APPENDIX C

WHALING CAPTAIN SURVEY RESULTS

APPENDIX C
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C.1 INTRODUCTION

This appendix provides a supplemental narrative regarding the questions addressed in the whaling captain survey and within the Chapter 5 analysis. The data tables that support this narrative can be found in Appendix D. This appendix is structured to allow readers to easily review the results for one or many questions. It is important to note that only key questions were selected for further description and analysis in this appendix; not all questions in the survey are detailed here, so while this section follows the structure of the survey used in the field, some questions will not be addressed due to their relevance (or lack of relevance) to the primary issues analyzed for the study. Questions follow the numeric order of the field survey, which is consistent with similar or identical questions asked in the household survey. The appendix is organized and broken down below:

(Section C.2) Part A: Demographics A.2-A.10
(Section C.3) Part B: Employment and Income B.1-B.4 and C.1-C.5
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Readers can turn to a particular section, cross-reference with the data tables that follow in Appendix D, and cross-reference with the summary analysis (Chapter 5).

Whaling Captain Survey Description

The Whaling Captain Survey was administered only to recognized whaling captains. The survey focused on their knowledge of the organization of whaling activity, the patterns of change in that organization, the changes that are occurring in the village-at-large, and the changes that are occurring as a result of Outer Continental Shelf (OCS) oil and gas-related activities.

Demographic questions about age, length of time in the community, education, gender, shareholder status in village and regional corporations, and family relations were designed, in part, to highlight a captain's experience, understanding, and perspectives on social change and resource development. Variation in participation in subsistence and other traditional activities among groups, as well as over time, were also a key analytical focus.

Captains were asked to list the different resources they harvest. Past studies have indicated that the number of subsistence resources obtained during the year is an indicator of how active the person in a household is hunting, fishing, and whaling. Specific questions were designed to gather information about participation in subsistence activities that relate to consistency and the involvement of whaling crews, families, and households. Individuals were queried about recent trends in whaling-related behavior. Other questions in the survey instruments have not been used in earlier surveys, including questions on costs and expenditures. To decrease the sensitivity of the question and to increase the response rate, each captain was asked to identify a range within which his whaling costs fall.

Whaling captains were asked about cultural changes related to sharing, visiting with friends and relatives, the status of elders, and language. Here the intent was to learn more about change and continuity, and the connections between the community and the captains. The employment questions for captains were secondary to their answers about whaling and subsistence and designed to further our understanding of the links between subsistence, whaling activities, and wage employment.

Finally, whaling captains were asked about specific changes in their community over the last 5 years. They were first asked about their perceptions of the respect they receive in the community first as individuals, and then as leaders of whaling crews. Many of the questions asked for their views on the effects of oil and gas development on culture, Iñupiat/Yupik society, and subsistence. They were also asked for their opinions about the importance of maintaining Iñupiat/Yupik culture, the extent of participation in community festivities, and their expectations about the future of young people. The last question asked whaling captains whether they agree or disagree with the statement: "Is it possible to have oil drilling in off-shore coastal areas and at the same time provide adequate safeguards to protect the environment and allow for important cultural activities?" This is an issue of major contention among all groups in Alaska and generates heated debate in whaling communities.

Surveyors attempted to interview all whaling captains in all four study villages. According to the Alaska Eskimo Whaling Commission (AEWC) there are 55 registered captains in Barrow, 8 in Kaktovik, 8 in Nuiqsut, and 28 in Savoonga. Seventy-eight percent of the captains (77/99) were interviewed. In Barrow, 69% (38/55) participated in the study; 88% (7/8) in Kaktovik; 88% (7/8) in Nuiqsut; and 89% (25/28) in Savoonga (Table 1). Those who did not participate were either out of town, unavailable, or refused.

Table 1. Whaling Captains Surveyed in MMS OCS Study

	a	b	c (= b/a)
Community	Number of Whaling Captains	Captains Surveyed	Percent of WC Participation in Each Community
Barrow	55	38	69%
Kaktovik	8	7	88%
Nuiqsut	8	7	88%
Savoonga	28	25	89%
Total	99	77	78%

C.2 PART A: DEMOGRAPHICS

The median age of whaling captains surveyed in 2004 is 50 to 54. Relatively few captains are under 40 (12% [9/74]) or over 70 (15% [11/74]) years old (Chart 1). The youngest captains on average are in Nuiqsut (age 47) and the oldest are in Kaktovik (age 61). In the control village, the median age of whaling captains in Savoonga is 55 to 59 (Chart 2). Most whaling captains are male, though Savoonga does have an active female whaling captain. Every captain is either Iñupiat (North Slope) or Bering Straits Yupik in Savoonga (Table 2).

Table 2. Ethnicity of Whaling Captains in MMS Household Survey

Ethnic Identification	Barrow	Kaktovik	Nuiqsut	Savoonga
Iñupiat	36	7	7	0
Bering Straits Yupik	0	0	0	25
Subtotal	36	7	7	25
Missing	2	0	0	0
Total	38	7	7	25
Question A.4: How do you identify yourself? Iñupiat, Yupik, other Alaska Native, Non-Alaska Native?				

Chart 1. Age Distribution of All Whaling Captains

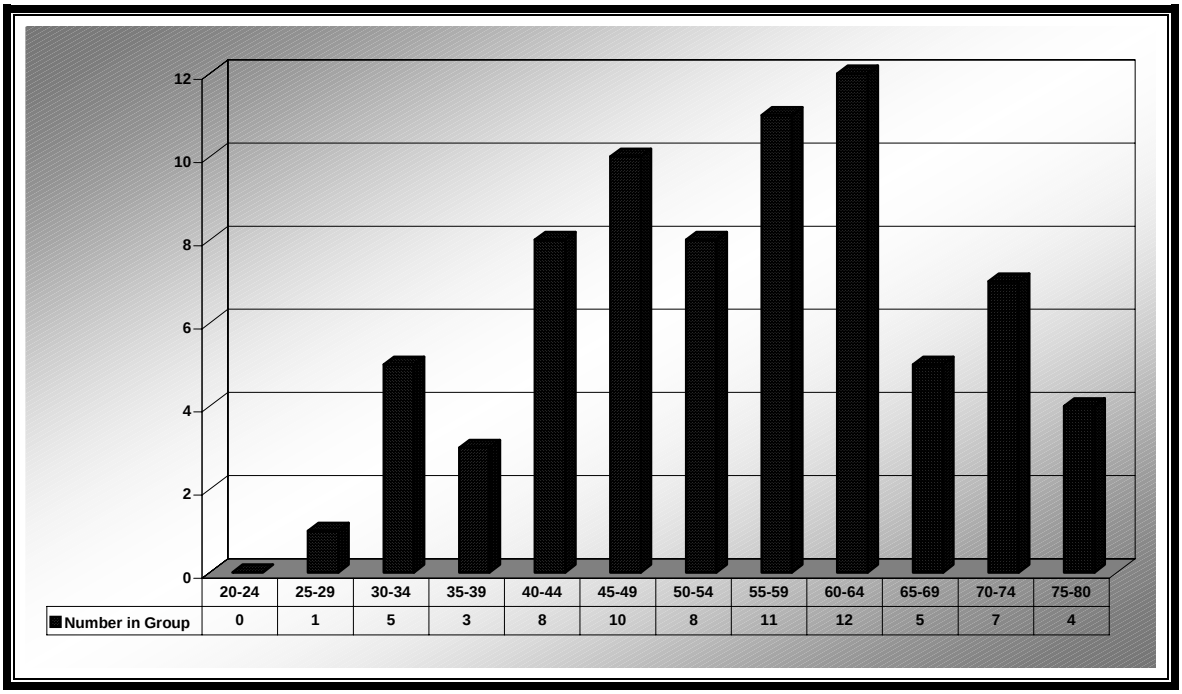
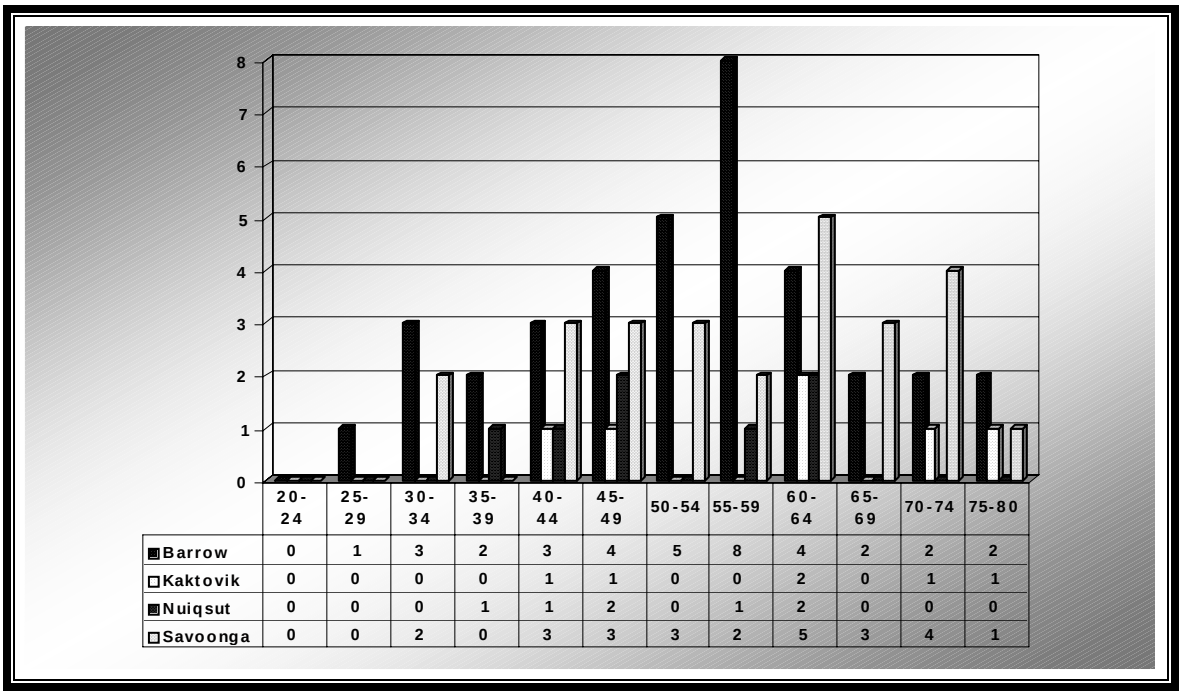


Chart 2. Whaling Captain Age Groups by Community



	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-80
Barrow	0	1	3	2	3	4	5	8	4	2	2	2
Kaktovik	0	0	0	0	1	1	0	0	2	0	1	1
Nuiqsut	0	0	0	1	1	2	0	1	2	0	0	0
Savoonga	0	0	2	0	3	3	3	2	5	3	4	1

Most whaling captains have been community residents their entire lives. Among those responding to this question, 68% (50/73) of responsive whaling captains have a high school or higher education level (Table 3). This compares to 66% (223/339) of the general population interviewed for the household survey (Table A.6 in Appendix B). Most whaling captains are shareholders in their respective village corporations. All the Iñupiat captains are members of the Arctic Slope Regional Corporation (ASRC). Because the residents of St. Lawrence Island opted for a different approach to Alaska Native Claims Settlement Act (ANCSA), most of the whaling captains are not shareholders in the Bering Straits Regional Corporation. Table 4 provides summary information on household size for whaling captains' households for all four study communities.

Table 3. Educational Level of Whaling Captains in All Villages

	a	b*
Education Level	Number	Percent
No Formal Education	3	4%
Elementary School	7	10%
Middle School	13	18%
High School Graduate	28	38%
VOC/Tech Graduate	7	10%
Some College	14	19%
Baccalaureate Degree	1	1%
Subtotal	73	95%
Missing	4	5%
Total	77	100%
Question A.6: What is the highest level of education that each individual has completed?		
*Subtotal, Missing, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).		

Table 4. Household Sizes among Whaling Captains in All Communities

	a	b*	a	b*	a	b*	a	b*
Number of Persons	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Number of Households	Percent of All Households	Number of Households	Percent of All Households	Number of Households	Percent of All Households	Number of Households	Percent of All Households
1-3	7	19%	2	28.5%	0	0%	4	16%
4-5	12	33%	2	28.5%	2	29%	9	36%
6-9+	17	47%	3	43%	5	71%	12	48%
Subtotal	36	95%	7	100%	7	100%	25	100%
No Response	2	5%	0	0%	0	0%	0	0%
Total	38	100%	7	100%	7	100%	25	100%
Question A.1: How many people live in this household?								
*Subtotal, No response, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

C.3 PART B: EMPLOYMENT AND INCOME

Employment information about whaling captains was obtained for all four villages. In Barrow, 67% (20/30) of the captains in our sample (excluding retired captains) are fully employed (Table 5). Among the North Slope Borough (NSB) villages, 61% (25/41) are fully employed. In Savoonga, only 11% (2/18) of nonretired whaling captains are fully employed, while 56% (10/18) have seasonal/temporary employment (Table 5). Of those captains not retired, unemployment in Savoonga is 28% (5/18) compared to the NSB at 20% (8/41). In Savoonga 30% (3/10) stated the reason for unemployment was conflict between employment and subsistence.

Table 5. Employment Status of All Whaling Captains

Employment Status	Barrow	Kaktovik	Nuiqsut	Savoonga	Total
Permanent/Full-time	20	3	2	2	27
Temporary/Seasonal	1	0	2	10	13
Part-time	3	0	0	1	4
Job Sharing	0	1	1	0	2
Unemployed	6	0	2	5	13
Subtotal	30	4	7	18	59
Retired	6	3	0	6	15
Missing/NA	2	0	0	1	3
Total	38	7	7	25	77
Question B.1/C.1: What is the employment status for each person in the household?					

The majority of captains work for public agencies or organizations. Tables 6a, 6b, and 6c show a breakdown by public and private employment of those whaling captains that responded to the survey questions on unemployment; these totals vary from question to question because all whaling captains did not answer all questions. With regard to employment data, the total number of participants who provided information on their employer is less than those who identified themselves as employed; therefore, a detailed comparison of employer types was not feasible. Table 6a does indicate that of the whaling captains in the North Slope villages responding, 60% (21/35) work for the NSB. In Savoonga, the federal government and the tribal council employ most captains.

Table 6a. Public and Private Employment of All Whaling Captains

Type of Employment	Barrow	Kaktovik	Nuiqsut	Savoonga	Total
Federal Government	0	1	2	8	11
Private Firm	0	0	0	1	1
Regional Corporation or Subsidiary	1	0	1	0	2
NSB CIP	1	0	0	0	1
NSB Government	15	4	0	0	19
NSBSD/REAA Schools	0	1	0	0	1
Village Corporation or Subsidiary	2	1	2	0	5
Tribal/RA Council/Native Government	3	0	0	4	7
Regional Non-profit Corporation	0	0	0	1	1
Other (Retired, Homemaker, Student, etc.)	1	0	0	0	1
Total	23	7	5	14	49
Question B.2/C.2: Who does each employed person work for?					

Table 6b. Unemployment during Last 12 Months

Unemployed during Last 12 Months?	Barrow	Kaktovik	Nuiqsut	Savoonga	Total
Yes	6	0	3	8	17
No	20	5	3	16	44
Total	26	5	6	24	61
Question B.3/C.4: Were any adults in the household unemployed in the last 12 months?					

Table 6c. Reasons for Unemployment for All Whaling Captains

Reason for Unemployment	Barrow	Nuiqsut	Savoonga	Total
Does not Want a Job	1	0	1	2
Could Not Get a Job	4	3	4	11
Disability	1	0	0	1
Conflict with Subsistence Activities	0	0	3	3
Other	1	0	2	3
Total	7	3	10	20
Question B.4/C.5: For those household members who are unemployed, what is the reason each person is not employed?				

