53%
	Know Inupiaq names of different types of snow	64%	40%	52%
	Repair traditional clothing	49%	56%	52%
	Navigate at sea	75%	28%	51%
	Make and maintain an ice cellar	67%	33%	50%
	Make traditional clothing	41%	55%	48%
	Makes sleds and boats	72%	21%	47%
Take care of and handle a dog team	37%	22%	29%	
Number of traditional skills learned	Five or less	5%	9%	7%
	6-10	8%	27%	18%
	11-15	29%	32%	31%
	16-20	58%	31%	44%
	Total	100%	100%	100%
	Chi-square p = 0.00			
	Mean, ANOVA p = 0.00	15	12	14
Number of Heads of Household		275	260	535

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Table 4-116: Understanding, speaking, and reading Iñupiaq, six communities combined, by gender, Iñupiat, 2016

Language Measure	Response Category	Male	Female	Total
Ability to understand Iñupiaq	Very Well	36%	43%	39%
	Relatively well	29%	19%	24%
	With effort	14%	18%	16%
	A few words	20%	19%	20%
	Not at all	1%	1%	1%
	Total	100%	100%	100%
	Chi-square p < 0.001			
Ability to speak Iñupiaq	Very Well	29%	39%	34%
	Relatively well	17%	9%	13%
	With effort	19%	24%	21%
	A few words	32%	27%	29%
	Not at all	3%	3%	3%
	Total	100%	100%	100%
	Chi-square p < 0.001			
Ability to read Iñupiaq	Very Well	22%	34%	28%
	Relatively well	21%	21%	21%
	With effort	16%	20%	18%
	A few words	31%	16%	23%
	Not at all	11%	10%	10%
	Total	100%	100%	100%
	Chi-square p < 0.001			
Ability to write Iñupiaq	Very Well	21%	30%	26%
	Relatively well	11%	17%	14%
	With effort	13%	19%	16%
	A few words	32%	19%	25%
	Not at all	23%	15%	19%
	Total	100%	100%	100%
	Chi-square p < 0.001			
Number of Heads of Household		274	258	532

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Table 4-117: Importance of Iñupiat values, six communities combined, by gender, Iñupiat, 2016

Iñupiaq Value Measure	Response Category	Male	Female	Total
How important is use of Iñupiaq language	Very important	67%	76%	71%
	Important	29%	22%	26%
	Not very important	4%	2%	3%
	Not at all important	1%		<1%
	Total	100%	100%	100%
	Chi-square p < 0.01			
How important is sharing and helping	Very important	78%	86%	82%
	Important	22%	13%	18%
	Not very important	<1%	1%	<1%
	Not at all important			
	Total	100%	100%	100%
	Chi-square p < 0.01			
How important is respect for others	Very important	89%	90%	89%
	Important	11%	9%	10%
	Not very important		2%	1%
	Not at all important			
	Total	100%	100%	100%
	Chi-square p < 0.01			
How important is cooperation	Very important	77%	81%	79%
	Important	23%	18%	20%
	Not very important		1%	1%
	Not at all important			
	Total	100%	100%	100%
	Chi-square p < 0.01			
How important is respect for elders	Very important	93%	95%	94%
	Important	7%	5%	6%
	Not very important			
	Not at all important			
	Total	100%	100%	100%
	Chi-square p = not significant			
How important is love for children	Very important	87%	94%	91%
	Important	13%	6%	9%
	Not very important			
	Not at all important			
	Total	100%	100%	100%
	Chi-square p < 0.01			

Table 4-117: Importance of Iñupiat values, six communities combined, by gender, Iñupiat, 2016, continued

Iñupiaq Value Measure	Response Category	Male	Female	Total
How important is hard work	Very important	76%	81%	79%
	Important	20%	17%	19%
	Not very important	3%	2%	2%
	Not at all important	1%		<1%
	Total	100%	100%	100%
	Chi-square p = not significant			
How important is knowledge of family tree	Very important	71%	80%	76%
	Important	26%	18%	22%
	Not very important	3%	2%	2%
	Not at all important		1%	<1%
	Total	100%	100%	100%
	Chi-square p < 0.01			
How important is avoidance of conflict	Very important	55%	67%	61%
	Important	36%	26%	31%
	Not very important	10%	7%	8%
	Not at all important			
	Total	100%	100%	100%
	Chi-square p < 0.01			
How important is the way I view nature	Very important	90%	89%	90%
	Important	10%	10%	10%
	Not very important		<1%	<1%
	Not at all important			
	Total	100%	100%	100%
	Chi-square p < 0.01			
How important is religious and spiritual beliefs	Very important	66%	80%	73%
	Important	29%	17%	23%
	Not very important	3%	3%	3%
	Not at all important	2%	1%	1%
	Total	100%	100%	100%
	Chi-square p < 0.01			
How important is humor	Very important	71%	84%	78%
	Important	28%	15%	21%
	Not very important	1%	1%	1%
	Not at all important			
	Total	100%	100%	100%
	Chi-square p < 0.01			

Table 4-117: Importance of Iñupiat values, six communities combined, by gender, Iñupiat, 2016, continued

Iñupiaq Value Measure	Response Category	Male	Female	Total
How important are family roles	Very important	72%	81%	77%
	Important	26%	15%	21%
	Not very important	1%	4%	3%
	Not at all important		<1%	<1%
	Total	100%	100%	100%
	Chi-square p < 0.01			
How important is the Iñupiaq food I eat	Very important	71%	83%	77%
	Important	25%	15%	20%
	Not very important	3%	2%	3%
	Not at all important			
	Total	100%	100%	100%
	Chi-square p < 0.01			
How important is the hunting and fishing I do	Very important	79%	85%	82%
	Important	17%	13%	15%
	Not very important	3%	2%	3%
	Not at all important	1%	<1%	<1%
	Total	100%	100%	100%
	Chi-square p < 0.01			
How important is preserving of Iñupiat foods	Very important	79%	85%	82%
	Important	19%	13%	16%
	Not very important	1%	2%	1%
	Not at all important	1%		<1%
	Total	100%	100%	100%
	Chi-square p < 0.01			
Count of "Very Important" Values	Mean, ANOVA p = 0.00	12	13	13
	Number of Heads of Household	273	259	532

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Table 4-118: Satisfaction with community's promotion of Iñupiat values, six communities combined, by gender, Iñupiat, 2016

Satisfaction Measure	Response Category	Male	Female	Total
How satisfied with job community doing promoting use of Inupiaq language	Very satisfied	33%	31%	32%
	Somewhat satisfied	43%	39%	41%
	Neither satisfied nor dissatisfied	11%	10%	11%
	Somewhat dissatisfied	11%	16%	14%
	Very dissatisfied	2%	3%	3%
	Total	100%	100%	100%
	Chi-square p < 0.05			
How satisfied with job community doing promoting sharing and helping	Very satisfied	51%	53%	52%
	Somewhat satisfied	40%	33%	36%
	Neither satisfied nor dissatisfied	7%	9%	8%
	Somewhat dissatisfied	2%	4%	3%
	Very dissatisfied	<1%	1%	1%
	Total	100%	100%	100%
	Chi-square p = not significant			
How satisfied with job community doing promoting respect for others	Very satisfied	50%	45%	47%
	Somewhat satisfied	30%	30%	30%
	Neither satisfied nor dissatisfied	14%	14%	14%
	Somewhat dissatisfied	5%	8%	6%
	Very dissatisfied	1%	3%	2%
	Total	100%	100%	100%
	Chi-square p = not significant			
How satisfied with job community doing promoting cooperation	Very satisfied	40%	43%	41%
	Somewhat satisfied	43%	37%	40%
	Neither satisfied nor dissatisfied	12%	9%	10%
	Somewhat dissatisfied	3%	7%	5%
	Very dissatisfied	3%	3%	3%
	Total	100%	100%	100%
	Chi-square p < 0.05			
How satisfied with job community doing promoting respect for elders	Very satisfied	64%	66%	65%
	Somewhat satisfied	27%	18%	23%
	Neither satisfied nor dissatisfied	4%	5%	5%
	Somewhat dissatisfied	3%	7%	5%
	Very dissatisfied	2%	3%	2%
	Total	100%	100%	100%
	Chi-square p < 0.05			

Table 4-118: Satisfaction with community's promotion of Iñupiat values, six communities combined, by gender, Iñupiat, 2016, continued

Satisfaction Measure	Response Category	Male	Female	Total
How satisfied with job community doing promoting love for children	Very satisfied	62%	64%	63%
	Somewhat satisfied	26%	21%	24%
	Neither satisfied nor dissatisfied	7%	6%	7%
	Somewhat dissatisfied	4%	6%	5%
	Very dissatisfied	1%	2%	1%
	Total	100%	100%	100%
	Chi-square p = not significant			
How satisfied with job community doing promoting hard work	Very satisfied	43%	51%	47%
	Somewhat satisfied	33%	21%	27%
	Neither satisfied nor dissatisfied	15%	12%	14%
	Somewhat dissatisfied	7%	12%	9%
	Very dissatisfied	2%	4%	3%
	Total	100%	100%	100%
	Chi-square p < 0.05			
How satisfied with job community doing promoting knowledge of their family tree	Very satisfied	47%	51%	49%
	Somewhat satisfied	35%	28%	32%
	Neither satisfied nor dissatisfied	11%	12%	12%
	Somewhat dissatisfied	6%	7%	7%
	Very dissatisfied	1%	1%	1%
	Total	100%	100%	100%
	Chi-square p = not significant			
How satisfied with job community doing promoting avoidance of conflict	Very satisfied	36%	37%	36%
	Somewhat satisfied	38%	29%	33%
	Neither satisfied nor dissatisfied	16%	15%	15%
	Somewhat dissatisfied	8%	12%	10%
	Very dissatisfied	2%	7%	5%
	Total	100%	100%	100%
	Chi-square p < 0.05			
How satisfied with job community doing promoting respect for nature	Very satisfied	56%	55%	56%
	Somewhat satisfied	25%	24%	24%
	Neither satisfied nor dissatisfied	11%	8%	9%
	Somewhat dissatisfied	6%	10%	8%
	Very dissatisfied	2%	2%	2%
	Total	100%	100%	100%
	Chi-square p < 0.05			

Table 4-118: Satisfaction with community's promotion of Iñupiat values, six communities combined, by gender, Iñupiat, 2016, continued

Satisfaction Measure	Response Category	Male	Female	Total
How satisfied with job community doing promoting spirituality	Very satisfied	48%	55%	51%
	Somewhat satisfied	33%	25%	29%
	Neither satisfied nor dissatisfied	13%	12%	12%
	Somewhat dissatisfied	6%	6%	6%
	Very dissatisfied	1%	3%	2%
	Total	100%	100%	100%
	Chi-square p < 0.05			
How satisfied with job community doing promoting humor	Very satisfied	51%	55%	53%
	Somewhat satisfied	36%	32%	34%
	Neither satisfied nor dissatisfied	10%	8%	9%
	Somewhat dissatisfied	2%	5%	4%
	Very dissatisfied	<1%	1%	1%
	Total	100%	100%	100%
	Chi-square p < 0.05			
How satisfied with job community doing promoting family roles	Very satisfied	47%	49%	48%
	Somewhat satisfied	39%	30%	34%
	Neither satisfied nor dissatisfied	11%	10%	10%
	Somewhat dissatisfied	2%	8%	5%
	Very dissatisfied	1%	4%	3%
	Total	100%	100%	100%
	Chi-square p < 0.05			
How satisfied with job community doing promoting eating traditional or wild foods	Very satisfied	65%	66%	66%
	Somewhat satisfied	28%	24%	26%
	Neither satisfied nor dissatisfied	5%	5%	5%
	Somewhat dissatisfied	2%	4%	3%
	Very dissatisfied		1%	1%
	Total	100%	100%	100%
	Chi-square p < 0.05			
How satisfied with job community doing promoting hunting and fishing	Very satisfied	63%	67%	65%
	Somewhat satisfied	31%	22%	26%
	Neither satisfied nor dissatisfied	4%	5%	5%
	Somewhat dissatisfied	2%	5%	3%
	Very dissatisfied	<1%	1%	<1%
	Total	100%	100%	100%
	Chi-square p < 0.05			

Table 4-118: Satisfaction with community's promotion of Iñupiat values, six communities combined, by gender, Iñupiat, 2016, continued

Satisfaction Measure	Response Category	Male	Female	Total
How satisfied with job community doing promoting preserving of traditional or wild foods	Very satisfied	61%	63%	62%
	Somewhat satisfied	32%	24%	28%
	Neither satisfied nor dissatisfied	6%	5%	5%
	Somewhat dissatisfied	1%	6%	4%
	Very dissatisfied	<1%	2%	1%
	Total	100%	100%	100%
	Chi-square $p < 0.05$			
Satisfaction with Community Promotion of Values (1-5)	Mean	4	4	4
	ANOVA $p = 0.00$			
Number of Heads of Household		271	252	523

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Table 4-119: Which lifestyle would you prefer, six communities combined, by gender, Iñupiat, 2016

Lifestyle Measure	Male	Female	Total
Working on a wage job	9%	8%	9%
Harvesting or processing own food	11%	11%	11%
Both	80%	80%	80%
Total	100%	100%	100%
Number of Heads of Household	264	252	516

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4.2.4.5 Education Indicators

Table 4-120: Level of formal education completed, six communities combined, by gender, Iñupiat, 2016

Education Measure	Male	Female	Total
Less than elementary school	1%	1%	1%
Elementary school	12%	11%	12%
High school	59%	65%	62%
Vocational or associates degree	22%	15%	18%
College or university degree	5%	8%	7%
Total	100%	100%	100%
Chi-square $p = 0.00$			
Number of Heads of Household	270	258	528

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Table 4-121: Satisfaction with formal schooling and formal education in community, six communities combined, by gender, Iñupiat, 2016

Satisfaction Measure	Response Category			
Satisfaction with formal schooling and training you received	Very satisfied	45%	44%	44%
	Somewhat satisfied	39%	41%	40%
	Neither satisfied nor dissatisfied	9%	8%	9%
	Somewhat dissatisfied	4%	5%	4%
	Very dissatisfied	3%	2%	2%
	Total	100%	100%	100%
	Chi-square p < 0.005			
Satisfaction with quality of formal education in your community	Very satisfied	34%	32%	33%
	Somewhat satisfied	45%	39%	42%
	Neither satisfied nor dissatisfied	12%	8%	10%
	Somewhat dissatisfied	7%	15%	11%
	Very dissatisfied	2%	6%	4%
	Total	100%	100%	100%
	Chi-square p < 0.005			
Number of Heads of Household		268	254	522

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4.2.4.6 Local Control Indicators

Table 4-122: Knowledge and interest in politics, six communities combined, by gender, Iñupiat, 2016

Political Measure	Response Category	Male	Female	Total
How knowledgeable about politics in general	Very knowledgeable	15%	16%	15%
	Somewhat knowledgeable	54%	42%	48%
	Not very knowledgeable	24%	27%	26%
	Not at all knowledgeable	7%	15%	11%
	Total	100%	100%	100%
	Chi-square p = 0.00			
So many people vote in national elections it does not make difference if I vote or not	Completely disagree	38%	34%	36%
	Partly disagree	18%	19%	18%
	Partly agree	30%	33%	31%
	Completely agree	15%	14%	15%
	Total	100%	100%	100%
	Chi-square p = 0.00			
How interested are you in politics in general	Very interested	18%	13%	16%
	Interested	39%	36%	38%
	Not interested	42%	50%	46%
	Total	100%	100%	100%
	Chi-square p = not significant			
Index of Political Engagement (3-11)	Mean	10	10	10
	ANOVA p = not significant			
Number of Heads of Household		262	255	517

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Table 4-123: Voting participation, six communities combined, by gender, Iñupiat, 2016

Voting Participation Measure	Response Category	Male	Female	Total
Vote in city election	Yes	59%	65%	62%
	No	41%	35%	38%
	Total	100%	100%	100%
	Chi-square p < 0.05			
Vote in traditional council election	Yes	55%	61%	58%
	No	45%	39%	42%
	Total	100%	100%	100%
	Chi-square p < 0.05			
Vote in village corporation election	Yes	65%	70%	68%
	No	35%	30%	32%
	Total	100%	100%	100%
	Chi-square p < 0.05			
Vote in Native regional corporation election	Yes	77%	82%	80%
	No	23%	18%	20%
	Total	100%	100%	100%
	Chi-square p < 0.05			
Vote in North Slope Borough election	Yes	71%	76%	73%
	No	29%	24%	27%
	Total	100%	100%	100%
	Chi-square p < 0.05			
Vote in ICAS election	Yes	45%	54%	50%
	No	55%	46%	50%
	Total	100%	100%	100%
	Chi-square p < 0.05			
Vote in state election	Yes	68%	66%	67%
	No	32%	34%	33%
	Total	100%	100%	100%
	Chi-square p < 0.05			
Vote in national election	Yes	58%	58%	58%
	No	42%	42%	42%
	Total	100%	100%	100%
	Chi-square p < 0.05			
Number of Elections Voted	0	16%	14%	15%
	1	5%	5%	5%
	2	12%	12%	12%
	3	16%	8%	12%
	4	51%	61%	56%
	Total	100%	100%	100%
	Chi-square p < 0.05			
Mean, ANOVA p = 0.00		3	3	3
Number of Heads of Household		270	254	524

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Table 4-124: How institutions are meeting needs, six communities combined, by gender, Iñupiat, 2016

Institution Measure	Response Category	Male	Female	Total
City council meeting needs	Yes	45%	35%	40%
	No	55%	65%	60%
	Total	100%	100%	100%
	Chi-square p < 0.05			
Tribal council or Native village meeting needs	Yes	58%	59%	58%
	No	42%	41%	42%
	Total	100%	100%	100%
	Chi-square p < 0.05			
Village corporation meeting needs	Yes	60%	66%	63%
	No	40%	34%	37%
	Total	100%	100%	100%
	Chi-square p < 0.05			
Native regional corporation meeting needs	Yes	70%	81%	76%
	No	30%	19%	24%
	Total	100%	100%	100%
	Chi-square p < 0.05			
North Slope Borough meeting needs	Yes	60%	61%	61%
	No	40%	39%	39%
	Total	100%	100%	100%
	Chi-square p < 0.05			
ICAS meeting needs	Yes	38%	35%	37%
	No	62%	65%	63%
	Total	100%	100%	100%
	Chi-square p < 0.05			
State government meeting needs	Yes	35%	48%	41%
	No	65%	52%	59%
	Total	100%	100%	100%
	Chi-square p < 0.05			
Federal government meeting needs	Yes	30%	37%	33%
	No	70%	63%	67%
	Total	100%	100%	100%
	Chi-square p = not significant			
Number of Institutions Meeting Needs	Mean, ANOVA p = not significant	3	3	3
Number of Heads of Household		248	230	478

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Table 4-125: Satisfaction with management of natural resources, six communities combined, by gender, Iñupiat, 2016

Natural Resource Measure	Response Category	Male	Female	Total
How satisfied with influence Iñupiat have on management of natural resources like oil, gas, and minerals	Very satisfied	17%	16%	16%
	Somewhat satisfied	31%	40%	35%
	Neither satisfied nor dissatisfied	20%	21%	20%
	Somewhat dissatisfied	18%	15%	16%
	Very dissatisfied	15%	8%	11%
	Total	100%	100%	100%
	Chi-square p < 0.05			
How satisfied with influence Iñupiat have on management of natural resources like fish and caribou	Very satisfied	39%	37%	38%
	Somewhat satisfied	37%	40%	39%
	Neither satisfied nor dissatisfied	9%	8%	8%
	Somewhat dissatisfied	11%	12%	12%
	Very dissatisfied	3%	2%	3%
	Total	100%	100%	100%
	Chi-square p < 0.05			
How satisfied with influence Iñupiat have on management of natural resources like marine mammals	Very satisfied	37%	39%	38%
	Somewhat satisfied	42%	35%	38%
	Neither satisfied nor dissatisfied	10%	11%	11%
	Somewhat dissatisfied	9%	12%	11%
	Very dissatisfied	1%	3%	2%
	Total	100%	100%	100%
	Chi-square p < 0.05			
How satisfied with influence Iñupiat have to reduce environmental problems in your area	Very satisfied	16%	22%	19%
	Somewhat satisfied	42%	35%	39%
	Neither satisfied nor dissatisfied	19%	25%	22%
	Somewhat dissatisfied	15%	13%	14%
	Very dissatisfied	7%	5%	6%
	Total	100%	100%	100%
	Chi-square p < 0.05			
Number of Heads of Household		261	248	509

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4.2.4.7 Overall Well-being Indicators

Table 4-126: Considered moving from community, six communities combined, by gender, Iñupiat, 2016

Moving from Community Measure	Response Category	Male	Female	Total
Considered moving away from community in last five years	Yes	44%	50%	47%
	No	56%	50%	53%
	Total	100%	100%	100%
	Chi-square p < 0.05			
Number of Heads of Household		268	257	525

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Table 4-127: Satisfaction with life in community and life as a whole, six communities combined, by gender, Iñupiat, 2016

Satisfaction Measure	Response Category	Male	Female	Total
Satisfaction with quality of life in this community	Very satisfied	42%	37%	39%
	Somewhat satisfied	42%	45%	44%
	Neither satisfied nor dissatisfied	6%	10%	8%
	Somewhat dissatisfied	9%	4%	6%
	Very dissatisfied	1%	4%	3%
	Total	100%	100%	100%
	Chi-square p < 0.05			
	Mean, ANOVA p < 0.05	4	4	4
Satisfaction with your life as a whole	Very satisfied	61%	58%	59%
	Somewhat satisfied	35%	35%	35%
	Neither satisfied nor dissatisfied	3%	5%	4%
	Somewhat dissatisfied	1%	1%	1%
	Very dissatisfied		1%	<1%
	Total	100%	100%	100%
	Chi-square p = not significant			
	Mean, ANOVA p = not significant	5	4	5
Number of Heads of Household		269	256	525

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4.2.5 International Comparisons

4.2.5.1 Economic Indicators

Table 4-128: Proportion of meat and fish that is traditional, international comparisons, Indigenous households, 2003, 2016

Contribution of Subsistence Foods	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway
Proportion of all meat and fish that is traditional food	More than half	47%	66%	55%	68%	37%	31%		67%	66%
	About half	28%	20%	25%	19%	28%	34%	29%	20%	21%
	Less than half	24%	12%	19%	13%	35%	31%	37%	12%	13%
	None	1%	2%	1%	<1%	<1%	4%	34%	1%	1%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00									
Proportion of all meat and fish harvested by household	More than half	23%	39%	30%	44%	20%	23%		46%	39%
	About half	24%	22%	25%	27%	16%	34%	23%	23%	16%
	Less than half	33%	31%	37%	21%	38%	34%	35%	24%	38%
	None	21%	9%	9%	9%	26%	8%	43%	8%	6%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00									
Number of Heads of Household		527	178	225	177	953	479	275	214	399

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Table 4-129: Satisfaction with amount of fish and game available locally and opportunities to hunt and fish, international comparisons, Indigenous heads of households, 2003, 2016

Satisfaction Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
Satisfaction with amount of fish and game available locally	Very satisfied	39%	47%	25%	63%	8%	8%	1%		39%	
	Somewhat satisfied	41%	39%	37%	32%	59%	32%	15%		38%	
	Neither satisfied nor dissatisfied	9%	8%	15%	4%	23%				10%	
	Somewhat dissatisfied	9%	4%	16%	1%	9%	34%	39%		10%	
	Very dissatisfied	2%	2%	7%		2%	25%	45%		3%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%		100%
	Chi-square p = 0.000										
Satisfaction with opportunities to hunt and fish	Very satisfied	48%	61%	41%	69%	13%	7%	2%	33%	58%	
	Somewhat satisfied	35%	30%	33%	27%	61%	25%	2%	47%	30%	
	Neither satisfied nor dissatisfied	8%	6%	10%	2%	15%			13%	6%	
	Somewhat dissatisfied	7%	2%	11%	1%	9%	40%	33%	5%	4%	
	Very dissatisfied	2%	1%	4%	1%	2%	28%	63%	2%	1%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.000										
Number of Heads of Household		516	174	213	176	812	342	256	199	373	

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Table 4-130: Did head of household have a job in the past 12 months, international comparisons, Indigenous heads, 2003, 2016

Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway
Yes	66%	69%	76%	73%	98%	72%	59%	64%	98%
No	34%	31%	24%	27%	2%	28%	41%	36%	2%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00									
Number of Heads of Household	523	182	226	173	671	483	281	214	309

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Table 4-131: Satisfaction with job held longest and job opportunities in community, international comparisons, Indigenous heads, 2003, 2016

Satisfaction Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
Satisfaction with job held longest	Very satisfied	64%	59%	63%	60%	35%	19%	17%	47%	68%	
	Somewhat satisfied	23%	33%	28%	35%	54%	51%	64%	45%	22%	
	Neither satisfied nor dissatisfied	8%	4%	7%	2%	8%			5%	9%	
	Somewhat dissatisfied	4%	4%	2%	2%	2%	24%	12%	3%	1%	
	Very dissatisfied	2%	1%	<1%	2%	<1%	6%	7%			
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square, p = 0.000										
Satisfaction with job opportunities in your community	Very satisfied	24%	11%	6%	15%	5%	3%	2%	4%	9%	
	Somewhat satisfied	34%	27%	25%	37%	29%	12%	2%	13%	19%	
	Neither satisfied nor dissatisfied	15%	20%	19%	14%	26%			28%	18%	
	Somewhat dissatisfied	16%	21%	29%	16%	35%	36%	30%	38%	34%	
	Very dissatisfied	12%	21%	20%	18%	5%	49%	66%	16%	20%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square, p = 0.000										
Number of Heads of Household		360	127	176	141	656	353	162	141	306	

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Table 4-132: 2016 Adjusted income by type, international comparisons, Indigenous households, 2003, 2016

Type of Household Income in Past 12 Months	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Norway	
Sales of carvings, skin clothing, furs, crafts, ivory and other similar goods	\$1,500 or under	89%	86%	86%	89%	99%	99%	99%	85%	
	\$1,501 to \$5,000	7%	9%	10%	8%	1%	1%	1%	10%	
	\$5,001 to \$8,000	2%	2%	2%	3%	<1%	<1%		2%	
	\$8,001 to \$12,000	1%	1%	1%		<1%			<1%	
	\$12,001 to \$16,000	<1%	<1%						<1%	
	\$16,001 to \$23,000	<1%	1%	1%		<1%				
	\$23,001 to \$28,000									
	\$28,001 to \$37,000	<1%		<1%					1%	
	\$37,001 to \$50,000	1%			<1%				1%	
	Above \$50,000	<1%	2%	<1%					1%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00									
Number of Heads of Household		492	161	219	170	854	349	161	295	

Table 4-132: 2016 Adjusted income by type, international comparisons, Indigenous households, 2003, 2016, continued

Type of Household Income in Past 12 Months	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Norway	
Self-employment	\$1,500 or under	82%	90%	91%	82%	85%	27%	55%	56%	
	\$1,501 to \$5,000	5%	3%	4%	2%	2%	29%	22%	5%	
	\$5,001 to \$8,000	2%	1%	2%	3%	1%	18%	9%	3%	
	\$8,001 to \$12,000	1%	2%	<1%	2%	1%	11%	7%	4%	
	\$12,001 to \$16,000	1%	2%		2%	1%	7%	6%	<1%	
	\$16,001 to \$23,000	1%	1%		1%	1%	7%	2%	3%	
	\$23,001 to \$28,000	1%		<1%	2%		1%		1%	
	\$28,001 to \$37,000	1%	1%			1%			2%	
	\$37,001 to \$50,000	2%			1%	3%	<1%		6%	
	Above \$50,000	3%	1%	2%	5%	6%			20%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00									
Number of Heads of Household		470	139	215	168	798	376	142	230	

Table 4-132: 2016 Adjusted income by type, international comparisons, Indigenous households, 2003, 2016, continued

Type of Household Income in Past 12 Months	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Norway	
Wage employment	\$1,500 or under	24%	11%	12%	9%	19%	30%	42%	2%	
	\$1,501 to \$5,000	4%		2%	7%	2%	25%	31%	1%	
	\$5,001 to \$8,000	3%	3%	2%	2%	1%	15%	9%	1%	
	\$8,001 to \$12,000	4%	2%	4%	2%	2%	13%	9%		
	\$12,001 to \$16,000	4%	4%	5%	6%	2%	7%	5%	<1%	
	\$16,001 to \$23,000	5%	7%	6%	5%	5%	8%	3%	3%	
	\$23,001 to \$28,000	4%	5%	6%	2%	3%	3%	1%	1%	
	\$28,001 to \$37,000	6%	8%	8%	6%	7%			2%	
	\$37,001 to \$50,000	8%	12%	17%	11%	11%			7%	
	Above \$50,000	38%	50%	38%	50%	49%			83%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00									
Number of Heads of Household		455	160	213	171	715	243	135	329	

Table 4-132: 2016 Adjusted income by type, international comparisons, Indigenous households, 2003, 2016, continued

Type of Household Income in Past 12 Months	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Norway	
Pensions, dividend checks, public assistance, shareholder dividends, student aid, disaster relief	\$1,500 or under	5%	3%	<1%	1%	63%	51%	43%	37%	
	\$1,501 to \$5,000	10%	6%	11%	8%	10%	38%	46%	11%	
	\$5,001 to \$8,000	17%	13%	12%	6%	3%	9%	10%	5%	
	\$8,001 to \$12,000	12%	17%	22%	20%	7%	1%	2%	4%	
	\$12,001 to \$16,000	12%	19%	15%	17%	4%	1%		5%	
	\$16,001 to \$23,000	12%	17%	17%	19%	8%	<1%		10%	
	\$23,001 to \$28,000	12%	8%	5%	14%	3%			2%	
	\$28,001 to \$37,000	8%	3%	9%	5%	2%			7%	
	\$37,001 to \$50,000	7%	8%	8%	6%	<1%			9%	
	Above \$50,000	6%	6%	1%	4%	1%			11%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00									
Number of Heads of Household		468	174	221	175	741	392	155	297	

Table 4-132: 2016 Adjusted income by type, international comparisons, Indigenous households, 2003, 2016, continued

Type of Household Income in Past 12 Months	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Norway
Other sources	\$1,500 or under	80%	90%	94%	91%		82%	88%	82%
	\$1,501 to \$5,000	6%	2%	2%	3%		12%	7%	6%
	\$5,001 to \$8,000	2%	1%	3%	<1%		5%	5%	4%
	\$8,001 to \$12,000	1%	1%		<1%		1%		3%
	\$12,001 to \$16,000	4%	<1%	1%	<1%		<1%	1%	1%
	\$16,001 to \$23,000	2%	1%	<1%	1%				2%
	\$23,001 to \$28,000	<1%			3%		1%		
	\$28,001 to \$37,000	1%	2%		1%				
	\$37,001 to \$50,000	1%	1%						2%
	Above \$50,000	3%	1%						1%
	Total	100%	100%	100%	100%		100%	100%	100%
	Chi-square p = 0.00								
Number of Heads of Household		459	128	217	171		181	103	239

Table 4-132: 2016 Adjusted income by type, international comparisons, Indigenous households, 2003, 2016, continued

Type of Household Income in Past 12 Months	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Norway	
All sources	\$1,500 or under	18%	1%	4%	1%	6%	29%	20%	1%	
	\$1,501 to \$5,000	3%	8%	14%	14%	3%	38%	62%	1%	
	\$5,001 to \$8,000	5%	4%	2%	4%	3%	17%	10%	<1%	
	\$8,001 to \$12,000	6%	8%	13%	8%	5%	7%	7%	3%	
	\$12,001 to \$16,000	8%	6%	10%	6%	9%	4%		1%	
	\$16,001 to \$23,000	6%	11%	13%	12%	14%	5%		6%	
	\$23,001 to \$28,000	3%	3%	7%	12%	4%	<1%		2%	
	\$28,001 to \$37,000	6%	11%	13%	11%	9%			7%	
	\$37,001 to \$50,000	10%	15%	12%	9%	15%	<1%		17%	
	Above \$50,000	34%	34%	13%	23%	33%			64%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00									
Number of Heads of Household		446	153	215	174	783	326	124	347	

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Table 4-133: Housing features, international comparisons, Indigenous households, 2003, 2016

Housing Measure	Housing Feature	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway
Housing Features	Electricity	98%	100%	99%	98%	99%	92%	98%	98%	100%
	Stove for cooking	95%	95%	95%	96%	99%	92%	96%	99%	100%
	Central heating or electric	92%	91%	86%	88%	87%	81%	96%		98%
	Hot running water	89%	88%	81%	75%	85%	69%	95%	99%	100%
	Cold running water	92%	93%	82%	81%	86%	52%	98%	97%	100%
	Double glass windows	86%	89%	72%	83%	92%	81%	91%		99%
	Bath or shower	89%	91%	82%	79%	82%	52%	98%	98%	99%
	Indoor flushing toilet	87%	87%	83%	80%	67%	61%	98%	98%	99%
	Telephone	90%	88%	89%	88%	88%	42%	72%	98%	91%
	Septic tank, sewer connection	83%	83%	79%	77%	53%	25%	51%	92%	99%
	Store room	79%	82%	64%	60%	77%	53%	54%		95%
	View to check the weather	93%	93%	93%	85%	90%	2%	2%		98%
	Place to cut meat and fish	92%	86%	77%	79%	24%	53%	35%		77%
	Smoke detector	87%	87%	89%	87%	28%	7%	9%		99%
	Fire exit	80%	82%	79%	75%	26%	10%	6%		91%
	Place to sit outside	69%	51%	30%	39%	58%	8%	70%		97%
	Carbon monoxide detector	78%	44%	37%	28%	4%			89%	
	Connection to the internet	73%	40%	31%	41%	48%	5%	16%	73%	79%
Generator	48%	35%	31%	31%	2%	8%	4%	15%	14%	

Table 4-133: Housing features, international comparisons, Indigenous households, 2003, 2016, continued

Housing Measure	Housing Feature	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
Number of Features	10 or fewer	8%	8%	15%	21%	26%	84%	39%	92%	2%	
	11-15	20%	40%	54%	36%	65%	16%	60%	8%	16%	
	16-19	73%	52%	31%	42%	8%	<1%	<1%		82%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	
	Chi-square p = 0.00										
	Mean, ANOVA p = 0.00	16	15	14	14	12	8	11	10	16	
Number of Heads of Household		537	182	225	178	948	480	286	215	403	

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Table 4-134: Housing problems, international comparisons, Indigenous households, 2003, 2016

Housing Measure	Type of Housing Problem	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
Individual house problem	Draft from doors or windows	66%	66%	71%	79%	47%	73%	69%	22%	23%	
	Cold floors	49%	49%	51%	62%	46%	80%	83%	18%	16%	
	Too little space	39%	41%	51%	54%	25%	71%	83%	23%	20%	
	Frost on windows	48%	40%	53%	67%	24%	79%	68%	10%	10%	
	Shifts from active permafrost	40%	30%	38%	42%	8%	50%	62%	5%	9%	
	Generally cold	24%	17%	25%	24%	26%	63%	90%	4%	4%	
	Stale air	19%	28%	28%	24%	26%	46%	66%	5%	6%	
	Drafts from places other than doors and windows	36%	37%	43%	32%	28%			6%	7%	
	Water leaking from the ceiling	28%	26%	34%	33%	16%	52%	41%	3%	4%	
	Dampness	20%	14%	21%	34%	22%	56%	60%	5%	5%	
	Water that is not safe to drink at least some times of the year	11%	15%	12%	26%	9%	47%	86%	8%	7%	
Mold or mildew	29%	13%	27%	27%	11%	37%	35%	3%	5%		
Number of housing problems	None	10%	19%	9%	8%	28%	12%	11%	50%	47%	
	1-3	39%	36%	33%	31%	37%	30%	39%	42%	45%	
	4-6	29%	26%	33%	33%	22%	30%	28%	6%	7%	
	5 or more	22%	20%	24%	27%	12%	28%	22%	2%	1%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
Mean, ANOVA p = 0.00	4	4	5	5	3	5	4	1	1		
Number of Heads of Household		521	177	221	176	913	403	261	211	412	

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Table 4-135: Persons per household, international comparisons, Indigenous households, 2003, 2016

Number of People	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway
1	11%	7%	7%	4%	19%	7%	13%	20%	13%
2	21%	13%	12%	13%	25%	14%	21%	34%	27%
3-4	28%	44%	27%	28%	36%	38%	53%	32%	43%
5-6	26%	26%	26%	30%	14%	29%	10%	14%	16%
7-8	10%	10%	21%	21%	5%	10%	3%	<1%	1%
9 or more	4%	1%	7%	4%	1%	2%	<1%	<1%	<1%
Chi-square p = 0.00									
Mean, ANOVA p = 0.00	4	4	5	5	3	4	3	3	3
Number of Heads of Household	537	183	227	178	961	487	288	218	412

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Table 4-136: Economic satisfaction measures, international comparisons, Indigenous households, 2003, 2016

Satisfaction Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
Household income	Very satisfied	38%	29%	27%	31%	13%	6%	1%	14%	46%	
	Somewhat satisfied	38%	44%	44%	42%	52%	18%	18%	49%	34%	
	Neither satisfied nor dissatisfied	11%	8%	12%	11%	24%			25%	11%	
	Somewhat dissatisfied	7%	13%	12%	10%	9%	35%	36%	6%	7%	
	Very dissatisfied	6%	6%	4%	6%	2%	41%	45%	6%	2%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
	Mean, ANOVA p = 0.00	4	4	4	4	4	2	2	4	4	
Availability of goods in local stores	Very satisfied	10%	18%	10%	13%	7%	3%	7%	31%	26%	
	Somewhat satisfied	31%	39%	27%	37%	49%	25%	44%	45%	38%	
	Neither satisfied nor dissatisfied	15%	15%	21%	14%	24%			11%	12%	
	Somewhat dissatisfied	29%	16%	26%	21%	15%	35%	31%	12%	18%	
	Very dissatisfied	15%	12%	16%	15%	5%	38%	19%	2%	6%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
	Mean, ANOVA p = 0.00	3	3	3	3	3	2	3	4	4	

Table 4-136: Economic satisfaction measures, international comparisons, Indigenous households, 2003, 2016, continued

Satisfaction Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
Transportation to and from community	Very satisfied	20%	28%	24%	33%	7%	2%	3%	13%	6%	
	Somewhat satisfied	27%	36%	38%	33%	54%	23%	16%	35%	15%	
	Neither satisfied nor dissatisfied	11%	15%	22%	13%	19%			19%	7%	
	Somewhat dissatisfied	19%	14%	9%	9%	14%	40%	28%	24%	27%	
	Very dissatisfied	22%	7%	7%	12%	5%	34%	53%	8%	45%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
Mean, ANOVA p = 0.00	3	4	4	4	3	2	2	3	2		
Cost of living in your community	Very satisfied	6%	10%	1%	8%	3%	2%	1%		22%	
	Somewhat satisfied	17%	23%	19%	24%	36%	9%	4%		39%	
	Neither satisfied nor dissatisfied	12%	16%	29%	13%	31%				22%	
	Somewhat dissatisfied	30%	27%	23%	27%	24%	38%	23%		13%	
	Very dissatisfied	35%	23%	28%	29%	5%	51%	71%		4%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
Mean, ANOVA p = 0.00	2	3	2	3	3	2	1		4		

Table 4-136: Economic satisfaction measures, international comparisons, Indigenous households, 2003, 2016, continued

Satisfaction Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
Standard of living	Very satisfied	26%	34%	24%	40%	16%	1%	2%		65%	
	Somewhat satisfied	38%	43%	50%	36%	59%	22%	18%		25%	
	Neither satisfied nor dissatisfied	13%	14%	9%	8%	15%				6%	
	Somewhat dissatisfied	15%	7%	10%	9%	7%	35%	36%		3%	
	Very dissatisfied	9%	2%	7%	8%	2%	42%	44%		1%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%		100%
	Chi-square p = 0.00										
Mean, ANOVA p = 0.00	4	4	4	4	4	4	2	2		5	
Ability to make ends meet	Very easily	15%	23%	12%	20%	22%	<1%	<1%		48%	
	Fairly easily	33%	30%	38%	34%	56%	17%	14%		38%	
	With some difficulty	45%	37%	46%	41%	19%	39%	34%		12%	
	With great difficulty	6%	10%	4%	5%	3%	43%	51%		2%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%		100%
	Chi-square p = 0.00										
Mean, ANOVA p = 0.00	3	3	3	3	3	3	2	2	NA	3	
Economic Satisfaction Index (1-24)		18	20	19	20	20	12	12	NA	20	
Number of Heads of Household		521	178	217	176	914	470	281	206	390	

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4.2.5.2 Physical Environment Indicators

Table 4-137: Environmental problems, international comparisons, Indigenous households, 2003 and 2016

Environmental Problem	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway
Pollution from industrial development	Yes	39%	32%	20%	27%	54%	66%	83%	43%	18%
	No	61%	68%	80%	73%	46%	34%	17%	57%	82%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00									
Pollution from other countries	Yes	32%	32%	31%	21%	60%	37%	22%	52%	54%
	No	68%	68%	69%	79%	40%	63%	78%	48%	46%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00									
Fish or animals that may be unsafe to eat	Yes	49%	44%	48%	40%	28%	70%	62%	11%	20%
	No	51%	56%	52%	60%	72%	30%	38%	89%	80%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00									
Erosion of coastal areas or riverbanks	Yes	81%	70%	50%	71%	25%	70%	78%	26%	25%
	No	19%	30%	50%	29%	75%	30%	22%	74%	75%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00									
Local contaminated sites	Yes	45%	48%	54%	47%	61%	96%	98%	21%	29%
	No	55%	52%	46%	53%	39%	4%	2%	79%	71%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00									
Climate change	Yes	85%	67%	68%	52%	75%	82%	93%	55%	66%
	No	15%	33%	32%	48%	25%	18%	7%	45%	34%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00									
Number of Heads of Household		457	158	204	163	750	427	256	194	354

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Table 4-138: Satisfaction with health of the environment and quality of recreational facilities in your area, international comparisons, Indigenous households, 2003 and 2016

Satisfaction Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
Satisfaction with health of the environment in your area	Very satisfied	26%	22%	13%	22%	5%	6%	2%	29%	21%	
	Somewhat satisfied	48%	55%	45%	51%	57%	19%	11%	50%	47%	
	Neither satisfied nor dissatisfied	14%	12%	23%	17%	27%			15%	17%	
	Somewhat dissatisfied	10%	9%	16%	4%	10%	47%	59%	4%	13%	
	Very dissatisfied	2%	2%	3%	6%	1%	28%	28%	1%	2%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
Mean, ANOVA p = 0.0		4	4	3	4	4	2	2	4	4	
Satisfaction with quality of recreational facilities in this community	Very satisfied	22%	31%	14%	14%	10%	5%	3%	25%	23%	
	Somewhat satisfied	33%	37%	42%	28%	44%	22%	7%	48%	43%	
	Neither satisfied nor dissatisfied	15%	11%	21%	13%	27%			19%	15%	
	Somewhat dissatisfied	15%	12%	21%	20%	15%	37%	30%	7%	14%	
	Very dissatisfied	16%	9%	2%	25%	3%	36%	60%	1%	4%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
Mean, ANOVA p = 0.0		3	4	3	3	3	2	2	4	4	
Number of Heads of Household		523	171	213	175	822	393	263	207	362	

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Table 4-139: Participation in activities, international comparisons, Indigenous households, 2003, 2016

Participated in Past 12 Months	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway
Listen to or tell a Native story	64%	62%	56%	53%	77%	84%		41%	75%
Hike, run, jog or walk	68%	67%	77%	68%	87%	37%	40%		
Take part in a Native festival	82%	59%	48%	38%	31%	75%	64%		61%
Be out in the country	65%	50%	80%	73%	83%	4%	22%		
Go snowmobiling or dog sledding	53%	53%	70%	72%	26%	14%			
Boat or kayak	50%	47%	61%	62%	70%	19%	26%		
Take part in Native traditional games	52%	54%	35%	24%	8%	31%		87%	20%
Take part in a Native dance	50%	50%	29%	11%	32%	21%	19%	56%	
Participate in sports	30%	30%	27%	32%	33%	9%	12%	75%	23%
Chi-square p = 0.00									
Number of Heads of Household	533	182	220	178	949	480	286	214	395

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4.2.5.3 Health and Safety Indicators

Table 4-140: How do you feel about your health in general, international comparisons, Indigenous households, 2003 and 2016

Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Sweden	Norway
Excellent	13%	23%	12%	13%	19%	5%	25%	21%
Very good	23%	24%	33%	28%	58%	13%	31%	28%
Good	36%	31%	28%	36%	18%	48%	19%	31%
Fair	23%	21%	23%	13%	4%	15%	21%	15%
Poor	6%	2%	4%	9%	1%	20%	4%	5%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00								
Number of Heads of Household	520	177	220	178	936	383	217	395

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Table 4-141: How satisfied are you with your health, international comparisons, Indigenous households, 2003 and 2016

Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Sweden	Norway
Very satisfied	28%	39%	36%	42%	22%	35%	50%
Somewhat satisfied	47%	49%	48%	42%	63%	47%	32%
Neither satisfied nor dissatisfied	14%	6%	4%	7%	12%	9%	9%
Somewhat dissatisfied	7%	5%	8%	5%	2%	6%	6%
Very dissatisfied	4%	2%	3%	4%	<1%	4%	4%
Total	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00							
Number of Heads of Household	520	177	220	178	936	217	395

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Table 4-142: Percentage of households with families affected by health problem, international comparisons, Indigenous households, 2003 and 2016

Health Problem	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Norway
Cancer	76%	61%	44%	50%	65%	54%
Alcoholism or drug Addiction	57%	43%	44%	47%	38%	29%
Arthritis	67%	49%	59%	38%	17%	24%
Eye disease	26%	23%	30%	25%	54%	31%
Accidental injury*	40%	27%	32%	28%	29%	23%
Joint and bone diseases	29%	18%	20%	14%	49%	26%
Mental illness	28%	13%	13%	7%	21%	22%
Chi-square p = 0.00, except * = not significant						
Number of Heads of Household	524	176	217	177	875	390

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Table 4-143: Head of household victim, international comparisons, Indigenous households, 2003 and 2016

Victim Measure for Past 12 Months	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden
Theft	13%	15%	10%	16%	11%	18%	7%	9%
Sexual assault	1%	<1%	2%	4%	1%		<1%	3%
Victim of theft or sexual assault	14%	16%	11%	16%	11%	17%	6%	10%
Chi-square p = 0.00								
Number of Heads of Household	484	168	195	158	857	424	269	202

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Table 4-144: Problems related to drugs or alcohol in home today, international comparisons, Indigenous households, 2003 and 2016

Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway
Yes often	5%	6%	7%	6%	3%			2%	1%
Yes sometimes	32%	30%	26%	41%	14%			8%	7%
Yes						46%	3%		
No never	63%	65%	68%	53%	82%	54%	97%	90%	92%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00									
Number of Heads of Household	495	160	198	158	889	385	255	205	345

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Table 4-145: Indicators of depression, international comparisons, Indigenous households, 2003 and 2016

Depression Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
How much of the time in the last month have you been a nervous person	All the time	1%	1%	1%	3%	3%	1%	2%		1%	
	Most of the time	2%		2%	3%	1%			6%	2%	
	Some of the time	19%	12%	25%	15%	16%	65%	59%	44%	15%	
	Very seldom	28%	21%	31%	30%	19%	18%	14%	30%	24%	
	Not at all	50%	66%	41%	49%	61%	16%	24%	20%	59%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										

Table 4-145: Indicators of depression, international comparisons, Indigenous households, 2003 and 2016, continued

Depression Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
How much time in last month have you felt calm and peaceful	All the time	24%	44%	30%	37%	55%	31%	38%	19%	31%	
	Most of the time	55%	28%	31%	27%	21%			68%	36%	
	Some of the time	14%	17%	28%	25%	15%	67%	59%	10%	25%	
	Very seldom	2%	4%	7%	8%	3%	1%	1%	1%	4%	
	Not at all	5%	8%	3%	3%	7%	1%	2%	2%	3%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
How much time in last month have you felt downhearted and blue	All the time	1%	1%	1%	3%	3%	2%	5%	1%	1%	
	Most of the time	4%	7%	4%	7%	4%			5%	7%	
	Some of the time	27%	27%	41%	31%	18%	61%	62%	35%	24%	
	Very seldom	32%	27%	30%	32%	23%	20%	10%	42%	38%	
	Not at all	36%	38%	25%	27%	52%	17%	23%	18%	30%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
How much time in last month have you been a happy person	All the time	29%	51%	33%	46%	48%	12%	16%	19%	28%	
	Most of the time	55%	28%	38%	27%	30%			56%	43%	
	Some of the time	13%	13%	23%	23%	14%	68%	66%	23%	24%	
	Very seldom	1%	3%	4%	3%	2%	14%	10%	2%	2%	
	Not at all	2%	5%	1%	1%	6%	6%	7%	1%	2%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										

Table 4-145: Indicators of depression, international comparisons, Indigenous households, 2003 and 2016, continued

Depression Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
How much time in last month have you felt so down nothing could cheer you up	All the time	1%	3%	1%	2%	4%	2%	2%		<1%	
	Most of the time	5%	1%	2%	10%	3%			1%	2%	
	Some of the time	14%	15%	22%	19%	9%	54%	59%	10%	9%	
	Very seldom	24%	17%	22%	19%	13%	21%	11%	15%	15%	
	Not at all	56%	64%	54%	50%	71%	23%	27%	74%	73%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
Index of Depression Indicators (1-25)	Mean, ANOVA p = 0.00	9	9	10	10	8	13	12	10	9	
Number of Heads of Household		483	152	189	157	785	303	252	194	336	

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Table 4-146: Indicators of social support, international comparisons, Indigenous households, 2003 and 2016

Social Support Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
Someone you can listen to you when you need to talk	All the time	42%	34%	31%	49%	48%	19%	28%	41%	35%	
	Most of the time	35%	34%	44%	24%	15%	31%	24%	39%	36%	
	Some of the time	16%	22%	19%	17%	16%	33%	25%	11%	24%	
	Very seldom	5%	10%	5%	7%	12%	13%	20%	6%	5%	
	Not at all	2%	1%	1%	3%	9%	3%	4%	2%	1%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
Someone you can count on when you need advice	All the time	38%	29%	41%	36%	40%	19%	22%	39%	45%	
	Most of the time	37%	31%	33%	34%	18%	34%	28%	40%	32%	
	Some of the time	17%	27%	20%	19%	20%	25%	20%	14%	16%	
	Very seldom	6%	11%	3%	8%	10%	17%	24%	5%	5%	
	Not at all	1%	2%	2%	2%	12%	5%	6%	2%	2%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
Someone who shoes you love and affection	All the time	54%	60%	62%	68%	66%	63%	68%	61%	54%	
	Most of the time	31%	22%	27%	19%	18%	26%	22%	29%	32%	
	Some of the time	11%	13%	9%	8%	10%	5%	4%	5%	11%	
	Very seldom	3%	4%	1%	4%	4%	3%	5%	3%	3%	
	Not at all	1%	2%	<1%	1%	2%	2%	1%	2%		
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										

Table 4-146: Indicators of social support, international comparisons, Indigenous households, 2003 and 2016, continued

Social Support Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
Someone to have a good time with	All the time	46%	41%	49%	55%	66%	24%	34%	57%	41%	
	Most of the time	37%	30%	36%	28%	19%	47%	39%	29%	39%	
	Some of the time	12%	21%	12%	10%	9%	21%	17%	13%	17%	
	Very seldom	4%	7%	3%	5%	4%	6%	7%	2%	4%	
	Not at all	1%	1%	<1%	2%	2%	2%	4%		<1%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
Someone to confide in or talk about yourself and your problems	All the time	42%	23%	41%	49%	52%	12%	24%	42%	43%	
	Most of the time	33%	29%	29%	15%	13%	14%	15%	36%	29%	
	Some of the time	15%	28%	19%	24%	15%	28%	19%	15%	17%	
	Very seldom	7%	12%	8%	8%	10%	34%	29%	4%	9%	
	Not at all	4%	7%	3%	4%	11%	12%	12%	4%	3%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
Someone to get together with for relaxation	All the time	40%	31%	45%	40%	68%	14%	22%	55%	48%	
	Most of the time	36%	27%	29%	24%	16%	26%	36%	28%	34%	
	Some of the time	15%	30%	20%	23%	9%	35%	26%	12%	16%	
	Very seldom	6%	8%	3%	10%	4%	20%	12%	4%	2%	
	Not at all	3%	5%	3%	3%	3%	6%	4%	2%		
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										

Table 4-146: Indicators of social support, international comparisons, Indigenous households, 2003 and 2016, continued

Social Support Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
Someone to do something enjoyable with	All the time	45%	41%	49%	54%	67%	16%	21%	53%	45%	
	Most of the time	37%	29%	33%	24%	17%	28%	28%	32%	36%	
	Some of the time	13%	23%	15%	15%	11%	25%	22%	12%	16%	
	Very seldom	3%	4%	2%	4%	4%	19%	14%	3%	3%	
	Not at all	1%	3%	1%	2%	2%	12%	14%			
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
Index of availability of social supports - grouped values (7-35)	35	27%	10%	16%	19%	26%	5%	8%	22%	18%	
	30-34	24%	32%	34%	35%	30%	8%	15%	36%	32%	
	25-29	31%	23%	33%	26%	24%	37%	25%	25%	32%	
	19-24	14%	28%	12%	16%	14%	42%	43%	10%	12%	
	18 or less	4%	7%	4%	4%	6%	8%	9%	8%	6%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
	Mean, ANOVA p = 0.00	29	27	29	29	29	25	25	29	29	
Number of Heads of Household		463	176	215	176	953	450	280	189	169	

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Table 4-147: Satisfaction with health, public safety, and court services, international comparisons, Indigenous households, 2003, 2016

Satisfaction Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
Satisfaction with quality of health services in your community	Very satisfied	24%	28%	34%	36%	5%	8%	3%	14%	28%	
	Somewhat satisfied	30%	42%	41%	41%	55%	31%	13%	40%	37%	
	Neither satisfied nor dissatisfied	15%	12%	12%	7%	24%			17%	13%	
	Somewhat dissatisfied	15%	14%	10%	10%	14%	38%		23%	17%	
	Very dissatisfied	16%	5%	3%	6%	2%	23%	84%	6%	5%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
Satisfaction with public safety services	Very satisfied	20%	12%	20%	19%	5%	4%	1%	30%	75%	
	Somewhat satisfied	35%	41%	47%	38%	52%	26%	29%	43%	17%	
	Neither satisfied nor dissatisfied	18%	18%	16%	8%	28%			15%	4%	
	Somewhat dissatisfied	14%	18%	14%	11%	14%	54%	50%	9%	3%	
	Very dissatisfied	12%	10%	3%	24%	2%	15%	20%	3%	1%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
Satisfaction with courts	Very satisfied	13%	13%	29%	15%	5%	7%	3%	8%	33%	
	Somewhat satisfied	27%	48%	44%	41%	65%	32%	40%	33%	33%	
	Neither satisfied nor dissatisfied	27%	20%	11%	23%	18%			45%	16%	
	Somewhat dissatisfied	16%	10%	12%	7%	10%	47%	31%	11%	10%	
	Very dissatisfied	17%	9%	4%	14%	2%	14%	25%	3%	8%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
Number of Heads of Household		516	171	213	168	857	401	273	209	369	

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4.2.5.4 Cultural Continuity Indicators

Table 4-148: Participation in subsistence activities, international comparisons, Indigenous households, 2003, 2016

Participation Measure	Subsistence Activity in Past 12 Months	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway
Participation in Activity	Fish	60%	69%	74%	84%		77%	65%	77%	78%
	Pick berries	47%	34%	89%	82%	72%	86%	90%	73%	83%
	Preserve meat or fish	64%	73%	75%	82%	56%	46%	46%	60%	81%
	Gather greens, roots, or other plants	25%	26%	73%	56%		60%	27%		
	Skinned and butchered a caribou	62%	61%	34%	71%		25%	14%	44%	44%
	Help whaling crews by cooking, giving money or supplies, cutting meat	69%	69%	21%	19%		14%	<1%		
	Hunt seal or ugruk	41%	39%	49%	22%					
	Hunt caribou, moose, or sheep	52%	50%	48%	60%	26%	15%	8%		18%
	Hunt waterfowl	46%	43%	45%	40%	35%	18%	11%		19%
	Make Native handicrafts	31%	40%	39%	29%	11%	23%	26%	28%	37%
	Make sleds or boats	25%	32%	13%	19%	14%	34%	34%	40%	46%
	Sew skins, make parkas and kamiks (boots)	29%	39%	22%	28%	16%	41%	32%	12%	26%
	Gather eggs	21%	18%	56%	34%	13%	28%	8%		
	Hunt walrus	22%	26%	19%	6%					
Trap	7%	8%	11%	9%	3%	17%	13%	12%	19%	

Table 4-148: Participation in subsistence activities, international comparisons, Indigenous households, 2003, 2016, continued

Participation Measure	Subsistence Activity in Past 12 Months	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway
Number of Subsistence Activities	5 or more	50%	53%	45%	53%	2%	29%	10%	9%	30%
	3-4	21%	21%	28%	24%	22%	26%	21%	33%	36%
	1-2	19%	16%	21%	12%	50%	31%	33%	32%	27%
	None	10%	10%	6%	11%	26%	14%	36%	26%	7%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00									
Mean, ANOVA p = 0.00										
		5	5	5	4	2	3	2	2	3
Number of Heads of Household		538	183	227	178	961	487	288	218	412

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Table 4-149: Traditional education, international comparisons, Indigenous households, 2003 and 2016

Traditional Skill	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway
Individual Skill									
Hunt and fish	87%	88%	79%	87%	61%	83%	69%	86%	84%
Know when berries are ripe and where to find them	69%	57%	95%	95%	87%	77%	57%	93%	95%
Drive a snowmachine	87%	77%	76%	77%	17%	32%	46%	59%	41%
Read the weather	71%	51%	50%	57%	47%	50%	51%	55%	61%
Overnight on the land	81%	80%	72%	79%	81%	69%	68%	75%	78%
Know Native names of different types of snow	52%	42%	23%	35%	49%	37%	34%	31%	62%
Skin and butcher a caribou	82%	76%	60%	86%	24%	63%	37%	58%	60%
Preserve meat and fish	85%	86%	87%	90%	75%	92%	86%	73%	87%
Take care of and sew skins	53%	51%	57%	48%	23%	63%	61%	36%	40%
Cook and prepare traditional Native foods	90%	89%	90%	88%	80%	82%	89%	73%	75%
Know the names of past generations of Native relatives	83%	78%	74%	75%	75%	74%	78%	72%	92%
Make traditional clothing	48%	52%	48%	44%	19%	53%	51%	25%	25%

Table 4-149: Traditional education, international comparisons, Indigenous households, 2003 and 2016, continued

Traditional Skill	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway
Individual Skill (cont.)									
Learn stories passed on by parents, grandparents	78%	68%	75%	74%	76%	72%	71%	46%	79%
Make Native arts and crafts	57%	52%	68%	56%	30%	39%	57%	47%	49%
Fix a snowmachine	52%	37%	44%	46%	7%	19%	29%		74%
Navigate at sea	51%	39%	47%	29%	37%	14%	9%		
Makes sleds and boats	47%	38%	32%	29%	21%	26%	20%		
Learn traditional dances and drumming	58%	51%	40%	27%	49%	46%	29%		
Hunt seal	65%	49%	61%	36%	45%	8%			
Number of traditional skills learned									
Five or less	7%	9%	6%	4%	19%	15%	22%	21%	12%
6-10	18%	24%	30%	33%	43%	36%	34%	50%	39%
11-15	31%	39%	40%	46%	35%	40%	38%	28%	49%
16-19	44%	27%	24%	17%	3%	9%	6%		
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00									
Mean, ANOVA p = 0.00	14	12	12	12	9	10	9	8	10
Number of Heads of Household	536	180	226	176	951	476	281	216	412

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Table 4-150: Understanding, speaking, and reading Indigenous language, international comparisons, Indigenous households, 2003 and 2016

Language Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway
Ability to understand Native language	Very Well	40%	60%	33%	48%	75%	54%	51%	22%	70%
	Relatively well	24%	12%	21%	13%	22%	21%	19%	11%	15%
	With effort	16%	10%	9%	13%	2%	13%	12%	12%	6%
	A few words	20%	16%	32%	24%	1%	7%	10%	28%	7%
	Not at all	1%	1%	5%	2%	<1%	6%	8%	27%	2%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00										
Ability to speak Native language	Very Well	34%	55%	24%	37%	72%	48%	43%	17%	64%
	Relatively well	13%	11%	17%	9%	23%	19%	16%	9%	13%
	With effort	21%	12%	10%	16%	3%	15%	15%	8%	11%
	A few words	29%	21%	37%	32%	2%	11%	12%	25%	9%
	Not at all	3%	2%	11%	6%	1%	7%	15%	41%	4%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00										
Ability to read Native language	Very Well	28%	29%	8%	15%	64%	40%	21%	6%	35%
	Relatively well	20%	22%	15%	19%	24%	20%	16%	12%	26%
	With effort	18%	14%	16%	25%	8%	20%	20%	12%	17%
	A few words	23%	17%	20%	26%	2%	5%	4%	19%	9%
	Not at all	10%	18%	41%	15%	3%	15%	39%	52%	12%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00										
Ability to write Native language	Very Well	26%	22%	6%	16%	59%	38%	12%	2%	23%
	Relatively well	14%	18%	12%	8%	25%	19%	15%	8%	20%
	With effort	16%	13%	10%	18%	9%	15%	19%	9%	26%
	A few words	26%	21%	23%	23%	2%	6%	5%	19%	10%
	Not at all	19%	26%	49%	34%	4%	22%	49%	61%	21%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00										
Number of Heads of Household		535	181	222	178	958	478	285	217	411

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Table 4-151: Importance of Native values, international comparisons, Indigenous households, 2003 and 2016

Native Value Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Sweden	Norway
How important is use of Native language	Very important	71%	74%	54%	56%	64%	70%	32%	61%
	Important	26%	20%	25%	31%	33%	25%	30%	29%
	Not very important	3%	4%	14%	11%	2%	5%	19%	7%
	Not at all important	<1%	2%	6%	1%	1%	<1%	20%	3%
	Total	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00								
How important is knowledge of family tree	Very important	75%	56%	62%	57%	38%	79%	41%	63%
	Important	22%	37%	32%	34%	48%	21%	45%	33%
	Not very important	3%	5%	6%	8%	12%	<1%	11%	3%
	Not at all important	<1%	2%	<1%	1%	2%		2%	<1%
	Total	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00								
How important is the way I view nature	Very important	89%	61%	69%	61%	53%	67%	56%	51%
	Important	11%	33%	30%	36%	44%	31%	39%	42%
	Not very important	<1%	4%	1%	3%	2%	2%	2%	5%
	Not at all important		1%	<1%		<1%	<1%	2%	2%
	Total	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00								
How important is religious and spiritual beliefs	Very important	73%	54%	58%	59%	31%	32%	9%	19%
	Important	22%	35%	28%	30%	51%	31%	24%	39%
	Not very important	3%	9%	12%	8%	14%	27%	29%	26%
	Not at all important	1%	3%	2%	3%	5%	10%	38%	15%
	Total	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00								

Table 4-151: Importance of Native values, international comparisons, Indigenous households, 2003 and 2016, continued

Native Value Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Sweden	Norway	
How important is the Native food I eat	Very important	77%	82%	86%	82%	62%	75%	49%	46%	
	Important	20%	15%	13%	16%	35%	22%	31%	37%	
	Not very important	3%	2%	1%	1%	3%	3%	17%	12%	
	Not at all important			<1%	<1%		<1%	4%	5%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	
	Chi-square p = 0.00									
How important is the hunting and fishing I do	Very important	82%	72%	85%	84%	39%	75%	46%	34%	
	Important	15%	26%	11%	15%	40%	23%	32%	37%	
	Not very important	3%	2%	3%	<1%	12%	2%	18%	24%	
	Not at all important	1%		2%	1%	8%		4%	6%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	
	Chi-square p = 0.00									
How important is preserving of Native foods	Very important	82%	77%	80%	72%	40%	53%	49%	31%	
	Important	16%	19%	17%	25%	47%	39%	36%	46%	
	Not very important	2%	3%	<1%	3%	10%	7%	13%	17%	
	Not at all important	<1%	1%	3%	<1%	4%	1%	1%	5%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	
	Chi-square p = 0.00									
Count of 7 "Very Important" Values	Mean	6	5	4	5	3	5	3	3	
	ANOVA p = 0.000									
	Number of Heads of Household	534	180	210	175	937	484	208	385	

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Table 4-152: Satisfaction with community's promotion of Native values, international comparisons, Indigenous households, 2003 and 2016

Satisfaction Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
How satisfied with job community doing promoting use of Native language	Very satisfied	33%	40%	25%	27%	21%	16%	11%	26%	17%	
	Somewhat satisfied	40%	44%	31%	44%	54%	18%	41%	28%	32%	
	Neither satisfied nor dissatisfied	11%	6%	23%	7%	16%			26%	17%	
	Somewhat dissatisfied	14%	6%	16%	14%	8%	43%	40%	14%	22%	
	Very dissatisfied	3%	5%	5%	7%	<1%	23%	8%	5%	13%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
How satisfied with job community doing promoting sharing and helping	Very satisfied	53%	58%	38%	53%	13%	24%	11%		26%	
	Somewhat satisfied	36%	36%	37%	36%	51%	35%	47%		37%	
	Neither satisfied nor dissatisfied	8%	4%	16%	4%	27%				20%	
	Somewhat dissatisfied	3%	1%	6%	7%	7%	29%	35%		16%	
	Very dissatisfied	1%	<1%	2%	1%	1%	11%	7%		1%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%		100%
	Chi-square p = 0.00										

Table 4-152: Satisfaction with community's promotion of Native values, international comparisons, Indigenous households, 2003 and 2016, continued

Satisfaction Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
How satisfied with job community doing promoting respect for others	Very satisfied	47%	52%	36%	44%	15%	23%	13%		20%	
	Somewhat satisfied	30%	35%	35%	30%	54%	38%	51%		48%	
	Neither satisfied nor dissatisfied	14%	7%	14%	11%	20%				15%	
	Somewhat dissatisfied	6%	5%	11%	10%	9%	29%	33%		13%	
	Very dissatisfied	2%	1%	3%	5%	1%	10%	4%		4%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%		100%
	Chi-square p = 0.00										
How satisfied with job community doing promoting cooperation	Very satisfied	41%	45%	27%	44%	14%	19%	10%		25%	
	Somewhat satisfied	40%	44%	47%	36%	61%	39%	57%		41%	
	Neither satisfied nor dissatisfied	10%	5%	14%	11%	19%				24%	
	Somewhat dissatisfied	5%	5%	10%	5%	6%	32%	29%		9%	
	Very dissatisfied	3%	1%	3%	3%	<1%	9%	4%		2%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%		100%
	Chi-square p = 0.00										

Table 4-152: Satisfaction with community's promotion of Native values, international comparisons, Indigenous households, 2003 and 2016, continued

Satisfaction Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
How satisfied with job community doing promoting respect for elders	Very satisfied	66%	67%	50%	62%	20%	23%	26%	38%	33%	
	Somewhat satisfied	22%	28%	31%	25%	56%	34%	56%	33%	50%	
	Neither satisfied nor dissatisfied	4%	2%	8%	3%	15%			17%	11%	
	Somewhat dissatisfied	5%	3%	8%	6%	7%	34%	15%	11%	4%	
	Very dissatisfied	2%	1%	4%	4%	1%	9%	3%	1%	2%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
How satisfied with job community doing promoting love for children	Very satisfied	64%	72%	61%	59%	26%	28%	30%	18%	45%	
	Somewhat satisfied	23%	23%	25%	32%	53%	31%	59%	40%	41%	
	Neither satisfied nor dissatisfied	7%	3%	9%	3%	14%			37%	12%	
	Somewhat dissatisfied	5%	2%	2%	2%	6%	34%	11%	5%	2%	
	Very dissatisfied	1%	1%	3%	3%	1%	7%	1%	1%	1%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										

Table 4-152: Satisfaction with community's promotion of Native values, international comparisons, Indigenous households, 2003 and 2016, continued

Satisfaction Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
How satisfied with job community doing promoting hard work	Very satisfied	47%	53%	40%	46%	8%	22%	22%		16%	
	Somewhat satisfied	27%	36%	35%	36%	44%	26%	43%		47%	
	Neither satisfied nor dissatisfied	13%	8%	18%	9%	28%				28%	
	Somewhat dissatisfied	9%	3%	3%	8%	17%	41%	33%		8%	
	Very dissatisfied	3%	<1%	4%	1%	3%	11%	3%		1%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%		100%
	Chi-square p = 0.00										
How satisfied with job community doing promoting knowledge of their family tree	Very satisfied	49%	45%	32%	42%	11%	15%	12%	27%	35%	
	Somewhat satisfied	31%	34%	39%	34%	58%	21%	40%	42%	41%	
	Neither satisfied nor dissatisfied	12%	14%	16%	10%	26%			24%	18%	
	Somewhat dissatisfied	7%	7%	9%	11%	5%	38%	37%	5%	5%	
	Very dissatisfied	1%	1%	4%	4%	<1%	25%	10%	2%		
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										

Table 4-152: Satisfaction with community's promotion of Native values, international comparisons, Indigenous households, 2003 and 2016, continued

Satisfaction Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
How satisfied with job community doing promoting avoidance of conflict	Very satisfied	37%	30%	21%	29%	5%	14%	11%		14%	
	Somewhat satisfied	34%	37%	27%	35%	37%	25%	37%		31%	
	Neither satisfied nor dissatisfied	15%	23%	32%	18%	29%				37%	
	Somewhat dissatisfied	10%	8%	15%	12%	25%	45%	42%		11%	
	Very dissatisfied	4%	3%	4%	6%	4%	17%	10%		7%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%		100%
	Chi-square p = 0.00										
How satisfied with job community doing promoting respect for nature	Very satisfied	56%	58%	37%	46%	16%	23%	19%	35%	26%	
	Somewhat satisfied	24%	32%	38%	31%	51%	31%	38%	35%	37%	
	Neither satisfied nor dissatisfied	9%	5%	11%	10%	19%			14%	23%	
	Somewhat dissatisfied	8%	4%	7%	8%	12%	29%	30%	15%	10%	
	Very dissatisfied	2%	1%	7%	4%	2%	17%	13%	2%	3%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										

Table 4-152: Satisfaction with community's promotion of Native values, international comparisons, Indigenous households, 2003 and 2016, continued

Satisfaction Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
How satisfied with job community doing promoting spirituality	Very satisfied	52%	48%	34%	49%	6%	14%	12%		16%	
	Somewhat satisfied	29%	37%	34%	32%	39%	18%	36%		46%	
	Neither satisfied nor dissatisfied	12%	13%	18%	11%	34%				27%	
	Somewhat dissatisfied	6%	1%	11%	6%	16%	46%	44%		7%	
	Very dissatisfied	2%	1%	2%	2%	6%	22%	8%		4%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%		100%
	Chi-square p = 0.00										
How satisfied with job community doing promoting humor	Very satisfied	53%	53%	35%	43%	16%	30%	27%		36%	
	Somewhat satisfied	34%	34%	37%	41%	69%	49%	60%		37%	
	Neither satisfied nor dissatisfied	9%	10%	22%	13%	13%				19%	
	Somewhat dissatisfied	4%	3%	3%	1%	2%	15%	11%		6%	
	Very dissatisfied	1%	<1%	3%	1%	<1%	6%	2%		1%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%		100%
	Chi-square p = 0.00										

Table 4-152: Satisfaction with community's promotion of Native values, international comparisons, Indigenous households, 2003 and 2016, continued

Satisfaction Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
How satisfied with job community doing promoting family roles	Very satisfied	48%	57%	39%	48%	8%	14%	14%		17%	
	Somewhat satisfied	34%	33%	37%	34%	68%	27%	46%		50%	
	Neither satisfied nor dissatisfied	10%	5%	15%	10%	19%				28%	
	Somewhat dissatisfied	5%	2%	8%	6%	4%	39%	33%		5%	
	Very dissatisfied	3%	2%	2%	2%	<1%	20%	6%			
	Total	100%	100%	100%	100%	100%	100%	100%	100%		100%
	Chi-square p = 0.00										
Satisfaction with Community Promotion of Values	Mean	4	4	4	4	4	3	3	4	4	
	ANOVA p = 0.000										
Number of Heads of Household		527	178	212	176	919	439	272	193	90	

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Table 4-153: Which lifestyle would you prefer, international comparisons, Indigenous households 2016

Lifestyle Measure	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway
Working on a wage job	9%	24%	8%	10%	67%	39%	34%	29%	43%
Harvesting, herding or processing own food	11%	10%	8%	14%	33%	34%	29%	16%	13%
Both	79%	66%	85%	76%		28%	36%	55%	44%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00									
Number of Heads of Household	519	166	216	174	727	475	273	161	366

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4.2.5.5 Education Indicators

Table 4-154: Level of formal education completed, international comparisons, Indigenous households, 2003, 2016

Education Measure	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway
Less than high school	13%	32%	21%	26%	43%	25%	22%	13%	19%
High school	62%	38%	59%	35%	9%	30%	31%	25%	11%
Vocational or college degree	25%	30%	19%	39%	49%	44%	48%	62%	71%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.000									
Number of Heads of Household	531	179	226	177	910	468	283	216	398

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Table 4-155: Satisfaction with formal schooling and formal education in community, international comparisons, Indigenous households, 2003, 2016

Satisfaction Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway
Satisfaction with formal schooling and training you received	Very satisfied	45%	51%	43%	52%				15%	31%
	Somewhat satisfied	40%	37%	42%	35%				59%	40%
	Neither satisfied nor dissatisfied	9%	6%	9%	6%				19%	13%
	Somewhat dissatisfied	4%	4%	5%	5%				6%	9%
	Very dissatisfied	2%	2%	<1%	2%				1%	7%
	Total	100%	100%	100%	100%				100%	100%
	Chi-square p = 0.00									
Satisfaction with quality of formal education in your community	Very satisfied	33%	42%	32%	22%	7%	14%	14%	9%	16%
	Somewhat satisfied	42%	38%	32%	41%	59%	41%	57%	55%	39%
	Neither satisfied nor dissatisfied	10%	11%	14%	13%	22%			24%	19%
	Somewhat dissatisfied	11%	7%	17%	16%	11%	26%	16%	9%	21%
	Very dissatisfied	4%	2%	5%	7%	2%	18%	13%	2%	6%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00									
Number of Heads of Household		514	177	213	174	779	425	253	172	353

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4.2.5.6 Local Control Indicators

Table 4-156: Knowledge and interest in politics, international comparisons, Indigenous households, 2003 and 2016

Political Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway
How knowledgeable about politics in general, recoded	Very knowledgeable	15%	17%	8%	9%	7%	2%	2%	5%	28%
	Somewhat knowledgeable	48%	46%	52%	40%	32%	20%	24%	49%	57%
	Not very knowledgeable	26%	24%	29%	43%	47%	64%	56%	32%	12%
	Not at all knowledgeable	11%	12%	10%	8%	14%	14%	18%	14%	3%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00										
So many people vote in national elections it does not make difference if I vote or not	Completely disagree	36%	33%	43%	38%	66%	30%	30%	3%	75%
	Partly disagree	18%	12%	21%	19%	8%	17%	24%	6%	9%
	Partly agree	31%	33%	25%	37%	12%	30%	27%	41%	11%
	Completely agree	15%	22%	12%	6%	15%	23%	18%	50%	5%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00										
How interested are you in politics in general	Very interested	16%	18%	15%	14%	26%	13%	5%	22%	25%
	Interested	38%	43%	50%	44%	54%	59%	48%	59%	60%
	Not interested	46%	39%	35%	43%	20%	28%	47%	19%	15%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00										
Number of Heads of Household		517	171	213	171	918	414	267	199	397
Index of political engagement (3-11)	Mean, ANOVA p = 0.00	10	7	7	7	8	7	6	6	9
Number of Heads of Household		425	151	204	155	779	335	246	192	385

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Table 4-157: Voting participation, international comparisons, Indigenous households, 2003, 2016

Type of Measure	Voting Participation Measure	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway
Voting participation	Vote in traditional council election	58%	53%	61%	51%		2%	1%	30%	
	Vote in village corporation election	68%	69%	65%	46%	31%	14%	30%		
	Vote in Native regional corporation election	80%	84%	54%	71%	79%	1%	6%	84%	82%
	Vote in state election	67%	86%	74%	74%		91%	75%	93%	89%
	Vote in national election	58%	73%	68%	70%	87%	90%	82%	44%	90%
	Voting in last local and regional elections	15%	9%	13%	14%	15%	9%	15%	5%	6%
Number of Elections Voted	0	15%	8%	13%	16%	16%	9%	15%	5%	6%
	1	5%	6%	15%	17%	9%	76%	57%	16%	15%
	2	12%	18%	19%	18%	55%	15%	22%	52%	79%
	3	12%	24%	17%	23%	20%	<1%	5%	27%	
	4	56%	44%	36%	26%		<1%	1%		
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Chi-square p = 0.00										
Mean, ANOVA p = 0.00		3	3	2	2	2	1	1	2	2
Number of Heads of Household		538	183	227	178	961	487	288	218	412

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Table 4-158: Satisfaction with management of natural resources, international comparisons, Indigenous households, 2003, 2016

Natural Resource Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway
How satisfied with influence Natives have on management of natural resources like oil, gas, and minerals	Very satisfied	17%	27%	13%	22%	4%	3%	4%		4%
	Somewhat satisfied	35%	40%	29%	39%	39%	12%	4%		9%
	Neither satisfied nor dissatisfied	20%	19%	25%	19%	32%				15%
	Somewhat dissatisfied	16%	8%	21%	10%	22%	51%	35%		26%
	Very dissatisfied	11%	6%	12%	10%	4%	34%	57%		46%
	Total	100%	100%	100%	100%	100%	100%	100%		100%
	Chi-square p = 0.00									
How satisfied with influence Natives have on management of natural resources like fish and caribou	Very satisfied	39%	56%	19%	42%	4%	4%	2%	3%	10%
	Somewhat satisfied	38%	33%	45%	36%	47%	32%	1%	12%	24%
	Neither satisfied nor dissatisfied	8%	6%	10%	8%	30%			24%	15%
	Somewhat dissatisfied	12%	4%	16%	11%	14%	38%	32%	30%	22%
	Very dissatisfied	3%	1%	11%	3%	5%	26%	65%	31%	28%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00									

Table 4-158: Satisfaction with management of natural resources, international comparisons, Indigenous households, 2003, 2016, continued

Natural Resource Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
How satisfied with influence Natives have to reduce environmental problems in your area	Very satisfied	20%	23%	21%	20%	4%	5%	2%		6%	
	Somewhat satisfied	39%	51%	39%	50%	42%	15%	7%		23%	
	Neither satisfied nor dissatisfied	22%	13%	22%	15%	34%				28%	
	Somewhat dissatisfied	14%	11%	17%	12%	18%	52%	59%		26%	
	Very dissatisfied	6%	2%	2%	3%	2%	27%	33%		17%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%		100%
	Chi-square p = 0.00										
Number of Heads of Household		512	171	207	170	804	329	243	190	334	

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4.2.5.7 Overall Well-being Indicators

Table 4-159: Considered moving away from community in last five years, international comparisons, Indigenous households, 2003, 2016

Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
Yes	47%	32%	41%	36%	34%	32%	29%		32%	
No	53%	68%	59%	64%	66%	68%	71%		68%	
Chi-square p = 0.00										
Number of Heads of Household		528	178	224	177	952	471	284		405

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Table 4-160: Satisfaction with life in community and life as a whole, international comparisons, Indigenous households, 2003, 2016

Satisfaction Measure	Response Category	North Slope 2016	North Slope 2003	Bering Straits	Northwest Arctic	Greenland	Chukotka	Kola Peninsula	Sweden	Norway	
Satisfaction with quality of life in this community	Very satisfied	40%	38%	23%	40%	5%	2%	<1%	28%	41%	
	Somewhat satisfied	43%	47%	56%	43%	63%	14%	10%	58%	45%	
	Neither satisfied nor dissatisfied	8%	10%	15%	11%	24%			11%	10%	
	Somewhat dissatisfied	6%	3%	5%	4%	7%	39%	44%	3%	4%	
	Very dissatisfied	3%	3%	1%	2%	2%	46%	45%		<1%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Chi-square p = 0.00										
Satisfaction with your life as a whole	Very satisfied	60%	68%	49%	64%	25%			53%		
	Somewhat satisfied	35%	27%	41%	28%	68%			42%		
	Neither satisfied nor dissatisfied	4%	3%	8%	4%	6%			4%		
	Somewhat dissatisfied	1%	1%	3%	1%	1%			<1%		
	Very dissatisfied	<1%	2%		3%	<1%					
	Total	100%	100%	100%	100%	100%			100%		
	Chi-square p = 0.00										
Number of Heads of Household		528	177	216	176	900	400	249	197	367	

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Chapter 5: Discussion and Conclusions

5.1 Testing Hypothesized Relationships

BOEM commissioned the SICAA study to “provide updated sociocultural and economic baseline data for analysis of potential local and regional impacts from offshore O&G exploration and development activities that may occur in federal waters off the North Slope of Alaska” (BOEM 2011). The best method for monitoring impacts is to repeatedly measure the state of the human environment over time. BOEM also recognized as early as the 1980s that SIs are an appropriate method to measure the state of the human environment. While this study is intended to be a baseline measurement of SIs, it also foresees the need to design a SI monitoring system around the most likely impact pathways. This project was based on the understanding that O&G exploration and development can bring both benefits (in the form of revenue streams and employment) and impacts (particularly impacts or fear of impacts on subsistence activities) to North Slope communities, and these benefits and impacts can affect overall well-being. In our research design, we stated the principal hypothesis:

The net effect of offshore exploration and development on the comprehensive array of SIs is dependent on the multivariate effects of the size of the indirect benefit stream, the prevalence of unmitigated disruptions of subsistence, and the fear of future effects of offshore exploration and development on subsistence.

The hypothesized relationships were shown in Section 3.2 and reproduced below (Figure 5-1).

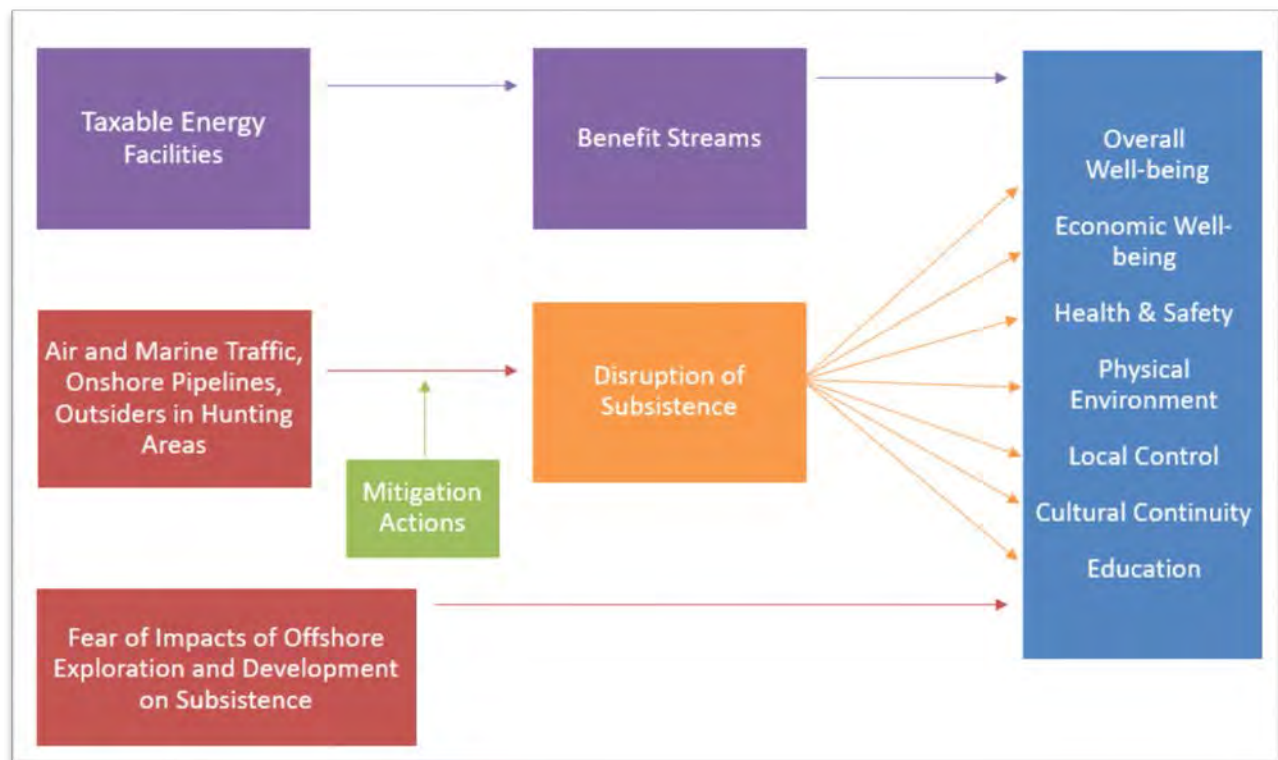


Figure 5-1: Summary of hypothesized relationships

One method of testing these relationships is to compare time series data. For example, the baseline SIs documented in the SICAA study can be compared to SIs collected in the future, after significant offshore O&G development has taken place, to assess potential linkages. It also makes sense, however, to take advantage of baseline study data to initially test hypothesized relationships between well-being and O&G impacts. Hence, another way to test potential linkages between O&G development and well-being is to analyze the 2016 baseline data collected to identify (1) whether communities closer to O&G development are more likely to experience impacts, and (2) correlations between SI measures, impact experiences, and overall well-being.

For the first measure, the study team compared the reported impacts of onshore and nearshore O&G development among communities to see if the residents of communities closer to O&G development (i.e. Nuiqsut) in fact show higher frequencies of impact experiences (see Section 4.1.1, “Comparisons of 2016 Impact Results by Community”). The study team concluded that Nuiqsut HHs were more likely to report impact experiences during subsistence activities, more likely than those residing in the other five communities to report pollution from industrial development, more likely to report that fish or animals may be unsafe to eat, and, other than Kaktovik, were more likely to have avoided eating certain subsistence foods in the last year because they believed they were contaminated. However, subsequent sections concluded that Nuiqsut HHs were substantially as satisfied with the amount of fish and game available locally and with local opportunities to hunt and fish as the HHs in the four other villages; in Utqiagvik satisfaction was slightly lower.

For the second measure (analyzing correlations between SI measures, impact experiences, and overall well-being), the study team analyzed relationships between different variables to establish whether there was a positive or negative correlation, if any, between variables. The analysis takes advantage of variations in impact experiences and SI measures among individual residents in order to determine whether impact experiences and SI measures are correlated in a manner consistent with the hypothesized relationships. For example, are measures of satisfaction related to subsistence important to overall well-being? The focus of this section of the report is on this second way of using baseline data to test hypothesized relationships. Correlations between measures were analyzed using a Pearson correlation analysis, which ranks each correlation on a scale between -1.0 (perfect negative correlation) and 1.0 (perfect positive correlation). The significance of each correlation is also calculated.

It is important to note that potential offshore O&G development impacts are not certain, and they are variable in geographic extent, intensity, and duration. Many impacts are also subject to mitigation measures, which have the potential to lessen the frequency and magnitude of the impacts. While the observed impacts of onshore O&G development are of the types that potentially might also arise from offshore development, it is not possible to infer from baseline data whether offshore impacts would go beyond those currently observed for onshore O&G development and affect satisfaction with subsistence.

5.1.1 Direct Benefits, Impacts, and Satisfaction

Employment related to O&G development is not included as a principal factor in the hypothesized relationships for this study (Figure 5-1). Rather, as the principal source of benefits, this study considers taxes on energy facilities collected by the NSB. Tax revenues are an indirect source of benefits, funding jobs, services, and infrastructure. However, petroleum related employment is a direct benefit of O&G development. The survey defined a petroleum related job as, “any job working for a company or organization that is part of the permitting, exploration, production, transportation, or servicing of oil or gas, including office jobs as well as field jobs, and including such jobs as subsistence coordinator, subsistence advisor, or marine mammal observer.” Based on this definition, 15 percent of HHs in 2016 reported having a petroleum related job in the past 12 months (see Table 4-20). The percentage of HHs holding a petroleum related job varied from 27 percent in Nuiqsut to 7 percent in Point Lay.

As shown in Table 5-1, having a petroleum related job does not make one more or less likely to be satisfied with the job. As noted above, the measure used to assess the relationship between these two variables is a Pearson correlation. A Pearson correlation has a range of -1.0 to plus 1.0, where 1.0 (and -1.0) reflects a perfect relationship (positive or negative)—that is, in which there is a one-to-one relationship in the values of both variables. The reported significance of a Pearson correlation indicates the probability that the observed correlation is zero. Residents who had a petroleum related job in 2015 were slightly less likely to be satisfied with the combination of activities they do for a living, and slightly less satisfied with their household income. There was no significant relationship between having a petroleum related job and satisfaction with job opportunities in the community.

Table 5-1: Correlations of petroleum development-related employment and subsistence impacts on satisfaction

Had A Petroleum Development Related Job		
Correlation With:	Pearson correlation	Significance
Job Satisfaction	0.02	ns
Satisfaction with Job Opportunities in Community	-0.07	ns
Satisfaction with Combination of Activities You do to Make a Living	-0.11	0.04
Satisfaction with Household Income	-0.12	0.02
Experienced One Or More Petroleum Development Related Impact on Subsistence Activities		
Correlation of One or More Impact Experiences With:	Pearson correlation	Significance
Satisfaction with Amount of Fish and Game Available Locally	-0.086	0.032
Satisfaction with Opportunities to Hunt and Fish	-0.08	0.045

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While the definition of a petroleum related job is deliberately broad, it does not include many other jobs whose funding comes from NSB taxes on petroleum facilities. There is no way to identify jobs indirectly related to O&G development based on the survey data, but if all NSB jobs were included, the percentage of jobs in the six survey communities indirectly or directly related to O&G development would be much larger than 15 percent. Therefore, job satisfaction for all job holders is perhaps the best SI for jobs both indirectly and directly related to O&G development. Sixty-five percent of HHs were very satisfied with the job they held the longest in 2015 (Table 4-21).

In addition to analyzing the benefits of O&G development, the study team also analyzed the relationship between subsistence impacts resulting from O&G development and measures of well-being. Disruption of subsistence activities is hypothesized to be the principal way in which O&G development may affect satisfaction with living conditions in North Slope communities. Twenty-two percent of HHs in the six survey communities reported at least one impact on their subsistence activities in 2015. The percentage of HHs whose subsistence activities were affected by O&G development ranged from 46 percent in Nuiqsut to 10 percent in Point Hope. HHs who reported at least one impact experience were slightly less likely to be satisfied with the amount of fish and game available locally, and they were also slightly less likely to be satisfied with opportunities to hunt and fish (Table 5-1). While these results are statistically significant they are not important. As reported above, Nuiqsut HHs were as satisfied with the amount of fish and game available locally and with local opportunities to hunt and fish as the HHs in the four other villages; in Utqiagvik, satisfaction were slightly lower. Together these results indicate that the existing extent of impacts of O&G development on subsistence has not yet reached the point of negatively affecting satisfaction with the amount of fish and game available locally or of the satisfaction with opportunities to hunt and fish.

5.1.2 Importance of Domain Level Measures of Satisfaction and Overall Well-being

The diagram of hypothesized relationships shows the six domains of well-being—economic, health and safety, physical environment, local control, education, and cultural continuity—as contributors to overall well-being. Individuals are able to assess not only how satisfied they are with their income or the amount of fish and game available locally; they are also able to assess how satisfied they are with their life as a whole. Satisfaction with life as a whole is the SI of overall well-being. It is measured on a 5-point scale, with “very satisfied” having a value of 5 and “very dissatisfied” have a value of 1. Each measure of satisfaction at the domain level (e.g. satisfaction with the amount of fish and game available is one of several measures within the domain of physical environment) uses the same scale. It is therefore possible to test whether there is a correlation between each domain level measure of satisfaction and satisfaction with life as a whole. The analysis looks at the subjective measures of satisfaction because they integrate the conditions reported in the relative objective measures.

Table 5-2 shows the correlation of each domain-level measure of satisfaction with satisfaction with life as a whole for two populations: all HHs in the six survey communities, and Iñupiat HHs. The Iñupiat subset of the population is shown separately, as Iñupiat are the original residents of the region. Using a probability of 0.05 as a threshold below which we conclude that the observed correlation is not zero, all domain-level measures as well as a second general measure of well-being (satisfaction with the quality of life in this community) are significant.

Table 5-2: Correlations of domain-specific satisfaction measures with satisfaction with live as a whole

Correlation with Satisfaction with Life as a Whole	All Heads of Household			Iñupiat Heads of Household		
	Pearson Correlation	Significance	Number of Heads of Household	Pearson Correlation	Significance	Number of Heads of Household
Economic Well-being						
Satisfaction with job held longest	0.16	.000	486	0.16	.003	357
Satisfaction with job opportunities in your community	0.16	.000	613	0.15	.001	487
Satisfaction with combination of activities you do to make a living	0.29	.000	651	0.26	.000	510
Satisfaction with quality of your housing	0.10	.009	666	0.08	.059	524
Satisfaction with household income	0.20	.000	657	0.17	.000	516
Satisfaction with availability of goods in local stores	0.14	.000	659	0.10	.028	517
Satisfaction with transportation to and from community	0.20	.000	647	0.14	.001	509
Satisfaction with cost of living in your community	0.15	.000	660	0.10	.022	520
Satisfaction with standard of living	0.31	.000	654	0.29	.000	514
Physical Environment						
Satisfaction with amount of fish and game available locally	0.14	.001	616	0.09	.036	503
Satisfaction with opportunities to hunt and fish	0.22	.000	628	0.20	.000	510
Satisfaction with health of the environment in your area	0.20	.000	653	0.21	.000	515
Satisfaction with quality of recreational facilities in this community	0.16	.000	655	0.13	.003	516
Health and Safety						
Satisfaction with your health	0.24	.000	652	0.25	.000	512
Satisfaction with quality of health services in your community	0.12	.002	646	0.11	.010	507
Satisfaction with public safety services	0.15	.000	645	0.14	.002	508
Satisfaction with courts on the North Slope	0.15	.000	561	0.14	.003	442
Cultural Continuity						
Index of promotion of 16 community values	0.27	.000	657	0.23	.000	517
See subsistence measures above						

Table 5-2: Correlations of domain-specific satisfaction measures with satisfaction with live as a whole, continued

Correlation with Satisfaction with Life as a Whole	All Heads of Household			Iñupiat Heads of Household		
	Pearson Correlation	Significance	Number of Heads of Household	Pearson Correlation	Significance	Number of Heads of Household
Education						
Satisfaction with formal schooling and training you received	0.13	.001	657	0.11	.015	517
Satisfaction with quality of formal education in your community	0.19	.000	641	0.16	.000	506
Satisfaction with teaching of traditional Inupiaq values, skills, and language in local schools	0.19	.000	613	0.17	.000	490
Local Control						
Satisfaction with degree of influence that Inupiaq people have on the management of natural resources like fish and caribou	0.21	.000	634	0.20	.000	506
Satisfaction with degree of influence that Inupiaq people have on the management of natural resources like marine mammals	0.27	.000	619	0.26	.000	495
Satisfaction with degree of influence that Inupiaq people have on the management of natural resources like oil, gas, and minerals	0.20	.000	602	0.18	.000	475
Satisfaction with degree of influence that Inupiaq people have to reduce environmental problems in your area	0.20	.000	591	0.18	.000	465
Generalized Well being						
Satisfaction with quality of life in this community	0.41	.000	663	0.38	.000	521

Stephen R. Braund and Associates, 2017

The importance of each domain-level measure to explaining variation in satisfaction with life as a whole is indicated by the size of the correlation. The square of a correlation can be interpreted as the percent of variation in satisfaction with life as a whole that is explained by variation in the domain-level measure. Thus, satisfaction with the promotion of cultural values in the community has a correlation for all HHs of 0.27 with satisfaction with life as a whole and can be interpreted as explaining 0.27 squared, or 7 percent of the variation in satisfaction with life as a whole.