Whaling captains were gauged as to their level of contentment with their current employment (Table 7). They were asked (1) if they were happy with their job and would not take another job if offered, (2) if they like their job but would change to another position if one were offered, (3) did not like their job and would take another if available, or (4) if they strongly disliked their job and were looking for another. Over 40% (31/77) of those interviewed did not answer the question. Of those who did respond, 61% (28/46) like their job, while 37% (17/46) also like their work but would consider taking another position if one were offered.

Table 7. Whaling Captains' Satisfaction with Current Job

	a	b*
Responses	Persons	Percent of Respondents
Very Happy	28	61%
Like Job, But Would Take Another	17	37%
Do Not Like Job	1	2%
Subtotal	46	100%
Missing/NA	31	40%
Total	77	100%
Question B.1: In terms of your job, which statement is most accurate? You are very happy and would not take another job if offered, you like the job but would take another if offered, you are minimally satisfied with the job, you do not like the job and would take another if available, or you strongly dislike the job and are actively looking for another job?		
*Subtotal, Missing/NA, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).		

Forty-three individuals commented on their employment experiences. Most liked their work because they felt they were contributing to a greater good, were entrusted with responsibility, or were satisfied with the rate of pay. Others simply said they generally enjoyed what they were doing. Those who would consider taking another position spoke of stress or low wages. Those who did not respond to the question explained it did not apply to them as they were retired, unemployed, or worked only part of the year.

Question B.2 – Household income among whaling captain families

Income in Nuiqsut and Kaktovik is below median household earnings in Barrow. The median income of whaling captain households in Barrow is higher than for the general Iñupiat families in Barrow (Tables 8a and 8b). In Savoonga, household incomes across the board for both whaling captains and general population are much lower than whaling captains on the North Slope.

Table 8a. Distribution of Whaling Captain Household Incomes by Village

	a	b*	a	b*	a	b*	a	b*	c
	Barrow		Kaktovik		Nuiqsut		Savoonga		
Household Income	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Total
$15,000 or less	0	0%	0	0%	1	14%	10	40%	11
$15,000-$29,999	4	13%	3	43%	1	14%	3	12%	11
$30,000-$59,999	6	20%	2	29%	1	14%	10	40%	19
$60,000-$99,999	8	27%	1	14%	1	14%	1	4%	11
$100,000-$149,999	4	13%	1	14%	2	29%	0	0%	7
$150,000-$199,999	2	7%	0	0%	0	0%	0	0%	2
$200,000 +	2	7%	0	0%	1	14%	0	0%	3
Don't Know	4	13%	0	0%	0	0%	1	4%	5
Subtotal	30	79%	7	100%	7	100%	25	100%	69
Missing	8	21%	0	0%	0	0%	0	0%	8
Total	38	100%	7	100%	7	100%	25	100%	77
Question B.2: What is your estimate of the annual income of this household?									
*Subtotal, Missing, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).									

Table 8b. Distribution of All Whaling Captain Household Incomes

	a	b*
Household Income	Number of Persons	Percent of Respondents
$15,000 or less	11	17%
$15,000-$29,999	11	17%
$30,000-$59,999	19	30%
$60,000-$99,999	11	17%
$100,000 +	12	19%
Subtotal	64	83%
Don't know/missing	13	17%
Total	77	100%
Question B.2: What is your estimate of the annual income of this household?		
*Subtotal, Don't know/missing, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).		

Question B.3 – Financial improvements

Whaling captains were asked if their household's financial situation over the last 5 years was getting better, getting worse, or staying the same (Table 9). The majority of captains thought their household finances had remained the same over the years. More said conditions had worsened than improved. The highest percentages of negative responses were in Nuiqsut but the numbers there, and in Kaktovik, were small. The most frequent explanations for financial slippage mentioned higher prices, increased expenses, or loss of jobs. Positive reviews hinged on pay raises or employment (Table 10).

Table 9. Changes in All Whaling Captains' Household Financial Situation

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Getting Better	4	12%	1	14%	2	29%	2	9%
Stayed the Same	22	65%	5	71%	2	29%	16	73%
Getting Worse	7	21%	1	14%	3	43%	3	14%
Don't Know	1	3%	0	0%	0	0%	1	5%
Subtotal	34	89%	7	100%	0	100%	22	88%
No Answer	4	11%	0	0%	0	0%	3	12%
Total	38	100%	7	100%	7	100%	25	100%
Question B.3: During the past 5 years, is your household's financial situation getting better, worse, or has it stayed the same?								
*Subtotal, No Answer, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Table 10. General Reasons for Changes in Whaling Captains' Household Financial Situation

Reasons	Barrow	Kaktovik	Nuiqsut	Savoonga	Total
Family/Health Changes	5	2	1	1	9
Prices/Expenses	2	1	2	3	8
Employment	4	1	1	0	6
Wages	1	2	1	0	4
Total	12	6	5	4	27
Question B.3a: Can you explain why your household situation has changed?					

C.4 PART C: PARTICIPATION IN BOWHEAD WHALING: WHALING CREWS TODAY

Captains have considerable experience whaling. They have been part of a whaling crew for most of their lives. The median years of involvement for captains in each community range from 40 in Kaktovik to 27 in Savoonga (Table 11). The median number of years they have been captains of their whaling crews is 18 years in Kaktovik, 14 in Barrow, 10 in Nuiqsut, and 6 in Savoonga (Table 12).

Table 11. How Many Years on Whaling Crew by Community

	a	b*	a	b*	a	b*	a	b*
Years on Whaling Crew	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1-9	2	5%					1	4%
10-19	2	5%			1	14%	2	8%
20-29	6	16%	3	43%	1	14%	12	48%
30-39	9	24%			2	29%	9	36%
40-49	10	26%	2	29%	1	14%	1	4%
50-59	7	18%	2	29%	2	29%		
60-69	1	3%						
70-79	1	3%						
Total	38	100%	7	100%	7	100%	25	100%
Median Years	39		40		37		27	
Question C.1: How many years altogether have you been on a whaling crew?								
*All percentages computed as (a/Total).								

Table 12. Years of Being Captain of Their Own Whaling Crew

	a	b (= a/Total)	a	b (= a/Total)	a	b (= a/Total)	a	b (= a/Total)
Years as Captain	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1-9	12	32%	1	14%	3	43%	14	56%
10-19	15	40%	4	57%	3	43%	5	20%
20-29	3	8%	0	0%	1	14%	6	24%
30-39	6	16%	2	29%	0	0%	0	0%
40-49	0	0%	0	0%	0	0%	0	0%
50-59	1	3%	0	0%	0	0%	0	0%
60-69	1	3%	0	0%	0	0%	0	0%
70-79	0	0%	0	0%	0	0%	0	0%
Total	38	100%	7	100%	7	100%	25	100%
Median Years	14		18		10		6	
Question C.2: How many years have you been captain of your own whaling crew?								

There is a general continuity in the leadership of whaling captains from year to year. A small number of those who were interviewed did not lead a crew last year (3 in Barrow, 1 in Kaktovik, and 2 in Nuiqsut and Savoonga). Most of these captains had not been active for the preceding 5 or 6 years.

Captains were then asked how many people were on their crew and if the number of crewmembers had changed in the last 5 years. The median number of crewmembers reported by

captains in Kaktovik was the largest (11), followed by Barrow (10), Nuiqsut with (8), and Savoonga (5) (Table 13). The captains were then asked if there had been changes in the size of their crews over the last 5 years. The most significant changes were in Barrow (51% [19/37] said yes) and Nuiqsut (86% [6/7]).

Table 13. Size of Whaling Crew

	a	b*	a	b*	a	b*	a	b*
Size of Whaling Crew	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1-5	2	5%	0	0%	0	0%	16	64%
6-10	19	51%	1	14%	7	100%	9	36%
11-15	14	38%	4	57%	0	0%	0	0%
16-20	1	3%	0	0%	0	0%	0	0%
21-25	1	3%	0	0%	0	0%	0	0%
Don't Know	0	0%	2	29%	0	0%	0	0%
Subtotal	37	97%	7	100%	7	100%	25	100%
Missing/Ref	1	3%	0	0%	0	0%	0	0%
Total	38	100%	7	100%	7	100%	25	100%
Median Number	10		11		8		5	
Question C.3: How many people are on your crew now?								
*Subtotal, Missing/Ref, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Table 14. Changes in the Size of Whaling Crews

	a	b*	a	b*	a	b*	a	b*
Changes in the Size of Whaling Crew	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Yes	19	51%	1	14%	6	86%	6	26%
No	18	49%	5	71%	1	14%	16	70%
Don't Know	0	0%	1	14%	0	0%	1	4%
Subtotal	37	97%	7	100%	7	100%	23	92%
Refused/Missing	1	3%	0	0%	0	0%	2	8%
Total	38	100%	7	100%	7	100%	25	100%
Question C.3a: Has this number changed in the last 5 years?								
*Subtotal, Refused/Missing, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

At least half the captains described what changes had occurred among their crews. The responses are difficult to categorize and vary between the communities. Adjustments in Barrow crews were attributed to the passing away of crewmembers, changes in family circumstances, and natural increases and declines in the number of individuals prepared to whale. In Kaktovik the focus was on families and the integral mix of individuals on the whaling boat and supporters in the village and Cross Island. A typical comment from one captain: "I always keep all the crew busy. Those who do not go out on boat (and not everyone can go on the boat) help with other tasks. The crew is composed mostly of family, and cousins, and in-laws." Another individual speaks of the family network of whaling: "Even the kids are part of the crew even if too young to do anything or have responsibilities. At least 4 households and 18 people, maybe more, (are involved)."

In Nuiqsut the emphasis is the shifting pool of available crew. According to one experienced captain: "Number of crew varies each year depending on how many want to go and other variables, e.g., the number of boats. There is never an exact "expected" crew size. The crew size depends on how other crews are going and who asks to go." In Savoonga, the number of crew varied with personal changes, e.g., moving to another community, starting a new job, and individual desire to whale.

Individuals then explained why fluctuations occurred among crews from year to year. In Barrow, family and personal circumstances (e.g., work, illness, death, and marriage) accounted for the loss of crew. Increases in crew size were related to individual choices to work with a particular captain or the division of a large whaling group into two whaling crews. In Nuiqsut problems with gear, the availability of boats, and a captain's decision to whale accounted for the changes in crew sizes. In Savoonga, difficulties in transportation to the south side of the island for whaling were cited due to limitation in the number of snowmobiles and the cost of gasoline to get there. With regard to crew, Savoonga captains have a less formalized system than Barrow with regard to participants in the crew; to wit:

> "Whoever wants to whale are added to the crew." (Savoonga whaling captain)

Question C.4 – Changes in whale landings

Captains were queried whether the number of bowhead whales struck and landed in the last 5 years had increased, remained the same, or decreased over the last 5 years. Barrow is the only community in which a large minority of captains thought there was a decrease in whales struck or landed (Table 15). Twenty-six captains of those responding commented on changes in whaling practices and bowhead whale migration. Increases in strikes and landings were linked to better crews, improvements in strike technology, and the need to increase efficiency due to the International Whaling Commission (IWC) regulations (Table 16).

Table 15. Changes in Whales Struck or Landed in the Last 5 Years

	a	b*	a	b*	a	b*	a	b*
Changes in Whales Struck or Landed Last 5 years	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Increased	6	16%	0	0%	0	0%	8	36%
Remained the Same	17	46%	7	100%	7	100%	7	32%
Decreased	14	38%	0	0%	0	0%	2	9%
Don't Know	0	0%	0	0%	0	0%	5	23%
Subtotal	37	97%	7	100%	7	100%	22	88%
Missing/Refused	1	3%	0	0%	0	0%	3	12%
Total	38	100%	7	100%	7	100%	25	100%
Question C.4: During the past 5 years, has the number of bowhead whales struck and landed by crews in this community increased, remained the same or decreased?								
*Subtotal, Missing/Refused/ and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Table 16. General Reasons for Changes in Bowhead Whales Struck in Last 5 Years

Reasons	Barrow	Kaktovik	Nuiqsut	Savoonga	Totals
Crews/Leadership	5	0	0	1	6
Technological Changes/Quota	2	6	7	1	16
Climate Change/Weather	14	0	0	7	21
Seismic/Development Activities	4	0	0	0	4
Oil/Gas Activities	1	0	0	0	1
Increase (Fall season) from Past	0	0	0	6	6
Total	26	6	7	15	54
Question C.4a: Can you tell what the reasons are for this change?					

> "The new projectile (or bomb) that has been given to us by the AEWC has increased the kill efficiency." (Barrow captain)

For captains who thought there were declines in whales struck and landed, two general explanations were offered: foremost were the alterations in climate and weather patterns:

> "The number fluctuates with ice and weather conditions."

> "(T)he ice to the west was too far out and made the whales go out further in the ocean."

A few others reasoned that development activities led to the "whales going further out due to disturbance from ships doing research in the Bering Sea and Arctic Ocean"; another captain felt "offshore seismic activities and other oil-related activities, ice breakers, and general noise from ships, airplanes, and helicopters," are responsible for declines in successful whale hunts (Table 16).

Captains in Kaktovik and Nuiqsut talked mainly about the IWC quotas on strikes and landings, and how they usually catch their quota every season. A comment from one captain was typical:

> "Various things will change, but not Nuiqsut whalers (who almost) always fill their quota, and the quota limits what they can harvest. Nuiqsut whalers have become better, boats are faster, and so on." (Nuiqsut whaling captain)

Savoonga whalers did notice variations in the behavior of whales because of changing weather and ice conditions, but they were unsure about the effect on numbers. As one person attested:

> "Can't say (if it's increased or decreased) because some years cannot go out due to the weather; weather is the determinant. In the fall there seems to be more whales and migration is earlier." (Savoonga whaling captain)

Another claimed there was a balance:

> "Increased in terms of fall whaling, spring whaling has decreased; weather has played a major role, average 5 to 7 days for spring whaling."

Because there is no whaling in Kaktovik and Nuiqsut in the spring, a larger majority whale in the fall than in the spring, but some individuals join crews in other communities during the spring whaling season (Table 17).

Table 17. Participation in Fall and Spring Whaling in All Communities

	a	b*	a	b*	a	b*	a	b*
Participate in Whaling?	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Fall Whaling								
Yes	30	81%	7	100%	7	100%	24	96%
No	7	19%	0	0%	0	0%	0	0%
Subtotal	37	97%	7	100%	7	100%	24	96%
Missing/Refused	1	3%	0	0%	0	0%	1	4%
Total	38	100%	7	100%	7	100%	25	100%
Spring Whaling								
Yes	35	97%	1	14%	4	57%	22	92%
No	1	3%	6	86%	3	43%	2	8%
Subtotal	36	95%	7	100%	7	100%	24	96%
Missing/Refused	2	5%	0	0%	0	0%	1	4%
Total	38	100%	7	100%	7	100%	25	100%
Question C.5: Do you participate in fall whaling? Question C.6: Do you participate in spring whaling?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Questions C.5a and C.6a - Change in migration paths over the past 5 years

The seasonal distinctions were then used to determine perceived change in the migration habits of the bowhead whale. Individuals were asked if the fall and spring migration path had changed significantly or remained essentially the same over the last 5 years. Table 18 summarizes the responses. Forty-nine percent (37/75) of captains said fall whale migrations had remained the same in the last 5 years, and a majority (51% [38/74]) agreed that spring movements were unchanged.

For fall whale migration, 50% (19/38) of the whaling captains in Barrow reported whale movement had changed significantly in the last 5 years; 28% (2/7) of those interviewed in Kaktovik and 43% (3/7) of those in Nuiqsut also thought there had been important shifts in migration. In contrast, 35% (8/23) of Savoonga's captains thought significant changes in whale migration had occurred, while 52% (12/23) did not see a marked change in whale migrations.

Table 18. Fall and Spring Seasonal Migrations of Bowhead Whales in All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Categories	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Fall Whaling								
Changed Significantly	19	50%	2	29%	3	43%	8	35%
Remained the Same	17	45%	5	71%	3	43%	12	52%
Don't Know	2	5%	0	0%	1	14%	3	13%
Subtotal	38	100%	7	100%	7	100%	23	92%
Missing/Refused	0	0%	0	0%	0	0%	2	8%
Total	38	100%	7	100%	7	100%	25	100%
Spring Whaling								
Changed Significantly	20	54%	0	0%	0	0	6	26%
Remained the Same	17	46%	1	14%	4	57%	16	70%
Don't Know	0	0%	6	86%	3	43%	1	4%
Subtotal	37	97%	7	100%	7	100%	23	92%
Missing/Refused	1	3%	0	0%	0	0%	2	8%
Total	38	100%	7	100%	7	100%	25	100%
Question C.5a: How have the fall migration paths of bowhead whales changed over the past 5 years? Question C.6a: How have the spring migration paths of bowhead whales changed over the past 5 years?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

The explanations for observed changes also differed between communities. The majority of captains in Barrow (54% [14/26]) and Kaktovik/Nuiqsut (62% [8/13]) attributed shifts in fall whale movements to oil and gas development activities (Table 19). The following comment was reiterated by whaling captains in Barrow:

> "Noise disturbance from offshore drilling and construction of islands has caused whales to go further out. They can be pursued with outboard motor boats but only on calm days. These motorboats can also contribute to the noise disturbance." (Barrow captain)

Table 19. Reasons for Changes in Bowhead Fall Migration Patterns

	a	b (= a/Total)	a	b (= a/Total)	a	b (= a/Total)
	Barrow		Kaktovik/Nuiqsut		Savoonga	
Categories	Number	Percent	Number	Percent	Number	Percent
Seismic/Development Activities: Oil & Gas	14	54%	8	62%	0	0%
Climate: Weather & Ice Conditions	6	23%	1	8%	3	18%
General Human Development	2	8%	1	8%	0	0%
Observations without Comment	4	15%	3	23%	14	82%
Total	26	100%	13	100%	17	100%
Question C.5b: Can you tell me all the reasons for changes in their [fall] migration paths?						

Migration routes were reported to change when there are activities east of Cross Island. A Nuiqsut whaling captain reported that one season they had to look for whales 35 miles northwest of Cross Island before they could find any whales, due to oil and gas activities.

Some whaling captains noticed the return of whales to normal routes after industrial activities had stopped.

> "The migration did change when there were seismic crews out in the area, but the last five years it has been okay. Ice conditions have been good (not too much ice) and the only problem has been stormy and foggy weather." (Kaktovik captain)

For the few captains who thought there were changes in whale migration at St. Lawrence Island, individuals specifically stated that they saw bowheads significantly closer to the island than in the past. These observations were less frequent in North Slope villages than in Savoonga (Table 19).

> "Never used to see whales in the fall, started 10 years ago for the first time." (Savoonga whaling captain)

> "When I first started (whaling), there were hardly any whales (near the village), and now there are a lot, never used to see bowheads passing by." (Savoonga whaling captain)

It is only in Barrow and Savoonga that crews whale in both the fall and the spring. Barrow captains have different explanations for bowhead whaling movements in the spring. Changes in weather and ice conditions (Table 20) are claimed to affect the behavior of whales in two ways: migration and timing.

Table 20. Reasons for Changes in Bowhead Spring Migration Patterns

	a	b (= a/Total)	a	b (= a/Total)	a	b (= a/Total)
	Barrow		Kaktovik/Nuiqsut		Savoonga	
Categories	Number	Percent	Number	Percent	Number	Percent
Seismic/Development Activities: Oil & Gas	1	4%	1	25%	0	0%
Climate: Weather & Ice Conditions	11	42%	1	25%	4	29%
General Human Development	5	19%	0	0%	2	14%
Observations without Comment	9	35%	2	50%	8	57%
Total	26	100%	4	100%	14	100%
Question C.6b: Can you tell me all the reasons for changes in their [spring] migration paths?						

> "The whales arrive one week earlier than the normal due date, the width of the route is (also) changing. Normally there is an opening. From Barrow there is a big bubble so the whales have a big open lead where they can go. The whales are more spread out." (Barrow whaling captain)

Savoonga leaders also think climate is critical to understanding migration patterns. Typical comments from Barrow whaling captains include:

> "Ice goes out more quickly now, less whales in the spring." (Barrow whaling captain)

> "…weather – we have to take greater risk, having to hunt in more dangerous weather, more windy conditions." (Barrow whaling captain)

Whaling captains in Barrow blame the use of motors and other technologies (general development) for increasing the difficulties of hunting whales.

> "Outboard motor use has increased in the last six or seven years."
> "Whales are further out due to disturbance by research boats." (Barrow whaling captains)

Barrow whaling captains describe migration as follows:

> "They follow the lead where there is open water. We go way out in open water where it is rough."
>
> "The whales are further offshore more often. The main migration passes by in May, outside the reach of crews. As a result, crews spend more idle days."
>
> "Whales are migrating earlier. The young ones went by earlier."

Similar comments come from Savoonga whalers:

> "The migration pattern is the same but the time they migrate has changed, the whales are migrating very early, one month earlier than before."
>
> "Seems like more are passing on the east; didn't see much this year, but have seen a lot on the east side. Camp is on the south. Migration used to go to the south and west but this is changing."

Captains were questioned about whether they have changed their hunting strategies in order to have a successful whaling season. Table 21 illustrates their response. While Kaktovik captains stand out, 100% stating they have not changed their hunting strategies, Barrow is split at 47% (16/34) with no change, and 57% (4/7) of Nuiqsut whalers have changed their hunting strategies.

Table 21. Changes in Hunting Strategies in All Communities

	a	b*	a	b*	a	b*	a	b*
Have You Had to Change Your Hunting Strategies?	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Yes	17	50%	0	0%	4	57%	10	43%
No	16	47%	7	100%	2	29%	13	57%
Don't Know	1	3%	0	0%	1	14%	0	0%
Subtotal	34	89%	7	100%	7	100%	23	92%
Missing/Refused	4	11%	0	0%	0	0%	2	8%
Total	38	100%	7	100%	7	100%	25	100%
Question C.7: Over the last 5 years, have whalers had to change their hunting strategies in order to be successful?								
*Subtotal, Missing/Refused/ and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

The revisions adopted by a plurality of captains in Barrow, a majority in Nuiqsut, and a substantial minority in Savoonga fell into one of four categories. Foremost were changes in technology.

> "After May 15th, outboard motors are allowed to be used. That is when the big whales start running."

> "(We can) be more efficient in the method of killing whales, weapon improvements."

> "More captains want to be like those in Wainwright and use outboards. I am still trying to use traditional methods, but those methods are being eroded."

Another captain questioned current hunting methods:

> "People are only thinking about chasing whales, but they should have patience. They should use the experience of the past. Motorboats only scare whales." (Barrow whaling captain)

In Savoonga a whaling captain replied:

> "We are using Lund boats; the Lund boats help us a lot, the boats help cut through the young (thin) ice and it helps to avoid wearing out skin boats."

Change in the timing was a second reason mentioned frequently. Barrow whalers identified the ice as thinner, which requires the crew to leave earlier than they used to. Similarly, in Savoonga a leader observed that migration is happening a few weeks earlier than in the past and that crews are going out later than in the last 5 years. A few whalers spoke of the greater distances they had to travel to find whales, reiterating their comment that whaling crews have to go farther out, adding that disruption can require crews to go farther than they otherwise would. A Barrow captain stated that leads are becoming wider, requiring crews to travel farther and to start 2 to 3 weeks earlier than in the past. In Savoonga, one captain stated that migration is farther than it used to be, also requiring crews to travel further. Finally, two Barrow captains pointed to the fact that they had to find new locations to whale:

> "Crews are using motorboats, but what they should be doing is changing the location of their base camps. People are only thinking about chasing whales, but they should have patience. They should use the experience of the past."

Many of the whaling captains provided explanations or observations on changes to whaling. For example, Kaktovik captains in Table 22 identify changes in technology, yet in Table 21, they indicate there has been no change to existing hunting strategies.

Table 22. General Types of Changes in Hunting Strategies in All Communities

	a	b (= a/Total)	a	b (= a/Total)	a	b (= a/Total)	a	b (= a/Total)
Types	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Technological	9	47%	2	100%	1	50%	6	75%
Timing	5	26%	0	0%	0	0%	1	12%
Distances	3	16%	0	0%	1	50%	1	12%
Locations	2	11%	0	0%	0	0%	0	0%
Total	19	100%	2	100%	2	100%	8	100%
Question C.7a: Please explain all the changes that have occurred.								

On the surface, these results seem to conflict. In fact, what this indicates is that captains perceive change in technology to be consistent with their hunting strategies, and that whaling is not a stagnant process but rather, that change is an accepted and welcomed part of whaling. One Kaktovik captain illustrates this point while describing the boat he uses to whale or the Global Positioning System (GPS) system now employed during whaling:

> "No real changes … big fiberglass [boat] with a cabin." (Kaktovik whaling captain)

> "Now [we are] using GPS. Boats can go straight to points where whales had been sighted before. In the old days they only had a compass." (Nuiqsut whaling captain)

> "Increased industry and other activity has modified whale behavior so that this strategy needed to be developed. Needed whale boats with larger motors."

Only one of the Savoonga captains offered a reason why new strategies were necessary:

> "(because of) weather more adjustments will need to be tried. Migration is happening a few weeks earlier that in the past. We'll have to adjust by going earlier. In the fall we are going later and later in the last 5 years. We used to go in November, now we go in December."

A third of the captains explained why the revisions in hunting approaches were necessary (Table 23). Most pointed to climate change, followed by development, expressing concerns that ranged from research ships disrupting whale stock to the fact that whalers use outboard motors, which they have actually been using for some time.

Table 23. Coded Explanations of Why Hunting Strategies Changed

	a	b (= a/Total)	a	b (= a/Total)	a	b (= a/Total)	a	b (= a/Total)
General Responses	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Oil Activities	1	8%	0	0%	0	0%	0	0%
Climate Change	7	58%	2	67%	0	0%	1	20%
Human Development	3	25%	1	33%	3	100%	1	20%
Observation	1	8%	0	0%	0	0%	3	60%
Total	12	100%	3	100%	3	100%	5	100%
Question C.7b: Why have these changes occurred?								

Questions C.8 and C.8a – Have the numbers of whales increased over time?

Whaling captains were asked if their crews have seen more, the same number, or fewer whales then they had expected. Of those that responded, 46% (33/71) had seen more, 37% (27/71) the same, and 10% (7/71) had seen fewer whales than anticipated (Table 24). The majority of the captains who explained their responses of why there were more or less whales were neutral (Table 25). For example, "depends on where crews are located. Those in the west are not seeing as many, while those in the east are seeing more but this is a dangerous area for hunting because of currents."

Table 24. Amount of Whales Seen in Comparison to Expectations

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
More	19	53%	0	0%	3	50%	11	50%
Same	10	28%	7	100%	3	50%	6	27%
Fewer	5	14%	0	0%	0	0%	2	9%
Don't Know	2	5%	0	0%	0	0%	3	25%
Subtotal	36	95%	7	100%	6	86%	22	88%
Missing/Refused	2	5%	0	0%	1	14%	3	12%
Total	38	100%	7	100%	7	100%	25	100%
Question C.8: Over the last 5 years, have whaling crews seen more, the same number, or fewer whales than they expected								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Table 25. Explanations as to Why Change in Number of Whales

	a	b (= a/Total)	a	b (= a/Total)	a	b (= a/Total)	a	b (= a/Total)
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Oil Activities	1	4%	0	0%	2	29%	0	0%
Climate	5	19%	1	20%	2	29%	7	64%
Human Development	7	26%	0	0%	0	0%	0	0%
Observation	14	52%	4	80%	3	43%	4	36%
Total	27	100%	5	100%	7	100%	11	100%
Question C.8a: Please explain all the reasons this change has occurred.								

In Savoonga, where no industrial activity has occurred, 45% (9/20) thought the number of whales were the same or fewer than expected (Table 24). In the North Slope villages, comparatively, 51% (25/49) saw the same or fewer, while 77% (10/13) in Kaktovik and Nuiqsut, combined, experienced the same number of whales as in the past. Barrow captains experienced more whales than they expected, with 53% (19/36), while 14% (5/36) stated they saw fewer whales than expected.

A few mentioned the effects of the IWC quotas or spoke of development. Two captains in Nuiqsut saw a relationship between the number and behavior of whales and industrial activity. The remainder of crew leaders thought the number of whales varied with changes in weather, currents, and ice conditions (climate):

"Pretty much the same but varies from year to year. When there is lots of activity (industry and other activities) the whalers see fewer whales. When there is no activity, then whalers see more whales and they are right on the expected migration path."

Question C.9 – Whaling crews

Two subsequent queries concern changes in the number of crews and the difficulty of recruiting and organizing crews. Whaling captains were asked if the number of whaling crews in the village had increased, remained the same, or decreased. Eighty-four percent (31/37) of captains in Barrow and 71% (17/24) of captains in Savoonga felt there were more crews than in the past. In Kaktovik, 67% (4/6) thought the number of crews remained the same, and in Nuiqsut, 57% (4/7) of the captains said there were fewer crews than in the past (Table 26).

Table 26. Changes in the Number of Whaling Crews in All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Increased	31	84%	0	0%	1	14%	17	71%
Remained the Same	4	11%	4	67%	2	29%	7	29%
Decreased	1	3%	2	33%	4	57%	0	0%
Don't Know	1	3%	0	0%	0	0%	0	0%
Subtotal	37	97%	6	86%	7	100%	24	96%
Missing/Refused	1	3%	1	14%	0	0%	1	4%
Total	38	100%	7	100%	7	100%	25	100%
Question C.9: Over the past 5 years, would you say that the number of whaling crews in this village has increased, remained the same, or decreased?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Reasons for the changes in the number of crews included population fluctuations, growth in Barrow and Savoonga, death of hunters in Kaktovik and Nuiqsut, and economic considerations (Table 27).

Table 27. Changes in Putting a Whaling Crew Together

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Easier	10	27%	1	14%	3	43%	4	17%
About the Same	13	35%	6	86%	4	57%	17	71%
Harder	12	32%	0	0%	0	0%	3	12%
Don't Know	2	5%	0	0%	0	0%	0	0%
Subtotal	37	97%	7	100%	7	100%	24	96%
Missing/Refused	1	3%	0	0%	0	0%	1	4%
Total	38	100%	7	100%	7	100%	25	100%
Question C.10: Over the past 5 years, would you say that putting a crew together has become easier than in the past, about the same, or harder than in the past?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

"… the number of whaling crews is income related. If a captain does have an income, he can't go out." (Nuiqsut whaling captain)

> "There used to be 11 crews in Nuiqsut, but now there are about 5 active crews. Some captains passed away, and no one took over the crew, while others have no motor and no jobs and cannot afford to whale." (Nuiqsut whaling captain)

Family/crew plays a role as well, with 34% (13/38) raising this as a critical factor (Table 28).

Table 28. General Explanations for Changes in Organizing a Whaling Crew

	a	b (= a/Total)	a	b (= a/Total)	a	b (= a/Total)	a	b (= a/Total)
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Explanations	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Easier/Economic Factors	7	33%	0	0	0	0	1	12%
Harder/Economic Factors	4	19%	3	100%	6	100%	4	50%
Easier/Family-Crew Factors	9	43%	0	0%	0	0%	1	12%
Harder/Family-Crew Factors	1	5%	0	0%	0	0%	2	25%
Total	21	100%	3	100%	6	100%	8	100%
Question C.10a: Can you tell me the reasons for this change?								

> "… couldn't say exactly. We split off. The crew used to be his father's crew. He separated because a lot of problems with the way things were done; wanted to keep the family together."

Question C.9b – Have changes had a negative/positive effect on crew recruitment?