Satisfaction with the quality of life in the community is not a domain-level measure; rather, it is a general measure of well-being that emphasizes living conditions in the community. Its correlation of 0.41 with satisfaction with life as a whole underscores the importance of community living conditions to satisfaction with life as a whole.

It is important to keep in mind that a correlation does not prove a causal relationship. Time series comparisons are an important test of causality. If, for example, satisfaction with the amount of fish and game available were to decline over time, and satisfaction with life as a whole were to also show a decline, then there would be greater empirical support for a causal relationship.

The next obvious questions are how well do all the domain-level measures together explain variation in satisfaction with life as a whole and which types of satisfaction are the most important. Statistically, these are not easy questions to answer. The reason is that the domain-level measures share variation; that is, they are correlated with each other. It is therefore not valid to add up the individual correlations as an estimate of the percentage of variation in satisfaction with life as a whole explained by all the domain-level measures. Multiple regression analysis is designed to calculate the variation in a dependent variable (in this case satisfaction with life as a whole) uniquely explained by each independent variable (the domain-level measures). However, the ability of multiple regression analysis to make these calculations is limited by the number of observations, or in the case of this study the number of households interviewed.

The limit on number of observations is lower when the amount of variation shared by the independent variables (multicollinearity is the technical term) is high. A major reason why there is a high level of shared variation among the independent variables in this study is that most of the domain level measures of satisfaction pertain to living conditions that are shared by all residents of a given community (e.g., education services, job opportunities, amount of fish and game available) and the six communities have similar living conditions.

A special form of multiple regression analysis is designed to identify in a “stepwise” manner the independent variables that uniquely explain the most variation in the dependent variable. Stepwise multiple regression adds independent variables until the significance threshold for the next candidate independent variable is exceeded. Stepwise multiple regression calculates the chance of the unique variation explained being zero; it does not allow these variables to enter the equation. In other words, independent variables are added until the chance that the next variable has no unique explanatory power is too high to warrant including it. The more

observations, and the less variation shared among the independent variables, the more variables will be included in the final multiple regression equation.

The research team ran a stepwise multiple regression in which all but one domain-specific satisfaction measures were eligible. Multiple regression only includes individual records for which there is a valid response for all independent variables as well as the dependent variable. Job satisfaction was eliminated since it has a missing value for individuals who did not have a job in 2015. Including job satisfaction would therefore only include in the multiple regression people who had jobs in 2015. Satisfaction with the quality of life in the community was also not eligible as it is not a domain-specific satisfaction measure.

Table 5-3 displays the results. Six variables met the entry criteria. The adjusted R square shown can be interpreted as the percentage of the variance in satisfaction with life as a whole that is uniquely explained by the independent variable. Thus, satisfaction with the degree of influence that Inupiat people have on the management of natural resources like marine mammals uniquely explains 13 percent of the variance in satisfaction with life as a whole. Satisfaction with the combination of activities HHs do to make a living uniquely explains another 7 percent. An additional 5 percent is explained by four measures: satisfaction with standard of living, satisfaction with job opportunities in the community, the index of satisfaction with the promotion of community values, and satisfaction with the availability of goods and services in local stores. The research team ran the same stepwise multiple regression on the subsample of Inupiat HHs and obtained the same results.

Table 5-3: Stepwise multiple regression of 24 domain level measures of satisfaction on satisfaction with life as a whole

Step	Variables Entered	Significance	Adjusted R Square	R square Difference
1	Satisfaction with degree of influence that Inupiaq people have on the management of natural resources like marine mammals	.000	.130	.130
2	Satisfaction with combination of activities you do to make a living	.000	.201	.070
3	Satisfaction with standard of living	.000	.223	.022
4	Satisfaction with job opportunities in your community	.000	.231	.008
5	Index of promotion of community values	.000	.238	.007
6	Satisfaction with availability of goods in local stores	.000	.247	.009

Stephen R. Braund and Associates, 2017

The regression results suggest what domain-level satisfaction measures may be most important to residents in the six survey communities today. Thus, the domains of local control, economic well-being, and cultural continuity each have unique contributions to satisfaction with life as a whole in the six survey communities. Should there be a substantial change in one or more aspects of living conditions in the future, other domain-level satisfaction measures could become relatively more important. It is best to think of all the domain-level measures of

satisfaction as potentially important. Time series comparisons will reveal any significant changes in each of these measures and help to explain any changes in satisfaction with life as a whole.

5.2 Recommendations for Design of Future Studies

5.2.1 Community Coordination

The study initiated community coordination through the development of the NSMB, an advisory board consisting of an Iñupiaq representative from each of the study communities. Board members were chosen with the assistance of the NSMB chair, Taquik Hepa, the director of the NSB Department of Wildlife Management. The study team chose Ms. Hepa based on past successful collaborations with her and her department, and her history of successful working relationships with North Slope communities. The NSMB played a key advisory role in reviewing and selecting the SIs to be included in the survey instrument, and in providing an Iñupiaq perspective on the appropriateness of certain questions or sampling methodologies. However, once the study team began coordinating with community entities to gain community support for the study and to coordinate fieldwork, several entities questioned how the NSMB members had been selected and why they had not been consulted during that process. Based on these concerns, the study team recommends that in future efforts, local community entities should be involved in selecting representatives from their own communities. Where possible or appropriate, each community entity should be allowed to select their own representative. For example, in Nuiqsut, consultation with the Nuiqsut Trilateral Committee, which includes the Native Village of Nuiqsut, City of Nuiqsut, and Kuukpiik Corporation, would ensure adequate representation within the community. In addition, in cases where one representative is unavailable to meet, the selection of an alternate representative would ensure that the community was still represented at any meetings.

The NSMB was involved in the SICAA project years before the survey was approved and implemented in the study communities. While board members were informed of updates such as BOEM's requested changes to the survey instrument, there was still a substantial temporal gap between the board's involvement and the approval of the survey instrument and therefore in some communities, board members were less involved or aware of the study by the time the field phase was initiated. Thus, the study team recommends that—in the event that there is a lengthy review period between development of the survey instrument and implementation of the survey—the study team should engage board members at least bi-annually. This would ensure that the board remains apprised of the study and continues to be actively involved in the study at the time of survey implementation. In addition to providing updates to board members, community entities should also be updated on the study throughout development and implementation of the survey instrument.

5.2.2 Questionnaire Development

Overall, the study team believes that the SIs selected for the SICAA study are valuable contributions to the study of well-being in Arctic communities. The resulting questionnaire introduced relatively minimal burden to the respondent (less than one hour) while collecting data on a strong set of SIs within each of the seven SICAA domains. One goal of the study team when selecting SIs and developing the SICAA questionnaire was to maximize comparability to

past SI research. The ability to compare SIs over time allows for the testing of potential linkages between well-being and other factors (e.g., O&G development). In the course of the review process for the SICAA questionnaire, changes were made which reduced comparability to previous SI studies. These included changing the sampling design to include HHs rather than any randomly selected adult household member; and having respondents choose from grouped income brackets rather than estimating income to the nearest \$1,000.

The choice to sample only HHs had positive and negative consequences. HHs, in general, are best suited to answer questions about their household as a whole (e.g., questions about household income, housing features, expenses), and therefore the selection of HHs likely resulted in more accurate reporting for those questions. However, for the more subjective or individual measures of well-being (e.g., satisfaction with job opportunities in the community, personal income), the selection of HHs meant that these measures of well-being were documented for a specific demographic subgroup within the study communities, rather than for the adult population as a whole. To partly address these concerns, the study team allowed for the identification of multiple HHs within a household and then randomly selected the respondent from the identified HHs. As noted earlier, males and females were almost equally represented in the SICAA sample. In addition, to allow comparability with previous studies which randomly selected an adult in each household, the study team was able to filter the data from those studies to include only HHs (or created a proxy variable to select likely HHs).

The decision to ask respondents to identify household and personal income within a grouped income range, rather than asking for income estimates to the nearest \$1,000, was in response to concerns about triggering the Federal Privacy Act by collecting personally identifiable information. The drawback of collecting income in ranges is that it reduces analytical possibilities and is prone to mischaracterizations of household income through poor choice of income groups or through slight differences in income (e.g., two households may fall into two different income range categories despite having a difference in annual income of only \$500). For the purposes of the SICAA survey, the study team decided to select income ranges based on how they were reported in previous SI studies. This allowed for direct comparisons to previous studies. The study team recommends that future studies document estimated income to the nearest \$1,000 or, at the very least, include a greater number of income ranges from which respondents could select. The study team also recommends that if future studies include income ranges, the upper income ceiling should be raised; the top income range in SICAA was \$50,000 or more, which the study team determined was too low to be meaningful on the North Slope.

5.2.3 Survey Implementation

While the field phase of the SICAA study was a success overall, the study team did have difficulty in some communities achieving the desired response rate of 80 percent. Lower response rates are generally a result of growing research burden in study communities, a lack of time on the part of respondents, and a lack of knowledge about the research and its potential benefits to the community and region. As noted above (Community Coordination), the study team believes that involving community entities earlier—by involving them in the selection of

board members and subsequently keeping in more regular contact with board members during the review period—could further strengthen community interest in participating in future studies by educating residents about the value of the research.

Research burden on the North Slope of Alaska is high. While the SICAA survey was conducted at an optimal time for avoiding peak subsistence harvesting seasons (January through March), it occurred one year after the NSB conducted a household census survey across the North Slope. The NSB census survey included some questions which were similar to those collected in the SICAA survey. Thus, some residents were hesitant to participate as they felt that they had just recently done something similar. Informing residents of the differences between the two surveys often helped allay their concerns, but not in all cases. The study team recommends that future research considers the timing of the field phase not only in terms of the time of year, but also in terms of its temporal proximity to other surveys being conducted. In cases where similar questions have been collected in other recent surveys, efforts at collaboration to avoid duplication of questions would help address concerns about being “over-surveyed.”

A lack of time on the part of residents was a common reason for refusing to participate in the SICAA survey. In addition, some residents were hesitant to participate because they did not want to discuss their personal lives with a stranger. To address residents’ concerns about time constraints or privacy, researchers sometimes offered to let the respondent fill the survey form out themselves, to be picked up by the researcher upon completion. The study team recommends that future studies improve options for self-administered surveys. The SICAA questionnaire was relatively straight forward, but some sections proved confusing to individuals filling the survey out themselves, resulting in certain questions having lower response rates. Developing an alternate version self-administered questionnaire which is straight-forward and does not include interviewer cues could reduce these issues. Finally, future research could include online or telephone options for filling out surveys.

5.3 Conclusions

Since the discovery of oil at Prudhoe Bay in the late 1960s, Alaskan history, economy, and society have been shaped by the ups and downs of the O&G industry. On the North Slope of Alaska, O&G exploration and development has been the primary economy on the North Slope, the primary source of revenue for the NSB, and the primary source of conflicts for Iñupiat hunters and harvesters practicing their traditional way of life. The extent to which the impacts of O&G development affect overall quality of life on the North Slope can be difficult to gauge, as one must take into account the multitude of negative and positive impacts that accompany such development, in addition to other forces of change (e.g., climate change, tourism, harvest regulations). The SICAA study, through the documentation of current SIs and incorporation of past SIs, provides a mechanism for monitoring well-being on the North Slope and identifying the factors most likely to affect well-being. While this report does not provide definitive answers to the question of how O&G development affects well-being on Alaska’s North Slope, or how it will affect well-being in the future, it does provide a basis against which future SI studies can be measured and offers insight into the state of well-being on the North Slope today.

As noted in Section 1.1 (Objectives), the objective of this study is *to identify a set of social domains and collect baseline data on key SIs within each domain to enable the monitoring of human well-being in coastal communities on the North Slope of Alaska*. Providing baseline data on well-being allows BOEM to 1) identify and evaluate changes in socioeconomic conditions; 2) identify and explore linkages between O&G development and well-being; 3) develop mitigation strategies to address the impacts of O&G development; and 4) inform future leasing and planning decisions by government agencies and officials.

The ability to monitor well-being on the North Slope is particularly important at a time when onshore development is well established on the North Slope and offshore O&G exploration and development is in its infancy. The SICAA study incorporated several features into its study design which facilitate monitoring in the context of O&G development. First, the study was designed to collect and report SI data by community. Each community may experience the impacts of O&G development differently for various reasons, including the community's proximity to onshore and/or offshore exploration and development. Second, the study reported and analyzed results in a way that changes can be tracked across different comparison groups and over time, by creating a multi-survey database. The four comparison groups presented in this study are as follows: 1) by community; 2) by gender; 3) over time (1977, 1988, 2003, and 2016); and 4) across regions and countries.

Finally, the study documented O&G impact observations from subsistence users so that impacts can be identified, monitored, and mitigated. The incorporation of impact measures also allows for the testing of study hypotheses about the association between well-being and O&G exploration and development, should offshore O&G development take place.

What follows is a summary of key findings of the SICAA study, including observations regarding well-being on the North Slope today, commonalities and differences in SIs across comparison groups, and linkages between O&G exploration development and well-being. It is important to distinguish between changes or differences in individual indicators versus overall well-being. When it comes to comparing individual indicators over time, the SICAA study documented both continuity and change. Similarly, both differences and commonalities in individual indicators and overall well-being were apparent in the remaining comparison groups (community, gender, and international comparisons). While the incorporation of comparison groups provides a mechanism for comparing indicators over time and across sub-groups, it is important to note the value of the indicators collected during the SICAA study as standalone baseline measures. The SIs selected for this study are meaningful in and of themselves; they should not be viewed in the context of comparisons alone.

1). Some measures of well-being, particularly O&G impact experiences, are correlated with proximity to development.

Twenty-two percent of all HHs in the six communities experienced an impact of O&G development on a subsistence activity in 2015. In contrast, 46 percent of HHs in Nuiqsut, the

community closest to O&G development on the North Slope, experienced an impact on a subsistence activity. Specifically, 54 percent of Nuiqsut caribou, moose, or sheep harvesters experienced an impact of O&G development in the past 12 months on their harvest activity compared with 29 percent or less of the caribou, moose, or sheep harvesters in the other five communities.

Despite the higher incidence of O&G impact reports, Nuiqsut responses were in the range of other communities on many non-impact specific indicators. For example, the percentage of Nuiqsut HHs who were “very satisfied” with the amount of fish and game available locally, and opportunities to hunt and fish were within the range of other communities. Furthermore, looking at harvest amounts for the three most impacted subsistence activities of caribou hunting, whaling, and fishing, there were no observable relationships between rates of impacts and relative harvest amounts.

However, on other measures, especially those related to the physical environment, Nuiqsut data showed substantial differences from the other study communities. Sixty-five percent of Nuiqsut HHs reported pollution from industrial development compared with 40 percent or less in the other study communities. Nuiqsut HHs were also more likely to report fish or animals that may be unsafe to eat as a problem for their community (64 percent compared to 46 percent or less) and, along with Kaktovik, to avoid eating subsistence foods because respondents believed they were contaminated (47 and 54 percent compared to 26 percent or less).

In the context of overall well-being (i.e., satisfaction with life as a whole), Nuiqsut HH responses were within the range of other communities, indicating that Nuiqsut O&G impact experiences and fear of future O&G impacts have not grown to the point of affecting residents’ overall satisfaction with their lives.

2). When comparing across communities, the greatest differences (more than 20 percentage points from the community aggregate) occur under the domains of economic well-being; physical environment; and cultural continuity.

Under the domain of economic well-being, respondents in two communities—Wainwright and Point Lay—were substantially less likely to have worked for 52 weeks out of the last 12 months (23 percent and 22 percent compared to the community aggregate of 45 percent). HHs in these two communities were also less likely to earn greater than \$50,000 per year from wage employment (17 percent and 16 percent compared to the community aggregate of 50 percent). Finally, on a list of housing features, Point Lay HHs were less likely to have at least 16 of the 24 features (43 percent compared to the 72 percent community aggregate).

Under the physical environment domain, communities showed substantial variation in reporting certain environmental problems. In general, HHs in Point Lay and Wainwright were less likely to report environmental problems, while HHs in Nuiqsut and Utqiagvik were more likely to report environmental problems. In 9 out of 12 cases, Nuiqsut had the highest or second highest percentage of HHs reporting environmental problems; in contrast, on the same number of

measures (9 out of 12), Point Lay had the lowest or second lowest percentage of HHs reporting environmental problems.

Under the cultural continuity domain, Nuiqsut HHs were more likely to understand Iñupiaq “very well” when compared to other communities (52 percent compared to the community aggregate of 29 percent). While the six study communities were similar in how important they considered traditional Iñupiat values, HHs in Wainwright and Point Lay were more likely to be satisfied with the job their community was doing in promoting those values. In fact, Wainwright had the highest percentage of HHs “very satisfied” with the job their community was doing in promoting 14 out of 16 Iñupiat values, while Point Lay had the second highest percent of HHs “very satisfied,” on 10 out of 16 Iñupiat values.

While there were variations among communities in terms of HH participation in subsistence and other traditional activities, many of these variations were due to community differences in their resource base. In the case of Utqiagvik, some of these differences were also due to the greater non-Iñupiaq population in that community. On measures of overall well-being, the six study communities were relatively similar. Between 55 percent and 64 percent of HHs in the study communities reported being “very satisfied” with their life as a whole.

3). With some exceptions, SIs on the North Slope have remained remarkably similar over time; the most notable changes occur under the domains of economic well-being, cultural continuity, and education.

The consistency of SIs over time is particularly notable given the substantial social and economic changes that have occurred over the last four decades. On a number of indicators, North Slope Iñupiat showed improvements over time.

Under the economic well-being domain, Iñupiat HHs reported greater participation in subsistence activities (an average of 5 activities in 2016 compared to 3 in 1977); higher satisfaction with the amount of fish and game available locally; and a higher number of weeks worked, on average. The proportion of meat and food coming from traditional foods declined slightly, but not significantly. Satisfaction with local job opportunities also declined somewhat between 1977 and 2003, but rose again in 2016. Harvest amounts remained similar over time. Under the physical environment domain, there was an increase between 2003 and 2016 in the percentage of HHs reporting climate change as a problem. Reports of other environmental problems remained similar over time.

The consistency of living conditions over the past 13 years extends to the health domain. No significant change occurred in how Iñupiat HHs assessed their health between 2003 and 2016, although fewer were “very satisfied” with their health in 2016. The index of depression remained unchanged between 2003 and 2016 while the index of social support significantly increased. Under the domain of cultural continuity, while Iñupiaq language speaking and understanding abilities declined between 2003 and 2016, Iñupiaq reading and writing abilities did not. The importance attached to Iñupiat values also did not change significantly. Asked to choose

between working on a wage job, harvesting, herding, or processing their own food, or both, in 2016 79 percent of Iñupiat HHs said “both”, compared with 64 percent in 2003 and 67 percent in 1977.

Under the education domain, more Iñupiat HHs had a high school degree in 2016 (87 percent) than in 1977 (35 percent), and more had a college or university degree (1 percent compared with 7 percent). Measures of political engagement (knowledge, interest, voting) all remained as high in 2016 as they did when last measured in 2003 or 1977. The two SIs of local control that did show some decline among Iñupiat HHs are the influence that Iñupiat have over the management of natural resources including O&G, and the influence that Iñupiat have over the management of wildlife like fish and caribou.

Survey respondents are best suited to integrate all aspects of their living conditions into overall assessments of well-being. Iñupiat HHs were more likely to be “very satisfied” with the quality of life in their community in 2016 and 2003 than they were in 1977. And finally, considering the most global SI of well-being—satisfaction with your life as a whole—the mean level of satisfaction did not significantly differ between 2016 and 2003.

4). In 2016, Iñupiat men and women did not differ significantly on measures of well-being; the most notable differences occur under economic well-being, physical environment, and cultural continuity.

Comparing the 2016 interview results between male and female Iñupiat HHs revealed few significant differences in measures of well-being. Instances where there were notable differences occurred under the domains of economic well-being, physical environment, health and safety, and cultural continuity.

Under the domain of economic well-being, women had a slightly lower score on the economic satisfaction index, and were somewhat less likely to be satisfied with certain economic measures such as transportation to and from their community and the ability to make ends meet. Under the physical environment domain, Iñupiat men and women scored similarly on the index of environmental problems and were equally satisfied with the health of the environment in their area. Iñupiat women were somewhat more likely to identify fish or animals that may be unsafe to eat, pollution of local lakes and streams, and disruption of views and landscapes as problems for their community. They were also more likely to have avoided eating subsistence foods because they thought they were contaminated.

Under the health and safety domain, Iñupiat men and women were relatively similar. Iñupiat women were somewhat more likely to report family health problems. They were also more likely to have been a victim of domestic violence in the last year. Iñupiat women scored slightly higher than men on the index of social support indicators. On other health and safety measures, male and female Iñupiat did not differ substantially. Under the domain of cultural continuity, the primary differences between Iñupiat men and women pertained to language and traditional

skills. Iñupiat women were slightly more likely than Iñupiat men to understand, speak, read, and write Iñupiaq.

Iñupiat men and women did not differ substantially on measures related to education, local control, and overall well-being. When it comes to overall well-being, Iñupiat women were slightly more likely than Iñupiat men to have considered moving from their community in the last five years. However, on other measures—satisfaction with life as a whole and satisfaction with life in their community—their responses were similar.

5). When comparing SIs across the Arctic, there are wider degrees of variation than among other comparison groups (e.g., by gender). In general, North Slope Iñupiat scored as high as other regions on most measures of well-being.

North Slope Iñupiat were generally within the range of other Arctic regions on most measures of well-being. However, on several indicators under the domains of cultural continuity, education, and local control, they showed higher levels of well-being.

Under the domain of economic well-being, measures related to subsistence harvests indicate that North Slope Iñupiat in 2003 were similar to other Alaskan regions and to Indigenous residents in Norway and Sweden. These measures declined somewhat for North Slope Iñupiat in 2016; however, their reliance on subsistence foods in 2016 was still higher than in Greenland and Chukotka in 2003. On employment and income-related measures, North Slope Iñupiat were within the range of other regions. North Slope Iñupiat satisfaction with HH income and standard of living was generally higher than or equal to other Arctic regions.

Under the physical environment domain, perceptions of environmental problems ranged widely, but in general North Slope Iñupiat HHs were within the range of other regions when responding to questions about environmental problems and satisfaction with the health of the environment. North Slope Iñupiat were less likely than Indigenous HHs in Chukotka and Kola Peninsula, but more likely than all other regions, to have concerns that fish or animals are not safe to eat.

When it comes to the domain of health and safety, North Slope Iñupiat were within the range of other regions on most measures. Less than half of North Slope Iñupiat HHs in both 2003 and 2016 rated their health as “very good” or “excellent,” similar to some other regions in 2003 but lower than in Greenland and Sweden. North Slope Iñupiat were more likely to say that there are problems related to drugs or alcohol in their home today, when compared to Indigenous HHs in the Kola Peninsula, Greenland, Sweden, and Norway; however, their responses were similar to those in the other Alaskan regions and in Chukotka.

Under the domain of cultural continuity, North Slope and Bering Straits Iñupiat engaged in the most subsistence activities on average (5) compared to the comparison regions (between 2 and 4). All three Alaska Iñupiat settlement regions show a mean of 12 (14 on the North Slope in 2016) traditional skills learned (of 19 measured), with an average of 10 for the Kola Peninsula and Norway, 9 for Chukotka and Greenland, and 8 for Sweden.

Under the education domain, about half of Iñupiat HHs in all three Alaska regions were “very satisfied” with the formal schooling and training that they received, substantially higher than in Norway and Sweden. Iñupiat HHs were also more likely than many other regions to be very satisfied with the quality of formal education in their community.

On measures related to local control, North Slope Iñupiat HHs in 2003 scored as high as Indigenous HHs in the comparison regions, except Greenland and Norway, on an index of political engagement based on their assessment of knowledge, interest, and attitude toward voting. North Slope Iñupiat HHs were more satisfied with the influence Iñupiat have on the management of natural resources like fish and caribou than any other region. Similarly, North Slope Iñupiat HHs were more satisfied with their ability to reduce environmental problems than any other comparison region.

When it comes to the most global indicator of overall well-being, North Slope Iñupiat HHs were nearly as likely to be very satisfied with the quality of life in their community as the Indigenous HHs in the Northwest Arctic and Norway and more likely than the Indigenous HHs in all other comparison regions. They were also more likely than most other regions to be very satisfied with their life as a whole.

6). At the HH level, O&G impacts on subsistence activities are correlated with a slight decrease in satisfaction with the amount of fish and game available locally and with opportunities to fish and hunt; however, results also indicate that the existing extent of impacts has not negatively affected these indicators at the community level.

The study team analyzed the relationship between subsistence impacts resulting from O&G development and measures of well-being. HHs who reported at least one impact experience were slightly less likely to be satisfied with the amount of fish and game available locally, and they were also slightly less likely to be satisfied with opportunities to hunt and fish. However, as reported above, at the community level, Nuiqsut HHs were as satisfied with the amount of fish and game available locally and with local opportunities to hunt and fish as the HHs in the four other villages; in Utqiagvik, satisfaction were slightly lower. Together these results indicate that the existing extent of impacts of petroleum development on subsistence has not yet reached the point of negatively affecting overall satisfaction with the amount of fish and game available locally or of the satisfaction with opportunities to hunt and fish.

7). While all indicators are potentially important to overall well-being—the domains of local control, economic well-being, and cultural continuity have a higher correlation with overall well-being than the other domains.

Individual SIs having the highest correlation with overall well-being (i.e., satisfaction with life as a whole) include satisfaction with 1) the quality of life in their community; 2) their standard of living; 3) the combinations of activities they do to make a living; 4) community promotion of 16

Iñupiat values; 5) the degree of influence Iñupiat have on management of natural resources like marine mammals, fish, and caribou; 6) their health; and 7) opportunities to hunt and fish.

It is important to keep in mind that a correlation does not prove a causal relationship. Time series comparisons are an important test of causality. If, for example, satisfaction with the amount of fish and game available were to decline over time, and satisfaction with life as a whole were to also show a decline, then there would be greater empirical support for a causal relationship.

On a broader level, the domains of local control, economic well-being, and cultural continuity showed a higher correlation with overall well-being than the domains of physical environment, health and safety, and education. However, it is best to think of all the domain-level measures of satisfaction as potentially important. Future time series comparisons will be valuable in revealing any significant changes in these measures and helping to explain any changes in satisfaction with life as a whole.

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Social Indicators in Coastal Alaska: Arctic Communities:

Appendix I: SICAA Survey Questionnaire

Social Indicators in Coastal Alaska: Arctic Communities

Appendix I: SICAA Survey Questionnaire

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No. M11PC00032

by

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US Department of the Interior
Bureau of Ocean Energy Management
Alaska Outer Continental Shelf Region
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DISCLAIMER

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This report can be obtained from the Alaska OCS Region Office; the contact information is below.

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CONTROL
NO.

INTWR
NO:

STUDY
NO.

SOCIAL INDICATORS IN COASTAL ALASKA: ARCTIC COMMUNITIES CONSENT FORM

CONSENT TO PARTICIPATE IN RESEARCH

You are asked to participate in a research study conducted by Stephen Braund & Associates for the U.S. Department of the Interior, the Bureau of Ocean Energy Management or BOEM for short. BOEM is responsible for managing offshore energy exploration and development. BOEM's responsibilities include monitoring the impacts of development on North Slope residents and taking steps to reduce any impacts. This questionnaire was compiled with direct involvement and input from the North Slope Management Board, an Iñupiaq review board the study team formed for this project. The board is comprised of representatives from the six study communities and the North Slope Borough.

PURPOSE OF THE STUDY

The purpose of the Social Indicators Study is to measure the well-being of North Slope residents so that any impacts of offshore oil and gas exploration and development can be identified and mitigated.

PROCEDURES

Your participation in this research project is voluntary. The interview is anonymous and takes about 1 hour. We will pay you \$50 for your participation. If we get to a question that you don't wish to answer, just say "pass."

POTENTIAL RISKS AND DISCOMFORTS

You may feel uncomfortable with some of the questions in this survey. We have placed the most sensitive questions in a self-administered part of the interview. We also use cue cards so that you can give your answers by selecting a letter indicating your response choice. As noted above, if we get to a question that you don't wish to answer, just say "pass." We will not identify you or your household.

ANTICIPATED BENEFITS TO SUBJECTS

The 1953 OCS Lands Act requires BOEM to monitor and assess, and if possible mitigate, impacts of resource development on the human environment. This study will produce baseline data to accomplish this legal requirement. It may help BOEM to avoid or reduce impacts of development. However, you should not expect to benefit directly from participation in this research. You are important to the goal of building an accurate picture of well-being on the North Slope. Are you willing to be interviewed?

► YES ► NO

IF NO, STOP INTERVIEW. IF YES, READ THE PAPERWORK REDUCTION ACT STATEMENT.

CONTACT INFORMATION: PRINCIPAL INVESTIGATOR: STEPHEN R BRAUND, 308 G ST, SUITE 323, ANCHORAGE, AK 99501, (907) 276-8222, SRBA@ALASKA.NET.

BUREAU OF OCEAN ENERGY MANAGEMENT OR BOEM, 3801 CENTERPOINT DRIVE, SUITE 500, ANCHORAGE, AK 99503, ATTENTION: CHRIS CAMPBELL, CONTRACT NO. M11PC00032, (907) 334-5264, CHRIS.CAMPBELL@BOEM.GOV.

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: THE PRA (44 U.S.C. 3501 ET. SEQ.) REQUIRES US TO INFORM YOU THAT WE COLLECT THIS INFORMATION TO OBTAIN KNOWLEDGE OF SUBSISTENCE ISSUES IN COASTAL ALASKA COMMUNITIES AND HOW THEY RELATE TO FUTURE OIL AND GAS DRILLING. RESPONSES ARE VOLUNTARY. AN AGENCY MAY NOT CONDUCT OR SPONSOR, AND A PERSON IS NOT REQUIRED TO RESPOND TO, A COLLECTION OF INFORMATION UNLESS IT DISPLAYS A CURRENTLY VALID OMB CONTROL NUMBER. THE NUMBER FOR THIS SURVEY IS 1010-1010-0188. PUBLIC REPORTING BURDEN FOR THIS STUDY IS ESTIMATED TO AVERAGE 1 HOUR PER RESPONSE. YOU MAY DIRECT COMMENTS REGARDING THE BURDEN ESTIMATE OR ANY OTHER ASPECT OF THIS FORM TO THE INFORMATION COLLECTION CLEARANCE OFFICER, BUREAU OF OCEAN ENERGY MANAGEMENT, MAIL STOP HM-3127, 381 ELDEN STREET, HERNDON, VA 20170.

SOCIAL INDICATORS IN COASTAL ALASKA: ARCTIC COMMUNITIES

CONTRACT NO. M11PC00032

OMB CONTROL NUMBER 1010-0188

EXPIRATION DATE: 10/31/2017

PROJECT ORGANIZATIONS

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UNDER CONTRACT WITH
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF OCEAN ENERGY MANAGEMENT
ALASKA OCS REGION
ENVIRONMENTAL SCIENCES MANAGEMENT SECTION
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SECTION A: SOCIAL INDICATORS OF ECONOMIC WELL-BEING

A1. I'd like to ask you about **your** hunting, fishing, trapping, and gathering activities in the past 12 months. (HAND R CARD ONE) Looking at this card, please tell me the letters of any of the activities **you** did in the last 12 months (ALSO CIRCLE APPROPRIATE LETTERS ON SEPARATE A1 SHEET):

- | | | | |
|--------------------------|--------------------------|--------------------------|--|
| 1. YES | 2. NO | 9. NA | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | a. CAPTAINED A WHALING CREW? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | b. WAS A MEMBER OF A WHALING CREW? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | c. SKINNED AND BUTCHERED A SEAL? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | d. SKINNED AND BUTCHERED A CARIBOU? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | e. SKINNED AND BUTCHERED ANOTHER ANIMAL? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | f. HELPED WHALING CREWS BY COOKING,
GIVING MONEY OR SUPPLIES, CUTTING MEAT? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | g. SEWED SKINS, MADE PARKAS, KAMIKS OR OTHER
TRADITIONAL CLOTHING? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | h. MADE SLEDS OR BOATS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | i. HUNTED CARIBOU, MOOSE, OR SHEEP? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | j. HUNTED SEAL OR UGRUK? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | k. HUNTED WALRUS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | l. HUNTED WATERFOWL (E.G., DUCKS AND GEESE)? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | m. GATHERED EGGS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | n. FISHED? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | o. GATHERED GREENS, ROOTS, OR OTHER PLANTS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | p. PRESERVED MEAT OR FISH? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | q. TRAPPED? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | r. PICKED BERRIES? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | s. MADE NATIVE OR TRADITIONAL HANDICRAFTS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | t. HUNTED WOLF OR WOLVERINE? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | u. HUNTED POLAR BEAR? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | v. HUNTED PTARMIGAN? |

A2. In the past 12 months, during which months, if any, did you spend five or more days on the subsistence activities listed above?

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	NO MONTHS
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----------

A3. Thinking about the subsistence activities of **all** the members of your household, how many caribou did your household members harvest in the past 12 months? (CONTINUE WITH OTHER SPECIES)

	SPECIES	NUMBER HARVESTED
A3a	Caribou	
A3b	Moose	
A3c	Dall Sheep	
A3d	Bearded Seal	
A3e	Beluga	
A3f	Seal	
A3g	Walrus	
A3h	Polar Bear	
A3i	Arctic char/Dolly Varden	
A3j	Cisco	
A3k	Other Whitefish	
A3l	Salmon	
A3m	Ducks	
A3n	Geese	

A4. How many shares of bowhead did your household get from your household's participation in bowhead whale hunts in the past 12 months?

(# SHARES)

A5. Think about **all** the meat and fish your household ate in the past 12 months. How much of this meat and fish was traditional food (e.g., nikipiaq): none, less than half, about half, or more than half?

- | | | | |
|--|-----|--------------|--|
| <input type="checkbox"/> 1. NONE | → → | SKIP TO Q.A8 | <input type="checkbox"/> 5. ALL |
| <input type="checkbox"/> 2. LESS THAN HALF | | | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. ABOUT HALF | | | <input type="checkbox"/> 9. NA |
| <input type="checkbox"/> 4. MORE THAN HALF | | | |

A6. Still thinking about **all** the meat and fish your household ate in the past 12 months, how much did members of your household harvest: none, less than half, about half, or more than half?

- | | |
|--|--|
| <input type="checkbox"/> 1. NONE | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 2. LESS THAN HALF | <input type="checkbox"/> 9. NA |
| <input type="checkbox"/> 3. ABOUT HALF | <input type="checkbox"/> 0. INAP |
| <input type="checkbox"/> 4. MORE THAN HALF | |
| <input type="checkbox"/> 5. ALL | |

A7. And still thinking about **all** the meat and fish your household ate in the past 12 months, how much of it did your household receive from other households: none, less than half, about half, or more than half?

- | | |
|--|--|
| <input type="checkbox"/> 1. NONE | <input type="checkbox"/> 5. ALL |
| <input type="checkbox"/> 2. LESS THAN HALF | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. ABOUT HALF | <input type="checkbox"/> 9. NA |
| <input type="checkbox"/> 4. MORE THAN HALF | <input type="checkbox"/> 0. INAP |

A8. (HAND R CARD TWO) Please tell me the number on this card that fits how satisfied you are with the amount of fish and game available locally?

- | | |
|--|---|
| <input type="checkbox"/> 1. VERY SATISFIED | <input type="checkbox"/> 5. VERY DISSATISFIED |
| <input type="checkbox"/> 2. SOMEWHAT SATISFIED | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. NEITHER SATISFIED NOR DISSATISFIED | <input type="checkbox"/> 9. NA |
| <input type="checkbox"/> 4. SOMEWHAT DISSATISFIED | |

A9. Using the same card, how satisfied are you with the opportunities to hunt and fish?

- | | |
|--|---|
| <input type="checkbox"/> 1. VERY SATISFIED | <input type="checkbox"/> 5. VERY DISSATISFIED |
| <input type="checkbox"/> 2. SOMEWHAT SATISFIED | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. NEITHER SATISFIED NOR DISSATISFIED | <input type="checkbox"/> 9. NA |
| <input type="checkbox"/> 4. SOMEWHAT DISSATISFIED | |

A10. Within the past 12 months, how many paid jobs or self-employment jobs did you have?

99. NA 00. INAP

(# JOBS)

A11. Thinking about all the paid jobs and self-employment jobs you had in the last 12 months, how many weeks (out of a total 52 weeks) did you work on a job in the last 12 months? Include weeks when you were employed but took subsistence leave or vacation.

(# WEEKS)

A12. And how many of these weeks, if any, did you work on a job associated with oil and gas exploration or development? By jobs associated with oil and gas development, I mean any jobs working for a company or organization that is part of the permitting, exploration, production, transportation, or servicing of oil or gas, including office jobs as well as field jobs, and including such jobs as subsistence coordinator, subsistence advisor, or marine mammal observer.

(# WEEKS)

(IF 0 WEEKS, SKIP TO A14)

A13. Do you know how many of these weeks were on a job related to **offshore** petroleum exploration or development?

(# WEEKS)

(ASK A14, A16, A17 IF WORKED AT MORE THAN ONE JOB)

A14. Of these (NUMBER OF JOBS GIVEN IN A10) jobs, please answer the next set of questions thinking about the job you worked on for the most hours over the last 12 months. How many weeks did you work on this job?

(# WEEKS)

THERE IS NO Q.A15

(ASK A16 AND A17 IF A12 IS GREATER THAN ZERO WEEKS, OTHERWISE SKIP TO A18)

A16. Was this a job in the oil and gas industry?

1. YES
 2. NO →
 8. DON'T KNOW →
 9. NA 0. INAP

SKIP TO A18

A17. Was this a job related to **offshore** petroleum exploration or production?

1. YES
 2. NO
 8. DON'T KNOW
 9. NA 0. INAP

A18. (HAND R CARD TWO) Please tell me the number on this card that fits how satisfied you were with this job.

1. VERY SATISFIED 5. VERY DISSATISFIED
 2. SOMEWHAT SATISFIED 8. DON'T KNOW
 3. NEITHER SATISFIED NOR DISSATISFIED 9. NA
 4. SOMEWHAT DISSATISFIED

A19. Using the same card, how satisfied are you with job opportunities in your community?

1. VERY SATISFIED 5. VERY DISSATISFIED
 2. SOMEWHAT SATISFIED 8. DON'T KNOW
 3. NEITHER SATISFIED NOR DISSATISFIED 9. NA
 4. SOMEWHAT DISSATISFIED

A20. In the last 12 months, how many months did you not have a wage job and wanted one?

99. NA 00. INAP

(# MONTHS)

A21. If you could choose, which lifestyle would you prefer: working on a wage job, harvesting or processing your own food, or both?

- 1. WORKING ON A WAGE JOB
- 2. HARVESTING OR PROCESSING YOUR OWN FOOD
- 3. BOTH
- 8. DON'T KNOW
- 9. NA

A22. (HAND R CARD TWO) Using Card Two, please tell me how satisfied you are with the combination of activities you do to make a living? (Examples of activities are your job, housework, subsistence, and raising your children)

- | | |
|--|---|
| <input type="checkbox"/> 1. VERY SATISFIED | <input type="checkbox"/> 5. VERY DISSATISFIED |
| <input type="checkbox"/> 2. SOMEWHAT SATISFIED | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. NEITHER SATISFIED NOR DISSATISFIED | <input type="checkbox"/> 9. NA |
| <input type="checkbox"/> 4. SOMEWHAT DISSATISFIED | |

A23. (HAND R CARD THREE) Looking at the features on this card, which of the following does your household **not** have? Please just tell me the letters.

1. HAVE 2. NOT HAVE 8. DK 9. NA

- | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | a. A FULL KITCHEN? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | b. A BATH OR SHOWER? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | c. AN INDOOR FLUSHING TOILET? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | d. HOT RUNNING WATER? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | e. CENTRAL HEATING OR ELECTRIC STORAGE HEATERS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | f. A NATURAL GAS HOOK-UP? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | g. A PLACE TO SIT OUTSIDE (E.G., A PORCH, BALCONY, TERRACE OR GARDEN) |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | h. A LANDLINE TELEPHONE OR CELL PHONE? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | i. STOVE FOR COOKING? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | j. SMOKE DETECTOR? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | k. ELECTRICITY? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | l. GENERATOR? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | m. CARBON MONOXIDE DETECTOR? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | n. COLD RUNNING WATER? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | o. SEPTIC TANK, SEWER CONNECTION, OR SEWAGE PROCESSOR? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | p. FIRE EXIT? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | q. A VIEW TO CHECK THE WEATHER? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | r. A STORE ROOM? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | s. ICE CELLAR? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | t. FREEZER? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | u. REFRIGERATOR? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | v. A PLACE TO CUT MEAT AND FISH? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | w. DOUBLE GLASS WINDOWS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | x. A CONNECTION TO THE INTERNET? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | y. TELEVISION? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | z. AN ELECTRONIC GAMING UNIT/DEVICE? |

A24. (HAND R CARD FOUR) Looking at the items on this card, did your house have any of these problems in the last 12 months? Please just tell me the letters.

1. YES 2. NO 8. DK 9. NA

- | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | a. TOO LITTLE SPACE? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | b. DAMPNESS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | c. MOLD OR MILDEW? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | d. WATER LEAKING FROM THE CEILING FROM
CONDENSATION OR MELTING? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | e. FROST ON THE WINDOWS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | f. DRAFT FROM THE DOORS OR WINDOWS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | g. DRAFTS FROM PLACES OTHER THAN DOORS &
WINDOWS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | h. COLD FLOORS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | i. GENERALLY COLD? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | j. STALE AIR – INADEQUATE VENTILATION? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | k. SHIFTING OF HOUSE FROM ACTIVE PERMAFROST? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | l. BROKEN DOORS, STAIRS, PIPES, OR WINDOWS DUE TO SHIFTING
FROM PERMAFROST? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | m. WATER THAT IS NOT SAFE TO DRINK,
AT LEAST AT SOME TIMES OF THE YEAR? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | n. FROZEN WATER LINE? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | o. AIR VENT PLUGGED WITH ICE? |

A25. How many people are currently living in your household?

(# PEOPLE)

A26. How many of these people, if any, are on a housing waiting list?

(# PEOPLE)

A27. (HAND R CARD TWO) Please tell me the number on this card that fits how satisfied you are with the quality of your housing.

- | | |
|--|---|
| <input type="checkbox"/> 1. VERY SATISFIED | <input type="checkbox"/> 5. VERY DISSATISFIED |
| <input type="checkbox"/> 2. SOMEWHAT SATISFIED | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. NEITHER SATISFIED NOR DISSATISFIED | <input type="checkbox"/> 9. NA |
| <input type="checkbox"/> 4. SOMEWHAT DISSATISFIED | |

A28. (HAND R CARD FIVE) For the last 12 months, please tell me the letter on this card that reflects an estimate of what you and other members of your household earned from the sales of carvings, skin clothing, furs, crafts, ivory and other similar goods.

- | | |
|--|--|
| <input type="checkbox"/> A. \$1,500 OR UNDER | <input type="checkbox"/> G. \$23,001 to \$28,000 |
| <input type="checkbox"/> B. \$1,501 to \$5,000 | <input type="checkbox"/> H. \$28,001 to \$37,000 |
| <input type="checkbox"/> C. \$5,001 to \$8,000 | <input type="checkbox"/> I. \$37,001 to \$50,000 |
| <input type="checkbox"/> D. \$8,001 to \$12,000 | <input type="checkbox"/> J. ABOVE \$50,000 |
| <input type="checkbox"/> E. \$12,001 to \$16,000 | <input type="checkbox"/> 99998. DON'T KNOW |
| <input type="checkbox"/> F. \$16,001 to \$23,000 | <input type="checkbox"/> 99999. NA |

A29. Using the same card, please think about the total income you and other members of your household earned from self-employment, a small business, and payment as an expert, over the past 12 months. Please tell me the letter on this card that reflects your estimate of that income.

- | | |
|--|--|
| <input type="checkbox"/> A. \$1,500 OR UNDER | <input type="checkbox"/> G. \$23,001 to \$28,000 |
| <input type="checkbox"/> B. \$1,501 to \$5,000 | <input type="checkbox"/> H. \$28,001 to \$37,000 |
| <input type="checkbox"/> C. \$5,001 to \$8,000 | <input type="checkbox"/> I. \$37,001 to \$50,000 |
| <input type="checkbox"/> D. \$8,001 to \$12,000 | <input type="checkbox"/> J. ABOVE \$50,000 |
| <input type="checkbox"/> E. \$12,001 to \$16,000 | <input type="checkbox"/> 99998. DON'T KNOW |
| <input type="checkbox"/> F. \$16,001 to \$23,000 | <input type="checkbox"/> 99999. NA |

A30. Using the same card, for the last 12 months, think about the total you and other members of your household earned in wages from an employer, before taxes. Please tell me the letter on this card that reflects your estimate of that income.

- | | |
|--|--|
| <input type="checkbox"/> A. \$1,500 OR UNDER | <input type="checkbox"/> G. \$23,001 to \$28,000 |
| <input type="checkbox"/> B. \$1,501 to \$5,000 | <input type="checkbox"/> H. \$28,001 to \$37,000 |
| <input type="checkbox"/> C. \$5,001 to \$8,000 | <input type="checkbox"/> I. \$37,001 to \$50,000 |
| <input type="checkbox"/> D. \$8,001 to \$12,000 | <input type="checkbox"/> J. ABOVE \$50,000 |
| <input type="checkbox"/> E. \$12,001 to \$16,000 | <input type="checkbox"/> 99998. DON'T KNOW |
| <input type="checkbox"/> F. \$16,001 to \$23,000 | <input type="checkbox"/> 99999. NA |

A31. Using the same card, for the last 12 months, think about the total you and other members of your household received from government and other organizations. Please include pensions, dividend checks, public assistance, shareholder dividends, student financial aid, disaster relief. Please tell me the letter on this card that reflects your estimate of that income. (INTERVIEWER HELP RESPONDENT ADD THESE UP IF NECESSARY).

- | | |
|--|--|
| <input type="checkbox"/> A. \$1,500 OR UNDER | <input type="checkbox"/> G. \$23,001 to \$28,000 |
| <input type="checkbox"/> B. \$1,501 to \$5,000 | <input type="checkbox"/> H. \$28,001 to \$37,000 |
| <input type="checkbox"/> C. \$5,001 to \$8,000 | <input type="checkbox"/> I. \$37,001 to \$50,000 |
| <input type="checkbox"/> D. \$8,001 to \$12,000 | <input type="checkbox"/> J. ABOVE \$50,000 |
| <input type="checkbox"/> E. \$12,001 to \$16,000 | <input type="checkbox"/> 99998. DON'T KNOW |
| <input type="checkbox"/> F. \$16,001 to \$23,000 | <input type="checkbox"/> 99999. NA |

A32. Using the same card, for the last 12 months, please think about the total household income you and all other members of your household earned or received from other sources. Please tell me the letter on this card that reflects your estimate of that income.

- | | |
|--|--|
| <input type="checkbox"/> A. \$1,500 OR UNDER | <input type="checkbox"/> G. \$23,001 to \$28,000 |
| <input type="checkbox"/> B. \$1,501 to \$5,000 | <input type="checkbox"/> H. \$28,001 to \$37,000 |
| <input type="checkbox"/> C. \$5,001 to \$8,000 | <input type="checkbox"/> I. \$37,001 to \$50,000 |
| <input type="checkbox"/> D. \$8,001 to \$12,000 | <input type="checkbox"/> J. ABOVE \$50,000 |
| <input type="checkbox"/> E. \$12,001 to \$16,000 | <input type="checkbox"/> 999998. DON'T KNOW |
| <input type="checkbox"/> F. \$16,001 to \$23,000 | <input type="checkbox"/> 999999. NA |

A33. Using the same card, for the last 12 months, please tell me the letter on this card that reflects an estimate of your total personal income, before taxes?