In an open-ended question, captains were asked if the change in the number of crews had any positive or negative effects on their ability to recruit and retain crewmembers (Table 27). Of those responding, 79% said there was no effect, and 10% felt the effects were positive. The remainder of the hunters did not answer the question directly.

Questions C.10 and C.10a – Putting crews together

The final question in this section examined whether putting a crew together had become easier, the same, or harder than in the past. Twenty-four percent (18/75) of the captains said it was easier, 53% (40/75) the same, and 20% (15/75) said it was harder (Table 27). Over half the captains explained their response by referring to economic variables.

> "It is easier to acquire equipment because of improved shipping and services and communications (internet). The downside is that money is flowing to outside firms rather than local businesses."

Crew recruitment is kinship based and is not a problem for the whaling captains:

> "… we already learn how to whale; don't have to teach them. Thus there are so many who want to go out and whale that there is no problem."

Questions C.11 and C.12 – Cost of whaling and preparing for the hunt

Subsistence costs for fuel, ammunition, food, and equipment have steadily risen. Over 54% (19/35) of whaling captains in Barrow and a majority in Nuiqsut spend over $10,000 for whaling (Table 29).

Table 29. Annual Costs of Whaling in All Communities

	a	b*	a	b*	a	b*	a	b*
Estimated	Barrow		Kaktovik		Nuiqsut		Savoonga	
Annual Expenses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Less than $5,000	4	11%	1	17%	0	0%	18	82%
$5,001-$7,500	5	14%	3	50%	0	0%	1	5%
$7,501-$9,999	7	20%	1	17%	1	20%	0	0%
$10,000-$12,500	5	14%	0	0%	0	0%	1	5%
$12,501-$15,000	5	14%	0	0%	1	20%	0	0%
$15,001-$17,500	4	4%	0	0%	0	0%	0	0%
Above $17,501	5	14%	1	17%	3	60%	0	0%
Don't Know	0	0%	0	0%	0	0%	2	9%
Subtotal	35	92%	6	86%	5	71%	22	88%
Missing/Refused	3	8%	1	14%	2	29%	3	12%
Total	38	100%	7	100%	7	100%	25	100%
Question C.11: Can you estimate the amount of money you spent in the last year to prepare for a bowhead hunt?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Captains in Savoonga spend considerably less on average, but in proportion to their incomes, their expenditures are significant. Many had to pay more than anticipated (Table 30).

Table 30. Is the Amount Spent on Whaling in the Last Year More, the Same, or Less than Usual?

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
More than Usual	14	41%	2	29%	3	43%	13	62%
About the Same	14	41%	5	71%	2	29%	6	29%
Less than Usual	5	15%	0	0%	2	29%	2	10%
Don't Know	1	3%	0	0%	0	0%	0	0%
Subtotal	34	89%	7	100%	7	100%	21	84%
Missing/Refused	4	11%	0	0%	0	0%	4	16%
Total	38	100%	7	100%	7	100%	25	100%
Question C.12: Is the amount you spent in this last year more, about the same, or less than what you usually expect to pay?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Explanations emphasize higher prices and reduced subsidies. A Barrow captain summed up his views with this sentiment:

> "Fuel prices went sky high. Discounts for food went away this year. One of the organizations behind coordination and sponsorship of the discounts in local stores is not doing well."

Questions C.13, C.13a, and C.14 – Expectations that crews are more, about the same, or less successful

While most individuals (39% [28/72]) think today's whaling conditions will continue (Table 31) and that the next generation will carry on the traditions of their elders (Table 32), a majority are guarded about their predictions. Table 33 shows that 34% (18/53) indicated discomfort with predicting the future.

Table 31. Expectation of Future Bowhead Whaling Success – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
More Successful	6	16%	0	0%	1	14%	7	32%
About the Same	12	32%	5	71%	6	86%	6	27%
Less Successful	2	5%	0	0%	0	0%	1	5%
Don't Know	17	46%	2	29%	0	0%	8	36%
Subtotal	37	97%	7	100%	7	100%	22	88%
Missing	1	3%	0	0%	0	0%	3	12%
Total	38	100%	7	100%	7	100%	25	100%
Question C.13: In the next 5 years, do you expect that crews from this village will be more successful, about the same, or less successful than usual?								
*Subtotal, Missing, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Table 32. Importance of Whaling for the Young in the Future – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
More Important	16	43%	4	57%	2	29%	13	57%
About the Same	14	38%	2	29%	4	57%	9	39%
Less Important	5	14%	0	0%	1	14%	1	4%
Don't Know	2	5%	1	14%	0	0%	0	0%
Subtotal	37	97%	7	100%	7	100%	23	92%
Missing/Refused	1	3%	0	0%	0	0%	2	8%
Total	38	100%	7	100%	7	100%	25	100%
Question C.14: In the next 5 years, do you expect that younger people in (community) will see bowhead whaling as more important, about the same, or less important than it is now?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Table 33. General Reasons for Expectations over Future Whaling Conditions – All Communities

	a	b (=a/Total)	a	b (=a/Total)	a	b (=a/Total)	a	b (=a/Total)
	Barrow		Kaktovik		Nuiqsut		Savoonga	
General Reasons	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Cannot Predict Future	8	30%	5	83%	1	17%	4	29%
Depends on Climate	11	41%	0	0	0	0	4	29%
Depends on Development	7	26%	1	17%	5	83%	3	21%
Depends on Whale Behavior	1	4%	0	0	0	0	3	21%
Total	27	100%	6	100%	6	100%	14	100%
Question C.13a: Can you tell me why?								

In all four villages, whaling captains were consistent with their views that whaling will remain important to the younger generations and be maintained over time. Many thought whaling would become more important in the future, given the ongoing question of stability of the economic base in the communities. The whaling captains identified whaling as a reliable livelihood in comparison to a cash economy, something that will prove to be as important in the future as it has been in the past. Few expressed any anxiety over participation in whaling among the youth.

C.5 PART D: SUBSISTENCE AND CULTURAL ACTIVITIES OTHER THAN WHALING

Almost all of the whaling captains actively hunt, fish, and gather wild foods and resources on the North Slope and St. Lawrence Island. Their households are an integral part of each community's subsistence economy. The survey looks at five aspects of subsistence: (a) resources harvested; (b) participation in subsistence activities; (c) changes in subsistence foods; and (d) the exchange of subsistence resources.

Resources Harvested

Among resources harvested on the North Slope by whaling captains, the percent of whaling captain households that subsistence hunt or gather, by species, is shown below. Besides whales, in general caribou, bearded seal, and geese/ducks are the most important subsistence species. Some whaling captains did not identify bowheads in response to the question, as it was considered a given, so bowhead whale hunting is underrepresented in this question. Percentages offered below are based upon the number of whaling captain respondents who hunt each species divided by the total sample in each village; they offer a general picture of subsistence species (Tables 34 through 41).

Table 34. Land Mammals Harvested by Whaling Captains in Barrow and Savoonga

	a	b*	a	b*
	Barrow		Savoonga	
Land Mammals Hunted	Number	Percent	Number	Percent
Brown Bear	2	5%	1	4%
Caribou	33	87%	3	12%
Moose	2	5%	0	0%
Fox	4	11%	0	0%
Hare	1	3%	0	0%
Lynx	3	8%	0	0%
Squirrel	3	8%	0	0%
Wolf	12	32%	0	0%
Wolverine	13	34%	0	0%
Other	1	3%	0	0%
Question D.1 (B.1a): During the last 12 months, what land mammals have you hunted?				
Percentages provide a rough picture of the level of hunting that occurs among whaling captains. Survey respondents chose multiple categories, based upon their level of participation.				
*All percentages computed as (a/Captains Surveyed) – see Table 1.				

Table 35. Animals Trapped by Whaling Captains in Barrow and Savoonga

	a	b*	a	b*
	Barrow		Savoonga	
Animals Trapped	Number	Percent	Number	Percent
Wolf	1	3%	0	0%
Wolverine	3	8%	0	0%
Question D.1 (B.1b): During the last 12 months, what animals have you trapped?				
Percentages provide a rough picture of the level of hunting that occurs among whaling captains. Survey respondents chose multiple categories, based upon their level of participation.				
*All percentages computed as (a/Captains Surveyed) – see Table 1.				

Table 36. Marine Mammals Harvested by Whaling Captains in Barrow and Savoonga

	a	b*	a	b*
	Barrow		Savoonga	
Marine Mammals Hunted	Number	Percent	Number	Percent
Polar Bear	14	37%	6	24%
Bearded Seal	33	87%	24	96%
Ribbon Seal	7	18%	12	48%
Spotted Seal	18	47%	22	88%
Walrus	29	76%	24	96%
Beluga Whale	12	32%	1	4%
Bowhead Whale	30	79%	23	92%
Gray Whale	0	0%	1	4%
Minke Whale	0	0%	4	16%
Question D.1 (B.1c): During the last 12 months, what marine mammals have you hunted?				
Percentages provide a rough picture of the level of hunting that occurs among whaling captains. Survey respondents chose multiple categories, based upon their level of participation.				
*All percentages computed as (a/Captains Surveyed) – see Table 1.				

Table 37. Fish Harvested by Whaling Captains in Barrow and Savoonga

	a	b*	a	b*
	Barrow		Savoonga	
Fish Harvested	Number	Percent	Number	Percent
Char	9	24%	6	24%
Grayling	24	63%	16	64%
Herring	4	11%	0	0%
Pike	8	21%	1	4%
Salmon	21	53%	12	48%
Sheefish	1	3%	0	0%
Trout	11	29%	12	48%
Whitefish	28	74%	8	32%
Question D.1 (B.1d): During the last 12 months, what fish have you fished for?				
Percentages provide a rough picture of the level of hunting that occurs among whaling captains. Survey respondents chose multiple categories, based upon their level of participation.				
*All percentages computed as (a/Captains Surveyed) – see Table 1.				

Table 38. Birds and Eggs Harvested by Whaling Captains in Barrow and Savoonga

	a	b*	a	b*
	Barrow		Savoonga	
Birds and Eggs Harvested	Number	Percent	Number	Percent
Ducks	31	82%	16	64%
Geese	32	84%	13	52%
Swans	5	13%	1	4%
Cranes	4	11%	2	8%
Shore Birds	2	5%	11	44%
Other Birds	1	3%	0	0%
Duck Eggs	0	0%	0	0%
Geese Eggs	3	8%	1	4%
Shore Bird Eggs	1	3%	6	24%
Other Eggs	2	5%	7	28%
Question D.1 (B.1e): During the last 12 months, what birds have you hunted or what eggs have you collected?				
Percentages provide a rough picture of the level of hunting that occurs among whaling captains. Survey respondents chose multiple categories, based upon their level of participation.				
*All percentages computed as (a/Captains Surveyed) – see Table 1.				

Table 39. Plants, Wood, and Berries Collected by Whaling Captains in Barrow and Savoonga

	a	b*	a	b*
	Barrow		Savoonga	
Plants and Berries Harvested	Number	Percent	Number	Percent
Berries	12	68%	20	80%
Plants	6	16%	13	52%
Wood	1	3%	0	0%
Question D.1 (B.1f): During the last 12 months, what plants have you harvested?				
Percentages provide a rough picture of the level of hunting that occurs among whaling captains. Survey respondents chose multiple categories, based upon their level of participation.				
*All percentages computed as (a/Captains Surveyed) – see Table 1.				

Table 40. Crafts Made or Sold by Whaling Captains in Barrow and Savoonga

	a	b*	a	b*
	Barrow		Savoonga	
Number of Crafts Sold	Number	Percent	Number	Percent
One Craft	13	34%	11	44%
Two Crafts	3	8%	2	8%
Three Crafts	1	3%	1	4%
Four Crafts	1	3%	0	0%
Five Crafts	1	3%	0	0%
Question D.1 (B.1g): During the last 12 months, what crafts have you made or sold?				
Percentages provide a rough picture of the level of hunting that occurs among whaling captains. Survey respondents chose multiple categories, based upon their level of participation.				
*All percentages computed as (a/Captains Surveyed) – see Table 1.				

Table 41. Marine Invertebrates Harvested by Whaling Captains in Barrow and Savoonga

	a	b*	a	b*
	Barrow		Savoonga	
Marine Invertebrates	Number	Percent	Number	Percent
Clams	12	32%	9	36%
Crabs	3	8%	7	28%
Mussels	0	0%	1	4%
Shrimp	1	3%	1	4%
Other Invertebrates	1	3%	1	4%
Question D.1 (B.1h): During the last 12 months, what marine invertebrates have you harvested?				
Percentages provide a rough picture of the level of hunting that occurs among whaling captains. Survey respondents chose multiple categories, based upon their level of participation.				
*All percentages computed as (a/Captains Surveyed) – see Table 1.				

For North Slope villages, the following illustrates the participation pattern by species:

Caribou	87%
Bearded Seals	87%
Geese	84%
Ducks	82%
Walrus	76%
Bowhead Whales	79%
Whitefish	74%
Grayling	63%
Salmon	53%
Berries	68%

For Savoonga, the pattern is somewhat different:

Bearded Seals	96%
Walrus	96%
Bowhead Whales	92%
Spotted Seals	88%
Berries	80%
Grayling	64%
Ducks	64%
Geese	52%
Plants	52%
Shorebirds	44%

In Kaktovik, households hunt for ducks (86%), geese (86%), caribou (71%), bowhead (71%), spotted (71%) and bearded seals (57%), and beluga whales (43%); and fish for char (71%), grayling (43%), and salmon (43%). In Nuiqsut, the more commonly taken resources are caribou (100%); ducks (100%); moose (86%); wolves (86%); wolverines (86%); bearded seals (100%); spotted seals (86%); geese (100%); grayling (100%); whitefish (100%); and char, salmon, and trout (43%) (Tables 42 through 47).

Table 42. Land Mammals Harvested by Whaling Captains in Kaktovik and Nuiqsut

	a	b*	a	b*
	Kaktovik		Nuiqsut	
Land Mammals Hunted	Number	Percent	Number	Percent
Brown Bear	0	0%	1	14%
Caribou	5	71%	7	100%
Moose	1	14%	6	86%
Sheep	2	29%	0	0%
Fox	1	14%	0	0%
Hare	0	0%	0	0%
Lynx	0	0%	1	14%
Squirrel	0	0%	0	0%
Wolf	1	14%	6	86%
Wolverine	2	29%	6	86%
Other	0	0%	0	0%
Question D.1 (B.1a): During the last 12 months, what land mammals have you hunted?				
Percentages provide a rough picture of the level of hunting that occurs among whaling captains. Survey respondents chose multiple categories, based upon their level of participation.				
*All percentages computed as (a/Captains Surveyed) – see Table 1.				

Table 43. Marine Mammals Harvested by Whaling Captains in Kaktovik and Nuiqsut

	a	b*	a	b*
	Kaktovik		Nuiqsut	
Marine Mammals Hunted	Number	Percent	Number	Percent
Polar Bear	1	14%	3	43%
Bearded Seal	4	57%	7	100%
Ribbon Seal	0	0%	0	0%
Spotted Seal	5	71%	6	86%
Walrus	0	0%	0	0%
Beluga Whale	3	43%	1	14%
Bowhead Whale	5	71%	4	57%
Gray Whale	0	0%	0	0%
Minke Whale	0	0%	0	0%
Question D.1 (B.1c): During the last 12 months, what marine mammals have you hunted?				
Percentages provide a rough picture of the level of hunting that occurs among whaling captains. Survey respondents chose multiple categories, based upon their level of participation.				
*All percentages computed as (a/Captains Surveyed) – see Table 1.				

Table 44. Fish Harvested by Whaling Captains in Kaktovik and Nuiqsut

	a	b*	a	b*
	Kaktovik		Nuiqsut	
Fish Harvested	Number	Percent	Number	Percent
Char	5	71%	3	43%
Grayling	3	43%	7	100%
Herring	0	0%	1	14%
Pike	0	0%	2	29%
Salmon	3	43%	3	43%
Sheefish	0	0%	0	0%
Trout	1	14%	3	43%
Whitefish	6	86%	7	100%
Question D.1 (B.1d): During the last 12 months, what fish have you fished for?				
Percentages provide a rough picture of the level of hunting that occurs among whaling captains. Survey respondents chose multiple categories, based upon their level of participation.				
*All percentages computed as (a/Captains Surveyed) – see Table 1.				

Table 45. Birds and Eggs Harvested by Whaling Captains in Kaktovik and Nuiqsut

	a	b*	a	b*
	Kaktovik		Nuiqsut	
Birds and Eggs Harvested	Number	Percent	Number	Percent
Ducks	6	86%	7	100%
Geese	6	86%	7	100%
Swans	0	0%	1	14%
Cranes	0	0%	1	14%
Shore Birds	0	0%	0	0%
Other Birds	0	0%	0	0%
Duck Eggs	0	0%	0	0%
Geese Eggs	0	0%	0	0%
Shore Bird Eggs	0	0%	0	0%
Other Eggs	0	0%	0	0%
Question D.1 (B.1e): During the last 12 months, what birds have you hunted or what eggs have you collected?				
Percentages provide a rough picture of the level of hunting that occurs among whaling captains. Survey respondents chose multiple categories, based upon their level of participation.				
*All percentages computed as (a/Captains Surveyed) – see Table 1.				

Table 46. Plants, Wood Collection, and Berries Harvested by Whaling Captains in Kaktovik and Nuiqsut

	a	b*	a	b*
	Kaktovik		Nuiqsut	
Plants and Berries Harvested	Number	Percent	Number	Percent
Berries	3	43%	6	86%
Plants	1	14%	1	14%
Wood	1	14%	0	0%
Question D.1 (B.1f): During the last 12 months, what plants have you harvested?				
Percentages provide a rough picture of the level of hunting that occurs among whaling captains. Survey respondents chose multiple categories, based upon their level of participation.				
*All percentages computed as (a/Captains Surveyed) – see Table 1.				

Table 47. Crafts Made or Sold by Whaling Captains in Kaktovik and Nuiqsut

	a	b*	a	b*
	Kaktovik		Nuiqsut	
Number of Crafts Sold	Number	Percent	Number	Percent
One Craft	1	14%	6	86%
Two Crafts	0	0%	1	14%
Three Crafts	0	0%	0	0%
Four Crafts	0	0%	0	0%
Five Crafts	0	0%	0	0%
Question D.1 (B.1g): During the last 12 months, what marine invertebrates have you harvested?				
Percentages provide a rough picture of the level of hunting that occurs among whaling captains. Survey respondents chose multiple categories, based upon their level of participation.				
*All percentages computed as (a/Captains Surveyed) – see Table 1.				

Participation in Subsistence Activities: Resources and Subsistence Practices

The intent of this section is to understand the involvement of whaling captains in other hunting, fishing, and gathering activities; who they hunt with; and what changes have occurred, if any.

Table 48 identifies the category of individuals with which whaling captains hunt. Each category is mutually exclusive. Barrow is the only community where respondents distinguished crewmembers from relatives, with regard to land mammal hunting (Table 49). Twenty-one percent (8/38) of the respondents in Barrow stated they hunt with one crewmember, with 45% (17/38) stating they hunt with more than one crewmember. The question distinguishes between crewmembers and relatives, where in most cases, relatives are also crewmembers. It may be reasonable to suspect that in having to choose an answer between "relative" and "crewmember" in the smaller villages, that "relative" covers both grounds.[1]

[1] Due to incomplete data for question D.3 (Land Mammals-Plants) we could not present results on the question of participation change in the hunting of land mammals, marine mammals, birds, and fish, and on the gathering of greens. Results and analysis from these questions are not currently available.

Table 48. Whaling Captains and Participation in Hunting Land Mammals – All Communities

Who Do You Hunt Land Mammals with?	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
Crewmember	8 (21%)	30 (79%)	0 (0%)	7 (100%)	0 (0%)	7 (100%)	0 (0%)	25 (100%)
More Crew	17 (45%)	21 (55%)	0 (0%)	7 (100%)	0 (0%)	7 (100%)	1 (4%)	24 (96%)
Other Members of Household	24 (63%)	14 (37%)	4 (57%)	3 (43%)	7 (100%)	0 (0%)	1 (4%)	24 (96%)
Relative in Another Household	24 (63%)	14 (37%)	3 (43%)	4 (57%)	4 (57%)	3 (43%)	0 (0%)	25 (100%)
Friend in Another Household	6 (16%)	32 (84%)	1 (14%)	6 (86%)	2 (29%)	5 (71%)	0 (0%)	25 (100%)
Others	1 (3%)	37 (97%)	0 (0%)	7 (100%)	0 (0%)	7 (100%)	0 (0%)	25 (100%)
Question D.2: Who do you participate with in each subsistence category?								

Table 49. Other Participants with Which Whaling Captains Hunt Land Mammals – All Communities

Others That Hunt with You?	Barrow	Kaktovik	Nuiqsut	Savoonga
Spouse	1	0	0	0
Children	1	0	0	0
Question D.2a: Who are the others you hunt land mammals with?				

With regard to answering why participation in hunting land mammals has changed (Table 50), captains identified time available and access as concerns:

> "… (my) job reduces time available for subsistence activities."

> "Access to subsistence resources has been reduced because charter plane service is no longer available."

Table 50. Why Has Participation in Hunting Land Mammals Changed? – NSB Only

	a	b (=a/Total)	a	b (=a/Total)	a	b (=a/Total)
	Barrow		Kaktovik		Nuiqsut	
Explanation Responses	Number	Percent	Number	Percent	Number	Percent
Individual Explanations	13	76%	7	100%	5	72%
Animal Behavior	1	6%	0	0%	0	0%
Human Influences	1	6%	0	0%	1	14%
Effects of Oil Development	1	6%	0	0%	0	0%
Observation without Comment	1	6%	0	0%	1	14%
Total	17	100%	7	100%	7	100%
Question D.4: Can you tell me why your participation has changed?						

A minority of captains on the North Slope (from 14% [1/7] in Kaktovik to 39% [15/38] in Barrow) and a majority in Savoonga (64% [16/25]) hunt marine mammals with other whaling crewmembers. Iñupiat usually hunt with household members or other relatives (Table 51).

Table 51. Whale Captains and Participation in Hunting Marine Mammals – All Communities

Who do you Hunt Marine Mammals With?	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
Crewmember	6 (16%)	32 (84%)	1 (14%)	6 (86%)	0 (0%)	7 (100%)	2 (8%)	23 (92%)
More Crew	15 (40%)	23 (60%)	1 (14%)	6 (86%)	0 (0%)	7 (100%)	16 (64%)	9 (36%)
Other Members of Household	18 (47%)	20 (53%)	4 (57%	3 (43%)	7 (100%)	0 (0%)	8 (32%)	17 (68%)
Relative in Another Household	19 (50%)	19 (50%)	5 (71%)	2 (29%)	7 (100%)	0 (0%)	5 (20%)	20 (80%)
Friend in Another Household	4 (11%)	34 (89%)	2 (29%)	5 (71%)	4 (57%)	3 (43%)	3 (12%)	22 (88%)
Others	1 (3%)	37 (97%)	0 (0%)	7 (100%)	1 (14%)	6 (86%)	1 (4%)	24 (96%)
Question D.2: Who do you participate with in each subsistence category?								

A Barrow hunter stated: "Walrus hunting takes longer because the animals stay at the edge of the ice pack and ice is going further out." One Kaktovik individual gave the following response to the question on participation in hunting (Table 52):

> "People go out when they see them (whales) in the area, and not that many are seen. … see less walrus, too far out."

Table 52. Why Has Participation in Hunting Marine Mammals Changed? – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Explanation Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Individual Explanations	4	80%	6	100%	7	100%	5	56%
Environmental Explanations	1	20%	0	0%	0	0%	2	22%
Observation without Comment	0	0%	0	0%	0	0%	2	22%
Total	5	100%	6	100%	7	100%	9	100%
Question D.4: Can you tell me why your participation has changed?								
*All percentages computed as (a/Total).								

Captains seldom fish with other crewmembers except in Barrow (39% [15/38]). Similar to the response given in Table 48, captains identify relatives (Table 53) as the partners they go fishing with; however, since many crewmembers are also relatives, they may be considered inclusive within the relative category. Those who fished mentioned fewer fish, e.g., "No fish in lake," Herring have not hit the beach in a long time"; others spoke of personal changes, e.g., "With spouse or sons or alone – but less than before (health reasons)," or "Son is becoming more experienced in hunting and providing more of the subsistence foods" (Table 54).

Table 53. Whale Captains and Participation in Fishing – All Communities

Who do you Fish With?	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
Crewmember	6 (16%)	32 (84%)	0 (0%)	7 (100%)	0 (0%)	7 (100%)	0 (0%)	25 (100%)
More Crew	15 (39%)	23 (61%)	0 (0%)	7 (100%)	0 (0%)	7 (100%)	4 (16%)	21 (84%)
Other Members of Household	24 (63%)	14 (37%)	6 (86%)	1 (14%)	7 (100%)	0 (0%)	10 (40%)	15 (60%)
Relative in Another Household	20 (53%)	18 (47%)	2 (29)	5 (71%)	5 (71%)	2 (29%)	7 (28%)	18 (72%)
Friend in Another Household	5 (13%)	33 (87%)	0 (0%)	7 (100%)	3 (43%)	4 (57%)	4 (16%)	21 (84%)
Others	0 (0%)	38 (100%)	0 (0%)	7 (100%)	0 (0%)	7 (100%)	2 (8%)	23 (92%)
Question D.2: Who do you participate with in each subsistence category?								

Table 54. Why Has Participation in Fishing Changed? All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Explanation Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Individual Explanations	1	14%	6	100%	7	100%	5	72%
Animal Behavior	2	29%	0	0%	0	0%	0	0%
Human Influences	3	43%	0	0%	0	0%	1	14%
Environmental Explanations	1	14%	0	0%	0	0%	0	0%
Effects of Oil Development	0	0%	0	0%	0	0%	1	14%
Totals	7	100%	6	100%	7	100%	7	100%
Question D.4: Can you tell me why your participation has changed?								
*All percentages computed as (a/Total).								

Twenty-nine percent (11/38) of captains in Barrow and 24% (6/25) in Savoonga hunt birds with crewmembers (Table 55). Most hunt with other relatives. Aside from personal changes (aging, disabilities) and observations, two individuals mentioned a decline in bird species, i.e., "not as many spectacle eiders as before (Savoonga captain)" and "the migration of some bird species has decreased" (Barrow captain); another said he was "[B]usy hunting whales, so did not have enough 'leave time' from job to go birding" (Savoonga captain) (Table 56). In Barrow, whaling captains gather plants (21% [8/38]) with other crewmembers (Table 57). A small percentage (3% [1/38]) in Barrow and a larger percentage (16% [14/25]) in Savoonga gather greens with their wives (Table 58). A captain in Barrow and Kaktovik blamed the weather for a decrease in gathering: "plants don't thrive in cold weather in Pt. Lay," and "(L)ast year they did not go as there was bad weather and the berries never matured." A couple of individuals said they were too busy (Table 59).

Table 55. Whale Captains and Participation in Bird Hunting – All Communities

Who do you Bird Hunt With?	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
Crewmember	6 (16%)	32 (84%)	0 (0%)	7 (100%)	0 (0%)	7 (100%)	1 (4%)	24 (96%)
More Crew	11 (29%)	27 (71%)	0 (0%)	7 (100%)	0 (0%)	7 (100%)	6 (25%)	19 (75%)
Other Members of Household	22 (58%)	16 (42%)	6 (86%)	(1) 14%	7 (100%)	0 (0%)	8 (32%)	17 (68%)
Relative in Another Household	16 (42%)	22 (58%)	2 (29%)	5 (71%)	5 (71%)	2 (29%)	3 (12%)	22 (88%)
Friend in Another Household	4 (10%)	34 (89%)	0 (0%)	7 (100%)	2 (29%)	5 (71%)	2 (8%)	23 (92%)
Others	0 (0%)	7 (100%)	0 (0%)	7 (100%)	0 (0%)	7 (100%)	0 (0%)	7 (100%)
Question D.2: Who do you participate with in each subsistence category?								

Table 56. Why Has Participation in Bird Hunting Changed? All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Explanation Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Individual Explanations	3	50%	0	0%	2	29%	0	0%
Animal Behavior	0	0%	0	0%	1	14%	1	11%
Human Influences	1	17%	0	0%	2	29%	1	11%
Environmental Explanations	0	0%	1	17%	0	0%	0	0%
Observations without Comment	2	33%	5	83%	2	29%	7	78%
Total	6	100%	6	100%	7	100%	9	100%
Question D.4. Can you tell me why your participation has changed?								
*All percentages computed as (a/Total).								

Table 57. Whale Captains and Participation in Gathering Activities – All Communities

Who do you Gather With?	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
Crewmember	0 (0%)	38 (100%)	0 (0%)	7 (100%)	0 (0%)	7 (100%)	0 (0%)	25 (100%)
More Crew	8 (21%)	30 (79%)	0 (0%)	7 (100%)	0 (0%)	7 (100%)	0 (0%)	25 (100%)
Other Members of Household	14 (37%)	24 (63%)	4 (57%)	3 (43%)	4 (57%)	3 (43%)	12 (48%	13 (52%)
Relative in Another Household	8 (21%)	30 (79%)	0 (0%)	7 (100%)	2 (29%)	5 (71%)	1 (4%)	24 (96%)
Friend in Another Household	2 (5%)	36 (95%)	0 (0%)	7 (100%)	0 (0%)	7 (100%)	0 (0%)	25 (100%)
Others	1 (3%)	37 (97%)	0 (0%)	7 (100%)	0 (0%)	7 (100%)	4 (16%)	21 (84%)
Question D.2: Who do you participate with in each subsistence category?								

Table 58. Others You Gather With

	a	b*	a	b*	a	b*	a	b*
Others That You Gather With?	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Wife	1	3%					4	16%
Question D.2a: Who are the others you gather with?								
*All percentages computed as (a/Captains Surveyed) – see Table 1.								

Table 59. Why Has Participation in Gathering Changed? All Communities

	a	b*	a	b*	a	b*	a	b*
Responses	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Human Influences	0	0%	0	0%	0	0%	1	33%
Environmental Explanations	1	50%	1	25%	0	0%	0	0%
Observations without Comment	1	50%	3	75%	4	100%	2	67%
Total	2	100%	4	100%	4	100%	3	100%
Question D.4: Can you tell me why your participation has changed?								
*All percentages computed as (a/Total).								

Changing Subsistence Resources and Practices in All Communities

In Barrow, Kaktovik, and Savoonga a large majority of whaling captains (83% [29/35] in Barrow, 42% [5/12] in Kaktovik/Nuiqsut combined, and 77% [17/22] in Savoonga) believe subsistence resources have stayed the same or increased over the last 5 years (Table 60).

Table 60. Changes in the Amount of Fish and Wildlife Available for Harvest – All Communities

	a	b*	a	b*	a	b*
Responses	Barrow		Nuiqsut/Kaktovik		Savoonga	
	Number	Percent	Number	Percent	Number	Percent
Increased	11	31%	0	0%	7	32%
Stayed the Same	18	51%	5	42%	10	45%
Decreased	4	11%	6	50%	2	9%
Don't Know	2	6%	1	8%	3	14%
Subtotal	35	92%	12	86%	22	88%
Missing/Refused	3	8%	2	14%	3	12%
Total	38	100%	14	100%	25	100%
Question D.5: During the last 5 years, how has the amount of fish and wildlife available for harvest changed?						
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).						