- | | |
|--|--|
| <input type="checkbox"/> A. \$1,500 OR UNDER | <input type="checkbox"/> G. \$23,001 to \$28,000 |
| <input type="checkbox"/> B. \$1,501 to \$5,000 | <input type="checkbox"/> H. \$28,001 to \$37,000 |
| <input type="checkbox"/> C. \$5,001 to \$8,000 | <input type="checkbox"/> I. \$37,001 to \$50,000 |
| <input type="checkbox"/> D. \$8,001 to \$12,000 | <input type="checkbox"/> J. ABOVE \$50,000 |
| <input type="checkbox"/> E. \$12,001 to \$16,000 | <input type="checkbox"/> 999998. DON'T KNOW |
| <input type="checkbox"/> F. \$16,001 to \$23,000 | <input type="checkbox"/> 999999. NA |

A34. (HAND R CARD TWO) Please tell me the number on this card that fits how satisfied you are with your household income?

- | | |
|--|---|
| <input type="checkbox"/> 1. VERY SATISFIED | <input type="checkbox"/> 5. VERY DISSATISFIED |
| <input type="checkbox"/> 2. SOMEWHAT SATISFIED | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. NEITHER SATISFIED NOR DISSATISFIED | <input type="checkbox"/> 9. NA |
| <input type="checkbox"/> 4. SOMEWHAT DISSATISFIED | |

A35. Using the same card, how satisfied are you with the availability of goods in local stores?

- | | |
|--|---|
| <input type="checkbox"/> 1. VERY SATISFIED | <input type="checkbox"/> 5. VERY DISSATISFIED |
| <input type="checkbox"/> 2. SOMEWHAT SATISFIED | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. NEITHER SATISFIED NOR DISSATISFIED | <input type="checkbox"/> 9. NA |
| <input type="checkbox"/> 4. SOMEWHAT DISSATISFIED | |

A36. Using the same card, how satisfied are you with transportation to and from your community?

- | | |
|--|---|
| <input type="checkbox"/> 1. VERY SATISFIED | <input type="checkbox"/> 5. VERY DISSATISFIED |
| <input type="checkbox"/> 2. SOMEWHAT SATISFIED | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. NEITHER SATISFIED NOR DISSATISFIED | <input type="checkbox"/> 9. NA |
| <input type="checkbox"/> 4. SOMEWHAT DISSATISFIED | |

A37. Using the same card, how satisfied are you with the cost of living in your community?

- | | |
|--|---|
| <input type="checkbox"/> 1. VERY SATISFIED | <input type="checkbox"/> 5. VERY DISSATISFIED |
| <input type="checkbox"/> 2. SOMEWHAT SATISFIED | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. NEITHER SATISFIED NOR DISSATISFIED | <input type="checkbox"/> 9. NA |
| <input type="checkbox"/> 4. SOMEWHAT DISSATISFIED | |

A38. Using the same card, how satisfied are you with your standard of living? I mean goods and services which one can buy like housing, clothing, food, cars, vacation, travel. How satisfied are you, overall, with your standard of living?

- | | |
|--|---|
| <input type="checkbox"/> 1. VERY SATISFIED | <input type="checkbox"/> 5. VERY DISSATISFIED |
| <input type="checkbox"/> 2. SOMEWHAT SATISFIED | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. NEITHER SATISFIED NOR DISSATISFIED | <input type="checkbox"/> 9. NA |
| <input type="checkbox"/> 4. SOMEWHAT DISSATISFIED | |

A39. Is your household able to make ends meet, with great difficulty, some difficulty, fairly easily, or very easily?

1. WITH GREAT DIFFICULTY

2. SOME DIFFICULTY

3. FAIRLY EASILY

4. VERY EASILY

8. DON'T KNOW

9. NA

SECTION B: SOCIAL INDICATORS OF CULTURAL CONTINUITY

B1. I'd like to read a list of values that may be important to maintaining your identity. For each one, please tell me the number on this card (HAND R CARD SIX) that best fits your choice:

	1	2	3	4	8	9
	VERY IMPORTANT	IMPORTANT	NOT VERY IMPORTANT	NOT AT ALL IMPORTANT	DK	NA
a. Use of Iñupiaq?						
b. Sharing and helping?						
c. Respect for others?						
d. Cooperation?						
e. Respect for Elders?						
f. Love for Children?						
g. Hard work?						
h. Knowledge of your family tree?						
i. Avoidance of conflict?						
j. Respect for nature?						
k. Spirituality?						
l. Humor?						
m. Family Roles?						
n. Eating traditional or wild foods?						
o. Hunting and Fishing?						
p. Preserving of traditional or wild foods?						

B2. Now I'd like to ask about the same list of values, but this time ask you to tell me how satisfied you are with the job your community is doing in promoting each of these values. For each one I read, please tell me the number on this card (HAND R CARD TWO) that best fits your choice:

	1	2	3	4	5	8	9
	VERY SATISFIED	SOMEWHAT SATISFIED	NEITHER SATISFIED NOR DISSATISFIED	SOMEWHAT DISSATISFIED	VERY DISSATISFIED	DK	NA
a. Use of Iñupiaq?							
b. Sharing and helping?							
c. Respect for others?							
d. Cooperation?							
e. Respect for Elders?							
f. Love for Children?							
g. Hard work?							
h. Knowledge of your family tree?							
i. Avoidance of conflict?							
j. Respect for nature?							
k. Spirituality?							
l. Humor?							
m. Family Roles?							
n. Eating traditional or wild foods?							
o. Hunting and Fishing?							
p. Preserving of traditional or wild foods?							

B3. Using this card, please tell me how would you rate your ability to understand, speak, read, and write Iñupiaq? (HAND R CARD SEVEN) Just tell me the number that best describes your ability to:

	1	2	3	4	5	9
	VERY WELL	RELATIVELY WELL	WITH EFFORT	A FEW WORDS	NOT AT ALL	NA
a. Understand?						
b. Speak?						
c. Read?						
d. Write?						

SECTION C: SOCIAL INDICATORS OF EDUCATION

C1. Now I'd like to ask about your education. I'd like to start by talking with you more about your traditional education. (HAND R CARD EIGHT) Looking at the items on this card, Which—if any—of these things did you learn how to do while you were growing up? Please just tell me the letters on the card.

- | 1. YES | 2. NO | 9. NA | |
|--------------------------|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | a. SERVE ON A WHALING CREW? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | b. HUNT AND FISH? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | c. HUNT SEAL? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | d. DRIVE A SNOWMACHINE? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | e. LEARN WHEN THE BERRIES ARE RIPE AND WHERE TO FIND THEM? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | f. FIX A SNOWMACHINE? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | g. READ THE WEATHER? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | h. OVERNIGHT ON THE LAND? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | i. NAME THE DIFFERENT TYPES OF SNOW IN IÑUPIAQ? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | j. SKIN AND BUTCHER A CARIBOU? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | k. SKIN AND BUTCHER A SEAL? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | l. SKIN AND BUTCHER ANOTHER ANIMAL? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | m. PRESERVE MEAT AND FISH? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | n. TAKE CARE OF AND SEW SKINS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | o. MAKE SLEDS OR BOATS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | p. COOK AND PREPARE TRADITIONAL OR WILD FOODS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | q. LEARN THE NAMES OF PAST GENERATIONS OF RELATIVES? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | r. MAKE TRADITIONAL CLOTHING? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | s. REPAIR TRADITIONAL CLOTHING? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | t. LEARN STORIES PASSED ON BY YOUR PARENTS AND GRANDPARENTS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | u. MAKE NATIVE OR TRADITIONAL ARTS AND CRAFTS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | v. LEARN TRADITIONAL DANCES AND DRUMMING? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | w. LEARN TRADITIONAL SONGS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | x. NAVIGATE AT SEA? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | y. TAKE CARE OF AND HANDLE A DOG TEAM? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | z. MAKE AND MAINTAIN AN ICE CELLAR? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | aa. PROTECT LAND AND RESOURCES? |

C2. What is the highest level of schooling or training you have completed?

- 02. LESS THAN ELEMENTARY/PRIMARY SCHOOL
- 03. ELEMENTARY/PRIMARY SCHOOL
- 04. SECONDARY/HIGH SCHOOL
- 05. VOCATIONAL/TRADE SCHOOL/COLLEGE – ASSOCIATE DEGREE
- 06. COLLEGE OR UNIVERSITY – BACHELOR’S, MASTER’S OR DOCTORAL DEGREE
- 97. OTHER: _____
- 98. DK
- 99. NA

C3. (HAND R CARD TWO) Please tell me the number on this card that fits how satisfied you are with the formal schooling and training you have received?

- 1. VERY SATISFIED
- 2. SOMEWHAT SATISFIED
- 3. NEITHER SATISFIED NOR DISSATISFIED
- 4. SOMEWHAT DISSATISFIED
- 5. VERY DISSATISFIED
- 8. DON’T KNOW
- 9. NA
- 0. INAP

C4. Using the same card, how satisfied are you with the quality of formal education in your community?

- 1. VERY SATISFIED
- 2. SOMEWHAT SATISFIED
- 3. NEITHER SATISFIED NOR DISSATISFIED
- 4. SOMEWHAT DISSATISFIED
- 5. VERY DISSATISFIED
- 8. DON’T KNOW
- 9. NA
- 0. INAP

C5. Do you have children enrolled in a K-12 school?

- 1. YES
- 2. NO →
- 8. DON’T KNOW →
- 9. NA
- 0. INAP

SKIP TO C7

C6. At which of the following types of places do you have children enrolled in a K-12?

1. YES 2. NO 9. NA

- | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | a. In a North Slope Community? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | b. Elsewhere in Alaska? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | c. Outside Alaska? |

C7. Do you volunteer in school-related events and activities?

- | | | | |
|--------------------------|---------------|--------------------------|---------|
| <input type="checkbox"/> | 1. YES | <input type="checkbox"/> | 9. NA |
| <input type="checkbox"/> | 2. NO | <input type="checkbox"/> | 0. INAP |
| <input type="checkbox"/> | 8. DON'T KNOW | | |

C8. (HAND R CARD TWO) Using the choices on this card, how satisfied are you with the teaching of traditional Iñupiaq values, skills, and language in local schools?

- | | | | |
|--------------------------|---------------------------------------|--------------------------|---------------|
| <input type="checkbox"/> | 1. VERY SATISFIED | <input type="checkbox"/> | 8. DON'T KNOW |
| <input type="checkbox"/> | 2. SOMEWHAT SATISFIED | <input type="checkbox"/> | 9. NA |
| <input type="checkbox"/> | 3. NEITHER SATISFIED NOR DISSATISFIED | <input type="checkbox"/> | 0. INAP |
| <input type="checkbox"/> | 4. SOMEWHAT DISSATISFIED | | |
| <input type="checkbox"/> | 5. VERY DISSATISFIED | | |

SECTION D: SOCIAL INDICATORS OF HEALTH

D1. Now I'd like to ask you about your health. First of all, how would you describe your health in general: excellent, very good, good, fair, or poor?

- | | |
|---------------------------------------|----------------------------------|
| <input type="checkbox"/> 1. EXCELLENT | <input type="checkbox"/> 4. FAIR |
| <input type="checkbox"/> 2. VERY GOOD | <input type="checkbox"/> 5. POOR |
| <input type="checkbox"/> 3. GOOD | <input type="checkbox"/> 9. NA |

D2. (HAND R CARD TWO) Please tell me the number on this card that fits how satisfied you are with your health.

- | | |
|--|---|
| <input type="checkbox"/> 1. VERY SATISFIED | <input type="checkbox"/> 5. VERY DISSATISFIED |
| <input type="checkbox"/> 2. SOMEWHAT SATISFIED | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. NEITHER SATISFIED NOR DISSATISFIED | <input type="checkbox"/> 9. NA |
| <input type="checkbox"/> 4. SOMEWHAT DISSATISFIED | |

D3. Using the same card, how satisfied are you with the quality of health services in your community?

- | | |
|--|---|
| <input type="checkbox"/> 1. VERY SATISFIED | <input type="checkbox"/> 5. VERY DISSATISFIED |
| <input type="checkbox"/> 2. SOMEWHAT SATISFIED | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. NEITHER SATISFIED NOR DISSATISFIED | <input type="checkbox"/> 9. NA |
| <input type="checkbox"/> 4. SOMEWHAT DISSATISFIED | |

D4. (HAND R CARD NINE) Which of the illnesses listed on this card have affected your family (anyone you consider to be family)? Please just tell me the letters on the card.

- | 1. YES | 2. NO | 9. NA | |
|--------------------------|--------------------------|--------------------------|---------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | A. CANCER |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | B. HEART DISEASE |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | C. LUNG DISEASE |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | D. EYE DISEASE |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | E. MENTAL ILLNESS |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | F. JOINT AND BONE DISEASES |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | G. ARTHRITIS |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | H. ACCIDENTAL INJURY |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | I. ALCOHOLISM OR DRUG ADDICTION |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | J. DIABETES |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | K. OBESITY |

D5. (HAND R CARD TWO) Using a number on this card, how satisfied are you with public safety services provided in your community?

- | | |
|--|---|
| <input type="checkbox"/> 1. VERY SATISFIED | <input type="checkbox"/> 5. VERY DISSATISFIED |
| <input type="checkbox"/> 2. SOMEWHAT SATISFIED | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. NEITHER SATISFIED NOR DISSATISFIED | <input type="checkbox"/> 9. NA |
| <input type="checkbox"/> 4. SOMEWHAT DISSATISFIED | |

I have a few questions that I would like to ask you to answer on your own using this self-administered questionnaire (HAND R SELF-ADMINISTERED QUESTIONNAIRE).

As with any part of the interview, you are free to choose not to participate in this self-administered part of the interview, or if you choose to participate you can skip any question that you do not wish to answer. As with any part of the interview, your responses during the interview are anonymous as neither your name, address or any other identifier will be attached to any of your responses.

When you have finished, please fold the papers in half, place them in the envelope, and then seal the envelope. The interviewer has pledged not to open the envelope. The person opening the envelope will not know who completed this form.

SECTION E: SOCIAL INDICATORS OF PHYSICAL ENVIRONMENT

E1. (HAND R CARD TEN) Which of these activities did you do in the past 12 months? Please just tell me the letters of the activities you did.

1. YES 2. NO 9. NA

- | | | | |
|--------------------------|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | a. TAKE PART IN A NATIVE OR TRADITIONAL FESTIVAL? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | b. VISIT NEIGHBORS, FRIENDS OR FAMILY? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | c. LISTEN TO OR TELL A NATIVE OR TRADITIONAL STORY? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | d. GO SLEDDING OR SNOWBOARDING? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | e. GO BIKING? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | f. GO TO SPORTS EVENTS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | g. PARTICIPATE IN SPORTS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | h. TAKE PART IN A NATIVE OR TRADITIONAL DANCE? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | i. TAKE PART IN NATIVE OR TRADITIONAL GAMES? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | j. GO SNOWMACHINING OR DOG SLEDDING? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | k. HIKE, RUN, JOG, OR WALK? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | l. PLAY BASKETBALL? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | m. SWIM? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | n. BOAT OR KAYAK? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | o. BE OUT IN THE COUNTRY? |

E2. (HAND R CARD ELEVEN) In your opinion, which of the following environmental problems, if any, exist in your region or community? Please tell me the letters on this card.

1. YES 2. NO 8. DK 9. NA

- | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | a. POLLUTION OF LOCAL LAKES AND STREAMS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | b. POLLUTION OF OFFSHORE WATERS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | c. POLLUTION FROM INDUSTRIAL DEVELOPMENT IN THIS REGION? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | d. POLLUTION FROM OTHER COUNTRIES? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | e. FISH OR ANIMALS THAT MAY BE UNSAFE TO EAT? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | f. EROSION OF COASTAL AREAS OR RIVERBANKS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | g. LOCAL CONTAMINATED SITES? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | h. POLLUTION FROM LANDFILLS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | i. DISPOSAL OF HAZARDOUS WASTE? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | j. DISPOSAL OF SEWAGE? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | k. DISRUPTION OF VIEWS AND LANDSCAPES? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | l. CLIMATE CHANGE? |

E3. In the past 12 months, have you avoided eating subsistence foods because you believe they are contaminated?

- | | | | |
|--------------------------|---------------|--------------------------|---------|
| <input type="checkbox"/> | 1. YES | <input type="checkbox"/> | 9. NA |
| <input type="checkbox"/> | 2. NO | <input type="checkbox"/> | 0. INAP |
| <input type="checkbox"/> | 8. DON'T KNOW | | |

E4. (HAND R CARD TWO) How satisfied are you with the health of the environment in your area?

- | | | | |
|--------------------------|---------------------------------------|--------------------------|----------------------|
| <input type="checkbox"/> | 1. VERY SATISFIED | <input type="checkbox"/> | 5. VERY DISSATISFIED |
| <input type="checkbox"/> | 2. SOMEWHAT SATISFIED | <input type="checkbox"/> | 8. DON'T KNOW |
| <input type="checkbox"/> | 3. NEITHER SATISFIED NOR DISSATISFIED | <input type="checkbox"/> | 9. NA |
| <input type="checkbox"/> | 4. SOMEWHAT DISSATISFIED | | |

E5. Using the same card, how satisfied are you with the quality of recreational facilities in this community?

- | | | | |
|--------------------------|---------------------------------------|--------------------------|----------------------|
| <input type="checkbox"/> | 1. VERY SATISFIED | <input type="checkbox"/> | 5. VERY DISSATISFIED |
| <input type="checkbox"/> | 2. SOMEWHAT SATISFIED | <input type="checkbox"/> | 8. DON'T KNOW |
| <input type="checkbox"/> | 3. NEITHER SATISFIED NOR DISSATISFIED | <input type="checkbox"/> | 9. NA |
| <input type="checkbox"/> | 4. SOMEWHAT DISSATISFIED | | |

SECTION F: SOCIAL INDICATORS OF LOCAL CONTROL

F1. I'd like to learn about your involvement in public affairs. Did you vote in the following elections:

- | 1. YES | 2. NO | 8. DK | 9. NA | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | a. City Council? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | b. Tribal Council or Native Village? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | c. Village Corporation? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | d. Native Regional Corporation? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | e. North Slope Borough? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | f. ICAS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | g. State? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | h. National? |

F2. How knowledgeable would you say you are about politics in general: very knowledgeable, somewhat knowledgeable, not very knowledgeable, or not at all knowledgeable?

- | | |
|--|--|
| <input type="checkbox"/> 1. VERY KNOWLEDGEABLE | <input type="checkbox"/> 4. NOT AT ALL KNOWLEDGEABLE |
| <input type="checkbox"/> 2. SOMEWHAT KNOWLEDGEABLE | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. NOT VERY KNOWLEDGEABLE | <input type="checkbox"/> 9. N A |

F3. (HAND R CARD TWELVE) Choosing from the numbers on this card, how much do you agree or disagree with the following statement: So many people vote at a national election that it does not make any difference if I vote or not vote.

- | | |
|--|---|
| <input type="checkbox"/> 1. COMPLETELY AGREE | <input type="checkbox"/> 4. COMPLETELY DISAGREE |
| <input type="checkbox"/> 2. PARTLY AGREE | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. PARTLY DISAGREE | <input type="checkbox"/> 9. N A |

F4. (HAND R CARD THIRTEEN) Which of the following groups do you think are helping to meet your needs? Please just tell me the letters on this card.

1. MEETING NEEDS	2. NOT MENTIONED	8. DK	9. NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A. CITY COUNCIL?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	B. TRIBAL COUNCIL OR NATIVE VILLAGE?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	C. VILLAGE CORPORATION?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	D. NATIVE REGIONAL CORPORATION?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	E. NORTH SLOPE BOROUGH?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	F. ICAS?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	G. STATE GOVERNMENT?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	H. FEDERAL GOVERNMENT?

F5. How interested would you say that you are in politics in general: very interested, interested, or not interested?

1	2	3	8	9
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very Interested	Interested	Not Interested	Don't Know	N A

F6. (HAND R CARD TWO) Please tell me the number on this card that fits how satisfied you are with the degree of influence that Iñupiaq people have on the management of natural resources like fish and caribou.

<input type="checkbox"/> 1. VERY SATISFIED	<input type="checkbox"/> 5. VERY DISSATISFIED
<input type="checkbox"/> 2. SOMEWHAT SATISFIED	<input type="checkbox"/> 8. DON'T KNOW
<input type="checkbox"/> 3. NEITHER SATISFIED NOR DISSATISFIED	<input type="checkbox"/> 9. NA
<input type="checkbox"/> 4. SOMEWHAT DISSATISFIED	

F7. Using the same card, how satisfied are you with the degree of influence that Iñupiaq people have on the management of natural resources like marine mammals?

<input type="checkbox"/> 1. VERY SATISFIED	<input type="checkbox"/> 5. VERY DISSATISFIED
<input type="checkbox"/> 2. SOMEWHAT SATISFIED	<input type="checkbox"/> 8. DON'T KNOW
<input type="checkbox"/> 3. NEITHER SATISFIED NOR DISSATISFIED	<input type="checkbox"/> 9. NA
<input type="checkbox"/> 4. SOMEWHAT DISSATISFIED	

F8. Using the same card, how satisfied are you with the degree of influence that Iñupiaq people have on the management of natural resources like oil, gas, and minerals?

- | | |
|--|---|
| <input type="checkbox"/> 1. VERY SATISFIED | <input type="checkbox"/> 5. VERY DISSATISFIED |
| <input type="checkbox"/> 2. SOMEWHAT SATISFIED | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. NEITHER SATISFIED NOR DISSATISFIED | <input type="checkbox"/> 9. NA |
| <input type="checkbox"/> 4. SOMEWHAT DISSATISFIED | |

F9. Using the same card, how satisfied are you with the degree of influence that Iñupiaq people have to reduce environmental problems in your area?

- | | |
|--|---|
| <input type="checkbox"/> 1. VERY SATISFIED | <input type="checkbox"/> 5. VERY DISSATISFIED |
| <input type="checkbox"/> 2. SOMEWHAT SATISFIED | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. NEITHER SATISFIED NOR DISSATISFIED | <input type="checkbox"/> 9. NA |
| <input type="checkbox"/> 4. SOMEWHAT DISSATISFIED | |

F10. Using the same card, please tell me the number on this card that fits how satisfied you are with the courts on the North Slope.

- | | |
|--|---|
| <input type="checkbox"/> 1. VERY SATISFIED | <input type="checkbox"/> 5. VERY DISSATISFIED |
| <input type="checkbox"/> 2. SOMEWHAT SATISFIED | <input type="checkbox"/> 8. DON'T KNOW |
| <input type="checkbox"/> 3. NEITHER SATISFIED NOR DISSATISFIED | <input type="checkbox"/> 9. NA |
| <input type="checkbox"/> 4. SOMEWHAT DISSATISFIED | |

SECTION G: SOCIAL INDICATORS OF GLOBAL WELL-BEING

G1. We've talked about many different parts of your well-being, like health and jobs and the environment. (HAND R CARD TWO) Thinking about everything important to your well-being, how satisfied are you with the quality of life in this community?

- 1. VERY SATISFIED
- 2. SOMEWHAT SATISFIED
- 3. NEITHER SATISFIED NOR DISSATISFIED
- 4. SOMEWHAT DISSATISFIED
- 5. VERY DISSATISFIED
- 8. DON'T KNOW
- 9. NA

G2. Using the same card, how satisfied are you with your life as a whole?

- 1. VERY SATISFIED
- 2. SOMEWHAT SATISFIED
- 3. NEITHER SATISFIED NOR DISSATISFIED
- 4. SOMEWHAT DISSATISFIED
- 5. VERY DISSATISFIED
- 8. DON'T KNOW
- 9. NA

G3. Have you considered moving away from (COMMUNITY) in the last five years?

- 1. YES
- 2. NO → SKIP TO G5
- 8. DON'T KNOW
- 9. NA

G4. Why have you considered moving away from (COMMUNITY)?

- 98. DON'T KNOW
- 99. NA
- 00. INAP

G5. What are the reasons why you have chosen to remain in (COMMUNITY)?

- 98. DON'T KNOW
- 99. NA
- 00. INAP

SECTION H: IMPACTS ON SUBSISTENCE ACTIVITIES

INTERVIEWER CHECKPOINT 1: SEE RESPONSES TO Q.A1

RESPONDENT DIDN'T ENGAGE IN ONE OR MORE ACTIVITIES



SKIP TO CLOSING

RESPONDENT ENGAGED IN ONE OR MORE ACTIVITIES



CONTINUE

H1. (HAND R CHECKED FORM SHOWING ACTIVITIES MENTIONED IN Q.A1) Looking at the subsistence activities you mentioned earlier, please tell me the letter of any of the activities in which you personally experienced impacts of oil industry activities in the last 12 months.

1. ENGAGED, NO IMPACT 2. ENGAGED, IMPACT 0. NO ACTIVITIES 9. NOT ASCERTAINED

- | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | A. CAPTAINED A WHALING CREW? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | B. WAS A MEMBER OF A WHALING CREW? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | C. SKINNED AND BUTCHERED A SEAL? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | D. SKINNED AND BUTCHERED A CARIBOU? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | E. SKINNED AND BUTCHERED ANOTHER ANIMAL? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | F. HELPED WHALING CREWS BY COOKING, GIVING MONEY OR SUPPLIES, CUTTING MEAT? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | G. SEWED SKINS, MADE PARKAS, KAMIKS OR OTHER TRADITIONAL CLOTHING? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | H. MADE SLEDS OR BOATS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | I. HUNTED CARIBOU, MOOSE, OR SHEEP? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | J. HUNTED SEAL OR UGRUK? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | K. HUNTED WALRUS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | L. HUNTED WATERFOWL (E.G., DUCKS AND GEESE)? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | M. GATHERED EGGS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | N. FISHED? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | O. GATHERED GREENS, ROOTS, OR OTHER PLANTS |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | P. PRESERVED MEAT OR FISH? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Q. TRAPPED? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | R. PICKED BERRIES? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | S. MADE NATIVE OR TRADITIONAL HANDICRAFTS? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | T. HUNTED WOLF OR WOLVERINE? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | U. HUNTED POLAR BEAR? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | V. HUNTED PTARMIGAN? |

INTERVIEWER CHECKPOINT 2:

- RESPONDENT DID NOT MENTION ANY AFFECTED ACTIVITIES, OR ADDITIONAL QUESTIONS COMPLETED FOR ALL MENTIONED ACTIVITIES ↓
SKIP TO CLOSING
- RESPONDENT MENTIONED AT LEAST ONE SUBSISTENCE ACTIVITY AFFECTED BY OIL INDUSTRY ACTIVITY
↓
CONTINUE WITH SECTION I

SECTION I: IMPACTS ON SUBSISTENCE ACTIVITIES

ACTIVITY LETTER:
SHORTHAND NAME FOR ACTIVITY:

11. Please describe what happened.

12. When did an oil industry activity affect SUBSISTENCE ACTIVITY?

MONTH(S)

CAN'T REMEMBER NA

13. Where were you when the oil industry activity affected SUBSISTENCE ACTIVITY?
(PROBE FOR NEAREST NAMED PLACE)

14. (Please describe the oil industry activity that affected SUBSISTENCE ACTIVITY).

15. Could anyone have done something differently to avoid the experience or make it better?

1. YES



2. NO →



16. Who could have done something differently?

17. What could they have done differently?

CONTINUE WITH NEXT AFFECTED ACTIVITY OR CONTINUE TO CLOSING QUESTIONS

Social Indicators in Coastal Alaska: Arctic Communities:

Appendix II: SICAA Literature Review

Social Indicators in Coastal Alaska: Arctic Communities

Appendix II: SICAA Literature Review

Authors

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Prepared under BOEM Contract
No. M11PC00032

by

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Bureau of Ocean Energy Management
Alaska Outer Continental Shelf Region
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Social Indicators in Coastal Alaska: Arctic Communities

Contract No. M11PC00032

North Slope Social Indicators Study Literature Review

Submitted to

Bureau of Ocean Energy Management (BOEM)
Alaska OCS Region
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9 January 2012

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LIST OF ACRONYMS AND ABBREVIATIONS

AHDR	Arctic Human Development Report
AOSIS	Alaska OCS Social Indicators System
ASI	Arctic Social Indicator
BOEM	Bureau of Ocean Energy Management
BOEMRE	Bureau of Ocean Energy Management and Regulation and Enforcement (now BOEM)
EEC	European Economic Community
GDP	Gross Domestic Product
ICC	Inuit Circumpolar Conference
ISER	Institute of Social and Economic Research
ISQOLS	International Society for Quality of Life Studies
ISR	Institute for Social Research
MAP	Man in the Arctic Program
MCA	Multiple Classification Analysis
MMS	Minerals Management Service
NANA	Northwest Arctic Native Association
NASA	National Aeronautics and Space Administration
NSSIS	North Slope Social Impact Study
OCS	Outer Continental Shelf
OECD	Organization for Economic Cooperation and Development
OMB	Office of Management and Budget
SG	Statistics Greenland
SLICA	Survey of Living Conditions in the Arctic
SRB&A	Stephen R. Braund & Associates
UNESCO	United Nations Economic, Scientific, and Cultural Organization
UNHDI	UN's Human Development Index
UNRISD	United Nations Research Institute for Social Development
USDOI	U.S. Department of Interior
USGS	U.S. Geological Survey

INTRODUCTION

Stephen R. Braund & Associates (SRB&A) has been contracted by the Bureau of Ocean Energy Management (BOEM) to design and implement a social indicators system based on a household survey and existing data in six Arctic communities: Barrow, Nuiqsut, Wainwright, Point Hope, and Kaktovik. The scope of work for this study includes a literature search and review, the purpose of which is to assess the current state of knowledge about key social indicators and their relevance to the North Slope Social Indicators Study.

EARLY SOCIAL INDICATORS RESEARCH IN ALASKA

The history of social indicators work in Alaska spans over thirty years. Much of this work has informed the design of this study. This literature review begins with research funded by the National Science Foundation and continues with early initiatives by the Minerals Management Service (MMS, now the Bureau of Ocean Energy Management [BOEM]) to develop a social indicators monitoring program.

National Science Foundation ‘Man in the Arctic Program’

Following the discovery of oil at Prudhoe Bay in 1969, the National Science Foundation awarded the Institute of Social and Economic Research (ISER) a research grant in 1973 to assess the social and economic effects of petroleum development in Alaska. Called the “Man in the Arctic Program” (MAP), ISER researchers first focused on the economy and population of Alaska and its major regions (Kresge, Seiver, Goldsmith, and Scott 1984). In 1975 an advisory board to MAP recommended that ISER expand its focus to include the distributional effects of development. Spurred by this recommendation, ISER researchers designed and implemented a survey of residents in the Fairbanks North Star Borough in 1976 (*Kruse 1976, Kruse 1977¹*). The Fairbanks Community Survey was designed to yield social indicators of the well-being of Fairbanks residents. It was based on a long history of social indicators research at the Institute for Social Research (ISR) at the University of Michigan (Andrews and Withey 1976). The survey design did not, however, include the step of systematically identifying domains within which to construct indicators. Survey topics included population composition, housing, reasons for coming to and staying in Fairbanks, perceptions of community change, social conditions, economic conditions, and Alaska lifestyles.

In 1977, MAP researchers designed and, in collaboration with the North Slope Borough, conducted a survey of North Slope Borough residents living in Barrow, Wainwright, Point Hope, Nuiqsut, Kaktovik, and Anaktuvuk Pass. Social indicators measured in the survey were published in the report, “Energy Development and the North Slope Iñupiat: Quantitative Analysis of Social and Economic Change” (*Kruse, Kleinfeld, and Travis 1981*). The MAP North Slope Survey design was also based on ISR’s earlier work, although it differed in that it included a major section on subsistence. The North Slope Borough has included a significant subset of the MAP survey indicators in subsequent census surveys. In 1991, Kruse published a comparative analysis of indicators from 1977 and 1988: “Alaska Iñupiat Subsistence and Wage Employment Patterns: Understanding Individual Choice” (*Kruse 1991*). In 2010, Kruse published a second comparative analysis of indicators from 1977 and 2003 (*Kruse 2010*). The 2010 report was organized by the six social indicator domains adopted in the Arctic Social Indicator (ASI) report published in 2010 as well (*Larsen, Schweitzer, and Fondahl (Eds) 2010*). Thus MAP work initiated in the 1970s has a legacy of comparative indicators through 2003. Table 1 shows the social

¹ Note that electronic copies of cited publications in italics are included on a DVD accompanying this report.

indicators compared between 1977 and 2003 organized by the six indicator domains included in BOEM’s scope of work for this study (referred to as “BOEM domains”).

Table 1: Comparable Social Indicators of Living Conditions on the North Slope: 1977 and 2003

BOEM Domain	Social Indicator
Economic Well-being	Work for pay Number of Subsistence Activities Satisfaction with job opportunities Satisfaction with kinds of things you can buy in stores Satisfaction with cost of living Preference subsistence job both
Health and Safety	Satisfaction with health services Perception drinking, drugs, fighting, stealing
Cultural Continuity	Satisfaction with sharing and helping
Local Control	Voting behavior Satisfaction with influence over oil development
Education	Education - years completed Satisfaction with education services
Physical Environment	Proportion food from subsistence Satisfaction with amount of fish and game available locally Satisfaction with opportunities to hunt and fish
Overall Well-being	Satisfaction with village life

Minerals Management Service Social Indicators 1

In the early 1980s, MMS contracted with Louis Berger and Associates to initiate the design of a social indicators system to monitor impacts of outer continental shelf (OCS) development impacts (*Louis Berger and Associates 1983a, 1983b, 1983c; Jorgensen, McCleary and McNabb 1985*). The goal was “the creation of tangible scientific tools useful for gauging and monitoring” social, economic, and cultural changes that may result from OCS development (*Louis Berger and Associates 1983a:4*). Conceived as a sociocultural study that focused on existing data compilation, field observation, and key informant interviews, formal survey research procedures were precluded from the statement of work. Thus the study differed from the current study which has an Office of Management and Budget (OMB)-approved household survey as its core method of data collection.

Focusing on the Aleutian-Pribilof and Northwest Arctic Native Association (NANA) regions, the Berger research team began with a description of “generalized sociocultural trends” (*Louis Berger and Associates 1983a:ii*). They then compiled existing data at the regional and community levels in two domains: (1) mental health, mortality, and morbidity; and, (2) economic and social welfare. The authors point out that, aside from providing descriptions of the two regions, existing data “help reveal the inherent flaws and obstacles to

interpretation that make the search for reliable and accurate social indicators for rural Alaska a difficult one” (Louis Berger and Associates 1983a:82). The Berger team described their approach as follows:

The research on which this study is based includes classical anthropological observations of village life and focused discussions about community affairs and the meanings which people attached to those affairs. It also includes as is consonant with social indicators research, the collection and analysis of archival data in the form of time series, and analysis of events that may have affected those time series. So archival data on population, morbidity, mortality, births, transfer payments, health, crime, transportation, business activities and the like are studied in the course of this research. The goal is to fit the field observations to the time series observation and to derive a set of variables that will indicate community well-being (Louis Berger and Associates 1983a:118).

The field observations consisted of interviews with a key informant in each of eight villages on institutions related to economics, politics, education, helping services, religion, and clubs and associations. Five key informants on domestic life were interviewed in each village regarding worldviews and family and kinship. Both the institutional and domestic interviews used open-ended questions. The research team reviewed the narrative responses with the goal of constructing variables and variable values. Fifty-seven variables were defined. The narratives were then coded on these variables, creating a set of family cases and community cases. As the study team reported:

The methodology employed in this study demanded that we refrain from predetermining the explicit variables and their operational values prior to field data collection, and instead define more general data themes and topics for which to collect information; only after the data were collected were we in a position to define the ranges of variation along which a variable could be defined and its values bracketed and specified. Although many classic research traditions call for an explicit and formal predefinition of variables prior to any data collection, it is our judgment that we cannot pretend to know so much about the distributions and qualities of the data that these predeterminations can be made in good faith before we even reach the field site. Instead, our methods seek to specify general topics of data collection (specified in protocols) that are justified on the basis of our previous knowledge of the areas and general social science findings, for which data can be collected, and thereafter scored and ranked using variable definitions that are inherently empirical in nature but nonetheless informed by and grounded in prior general knowledge and tenets of social science (Louis Berger and Associates 1983a: 146:147).

The research team analyzed the institutional and domestic variables constructed from the narrative to identify dimensions of covariation (i.e., components of variation in variables which are shared) through the use of bivariate comparisons and a multivariate technique called smallest space analysis. The researchers explained their analysis approach:

Social indicators, as the term implies, are constructs that are supposed to represent, or indicate something. Unlike direct counts of a person’s age, or the number of residents in a household, an indicator is a construct, measured with bivariate and multivariate statistics in this research, which is intended to account for something or somethings which are not directly measured. (Louis Berger and Associates 1983a: 229).

It was our intention from the beginning to determine by formal means those central items in groups of related variables (determined statistically) which could serve as social indicators in future studies (Louis Berger and Associates 1983a: 230).

The first cluster of variables was interpreted by the research team to identify a dimension of household organization scaled from traditional subsistence to western practices. A second cluster was interpreted as being related to “perceptions and knowledge borne of experience of native persons about contemporary economic and political issues” (Louis Berger and Associates 1983a: 238). The third cluster of variables was interpreted as relating to income and increased skepticism (Louis Berger and Associates 1983a:240), while the fourth cluster of variables are practices shared by both traditional and more western households: income pooling, labor sharing, subsistence expenditures, traditional foods in the diet, and household size. The team concluded from this research that sixteen variables “appear to be potential indicators of community well-being from our research” (Louis Berger and Associates 1983a: 268). To these variables the researchers identified six village-level variables and one regional-level variable derived from existing data (Louis Berger and Associates 1983a: 289). Table 2 displays the combined set of 22 indicators by BOEM domain:

Table 2: MMS Social Indicators 1 Indicators by BOEM Domain

BOEM Domain	Indicator
Economic Well-being	Household income Percentage of total income earned Percentage of total income unearned Proportion of total earned income derived from government sources Proportion of total earned income derived from private sources Stability of earned income Stability of unearned income Income pooling, labor and resource sharing Investment of percentage of total income in subsistence harvest expenses Employment and wages Welfare payments Social welfare caseloads Employment by sector (regional-level)
Health and Safety Cultural Continuity	Household size Domestic functions and child rearing practices Household dynamics
Local Control	Residents perceptions of the locus of control over institutions Native participation in formal village institutions Sodality membership overlaps among institutional and village leaders Village size
Education	School enrollments
Physical Environment Overall well-being	Internal growth rate External growth rate

Minerals Management Service Social Indicators 2

In the mid-1980s, MMS awarded the next phase of social indicators development to a collaboration of SRB&A, ISER, and the ISR at the University of Michigan. Findings appeared as MMS Technical Report 116, “A Social Indicators System for OCS Impact Monitoring” (SRB&A, ISER, and ISR 1985).

Angus Campbell, Stephen Withey, Frank Andrews and others at ISR played leading roles in social indicators research, starting in 1946 with the founding of the Social Science Survey Project. Dr. Frank Andrews participated on behalf of ISR. According to a short biography published by ISR (2011), “Frank Andrews, a Research Scientist at the Institute for Social Research and Professor in the Department of Psychology and School of Public Health at the University of Michigan, conducted numerous landmark studies on social indicators of well-being, scientific creativity, social science research methods, and other topics. He was the author or editor of more than a dozen books and monographs, as well as many journal articles and book chapters. He received the University of Michigan's Distinguished Research Scientist Award in 1990.” The intent of inviting Dr. Andrews to participate in the MMS sponsored research was to bring the process of social indicator development in Alaska into the mainstream of social indicator research. With that intent in mind, this literature review includes the following major excerpts from Dr. Andrews’ chapter on social indicators development contained in MMS Technical Report Number 116 (SRB&A, ISER, and ISR 1985).

Excerpts From TR116 Chapter Two: Contributions of the Worldwide Social Indicators Movement to Monitoring Life Quality in Alaskan Villages by Dr. Frank Andrews

[Preface: All the text that follows until the next major section (Validation and Revision of Social Goals) is a direct quote of Dr. Andrews. We took this unusual step because SRB&A involved Dr. Andrews in this earlier study precisely because he is an international expert on social indicators and he was willing to apply his expertise to the specific task of developing an Alaska social indicator system. We have changed table and figure numbers from the original in TR116 to integrate them with the current report. We have also introduced BOEM domains in the tables and figures for comparison. Text added by the 2012 study team appears in brackets and is italicized.]

Over the past twenty years, there has been interest and increasing sophistication in using social indicators to monitor changes in the quality of life of the world's peoples. The interest of the Minerals Management Service in monitoring and projecting the effects of OCS activities falls squarely in the tradition of social indicators research. Lessons learned from prior work on social indicators can be useful for this purpose.

This chapter reviews past work on social indicators that promises to be useful for the present task of monitoring life quality in Alaskan villages. As such, this chapter describes the intellectual background and conceptual framework that guided the development of the present project and that is reflected throughout this report.

The next section of this chapter briefly sketches the historical development of the worldwide social indicators movement and describes its fundamental concepts. It is followed by a review of past work on identifying important components of life quality and assessing the comprehensiveness of their coverage. The chapter continues by describing how social indicators have been used to measure these life quality components. The next section of the chapter discusses some of the research on causes and consequences and the meaning of

changes in well-being. The final section of the chapter presents an extensive set of references and some advice on how they can be used to pursue in greater detail many of the topics discussed in this chapter.

This chapter is not intended to be a formal academic review of the history of the social indicators movement such treatises are available elsewhere (Glatzer, 1981; Rossi and Gilmartin, 1980)—but rather as a reasonably short, nontechnical culling of the concepts and procedures developed in the social indicators movement that are applicable to the goals and needs of measuring life quality in Alaskan villages.

The Social Indicators Movement: Historical Development and Key Concepts

Historical Development

Concerns about maintaining and enhancing the quality of life—the quality of one's own life as well as that of selected others—are surely very old. Classical scholars point to Greek interests in the nature of "happiness," and the "pursuit of happiness" is an "unalienable right" explicitly written in the United States Declaration of Independence. However, actually measuring the life quality of people in a society is a relatively recent phenomenon. The work of William Ogburn in the early 1930s on behalf of a Presidential Commission established by President Hoover to examine social trends and sources of social stress, and work by the United Nations during the 1950s assessing the extent basic human needs were met in various societies are precursors of the modern social indicators movement.

In the United States, one of the influences on the modern social indicators movement was, surprisingly, the Space Program. NASA [National Aeronautics and Space Administration] was interested in being able to show that investments made to send Americans to the moon had a wide range of beneficial "secondary" effects such as support for basic research and technical education, and the development of new industrial products and processes. Documenting these secondary effects required a broad range of new social measurements—social indicators.

A more important motivation for the modern social indicators movement, however, was the growing sense in the United States and elsewhere that the available statistics that had been designed (and were useful) for monitoring economic processes were insufficient for assessing broader changes in life quality. Too many "externalities" (e.g., the social and ecological value of a wilderness region) were untapped by traditional economic measures. The urban riots of the late 1960s in the United States, which took observers by surprise, was a clear indication that social monitoring systems needed expansion. In many countries, there was ready acceptance of the idea that enhancing the quality of life was an important—perhaps the most important—social goal, and that social monitoring systems should be developed that could measure the levels of life quality experienced by specific segments of a population at specific times.

Obviously, much work was required to make progress toward this goal. A coherent conceptual framework had to be developed, ways of measuring the concepts had to be tried and evaluated, basic descriptive data had to be assembled, and some understanding of how and why the measures changed as they did over time and varied as they did between social groups had to be attempted. This was the research agenda of the social indicators movement during the 1970s, and much progress was made.

Several international organizations instituted programs focused on these topics, including the Organization for Economic Cooperation and Development (OECD); the United Nations Economic, Scientific, and Cultural Organization (UNESCO); the United Nations Research Institute for Social Development (UNRISD); and the European Economic Community (EEC). Stimulated in part by the work of these international organizations and in part by their own internal interests, many countries published volumes presenting social indicators for their own societies. (The bibliography at the end of this chapter [of *TR 116*] lists national social indicator reports from 29 different countries. The most recent volume for the United States, the third in the series, was published by the U.S. Department of Commerce in December 1980, and is titled *Social Indicators III*). In addition, researchers in academic organizations in many of the more developed countries began to investigate people's own perceptions of their well-being. An international scientific journal published in the Netherlands, *Social Indicators Research*, was established in 1974 to report developments in the field and has published several hundred pages of high-quality research each year since then.

During the latter 1970s and into the 1980s, the research and monitoring work has continued, though at a somewhat reduced pace. The social indicators movement appears to have moved into a period of consolidation. Textbooks, literature reviews, handbooks, and bibliographies are now being published that summarize and make more easily accessible the basic and applied research results from the past 15-20 years. (Important recent contributions include Carley, 1981; Diener, 1984; Gilmartin et al., 1979; Land, 1983; Michalos, 1985; Rossi and Gilmartin, 1980; and Verwayen, 1984.) Also, in recent years, key methodological results have begun to be applied to assess the quality of life of specialized populations—people living in particular states, counties, or cities of the United States (e.g., Ross, Bluestone and Hines, 1979; Liu, 1974, 1975); particular demographic subgroups of the population—Blacks, Chicanos, youth, the aged (e.g., Bachman, Johnston, and O'Malley, 1985; George and Bearon, 1980; Herzog and Rodgers, 1985; Jackson, Chatters, and Neighbors, 1985; and Ortiz and Arce, 1985); and individuals with special life circumstances users of tranquilizers (Caplan et al., 1984), people who have undergone coronary bypass surgery for heart disease, or radiation therapy for cancer (Irwin, 1982).

In the light of the past twenty years of developments in the social indicators movement and the current trend of applying the results of that research to special population groups, the present project's undertaking to develop a system for monitoring the life quality of Alaskans living in coastal areas that might be affected by OCS development activities is a reasonable, timely, and natural extension of past work.

Key Concepts

Part of the work of the social indicators movement over the past twenty years has been to develop and refine a set of concepts that have proven useful in the work of assessing life quality. The notion of what is meant by "life quality," "well-being," and "social indicator" as well as, distinctions between "objective" versus "subjective," "global-level" versus "concern-level," "individual" versus "aggregate," and indicators of "levels" versus "distributions" are important for ongoing work.

Life quality and well-being. "Quality of life" is a primitive term that does not lend itself easily to precise definition. Among people active in the social indicators movement, however, there do not seem to be major disagreements about the general intent of what is meant. One of the most careful statements about the meaning of "quality of life" is provided by Solomon et al. (1980). Summarizing several years of deliberations by international scholars at UNESCO, they write:

'Quality of life' is an inclusive concept which covers all aspects of living as it is experienced by individuals. It therefore covers both the material satisfaction of vital needs and aspects of life such as personal development, self realization, and a balanced ecosystem.

Quality of life has objective conditions and subjective components.

While the quality of life is experienced by individuals, it is closely related to the quality of life of social groups, communities, and nations.

Quality of life research draws part of its data from the social sciences but also uses inputs from other sciences. . . .Quality of life research tries to analyze quality of life as an integral system of interacting variables Quality of life research is conscious of the plurality and relativity of value frameworks Quality of life research is, or at least should be, past, present, and future-oriented. (p. 224, 226)

While "quality of life" is, obviously, very broad in meaning, "well-being" is a somewhat narrower concept that is a component of life quality. As commonly used, well-being refers to how well-off an individual is, as evaluated by that individual and/or by another person expert in making such evaluations.

Social indicators. An appropriate definition for the term "social indicators" has also been widely debated over the past twenty years. The definition that the present writer prefers, which draws key elements from many sources is that a "social indicator" is one of a:

limited yet comprehensive set of coherent and significant indicators which can be monitored over time, and which can be disaggregated to the level of the relevant social unit.

The set of indicators should be "limited" so they can be understandable and not overly detailed, lengthy, or complex. The indicators should be "comprehensive" so that a substantial portion of the most salient or critical aspects of society is included. They should be "coherent" in that it would be helpful to our understanding if they hung together in some form that would eventually lead to a model or theory about how society operates. Any set of indicators would be "significant" if they fulfilled the foregoing demands, but there is a further implication that they should relate to aspects of society that interest or concern us. (Andrews and Withey, 1976, p. 4)

Social indicators are the measures of life quality (including well-being). Furthermore, in most cases they will be measures of outputs of a social system—because that is what we are ultimately concerned about—rather than inputs. For example, if one is interested in people's health, one should measure how healthy people are (the output of the health system) rather than the number of doctors or hospital beds in an area. These latter inputs to health care are (at best) only indirect measures of how healthy a population is, and can be quite misleading: An increase in doctors might indicate either improving health or worsening health—or a mixture of both.