In Kaktovik/Nuiqsut, 50% (6/12) of the leaders think available resources have decreased. Declines were attributed to human influences (Table 61) such as stepped-up oversight of walrus hunting by the U.S. Fish and Wildlife Service (USFWS) in Savoonga, or planes and helicopters that chase the caribou away in Kaktovik. Thirty-two percent of Savoonga captains stated they experienced an increase in fish and wildlife; however, because of Savoonga's perceived increase in involvement by USFWS staff, it is reasonable to assume that respondents conflated the question, and in doing so, they were referring to an "increase" that reflects agency change as much as actual resource change.

Table 61. Explanations for Changes in Fish and Wildlife Available for Harvest

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Human Influences	3	24%	1	17%	1	17%	4	36.5%
Environmental Explanations	3	18%	0	0%	0	0%	2	18%
Effects of Oil Development	4	18%	0	0%	2	33%	1	9%
Observation Only	6	6%	5	83%	3	50%	4	36.5%
Total	16	100%	6	100%	6	100%	11	100%
Question D.5a: Can you tell me why your participation has changed?								
*All percentages computed as (a/Total).								

Savoonga whaling captains interpreted the questions about change in fish and wildlife to mean change in regulatory oversight from the USFWS. This is due to a general concern of Savoonga residents that the increased presence of USFWS agents in Savoonga and USFWS involvement with walrus counts may threaten their ability to hunt walrus. Walrus is the second most important subsistence species on St. Lawrence Island. Climate change was identified by a Savoonga captain as causing change in their access to subsistence resources:

> "Access to the resources is more difficult due to climate change. In the spring, the ice was thick, now there is more open water, so we have to go out too far." (Savoonga captain)

With regard to oil and gas issues, captains in Nuiqsut, in particular, cited development as an obstacle, when describing a change in the availability of fish and wildlife:

> "Decreased somewhat because of cumulative effects of more obstacles composed of the infrastructure of oil and gas facilities. Nuiqsut hunters have to go further out from the village to find animals and it takes more time."

Whaling captains were then asked about their personal harvest of fish and wildlife and whether it had increased, stayed the same, or decreased over the last 5 years. Consistent with their views about changes in available resources, when combining responses 72% (26/36) in Barrow and 74% (17/23) in Savoonga stated their personal harvest had "stayed the same" or "increased." In the small villages, 60% (3/5) in Kaktovik and 14% (1/7) in Nuiqsut stayed the same. Nuiqsut, with 71% (5/7), was the only community where the majority stated their personal harvest had decreased (Table 62).

Individuals were much more pessimistic about the future of subsistence (Table 63). When asked if the amount of resources available for harvest will change in the next 5 years, most said it would stay the same or decrease. Many, who responded "do not know," did so because they chose not to respond to a question that required a prediction of any sort. The only exception was Savoonga where 22% (5/23) of those individuals who expressed an opinion predicted an increase.

Table 62. Personal Harvest of Fish and Wildlife – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Increased	3	8%	0	0%	0	0%	3	13%
Stayed the Same	23	64%	3	60%	1	14%	14	61%
Decreased	10	28%	2	40%	5	71%	6	26%
Don't Know	0	0%	0	0%	1	14%	0	12%
Subtotal	36	95%	5	71%	7	100%	23	92%
Missing/Refused	2	8%	2	29%	0	0%	2	8%
Total	38	100%	7	100%	7	100%	25	100%
Question D.5b: Has your personal harvest of fish and wildlife increased, stayed the same, or decreased over last 5 years?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Table 63. Future Harvests of Fish and Game – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Increased	3	8%	0	0%	0	0%	5	22%
Stayed the Same	12	33%	2	40%	1	14%	8	35%
Decreased	6	16%	0	0%	4	57%	1	4%
Don't Know	15	42%	4	80%	2	29%	9	39%
Subtotal	36	95%	5	71%	7	100%	23	92%
Missing/Refused	2	5%	1	14%	0	0%	2	8%
Total	38	100%	7	100%	7	100%	25	100%
Question D.6: Do you think in 5 years the harvest of fish and wildlife will increase, stay the same, or decrease?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Table 64 is grouped by the categories of explanations why change to subsistence in fish and wildlife might occur. Nuiqsut residents were, predictably, most concerned about the effect of oil and gas development. Examples of these explanations are below.

Table 64. Explanations for Future Changes in Subsistence Harvest of Fish and Wildlife – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Subsistence/Tradition	0	0%	1	17%	0	0%	0	0%
Government Policies	2	15%	0	0%	0	0%	2	25%
Human Development	0	0%	0	0%	0	0%	3	38%
Environmental Explanations	1	8%	0	0%	0	0%	2	25%
Effects of Oil Development	6	46%	0	0%	4	66%	0	0%
Cannot Know Future	0	0%	4	56%	2	34%	1	12%
Animal Behavior	4	31%	1	17%	0	0%	0	0%
Total	13	100%	6	100%	6	100%	8	100%
Question D.6a: Can you tell me why the future of subsistence harvests will increase, stay the same, or decrease?								
*All percentages computed as (a/Total).								

Captains on the North Slope cited resource exploration and development and government interference with subsistence:

> "All the oil company activity has had a negative effect. When they make ice roads they pump water from lakes. This may have a negative effect on fish." (Barrow captain)

> "This is a hard question to answer, with the ongoing oil development and all. With the pipeline going west subsistence harvest may well decrease (animals diverted away, harder to find and reach)." (Nuiqsut captain)

> "The more exploration and production there is in the area, the greater the cumulative impact." (Nuiqsut captain)

Subsistence and Households

Subsistence is an important source of food in whaling captain households. Ninety-seven percent (35/36) of households in Barrow and 100% (25/25) in Savoonga obtain half or more than half of their foods from hunting, fishing, and gathering activities (Table 65). The proportions are lower in Kaktovik and Nuiqsut. This may be partially explained by age: 43% of the respondents in each community are 55 or over (see Chart 2 for age distribution).

Table 65. Amount of Subsistence Foods from Household Hunting, Fishing, and Gathering Activities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
None	1	3%	1	14%	0	0%	0	0%
About a Quarter	0	0%	2	29%	2	29%	0	0%
About Half	13	36%	1	14%	3	43%	5	20%
About Three Quarters	10	28%	2	29%	2	29%	6	24%
Almost All	12	33%	1	14%	0	0%	14	56%
Don't Know	0	0%	0	0%	0	0%	0	0%
Subtotal	36	100%	7	100%	7	100%	25	0%
Missing/Refused	2	5%	0	5%	0	0%	0	0%
Total	38	100%	7	100%	7	100%	25	100%
Question D.7: During the last year, how much of your subsistence foods came from hunting, fishing, and gathering by you or other members of household?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Whaling captain households are an integral part of the sharing network of subsistence foods. According to Table 66, 56% (20/36) of the whaling captains in Barrow obtained about a quarter of their subsistence food from others, while 19% (7/36) get no subsistence food from others. Combining Kaktovik and Nuiqsut, 54% (7/13) of the captains receive a quarter of their subsistence foods from others (Table 66). This is likely due to the fact that whaling captains obtain most of their subsistence food for their household themselves and provide shares of their food to others. This is confirmed in the results found also in Table 67, which shows Barrow

captains as giving away at least one-quarter of their harvest, with 47% stating they had given half away in the last year. In Kaktovik, there was a split with 43% (3/7) of the captains stating they gave away a quarter or less subsistence food and another 43% (3/7) stating they gave away half or more to others. In Nuiqsut, 86% (6/7) give about half their subsistence foods to others. Finally, in Savoonga, 36% (9/25) receive a quarter or less from others, while 56% (14/25) receive half or more from friends and family.

Table 66. Amount of Subsistence Foods Received from Others

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
None	7	19%	0	0%	1	14.25%	3	12%
About a Quarter	20	56%	2	33%	5	71.5%	12	48%
About Half	4	11%	0	0%	1	14.25%	7	28%
About Three Quarters	0	0%	1	17%	0	0%	0	0%
Almost All	4	11%	2	33%	0	0%	1	4%
Don't Know	1	3%	1	17%	0	0%	2	8%
Subtotal	36	95%	6	100%	7	100%	25	100%
Missing/Refused	2	5%	0	0%	0	0%	0	0%
Total	38	100%	6	100%	7	100%	25	100%
Question D.8: During the last year how much of your households subsistence food came from the harvests of others (family and friends in this village or from another village)?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Table 67. Amount of Subsistence Foods Shared with Others

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
None	2	6%	0	0%	0	0%	1	4%
About a Quarter	8	22%	3	43%	1	14%	8	32%
About Half	17	47%	0	0%	5	71%	12	48%
About Three Quarters	6	16%	2	29%	1	14%	1	4%
Almost All	1	3%	1	14%	0	0%	1	4%
Don't Know	2	6%	1	14%	0	0%	2	8%
Subtotal	36	95%	7	100%	7	100%	25	100%
Missing/Refused	2	5%	0	0%	0	0%	0	0%
Total	38	100%	7	100%	7	100%	25	100%
Question D.9: During the last year how much of your subsistence foods did you give away to friends and relatives?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Table 67 demonstrates the amount of subsistence harvest obtained by the respondents and shared with others. Only 4% (3/75) of all whaling captains said they give no subsistence food to others. Sixty-three percent (47/75) of the population of whaling captains in all four villages give away at least half or more of the foods they hunt to family and friends.

Table 68 presents change in trade and barter between individuals and families amongst communities. North Slope residents do not consider or describe sharing as either trade or barter. Though some of the participants recognized the intent of the question related to sharing, others took offense at the suggestion that bartering and trading was synonymous with sharing. In fact,

the concept of trade/barter is antithetical to their values. Therefore, the question and responses presented in Table 68 are problematic for the three villages in the NSB, resulting in a high percentage of refused/missing responses. It may also be the result of conflating subsistence resources with money and labor. This did not appear to be an issue on St. Lawrence Island. For those that did answer the question, over 61% (37/61) in all four villages state that no change has occurred in exchange of goods.

Table 68. Changes in Trade and Barter between Individuals and Families – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Increased	5	21%	0	0%	1	14%	3	13%
Remained the Same	15	63%	5	71%	4	57%	13	56%
Decreased	2	8%	0	0%	0	0%	2	9%
Don't Know	2	8%	2	29%	0	0%	5	22%
Subtotal	24	63%	7	100%	7	100%	23	92%
Missing/Refused	14	37%	0	0%	2	29%	2	8%
Total	38	100%	7	100%	7	100%	25	100%
Question D.10: Has the amount of subsistence resources, money, and labor exchanged through trade and barter between individuals and families Increased, remained the same, or decreased in the last 5 years?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Whaling captains are also socially active in the community. With the exception of Kaktovik, over 50% of captains had between one and five or more meals with friends or relatives 2 days prior to the interview (Table 69). Seventy-nine percent (15/72) of individuals had visited with friends or relatives within a week of the interview (Table 70).

Table 69. Meals with Friends – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
None	14	40%	5	71%	3	43%	7	35%
1 Time	4	11%	2	29%	3	43%	4	20%
2 Time	9	26%	0	0%	0	0%	5	25%
3-4 Times	6	17%	0	0%	0	0%	3	15%
5 or More Times	2	6%	0	0%	1	14%	1	5%
Subtotal	35	92%	7	100%	7	100%	20	80%
Missing/Refused	3	8%	0	0%	0	0%	5	20%
Total	38	100%	7	100%	7	100%	25	100%
Question D.11: In the last two days, how many meals did you eat with a relative in another household?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Table 70. Visiting with Friends and Relatives – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
No Time	7	20%	1	14%	2	29%	5	23%
1-2 Times	8	22%	4	57%	4	57%	10	45%
3-4 Times	21	58%	2	29%	1	14%	7	32%
5 or More Times	0	0%	0	0%	0	0%	0	0%
Subtotal	36	95%	7	100%	7	100%	22	88%
Missing/Refused	2	5%	0	0%	0	0%	3	12%
Total	38	100%	7	100%	7	100%	25	100%
Question D.12: During the last week, how often would you say you visited with friends or relatives?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Elders and Language

A majority of captains thought the influence of elders had remained the same or increased in the preceding 5 years. Twenty-three percent (8/35) in Barrow and 35% (8/23) in Savoonga thought the influence of elders had increased, while close to half in each of the three North Slope villages responded with no change (51% [18/35] Barrow, 43% [3/7] Kaktovik, 43% [3/7] Nuiqsut) in influence. Savoonga is the only community that expressed a change, and this was split between those that saw an increase and those that felt their influence had decreased (Table 71).

Table 71. Influence of Elders

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Increased	8	23%	1	14%	2	29%	8	35%
Stayed the Same	18	51%	3	43%	3	42%	6	26%
Decreased	9	26%	3	43%	2	29%	9	39%
Don't Know	0	0%	0	0%	0	0%	0	0%
Subtotal	35	92%	7	100%	7	100%	23	92%
Missing/Refused	3	8%	0	0%	0	0%	2	8%
Total	38	100%	7	100%	7	100%	25	100%
Question D.13: Over the last 5 years, would you say the influence of elders in the village has increased, stayed the same, or decreased?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Table 72 indicates that 57% (4/7) of Nuiqsut whaling captains believe visiting with elders has significantly decreased. The other two villages are in line with Savoonga, with 29% (7/24) perceiving a decline in visitation.

Table 72. Visiting with Elders

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Increased	2	6%	2	29%	0	0%	2	8%
Stayed the Same	18	50%	3	43%	3	43%	11	46%
Decreased	12	33%	2	29%	4	57%	7	29%
Don't Know	4	11%	0	0%	0	0%	4	17%
Subtotal	36	95%	7	100%	7	100%	24	96%
Missing/Refused	2	5%	0	0%	0	0%	1	4%
Total	38	100%	7	100%	7	100%	25	100%
Question D.14: Over the last 5 years, would you say visiting with elders has increased, stayed the same, or decreased?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Tables 73 and 74 correlate to questions regarding sharing and respect for elders. Table 73 is interesting, in that very few individuals in any of the villages thought sharing with elders had decreased; on the contrary, over 32% (24/74) in all four villages saw an increase in sharing with elders, while the remainder thought it stayed the same. The findings for the NSB villages on respect for elders in Table 74 indicate that captains perceive no change in respect for elders in recent years, while 57% (4/7) of Nuiqsut captains saw an increase in respect for elders. In Savoonga, 46% (11/24) of the captains saw no change, while 42% (10/24) indicated respect for elders has decreased.

Table 73. Sharing with Elders

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Increased	12	33%	2	29%	3	43%	7	29%
Stayed the Same	22	61%	5	71%	4	57%	14	58%
Decreased	1	3%	0	0%	0	0%	2	8%
Don't Know	1	3%	0	0%	0	0%	1	4%
Subtotal	36	95%	7	100%	7	100%	24	96%
Missing/Refused	2	5%	0	0%	0	0%	1	4%
Total	38	100%	7	100%	7	100%	25	100%
Question D.15: Over the last 5 years, would you say sharing with elders has increased, stayed the same, or decreased?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Table 74. Respect for Elders

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Increased	10	26%	2	29%	4	57%	3	12%
Stayed the Same	17	47%	5	71%	2	29%	11	44%
Decreased	8	22%	0	0%	1	14%	10	40%
Don't Know	1	3%	0	0%	0	0%	0	0%
Subtotal	38	95%	7	100%	7	100%	24	96%
Missing/Refused	2	5%	0	0%	0	0%	1	4%
Total	38	100%	7	100%	7	100%	25	100%
Question D.16: Over the last 5 years, has respect for elders in this community increased, stayed the same, or decreased?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Language

The majority of captains' households in Barrow speak both Iñupiaq and English, whereas in Nuiqsut English is the predominant language. In Savoonga, 40% (10/25) of the households speak Yupik (Table 75). Eighty-two percent (31/38) of the captains in Barrow are fluent in Iñupiaq, and 92% (23/25) of the captains in Savoonga are fluent in Yupik (Table 76), while 100% of the whaling captains in Nuiqsut and Kaktovik are fluent in both English and Iñupiaq. Many are worried about the future of their aboriginal languages. When asked whether use of their indigenous language will increase, stay the same, or decrease in the coming years, 43% (32/74) in all combined villages of respondents expressing an opinion thought the use of their native language would decrease (Table 77).

Table 75. Language Use in the Household – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Questions	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Iñupiaq Mostly Spoken	7	18%	3	43%	0	0%	0	0%
Yupik Mostly Spoken	0	0%	0	0%	0	0%	10	40%
Both English and Iñupiaq/ Yupik Spoken	21	55%	1	14%	2	29%	11	44%
English Mostly Spoken	4	11%	3	43%	5	71%	1	4%
Other	6	16%	0	0%	0	0%	3	12%
Total	38	100%	7	100%	7	100%	25	100%
Question D.17: Which of the following best describes the use of language in your home?								
*All percentages computed as (a/Total).								

Table 76. Ability to Speak and Read Languages – All Communities

	a*	b**	a*	b**	a*	b**	a*	b**
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Categories	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Fluency in Iñupiaq	31	82%	7	100%	7	100%	2	8%
Less Fluent Iñupiaq	4	11%	0	0%	0	0%	0	0%
Fluency in Yupik	0	0%	0	0%	0	0%	23	92%
Fluency in English	27	71%	7	100%	7	100%	19	76%
Less Fluent English	5	13%	0	0%	0	0%	2	8%
Can Read Iñupiaq	22	58%	7	100%	6	100%	1	4%
Can Read Yupik	0	0%	0	0%	0	0%	9	36%
Can Read English	38	100%	7	100%	0	0%	16	64%
Fluency In Other Language	1	3%	0	0%	7	100%	0	0%
Less Fluency In Other Language	1	3%	0	0%	0	0%	0	0%
Question D.18: What languages can each person speak? Iñupiaq, Yupik, English, other?								
*Due to bi- and multi-lingualism, each answer is mutually exclusive of the other; thus multiple categories could have same totals. **All percentages computed as (a/Captains Surveyed) – see Table 1.								

Table 77. Future of Indigenous Language – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Increase	7	19%	2	29%	2	29%	4	17%
Stayed the Same	5	14%	1	14%	1	14%	5	21%
Decrease	14	39%	4	57%	4	57%	10	42%
Don't Know/No response	10	28%	0	0%	0	0%	5	21%
Subtotal	36	95%	7	100%	7	100%	24	96%
Missing/Refused	2	5%	0	0%	0	0%	1	4%
Total	38	100%	7	100%	7	100%	25	100%
Question D.19 (Question D.21 in Access database): Do you think the use of Iñupiaq/Bering Straits Yupik in this community will increase, stay the same, or decrease over the next few years? Can you explain why?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

The whaling captains' explanations for their views on the future of the language fall loosely into four groups: first, the observation of people speaking more English than the native language; second, the influence of school and technology (television); third, use of language in everyday life; and fourth, use of language in traditional activities and by elders. Whaling captains in the control village of Savoonga set the stage for their responses:

> "A lot of people speak English, mostly." (Savoonga captain)
>
> "Young people are not growing up with it, too many people in the household speak English." (Barrow captain)
>
> "Young kids are speaking English now." (Savoonga captain)
>
> "Everyone is speaking English. Too Much." (Barrow captain)
>
> "English is killing our language." (Barrow captain)
>
> "The kids speak fluent English, but they hardly use certain words in Yupik." (Savoonga captain)

Many point to schools and technology as either inimical to the existence of Iñupiaq or Yupik, or alternatively, supportive of their continued use:

> "Computers and TV are spoiling the use of Iñupiaq language. I blame the schools where everything is taught in English by outsiders." (Barrow captain)
>
> "TV and that stuff – we are being westernized faster than we can say what is going on. I want to be Iñupiat, but outside influences are pretty strong, and there are too many easy things to do." (Nuiqsut captain)
>
> "Hopefully it [use of language] will increase with the teaching of Iñupiaq in school – can no longer rely on it being spoken in households." (Barrow captain)

The most common reasons cited for the continuity of the native language pointed to use in local traditions (such as whaling) and use of the language by elders. Traditions, families, and elders are very important influences for many. Use during traditional practices, such as hunting, was particularly critical to maintaining certain words and phrases, coupled with the fact that no English equivalent exists for those words or phrases to adequately convey the same meaning, traditional activities tend to reinforce limited use of the language, and vice versa.

> "The use of Iñupiaq during hunting keeps the language alive, it is more useful than English." (Barrow captain)

> "The knowledge itself (of language) comes with the use of language." (Savoonga captain)

A few see a chasm between generations and express concern that there is a lack of communication between youth and elders. Table 78 categorizes the whaling captains' ideas about the future of Iñupiaq and Yupik languages.

Table 78. Future of Iñupiaq and Yupik: Perspectives of Whaling Captains – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Categories	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Observations	11	48%	1	14%	0	0%	4	36%
Schools/Technology	6	26%	1	14%	1	17%	2	18%
Language Use	2	9%	4	57%	4	67%	4	36%
Tradition/Elders	4	17%	1	14%	1	17%	1	9%
Total	23	100%	7	100%	6	100%	11	100%
Question D.19a: Can you explain why these changes in language usage may occur?								
*All percentages computed as (a/Total).								

C.6 PART E: COMMUNITY PERCEPTIONS

Part E of the survey asked detailed questions to ascertain the whaling captains' perceptions on a variety of issues ranging from questions on the value or place in society that whaling captains hold, to the importance of culture, and the effects and future of development in their communities. For the purposes of this study, questions that address most directly their attitudes toward OCS development are found here.

The first two questions dealt with the respect accorded to the whaling captain interviewed. With the exception of one individual, every whaling captain in the North Slope thought the respect they receive had either stayed the same (63% [31/49] of those answering) or increased (35% [17/49]). In Savoonga, whaling captains expressed a decline in respect (29% [7/24]) more often than an increase (17% [4/24]) (Table 79).

Table 79. Respect for Whaling Captains from Others

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Increase	13	37%	2	29%	2	29%	4	17%
Stayed the Same	21	60%	5	71%	5	71%	11	46%
Decrease	1	3%	0	0%	0	0%	7	29%
Don't Know	0	0%	0	0%	0	0%	2	8%
Subtotal	35	92%	7	100%	7	100%	24	96%
Missing/Refused	3	8%	0	0%	0	0%	1	4%
Total	38	100%	7	100%	7	100%	25	100%
Question E.1a: In the last 5 years do you think the amount of respect you get from others has increased, stayed the same, or decreased?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Whaling captains on the Arctic Slope spoke of individual accomplishment, service to the community, or experience as reasons for why they were held in high regard. When explaining their answers to the open-ended question, six whaling captains in Savoonga opined that the youth had less respect for them and their traditions but did not provide an explanation.

Table 80 moves the question from the personal to a broader, communitywide perspective on the question of respect. Interestingly, the numbers do not change significantly, with the exception of Savoonga. In Savoonga, 29% (7/24) of the whaling captains felt a personal decrease in the perceived stature and respect afforded to themselves; however, communitywide, 75% (18/24) stated the communal respect for whaling captains had stayed the same, with no decrease. Only four individuals in Barrow and Kaktovik (9.5% [4/42]) cited a decrease in communitywide respect; the majority in all four communities said respect was the same, with 25% (18/73) stating respect has increased.

Table 80. Community Respect for Whaling Captains – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Increase	10	29%	1	14%	3	43%	4	17%
Stayed the Same	22	63%	5	71%	4	57%	18	75%
Decreased	3	8%	1	14%	0	0%	0	0%
Don't Know	0	0%	0	0%	0	0%	2	8%
Subtotal	35	92%	7	100%	7	100%	24	96%
Missing/Refused	3	8%	0	0%	0	0%	1	4%
Total	38	100%	7	100%	7	100%	25	100%
Question E.1b: In the last 5 years, do you think the amount of respect whaling captains generally get from people in this community has increased, stayed the same, or decreased?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

The comments below are indicative of the general view toward whaling captains generally, and the role whaling captains play, in particular, in these communities:

> "Respect for leaders is ingrained in us." (Barrow captain)
>
> "Captains are considered role models." (Barrow captain)
>
> "They (captains) are the people who provide maktak and meat." (Barrow captain)

Change and Development

The remaining questions explore the effects of development and change. Whaling captains were asked about increases in opportunities for employment. Table 81 displays responses to the question: "In the last 5 years, has the opportunity for good jobs increased, stayed the same, or decreased." Interestingly, over 78% (38/49) of the whaling captains in the NSB thought job prospects had decreased in the Arctic; Savoonga captains saw increases (52% [12/23]) or no change (39% [9/23]). Individuals in the Arctic supported their choices by noting the decline in NSB revenues (64% in Barrow), the decline of the economy or oil production (14%), or by stating the absence of full-time employment (22%). In Savoonga, a third of the captains spoke of the availability of seasonal or odd jobs (63% as their primary employment), local or family hire (25%), or a teacher/contractor position (12%).

Table 81. Opportunities for Good Jobs in All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Increased	1	3%	0	0%	2	29%	12	52%
Stayed the Same	2	6%	3	43%	0	0%	9	39%
Decreased	30	86%	3	43%	5	71%	1	4%
Don't Know	2	6%	1	14%	0	0%	1	4%
Subtotal	35	92%	7	0%	7	100%	23	92%
Missing/Refused	3	8%	0	0%	0	0%	2	8%
Total	38	100%	7	100%	7	100%	25	100%
Question E.1c: In the last 5 years, have opportunities for good jobs increased, stayed the same, or decreased?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

A central query is whether the impact of oil and gas development on community activities such as traditional gatherings, subsistence, or on speaking Iñupiaq has been positive, neutral, or negative. Table 82 reveals some of the answers. A plurality of captains on the North Slope thought the effects of resource extraction were neutral (36% [16/45]) while 31% (14/45) felt the impact was negative. An equal number said they did not know or refused to answer. Savoonga totals are not comparable. Based upon comments from whaling captains in Savoonga, their positive and neutral responses to this question referred to optimism that oil and gas development would result in reduced costs for fuel for the island, and for gas necessary to operate the snow machines and boats. Predictably, Nuiqsut captains gave a neutral response (66% [4/6]),with only one indicating a positive and negative response (17% [1/6]); while Kaktovik captains split, with 43% (3/7) stating a negative or neutral impact.

Table 82. Impact of Oil and Gas Development – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Positive	7	22%	0	0%	1	17%	4	19%
Neutral	9	28%	3	43%	4	66%	13	62%
Negative	10	31%	3	43%	1	17%	1	5%
Don't Know	6	19%	1	14%	0	0%	3	14%
Subtotal	32	84%	7	100%	6	86%	21	84%
Missing/Refused	6	16%	0	0%	1	14%	4	16%
Total	38	100%	7	100%	7	100%	25	100%
Question E.1d: In the last 5 years, has the impact of oil and gas development on aspects of the community such as Iñupiaq Yupik language, traditional activities, and subsistence, been positive, neutral, or negative?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

The testimony of whaling captains in Barrow, Kaktovik, and Nuiqsut ranges from critical to mixed. Individuals that think the energy industry has had negative impacts have expressed concern over the continuity of subsistence hunting:

> "It is making people go out further to hunt."
>
> "Long-term negative effects on wildlife."
>
> "More helicopters are disturbing wildlife."

Most of the statements in Kaktovik and Nuiqsut and a third in Barrow felt industrialization had been a mix of improvements and misfortune:

> "Mixed impacts. The positive impacts include tax revenues, low-cost housing, inexpensive fuel, etc. The negative effects include loss of subsistence activities due to wildlife disturbances and drug and alcohol problems for which there seem to be no solution." (Barrow captain)
>
> "Positive – it brought us into the 21st century. Negative – here we are with its ills. Drugs and alcohol are a problem." (Barrow captain)

Captains in Nuiqsut and Kaktovik were more reticent to give a direct answer:

> "A balance of positive and negative, but do not want to detail any of it." (Nuiqsut captain)
>
> "Development has both positive and negative effects, but don't feel choices offered [in the survey questions] reflect my views." (Kaktovik captain)
>
> "Communication is good – villagers and industry are working together." (Barrow captains)

Native and Non-Native Interpersonal Relationships

Table 83 displays responses to a question addressing improvements in relationship between native and non-Native members of the community. A majority of whaling captains thought relations between Iñupiat/Yupik peoples and non-Natives had either stayed the same or had improved over time. Eleven percent (7/66) felt relations had worsened and 14% (11/77) did not respond. Intermarriage and better communication were the most common explanations by captains in Barrow, the most ethnically heterogeneous of the four communities. In the smaller villages, individuals had little to say beyond their responses to the survey question.

Table 83. Relations between Iñupiat/Bering Straits Yupik and Others – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Improved	14	44%	2	29%	1	20%	6	27%
Stayed the Same	14	44%	4	57%	3	60%	12	55%
Worsened	2	6%	1	14%	1	20%	3	14%
Don't Know	2	6%	0	0%	0	0%	1	4%
Subtotal	32	84%	7	100%	5	71%	22	88%
Missing/Refused	6	16%	0	0%	2	29%	3	12%
Total	38	100%	7	100%	7	100%	25	100%
Question E.1e: In the last 5 years, have relations between Iñupiat/Bering Straits Yupik and Non-Iñupiat/non-Yupik improved, stayed the same, or worsened?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Participation in Traditional Activities among the Youth

The next three questions focus on Iñupiat/Yupik tradition, cultural activities, and the acculturation of young people. The questions were meant to gauge the perception and level of concern among adults on the participation of the younger generation in traditional activities. Whaling captains were first asked if maintaining Iñupiat or Bering Straits Yupik culture was important, neither important or unimportant, or unimportant? This question is much like asking priests if they support Catholicism; the captains responded with a unanimous (except for one neutral response) endorsement of their cultures. As two captains said:

"(being) Eskimo is our way of life, trying to carry on what our grandparents do, self-esteem, know who we are." (Savoonga whaling captain)

"It is who I am. If culture changes, we would not survive." (Barrow whaling captain)

The next two queries specifically asked about participation of young people in Nalukataq, using this festivity as a proxy for participating in other similar cultural activities. Captains in North Slope communities are pleased over the participation of young people in Iñupiat festivities, dancing, and other activities. Of those responding in the three North Slope villages, 62% (29/47) thought the involvement of the young was growing and 30% (14/47) did not see a change from the past (Table 84). This is consistent with responses in Savoonga. When asked why, captains identified interest, motivation to participate in whaling, and increased educational efforts:

"Elders are talking more to younger people, teaching them cultural activities. Young people want to learn more about the Iñupiat way of life. The schools are having a positive effect on getting young people interested in cultural activities." (Barrow whaling captain)

Table 84. Youth Involvement in Cultural Activities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Growing	21	64%	2	29%	6	86%	5	22%
Staying the Same	9	27%	4	57%	1	14%	12	52%
Diminishing	2	6%	1	14%	0	0%	6	26%
Don't Know	1	3%	0	0%	0	0%	0	0%
Subtotal	33	87%	7	100%	7	100%	23	92%
Missing/Refused	5	13%	0	0%	0	0%	2	8%
Total	38	100%	7	100%	7	100%	25	100%
Question E.1g: Do you think the participation of young people in cultural activities like Naluqataq is growing, staying the same, or diminishing?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

The positive views about the youth carry over to what captains expect in the future. Forty-one percent (20/45) think the youth will become more active in Iñupiat culture in the next 5 years, and 51% (25/49) say it will be the same as the present (Table 85). Interest, motivation, and education were again behind this optimism along with a concern that will lead to increased subsistence activity. Barrow whaling captains stated:

"There will be more subsistence hunting with the downturn in the economy."

"People who moved out of Barrow, or were adopted by outside families are moving back to discover who they are."