Objective versus subjective (or perceptual). The social indicators movement has found it helpful to distinguish between phenomena that are objective and those that are subjective (or perceived), and also between measures that are objective versus those that are subjective (or based on perceptions). Examples will illustrate the distinctions.

In the area of housing, an objective phenomenon would be the size of the dwelling, whereas a subjective phenomenon would be an individual's satisfaction with the dwelling. Furthermore, each of these could be measured using either objective or subjective measures. An objective measure of the objective phenomenon would be a calculation of the number of square feet of floor area; another such measure would be a count of the number of rooms. A subjective measure of dwelling size would be a rating, by the homeowner or someone else, as to whether the dwelling was "large," "medium," or "small." In contrast, information about whether an individual moved to another dwelling in the same neighborhood would be an objective indicator of the subjective phenomenon of housing satisfaction, and a rating of level of satisfaction by the homeowner would represent a subjective measure of the subjective phenomenon.

One of the most important findings of early social indicators research, a finding that was surprising to many observers, is that objective and subjective phenomena provide quite different information about levels of well-being. Many people had expected the two types of phenomena would closely parallel each other, but this turns out not to be true. On the contrary, the statistical overlap between the two is often rather small, and they prove not to be redundant with one another. For example, people living in houses with substantial numbers of rooms will not generally feel their houses are large or spacious. Similarly, many people who live in only one or two rooms feel they have plenty of space. When concrete examples are presented, it is easy to imagine why variations in subjective feelings about spaciousness might not parallel actual physical space. However, it took experience with a wide range of indicators to demonstrate 'the truth of the general proposition that objective and subjective phenomena do not generally parallel each other. One needs information on both types of phenomena to understand well-being, and, accordingly, both should be measured in a comprehensive indicator system.

One should not confuse the phrase "subjective measure" with notions of weak or inferior measurement. While no measurement is perfect, there is much evidence that well-constructed subjective measures of life quality can show high levels of validity and reliability: They measure with considerable precision what they are intended to measure, and people can provide stable, replicable, dependable information about subjective phenomena. Nor should one assume that an "objective" measure is perfectly valid—practically none are, and examples of substantial errors in objective measures are not hard to find (e.g., it is acknowledged that published crime rates substantially underreport total crime).

An important perspective is that since life quality and well-being are ultimately subjective phenomena, it is the subjective measures that provide the most direct indicators.

Global-level versus concern level. Another distinction found useful by social indicators researchers is that between global phenomena and concern-level phenomena. Here "global" is used to refer to all-encompassing aspects—e.g., to "life as a whole"—whereas "concerns" refer to particular subparts of life (e.g., housing, health, job, family, etc.). From a policy-oriented perspective, the distinction is useful because a broad societal goal is to enhance overall well-being (the global concept), but to reach this goal it is necessary to focus on a set of more specific aspects of life (particular life concerns). From a research perspective, the distinction has been used for trying to understand how people come to evaluate their lives as they do and for exploring the relative importance of different life concerns to overall life quality.

In addition to this basic conceptual distinction, prior work on social indicators leads to four other observations about the global versus concern-level phenomena. These have to do with (a) the importance of having measures

of both types of phenomena, (b) the potential infinite regress in levels, (c) the possibility of subdividing concerns into domains and values, and (d) conceptual and practical difficulties in developing a global indicator based on objective data. These points are discussed in the following paragraphs:

- (a) Comprehensive social indicators systems have measures (i.e., "indicators") of both global and concern-level phenomena. For example, an indicator that showed how happy people were would be designated a global indicator, and an indicator measuring satisfaction with housing would be a concern-level indicator.
- (b) In principle, there is an infinite regress from global to concern to subconcern to sub-subconcern, etc. (e.g., from life-as-a-whole to housing to kitchen to stove, etc.) Thus, the logic of the system is hierarchical, and at any given level one can subdivide into a set of components. In practice, however, most social indicators research has focused primarily on just the global and concern-level phenomena (The major exception is research on quality of work life—itself a concern-level phenomenon—where considerable attention has been devoted to such subconcerns as pay, resources, supervision, environmental conditions, and coworkers.)
- (c) Researchers have found that there are two ways in which concern-level measures can be aggregated to, theoretically at least, yield a global measure of life quality. First, it is conceptually reasonable to aggregate aspects of life that have to do with physical or social settings. These aspects of life are commonly referred to as domains. Second, aspects of life that have to do with the criteria by which one evaluates life quality—e.g., health, beauty, sharing, honesty, virtue, safety—can be aggregated. These criteria are often called values. There is a complementarity between domains and values in that domains are evaluated with respect to values, and values are evaluated in the settings of the domains.
- (d) One of the significant problems encountered by social indicators researchers has been how to conceptualize and measure objective phenomena at the global level. This is not a problem for subjective phenomena because people have little trouble assessing their life as a whole. (In fact, family and friends frequently ask for this assessment: "How are you today?" "How are things going for you?") Furthermore, with measures of subjective phenomena, it is not hard to find ways to combine concern-level indicators that will provide an excellent statistical prediction of global-level indicators. Simple additive combinations, sometimes incorporating regression weights, have worked remarkably well. (This matter is discussed later in Section 3.) However, no one has yet identified a conceptually attractive notion of well-being that is both objective and at the global-level, nor has anyone found an uncontested way to combine measures of objective concern-level phenomena to predict objective well-being at the global level. (The Physical Quality of Life Index proposed by Morris, 1979, and the index of overall quality of life in American cities and states assembled by Liu (1974, 1975] are examples of investigators' attempts to construct an objective global indicator. While both works have been widely cited, there has been significant criticism of their attempts at global measurement.)

Individual versus aggregate characteristics. Another important distinction has been between indicators that measure aspects of individuals and others that assess characteristics of groups of individuals. These aggregates come at many levels: families, households, villages, clusters of villages, census enumeration districts, education districts, regions, states, etc. Of course, one can always combine information from many individuals in a group

to obtain some average value for the aggregate, and this is the basis for many social indicators. Examples include mean levels of satisfaction, infant mortality rates, literacy rates, crime rates, etc.

In addition, however, there are characteristics of collectivities themselves, some of which qualify as candidates for monitoring in a social indicators system, that are simply irrelevant at the individual level. Examples at the village level include the rate of growth or decline of a community, its resource base, and its degree of ethnic/racial homogeneity or diversity. These are characteristics of an aggregate of individuals (the village) that might well be regarded as important components of life quality, that can be reported upon by individuals, but that are not characteristics of the individuals themselves.

While the distinction between individual-level and aggregate-level indicators is recognized in the social indicators literature and there has been discussion regarding for what aggregates indicators should be presented, relatively little has been done with regard to systematic indicator development for collectivities per se.

Levels versus distributions. The final distinction to be noted here is a simple one, but is nevertheless important. Most social indicators assess the level of some characteristic, e.g., the mean level of satisfaction with housing, the average number of people per room, etc. Also of interest from life quality and policy perspectives are indicators that report the degree of diversity within some aggregation of individuals with regard to the phenomenon. A village in which nearly everyone is moderately satisfied with their housing has a quality of life very different from another village where the mean level of satisfaction is the same, but where many individuals feel very pleased about their housing but many others are extremely dissatisfied.

In reporting social indicators data for aggregates of individuals, it will often be desirable to report both mean levels and also information about the distribution of the indicator scores.

Implications of Prior Conceptual Development for Monitoring Life Quality in Alaskan Villages

As noted previously, the proposal to measure life quality in Alaskan villages and monitor its changes over time fits well with the historical trends of the development and use of social indicators.

Many of the key concepts found useful for social indicators work elsewhere are readily applicable in the Alaskan context. Well-being is surely a topic of concern, but so also may be some other—perhaps culturally oriented—aspects of life quality. Within the set of well-being phenomena, it will be helpful to consider both global and concern-level well-being, and it will probably be appropriate to consider both domain-type and value-type life concerns. It will probably also be desirable to consider both objective and subjective phenomena. For conceptual clarity and ease of presentation, a basic hierarchical organization of the phenomena of interest should be sought.

This project, like any other empirical piece of research, should distinguish clearly between the life quality phenomena that are of interest and the social indicators that are used to measure (i.e., to indicate) those phenomena.

The level to which individual data should be "aggregated up" needs careful attention; obvious candidates are: village, village cluster, and region, but there may be others as well. In addition, it will be desirable to consider

the relevance of phenomena that are not characteristics of individuals themselves but of the collectivities in which individuals live. This seems particularly promising for the present project because of the focus on sharing and collective action which is an important part of Alaska Native cultures.

Finally, in reporting social indicator results, it will be helpful to recall the distinction between information on levels and information on distributions and to consider the possibility of reporting both.

Identifying Components of Life Quality

One of the major tasks undertaken by social indicators researchers has been to identify components of life quality. By components we here refer to particular life concerns, domains, or values—health, housing, work, education, etc. The task has an obvious importance and forms the core of social indicator systems. The goal is simple to state but hard to achieve: Find a small number of key aspects of life which, taken together, account for a substantial portion of whatever is meant by the quality of life. One would like a set of concerns that are conceptually independent of one another and logically "parallel" (i.e., not hierarchically nested one within another).

Two broad approaches have been used. One is the expert/logical approach and the other is the empirical/statistical approach.

The Expert/Logical Approach for Deriving Life Concerns

The most sophisticated implementation of the expert/logical approach for deriving life concerns is probably represented by the work of the OECD. Over a period of several years during the early 1970s, the Social Indicators Development Program at OECD held a series of international meetings designed to develop a list of social concerns that could be agreed upon by all their members (about 30 countries, mainly from the developed West, but including Brazil, Greece, Japan, Turkey, Venezuela, and Yugoslavia). The participants in these working sessions tended to be middle-level government scientists employed in statistics ministries and census bureaus. Eventually, they reached enough consensus to publish a slim monograph cautiously titled "List of Social Concerns Common to Most OECD Countries" (OECD 1973). Included are eight main concerns, each carefully stated in output terms and elaborated by one or more subconcerns. This list is reproduced here as Table 3.

[The following table is reformatted from the original figure in TR116.]

Table 3: OECD List of Social Concerns Common to Most OECD Countries with BOEM Domain in Parentheses

A.	<u>HEALTH (HEALTH AND SAFETY PART 1)</u>
A-1	The probability of a healthy life through all stages of the life cycle.
A-2	The impact of health impairments on individuals.
B.	<u>INDIVIDUAL DEVELOPMENT THROUGH LEARNING (EDUCATION)</u>
B-1	The acquisition by children of the basic knowledge, skills and values necessary for their individual development and their successful functioning as citizens in their society.

- B-2 The availability of opportunities for continuing self -development and the propensity of individuals to use them.
- B-3 The maintenance and development by individuals of the knowledge, skills and flexibility required to fulfill their economic potential and to enable them to integrate themselves in the economic process if they wish to do so.
- B-4 The individuals satisfaction with the process of individual development through learning, while he is in the process.
- B-5 The maintenance and development of the cultural heritage relative to its positive contribution to the well-being of the members of various social groups..

C. EMPLOYMENT AND QUALITY OF WORKING LIFE (ECONOMIC WELL-BEING PART 1)

- C-1 The availability of gainful employment for those who desire it.
- C-2 The quality of working life.
- C-3 Individual satisfaction with the experience of working life.

D. TIME AND LEISURE

- D-1 The availability of effective choices for the use of time.

E. COMMAND OVER GOODS AND SERVICES (ECONOMIC WELL-BEING PART 2)

- E-1 The personal command over goods and services.
- E-2 The number of individuals experiencing material deprivation.
- E-3 The extent of equity in the distribution of command over goods and services.
- E-4 The quality, range of choice and accessibility of private and public goods and services.
- E-5 The protection of individuals and families against economic hazards.

F. PHYSICAL ENVIRONMENT (PHYSICAL ENVIRONMENT)

- F-1 Housing conditions.
- F-2 Population exposure to harmful and/or unpleasant pollutants.
- F-3 The benefit derived by the population from the use and management of the environment.

G. PERSONAL SAFETY AND THE ADMINISTRATION OF JUSTICE (HEALTH AND SAFETY PART 2)

- G-1 Violence victimization and harassment suffered by individuals.
- G-2 Fairness and humanity of the administration of justice.
- G-3 The extent of confidence in the administration of justice.

H. SOCIAL OPPORTUNITY AND PARTICIPATION (LOCAL CONTROL)

H-1	The degree of social inequality.
H-2	The extent of opportunity for participation in community life, institutions, and decision-making.

As noted in Section 2 of this chapter, many individual countries have issued their own social indicator reports, and of course each has faced the practical problem of how to organize such a document. These national reports also represent the results of applying an expert/logical approach to defining the components of life quality. Most countries have loosely followed the OECD list but have introduced modifications to reflect their own national sense of what was important. The list of concerns addressed by the United States' most recent social indicator report appears in [Table 4, organized by BOEM domain].

Table 4: Topics Covered in the United States Government Publication Social Indicators III Organized by BOEM Domain

BOEM Domain	Sub-Domain
Economic Well-being	Work Social Security and Welfare Income and Productivity
Health and Safety	Health and Nutrition Public Safety
Cultural Continuity	Culture, Leisure, and Use of Time
Local Control	Social Participation
Physical Environment	Housing and the Environment Transportation
Education	Education and Training
Overall Well-being	Population and the Family

Source: U.S. Department of Commerce, 1980

The Empirical/Statistical Approach for Deriving Life Concerns

Researchers working with subjective measures of life quality have used an empirical and statistical approach for deriving life concerns. Andrews and Withey (1976), whose work is the most extensive in this regard, began with an initial list of hundreds of possible concerns which were assembled from statements made by representative samples of individuals as to what about life concerned them, why their life was not better, why their life was as good as it was, and the like. Then, using self-evaluations from a different set of people, the statistical overlaps among questionnaire items tapping these concerns were determined, and the items were grouped into clusters. The clusters turned out to include items that addressed similar content areas which, in many cases, rather closely paralleled the concerns identified by the expert/logical approach. As a final step, the

comprehensiveness of the list of life concerns was assessed by seeing how well the concerns, taken together, accounted for differences between people in their overall (global) sense of well-being. As Table 5 demonstrates, it turned out that individuals' evaluations of only a modest number of life concerns (about a dozen) could statistically explain nearly all of the variation in sense of global well-being that was not attributable to measurement imprecision.

Using the concerns identified in the clustering analyses (e.g., family index), Table 5 shows how various combinations of concerns could account for variation in a global measure, evaluations of life-as-a-whole. In Table 5, each column represents a different combination of life concerns. Note that the "Selected 12 concerns" in Column D accounted for about the same amount of variation -- 50 percent -- as a much larger set of concerns in Column A, yet included a small but wide range of policy relevant topics. Note that it is unusual for a set of survey-based measures to account for as much as 50 percent of the observed variation (technically the variance) in a dependent variable, and further analysis has shown that in this case most of the variation that is not accounted for is attributable to imprecisions in the measurement (Details appear in Andrews and Withey, 1976, Chapter 6). The objectives of the form of analysis illustrated in Table 5 are to confirm that some combination of measured concerns in fact accounts for a large proportion of variation in an overall assessment of life quality and to identify the smallest set of concerns that can be used to explain most of the variation in overall life quality.

Column C in the table—showing results for six concerns—indicates that a weighted additive combination of respondents' assessments of their own efficacy, their family, their financial situation, the amount of fun they were having, their housing, and their family activities was able to statistically explain 49 percent of the observed variation in their overall assessments of life-as-a-whole. It is estimated, as also shown in Column C, that this would drop slightly—to 48 percent—on replication in another sampling from the same population. Columns A, B, and D show the explanatory power that was achieved using various larger combinations of concerns to predict feelings about life-as-a-whole and Multiple Classification Analysis (MCA) assumptions. Column E is similar to Column D, but instead of using MCA assumptions, it uses the more restrictive assumptions required for Multiple Regression. For these data, the more restrictive assumptions are not problematical, and Multiple Regression as a prediction/combination system proves to work as well as MCA.

Comparisons Between the Two Approaches for Deriving Life Concerns

The expert/logical and the empirical/statistical approaches for identifying life concern areas have provided roughly comparable lists of life quality domains. This can be seen by comparing the topics included in the preceding figures. One of the major differences, however, is that the former lists tend to omit people's concern with themselves as competent, efficacious individuals, and concerns having to do with relationships within families and between close associates—neighbors, friends, coworkers. That the expert/logical approach has tended to omit such concerns is not surprising because most of the government scientists who produced these lists believe that such matters are not proper factors for census bureaus to try to monitor. The empirical/statistical approach shows, however, that aspects of life that are close to self, family, and home are indeed important components of life quality, and for many people, the most important components.

[Table 5 was revised from the original figure in TR116 to include BOEM domains.]

Table 5: Predicting Global Well-being by Various Combinations of Concern-Level Measures Organized by BOEM Domain

BOEM Domain	A 30 concerns	B Top 16	C Top 6	D Selected 12	E Selected 12
Percent variance explained					
In present data	55%	54%	49%	52%	51%
Population estimate	50%	51%	48%	50%	51%
Concern measures					
Economic Well-being					
Money index	0.15	0.15	0.2	0.16	0.12
Consumer index	0.07	0.06	a	0.06	0.03
Housework	0.07	0.07	a	a	a
Cost index	0.06	a	a	a	a
Job index	0.03	a	a	0.02	0.05
Health and Safety					
Things do with family	0.11	0.09	0.1	0.08	0.05
Your health	0.06	0.06	a	0.06	0.07
Getting on with people	0.01	a	a	a	a
Cultural Continuity					
Family index	0.19	0.18	0.17	0.19	0.22
Amount of fun	0.15	0.16	0.21	0.15	0.17
Time to do things	0.09	0.09	a	0.07	0.02
Young people think	0.09	0.08	a	a	a
Spare-time activities	0.09	0.08	a	0.08	0.06
Recreation index	0.07	0.06	a	a	a
Media index	0.06	0.05	a	a	a
Close adult relatives	0.06	a	a	a	a
Comfortable people	0.05	a	a	a	a
People over 40 think	0.04	a	a	a	a
Friends index	0.03	a	a	a	a
Religious faith	0.03	a	a	a	a
Local Control					
Efficacy index	0.26	0.27	0.28	0.25	0.23
National govt. index	0.07	0.08	a	0.09	0.07
Local govt. index	0.07	0.06	a	a	a
Organizations belong to	0.04	a	a	a	a
Physical Environment					
House/apartment	0.12	0.12	0.13	0.11	0.1
Services in neighborhood.	0.06	a	a	a	a
Natural environment	0.05	a	a	a	a
Neighborhood index	0.04	a	a	a	a
Weather	0.04	a	a	a	a
Education					
Schools in area	0.06	a	a	a	a
a - predictor omitted					
Data Source: 1,297 respondents to May national survey					
Source: Andrews and Withey, 1976, p. 124					

Applying Prior Work on Identifying Concern Areas to Monitoring Life Quality in Alaskan Villages

Given the extensive prior work on identifying life quality concern areas, it is reasonable to use the resulting lists as starting points for assembling a list of concern areas to be monitored in Alaskan villages. However, because Alaska Native culture is different from any culture previously monitored for life quality, the sets of concern areas that have worked well in other cultures will need to be checked for relevance and coverage in the Alaskan setting. Initially, this check can proceed through the expert/logical approach, given that some of the present project's staff are knowledgeable about Native Alaskan cultures, but ultimately an empirical/statistical approach should be used to assess the comprehensiveness of the coverage of life concerns and the statistical efficiency (i.e., lack of redundancy) of the set. Of course, this latter approach requires having measures of the concerns, the topic that is discussed next.

Measuring the Life Concerns

Merely to identify a relevant set of life concerns is insufficient: an operational social indicators system requires measurements of these concerns. The social indicators movement provides numerous instructive examples of how this problem has been approached. In the broadest terms, the choice comes down to either using existing data (much of which will have been collected for other purposes, and hence represents "secondary data" from a social indicators perspective) or collecting new ("primary") data. If secondary data meet the necessary criteria for use as social indicators, they are usually used because this saves the expense of collecting new data. In practice, the selection of indicators to assess any particular concern area is usually a complex compromise through which one tries to maximize several, sometimes conflicting, criteria.

Criteria for Selecting Indicators

An ideal social indicator would meet all of the following criteria:

- Have construct validity: The indicator, should be tightly linked conceptually to the concern area one is attempting to measure. Included here is the notion that the indicator reflects the concern with a high degree of precision, i.e., that measurement errors are small.
- Be sensitive to relevant variations in the concern: The indicator should reflect variations (between people or other units and/or over time) in the concern that are felt to be substantially important. In many practical instances, this means that the indicator should show substantial variation (and not extreme skew) over the units that are being observed.
- Be available for the particular aggregations one wishes to examine. For example, in the present project one would want information to be available for Native Alaskans, perhaps subdivided into geographic regions or clusters of villages.
- Be available at the time intervals one is interested in. Aspects of life quality change at varying rates, particularly when driven by a strong external force (such as a large investment in energy resource development), and it is important to have social indicator data measured with sufficient frequency to reflect these changes.

- Be obtainable at reasonable cost. Most government-originated secondary data, if they meet other criteria, will usually involve only small costs to obtain. Obtaining primary data, however, may involve significant costs, and these costs can vary tremendously according to the design of the indicator system.
- Be available over an extended period of time, into the past and into the foreseeable future. A key perspective of social indicators work is the notion of monitoring changes over time. If a particular indicator is not available (or has had its measurement procedures changed) over the time span of interest, it will be difficult or impossible to assess changes in life quality.

Validation and Revision of Social Goals²

Following the recommendations of Dr. Andrews, the [1985] study team of SRB&A, ISER, and ISR started with the OECD universal list of social goals. As stated in TR116, “since these universal goals addressed basic needs and wants of people, regardless of cultural context, it was assumed that the goals would be valid for rural Alaskan communities as well. However, the previous studies did not offer much guidance related to defining regionally or culturally specific goals associated with coastal Alaska (*SRB&A, ISER, and ISR 1985:72*). First, the team defined the regions of interest to include the North Slope, NANA, Bering Straits, Bristol Bay, and Aleutian/Pribilof regions. The team then reviewed coastal zone management plan stated goals and objectives, regional newspapers, regional corporation annual reports, regional planning documents, and local testimony at public hearings to identify and assess the importance of stated social goals. Although the team expected social goals to vary regionally, on the contrary, high priority social goals were shared across regions. As a result, the team initially defined four “goal families” (the top level of a hierarchy of social goals), as well as goals and sub-goals within each goal family. The goal families initially defined were:

- (1) Continued existence of traditional culture
- (2) Individuals and families that are able to function well in society
- (3) Command over goods and services
- (4) Social opportunities and participation

The team then validated and revised the goal families, goals, and sub-goals in two ways: (1) fieldwork in all five regions; and, (2) comparison of major regional issues identified through secondary sources. Trained fieldworkers reviewed the hierarchy of social goals with 62 key informants in five regions and ten communities. As a result of the fieldwork, goal family one was redefined to include coastal populations in which the word “traditional” as applied to culture is problematic (*SRB&A, ISER, and ISR 1985:97, 103*). The team found that rewording goal family one to “Cultural Continuity” and rewording goals and sub-goals to avoid the word traditional made the goal hierarchy consistent with the views of both Native and non-Native residents of the five regions. Table 6 displays the goal families, goals, and subgoals as modified in the validation process. BOEM Domains are shown in parentheses.

² This section resumes the study team’s discussion of the literature review and is no longer a direct excerpt from TR 116 (*SRB&A, ISER, and ISR 1985*)

Table 6: Alaska OCS Social Goals

**GOAL FAMILY ONE
CULTURAL CONTINUITY (CULTURAL CONTINUITY)**

GOAL ONE: CONTINUED HARVEST OF RENEWABLE RESOURCES

- 111 HEALTHY WILDLIFE POPULATION
- 112 UNRESTRICTED ACCESS TO TRAD. HUNTING & FISHING AREAS
- 113 PRESENCE OF WILDLIFE POP. IN TRAD'L HUNTING & FISHING AREAS
- 114 INTEREST IN AND USE OF RENEWABLE RESOURCES

GOAL TWO: CONTINUED TRADITIONAL SOCIAL RELATIONSHIPS

- 121 CONTINUED COOPERATIVE ACTIVITIES
- 122 CONTINUED SHARING OF RENEWABLE RESOURCE PRODUCTS & EQUIP.
- 123 CONTINUED EXTENDED FAMILY RELATIONSHIPS
- 124 CONTINUED RESPECT FOR ELDERS
- 125 INTERVILLAGE SOCIAL RELATIONSHIPS.

GOAL THREE: CONTINUED CULTURAL SUPPORTS

- 131 CONTINUED USE OF NATIVE LANGUAGE
- 132 CONTINUED ORAL HISTORY TRADITION
- 133 CONTINUED PRODUCTION OF ARTS & CRAFTS

**GOAL FAMILY TWO
INDIVIDUALS & FAMILIES THAT ARE ABLE TO
FUNCTION WELL IN SOCIETY (HEALTH AND SAFETY)**

GOAL ONE: HEALTHY INDIVIDUALS

- 211 PHYSICALLY HEALTHY INDIVIDUALS
- 212 MENTALLY HEALTHY INDIVIDUALS

GOAL TWO: INDIVIDUALS WHO ARE SAFE FROM HARM

- 221 INDIVIDUALS WHO ARE SAFE FROM HARM BY OTHERS

222 INDIVIDUALS WHO ARE SAFE FROM HARM CAUSED BY THEIR OWN ACTIONS

GOAL THREE: AN EDUCATED & SKILLED POPULATION (EDUCATION)

231 INDIVIDUALS HAVE RECEIVED A BASIC EDUCATION

232 ADULTS HAVE THE EDUCATION AND SKILLS NECESSARY TO OB. EMPL

GOAL FOUR: FAMILIES THAT FUNCTION WELL IN SOCIETY (HEALTH AND SAFETY)

241 PREVALENCE OF FAMILIES AS THE PRIMARY SOCIAL UNIT

242 HEALTHY SOCIAL RELATIONSHIPS WITHIN FAMILIES

GOAL FIVE: ADEQUATE LEISURE OPPORTUNITIES (CULTURAL CONTINUITY)

251 ADEQUATE OPPORT. TO INTERACT INFORMALLY WI FRIENDS,FAMILY

252 ADEQUATE OPPORTUNITIES TO PARTICIPATE IN RECR. ACTIVITIES

**GOAL FAMILY THREE
COMMAND OVER GOODS AND SERVICES (ECONOMIC WELL-BEING)**

GOAL ONE: SUFFICIENT INCOME & EQUITABLE INCOME DISTRIBUTION

311 ALL HH RECEIVING MIN. INCOME REQUIRED TO MEET BASIC NEEDS

312 MOST HOUSEHOLDS EXPERIENCING REAL INCOME GROWTH

GOAL TWO: SUFFICIENT OPPORTUNITIES FOR EMPLOYMENT

321 SUFFICIENT NUMBER OF LOCAL JOBS

322 SUFFICIENT OPPORTUNITIES FOR PREFERRED JOBS

GOAL THREE: SUFFICIENT HOUSING (PHYSICAL ENVIRONMENT)

331 AFFORDABLE HOUSING OPPORTUNITIES

332 SATISFACTORY PHYSICAL LIVING SPACE

GOAL FOUR: SUFFICIENT FOOD

341 SUFFICIENT FOOD AVAILABLE

342 AFFORDABLE FOOD

GOAL FIVE: SUFFICIENT PERSONAL GOODS & SERVICES

351 SUFFICIENT AVAILABILITY OF GOODS AND SERVICES

352 AFFORDABLE PRICE FOR GOODS AND SERVICES

GOAL SIX: SATISFACTORY COMMUNITY ENVIRONMENT (PHYSICAL ENVIRONMENT)

361 SATISFACTORY PUBLIC SERVICES AND FACILITIES

362 SATISFACTORY PHYSICAL ENVIRONMENT

**GOAL FAMILY FOUR
SOCIAL OPPORTUNITIES AND PARTICIPATION (LOCAL CONTROL)**

GOAL ONE: ADEQUATE LOCAL CONTROL

411 SENSE OF LOCAL CONTROL

412 CONFIDENCE IN INSTITUTIONS AND LEADERS

GOAL TWO: ADEQUATE PARTICIPATION

421 PARTICIPATION IN ROUTINE PROCESSES OF GOVT

Identification and Assessment of Social Indicators

Informed by Dr. Andrews' review of the field of social indicators, the 1985 study team applied the following rules in the identification and assessment of potential social indicators:

- (1) There must be at least one social indicator for each subgoal. However, the number of indicators included under a single subgoal should be limited to that which is necessary to reliably measure the subgoal.
- (2) The meaning of each indicator should correspond to the meaning of one, and only one, subgoal.
- (3) The indicator must directly measure individual well-being.
- (4) The indicator must accurately reflect reality.
- (5) The indicator must be sensitive to actual change.
- (6) Indicators should be expressed both as averages and as distributions of well-being.
- (7) Where possible, each subgoal should be described by both objective and subjective measures.

Potential Indicators Based on Existing Data

The team first applied the above rules to social indicators based on existing data. Major sources of potential indicators included the U.S. Bureau of the Census, the Alaska Department of Labor, and the Alaska Division of Vital Statistics. The following rules on data availability were applied:

- (1) Be available on a subregional or place-by-place basis.
- (2) Should distinguish between levels of well-being of Natives and non-Natives.
- (3) Should be collected at least every five years.
- (4) Should meet the general rules for social indicators.

Table 7 summarizes the results of the assessment of existing 1985 data. The team found that only 18 of the 42 subgoals had potential indicators based on existing data, and only nine of the 45 potential indicators were judged to be fully acceptable by the above rules. The team concluded:

Not unexpectedly then, available data does not take us very far toward the construction of a comprehensive social indicator system for coastal areas of Alaska. While available data should certainly be included in AOSIS, it is clearly necessary to collect new information (SRB&A, ISER, ISR 1985:129).

Potential Indicators Based on Primary Data

The team considered key informants as sources of primary data. They concluded that key informant data rarely provides accurate measures of individual well-being that are sensitive to change over time at the individual resident level. Key informants are in the best position to report on prevalent states of well-being at the community level. The team then developed at least one indicator for each subgoal based on self-reports and one subjective indicator for each subgoal. The subjective indicators were directly based on the work of Andrews and Withey (1976) and focused on twelve domains, shown in Table 8 by BOEM Domain.

The team added subjective measures for the subgoals under cultural continuity.

The self-report measure of interest in and use of renewable resources was the percent of the population engaging in 50 percent or more of local subsistence activities. The team therefore had to develop lists of ten subsistence activities and up to six related special skills for each community in each of the five study regions. Selection of activities was guided by the following principles:

- (1) Represent a seasonal round and variety in diet.
- (2) Include activities done by males, females and those done by both.
- (3) Include both individual and cooperative activities.
- (4) Focus on activities that contribute to cultural continuity.
- (5) Include activities that provide adequate variance.

Revisions in the indicators based on pretesting resulted in the final selection of social indicators shown in Table 9 with BOEM domains in parentheses.

Table 7: Assessment of Existing Social Indicator Data in 1985

Table 7: Assessment of Existing Data								
Goal		Accept-	Region		Type	Sub-		
Type	Name	ability	Quality	Relevance	Measure	Regional	Race	Source
CULTURAL CONTINUITY								
111	size key wildlife pop as % max size in last 20 yrs	Yes	Unknown	Very Good	Output	Yes	NA	ADF&G
113	% recent historic max wildlife pop present in area	Yes	Unknown	Very Good	Output	Yes	NA	ADF&G
131	% speaking Native language at home	Marginal	Good	Very Good	Output	Yes	Yes	Census
INDIVIDUALS AND FAMILIES THAT FUNCTION WELL IN SOCIETY								
211	birth rates	Yes	Fair	Limited	Output	Yes	Yes	ADHSS
	infant survival rate	Yes	Fair	Very Good	Output	Yes	Yes	ADHSS
	death rate by cause	Yes	Fair	Very Good	Output	Yes	Yes	ADHSS
	% pop. treated for selected medical problems	Marginal	Fair	Limited	Int-Out	Yes	No	IHS
221	death by homicide rate	Yes	Fair	Very Good	Output	No	Yes	ADHSS
	f of arrests by type	No	Poor	Limited	Input	Yes	?	ADPS
222	death by suicide rate	Yes	Fair	Very Good	Output	No	Yes	ADHSS
	death rate by alcoholism	Yes	Fair	Very Good	Output	No	Yes	ADHSS
	death rate by accident rate	Yes	Fair	Very Good	Output	No	Yes	ADHSS
231	% completing eighth grade	Marginal	Good	Good	Int-Out	Yes	Yes	Census
232	% completing high school	Marginal	Good	Good	Int-Out	Yes	Yes	Census
241	% of total households which contain 2+ relatives	Marginal	Good	Good	Output	Yes	Yes	Census
	% adults married	Marginal	Fair	Good	Int-Out	Yes	Yes	Census
242	% adults ever married but never divorced	Marginal	Good	Good	Output	Yes	Yes	Census
	% households w/children having 2 adults present	Marginal	Good	Good	Output	Yes	Yes	Census

Table 7 (continued): Assessment of Existing Data

Goal		Accept-	Region		Type	Sub-		
Type	Name	ability	Quality	Relevance	Measure	Regional	Race	Source
COMMAND OVER GOODS AND SERVICES								
311	% households (families) below income threshold	Marginal	Good	Very Good	Output	Yes	Yes	Census
	% of households receiving public assistance	Marginal	Good	Limited	Flow	Yes	No	ADHSS
	total earnings by place of work	No	Good	Poor	Output	No	No	BEA
	total payroll for covered employment by industry	No	Good	Poor	Output	No	No	DOL
312	median per capita income	Marginal	Fair	Good	Output	No	No	BEA
321	% of labor force who are employed	Marginal	Good	Good	Int-Out	Yes	Yes	Census
	% full-time workers who worked 38 weeks or more	Marginal	Good	Good	Int-Out	Yes	Yes	Census
	nonagricultural employment (total)	No	Fair	Poor	Output	No	No	ADOL
	unearned proportion of income (54)	No	Poor	Limited	Int-Out	No	No	BEA
	number (or pounds) of salmon by species	No	Fair	Poor	Int-Out	No	NA	ADF&G
	commercial fishing licenses	No	Good	Good	Input	No	No	ADF&G
	chum salmon aerial survey escapement	No	Fair	Good	Input	No	NA	ADF&G
	commercial fishing periods (hours per week)	No	Good	Limited	Input	No	NA	ADF&G
	labor force status of persons 16+	Marginal	Good	Limited	Flow	Yes	Yes	Census
	hours worked per week by f of weeks worked	Marginal	Good	Good	Int-Out	Yes	Yes	Census
322	% men holding professional, technical, craft jobs	Marginal	Good	Good	Output	Yes	Yes	Census
322	% women holding professional, technical, managerial jobs	Marginal	Good	Good	Output	Yes	Yes	Census
	nonagricultural employment by industry	No	Good	Poor	Output	No	No	ADL
	average monthly wage by industry	No	Good	Poor	Output	No	No	ADL
331	gross rent as percentage of income	Marginal	Good	Good	Output	Yes	Yes	Census
	selected monthly owner costs as % of income	Marginal	Good	Good	Output	Yes	Yes	Census
332	persons per room	Marginal	Good	Good	Int-Out	Yes	Yes	Census
	% households with running water	Marginal	Good	Good	Output	Yes	Yes	Census

Table7 (continued): Assessment of Existing Data								
Goal		Accept-	Region		Type	Sub-		
Type	Name	ability	Quality	Relevance	Measure	Regional	Race	Source
SOCIAL OPPORTUNITIES AND PARTICIPATION								
411	% population residing in community for 5+ years	Marginal	Good	Good	Int-Out	Yes	Yes	Census
	existence of local jurisdiction w/ plan-zone powers	No	Good	Good	Input	Yes	NA	ADCRA
421	% adults voting in statewide elections	Marginal	Fair	Good	Output	Yes	No	ADE
	registered voters as % adult population	Marginal	Fair	Good	Output	Yes	No	ADE
Sources:								
ADCRA = Alaska Department of Community and Regional Affairs								
BEA = U.S. Department of Commerce, Bureau of Economic Analysis.								
Census = U.S. Department of Commerce, Bureau of the Census.								
IHS = U.S. Department of Health and Human Services, Indian Health Service								
ADE = Alaska Division of Elections								
ADF&G = Alaska Department of Fish and Game								
ADHSS = Alaska Department of Health and Social Services								
ADL Alaska Department of Labor								
ADPS Alaska Department of Public Safety								
NA not applicable.								

Table 8: MMS 2 Subjective Indicators by BOEM Domain

BOEM Domain	Sub-Domain
Economic Well-being	Money Job Material well-being
Health and Safety	Health
Cultural Continuity	Family Things do with family Time to do things Spare time activities Fun
Local Control	Efficacy Government
Physical Environment	House/apartment

Table 9: Alaska OCS Social Indicators

GOAL FAMILY ONE CULTURAL CONTINUITY (CULTURAL CONTINUITY)	
<u>SUBGOAL SOCIAL INDICATOR</u>	<u>SOURCE</u>
<u>GOAL ONE: CONTINUED HARVEST OF RENEWABLE RESOURCES</u>	
111 HEALTHY WILDLIFE POPULATION	
size key wildlife pop as % max size in last 20 yrs	SECONDARY
% satis w/ amt. of wildlife there is to harvest	SURVEY
% perceive amt. wildlife is same/more than 5 yrs. ago	SURVEY
% perceive amt. wildlife will be same/more 5 yrs. hence	SURVEY
112 UNRESTRICTED ACCESS TO TRAD. HUNTING & FISHING AREAS	
% tradll hunting areas accessible to local resid	KEY INF
113 PRESENCE OF WILDLIFE POP/ TRADIL HUNTING & FISHING AREAS	
% recent historic max wildlife pop present in area	SECONDARY
114 INTEREST IN AND USE OF RENEWABLE RESOURCES	
% engaging in 50%+ local hunting/fishing activities	SURVEY
months during which engaged in some activ.rel.to H&F	SURVEY
% eating 2+ meals of fish & game in last 2 days	SURVEY
% HH meat derived from harvested wildlife	SURVEY
% satis. w/ amount hunting/fishing do personally	SURVEY

GOAL TWO: CONTINUED TRADITIONAL SOCIAL RELATIONSHIPS

121 CONTINUED COOPERATIVE ACTIVITIES	
% engaging in activities cooperatively	SURVEY
% satis. w/ cooperative activ. do personally	SURVEY
122 CONTINUED SHARING/RENEWABLE RESOURCE PRODUCTS & EQUIP.	
% eating 1+ meal w/ shared food in last 2 days	SURVEY
% satis. with amount share with others	SURVEY
123 CONTINUED EXTENDED FAMILY RELATIONSHIPS	
% engaging in 1+ H/F act w/non-nuclear rel.	SURVEY
% pop eating 1+ meal w/non-nucl.rel.in last 2 days	SURVEY
% satis. with time spent w/non-nucl. relatives	SURVEY
124 CONTINUED RESPECT FOR ELDERS	
% pop seeking advice from elder in last month	SURVEY
% satis. w/ extent seek advice of elders personally	SURVEY
% perceive elders get same/more respect as 5 yrs ago	SURVEY
125 INTERVILLAGE SOCIAL RELATIONSHIPS	
% adults born in same region of residence	SURVEY
% satis. w/ social ties to other communities	SURVEY
no. times left community to visit relatives/friends	SURVEY

GOAL THREE: CONTINUED CULTURAL SUPPORTS

131 CONTINUED USE OF NATIVE LANGUAGE	
% speaking Native language at home	SECONDARY
% speaking Native language at home at least sometimes	SURVEY
% satis. with ability to speak Native language	SURVEY
132 CONTINUED ORAL HISTORY TRADITION	
% adults hearing tradl story from elder last week	SURVEY
% satis. amt. time spent listening to tradl. stories	SURVEY
133 CONTINUED PRODUCTION OF ARTS & CRAFTS	
% engaging in arts & crafts activities in last yr.	SURVEY
% satis.'w/ arts and crafts do personally	SURVEY

**GOAL FAMILY TWO
INDIVIDUALS & FAMILIES THAT ARE ABLE TO FUNCTION WELL IN SOCIETY
(HEALTH AND SAFETY)**

GOAL ONE: HEALTHY INDIVIDUALS

211 PHYSICALLY HEALTHY INDIVIDUALS	
infant survival rate	SECONDARY
death rate by cause	SECONDARY
% pop. treated for selected medical problems	SECONDARY
% perceive general health to be at least good	SURVEY
% perceive health as good as should be	SURVEY
% suffer longstand effects/illness-injury-disabltly	SURVEY

% can see faces clearly on other side of room	SURVEY
% can hear normal conversation w/at least 2 people	SURVEY
% can run 300 feet	SURVEY
% can carry object of 25 pounds 30 feet easily	SURVEY
% bite and chew on hard foods	SURVEY
% had daily activ.interrupted for illness in last wk.	SURVEY
% satis. with health and physical condition	SURVEY
212 MENTALLY HEALTHY INDIVIDUALS	
% pop. treated for selected mental health problems	SECONDARY
% satis. with way handle problems that come up in life	SURVEY
% satis. with what accomplishing in life	SURVEY
% satis. with amount respect get from others	SURVEY
% satis. with self	SURVEY
<u>GOAL TWO: INDIVIDUALS WHO ARE SAFE FROM HARM</u>	
221 INDIVIDUALS WHO ARE SAFE FROM HARM BY OTHERS	
death by homicide rate	SECONDARY
% pop. physically harmed by someone else in last yr.	SURVEY
% satis. how safe feel in community	SURVEY
222 INDIVIDUALS WHO ARE SAFE FROM HARM CAUSED BY THEIR OWN ACTIONS	
death by suicide rate	SECONDARY
death rate by alcoholism	SECONDARY
death by accident rate	SECONDARY
% consuming alcohol on 4+ days in last week	SURVEY
% who smoke 20+ cigarettes per day	SURVEY
<u>GOAL THREE: AN EDUCATED & SKILLED POPULATION (EDUCATION)</u>	
231 INDIVIDUALS HAVE RECEIVED A BASIC EDUCATION	
%completing eighth grade	SECONDARY
%completing eighth grade	SURVEY
%18-24 year olds who have not dropped out of school	SURVEY
%rating ability to read magazine easily	SURVEY
%rating ability to add 15 prices easily	SURVEY
%rating ability to solve 583/17 easily	SURVEY
%satis. w/ usefulness of educ. children getting	SURVEY
232 ADULTS HAVE THE EDUCATION AND SKILLS NECESSARY TO OB.EMPL	
% completing high school	SECONDARY
% completing high school	SURVEY
% satis. w/ usefulness of educ-. personally	SURVEY
<u>GOAL FOUR: FAMILIES THAT FUNCTION WELL IN SOCIETY (HEALTH AND SAFETY)</u>	
241 PREVALENCE OF FAMILIES AS THE PRIMARY SOCIAL UNIT	
% of total households which contain 2+ related indiv.	SECONDARY
% adults married	SECONDARY
% population in family households	SURVEY
% adults married	SURVEY
242 HEALTHY SOCIAL RELATIONSHIPS WITHIN FAMILIES	
% adults who have ever married but never divorced	SECONDARY

% households w/ children having two adults present	SECONDARY
% adults who have ever married but never div./sep.	SURVEY
% households w/ children having two adults present	SURVEY
% satis. with how well family gets a.long	SURVEY
<u>GOAL FIVE: ADEQUATE LEISURE OPPORTUNITIES (CULTURAL CONTINUITY)</u>	
251 ADEQUATE OPPORT. TO INTERACT INFORMALLY W/ FRIENDS,FAMILY	
no. days in last week went to visit friends/relatives	SURVEY
% satis. with amount of visiting do personally	SURVEY
252 ADEQUATE OPPORTUNITIES TO PARTICIPATE IN RECR. ACTIVITIES	
no. days/last week spent .5 hr. on recr. act.exc. TV	SURVEY
no. hrs/last wk. sat down to watch TV	SURVEY
% satis. w/ how much fun having these days	SURVEY
GOAL FAMILY THREE COMMAND OVER GOODS AND SERVICES (ECONOMIC WELL-BEING)	
<u>GOAL ONE: SUFFICIENT INCOME & EQUITABLE INCOME DISTRIBUTION</u>	
311 ALL HH RECEIVING MIN. INCOME REQ. TO MEET BASIC NEEDS	
% households (families) below income threshold	SECONDARY
% of households receiving public assist	SECONDARY
ratio of income percvd neces to actual income	SURVEY
% below 200% pov level adj for incr cost of living	SURVEY
% satis. with standard of living	SURVEY
312 MOST HOUSEHOLDS EXPERIENCING REAL INCOME GROWTH	
median per capita income	SECONDARY
median per capita income	SURVEY
real median household income	SURVEY
% perceive financial situation has impr.in last 3yrs	SURVEY
% expect financial situation to impr. in next 3yrs	SURVEY
% satis. w/ income	SURVEY
<u>GOAL TWO: SUFFICIENT OPPORTUNITIES FOR EMPLOYMENT</u>	
321 SUFFICIENT NUMBER OF LOCAL JOBS	
% employed who are in labor force	SECONDARY
% full time workers who worked 38 weeks or more	SECONDARY
% employed who are in labor force	SURVEY
ratio months worked to months unemployed	SURVEY
ratio mo. worked in comm. to mo. wkd. outside comm.	SURVEY
% satis. with local job opportunities	SURVEY
322 SUFFICIENT OPPORTUNITIES FOR PREFERRED JOBS	
% men holding professional, technical, crafts jobs	SECONDARY
% women holding professional, tech., managerial jobs	SECONDARY
% men holding job type perceived to be preferred	SURVEY
% women holding job type perceived to be preferred	SURVEY
mean mos.some time spnt H&F actvs among 9+mo.empl.	SURVEY
% reporting could do most or all H&F wanted to do	SURVEY
% satis. with job	SURVEY
% satis. with people work with	SURVEY

% satis. with work do on job	SURVEY
% satis. w/ time have to hunt, fish & pursue rel.act.	SURVEY
<u>SUBGOAL SOCIAL INDICATOR</u>	<u>SOURCE</u>
<u>GOAL THREE: SUFFICIENT HOUSING (PHYSICAL ENVIRONMENT)</u>	
331 AFFORDABLE HOUSING OPPORTUNITIES	
gross rent as % of income	SECONDARY
selctd mo owner costs as % of income	SECONDARY
housing costs as % of income	SURVEY
% satis. with opport. to get affordable housing	SURVEY
332 SATISFACTORY PHYSICAL LIVING SPACE	
persons per room	SECONDARY
% households with running water	SECONDRY
# of rooms	SURVEY
persons per room	SURVEY
% households w/no difficulty getting enough dr. water	SURVEY
% households with gray water piped away	SURVEY
% households with flush or chemical toilets that wk.	SURVEY
% households perceived warm on cold, windy days	SURVEY
% satis. with housing	SURVEY
% satis. with water have to drink	SURVEY
<u>GOAL FOUR: SUFFICIENT FOOD</u>	
341 SUFFICIENT FOOD AVAILABLE	
% satis. w/ food have to eat	SURVEY
342 AFFORDABLE FOOD	
price standard mkt bskt as propor. of median income	KEY INF
<u>GOAL FIVE: SUFFICIENT PERSONAL GOODS & SERVICES</u>	
351 SUFFICIENT AVAILABILITY OF GOODS AND SERVICES	
availability of plywood, dining table, stove in vill.	KEY INF
% satis. with goods & services can get in vill.	SURVEY
352 AFFORDABLE PRICE FOR GOODS AND SERVICES	
cost of 3 selected items as % of median income	KEY INF
<u>GOAL SIX: SATISFACTORY COMMUNITY ENVIRONMENT (PHYSICAL ENVIRONMENT)</u>	
361 SATISFACTORY PUBLIC SERVICES AND FACILITIES	
water treatment, main power facil. present & working	KEY INF
362 SATISFACTORY PHYSICAL ENVIRONMENT	
% satis. w/ land & buildings in village	SURVEY
% satis. w/ land & water near village	SURVEY
GOAL FAMILY FOUR SOCIAL OPPORTUNITIES AND PARTICIPATION (LOCAL CONTROL)	
GOAL ONE: ADEQUATE LOCAL CONTROL	

411 SENSE OF LOCAL CONTROL	
% population residing in community for 5+ yrs.	SECONDARY
% population residing in community for 3+ yrs.	SURVEY
% perceive opinion makes at least some difference	SURVEY
% satis. w/amt. influence over harvest of wildlife	SURVEY
% satis. w/amt. influence over local education	SURVEY
% satis. w/amt. influence over development	SURVEY
% satis. w/amt. personal infl. over local affairs	SURVEY
412 CONFIDENCE IN INSTITUTIONS AND LEADERS	
% perceive local govts. as very effective	SURVEY
% perceive regional govts. as very effective	SURVEY
<u>GOAL TWO: ADEQUATE PARTICIPATION</u>	
421 PARTICIPATION IN ROUTINE PROCESSES OF GOVT	
% adults voting in statewide elections	SECONDARY
% adults registered to vote	SECONDARY
% voting in last local election	SURVEY
% voting in last statewide election	SURVEY
% attending one or more public meetings in last mo.	SURVEY

The final step in the project was the preparation and submission of a final questionnaire, research design and justification to the federal OMB. Called the Alaska OCS Social Indicators System (AOSIS), the submission was approved by OMB in 1986.

Minerals Management Service Social Indicators 3

The third phase of MMS' social indicator program was a hybrid of the first two phases. The research team, headed by Joseph Jorgensen, selected to lead phase three also directed the first phase, although the lead organization changed from Louis Berger & Associates to Human Relations Area Files, Inc. In their reporting of the third phase of MMS social indicator program, they commented on the phase one work as follows:

The MMS provided us with a questionnaire with which to survey village residents. Questionnaires, because they are forced-choice instruments, are fraught with problems that threaten their validity (Human Relations Area Files, Inc. 1994:5).

We developed a protocol – an open-ended device to guide questions – with which to interview villagers, and we also developed a list of questions to ask persons who occupied key positions within the village. Casual observations and chance discussions, too, the stuff of participant-observations methods in ethnographic research, were parts of our multimethod, multidata-set research design. We use casual observations and chance discussion, in conjunction with the information gained from our focused discussions with key persons in villages, to provide ethnographic background and depth to our understanding of the responses from the protocol and questionnaire. We use the objectivity of questionnaire responses to account for the subjectivity of the protocol, and the subjectivity of the protocol to account for the potential triviality (and construct validity problems of the questionnaire (Human Relations Area Files, Inc. 1994:5).

The third phase research team chose not to focus on the averages and distributions of the individual social indicators contained in the AOSIS questionnaire. Instead, they used smallest space analysis to examine relationships among indicators, as shown in the following example:

Figure 1 solves the relations among 35 traditional AOSIS variables in three dimensions. A region comprising four areas appears in the center-right side of the box. Subsumed as TRADITIONAL EXTRACTORS are the two largest areas. Sea Mammal Extractors on the right and General Extractors on the left. Fitted toward the right front of the box, in front of the two areas designating extraction, are items measuring household size (B) and household type (C). Large household sizes and composite types fit with traditional customs. These variables are negatively correlated with the items in the HIGH PRIVATE INCOME region (Human Relations Area Files, Inc. 1994:45).

Figure 1: Example of MMS Social Indicators 3 Use of Social Indicators

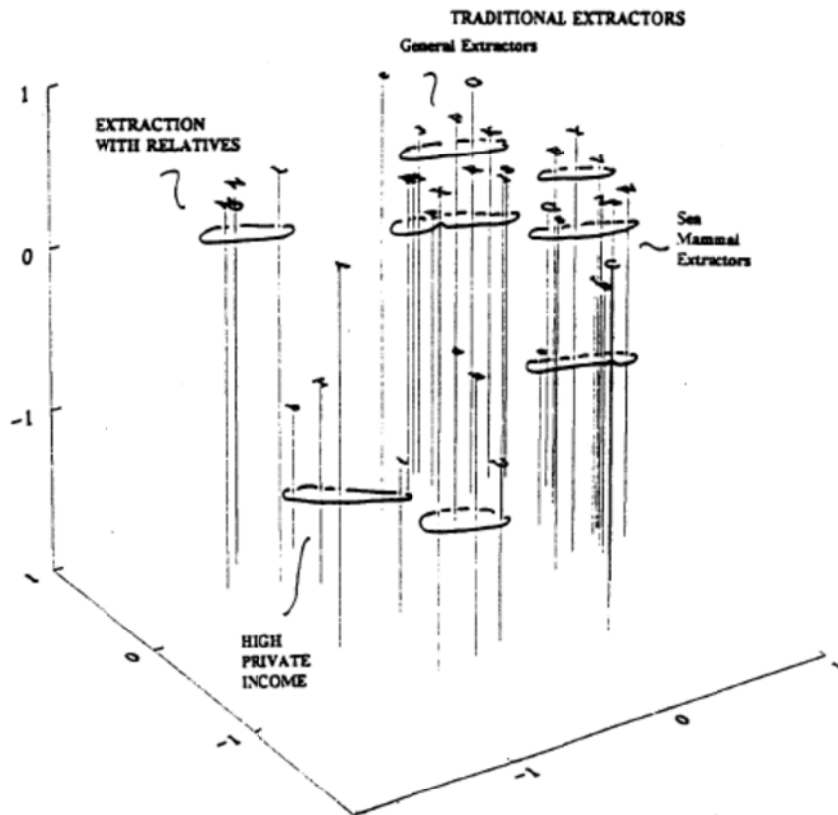


FIGURE 1. STRUCTURE OF AOSIS TRADITIONAL CUSTOMS, GUTTMAN-LINGOES' SSA CONFIGURATION (3-D), 35 VARIABLES, N = 856, TOTAL PRETEST-POSTTEST SAMPLES COMBINED, 1987-1990

Source: *Human Relations Area Files Inc. 1994:46*

As shown in Dr. Andrews' review of the field of social indicators, each social indicator is constructed to convey information about a particular social goal or concern. An indicator is intended to mean something on its own. The phase three approach described above departs from the mainstream of social indicators in two ways. First, the results are a blend of ethnographic and questionnaire observations. Second, the social

indicators are used as inputs to a multivariate-based interpretation rather than as outputs. It is beyond the scope of this review of social indicators to summarize the work of Jorgensen and his colleagues. The work is a significant contribution to the sociocultural studies of MMS and deserves to be read in that context.

SURVEY OF LIVING CONDITIONS IN THE ARCTIC (SLiCA)

The Survey of Living Conditions in the Arctic (SLiCA) is one of four components that serve as the foundation of the theoretical framework for the current BOEM sponsored study. The four foundation components are:

- (1) BOEM legal mandates
- (2) SLiCA
- (3) ASI initiative
- (4) North Slope Social Impact Study (NSSIS)

Both SLiCA and the following subject of our review, the ASI initiative, have drawn from the work reported in the previous section, Early Social Indicators Research in Alaska. The following is a review of SLiCA itself.

Motivation for the Study

The initiative for the SLiCA came from the Greenland Home Rule Government. In 1994, Statistics Greenland (SG) conducted a survey of living conditions in Greenland, partly based on what has been described as the Scandinavian model (Erikson and Uusitalo 1987). Analysis of the data caused researchers in Greenland to re-examine their theoretical assumptions. They decided that the dimensions and indicators of living conditions had to be context-specific so that the concept of well-being reflects the life of the respondents and their priorities (*Andersen and Poppel 2002*). Thus it was crucial to the research effort that representatives of the respondents, the indigenous peoples, were included as partners in the process. The preliminary discussions with representatives of the respondents indicated that the role of household production in Arctic regions, the strong ties of Arctic people to the environment, and the continuing role of extended informal social relationships were among the dimensions that had to be included in a future living conditions survey. They decided that a multidisciplinary team was needed to assess living conditions—and that it was more important to examine differences in living conditions among peoples with similar cultures and environmental circumstances than to compare living conditions of northern indigenous peoples and southern majority cultures.

By 1997, Birger Poppel (the then chief statistician, SG) and Thomas Andersen (international project coordinator, SG) had consulted with researchers, research institutions, indigenous organizations, and governments in Canada, Norway, Sweden, Finland, Russia, and the United States about the idea of an international comparative study of living conditions in the Arctic. In 1998 the Inuit Circumpolar Conference (ICC) passed Resolution 29 (Section I) in support of the study: "Rapid social change characterizes all indigenous peoples of the Arctic . . . There is a need to document and compare the present state of living conditions and development among the indigenous peoples of the Arctic." In October 2000, the Arctic Council (a ministerial level international body) formally named the project as a part of its Sustainable Development initiative.

Study Design

SLiCA's conceptual design is described in detail in Andersen and Poppel (2002). Briefly, the research approach was based on previous studies on living conditions, social indicator development and quality of life (Bauer 1966; Sheldon and Moore 1968; U.S. Department of Health, Education, and Welfare 1969; Campbell and Converse 1972; Campbell, Converse, and Rogers 1976; Andrews and Withey 1976; Allardt 1975; and Ringen 1985). For a recent review of the state of the art of this field, see Sirgy Michalos, Ferriss, Easterlin, Patrick, and Pavot (2006). Although previous research has shown that commonly applied economic indices such as income and unemployment explain most, but not all, of the variation in a broader array of quantitative statistics (Diener and Suh 1997), these indicators do not offer strong explanations of Arctic peoples' choice to continue living in their communities. As a first step in resolving this inconsistency, the SLiCA definition of living conditions, focusing in resources, was broadened to embrace the full scope of economic production in the North; that is, including the role of household production in Arctic regions and the mixed cash-local harvest economy (Usher, Duhaime, and Searles 2003). SLiCA's approach was further expanded to incorporate other dimensions of living conditions that have been previously identified as important in the Arctic. These include: family relationships and spirituality (McNabb 1991); social adjustment and social support (Larsen 1993); and ethnic identity (Spratt 1994). Table 10 shows the domains within which social indicators were developed for SLiCA, organized by BOEM domain.

Table 10: SLiCA Sub-Domains Organized by BOEM Domains

BOEM Domain	Sub-Domain
Economic Well-being	Household economy Employment Harvest Income and expenses
Health and Safety	Physical and mental health Safety and justice Family relationships Leisure
Cultural Continuity	Identity Spirituality Language
Local Control	Resource management Political resources
Education	Formal education Traditional education
Physical Environment	Housing Environmental health Technology Community viability
Overall well-being	Mobility Subjective well-being overall

Finally, Deiner and Suh's review on the relationship between economic indices, living condition measures, and subjective well-being concludes that these measures do not always agree: including both objective and subjective measures provides an opportunity for greater understanding of living conditions (1997:213). Therefore SLiCA's measurement of living conditions includes both subjective and objective measures.

Questionnaire development took place between 1998 and 2001 in eleven workshops and field pretests in each country. This work involved indigenous people and researchers from eight countries and five social science disciplines. Indigenous steering committees approved the final questionnaire design. The entire process of questionnaire development is documented on the project website (www.arcticlivingconditions.org).

In 2001 Birger Poppel convened a conference in Nuuk Greenland to review the SLiCA research design. Invited peer reviewers included five leaders of the professional organization, International Society for Quality of Life Studies (ISQOLS): Professor Valerie Möller, Chair of Quality of Life, Rhodes University, South Africa, and former president of ISQOLS; Dr. Heinz-Herbert Noll, Director of the Social Indicators Department of the Centre for Survey Research and Methodology (ZUMA), Mannheim, Germany; Professor Ruut Veenhoven, Emeritus Professor of Social Conditions of Human Happiness, Erasmus University, Rotterdam, Netherlands; Dr. Joachim Vogel, Statistics Sweden; and, Professor Emeritus Michael Hagerty, University of California Davis. These social indicator experts favorably reviewed the SLiCA research design and offered suggestions for improvements. A summary of their comments "What We Heard from You: Review by International Experts in Living Conditions Research" appears on the SLiCA website: www.arcticlivingconditions.org at "Project History/Nuuk, Greenland, April 2001/Nuuk Conference Review Summary".

In February 2003 members of the international team and indigenous management boards met in Murmansk Russia to adopt a shared set of fieldwork methods and to identify SLiCA's major analytic themes. Indigenous management board members Ed Ward (Kotzebue Alaska) and Charles Dorais (Kuujuaq, Quebec) took the lead in identifying analytic themes:

- (1) The importance of a mixed cash- and harvest/herding- based economy to living in the Arctic.
- (2) The importance of social relationships and the standard of living to settlement patterns
- (3) Relationships between social problems and other dimensions of living conditions
- (4) The influence of educators and missionaries
- (5) The influence of policies on living conditions

Implementation of SLiCA was affected by funding. SLiCA was fully implemented in Canada (Four Inuit settlement regions), the US (Alaska's three Inupiat settlement regions), Greenland, and Chukotka between 2001 and 2006. Non-probability samples of Sami in Norway, Sweden, and the Kola Peninsula were obtained after the first publication of SLiCA data and are still being processed. The first wave of SLiCA produced 7,250 interviews with response rates of 83 to 85 percent (Kruse J., Poppel, Abryutina, Duhaime, Martin, Poppel, Kruse M., Ward, Cochran, Hanna, 2008). Interviews with randomly selected adults on average took 90 minutes to complete. The SLiCA international core data set consists of 950 variables used to produce 398 analytic variables. Since these variables are all linked as individual records, it is

possible to examine relationships among variables, as for instance, the relationship of subsistence activity and measures of mental health and overall well-being.

Once the SLiCA team had constructed an international data set, they commenced the analysis phase by focusing on themes one, two, and three. Birger Poppel was invited to make a plenary presentation on SLiCA at the Seventh Conference of the International Society for Quality-of-Life Studies held in 2006 at Rhodes University, Grahamstown, South Africa. Members of the team presented seven papers at the conference:

- (1) Poppel, Birger. The Importance of a Mixed Cash and Harvesting/Herding-based Economy of Living in the Arctic.
- (2) Martin, Stephanie. The Importance of Social Relationships and Standard of Living to Settlement Patterns in the Arctic.
- (3) Kruse, Jack. Relationships Between Social Problems and Other Dimensions of Living Conditions: An International Arctic Analysis.
- (4) Poppel, Mariekathrine. Relationships Between Violence and Different Living Conditions – An Analysis Based on the Survey of Living Conditions in the Arctic, SLiCA.
- (5) Abrutina, Larissa. An International Comparison of Health Conditions Among Inuit and Indigenous Peoples of Chukotka.
- (6) Hanna, Virgene. Arctic Children: Resources for Well-being. A View from the Survey of Living Conditions in the Arctic.
- (7) Ward, Ed, Marg Kruse. Survey of Living Conditions in the Arctic among Inuit, Iñupiat, Sami, and the Indigenous Peoples of Chukotka: Lessons Learned for the Social Sciences.

The SLiCA team was invited to publish two papers in books resulting from the ISQOLS conference:

- (1) Kruse, J., Poppel, B., Abrutina, L., Duhaime, G., Martin, S., Poppel, M., Kruse, M., Ward, E., Cochran, P., Hanna, V. (2008). *Survey of Living Conditions in the Arctic, SLiCA*. In: Møller, V., Huschka, D, and Michalos, A. C. (eds.). *Barometers of Quality of Life around the Globe*. Springer Social Indicators Research Series. Springer, Dordrecht.
- (2) Birger Poppel and Jack Kruse (2008). *The importance of a mixed cash- and harvest herding based economy to living in the Arctic – an analysis based on Survey of Living Conditions in the Arctic (SLiCA)*. In: Valerie Møller and Dennis Huscka (eds): *Quality of Life in the New Millennium: Advances in Quality-of-Life Studies, Theory and Research*. Social Indicators Research Series. Springer Verlag, Dordrecht.

Following a workshop of researchers and indigenous partners in March 2007, the SLiCA team made a comprehensive data release via the project web site. The data release was organized by the six ASI domains: Material Success, Health, Education, Cultural Continuity, Fate Control, and Ties with Nature. Social indicators within each domain were reported by country, region, place type (regional center versus village), and in many cases, by gender and age. A total of 581 tables were released involving 154 social indicators. Table 11 displays the SLiCA social indicators included in the data release, organized by BOEM domain.

Table 11: SLiCA Social Indicators by BOEM Domain

BOEM Domain	Sub-Domain	Social Indicator
Material Success	wage work	Respondent work summary
Material Success	wage work	Away from community for work
Material Success	consumption	Proportion meat and fish that is traditional food
Material Success	harvest	Proportion meat and fish that is harvested by household
Material Success	unemployment	Experience with 14 different reasons why can't work
Material Success	unemployment	perception of unemployment as problem for indigenous people in community
Material Success	domestic production	Household member participation in six different domestic production activities
Material Success	domestic production	Household member participation in four different domestic helping activities
Material Success	discrimination	Perception of being treated fairly on job
Material Success	mixed economy	Preference for way of making a living
Material Success	income	Total personal income
Material Success	income	Household income from sales of arts and crafts
Material Success	income	Household income from wages
Material Success	income	Household income from self-employment
Material Success	income	Household income from government and other organizations
Material Success	income	Household income from other sources
Material Success	income	Household income below 60 percent of median income
Material Success	income	Personal income above or below US poverty level
Material Success	well-being	Satisfaction with combination of activities to make a living
Material Success	well-being	Satisfaction with combination of activities to make a living
Material Success	well-being	Satisfaction with job
Material Success	well-being	Satisfaction with amount fish and game available locally
Material Success	well-being	Satisfaction with household income
Material Success	well-being	Satisfaction with standard of living
Material Success	well-being	Ease in making ends meet
Material Success	technological resources	Use of 11 different types of technology (eg cell phone)
Material Success	leisure	Away from community on vacation
Health	physical health	Self-reported health
Health	physical health	Experience with each of 12 different types of health symptoms
Health	physical health	Count of health symptoms experienced
Health	physical health	Diagnosis of each of 15 different types of health problems
Health	physical health	Count of diagnosed health conditions

Health	medical support	Availability of medical services in community
Health		Away from community due to illness
Health	family health	Experience of family members with each of eight different types of health problems
Health	disability	Hampered in daily activities due to chronic physical or mental health problem, illness, or disability
Health	disability	Difficulty hearing, seeing, communicating, walking, climbing stairs, bending, learning or similar
Health	health related behavior	Smoking behavior summary
Health	health related behavior	Drinking behavior summary
Health	health related behavior	Alcohol or drug problems in home as a child
Health	health related behavior	Use of each of six different types of drugs
Health	health related behavior	Drug use summary
Health	health related behavior	Experience as a victim of four different types of crimes
Health	health related behavior	Victimization summary
Health	health related behavior	Thoughts of suicide
Health	mental health	Experience with each of 8 different types of mental health symptoms
Health	mental health	Depression index
Health	social support	Availability of seven different types of informal social support
Health	social support	Social support index
Health	social support	Strength of ties with family not living with respondent
Health	social support	Frequency of phone and email contact with family
Health	social support	Sent traditional food to other places
Health	social support	Away from community for family reasons
Health	community safety	How safe feel walking around this area at night
Health	community safety	How satisfied with public safety provided in community
Health	community safety	Perception of six different types of potential community problems
Health	community safety	Count of perceived community problems
Health	environmental health	Perception of six different types of local environmental problems
Health	environmental health	How satisfied with the health of the environment in your area
Health	well being	How satisfied with quality of health services in your community
Health	well being	How satisfied with the quality of life in this community
Health	well being	satisfaction with life as a whole with life in this community
Cultural Continuity	cultural background	Cultural background of married respondent's spouse
Cultural Continuity	cultural background	Mom indigenous
Cultural Continuity	cultural background	Dad indigenous

Cultural Continuity	cultural background	Parents indigenous
Cultural Continuity	household structure	Female respondent is single mom
Cultural Continuity	household structure	Number of generations present in household
Cultural Continuity	cultural identity	Named considered indigenous name
Cultural Continuity	cultural identity	Name used by special friends and relatives
Cultural Continuity	cultural identity	Name used when do traditional activities
Cultural Continuity	connection with place	Born in community
Cultural Continuity	connection with place	Childhood spent in community
Cultural Continuity	connection with place	Lived somewhere else for a year or more
Cultural Continuity	connection with place	Considered moving from community
Cultural Continuity	language	Learned indigenous language as a child; parents spoke indigenous language at home; parents spoke indigenous language to child at home
Cultural Continuity	language	Ability to understand indigenous language
Cultural Continuity	language	Ability to understand and speak indigenous language
Cultural Continuity	language	Ability to read and write indigenous language
Cultural Continuity	language	Current use of indigenous language in household
Cultural Continuity	indigenous involvement in education	Summary of Indigenous language use
Cultural Continuity	indigenous involvement in education	Teachers or teacher's aides indigenous
Cultural Continuity	indigenous involvement in education	Taught indigenous language in elementary or high school
Cultural Continuity	indigenous involvement in education	Taught subjects in indigenous language in elementary of high school
Cultural Continuity	indigenous stories	Information taught about indigenous people accurate
Cultural Continuity	indigenous stories	Household member tell indigenous stories to children
Cultural Continuity	participation in indigenous event	Participation in each of four different cultural activities (eg tell indigenous stories)
Cultural Continuity	cultural identity	When home regularly watch or listen to indigenous programming on radio or TV
Cultural Continuity	global exposure	Hours regularly watch television
Cultural Continuity	cultural identity	Importance of each of 15 different cultural actions (eg traditional food I eat)
Cultural Continuity	cultural values	Satisfaction with each of 20 different community cultural actions (eg promoting use of indigenous language)
Cultural Continuity	cultural values	Index of satisfaction with promotion of 20 different community cultural actions
Cultural Continuity	cultural values	Apply traditional values in personal life
Cultural Continuity	cultural beliefs	Consider yourself to be a Christian
Cultural Continuity	cultural beliefs	Indigenous spiritual beliefs part of your life
Control of Destiny	community participation	Participation in four different leisure activities
Control of Destiny	civic participation	Voting behavior in six different types of elections
Control of Destiny	civic participation	Count of types of votes made

Control of Destiny	civic participation	Membership in 10 different types of boards, councils, or committees
Control of Destiny	civic participation	Count of civic activities
Control of Destiny	civic empowerment	How knowledgeable about politics in general
Control of Destiny	civic empowerment	Agreement with Statement that so many people vote in nat'l elections it does not make difference if I vote or not
Control of Destiny	civic empowerment	How important to your life are political decisions made by government
Control of Destiny	civic empowerment	How interested are you in politics in general
Control of Destiny	civic empowerment	Index of political power
Control of Destiny	appropriateness of authority	Agreement that Public safety officers have the same priorities concerning public safety you do
Control of Destiny	well-being	How satisfied with public safety provided in your community
Control of Destiny	influence	How satisfied with influence indigenous people have on management of nat'l resources like fish and caribou
Control of Destiny	influence	How satisfied with influence indigenous people have on management of nat'l resources like oil, gas and minerals
Control of Destiny	influence	How satisfied with influence indigenous people have to reduce environmental problems in your area
Control of Destiny	government help	How satisfied with how well the national government is dealing with needs in your community
Control of Destiny	government help	How satisfied with how well the national government is dealing with needs in your community
Education	traditional education	Learned each of 25 different traditional skills (eg skin and butcher a caribou)
Education	traditional education	Count of traditional skills learned as a child
Education	traditional education	Learned or improved traditional skills since childhood
Education	traditional education	Learned or improved traditional skills with help of local mentor
Education	traditional education	Still use traditional skills today
Education	traditional education	Children learning traditional skills
Education	literacy	Ability to understand western language
Education	literacy	Ability to speak western language
Education	literacy	Ability to read western language
Education	formal education	Highest level of school completed
Education	formal education	Went to preschool or kindergarten
Education	formal education	Highest level of school mother completed
Education	formal education	Highest level of school father completed
Education	education experience	Attendance of elementary school outside community
Education	education experience	Elementary school stressful

Education	education experience	Away from community in last year for education
Education	well being	How satisfied with quality of education in your community
Physical Environment	Traditional Activities	Household member participation in six different domestic production activities (eg prepared or packed for hunting, fishing, or camping trip)
Physical Environment	Traditional Activities	Average number of household activities participated in per household member
Physical Environment	sharing	Household received traditional food
Physical Environment	mobility	Subsistence a reason for staying in community
Physical Environment	out in nature	Participation in each of four nature-related activities (eg snowmachining)
Physical Environment	out in nature	Away from community hunting, fishing, trapping, or gathering
Physical Environment	well being	How satisfied with opportunities to hunt and fish
Physical Environment	well being	How satisfied with amount of fish and game available locally
Physical Environment	Traditional Activities	Participation in each of 25 different subsistence activities (eg hunt walrus)
Physical Environment	Traditional Activities	Count of participation in subsistence activities
Physical Environment	equipment	Use of 18 different types of subsistence equipment
Physical Environment	equipment	Ownership of 18 different types of subsistence equipment
Physical Environment	equipment	Purchase in last 12 months of 18 different types of subsistence equipment
Physical Environment	housing	Type of house
Physical Environment	housing	Number of rooms
Physical Environment	housing	Size of home in square feet
Physical Environment	housing	Presence of 20 different house features (eg place to cut meat and fish)
Physical Environment	housing	House feature index
Physical Environment	housing	Presence of 12 different potential house problems (eg cold floors)
Physical Environment	housing	House problem index
Physical Environment	housing	Is your home in need of major repairs
Physical Environment	housing	Annual cost for housing as a percentage of income
Physical Environment	housing	How satisfied with quality of your housing
Physical Environment	housing	Waiting list for housing
Physical Environment	housing	Treated fairly in getting good housing

ARCTIC SOCIAL INDICATORS (ASI)

At the 2002 Arctic Council Ministerial Meeting held in Inari, Finland, Iceland was called upon to lead an effort to assess the state of human development in the Arctic. This effort culminated in a report in 2004, the Arctic Human Development Report (*AHDR 2004*). The AHDR community focused on the UN's Human Development Index (UNHDI), which is a composite of three measures: life expectancy at birth, a combination of adult literacy and school enrollments, and gross domestic product (GDP) per capita. They reported findings highly relevant to this project:

In our effort to understand human development in the Arctic, we took the UNHDI as a point of departure. This effort soon revealed an anomaly that was to become one of the central issues in the preparation of the AHDR. Many areas of the Arctic and especially the more remote areas with substantial indigenous populations would not achieve high scores on the UNHDI. The reasons for this are clear. Many Arctic communities do not rank high in terms of life expectancy, particularly among indigenous peoples where suicide rates and accidental-death rates are high as well as in the Russian North where the effects of the post-Soviet collapse are still substantial. Most Arctic residents today are literate. But school enrollments, especially at the secondary and tertiary levels, are comparatively low in the Far North. GDP per capita is often deceptive as a measure of well-being in the Arctic. If we include income derived from hydrocarbons and minerals extracted from northern locations, GDP per capita can seem impressive. But most of the income associated with these extractive industries flows out of the Arctic and into the income streams of large multinational corporations. GDP per capita at the community level is comparatively low in many parts of the Arctic, especially if we leave out transfer payments and do not have a workable method for integrating the informal or subsistence economy into the calculus.

*But here is the puzzle. While the Arctic's permanent residents do not rank high on a measure like the UNHDI, many individuals in this region exhibit a strong sense of well-being. What accounts for this anomaly? The effort to answer this question and, in the process, to identify Arctic success stories became a focal point in the preparation of the AHDR (*AHDR 2004:19*).*

The AHDR recommended that a set of indicators be developed to monitor human development in the Arctic over time (*AHDR 2004:11*). The report concluded that, "a number of key domains as determinants of well-being in the Arctic...have not been systematically considered:

- Fate control – guiding one's destiny
- Cultural integrity – belonging to a viable local culture; and
- Contact with nature – interacting closely with the natural world (*AHDR 2004:11*)

The starting point for ASI was to identify the domains of well-being to be explicitly considered in a suite of Arctic social indicators. Joan Nymand Larsen of the Stefansson Arctic Institute in Akureyri Iceland convened a workshop in Akureyri in 2006 along with her co-chair, Peter Schweitzer of the University of Alaska Fairbanks. Twenty-five members of a 50-member working group participated in this first workshop, representing eight Arctic countries and seven social science disciplines. This group concluded

that social indicators for six domains should be systematically considered, the three domains addressed by the UNHDI, and the three domains recommended in the AHDR:

- (1) Material Well-being
- (2) Health
- (3) Education
- (4) Cultural Integrity
- (5) Fate Control
- (6) Contact with Nature

ASI has focused on the challenge of weighing alternative approaches to measurement within these six domains. ASI's discussion itself is of immense value as it represents the thinking of many of the Arctic's leading social scientists. The original premise of ASI was that it is possible to identify a small set of indicators covering all six domains based on existing data. ASI domain-specific teams discovered that it is extremely difficult to meet all data quality criteria using indicators based on existing data. In the first ASI report, *Arctic Social Indicators* (Larsen, Schweitzer, and Fondahl (eds), 2010), the following indicators were identified:

- (1) Infant Mortality (Health/Population domain)
- (2) Net-Migration (Health/Population and Material Well-being domains)
- (3) Consumption/Harvest of Local Foods (Closeness to Nature and Material Well-being domains)
- (4) Ratio of Students Successfully Completing Post-Secondary Education (Education domain)
- (5) Language Retention (Cultural Well-being domain)
- (6) Fate Control Index (Fate Control domain)

The ASI team concluded, however, that social indicators are largely unavailable (or not applicable) at a community level or are not collected at a frequency sufficient to detect change. ASI recommended the following objectives for further design and testing of a social indicator system:

- (1) Data are available at a regional level
- (2) Data are available separately for indigenous and non-indigenous populations
- (3) Data are available on at least a five-year reporting period.

The work of ASI is ongoing. One avenue of examination is to consider three tiers of data collection effort:

- Tier 1: based on existing published data
- Tier 2: data that would be produced by special tabulations from existing unpublished data
- Tier 3: would require primary data collection

Prior social indicator work in coastal Alaska (*Louis Berger & Associates 1983a; SRB&A, ISER, and ISR 1985*) concluded that existing data at the regional level meeting social indicator data standards are largely unavailable. ASI's experience has been similar. Collaboration with ASI on this project will contribute to ASI's ongoing work as well as to meeting BOEM's mandates.

NORTH SLOPE SOCIAL IMPACT STUDY (NSSIS)

This review of mainstream social indicators research pertinent to coastal communities in Alaska ends with the most current contributions, the work of ASI. BOEM’s legal mandates, however, insert a third foundation component to the theoretical framework for this study. This third foundation component in turn brings in a fourth contribution: the NSSIS (*SRB&A 2009*).

BOEM has national responsibility for “overseeing the safe and environmentally responsible development of energy and mineral resources on the Outer Continental Shelf” (U.S. Department of Interior, Bureau of Ocean Energy Management and Regulation and Enforcement [BOEMRE] 2011a . Under the mandates of the 1953 (amended 1978) Outer Continental Shelf Lands Act and the 1969 National Environmental Policy Act, BOEM anticipates, monitors, and mitigates adverse impacts of offshore resource exploration and development.

On June 23, 2011, the USGS released a study: *An Evaluation of the Science Needs to Inform Decisions on Outer Continental Shelf Energy Development in the Chukchi and Beaufort Seas* (USDOI, Bureau of Ocean Energy Management and Regulation and Enforcement [BOEMRE] 2011b). While the USGS study focused on the natural environment, it includes the following conclusions and recommendations directly relevant to the current study:

- “Although general usage patterns are known, village [subsistence] surveys have been conducted intermittently. In some cases, the data are old enough and may no longer be representative of actual harvests.” (Holland-Bartels and Pierce, 2011: 77)
- “Subsistence users may be among the first to notice changes in abundance and distribution of fish and wildlife species as it relates to climate change, development, and other stressors. Local traditional knowledge should be more formally incorporated and integrated into resource assessments.” (Holland-Bartels and Pierce, 2011: 77)
- Issues “that must be considered when addressing comprehensive cumulative impact assessments” (Holland-Bartels and Pierce, 2011: 207):
 - Socioeconomic change
 - Impact on subsistence activities
 - Aesthetic, cultural, spiritual impacts
 - Human health effects
- “There are no known studies that attempt to separate the effects of oil and gas activities from other causes of socioeconomic change in communities of the North Slope of Alaska” (Holland-Bartels and Pierce, 2011: 207).
- “Human Communities – there is important missing information on the effects (beneficial and harmful) to the North Slope Communities; a better mechanism is needed to increase Alaska Native input into the research process and a way to translate their observations into hypotheses that can be addressed by research” (Holland-Bartels and Pierce, 2011: 208).

The Holland-Bartels and Pierce USGS study highlights the BOEM socioeconomic studies plan, “showing the progression in understanding through time of the social systems in Arctic Alaska” (Holland-Bartels and Pierce, 2011: 208). Figure 7-1 in their report shows “New Social Indicators” beginning in 2011 as contributing to this process (Holland-Bartels and Pierce, 2011: 209).

The current BOEM study is thus an integral component of BOEM’s response to its mandate to oversee the safe and environmentally responsible exploration and development of energy and mineral resources

on the Outer Continental Shelf off of the North Slope of Alaska. To be responsive to BOEM's legal mandates, the study design needs to enable researchers to distinguish between changes in social indicators related to exploration and development of offshore petroleum resources and other forces for change. In particular, the effects on subsistence of multiple forces for change need to be examined.

In addition to offshore petroleum exploration and development potential forces for change in the Arctic include onshore petroleum exploration and development, climate, government spending, marine transportation, tourism, commercial fishing, and hard rock mining (*Berman 2011*). In his discussion of "Next Steps Toward an Arctic Human Dimensions Observing System," Berman introduces a prototype arctic social system model designed to take multiple forces for change into account in projecting changes in outcome indicators based on ASI recommendations (*Berman 2011:130-136*). Such a model requires inputs on each force for change. Recent assessments of available data for such inputs were developed from a project funded by the National Science Foundation, Arctic Observing Network Social Indicators Project (*Kruse, Lowe, Haley, Fay, Hamilton, and Berman 2011*). These assessments address the following forces for change: tourism (*Fay and Karlsdóttir 2011*); commercial fishing (*Lowe 2011*); mining (*Haley, Klick, Szymoniak, and Crow 2011*); and, subsistence (*Kruse 2011*). Compilation, much less collection of such data are beyond the scope of this project, but would be a necessary part of any systematic effort to distinguish among the effects of potential forces for change on social indicators.

It is possible, however, to anticipate an analysis of the effects of multiple forces for change on social indicators in the design of the social indicators system itself. Of particular importance on the North Slope is the certainty that any offshore exploration and development will occur in the context of continued onshore development. Gathering lines, roads, staging areas, helicopters and other infrastructure and equipment associated with offshore and onshore exploration and development are likely to be located near each other or even shared. Producers and contractors such as aircraft services are likely to overlap in onshore and offshore development activities.

A first step in differentiating between onshore and offshore forces for change is to design the social indicators system to produce separate reports by community. While ASI seeks to develop indicators at the regional level, meeting the BOEM mandates requires community-level indicators.

A second step to meeting the challenge of understanding the relative effects of onshore and offshore exploration and development is to incorporate in the research design measures of the most likely causes of impacts affecting social indicators. Results from the North Slope Social Impact Study (SRB&A 2009) are helpful in this regard. The North Slope Social Impact Study was funded through the North Slope Borough by a grant from the National Petroleum Reserve -Alaska (NPR-A) Impact Program administered by the State of Alaska Department of Community and Economic Development, Division of Community Advocacy. The study included a survey of 217 active hunters from Barrow, Nuiqsut, Atqasuk, and Wainwright.

Table 12 shows the relative frequency of personal experiences of active hunters with different types of impacts. Displacement of wildlife is the most prevalent experience (60 percent), followed by disruption of wildlife (56 percent). Table 12 also shows that the frequency of personal experiences often varies by

community. Nuiqsut active harvesters were more likely to cite personal experiences with nine of 18 different types of impacts, ranging from displacement of wildlife to decrease in habitat and ability to hunt.

Table 12: Percentage of Active Hunters Citing Personal Experience with Subsistence Impacts

	Nuiqsut	Barrow	Atqasuk	Wainwright	Total
Displacement of Wildlife	73%	60%	58%	52%	60%
Disruption of Wildlife	64%	60%	38%	52%	56%
Decline of Wildlife Populations	48%	40%	23%	40%	39%
Decrease in Habitat	55%	37%	23%	26%	35%
Reduced Health of Wildlife	27%	25%	35%	30%	28%
Contamination and Extraction of Materials	70%	54%	38%	48%	53%
Effects of Development on Wildlife	61%	42%	15%	42%	42%
Effects of Development on People	39%	14%	--	10%	15%
Ability to Hunt	55%	50%	35%	40%	47%
Difficulty Hunting	79%	75%	58%	52%	68%
Cultural Impacts	15%	16%	4%	10%	13%
Social Impacts	48%	46%	31%	24%	40%
Economic Impacts	24%	37%	4%	26%	28%
Lack of Influence	24%	27%	15%	18%	23%
EIS Deficiencies	18%	25%	4%	12%	18%
Cumulative Effects	9%	25%	--	18%	18%
Climate-Development Effects	27%	42%	19%	14%	31%
Relative Hazard	9%	12%	8%	6%	10%
Benefits	85%	84%	62%	48%	73%

Number of Active Hunters: 215

Source: SRB&A 2009:25

Table 13 shows more detailed results on experiences with the displacement of wildlife. The species most often associated with a personal experience in displacement of wildlife is caribou. Most frequently cited causes for displacement are small aircraft, helicopters, and pipelines elevated less than seven feet.

Table 13: Personal Experiences with Displacement of Wildlife by Community

	Nuiqsut	Barrow	Atqasuk	Wainwright	Total
Overarching Concern	28	60	8	26	122
Displacement of wildlife	13	26	6	12	57
Displacement of game from migration routes	9	12	1	9	31
Displacement of offshore wildlife, general mention	3	11	0	4	18
Displacement of onshore wildlife, general mention	3	11	0	1	15
Displacement of wildlife due to changes in distribution of prey species	0	0	1	0	1
Caribou	28	57	20	15	120
Displacement of caribou from migration routes	18	22	7	8	55

	Nuiqsut	Barrow	Atqasuk	Wainwright	Total
Small aircraft and helicopters disturbing caribou migration	1	22	8	4	35
Helicopters deliberately chasing/herding caribou	1	5	4	0	10
Large bull caribou travel disrupted by pipelines elevated less than seven feet	7	3	0	0	10
Caribou displaced from insect relief areas by development	1	5	1	3	10
Marine Mammals	14	51	0	10	75
Deflection of bowhead from normal migration path	5	20	0	4	29
Displacement of bowhead due to noise from seismic surveys	1	6	0	3	10
Displacement of bowhead due to noise from operations	3	6	0	0	9
Displacement of belugas and bowheads by non-local boat operations	2	1	0	3	6
Displacement of marine mammals from feeding areas due to contamination of prey	0	4	0	0	4
Displacement of bowhead due to noise from drillships	1	3	0	0	4
Displacement of marine mammals due to shorter season of solid ice	0	3	0	0	3
Displacement of bowhead due to noise from boat traffic	0	3	0	0	3
Displacement of seals due to seismic activities	1	2	0	0	3
Displacement of bowhead	0	2	0	0	2
Displacement of bowhead due to noise from construction	1	0	0	0	1
Displacement of bowhead from feeding areas due to contamination	0	1	0	0	1
Fish	3	2	0	0	5
Displacement of Arctic cisco within Colville River	3	2	0	0	5

Number of Respondents=215

Source: SRB&A 2009: 34

The NSSIS interview with active hunters included 10 SLiCA questions on subjective well-being. Responses to these questions made it possible to compare the well-being of active hunters interviewed in the NSSIS study in 2007 with the well-being of active hunters interviewed in the SLiCA study in 2003. The NSSIS analysis found:

Thirty-four percent of the impact experiences cited by active harvesters started after 2003. The 2003-2007 comparison of well-being shows a statistically significant decrease in satisfaction of over ten percentage points for the influence of Iñupiat over management of natural resources like fish and game, the influence of Iñupiat over reduction of environmental problems, and the amount of fish and game available locally (SRB&A 2009:3)

The combination of social indicator measures and key impact measures in the design of the questionnaire in this study coupled with a sampling design to produce place-level results will make it possible to test hypotheses about the association of offshore and onshore exploration and development experiences with well-being. The NSSIS provides the basis for identify key impact measures.

REPORT BY THE COMMISSION OF THE MEASUREMENT OF ECONOMIC PERFORMANCE AND SOCIAL PROGRESS

As mentioned earlier, the four major components of the theoretical foundation for the current study are: (1) BOEM legal mandates; (2) ASI initiative; (3) SLiCA; and, (4) NSSIS. It is useful, however, to take into account contributions to the field of social indicators made after the design of ASI and SLiCA. Most important among these more recent contributions is the Report by the Commission of the Measurement of Economic Performance and Social Progress (*Stiglitz, Sen, and Fitoussi 2009*). The Stiglitz Report is highly relevant here because one of its primary purposes was to, “consider what additional information [to GDP measures] might be required for the production of more relevant indicators of social progress” (*Stiglitz, Sen, and Fitoussi 2009*).

Recommendations and conclusions of the Stiglitz Report included the following points relevant to the design of this study:

- (1) When evaluating material well-being, look at income and consumption rather than production.
- (2) Emphasize the household perspective.
- (3) Consider income and consumption jointly with wealth.
- (4) Give more prominence to the distribution of income, consumption and wealth.
- (5) Broaden income measures to non-market activities.
- (6) To define what well-being means a multidimensional definition has to be used. Based on academic research and a number of concrete initiatives developed around the world, the Commission has identified the following key dimension that should be taken into account. At least in principle, these dimensions should be considered simultaneously:
 - a. Material living standards (income, consumption and wealth);
 - b. Health;
 - c. Education;
 - d. Personal activities including work
 - e. Political voice and governance;
 - f. Social connections and relationships;
 - g. Environment (present and future conditions);
 - h. Insecurity, of an economic as well as a physical nature.
- (7) Quality of life depends on people’s objective conditions and capabilities. Steps should be taken to improve measures of people’s health, education, personal activities and environmental conditions. In particular, substantial effort should be devoted to developing and implementing robust, reliable measures of social connections, political voice, and insecurity that can be shown to predict life satisfaction.
- (8) Surveys should be designed to assess the links between various quality-of-life domains for each person, and this information should be used when designing policies in various fields.
- (9) At a minimum, in order to measure sustainability, what we need are indicators that inform us about the change in the quantities of the different factors that matter for future well-being. Put differently, sustainability requires the simultaneous preservation or increase in several “stocks”: quantities and qualities of natural resources, and of human, social and physical capital.

IMPLICATIONS OF REVIEWED LITERATURE FOR THE STUDY DESIGN

Domains

The correspondence of domains across the reviewed literature is remarkable. The domains listed in the BOEM scope of work also match the literature well. We can therefore be confident that, by including indicators in each of the BOEM domains, we will be reasonably comprehensive. Thus we want to develop a small set of indicators within each of the following domains:

- (1) Economic well-being
- (2) Health and safety
- (3) Cultural continuity
- (4) Local control
- (5) Education
- (6) Physical environment

It is important to note that including overall measures of well-being in SLiCA, the NSSIS, and the 1977 North Slope Study has been important to understanding the relative contributions of each domain.

Reporting Level

While the focus of ASI has been on regional level indicators, the mandates of BOEM to monitor the effects of offshore exploration and development require reporting at the community level.

Sources of Data

Earlier studies on Alaska coastal community indicators concluded that few indicators can be feasibly based on existing data (*SRB&A, ISER, and ISR 1985; Louis Berger and Associates 1983a*). The Stiglitz Report concluded that links between various quality-of-life domains should be used when designing policies such as BOEM is required to do to document and mitigate impacts of exploration and development. While in some Arctic countries such as Sweden, Norway, and Greenland administrative data can be linked across domains at the personal level, such links are not possible in the United States. This fact coupled with the general lack of existing data sources at the community level underscore the need to focus the design on survey-based social indicators.

Rules for Selecting Indicators

As discussed above, Andrews suggested rules for selecting indicators, and Braund and his team applied these rules in the selection of indicators in the second MMS social indicators study. ASI applied a similar set of rules in selecting indicators. The Stiglitz Report's recommendations and conclusions included guidelines for indicator selection. These contributions are brought together below under the BOEM indicator assessment criteria as interpreted in the study team's research plan (*SRB&A 2011*).

Utility

- ***Limited yet comprehensive.*** Andrews, ASI, and BOEM call for a small number of indicators that together account for what is most important to well-being.

- ***Understandable as important to us.*** Andrews, ASI, and Stiglitz et al. call for indicators that are each meaningful to people as aspects of society that are of concern to us.
- ***Global-level and concern-level measures.*** Andrews points to the importance of including global-level as well as concern-level measures.
- ***Available for the past and reasonably foreseeable future.*** Andrews argues that indicators with an established time series are more valuable than new indicators providing that meet other criteria.

Validity

- ***Measures of outputs of social system.*** Andrews and Stiglitz et al. call for measures that are directly related to well-being at the household level.
- ***Meaningful at the household level.*** Andrews and Stiglitz et al. call for measures which can be disaggregated at the level of the most relevant social unit, the household.
- ***Include both objective and subjective measures.*** Andrews and Stiglitz et al. call for both types of measures to understand changes in well-being.

Reliability

- ***Sensitive to variations between people and over time.*** Andrews points out that there needs to be substantial variation between people for an indicator to reflect change over time.

Precision

- ***Reflects concern with a high degree of precision.*** Andrews points out that precision is important to detecting change over time.

Feasibility

- ***Available at a reasonable cost.*** While usually this criterion is a code phrase for basing indicators on existing data, in this case it is best applied as a test of response burden.

Applicability

- ***Available reporting for Alaska Natives.*** Andrews and ASI explicitly note the importance of being able to report indicators for Alaska Natives. Stiglitz et al. highlight the importance of understanding inequalities, for which purpose Native, non-Native comparisons may be critical.
- ***Available at the village level.*** Andrews notes that village-level data can be important to the use of the indicators, as shown by the North Slope Social Impact Study results.
- ***Linked data.*** Stiglitz et al. point to the importance of understanding relationships between domains of well-being. Linked data at the individual level is the only way to examine these relationships.
- ***Available at least every five years.*** ASI adopted this criterion and Andrews noted the importance of the time interval of data availability.
- ***Levels and distributions.*** Andrews and Stiglitz et al. point to the importance of understanding the distribution of well-being as well as its average.

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Social Indicators in Coastal Alaska: Arctic Communities:

Appendix III: SICAA Social Indicator Assessment

Social Indicators in Coastal Alaska: Arctic Communities

Appendix III: SICAA Social Indicator Assessment

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Contract No. M11PC00032

North Slope Social Indicators Study Assessment of Social Indicators

Submitted to

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LIST OF ACRONYMS AND ABBREVIATIONS

ASI	Arctic Social Indicator
BOEM	Bureau of Ocean Energy Management
ISER	Institute of Social and Economic Research
ISQOLS	International Society for Quality of Life Studies
ISR	Institute for Social Research
NSSIS	North Slope Social Impact Study
OMB	Office of Management and Budget
SLICA	Survey of Living Conditions in the Arctic
SRB&A	Stephen R. Braund & Associates

INTRODUCTION

Stephen R. Braund & Associates (SRB&A) has been contracted by the Bureau of Ocean Energy Management (BOEM) to design and implement a social indicators system based on a household survey and existing data in six Arctic Alaskan communities: Barrow, Nuiqsut, Wainwright, Point Hope, and Kaktovik. The North Slope Social Indicator study includes a social indicator assessment, a set of recommended social indicators, and the development of a survey instrument to collect information not available through existing data sources. Two earlier work products inform the assessment of social indicators and subsequent development of a survey instrument: (1) the Research Plan (SRB&A 2011a); and, (2) the Literature Review (SRB&A 2012). The Research Plan introduced the idea of a North Slope Management Board (NSMB). The NSMB is modeled on the Alaska Native Management Board (ANMB) formed in the Survey of Living Conditions in the Arctic (SLiCA: see Kruse et al. 2008). The purpose of the NSMB is to review and give final approval for research design and questionnaire protocols, review preliminary results, and review draft report deliverables. Relevant to the assessment of social indicators, BOEM and Office of Management Budget (OMB) approvals will be based on protocols that have been recommended by the NSMB. A more detailed discussion of the origin, purpose, and process of the NSMB is provided in SRB&A (2012b).