Table 85. Future Youth Involvement in Cultural Activities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
More Than Now	16	46%	0	0%	4	57%	6	28.5%
About the Same	17	48%	5	71%	3	43%	6	28.5%
Less Than Now	1	3%	1	14%	0	0%	4	19%
Don't Know	1	3%	1	14%	0	0%	5	24%
Subtotal	35	92%	7	100%	7	100%	21	84%
Missing/Refused	3	8%	0	0%	0	0%	4	16%
Total	38	100%	7	100%	7	100%	25	100%
Question E.1h: In the next five years, do you expect young people will be involved in cultural activities like Naluqataq more than they do now, about the same, or less than they do now?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Captains in Savoonga are more concerned with the involvement of the young in Yupik culture. More think participation is declining (26% [6/23]) than growing (22% [5/23]). Fifty-two percent (12/23) think it is the same and 8% (2/25) did not respond. One individual offered an explanation:

> "At school, [they] starting to stop teaching Yupik. There are no more carving teachers, no boat making teachers."

In looking to the future, Table 85 demonstrates more hesitancy in predicting what the youth will do in 5 years; 36% (9/25) did not know, were missing, or refused to answer the question. As with previous questions that require predictive answers, the high percentage of missing/refused/ don't know indicates a reluctance to answer predictive questions about how things will be in the future, rather than it being reflective of the issue at hand. Given the sample of those who responded to the answer with anything other than a "don't know" answer, 90% (57/63) state that youth involvement will be greater or the same as it is today. Only 10% (6/63) feel there will be a decline. The few that discuss their choices (five captains) speak of hope, or point to the value of community activities such as youth groups and Native dancing.

Oil and Gas Activity

The next two questions cover whaling captain opinions about offshore and onshore oil and gas development. The first question simply asked if offshore oil and gas development in the Beaufort Sea or Bering Straits is good, equally good and bad, or bad (Table 86). Kaktovik captains commented that development has not been good for the community, while another acknowledged that oil and gas have helped the NSB and the village of Kaktovik, but he is nonetheless completely opposed to drilling in the ocean. In Barrow, 21 whaling captains commented that oil and gas exploration and production had negative effects on whaling and wildlife and were dubious about the ability of the latest technology to contain an oil spill.

Table 86. Whaling Captain Perspectives of Offshore Oil and Gas Development – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Good	1	3%	0	0%	0	0%	2	9%
Equally Bad and Good	8	23%	1	14%	0	0%	15	65%
Bad	22	65%	6	86%	7	100%	5	22%
Don't Know	3	9%	0	0%	0	0%	1	4%
Subtotal	34	89%	7	100%	7	100%	23	92%
Missing/Refused	4	11%	0	0%	0	0%	2	8%
Total	38	100%	7	100%	7	100%	25	100%
Question E.1i: Do you think offshore oil and gas development in the Beaufort Sea of the Bering Straits is good, equally good and bad, or bad?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Representative views from Barrow include:

> "Possible oil spill effects wildlife. It is our garden out there."
>
> "Ice conditions are different offshore. Mother Nature is unpredictable. No technology can stop the weather and ice movement."
>
> "If there is an oil spill, there will be an impact on subsistence, no clean up ability."
>
> "Oil rigs create a lot of noise. There have been impact studies which point to migration being diverted further out, away from the shore. We would have to go out further to harvest bowhead whales and in doing so, are risking our lives to hunt the whale."
>
> "They have not demonstrated any ability to prevent or clean up accidental discharges."

A few whaling captains listed positive and negative aspects of oil and gas exploration and development:

> "Bad – current technology is incapable of handling an oil spill; good – brought in industry, infrastructure, and taxes."
>
> "Bad – noise from seismic activities has a negative effect on the migration of wildlife. Good – provides job opportunities."
>
> "Good – money-wise, provides jobs and income. Bad – villagers have been long opposed because it fringes on migration routes."
>
> "Good – new equipment is being used; bad – the equipment is untested."

Captains in the control village of Savoonga, where no imminent threat of development exists, were understandably more tolerant, with 65% (15/23) responding that OCS development is equally good and bad. Half of those who commented considered the economic repercussions: Some in Savoonga felt development might be good, if done on land, while the ocean was too risky, and cited the fact that they are in the middle of the whale migration routes, and any development would affect their food chain. They did acknowledge, at the same time, that development could help the island financially. The rest of the captains worried about the effects of development on subsistence hunting and fishing, particularly the migration of marine mammals:

> "… good for the economy. If they use St. Lawrence Island as a staging area, we would get royalties. There are miles that are owned by the island. If there was cheap natural gas, that would be good. Bad because it will drive all the marine mammals out."

> "If there is a spill, it will affect the mammals, maybe kill them. The whales might bypass the island and we'll never see them again. When there are noises, the mammals will stay away."

Tables 87 and 88 provide responses to questions addressing how villagers view their ability to influence onshore and offshore development. Fifty-six percent (19/34) of the captains in Barrow, 100% (7/7) in Kaktovik, 57% (4/7) in Nuiqsut, and 38% (9/24) in Savoonga thought their communities could affect decisions about oil and gas exploration and production (Table 87). Only Savoonga had a majority of individuals with no opinion, which is consistent with our expectation, given the lack of oil and gas exploration and development in the vicinity of their village. Interestingly, 29% (2/7) of whaling captains in Nuiqsut felt they had no influence, while 18% (6/34) in Barrow felt they had no influence on decision-making.

Table 87. Ability to Influence Onshore Development – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Yes	19	56%	7	100%	4	57%	9	38%
No Opinion	5	15%	0	0%	1	14%	13	54%
No	6	18%	0	0%	2	29%	2	8%
Don't Know	4	12%	0	0%	0	0%	0	0%
Subtotal	34	89%	7	100%	7	100%	24	96%
Missing/Refused	4	11%	0	0%	0	0%	1	4%
Total	38	100%	7	100%	7	100%	25	100%
Question E.1j: Do you think people in (village) have the capability to influence onshore oil and gas development?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Table 88. Ability to Influence Offshore Development – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Yes	20	61%	3	43%	2	33%	10	43%
No Opinion	3	9%	2	29%	1	17%	5	22%
No	8	24%	1	14%	3	50%	6	26%
Don't Know	2	6%	1	14%	0	0%	2	9%
Subtotal	33	87%	7	100%	6	86%	23	92%
Missing/Refused	5	13%	0	0%	1	14%	2	8%
Total	38	100%	7	100%	7	100%	25	100%
Question E.1k: Do you think people in (village) have the capability to influence offshore oil and gas development?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Some individuals expressed optimism about present and future communication efforts, even recognizing the oil industry's effort to listen and work with the community, but they were also critical of past decisions and what they described as unresponsive agencies. Clearly, onshore development, in comparison to Table 88 responses to offshore development, is favored.

> "By being vocal and by strengthening our tribal government and tribal rights (can influence developmental decisions). In the past nobody has been representing us in the right way – ASRC says yes to all development."

> "Locals and the oil companies can have good communication and can have strong words with each other. However, the oil companies still go where they want to go."

> "Villagers have long expressed a preference for on-shore development; the companies have become more adaptable and addressed village concerns such as reducing impacts on caribou migration."

There were also captains that felt their influence with regard to controlling development is largely futile:

> "Oil companies negotiate with BLM and other federal agencies, not with the people in the area."

> "Very minimal influence because Washington bureaucrats and state management agencies, legislature, and the governor have more influence. As a result of poor communication villagers are at a disadvantage and must continually try to obtain information."

> "As soon as the oil companies get their contracts they stop listening to the locals, before that they talk nicely to the locals."

> "Locals have no influence at all on the oil industry. There is a lot of opposition to oil development and the elders keep saying 'no' but oil development keeps coming."

In contrast, Savoonga captains felt they had more direct control over decision-making. Presumably, because the residents own both the surface and subsurface, the residents of Savoonga and Gambell would have the final word on development projects in the area.

> "Ownership of land here is ours, surface and subsurface."

When captains were queried about community influence over offshore development, 61% (20/33) of Barrow's whaling captains thought villagers had some effect; percentages of affirmative responses drop to 43% (3/7) in Kaktovik, 43% (10/23) in Savoonga, and 33% (2/6) in Nuiqsut (Table 88).

Barrow captains were the most expressive in thinking about what residents could do to manage offshore industrial activities, with half of all captains providing comments. Three substantive examples were offered: they have been able to influence offshore development through the use of NSB regulations and tribal sovereignty rights; they have been able to influence conditions that have been placed on offshore development that determine what time of year and when they can operate; and they have been able to improve communications with industry to be better informed about ongoing offshore activities.

> "Villagers have influence through the AEWC and the Marine Mammal Protection Act. An example of this influence is the Good Neighbor policy with British Petroleum."

Others reiterated their frustration with trying to affect resource decision-making with little impact. Individuals from the other three communities had little to say.

Whaling captains gave their opinions to the last query of the survey about the compatibility of offshore oil and gas development with the protection of the environment and cultural practices. Of the captains on the North Slope, 67% (33/49) (60% [21/35] in Barrow, 86% [6/7] in both Kaktovik and Nuiqsut) did not think it was possible to do both. Forty-one percent (9/22) of Savoonga captains felt development could coexist with a healthy environment and vibrant Yupik culture (Table 89).

Table 89. Compatibility of Offshore Development and Protection of the Environment and Iñupiat/Yupik Culture

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Responses	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Agree	11	31%	0	0%	0	0%	9	41%
No Opinion	2	6%	1	14%	1	14%	5	23%
Disagree	21	60%	6	86%	6	86%	7	32%
Don't Know	1	3%	0	0%	0	0%	1	4%
Subtotal	35	92%	7	100%	7	100%	22	88%
Missing/Refused	3	8%	0	0%	0	0%	3	12%
Total	38	100%	7	100%	7	100%	25	100%
Question E.1l: Do you agree or disagree with the following statement?: It is possible to have oil drilling in offshore coastal areas and at the same time provide adequate safeguards to protect the environment and important cultural activities.								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

The remarks that followed the survey response for this last question were extensive. In Barrow, one captain supported his agreement that adequate safeguards can be put in place to protect the Beaufort Sea and Iñupiat culture. There were also individuals in other communities that felt that local areas could be protected through deferrals or moratoriums. The rest of the captains were clear that development and protection were mutually exclusive. Three general reasons were given: the harm to wildlife would be irreparable; there is little faith in current technology; and a lack of understanding, on the part of the industry, of Arctic conditions.

Harm to wildlife:

> "Conoco says they are trying their best to minimize impacts on the subsistence way of life, but their activity is changing wildlife behavior."
>
> "It is going to affect our subsistence activities. It will move those animals further out."

Lack of trust of current technology:

> "No way. They do not have the technology. An experiment in Canada showed that on stable ice, ice absorbs oil. There is almost no recovery. Shore ice used to be 10 feet thick. Now it is much thinner and less stable."
>
> "There is no technology on the ice, there is a bad ice condition and no technology to clean it up. If there is even a ship, they won't make it out there. There is nothing to safeguard offshore impacts."

Finally, whaling captains do not believe outside interests understand the Arctic environment:

> "They don't know the ice conditions and currents in the Arctic Ocean."
>
> "When the Arctic Endeavor went out, the person who wrote the protocol had never seen the Arctic."
>
> "It's not possible. We have a very strong current, dangerous ice conditions. The scientists don't even understand it." The ice conditions are not suitable for any drilling at all."

C.7 PART F: HEALTH OF WHALING CAPTAINS

When conducting initial discussions within the North Slope villages, the health of residents, and in particular, increases in back injuries, were growing concerns among government officials. The NSB requested that a number of questions be added to the whaling captain survey, which was done. These findings indicate the self-perception of whaling captains' health is as follows: good (54% [38/70]) or excellent (20% [14/70]). A quarter (24% [17/70]) of the respondents state their health is fair or poor (Table 90), though lost days from work or daily activities because of illness are a rarity (Tables 91 and 92). Table 93 reflects the answer to a question regarding adequate rest and sleep as an indicator of good or poor health. Because this question was asked at the end of whaling season and the beginning of the spring/summer hunting season, most respondents were out subsistence hunting, leading to a substantial lack of sleep and rest as much of the hunting is done in the late evening to early morning hours. This question, therefore, lacks validity for analytic purposes due to the time of year the participants responded. Forty percent of captains do report having back problems (Table 94). When asked the cause of these problems, the reasons ranged from subsistence-related activities to arthritis or early injuries.

Table 90. General Health of Whaling Captains – All Communities

	a	b*	a	b*	a	b*	a	b*
How is Your General Health?	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Excellent	11	32%	0	0%	0	0%	3	14%
Good	16	47%	4	57%	5	71%	13	59%
Fair	3	9%	2	29%	2	29%	6	27%
Poor	3	9%	1	14%	0	0%	0	0%
Don't Know	1	3%	0	0%	0	0%	0	0%
Subtotal	34	89%	7	100%	7	0%	22	88%
Missing/Refused	4	11%	0	0%	0	0%	3	12%
Total	38	100%	7	100%	7	100%	25	100%
Question F.1: Is your general health excellent, good, fair or poor?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Table 91. Days Physical Health Not Good – All Communities

	a	b*	a	b*	a	b*	a	b*
Number of Days?	Barrow		Kaktovik		Nuiqsut		Savoonga	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0	26	76%	6	86%	4	57%	18	86%
1-3	4	12%	0	0%	1	14%	1	5%
4-7	0	0%	0	0%	1	14%	1	5%
8-11	0	0%	1	14%	0	0%	0	0%
12 or More	0	0%	0	0%	1	14%	1	5%
Don't Know	4	12%	0	0%	0	0%	0	0%
Subtotal	34	89%	7	100%	7	100%	21	84%
Missing/Refused	4	11%	0	0%	0	0%	4	16%
Total	38	100%	7	100%	7	100%	25	100%
Question F.2: How many days In the last month was your physical health not good because of injury or physical Illness?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Table 92. Ill Health and Not Doing Usual Activities – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Number of Days?	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0	23	70%	6	86%	5	71%	19	86%
1-3	5	15%	0	0%	0	0%	2	9%
4-7	2	6%	0	0%	1	14%	1	5%
8-11	0	0%	1	14%	0	0%	0	0%
12 or More	2	6%	0	0%	1	14%	0	0%
Don't Know	1	3%	0	0%	0	0%	0	0%
Subtotal	33	87%	7	100%	7	100%	22	88%
Missing/Refused	5	13%	0	0%	0	0%	3	12%
Total	38	100%	7	100%	7	100%	25	100%
Question F.3: During the last month, how many days did poor physical health keep you from doing your usual activities such as self-care, work, hunting, or fishing, or recreation?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Table 93. Days of Poor Rest and Sleep – All Communities

	a	b*	a	b*	a	b*	a	b*
	Barrow		Kaktovik		Nuiqsut		Savoonga	
Number of Days?	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0	14	41%	5	71%	5	71%	10	45%
1-3	3	9%	1	14%	0	0%	1	5%
4-7	3	9%	0	0%	1	14%	1	5%
8-11	1	3%	0	0%	0	0%	0	0%
12 or More	4	12%	0	0%	1	14%	8	36%
Don't Know	9	26%	1	14%	0	0%	2	9%
Subtotal	34	89%	7	100%	7	100%	22	88%
Missing/Refused	4	11%	0	0%	0	0%	3	12%
Total	38	100%	7	100%	7	100%	25	100%
Question F.4: During the last month, how many days did you not get enough rest and sleep?								
*Subtotal, Missing/Refused, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

Table 94. Whaling Captain Households and Back Pain – All Communities

	a	b*	a	b*	a	b*	a	b*
Has Anyone Experienced	Barrow		Kaktovik		Nuiqsut		Savoonga	
Back Pain?	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Yes	18	53%	2	29%	4	57%	6	27%
No	16	47%	5	71%	3	43%	16	73%
Subtotal	34	89%	7	100%	7	100%	22	88%
Missing	4	11%	0	0%	0	0%	3	12%
Total	38	100%	7	100%	7	100%	25	100%
Question F.5: Do you have back problems, or does anyone in the household experience back pain on a regular basis?								
*Subtotal, Missing, and Total percentages computed as (a/Total). All other percentages computed as (a/Subtotal).								

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