The assessment of social indicators is based both on guidelines for social indicator assessment identified during the literature review as well as input from the NSMB. The following sections summarize the conclusions of the literature review, describe the methods used to assess and select social indicators for the North Slope Social Indicator study, and report the conclusions of the social indicator assessment.

IMPLICATIONS OF LITERATURE REVIEW FOR SELECTION OF SOCIAL INDICATORS

Domains

The correspondence of domains across the reviewed literature is remarkable. The domains listed in the BOEM scope of work also match the literature well. We can therefore be confident that, by including indicators in each of the BOEM domains, we will be reasonably comprehensive. Thus we want to develop a small set of indicators within each of the following domains:

- (1) Economic well-being
- (2) Health and safety
- (3) Cultural continuity
- (4) Local control
- (5) Education
- (6) Physical environment

It is important to note that including overall measures of well-being in SLiCA, the North Slope Social Impact Study (NSSIS), and the 1977 North Slope Study has been important to understanding the relative contributions of each domain and will be critical to understanding the combined effects of impacts and benefits of offshore oil and gas exploration and development.

Reporting Level

While the focus of the Arctic Social Indicators (ASI) initiative has been on regional level indicators, the mandates of BOEM to monitor the effects of offshore exploration and development require reporting at the community level since impacts are likely to vary by community.

Sources of Data

Earlier studies on Alaska coastal community indicators concluded that few indicators can be feasibly based on existing data (SRB&A, ISER, and ISR 1985; Louis Berger and Associates 1983a). The Stiglitz Report concluded that links between various quality-of-life domains should be used when designing policies such as BOEM is required to do in order to document and mitigate impacts of exploration and development. While in some Arctic countries such as Sweden, Norway, and Greenland administrative data can be linked across domains at the personal level, such links are not possible in the United States. This fact coupled with the general lack of existing data sources at the community level underscore the need to focus the design of survey-based social indicators.

Rules for Selecting Indicators

A leading international expert on social indicators, Dr. Frank Andrews (now deceased), worked with SRB&A in an earlier Alaska social indicators study. He suggested rules for selecting indicators. Braund and his team applied these rules in the selection of indicators. The ASI project, an Arctic Council initiative, applied a similar set of rules in selecting indicators. A 2009 blue ribbon panel report on social indicators (Stiglitz, Sen, Fitoussi, 2009) provided recommendations and conclusions, which included guidelines for indicator selection. The contributions of these documents are brought together below under the BOEM indicator assessment criteria as interpreted in the study team's research plan (SRB&A 2011a).

Utility

- ***Limited yet comprehensive.*** Andrews, ASI, and BOEM call for a small number of indicators that together account for what is most important to well-being.
- ***Understandable as important to us.*** Andrews, ASI, and Stiglitz et al. call for indicators that are each meaningful to people as aspects of society that are of concern to us.
- ***Global-level and concern-level measures.*** Andrews points to the importance of including global-level as well as concern-level measures.
- ***Available for the past and reasonably foreseeable future.*** Andrews argues that indicators with an established time series are more valuable than new indicators providing that they meet other criteria.

Validity

- ***Measures of outputs of social system.*** Andrews and Stiglitz et al. call for measures that are directly related to well-being.
- ***Meaningful at the household level.*** Andrews and Stiglitz et al. call for measures which can be disaggregated at the level of the most relevant social unit, the household.
- ***Include both objective and subjective measures.*** Andrews and Stiglitz et al. call for both types of measures to understand changes in well-being.

Reliability

- *Sensitive to variations between people and over time.* Andrews points out that there needs to be substantial variation among people for an indicator to reflect change over time.

Precision

- *Reflects concern with a high degree of precision.* Andrews points out that precision is important to detecting change over time.

Feasibility

- *Available at a reasonable cost.* While usually this criterion is a code phrase for basing indicators on existing data, in this case it is best applied as a test of response burden.

Applicability

- *Available reporting for Alaska Natives.* Andrews and ASI explicitly note the importance of being able to report indicators for Alaska Natives. Stiglitz et al. highlight the importance of understanding inequalities, for which purpose Native, non-Native comparisons may be critical.
- *Available at the village level.* Andrews notes that village-level data can be important to the use of the indicators, as shown by the NSSIS results.
- *Linked data.* Stiglitz et al. point to the importance of understanding relationships between domains of well-being. Linked data at the individual level is the only way to examine these relationships.
- *Available at least every five years.* ASI adopted this criterion and Andrews noted the importance of the time interval of data availability.
- *Levels and distributions.* Andrews and Stiglitz et al. point to the importance of understanding the distribution of well-being as well as its average.

SOCIAL INDICATORS TO BE ASSESSED

As described in the Literature Review, a large international team of researchers and indigenous partners identified the survey-based social indicators used in SLiCA. The design was favorably reviewed by international experts in social indicators research (SLiCA 2001). These indicators were applied in over 7,000 interviews, yielding comparable results for the three Iñupiat settlement regions of Alaska (North Slope, Northwest Arctic, Bering Straits), four Inuit settlement regions of Canada (Inuvialuit, Nunavik, Nunavut, Labrador Inuit), Greenland, and the Chukotka region of Russia. The same set of social indicators has since been applied in the Sami settlement regions of Norway, Sweden, and the Kola Peninsula region of Russia. The SLiCA social indicators offer the best starting point for this study for a number of reasons: (1) they have been approved by oversight boards in the US (the ANMB), Canada, Greenland, Russia, Norway, and Sweden; (2) they have been approved by international experts in social indicators research (notably the leadership of the International Society for Quality of Life Research, or ISQOLS); (3) they have been tested across the Arctic in both rural and urban settings among men and women aged 16 and over; and (4) they provide comparable data that can be used to help understand changes in well-being on the North Slope over time. There are 129 SLiCA social indicators, many of which are based on multiple questions. These indicators form the core set of potential indicators being assessed in this study.

As discussed in the Social Indicators in Coastal Alaska: Literature Review (SRB&A 2012: 31-33), the Minerals Management Service funded a social indicators study in the early 1990s entitled “Social Indicators Study of Alaskan Coastal Villages” (Human Relations Area Files, Inc. 1994). This study, which was directed by Joe Jorgensen, is another source of potential social indicators for the current study. Jorgensen’s team chose not to base social indicators solely on one or more structured questions. To quote the study team’s report:

The MMS provided us with a questionnaire with which to survey village residents. Questionnaires, because they are forced-choice instruments, are fraught with problems that threaten their validity. In response, we developed a research design that incorporated data from sources other than the questionnaire. The intention was to reduce threats to validity by using several types of data collected in different ways and from different sources than the questionnaire survey. (Human Relations Area Files, Inc. 1994:5)

Jorgensen’s team revised the questionnaire and added an open-ended interview component to the study design. They constructed variables and coding categories based on their review of the questionnaire responses as well as the open-ended responses. They then used a statistical method, smallest space analysis, to map relationships among the variables. Finally, they interpreted the observed empirical relationships with the goal of understanding current ways of living.

The final report for the Jorgensen study provides the revised survey questionnaire and the variable definition codes for the open-ended “Key Informant” interviews (although no protocol for the open-ended interviews is provided). The questionnaire used in the study was organized under the following five headings: Traditional Activities; Health; Education and Employment; Income, Goods and Services; and Perceived Wellbeing. The open-ended interview was organized under the following 10 headings: Subsistence Economy; Economics; Social Organization; Politics; Religious Participation; Ethics; Enculturation; Political and Economic Knowledge; Demography; and Social Service Utilization. While many of the topics addressed in the questionnaire and the open-ended interviews were similar to those addressed in other social indicator studies, the report did not provide a discrete list of recommended indicators. Furthermore, the headings in the questionnaire and open-ended protocol are not consistent with the domains requested by BOEM and used in other social indicator studies, thus making comparison difficult.

The contract for the current study calls for development of “common statistical measures” (BOEM p. 6) informed by “previous northern social indicator studies, such as “Survey of Living Conditions in the Arctic (SLiCA) (<http://ortal.sdwg.org/content.php?doc=81>) or construction of social indicators, such as “Arctic Social Indicators, a Follow-up to the Arctic Human Development Report (<http://www.svs.is/ASI/Report%20Chapters.htm>)” (BOEM 2011: 7). As noted above, the approach taken by Jorgensen’s team was based on a blend of ethnographic and questionnaire observations and was not based on a discrete set of social indicators. In addition, as discussed in the literature review for this study (SRB&A 2012a), the Social Indicators Study of Alaskan Coastal Villages used social indicators as inputs to the multivariate analysis, rather than as outputs that allow each indicator to be considered individually.

For the above reasons, the 1994 MMS-funded study could not be readily incorporated into the systematic assessment of social indicators described below (“NSMB Review and Social Indicator Assessment”). However, the study team did review Jorgensen’s testing and analysis of the original questionnaire, which

concluded with a list of questions identified as valid. The study team included a number of those questions (as relevant to the selected social indicators) in the survey instrument for the North Slope Social Indicator study.

The Literature Review identified another social indicator study warranting inclusion as a source of potential social indicators: the 1977 North Slope Survey. This study was a collaboration of the North Slope Borough and the University of Alaska. The timing of the 1977 study is important to the goals of the current study. It took place at the construction stage of the first wave of onshore oil and gas development on the North Slope, before most of the village developments made possible by taxation of oil and gas facilities. The 1977 North Slope Survey is close to being a baseline social indicator study for all oil and gas development. Forty-nine questions included in the 1977 North Slope Survey were repeated or closely approximated in SLiCA as well as in North Slope Borough census surveys conducted between 1977 and 2003.

A third source of potential social indicators is derived from the work of the ASI project as described in the Literature Review. ASI is a project of the Arctic Council. The intent of ASI is to develop regional-level indicators for all regions in the Arctic. The BOEM contract mandates close coordination with ASI. One of the two persons leading ASI, Joan Larsen of the Stefansson Arctic Institute in Akureyri Iceland is part of the North Slope Social Indicator project team.

Integration of the North Slope Social Indicators Project and the ASI initiative occurred at three levels: (1) domains; (2) indicator assessment criteria; and (3) indicators. In the Literature Review the team compared ASI domains with those included in the BOEM SOW, concluding that the domains are closely enough matched to be fully integrated. The Literature Review also included a synthesis of indicator assessment criteria, including those applied by ASI.

The third level of integration, indicators, was the focus of a workshop held in Anchorage April 4-5, 2012. The Anchorage-based research team met with Joan Larsen, director of the ASI initiative, her colleague (and husband) Jon Ingimundarson, and Jack and Marg Kruse, both members of the SLiCA research team. Following a review of project goals and work to date, the study team agreed that all ASI indicators, including those discussed as potential indicators in the individual domain chapters, but requiring primary data collection, should be included in the social indicator assessment. The team noted that most of the ASI primary indicators (the short list) apply at the regional level or above and are therefore not applicable at the community level.

Larsen and Ingimundarson used the existing matrix of indicator assessments (which included indicators from SLiCA and the 1977 North Slope Survey) as their starting point for adding ASI indicators. They intended their list to be comprehensive. Larsen and Ingimundarson also applied the assessment criteria used for other potential social indicators to the ASI indicators (see the following section, “Application of Rules for Assessing Indicators”). Regardless of the applied ratings, however, with one exception (smoking summary) all ASI indicators were recommended for inclusion to ensure complete integration of ASI with the North Slope Social Indicators project. Dr. Larsen identified 38 ASI indicators to include in the assessment. How the ASI indicators are integrated with the survey instrument is discussed in the second to last section of this report, “Integration of ASI Indicators.”

The final source of potential measures for the North Slope Social Indicators project is the NSSIS. Commissioned by the North Slope Borough, the NSSIS documented the experiences of 217 active harvesters in Barrow, Nuiqsut, Atqasuk, and Wainwright with the impacts and benefits of oil and gas

development. Measures developed in this study are relevant to the mandate of BOEM to identify the impacts of offshore oil and gas exploration and development. There are multiple sources of impacts on well-being, including onshore oil and gas exploration and development, offshore oil and gas exploration and development, climate change, changes in government spending, and increasing tourism. Questions developed for the NSSIS will help differentiate among these and other potential impact sources.

APPLICATION OF RULES FOR ASSESSING INDICATORS

As described above, the Literature Review yielded a set of rules of assessing indicators. To apply these rules, the research team developed methods for rating each criterion, which are depicted in Table 1.

Table 1: Methods for Rating Individual Social Indicator Assessment Criteria

Criterion	Values	Value Label	Value Rule
Understandable as Important	5	Highest	Among most important Iñupiat values
	4	High	Among important universal human values
	3	Medium	Probably an indirect measure of important value
	1	Low	Not understandable as important
Available for Past and Reasonably Foreseeable Future	5	Highest	Available from 1977 NSB Survey
	4	High	Available from SLiCA or Harvest Surveys
	3	Medium	Available from Census
	1	Low	Not available for past nor from reasonably foreseeable future
Measure of Output of Social System	5	High	Clearly a social outcome important to individuals
	3	Medium	Probably an indirect measure of individual well-being
	1	Low	Cannot be assumed to indicate well-being at the individual level
Meaningful at the Household Level	5	High	Meaningful at the individual level as well as household level
	3	Medium	Meaningful at the community level
	1	Low	Not meaningful below the regional level
Sensitive to Variations Between People and Over Time	5	Highest	Demonstrated variability between people and over time
	3	Medium	Based on pretests likely to be sensitive to variations between people and over time
	1	Low	Unlikely to be sensitive to variations between people and/or over time
Reflects Concern with a High Degree of Precision	5	Highest	Based on multiple solid count measures of respondent's own experience

Criterion	Values	Value Label	Value Rule
	4	High	Based on solid count measure of respondent's own experience
	3	Medium	Based on ordinal measure of respondent's own experience
	2	Low	Based on respondent's perception of other household member experience
	1	Lowest	Based on respondent's perception of community-level condition
Available at a Reasonable Cost (reasonable response burden)	5	Highest	Based on single, easy to answer item
	4	High	Based on simple set of questions answerable in less than 5 minutes
	3	Medium	Based on extended set of questions answerable in 5 - 10 minutes
	1	Low	Based on extensive set of questions answerable in more than 10 minutes
Available Reporting for Alaska Natives	5	Highest	Yes, including prior data
	3	Medium	Yes, no prior data
	1	Low	No
Available at the Village Level	5	Highest	Yes, and considered an accurate representation of community resident well-being
	3	Medium	Yes, but of questionable accuracy
	1	Low	Not available at the village level
Available at Least Every Five Years	5	Highest	Available at intervals of five years or less
	3	Medium	Available as often as survey conducted
	1	Low	Not available at intervals of five years or less
Levels and Distributions	5	Highest	Available as percentage distributions and means
	3	Medium	Available as distributions
	1	Low	Available as means only
Linked Data	5	Highest	Linked survey data with comparable prior linked data
	4	High	Linked survey data
	1	Low	Unlinked data
Overall Assessment	5	Recommend	High or highest on most values including output measure and availability of levels and distributions; no values below medium; or ASI indicator
	4	Recommend with reservations	Doesn't meet recommend criteria but 1977 comparable data

NSMB REVIEW AND SOCIAL INDICATOR ASSESSMENT

On April 4 and 5, 2012 the NSMB met in Barrow to review a set of social indicators initially recommended by the study team. As a result of the review, the NSMB decided to drop one indicator, change three indicators, add two indicators, and add several response choices.

The indicator removed by the NSMB is the question, “How safe do you feel if you are walking around this area at night: very safe, rather safe, rather unsafe, or very unsafe?” NSMB members observed that responses would be primarily in terms of the threat of attacks by polar bears. People unfamiliar with this threat would misinterpret results as indicating a threat by humans.

The NSMB also changed two questions. In the first case, the NSMB selected a question sequence from the 1977 North Slope survey in favor of the SLiCA survey item which read, “How important to your life are political decisions made by government: very important, important, not very important, or not at all important?” They pointed out that answers to the SLiCA question would likely vary by the level of government. They favored the 1977 question which asked, “Which of these groups do you think are helping to meet your needs: your village or city council? Your tribal council? Your village corporation? Your regional corporation? The state of Alaska? The federal government?”

The second question changed by the NSMB originally read, “How often have you not had a wage job and wanted one for more than six months in the last five years?” While this question is a standard one used in international surveys, NSMB members found it confusing and favored the following wording: “In the last year, how many months did you not have a wage job and wanted one?”

Originally the research team recommended that respondents estimate the pounds of bowhead whale their household received for their participation in whaling activities. NSMB members noted that respondents would have difficulty estimating pounds. The question was therefore changed to ask respondents to estimate the number of shares of bowhead whale received.

The NSMB recommended that two questions be added to the housing section: (1) “How many people live in this household?”; and, (2) “How many of them are on a housing waiting list?” Two response categories were added to the list of potential problems with housing: (1) “frozen water line”; and, (2) “air vent plugged with ice.”

The NSMB added “Skinned and butchered another animal” to the list of subsistence activities. The item “skinned and butchered a caribou” was already on the list. The phrase “or other traditional clothing” was added to the existing item, “sew skins, make parkas or kamiks.”

The research team and the NSMB discussed the design of question A3 which reports subsistence harvests. They agreed with the design approach of including the top ten species harvested by each community. Thus the list will vary by community.

The team revised the assessment matrix to reflect the NSMB’s conclusions. The team also revised the draft questionnaire accordingly. Table 2 applies the criteria listed in Table 1 to the potential social indicators drawn from SLiCA, the 1977 North Slope Survey, ASI, and the NSSIS, as well as the two additional indicators identified by the NSMB. Those indicators with an overall assessment score of 4 or 5 are those recommended by the NSMB following their review of the study team’s initial recommendations.

The assessment ratings shown in Table 2 are most easily interpreted by using the color coding. The colors have the following meaning (the value of “2” was held in reserve and not used):



5. Highest (best)



4. High



3. Medium



1. Low (worst)

Table 2: Assessment of Potential Social Indicators Using Social Indicator Assessment Criteria

Source	Domain & Potential Indicator	Utility		Validity		Reliability	Precision	Feasibility	Applicability					Recommendation
		Understandable as Important	Available for Past and Reasonably Foreseeable Future	Measure of Output of Social System	Meaningful at the Household Level	Sensitive to Variations Between People and Over Time	Reflects Concern with a High Degree of Precision	Available at a Reasonable Cost (reasonable response burden)	Available Reporting for Alaska Natives	Available at the Village Level	Available at Least Every Five Years	Levels and Distributions	Linked Data	
	Cultural Continuity													
SLiCA	count of traditional skills learned as a child	5	4	5	5	5	5	4	5	5	3	5	5	5
SLiCA	count of comparable subsistence activities	5	5	5	5	5	5	4	5	5	3	5	5	5
SLiCA	number of generations present in household	3	4	1	5	1	4	4	5	5	3	5	5	
SLiCA	born in community	3	4	3	5	1	4	5	5	5	3	4	5	
SLiCA	father born in community	3	4	3	5	1	4	5	5	5	3	4	5	
SLiCA	mother born in community	3	4	3	5	1	4	5	5	5	3	4	5	
SLiCA, NS1977	childhood spent in community	3	5	3	5	1	4	5	5	5	3	4	5	
SLiCA	lived somewhere else for a year or more	3	4	3	5	1	4	5	5	5	3	4	5	
SLiCA	learned indigenous language as a child	5	4	5	5	1	4	5	5	5	3	4	5	
SLiCA	parents spoke indigenous language at home when a child	5	4	3	5	1	4	5	5	5	3	4	5	
SLiCA	parents spoke indigenous language to respondent as a child	5	4	3	5	1	4	5	5	5	3	4	5	
SLiCA	indigenous language ability index	5	4	5	5	5	5	4	5	5	3	5	5	5
SLiCA	use of indigenous language at home,work,school, elsewhere	5	4	5	5	5	4	5	5	5	3	4	5	
SLiCA	teachers or teacher's aides indigenous	5	4	3	5	5	4	5	5	5	3	4	5	
SLiCA	taught indigenous language in elementary or high school	5	4	3	5	5	4	5	5	5	3	4	5	
SLiCA	taught subjects in indigenous language in elementary of high school	5	4	3	5	5	4	5	5	5	3	4	5	

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SLiCA	taught indigenous culture and history in elementary of high school	5	4	3	5	5	4	5	5	5	3	4	5	
New	Number of months spent 5 or more days on subsistence	5	3	5	5	5	5	5	5	5	3	5	5	5
SLiCA	information taught about indigenous people accurate	5	4	3	5	5	4	5	5	5	3	4	5	
SLiCA	teach children indigenous stories	5	4	3	5	5	4	5	5	5	3	4	5	
SLiCA	Past 12 months listen to or tell a Native story	5	4	3	5	5	4	5	5	5	3	4	5	
SLiCA	How satisfied with job community doing promoting use of Inupiaq language	5	4	5	5	5	3	5	5	5	3	5	5	
SLiCA	How satisfied with job community doing promotion of sharing	5	5	5	5	5	3	5	5	5	3	5	5	
SLiCA	How satisfied with job community doing promoting respect for elders	5	4	5	5	5	3	5	5	5	3	5	5	
SLiCA	name consider native name	3	4	1	5	1	4	5	5	5	3	4	5	
SLiCA	household member participation in subsistence activities	5	5	5	5	5	2	3	5	5	3	5	5	
SLiCA	household member participation in work and domestic activities	3	5	1	5	5	4	3	5	5	3	5	5	
SLiCA	cultural background of parents	3	4	3	5	1	4	4	5	5	3	4	5	
SLiCA	child named after someone	3	4	3	5	1	4	5	5	5	3	4	5	
SLiCA	share traditional food	5	5	5	5	5	4	5	5	5	3	3	5	
SLiCA	regularly watch or hear indigenous programming on radio or television	3	4	3	3	5	4	5	5	5	3	4	5	

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SLiCA	index of importance of 16 cultural values	5	4	5	5	3	5	3	5	5	3	5	5	5
SLiCA	taught traditional values	5	4	5	5	1	3	5	5	5	3	4	5	
SLiCA	index of satisfaction with promotion of 16 cultural values	5	4	5	5	5	5	3	5	3	3	5	5	5
SLiCA	apply any of these traditional values in your personal life	5	4	5	5	1	3	5	5	5	3	4	5	
SLiCA	are indigenous spiritual beliefs part of your life	5	4	5	5	1	3	5	5	5	3	4	5	
SLiCA	preference for subsistence, job, or both	3	5	3	5	5	4	5	5	5	3	4	5	4
ASI	do laws and policies exist that recognize institutions that advocate for the cultural autonomy of national minority populations?	4	5	3	1	1	3	4	5	5	5	5	5	4
ASI	what is the proportion of such institutions to minority peoples, e.g. Are all peoples represented through such organizations?	5	5	3	1	1	3	4	5	5	5	5	5	4
ASI	are resources available to such institutions?	5	5	3	1	1	3	4	5	5	5	5	5	4
ASI	are funding policies in place and how well-resourced are they?	5	5	3	1	1	3	4	5	5	5	5	5	4
ASI	do institutions representing national minority cultures exist?	5	5	3	1	1	3	4	5	5	5	5	5	4

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ASI	what percentage of people are engaged in recreational or subsistence activities on the land?	5	5	5	5	1	3	5	5	5	5	5	5	5
ASI	what is the relative size of the informal sector in the economy?	5	5	5	5	1	3	5	5	5	5	5	5	5
ASI	what percentage of a population speaks its ancestral language compared with the population as a whole?	5	5	5	5	5	5	5	5	5	5	5	5	5
	Economic Well-Being													
SLiCA, NS1977	count of comparable subsistence activities	5	5	5	5	5	5	4	5	5	3	5	5	5
SLiCA, NS1977	proportion meat and fish traditional food	5	5	5	5	3	3	5	5	5	3	4	5	4
SLiCA, NS1977	proportion meat and fish harvested traditional food	5	5	5	5	4	3	5	5	5	3	4	5	4
SLiCA, NS1977	proportion meat and fish received traditional food	5	5	5	5	4	4	5	5	5	3	4	5	4
ASI	pounds of traditional food harvested - all species	5	5	5	5	5	5	1	5	5	3	5	5	
ASI	pounds of traditional food harvested - top ten species harvested by community	5	5	5	5	5	5	4	5	5	3	5	5	5

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SLiCA, NS1977	number of jobs held in last year	5	5	5	5	5	4	5	5	5	3	5	5	5
NS1977	total weeks worked in last 12 months	5	5	5	5	5	4	5	5	5	3	5	5	5
NS1977	weeks worked in oil and gas industry-related jobs held in last year	5	5	5	5	5	4	5	5	5	3	5	5	5
New	weeks worked in offshore petroleum-related jobs held in last year	5	3	5	5	5	4	5	5	5	3	5	5	5
SLiCA, NS1977	weeks worked on job held the longest in last year	5	5	5	5	5	4	5	5	5	3	5	5	5
SLiCA, NS1977	industry of longest held job	5	5	5	5	5	4	5	5	5	3	4	5	5
SLiCA, NS1977	occupation of longest held job	3	5	3	3	5	4	4	5	5	3	4	5	5
New	number of months did not have a wage job and wanted one	5	4	5	5	5	4	5	5	5	3	5	5	5
SLiCA	total personal income	5	4	5	5	5	4	5	5	5	3	5	5	5
SLiCA, NS1977, ASI	household income from wage employment	5	5	5	5	5	4	5	5	5	3	5	5	5
SLiCA	satisfaction with combination of activities to make a living	4	4	5	5	5	3	5	5	5	3	5	5	
SLiCA	satisfaction with longest held job	5	4	5	5	5	3	5	5	5	3	5	5	5
SLiCA	satisfaction with quality of your housing	5	4	5	5	5	3	5	5	5	3	5	5	5

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SLiCA	satisfaction with household income	5	4	5	5	5	3	5	5	5	3	5	5	5
SLiCA	satisfaction with standard of living	5	4	5	5	5	3	5	5	5	3	5	5	5
SLiCA, NS1977	satisfaction with job opportunities	5	5	5	5	5	3	5	5	5	3	5	5	5
SLiCA, NS1977	satisfaction with cost of living in your community	5	5	5	5	5	3	5	5	5	3	5	5	5
SLiCA, NS1977	satisfaction with availability of goods in local stores	5	5	5	5	5	3	5	5	5	3	5	5	5
SLiCA	economic well-being satisfaction index (c4,c13,e9,e23,e24,h13d,h13j,h13k)	5	4	5	5	5	5	4	5	5	3	5	5	5
SLiCA	Square feet per person living in household	5	4	5	5	5	5	4	5	5	3	5	5	5
SLiCA	House feature index	5	4	5	5	5	5	4	5	5	3	5	5	4
SLiCA	House problem index	5	4	5	5	5	5	4	5	5	3	5	5	4
SLiCA	house in need of major repairs	5	4	5	5	5	4	5	5	5	3	4	5	
SLiCA	on waiting list for housing	3	4	3	5	5	4	5	5	5	3	4	5	
SLiCA	treated fairly in getting housing	3	4	3	5	5	3	5	5	5	3	4	5	
SLiCA	subsistence equipment	3	4	3	5	5	5	3	5	5	3	5	5	
SLiCA, NS1977	household earnings from carvings, skin clothing, furs, crafts, ivory, or similar	5	5	5	5	5	4	5	5	5	3	5	5	5
SLiCA	household income from self-employment	5	4	5	5	5	4	5	5	5	3	5	5	5

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SLiCA, NS1977	household income from government and other organizations	5	5	5	5	5	4	5	5	5	3	5	5	5
SLiCA, NS1977	household income from other sources	5	5	5	5	5	4	5	5	5	3	5	5	5
SLiCA, NS1977	household income by major source	5	5	5	5	5	5	4	5	5	3	5	5	5
SLiCA	ability of household to make ends meet	5	4	5	5	5	4	5	5	5	3	5	5	5
SLiCA	use of technology	3	4	3	5	5	5	3	5	5	3	5	5	
ASI	per capita Gross Domestic Product	3	3	1	1	1	1	1	1	1	3	1	5	4
ASI	unemployment rate	3	3	3	3	1	1	5	5	5	5	1	5	4
ASI	poverty rate	3	3	3	3	1	1	5	5	5	5	1	5	4
ASI	net-migration rate	3	3	3	3	1	5	5	5	5	5	1	5	4
ASI	composite index: subsistence harvest, household income, transfers	3	3	3	3	1	5	1	3	3	3	3	5	4
	Education													
SLiCA	count of traditional skills learned as a child	5	4	5	5	5	5	4	5	5	3	5	5	5
SLiCA, NS1977, ASI	highest level of school completed	5	5	5	5	5	4	5	5	5	3	5	5	5
SLiCA, NS1977	highest level of school mother completed	3	5	3	5	5	4	5	5	5	3	5	5	
SLiCA, NS1977	highest level of school father completed	3	5	3	5	5	4	5	5	5	3	5	5	
SLiCA, NS1977	satisfaction with education services	5	5	5	5	5	3	5	5	5	3	5	5	5
SLiCA	satisfaction with education and training received	5	4	5	5	5	3	5	5	5	3	5	5	5

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ASI	proportion of students pursuing post-secondary education opportunities.	3	5	3	3	1	4	5	5	5	5	5	5	4
SLiCA, NS1977, ASI	ratio of students successfully completing post-secondary education	3	5	3	3	1	5	5	5	5	5	5	5	5
ASI	proportion of students who are still in the community 10 years later	3	5	3	3	1	4	5	5	5	5	5	5	4
	Local Control													
SLiCA, NS1977, ASI	count of voting in three types of elections - local, regional, state or national	5	5	3	5	5	5	4	5	5	3	5	5	5
NS1977	count of six types of institutions meeting needs	5	5	5	5	5	5	5	5	5	3	5	5	5
SLiCA	count of three community civic activities	3	4	3	5	5	5	4	5	5	3	5	5	
SLiCA	how satisfied with courts in community	5	4	5	1	5	3	5	5	5	3	5	5	
SLiCA	how satisfied with influence Iñupiat have on management of nat'l resources like fish and caribou	5	4	5	5	5	3	5	5	5	3	5	5	5
SLiCA, NS1977	how satisfied with influence Iñupiat have on management of nat'l resources like oil, gas and minerals	5	5	5	5	5	3	5	5	5	3	5	5	5

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SLiCA	how satisfied with influence Inupiat have to reduce environmental problems in your area	5	4	5	5	5	3	5	5	5	3	5	5	5
SLiCA	local influence index (h7, h9, h13a)	5	4	5	5	5	5	4	5	5	3	5	5	5
SLiCA	participation in boards, councils, committees	3	5	3	5	5	5	4	5	5	3	5	5	
SLiCA	political motivation index	5	4	5	5	5	5	4	5	5	3	5	5	4
SLiCA	do public safety officers have the same priorities concerning public safety and general order that you do	5	4	5	5	5	4	5	5	5	3	4	5	
SLiCA	do you think courts have the same priorities concerning public safety and general order that you do	5	4	5	5	5	4	5	5	5	3	4	5	
SLiCA	do you think that fish and wildlife officers have the same idea of what is right and wrong that you do	5	4	5	5	5	4	5	5	5	3	4	5	
ASI	percentage of indigenous members in governing bodies relative to the percentage of indigenous people in the total population	3	3	1	3	5	4	3	3	5	3	5	5	5
ASI	percentage of surface lands legally controlled by the inhabitants through public governments, Native corporations	3	3	1	3	3	4	3	3	5	3	5	5	5

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ASI	percentage of public expenses within the region (regional government, municipal taxes, community sales tax) raised locally.	3	3	1	3	5	4	3	3	5	3	5	5	5
ASI	percentage of individuals who speak a mother tongue (whether Native or not) in relation to the percentage of individuals reporting corresponding ethnicity.	5	4	3	3	5	4	4	5	5	3	5	5	5
ASI	percentage of indigenous members in governing bodies relative to percentage of indigenous people in total population	3	3	3	3	5	4	3	3	5	3	5	5	5
ASI	percentage of surface lands legally controlled by local inhabitants	3	3	3	3	3	4	3	5	5	3	5	5	5
ASI	percentage of public expenses within region raised in that jurisdiction	3	3	3	3		4	3	3	5	3	5	5	5
ASI	percentage individuals who speak mother tongue in relation to percentage of individuals reporting corresponding ethnicity	5	4	3	3		4	4	5	5	3	5	5	5

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	Health & Safety													
SLiCA, ASI	self-reported health satisfaction with your health	5	4	5	5	5	4	5	5	5	3	5	5	5
SLiCA	count of health symptoms	5	4	5	5	5	5	4	5	5	3	5	5	
	satisfaction with Health Services	5	5	5	5	5	3	5	5	5	3	5	5	5
SLiCA	count of diagnosed health conditions	5	4	5	5	5	5	3	5	5	3	5	5	
SLiCA, ASI	smoking summary	4	4	3	5	5	5	4	5	5	3	4	5	
SLiCA	drinking summary	4	4	3	5	5	5	4	5	5	3	4	5	
SLiCA	problems related to alcohol or drugs in your home today (self-admin)	4	4	5	5	5	3	5	5	5	3	4	5	4
SLiCA	drug use summary	4	4	3	5	5	5	4	5	5	3	4	5	
SLiCA	victimization summary (self-admin)	4	4	5	5	5	5	4	5	5	3	4	5	5
SLiCA	depression index (self-admin)	4	4	5	5	5	5	4	5	5	3	5	5	5
SLiCA	social support index (self-admin)	4	4	5	5	5	5	4	5	5	3	5	5	5
SLiCA	family contact index	4	4	5	5	5	5	4	5	5	3	5	5	
SLiCA	strength of links with family members not living with you	4	4	5	5	5	4	5	5	5	3	4	5	
SLiCA	how safe feel walking around this area at night	4	4	5	5	5	4	5	5	5	3	4	5	

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SLiCA	place to see doctor or other medical professional in your community	3	4	5	3	1	4	5	5	5	3	4	5	
SLiCA	able to get medicine you need	4	4	5	5	5	4	5	5	5	3	4	5	
SLiCA	untreated medical problem	4	4	5	5	5	4	5	5	5	3	4	5	
SLiCA	waiting to visit specialty clinic	4	4	5	5	5	4	5	5	5	3	4	5	
SLiCA	traditional healer or wellness practices available in your community	3	4	3	3	1	4	5	5	5	3	4	5	
SLiCA	seen a traditional healer	4	4	3	5	5	4	5	5	5	3	4	5	
SLiCA	family members affected by different medical conditions	3	4	5	3	5	4	5	5	5	3	4	5	
SLiCA	hampered in daily activities by chronic physical health problem or disability	5	4	5	5	5	4	5	5	5	3	4	5	
SLiCA	difficulty hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing any similar activities	5	4	5	5	5	4	5	5	5	3	4	5	
SLiCA	perceived problems among indigenous in community	3	4	5	3	5	1	5	5	5	3	5	5	
SLiCA	suicidal thoughts	5	4	5	5	5	4	5	5	5	3	4	5	
SLiCA	satisfaction with public safety services provided in your community	4	4	5	5	5	4	5	5	5	3	5	5	5
ASI	infant mortality	5	3	3	3	1	5	5	5	1	5	5	5	5

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ASI	child mortality	5	3	3	3	1	5	5	5	1	5	5	5	4
ASI	access to health care	5	3	5	5	1	5	5	5	3	5	5	5	4
ASI	suicide rate	5	3	3	3	1	5	5	5	3	5	5	5	4
ASI	obesity rate	5	3	3	3	1	5	5	5	3	5	5	5	4
ASI	total population	1	3	1	1	1	5	5	5	3	5	5	5	4
ASI	number of births	1	3	1	1	1	5	5	5	3	5	5	5	4
ASI	number of deaths	1	3	1	1	1	5	5	5	3	5	5	5	4
ASI	net migration	3	3	3	3	1	5	5	5	3	5	5	5	5
	Physical Environment													
SLiCA, NS1977	count of comparable subsistence activities	5	5	5	5	5	5	4	5	5	3	5	5	5
SLiCA, ASI	participation in outdoor activities	5	4	5	5	5	5	4	5	5	3	5	5	5
SLiCA, NS1977	how satisfied with opportunities to hunt and fish	5	5	5	5	5	3	5	5	5	3	5	5	5
SLiCA, NS1977	how satisfied with amount of fish and game available locally	5	5	5	5	5	3	5	5	5	3	5	5	5
SLiCA	local environmental problem index	5	4	5	3	5	5	4	5	5	3	5	5	5
SLiCA	how satisfied with the health of the environment in your area	5	4	5	5	5	3	5	5	5	3	5	5	5
SLiCA, ASI	consumption of traditional food	5	4	4	5	5	4	4	5	5	3	5	5	5
SLiCA, ASI	harvest of traditional food	5	4	5	5	5	5	4	5	5	3	5	5	5

Source	Domain & Potential Indicator	Utility		Validity		Reliability	Precision	Feasibility	Applicability					Recommendation
		Understandable as Important	Available for Past and Reasonably Foreseeable Future	Measure of Output of Social System	Meaningful at the Household Level	Sensitive to Variations Between People and Over Time	Reflects Concern with a High Degree of Precision	Available at a Reasonable Cost (reasonable response burden)	Available Reporting for Alaska Natives	Available at the Village Level	Available at Least Every Five Years	Levels and Distributions	Linked Data	
SLiCA, ASI	number of people or households engaged in the traditional economy	5	4	4	5	5	4	4	4	5	3	5	5	5
SLiCA, ASI	time on the land	5	4	4	5	5	5	4	4	5	3	5	5	5
SLiCA, ASI	participation in traditional/outdoor activities	5	4	5	5	5	4	5	4	5	3	5	5	5
	Global													
SLiCA, NS1977	satisfaction with village life	5	5	5	5	5	3	5	5	5	3	5	5	5
SLiCA	satisfaction with life as a whole	5	4	5	5	5	3	5	5	5	3	5	5	5
SLiCA	considered moving from community	3	4	3	5	5	4	5	5	5	3	4	5	4
SLiCA	reasons for moving from or staying in community	5	4	3	5	5	3	4	5	5	3	4	5	4
SLiCA, NS1977	gender ratio	3	5	3	5	5	4	5	5	5	3	5	5	
SLiCA, NS1977	proportion of community population 60 and over	3	5	3	5	5	4	5	5	5	3	5	5	
	Explanatory Variables													
SLiCA, NS1977	reasons away from community in last year a month or more	3	5	3	5	5	4	4	5	5	3	4	5	
SLiCA, NS1977	reasons lived away from community a year or more	3	5	3	5	5	4	4	5	5	3	4	5	

Source	Domain & Potential Indicator	Utility		Validity		Reliability	Precision	Feasibility	Applicability					Recommendation
		Understandable as Important	Available for Past and Reasonably Foreseeable Future	Measure of Output of Social System	Meaningful at the Household Level	Sensitive to Variations Between People and Over Time	Reflects Concern with a High Degree of Precision	Available at a Reasonable Cost (reasonable response burden)	Available Reporting for Alaska Natives	Available at the Village Level	Available at Least Every Five Years	Levels and Distributions	Linked Data	
SLiCA, NS1977	reasons for not starting a job in last week	3	5	3	5	5	4	4	5	5	3	4	5	
SLiCA, NS1977	reasons for stopping work on job	3	5	3	5	5	4	4	5	5	3	4	5	
SLiCA, NS1977	subsistence activities affected by oil and gas industry activities	3	5	3	5	5	5	4	5	5	3	4	5	5
SLiCA, NS1977	descriptors of impact on subsistence activity	3	5	3	5	5	5	3	5	5	3	4	5	5

RECOMMENDED SOCIAL INDICATORS

Based on the preceding analysis and review, the NSMB and the research team recommend the following indicators.

Cultural Continuity

1. Number of subsistence activities pursued in past 12 months
2. Number of months spent five days or more on subsistence activities
3. Number of traditional skills learned as a child
4. Ability to understand, speak, read, and write Iñupiaq
5. Proportion of meat and fish consumed that is traditional food
6. Proportion of meat and fish consumed that is harvested by household
7. Proportion of meat and fish consumed that was received traditional food
8. Index of importance of cultural values
9. Index of satisfaction with community promotion of cultural values
10. Preference for type of work: subsistence, job, or both

Economic Well-Being

1. Number of subsistence activities pursued in past 12 months (see above)
2. Pounds of traditional food harvested for top ten species harvested by community
3. Shares of bowhead whale received for household participation in whaling
4. Weeks worked in past 12 months (total, longest job, related to oil and gas, related to offshore petroleum)
5. Occupation and industry of longest job
6. Months in last year did not have a wage job and wanted one
7. Total personal income in past 12 months
8. Household income by major source (wages, self-employment, arts & crafts, transfers)
9. Index of satisfaction with economic well-being items
10. Ability of household to make ends meet
11. Proportion of meat and fish consumed that is traditional food (see above)
12. Proportion of meat and fish consumed that is harvested by household (see above)
13. Proportion of meat and fish consumed that was received traditional food (see above)
14. House problem index
15. House feature index

Education

1. Number of traditional skills learned as a child (see above)
2. Highest level of school completed
3. Satisfaction with education and training received
4. Satisfaction with education services

Local Control

1. Count of votes placed in local, regional, state, and national elections
2. Count of six institutions meeting needs or not
3. Satisfaction with influence Iñupiat have on management of natural resources like oil, gas, and minerals
4. Satisfaction with influence Iñupiat have on management of natural resources like fish and caribou
5. Satisfaction with influence Iñupiat have to reduce environmental problems in your area
6. Index of political motivation

Health and Safety

1. Self-reported health
2. Satisfaction with your health
3. Satisfaction with health services
4. Satisfaction with public safety services
5. Victimization summary
6. Depression index
7. Social support index
8. Problems related to alcohol or drugs in your home today

Physical Environment

1. Number of subsistence activities pursued in the past 12 months (see above)
2. Number of outdoor activities pursued in the past 12 months
3. Satisfaction with amount of fish and game available locally
4. Local environmental problem index
5. Satisfaction with the health of the environment in your area
6. Satisfaction with recreational facilities in community
7. Pounds of traditional food harvested for top ten species harvested by community (see above)
8. Proportion of meat and fish consumed that is traditional food (see above)
9. Proportion of meat and fish consumed that is harvested by household (see above)

Global Indicators

1. Satisfaction with life in this community
2. Satisfaction with life as a whole
3. Considered moving from community and reasons for staying or moving

In addition to the above social indicators, the research team recommends the following variables to help explain changes in well-being.

Explanatory Variables

1. Identification of any subsistence activities affected by oil industry activities in the last year
2. Description of each activity affected
3. Description of location of activity affected
4. Description of associated industry activity
5. Identification of actions that could have avoided or reduced impact

INTEGRATION OF ASI INDICATORS

As discussed earlier, Joan Larsen, a member of the project team and director of ASI, identified a comprehensive list of ASI indicators for integration with the North Slope Social Indicator Project. As noted, ASI indicators are intended to be meaningful at least at the regional level. As a result, 19 identified ASI indicators are calculated separately at the regional level and 19 are based on survey measures. Table 3 shows the detailed breakdown.

Table 3: Integration of ASI Indicators

Domain	Source	Indicator	Method of Integration
Cultural Continuity			
	ASI	Do laws and policies exist that recognize institutions that advocate for the cultural autonomy of national minority populations?	Regional, calculated separately
	ASI	What is the proportion of such institutions to minority peoples, e.g. Are all peoples represented through such organizations?	Regional, calculated separately
	ASI	Are resources available to such institutions?	Regional, calculated separately
	ASI	Are funding policies in place and how well-resourced are they?	Regional, calculated separately
	ASI	Do institutions representing national minority cultures exist?	Regional, calculated separately
	ASI	What percentage of people are engaged in recreational or subsistence activities on the land?	Questionnaire A1, E1
	ASI	What is the relative size of the informal sector in the economy?	Questionnaire A5
	ASI	What % of a population speaks its ancestral language compared with the population as a whole?	Questionnaire B3

Domain	Source	Indicator	Method of Integration
Economic Well-Being	ASI	Pounds of traditional food harvested - all species	Not included in favor of top ten species
	ASI	Pounds of traditional food harvested - top ten species harvested by community	Questionnaire A3
	SLiCA, NS1977, ASI	household income from wage employment	Questionnaire A31
	ASI	Per capita Gross Domestic Product	Regional, calculated separately
	ASI	Unemployment rate	Questionnaire A21
	ASI	Poverty rate	Questionnaire A29 - A33
	ASI	Net-migration rate	Regional, calculated separately
	ASI	Composite index: subsistence harvest, household income, transfers	Questionnaire A3, A29 - A33
Education	ASI	The proportion of students pursuing post-secondary education opportunities.	Questionnaire C2
	SLiCA, NS1977, ASI	The ratio of students successfully completing post-secondary education	Questionnaire C2
	ASI	The proportion of students who are still in the community 10 years later	Questionnaire C2
Local Control	SLiCA, NS1977, ASI	Count of voting in three types of elections - local, regional, state or national	Questionnaire F1
	ASI	The percentage of indigenous members in governing bodies relative to the percentage of indigenous people in the total population	Regional, calculated separately
	ASI	The percentage of surface lands legally controlled by the inhabitants through public governments, Native corporations	Regional, calculated separately
	ASI	The percentage of public expenses within the region (regional government, municipal taxes, community sales tax) raised locally.	Regional, calculated separately
	ASI	The percentage of individuals who speak a mother tongue (whether Native or not) in relation to the percentage of individuals reporting corresponding ethnicity.	Questionnaire B3

Domain	Source	Indicator	Method of Integration
Health			
	SLiCA, ASI	self-reported health	Questionnaire D1
	SLiCA, ASI	smoking summary	Not included
	ASI	Infant mortality	Regional, calculated separately
	ASI	Child mortality	Regional, calculated separately
	ASI	Access to health care	Regional, calculated separately
	ASI	Suicide rate	Regional, calculated separately
	ASI	Obesity rate	Regional, calculated separately
	ASI	Total population	Regional, calculated separately
	ASI	Number of births	Regional, calculated separately
	ASI	Number of deaths	Regional, calculated separately
	ASI	Net migration	Regional, calculated separately
Physical Environment			
	SLiCA, ASI	Consumption of traditional food	Questionnaire A3 - A7
	SLiCA, ASI	Harvest of traditional food	Questionnaire A3
	SLiCA, ASI	Number of people or households engaged in the traditional economy	Questionnaire A3
	SLiCA, ASI	Time on the land	Questionnaire E1
	SLiCA, ASI	Participation in traditional/outdoor activities	Questionnaire A1, E1

SOCIAL INDICATOR RESULTS FROM SLICA

Accompanying this document as Appendix A are SLiCA results for the three Iñupiat settlement regions of Alaska (North Slope, Northwest Arctic [referred to as NANA in the tables], Bering Straits), the combined Inuit settlement regions of Canada, Greenland, and Chukotka, Russia for each social indicator.

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APPENDIX A: SLICA RESULTS FOR RECOMMENDED NORTH SLOPE SOCIAL INDICATORS

Cultural Continuity

1. Number of subsistence activities pursued in past 12 months

Count of Subsistence Activities in Previous 12 Months						
	North Slope	NANA ¹	Bering Straits	Greenland	Chukotka	Kola P
No activities	6%	8%	3%	11%	2%	8%
1-5 activities	31%	20%	25%	40%	30%	48%
6 thru 16 activities	63%	72%	72%	49%	68%	44%
Total	100%	100%	100%	100%	100%	100%

¹Northwest Arctic Borough in Alaska

Mean Number of Subsistence Activities Engaged in Within Last 12 Months						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
	8.7	8.3	9.5	*	5.7	8

2. Number of traditional skills learned as a child

Number of Traditional Education Skills Learned as a Child						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Zero to 5 skills	10%	5%	5%	*	20%	12%
5-10 skills	27%	33%	28%	*	39%	23%
11-15 skills	38%	43%	42%	*	36%	26%
16-25 skills	25%	18%	25%	*	6%	39%
	100%	100%	100%	*	100%	100%
Estimated Total	2,803	3,130	4,797	*	39,715	20,714

* Data Not Available

3. Ability to understand, speak, read, and write Iñupiaq

Level of Ability to Understand and Speak Indigenous Language						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
High (8)	39%	32%	23%	75%	68%	36%
Low-medium (0-7)	61%	68%	77%	25%	32%	64%
	100%	100%	100%	100%	100%	100%
Estimated Total	2,908	3,182	4,900	19,970	39,678	20,611

4. Index of importance of cultural values

Index of Importance of Cultural Values							
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka	Kola P
0-4 Values Very Important	34%	26%	27%	*	47%	19%	33%
5-9 Values Very Important	27%	36%	28%	*	29%	48%	38%
10-14 Values Very Important	39%	38%	45%	*	24%	34%	29%
Total	100%	100%	100%	*	100%	100%	100%

*Data Not Available

5. Index of satisfaction with community promotion of cultural values

Index of Satisfaction with Community Promotion of Cultural Values							
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka	Kola P
Very satisfied on none	14%	17%	32%	*	56%	63%	54%
1-5 values	25%	32%	27%	*	30%	22%	28%
6-10 values	17%	16%	17%	*	8%	5%	11%
11-20 values	44%	35%	23%	*	6%	10%	7%
Total	100%	100%	100%	*	100%	100%	100%

*Data Not Available

6. Preference for type of work: subsistence, job, or both

Preferred Ways of Making a Living						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Working on a wage job	27%	14%	9%	*	56%	40%
Both wage and harvesting, herding or processing	65%	74%	85%	*	14%	28%
Harvesting, herding or processing	8%	12%	7%	*	30%	32%
	100%	100%	100%	*	100%	100%
Estimated Total	2,713	3,094	4,814	*	35,316	20,184

* Data Not Available

Economic Well-Being

1. Number of subsistence activities pursued in past 12 months (see above under Cultural Continuity)
2. Pounds of traditional food harvested for top ten species harvested by community

Examples of Harvest Data: Pounds of Edible Harvest

Name	Year	All Resources	Top Ten Resources	Percent of All Resources Harvest Captured by Top Ten Resources
Kaktovik	1992	399	394	99%
Nuiqsut	1993	334	311	93%
Point Lay	1987	401	385	96%
Barrow	1989	130	120	92%
Wainwright	1989	338	330	98%
Deering	1994	302	283	94%
Kiana	2006	156	134	86%
Kivalina	1992	343	304	89%
Noatak	1994	207	201	97%
Brevig Mission	1989	261	218	84%
Shishmaref	1995	357	343	96%
Wales	1993	335	312	93%

Source: ADF&G, MMS subsistence data in AON-HD database

3. Weeks worked in past 12 months (not asked in SLiCA – should have been)

Work Status in Previous 12 Months

	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Worked in Past 12 Months	77%	75%	73%	88%	80%	86%
Did Not Work in Past 12 Months	23%	25%	27%	12%	20%	14%
Total	100%	100%	100%	100%	100%	100%

4. Total personal income in past 12 months

Total Personal Income Adjusted for Purchasing Power						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
\$1,500 or under	1%	<1%	3%	18%	8%	16%
\$1,501 to \$5,000	15%	21%	17%	16%	5%	12%
\$5,001 to \$8,000	6%	10%	15%	10%	8%	17%
\$8,001 to \$12,000	15%	7%	10%	12%	13%	7%
\$12,001 to \$16,000	9%	7%	8%	9%	9%	10%
\$16,001 to \$23,000	6%	21%	13%	10%	11%	12%
\$23,001 to \$28,000	7%	5%	13%	6%	12%	8%
\$28,001 to \$37,000	13%	7%	8%	8%	12%	3%
\$37,000 to \$50,000	11%	13%	4%	6%	14%	4%
Above \$50,000	17%	9%	10%	5%	8%	11%
	100%	100%	100%	100%	100%	100%
Estimated Total	2,379	3,066	4,750	22,220	33,022	15,582

5. Household income by major source (wages, self-employment, arts & crafts, transfers)

Household Wage Earnings							
	North Slope	NANA	Bering Straits	Greenland	Canada	Chukotka	Kola P
None	8%	7%	7%	18%	*	30%	38%
\$5,000 or under	3%	10%	7%	2%	*	42%	43%
\$5,001 - 16,000	14%	15%	15%	6%	*	20%	19%
\$16,001 – 28,000	13%	10%	17%	12%	*	8%	1%
Above \$28,000	62%	58%	54%	62%	*	0%	0%
Total	100%	100%	100%	100%	*	100%	100%

* Data Not Available

Household Payments from Sale of Native Arts and Self-Employment							
	North Slope	NANA	Bering Straits	Greenland	Canada	Chukotka	Kola P
None	63%	53%	53%	79%	*	9%	44%
\$5,000 or under	26%	31%	38%	5%	*	54%	39%
\$5,001 - 16,000	8%	8%	4%	4%	*	24%	17%
\$16,001 – 28,000	1%	3%	2%	2%	*	13%	1%
Above \$28,000	3%	5%	4%	9%	*	0%	0%
Total	100%	100%	100%	100%	*	100%	100%

* Data Not Available

Household Payments from Government and Other Organizations

	North Slope	NANA	Bering Straits	Greenland	Canada	Chukotka	Kola P
None	1%	0%	0%	59%	*	6%	12%
\$5,000 or under	14%	13%	23%	18%	*	91%	84%
\$5001 - 16,000	57%	56%	51%	17%	*	3%	3%
\$16,001 - 28000	15%	19%	18%	5%	*	0%	0%
Above \$28,000	13%	12%	8%	1%	*	0%	0%
Total	100%	100%	100%	100%	*	100%	100%

* Data Not Available

Household Payments from Other Sources

	North Slope	NANA	Bering Straits	Greenland	Canada	Chukotka	Kola P
None	87%	87%	93%	*	*	50%	61%
\$5,000 or under	6%	8%	3%	*	*	50%	39%
\$5001 - 16,000	2%	2%	4%	*	*	0%	1%
\$16,001 - 28000	2%	3%	0%	*	*	0%	0%
Above \$28,000	3%	0%	0%	*	*	0%	0%
Total	100%	100%	100%	*	*	100%	100%

* Data Not Available

6. Index of satisfaction with economic well-being items

Index of Satisfaction with Economic well-being items

	North Slope	NANA	Bering Straits	Greenland	Canada	Chukotka	Kola P
Satisfied or Very Satisfied with No Measures	2%	1%	3%	4%	*	20%	13%
Satisfied or Very Satisfied with 1-3 Measures	22%	24%	32%	28%	*	57%	61%
Satisfied or Very Satisfied with 4-6 Measures	54%	53%	56%	49%	*	21%	24%
Satisfied or Very Satisfied with 7-8 Measures	22%	23%	9%	19%	*	1%	2%
Total	100%	100%	100%	100%	*	100%	100%

* Data Not Available

7. Ability of household to make ends meet

Ease in Making Ends Meet						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Very easily	21%	19%	11%	*	21%	5%
Fairly easily	35%	37%	38%	*	58%	17%
With some difficulty	36%	40%	47%	*	18%	33%
With great difficulty	9%	4%	4%	*	3%	45%
	100%	100%	100%	*	100%	100%
Estimated Total	2,754	3,097	4,777	*	38,208	20,425

* Data Not Available

8. Respondent work summary

Work Status in Previous 12 Months						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Worked in Past 12 Months	77%	75%	73%	88%	80%	86%
Did Not Work in Past 12 Months	23%	25%	27%	12%	20%	14%
Total	100%	100%	100%	100%	100%	100%

9. Proportion of meat and fish consumed that is traditional food

Proportion of Meat and Fish Consumed by Household Traditional Food						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
None	1%	0%	1%	1%	0%	9%
Less than half	12%	14%	17%	24%	33%	34%
About half	22%	20%	27%	35%	27%	29%
More than half	65%	66%	55%	39%	40%	28%
Total	100%	100%	100%	100%	100%	100%

10. Proportion of meat and fish consumed that is harvested by household

Proportion of Meat and Fish Harvested by Household Traditional Food						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
None	7%	9%	8%	*	25%	18%
Less than half	31%	23%	36%	*	38%	38%
About half	25%	27%	25%	*	15%	27%
More than half	37%	42%	31%	*	21%	17%
	100%	100%	100%	*	100%	100%
Estimated Total	2,793	3,181	4,913	*	38,316	20,589

* Data Not Available

11. Received traditional food (revised to give proportions of meat and fish)

Receive traditional food from others?							
	North Slope	NANA	Bering Straits	Greenland	Canada	Chukotka	Kola P
Yes	87%	87%	87%	53%	*	80%	64%
No	13%	13%	13%	47%	*	20%	36%
Total	100%	100%	100%	100%	*	100%	100%

* Data Not Available

12. House problem index

Housing Problems Summary						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
No problems	21%	8%	9%	*	27%	11%
1-3 problems	36%	33%	33%	*	39%	30%
4 or more	43%	59%	58%	*	34%	59%
	100%	100%	100%	*	100%	100%
Estimated Total	2,915	3,156	4,927	*	39,437	18,465

* Data Not Available

13. House feature index

Home Feature Summary						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Less than 6 home features	7%	20%	18%	8%	30%	55%
6-7 home features	18%	9%	11%	18%	56%	43%
8 home features	29%	31%	31%	58%	12%	2%
9-10 home features	46%	40%	41%	16%	2%	1%
	100%	100%	100%	100%	100%	100%
Estimated Total	2,923	3,182	4,856	22,190	39,326	20,703

Education

1. Number of traditional skills learned as a child (see above under Cultural Continuity)
2. Highest level of school completed

Highest Level of School Completed						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Elementary or less	12%	16%	12%	44%	10%	26%
Some high school or in high school now	23%	17%	11%	26%	34%	0%
High school	40%	31%	58%	13%	10%	32%
Vocational school or college	25%	36%	18%	16%	46%	42%
	100%	100%	100%	100%	100%	100%
Estimated Total	2,841	3,164	4,975	21,860	37,944	19,796

3. Satisfaction with education and training received

Respondent Satisfaction with Western Education received			
	North Slope	NANA	Bering Straits
Very satisfied	47%	50%	44%
Somewhat satisfied	39%	32%	41%
Neither satisfied or dissatisfied	10%	7%	10%
Somewhat dissatisfied	2%	6%	4%
Very dissatisfied	2%	4%	1%
Total	100%	100%	100%

4. Satisfaction with education services

Satisfaction with Quality of Education in Community						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Very satisfied	39%	23%	30%	25%	7%	10%
Somewhat satisfied	41%	42%	32%	48%	56%	31%
Not satisfied or neither or dissatisfied	20%	34%	38%	27%	37%	59%
	100%	100%	100%	100%	100%	100%
Estimated Total	2,803	3,057	4,776	17,130	33,606	17,160

Local Control

1. Count of votes places in local, regional, state, and national elections

Count of Voting in Three Types of Elections						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Three	63%	42%	37%	44%	23%	<1%
Two	11%	25%	33%	17%	51%	85%
One	10%	8%	9%	11%	10%	3%
None	16%	25%	21%	28%	15%	12%
	100%	100%	100%	100%	100%	100%
Estimated Total	2,904	3,182	4,869	22,120	38,920	20,548

2. Satisfaction with influence Iñupiat have on management of natural resources like oil, gas, and minerals

Satisfaction with Influence Indigenous People Have on Management of Natural Resources like Oil, Gas, and Minerals

	North Slope	NANA	Bering Straits	Greenland	Canada	Chukotka	Alaska	Kola P
Very satisfied	26%	21%	12%	3%	*	2%	18%	4%
Somewhat satisfied	38%	40%	29%	41%	*	11%	35%	4%
Neither satisfied nor dissatisfied	22%	21%	28%	31%	*		24%	
Somewhat dissatisfied	7%	7%	20%	20%	*	57%	13%	34%
Very dissatisfied	6%	11%	11%	4%	*	30%	10%	58%
Total	100%	100%	100%	100%	*	100%	100%	100%

* Data Not Available

3. Satisfaction with influence Iñupiat have on management of natural resources like fish and caribou

Satisfaction with Influence Indigenous People Have on Management of Natural Resources Like Fish and Caribou

	North Slope	NANA	Bering Straits	Greenland	Canada	Chukotka	Kola P
Very satisfied	55%	43%	17%	6%	*	3%	2%
Somewhat satisfied	32%	36%	46%	48%	*	27%	2%
Neither satisfied nor dissatisfied	7%	7%	13%	29%	*		
Somewhat dissatisfied	4%	11%	14%	13%	*	45%	33%
Very dissatisfied	1%	3%	10%	4%	*	25%	63%
Total	100%	100%	100%	100%	*	100%	100%

* Data Not Available

4. Satisfaction with influence Iñupiat have to reduce environmental problems in your area

Satisfaction with Influence Indigenous People have to Reduce Environmental Problems in Your Area

	North Slope	NANA	Bering Straits	Greenland	Canada	Chukotka	Kola P
Very satisfied	21%	19%	18%	4%	*	2%	2%
Somewhat satisfied	49%	49%	40%	43%	*	13%	7%
Neither satisfied nor dissatisfied	17%	19%	23%	35%	*		
Somewhat dissatisfied	12%	10%	16%	16%	*	64%	58%
Very dissatisfied	1%	3%	3%	2%	*	21%	33%
Total	100%	100%	100%	100%	*	100%	100%

* Data Not Available

5. Index of political motivation

Index of Political Involvement and Interest

	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
High (13-15)	13%	13%	17%	*	25%	10%
(11-12)	24%	28%	35%	*	30%	14%
(8-10)	35%	31%	33%	*	33%	37%
Low (1-7)	28%	28%	16%	*	12%	40%
	100%	100%	100%	*	100%	100%
Estimated Total	2,896	3,181	4,813	*	39,067	19,981

* Data Not Available

Health and Safety

1. Self-reported health

Self Perception of Personal Health						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Excellent	21%	13%	12%	28%	19%	5%
Very good	29%	29%	35%	27%	59%	10%
Good	29%	35%	27%	33%	18%	34%
Fair	19%	16%	23%	9%	4%	29%
Poor	2%	7%	4%	2%	1%	23%
	100%	100%	100%	100%	100%	100%
Estimated Total	2,914	3,183	4,951	22,240	39,338	17,666

2. Satisfaction with your health

Satisfaction with Health							
	North Slope	NANA	Bering Straits	Greenland	Canada	Chukotka	Kola
Very satisfied	38%	43%	37%	24%	*	*	*
Somewhat satisfied	48%	42%	46%	63%	*	*	*
Neither satisfied nor dissatisfied	7%	6%	7%	11%	*	*	*
Somewhat dissatisfied	5%	5%	7%	2%	*	*	*
Very dissatisfied	2%	4%	3%	0%	*	*	*
Total	100%	100%	100%	100%	*	*	*

* Data Not Available

3. Satisfaction with health services

Satisfaction with Quality of Health Services in Community						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Very satisfied	28%	38%	32%	26%	5%	7%
Somewhat satisfied	44%	38%	42%	47%	54%	28%
Not satisfied or neither	28%	24%	26%	27%	41%	65%
Total	100%	100%	100%	100%	100%	100%

4. Victimization summary

Summary of Victimization in Past 12 Months						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Not a victim	79%	78%	87%	*	82%	66%
Victim	21%	22%	13%	*	18%	34%
	100%	100%	100%	*	100%	100%
Estimated Total	2,922	3,182	4,980	*	39,732	20,713

* Data Not Available

5. Depression index

Percentage of Adults Likely Depressed						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Most likely depressed	6%	14%	5%	6%	13%	26%
Least likely depressed	94%	86%	95%	94%	87%	74%
	100%	100%	100%	100%	100%	100%
Estimated Total	2,429	2,727	3,849	19,550	39,026	15,558

6. Social support index

Index of Availability of Social Supports						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
27-28 (high)	13%	23%	23%	33%	26%	3%
23-26	26%	29%	26%	18%	23%	6%
18-22	27%	25%	31%	28%	29%	30%
1-17 (low)	35%	23%	20%	22%	22%	62%
	100%	100%	100%	100%	100%	100%
Estimated Total	2,907	3,170	4,802	19,450	39,594	20,660

7. Problems related to alcohol or drugs in your home today (with reservations)

Experience Alcohol or Drug Problems in Home Today						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Never	66%	55%	69%	*	82%	49%
Yes, sometimes	28%	40%	26%	*	15%	51%
Yes, often	6%	5%	6%	*	3%	<1%
	100%	100%	100%	*	100%	100%
Estimated Total	2,521	2,810	4,017	*	37,124	16,042

* Data Not Available

Physical Environment

1. Number of subsistence activities pursued in the past 12 months (see above)
2. Number of outdoor activities pursued in the past 12 months

Number of Outdoor Activities Participated In Previous Twelve Months							
	North Slope	NANA	Bering Straits	Greenland	Canada	Chukotka	Kola P
None of 4 activities measured	15%	9%	6%	7%	*	58%	45%
1 activity	20%	10%	12%	9%	*	28%	29%
2 activities	17%	14%	16%	16%	*	11%	19%
3 activities	22%	22%	19%	47%	*	2%	7%
4 activities	26%	44%	47%	21%	*	0%	0%
Total	100%	100%	100%	100%	*	100%	100%

* Data Not Available

3. Satisfaction with amount of fish and game available locally

Satisfaction with Amount of Fish and Game Available Locally						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Very satisfied	48%	58%	24%	*	9%	5%
Somewhat satisfied	39%	33%	36%	*	54%	34%
Not satisfied or neither	13%	9%	40%	*	37%	71%
Total	100%	100%	100%	*	100%	100%

* Data Not Available

4. Local environmental problem index

Number of Environmental Problems Observed							
	North Slope	NANA	Bering Straits	Greenland	Canada	Chukotka	Kola P
None	18%	14%	11%	18%	*	1%	0%
1-2	30%	27%	33%	28%	*	10%	9%
3-4	27%	36%	32%	27%	*	46%	33%
5-8	24%	23%	24%	26%	*	42%	58%
Total	100%	100%	100%	100%	*	100%	100%

* Data Not Available

5. Satisfaction with the health of the environment in your area

Satisfaction with Health of Local Environment						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Very satisfied	23%	21%	11%	*	6%	4%
Somewhat satisfied	53%	52%	47%	*	59%	16%
Not satisfied or neither	24%	26%	42%	*	35%	80%
	100%	100%	100%	*	100%	100%
Estimated Total	2,725	3,159	4,764	*	34,715	18,110

* Data Not Available

6. Pounds of traditional food harvested for top ten species harvested by community (see above under economic well-being and cultural continuity)
7. Proportion of meat and fish consumed that is traditional food (see above under economic well-being and cultural continuity)
8. Proportion of meat and fish consumed that is harvested by household (see above under economic well-being and cultural continuity)

Global Indicators

1. Satisfaction with life in this community

Satisfaction with Life as a Whole in This Community						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Very satisfied	62%	59%	46%	50%	23%	*
Somewhat satisfied	33%	38%	42%	42%	72%	*
Not satisfied or neither	5%	3%	12%	8%	5%	*
	100%	100%	100%	100%	100%	*
Estimated Total	2,756	3,096	4,611	18,560	38,780	17,121

* Data Not Available

2. Satisfaction with life as a whole

Satisfaction with Life as a Whole						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Very satisfied	63%	64%	46%	*	25%	*
Somewhat satisfied	31%	29%	40%	*	68%	*
Not satisfied or neither	6%	7%	14%	*	7%	*
Total	100%	100%	100%	*	100%	*

* Data Not Available

1. Considered moving from community

Considered Moving Away From Community in Past Five Years						
	North Slope	NANA	Bering Straits	Canada	Greenland	Chukotka
Yes	36%	42%	44%	29%	36%	29%
No	64%	58%	56%	71%	64%	71%
	100%	100%	100%	100%	100%	100%
Estimated Total	2,840	3,144	4,966	20,280	39,234	20,321

Social Indicators in Coastal Alaska: Arctic Communities:

Appendix IV: Community Outreach Materials

Social Indicators in Coastal Alaska: Arctic Communities

Appendix IV: Community Outreach Materials

Authors

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Prepared under BOEM Contract
No. M11PC00032

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US Department of the Interior
Bureau of Ocean Energy Management
Alaska Outer Continental Shelf Region
May 31, 2017



DISCLAIMER

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SOCIAL INDICATORS IN COASTAL ALASKA: ARCTIC COMMUNITIES

**Household Surveys
Completed in 2016**

Point Hope

Point Lay

Wainwright

Utqiagvik

Nuiqsut

Kaktovik

COMMENTS OR QUESTIONS

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PURPOSE OF STUDY: Collect baseline information on key social indicators to enable the monitoring of human well-being in coastal communities on the North Slope of Alaska.

KEY FINDINGS:

- Measures of well-being were compared by community, gender, over time, and across regions and countries.
- North Slope residents scored high on measures of well-being when compared over time and across the Arctic – 58 percent “very satisfied” with life in 2016.
- Nuiqsut, the community closest to North Slope oil and gas development, was more likely to report impact experiences during subsistence activities.
- Existing impacts of petroleum development on subsistence have not yet reached the point of negatively affecting satisfaction with the amount of fish and game available locally or of the satisfaction with opportunities to hunt and fish.

FORTHCOMING STUDY RESULTS AVAILABLE AT www.arctichost.net/SICAA/

AND <https://www.boem.gov/Alaska-Scientific-Publications/>



SOCIAL INDICATORS IN COASTAL ALASKA: ARCTIC COMMUNITIES

SUMMARY HANDOUT

April 18, 2017

**Prepared by
Stephen R. Braund & Associates**

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Introduction

In 2011, the U.S. Department of the Interior (USDOI), Bureau of Ocean Energy Management (BOEM) hired Stephen R. Braund & Associates (SRB&A) to conduct a social indicators survey that would measure the well-being of residents on the North Slope of Alaska. In other words, how satisfied, comfortable, healthy, and happy are North Slope residents?



Very Satisfied



Neither Satisfied nor Dissatisfied



Very Dissatisfied

Over the last 40 years, oil and gas exploration and development has been the primary industry on the North Slope (Figure 1), a vast expanse of land extending from the Brooks Range north to the Arctic Ocean and inhabited by the Iñupiat. BOEM is responsible for managing development of energy and mineral resources within the U.S. Outer Continental Shelf (OCS), and as part of this responsibility the agency looks at the impacts of exploration and development activities on the human environment. USDOI has funded over 40 years of sociocultural research in Alaska through BOEM's Environmental Studies Program (ESP), including the development and implementation of multiple social indicators studies since the 1980s.

The title of this study is *Social Indicators in Coastal Alaska: Arctic Communities* (SICAA). The study identified a set of social indicators—variables which measure people's well-being and quality of life. These social indicators were grouped under a distinct set of social domains (or categories of social indicators) and were collected through a 2016 household survey in six coastal North Slope communities (Point Hope, Point Lay, Wainwright, Utqiagvik, Nuiqsut, and Kaktovik).

Figure 1-1

Study Communities

- ⊙ Study Community
- Other Community
- ▲ Other Location



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0 20 40 80 Miles

0 20 40 80 Kilometers



Source: US National Park Service

Methods

SRB&A selected seven domains to measure various topics of well-being:



Economic Well-Being



Health and Safety



Cultural Continuity



Local Control



Education



Physical Environment



Overall Well-Being

SRB&A identified the social indicators to be measured in each of the above domains through a review of previous social indicators research and talking with and listening to a board of local residents formed specifically for the SICAA study, referred to as the North Slope Management Board (NSMB). Following selection of the SICAA social indicators, the study team developed a survey questionnaire which was reviewed by the NSMB and approved by BOEM, the USDO, and the Office of Management and Budget (OMB).

Between January 8 and March 9, 2016, the study team interviewed 684 randomly selected heads of household in the six study communities. Seventy-nine percent of all randomly selected heads of household completed the interview.

**684
SURVEYS**

The interview, which took about an hour, used structured questions to measure social indicators of well-being under the seven social domains listed above. Survey questions included both simple observations (did you hunt caribou?) and those based on feelings (how satisfied are you with opportunities to hunt and fish?). The interview also included questions about the type, timing, cause, and appropriate mitigation action associated with any impacts of petroleum development on subsistence activities in the prior year. Questions on oil and gas related impacts were meant to help look at possible linkages between oil and gas activities and well-being.

In addition to a section on subsistence impacts, for each of the seven SICAA domains, the results of the survey were analyzed and presented under four data comparison groups:



Communities in 2016



Gender in 2016



**Over Time
1977, 1988,
2003, 2016**



**Across Countries
Alaska, Greenland,
Norway, Sweden,
Russia**



Communities in 2016

On a community level, some measures seem to be correlated with proximity to development or impact experiences. Heads of household in Nuiqsut, the community closest to North Slope oil and gas development, were more likely in 2016 to report impact experiences during subsistence activities, more likely than those residing in the other five communities to report pollution from industrial development, more likely to report that fish or animals may be unsafe to eat, and, other than Kaktovik, were more likely to have avoided eating certain subsistence foods in the last year because they believed they were contaminated. However, on other potentially relevant measures (e.g., satisfaction with fish and game availability and with opportunities to hunt and fish), Nuiqsut heads of household were as or more satisfied as other communities. Other differences were evident when comparing across communities, particularly when it came to impact experiences and measures of economic well-being (employment rates, income, and housing quality) and cultural continuity (participation in subsistence activities and learning of traditional skills). However, on measures of overall well-being, responses across communities were similar. A majority (58 percent) of heads of household in the six communities as an aggregate were “very satisfied” with their life as a whole in 2016.

IN COMMUNITIES, 55-64% VERY SATISFIED WITH LIFE AS WHOLE



Over Time – 1977, 1988, 2003, 2016

Comparison of social indicators over time (1977, 1988, 2003, and 2016) revealed a remarkable consistency of social indicator results among Iñupiaq heads of household, with some key differences. Compared to previous study years, Iñupiaq heads of household in 2016 reported:

INCREASE



- Weeks Worked
- Subsistence Activities
- Levels of Education
- Quality of life
- Awareness of Climate Change

DECREASE



- Iñupiat Influence over Natural Resources and Wildlife
- Ability to speak and understand Iñupiaq
- Satisfaction with health, recreational facilities, courts, and health services



Gender in 2016

With some exceptions, male and female Iñupiaq heads of household did not differ substantially on measures of well-being.

MEN

- Higher satisfaction with economic well-being, standard of living, and ability to make ends meet
- Lower score in ability to understand, speak, read, and write Iñupiaq
- Lower high school graduation rates

WOMEN

- More likely to identify fish or animals unsafe to eat, pollution, disruption of views, and to avoid eating subsistence foods out of concerns of contamination
- Higher report of family health problems and lower satisfaction with their own health



Across Countries - Alaska, Greenland, Norway, Sweden, Russia

When comparing across Arctic regions and countries, there is a wider degree of variation.

Economic Well-Being – North Slope Iñupiat scored higher than most other regions on measures related to subsistence participation and harvests; satisfaction with the availability of fish and game; housing quality; and satisfaction with household income and standard of living.

Physical Environment - North Slope Iñupiat were more likely than most other regions to have concerns that fish or animals were not safe to eat.

Health and Safety - North Slope Iñupiat were within the range of other regions on measures pertaining to health and safety, although they were more likely than most regions to indicate problems related to drugs or alcohol in their home today.

Cultural Continuity - North Slope Iñupiat, in addition to the other Iñupiat regions of Alaska, were higher than all of the other Arctic regions on measures such as participation in subsistence activities and number of traditional skills learned.

Education - North Slope Iñupiat were more likely to be very satisfied with the formal schooling and training they had received, and with the quality of formal education in their community. They had fewer persons reporting vocational or college degrees than other countries.

Local Control - North Slope Iñupiat were more likely to be satisfied with influence over natural resources, wildlife, and reducing environmental problems. They also had a higher index of political engagement.

Overall Well-Being - North Slope Iñupiat were as or more likely to be “very satisfied” with the quality of life in their community and life as a whole when compared to other Arctic regions.

Other Key Findings

The consistency of social indicators of well-being among Iñupiat heads of household over almost 40 years was remarkable, particularly given the magnitude of onshore petroleum development and the increasing exposure to the technology and culture of the western world.

Residents who had a petroleum related job in 2015 were slightly less likely to be satisfied with the combination of activities they do for a living, and slightly less satisfied with their household income. There was no significant relationship between having a petroleum related job and satisfaction with job opportunities in the community.

Results indicate that the existing extent of impacts of petroleum development on subsistence has not yet reached the point of negatively affecting satisfaction with the amount of fish and game available locally or of the satisfaction with opportunities to hunt and fish.

In 2016, the domains of local control, economic well-being, and cultural continuity showed a higher correlation with overall well-being than the other domains of physical environment, health and safety, and education. However, it is best to think of all the domain-level measures of satisfaction as potentially important. Future time series comparisons will reveal any significant changes in each of these measures and help to explain any changes in satisfaction with life as a whole.



Social Indicators in Coastal Alaska: Arctic Communities:

Appendix V: Introductory Letter to Communities

Social Indicators in Coastal Alaska: Arctic Communities

Appendix V: Introductory Letter to Communities

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Alaska Outer Continental Shelf Region
May 31, 2017



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October 30, 2015

Samuel Kunaknana, President
Martha Itta, Tribal Administrator
Native Village of Nuiqsut
P.O. Box 169
Nuiqsut, Alaska 99789
Phone: (907) 480-3010
Fax: (907) 480-3009
Number of Pages: 2

Re: Social Indicators in Alaska: Arctic Communities

Dear Mr. Kunaknana:

My firm, Stephen R. Braund & Associates (SRB&A), has been contracted by the U.S. Department of the Interior (DOI) Bureau of Ocean Energy Management (BOEM) to conduct social indicators research in six North Slope communities: Barrow, Kaktovik, Nuiqsut, Point Hope, Point Lay, and Wainwright. Part of this research is to conduct household surveys in each community to measure baseline social indicators of well-being. The purpose of these surveys is to establish these baseline measures for comparison to past and future indicators and to help BOEM and the Iñupiat identify and mitigate the impacts of offshore development.

In 2012, our research team worked with Taqulik Hepa, Director of the North Slope Borough Department of Wildlife Management, to form the North Slope Management Board, or NSMB. The management board is made up of one representative from each of the six communities and regional representatives (e.g., NSB and AEWC). George Sielak was selected as the representative from Nuiqsut, and Taqulik Hepa is the chair. We met with the NSMB in Barrow in April 2012 over a period of two days to identify the social indicators to be measured in our proposed survey. We then submitted a proposed questionnaire to the Office of Management and Budget (OMB) for approval. In February 2015 we received word from BOEM that we have an approved questionnaire and funding to proceed with the North Slope Social Indicators Survey. In May of 2015 we emailed this final version of the questionnaire to NSMB members for review.

This project is designed to build on the work of previous social indicator studies on the North Slope, including a 1977 and 1988 NSB survey, a 2003 survey entitled the Survey of Living Conditions in the Arctic (SLiCA), and the 2007 NSB North Slope Social Impact Study, which included a subset of social indicator questions. The current survey includes questions from each of the previous studies, which will enable comparison of the current well-being of residents with their well-being in 2003, 1988, and 1977. The survey includes questions under the following six topics:

1. Cultural continuity
2. Economic well-being
3. Education
4. Local control
5. Health and safety
6. Physical Environment

The survey also documents the impacts of oil industry activities on subsistence.

SRB&A would like to coordinate through the Native Village of Nuiqsut and the City of Nuiqsut to gain approval for this research in your community, to determine the best time to conduct these surveys, and to plan and coordinate fieldwork. We would like to interview a household head from each household in your community. We plan to hire local assistants to assist with scheduling and/or conducting surveys. Participation in the study is voluntary, and we will pay a \$50 honorarium to each participant who completes an interview. Individual and household information will remain confidential, and we will protect the anonymity of survey participants.

Stephen R. Braund & Associates has conducted subsistence and socioeconomic research in Alaska, including Nuiqsut, for over 37 years associated with a variety of projects. We are familiar with Alaska Native subsistence patterns and issues and are dedicated to working cooperatively with your community to produce a quality product. Please contact me if you have any questions regarding this project.

Thank you for your attention to this matter, and I look forward to working with the community of Nuiqsut.

Sincerely,



Stephen R. Braund

Social Indicators in Coastal Alaska: Arctic Communities:

Appendix VI: Additional Detailed Impact Responses

Social Indicators in Coastal Alaska: Arctic Communities

Appendix VI: Additional Detailed Impact Responses

Authors

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DISCLAIMER

Study concept, oversight, and funding were provided by the US Department of the Interior, Bureau of Ocean Energy Management, Environmental Studies Program, Washington, DC, under Contract Number M11PC00032. This report has been technically reviewed by BOEM and it has been approved for publication. The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the opinions or policies of the US Government, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

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Additional Detailed Impact Responses

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1 Additional Detailed Impact Responses

This appendix provides the detailed impact responses from the subsistence activities of fishing, waterfowl hunting, butchering caribou, hunting seal/ugruk, helping whaling, berry gathering, walrus hunting, plant gathering, hunting wolf and wolverine, and difficulty locating game. The following tables by each of the above activities identify the type of impact, the type of industry activity affecting the harvest activity, identification of who could mitigate the impact, what could be done to mitigate the impact, and the months that the impact occurred. The tables are for impacts with two or more responses. For details on the top three impacted activities: caribou/moose/sheep hunting impacts, whaling crew member impacts, and all subsistence activity impacts, see Section 4.1.1 in the main report.

1.1 Fishing

Table VI-1: Type of impact on fishing activity by community, 2016

Type of Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Release of Contaminants	2				0	1	3
Reduced Health of Wildlife	1				2	0	3
Decline of Wildlife Populations	2				0	0	2
Movement impediments					2	0	2
Displacement of wildlife					1	0	1
Disruption of Wildlife					1	0	1
Decreased Access to Spawning Sites	1				0	0	1
Wildlife Mortality	1				0	0	1
Diminished Subsistence Harvests					0	1	1
Need to Travel Farther	1				0	0	1
Total	6				4	1	11

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Table VI-2: Type of industry activity affecting fishing activity by community, 2016

Type of Industry Activity	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Bridges/roads/ice roads/causeways	1				3		4
Drill Rigs	1				1		2
Drilling	1						1
Oil Spills/Cleanup	1						1
Industry vessels/barges						1	1
Industry development -- all aspects	1						1
Ship activity	1						1
Total	4				3	1	8

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Table VI-3: Who could mitigate impact affecting fishing activity by community, 2016

Who Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Boat and Vessel operators	1						1
Don't Know	4						4
Total	3						3

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Table VI-4: What could mitigate impact on fishing activity by community, 2016

What Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Stay away from drilling in Chukchi Sea / ocean						1	1
Tighter maintenance of infrastructure and pipelines	1						1
No development activities in subsistence hunting areas / ocean						1	1
Use caution when drilling	1						1
Lower the price of our gas on the NS/assistance with fuel needs	1						1
Total	3					1	4

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Table VI-5: Month fishing impact experienced by community, 2016

Month Impact Experienced	Percent Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
January					34%		11%
February					34%		11%
March					34%		11%
April					34%		11%
May	17%				34%		22%
June	17%				34%		22%
July	50%				34%		22%
August	50%				67%		56%
September	17%				34%		22%
October	17%				67%		33%
November	17%				67%		33%
December	17%				34%		22%

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1.2 Waterfowl Hunting

Table VI-6: Type of impact on waterfowl activity by community, 2016

Type of Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Disruption of Wildlife	3		1		1	1	6
Auditory Disruptions	2		1		1		4
Ability to Hunt	2						2
Displacement of Wildlife					1		1
Decrease in Habitat	1						1
Uncomfortable Hunting Environment					1		1
Difficulty Hunting					1		1
Climate-Development Effects	1						1
Environmental Impacts [General]					1		1
Total	5		1		3	1	10

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Table VI-7: Type of industry activity affecting waterfowl activity by community, 2016

Type of Industry Activity	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Helicopters/ small plane/ drone activities	3		1		2		6
Industry vessels/ barges			1				1
Bridges/ roads/ ice roads/ causeways					1		1
Infrastructure/ facilities/ vehicles	1						1
Industry development -- all aspects	1						1
Total	5		1		3		9

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Table VI-8: Who could mitigate impact affecting waterfowl activity by community, 2016

Who Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Oil companies	1		1		2		4
Shell	1						1
Total	1		1		2		4

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Table VI-9: What could mitigate impact on waterfowl activity by community, 2016

What Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Honor convention with subsistence hunters to not disrupt traditional hunting	1				1		2
Better communication			1		1		2
Be more responsive to hunters needs	1						1
Clean up (55 gallon oil and gas drums/oil spills from 4-wheelers					1		1
Total	1		1		2		4

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Table VI-10: Month waterfowl impact experienced by community, 2016

Month Impact Experienced	Percent Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
January							
February							
March							
April					33%		10%
May	40%		100%		67%	100%	60%
June			100%		33%	100%	30%
July	60%		100%				40%
August	80%		100%				50%
September	20%		100%				20%
October							
November							
December							

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1.3 Butchering Caribou

Table VI-11: Type of impact on butchering caribou activity by community, 2016

Type of Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Auditory Disruptions	2		1				3
Displacement of wildlife	1		1				2
Decline of Wildlife Populations	2						2
Reduced Health of Wildlife	2						2
Disruption of Wildlife	1						1
Contamination of Wildlife						1	1
Effects of Development on Wildlife			1				1
Ability to Hunt	1						1
Total	6		2			1	9

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Table VI-12: Type of industry activity affecting butchering caribou activity by community, 2016

Type of Industry Activity	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Seismic testing	1						1
Helicopters/small plane/drone activities	3		1				4
Exploration	1						1
Total	5		1				6

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Table VI-13: Who could mitigate impact affecting butchering caribou activity by community, 2016

Who Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Oil companies	3		1				4
EPA	1						1
Industry	1						1
Helicopter operators--pilots	1						1
Total	4		1				5

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Table VI-14: What could mitigate impact on butchering caribou activity by community, 2016

What Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Fly higher over harvest areas	3						3
Clean up (55 gallon oil and gas drums/ oil spills from 4-wheelers	1		1				2
Avoid seismic/ drilling/ barge/overflight activities during hunting seasons	1						1
Stop seismic testing altogether	1						1
Clean up wires and chords used in seismic testing promptly			1				1
Total	5		1				6

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Table VI-15: Month butchering caribou impact experienced by community, 2016

Month Impact Experienced	Percent Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
January	17%						14%
February	17%						14%
March	17%						14%
April	17%						14%
May	40%						33%
June	80%						67%
July	60%		100%				67%
August	60%		100%				67%
September	20%						17%
October	17%						14%
November	17%						14%
December	17%						14%

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1.4 Hunting Seal/Ugruk

Table VI-16: Type of impact on hunting seal/ugruk activity by community, 2016

Type of Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Disruption of Wildlife			1		1		2
Difficulty Hunting					2		2
Auditory Disruptions	1						1
Bowhead Migration Impacts					1		1
Reduced Health of Wildlife	1						1
Wildlife Mortality	1						1
Contamination of Wildlife		1					1
Uncomfortable Hunting Environment					1		1
Environmental Impacts [General]					1		1
Total	2	1	1		3		7

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Table VI-17: Type of industry activity affecting hunting seal/ugruk activity by community, 2016

Type of Industry Activity	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Helicopters/small plane/drone activities	1		1		1		3
Industry vessels/barges			1		2		3
Seismic testing	1						1
Bridges/roads/ice roads/causeways					1		1
Total	2		1		3		6

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Table VI-18: Who could mitigate impact affecting hunting seal/ugruk activity by community, 2016

Who Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Oil companies			1		2		3
FAA	1						1
Helicopter operators--pilots	1						1
Unspecified--anyone--us--everyone	1						1
Total	2		1		2		5

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Table VI-19: What could mitigate impact on hunting seal/ugruk activity by community, 2016

What Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Better communication			1		1		2
Honor convention with subsistence hunters to not disrupt traditional hunting					1		1
Stop seismic testing altogether	1						1
Fly higher over harvest areas	1						1
Clean up (55 gallon oil and gas drums/oil spills from 4-wheelers)					1		1
Total	2		1		2		5

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Table VI-20: Month hunting seal/ugruk impact experienced by community, 2016

Month Impact Experienced	Percent Reported for All Impact Observations - Past 12 Months						
	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
January							
February							
March							
April							
May			100%				14%
June	50%		100%		33%		43%
July	100%				67%		57%
August	50%	100%			33%		43%
September	50%				33%		29%
October							
November							
December							

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1.5 Helping Whaling

Table VI-21: Type of impact on helping whaling activity by community, 2016

Type of Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Decrease in Habitat			1				1
Wildlife Mortality	1						1
Release of Contaminants	1						1
Effects of Development on People	1						1
Ability to Hunt	1						1
Uncomfortable Hunting Environment	1						1
Cultural Impacts			1				1
Social Impacts	1						1
Total	5		1				6

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Table VI-22: Type of industry activity affecting helping whaling activity by community, 2016

Type of Industry Activity	Number Reported for All Impact Observations - Past 12 Months						
	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Exploration	1						1
Drill Rigs	1						1
Ship activity	1						1
Promotional activities by oil companies	1						1
Total	3						3

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Table VI-23: Who could mitigate impact affecting helping whaling activity by community, 2016

Who Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Oil companies	1		1				2
Native corporations	1						1
ASRC	1						1
City of Barrow/ Communities	1						1
Don't Know	1						1
Total	4		1				5

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Table VI-24: What could mitigate impact on helping whaling activity by community, 2016

What Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Stay away from drilling in Chukchi Sea / ocean	1		1				2
Honor convention with subsistence hunters to not disrupt traditional hunting	1						1
Muffle sounds underwater	1						1
Total	3		1				4

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Table VI-25: Month helping whaling impact experienced by community, 2016

Month Impact Experienced	Percent Reported for All Impact Observations - Past 12 Months						
	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
January							
February							
March							
April							
May	40%						40%
June	40%						40%
July	40%						40%
August	20%						20%
September	60%						60%
October	20%						20%
November	20%						20%
December							

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1.6 Berry Gathering

Table VI-26: Type of impact on berry gathering activity by community, 2016

Type of Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Release of Contaminants						1	1
Diminished Subsistence Harvests		1					1
Spoiled Subsistence Resources					1		1
Total		1			1	1	3

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Table VI-27: Type of industry activity affecting berry gathering activity by community, 2016

Type of Industry Activity	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Helicopters/small plane/drone activities		1			1		2
Total		1			1		2

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Table VI-28: Who could mitigate impact affecting berry gathering activity by community, 2016

Who Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Oil companies		1				1	2
Total		1				1	2

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Table VI-29: What could mitigate impact on berry gathering activity by community, 2016

What Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Be more responsive to hunters needs		1					1
Collaborate among companies to reduce flights over hunting areas; fly higher		1					1
Stay away from drilling in Chukchi Sea / ocean						1	1
Total		1				1	2

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Table VI-30: Month berry gathering impact experienced by community, 2016

Month Impact Experienced	Percent Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
January							
February							
March							
April							
May							
June							
July		100%				100%	67%
August					100%		33%
September							
October							
November							
December							

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1.7 Walrus Hunting

Table VI-31: Type of impact on walrus hunting activity by community, 2016

Type of Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Auditory Disruptions				1			1
Bowhead Migration Impacts			1				1
Difficulty Hunting				1			1
Total			1	1			2

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Table VI-32: Type of industry activity affecting walrus hunting activity by community, 2016

Type of Industry Activity	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Helicopters/small plane/drone activities			1	1			2
Total			1	1			2

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Table VI-33: Who could mitigate impact affecting walrus hunting activity by community, 2016

Who Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
NSB			1				1
Helicopter operators--pilots				1			1
Total			1	1			2

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Table VI-34: What could mitigate impact on walrus hunting activity by community, 2016

What Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Avoid seismic/ drilling/ barge/ overflight activities during hunting seasons				1			1
Collab among comps to reduce flights over hunting areas; fly higher				1			1
Fly higher over harvest areas			1				1
Total			1	1			2

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Table VI-35: Month walrus hunting impact experienced by community, 2016

Month Impact Experienced	Percent Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
January							
February							
March							
April							
May							
June							
July			100%	100%			100%
August				100%			50%
September				100%			50%
October							
November							
December							

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1.8 Plant Gathering

Table VI-36: Type of impact on plant gathering activity by community, 2016

Type of Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Disruption of Wildlife					1		1
Visual Disruptions	1						1
Environmental Impacts [General]	1						1
Total	1				1		2

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Table VI-37: Type of industry activity affecting plant gathering activity by community, 2016

Type of Industry Activity	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Flares/fossil fuel emissions/smoke					1		1
Total					1		1

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Table VI-38: Who could mitigate impact affecting plant gathering activity by community, 2016

Who Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Oil companies					1		1
Total					1		1

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Table VI-39: What could mitigate impact on plant gathering activity by community, 2016

What Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Filter emissions--burn natural gas-not diesel					1		1
Industry should have cultural orientation for employees	1						1
Education for locals	1						1
Total	1				1		2

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Table VI-40: Month plant gathering impact experienced by community, 2016

Month Impact Experienced	Percent Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
January							
February							
March							
April							
May							
June					100%		50%
July	100%				100%		100%
August	100%				100%		100%
September							
October							
November							
December							

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1.9 Hunting Wolf and Wolverine

Table VI-41: Type of impact on hunting wolf and wolverine activity by community, 2016

Type of Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Visual Disruptions	1						1
Ability to Hunt					1		1
Need to Travel Farther					1		1
Total	1				1		2

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Table VI-42: Type of industry activity affecting hunting wolf and wolverine activity by community, 2016

Type of Industry Activity	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Exploration	1						1
Flares/fossil fuel emissions/smoke					1		1
Drill Rigs					1		1
Total	1				1		2

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Table VI-43: Who could mitigate impact affecting hunting wolf and wolverine activity by community, 2016

Who Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Conoco Phillips					1		1
Oil companies	1						1
Total	1				1		2

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Table VI-44: What could mitigate impact on hunting wolf and wolverine activity by community, 2016

What Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Better communication	1						1
Assist with cost of fuel needed to travel farther distance for harvest / lower cost					1		1
Total	1				1		2

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Table VI-45: Month hunting wolf and wolverine impact experienced by community, 2016

Month Impact Experienced	Percent Reported for All Impact Observations - Past 12 Months						
	Utqiagvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
January					100%		50%
February	100%				100%		100%
March					100%		50%
April							
May							
June							
July							
August							
September							
October							
November							
December					100%		50%

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1.10 Difficulty Locating Game

Table VI-46: Type of impact on difficulty locating game by community, 2016

Type of Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Auditory Disruptions	1			1			2
Disruption of Wildlife	1						1
Difficulty Hunting				1			1
Total	1			1			2

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Table VI-47: Type of industry activity affecting difficulty locating game by community, 2016

Type of Industry Activity	Number Reported for All Impact Observations - Past 12 Months						
	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Helicopters/ small plane/ drone activities	1						1
Industry vessels/barges				1			1
Total	1			1			2

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Table VI-48: Who could mitigate impact affecting difficulty locating game by community, 2016

Who Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
City of Barrow/Communities				1			1
Shell	1						1
Boat and Vessel operators				1			1
Total	1			1			2

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Table VI-49: What could mitigate impact on difficulty locating game by community, 2016

What Could Mitigate Impact	Number Reported for All Impact Observations - Past 12 Months						
	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
Be more responsive to hunters needs	1						1
Fly higher over harvest areas	1						1
Better communication				1			1
Total	1			1			2

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Table VI-50: Month difficulty locating game impact experienced by community, 2016

Month Impact Experienced	Percent Reported for All Impact Observations - Past 12 Months						
	Utqiaġvik	Kaktovik	Wainwright	Point Lay	Nuiqsut	Point Hope	Total
January							
February							
March							
April							
May							
June				100%			100%
July				100%			100%
August				100%			100%
September				100%			100%
October							
November							
December							

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The Department of the Interior Mission

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.



The Bureau of Ocean Energy Management

As a bureau of the Department of the Interior, the Bureau of Ocean Energy Management (BOEM) primary responsibilities are to manage the mineral resources located on the Nation's Outer Continental Shelf (OCS) in an environmentally sound and safe manner.

The BOEM Environmental Studies Program

The mission of the Environmental Studies Program (ESP) is to provide the information needed to predict, assess, and manage impacts from offshore energy and marine mineral exploration, development, and production activities on human, marine, and coastal environments.

