IWC/S15/ASW/11

Quantification of subsistence and cultural need for bowhead whales by Alaska Eskimos: overview

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INTERNATIONAL WHALING COMMISSION

Workshop on Aboriginal Subsistence Whaling
Maniitsoq, Greenland

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Quantification of Subsistence and Cultural Need for Bowhead Whales by Alaska Eskimos

Overview

Stephen Braund

Stephen R. Braund & Associates

Cultural & Subsistence Need: Historic Context

- Until 1970s, Alaska bowhead hunt regulation-free of IWC
- In mid-1970s, IWC Scientific Committee reported increases in annual landed and struck and lost
- The estimate of bowhead stock was low (e.g., 1,300)
- Problem: low stock and an expanding hunt
- IWC Scientific Committee highest objective = sustainability
- June 1977 - IWC removed bowhead exemption resulting in no legal basis for the hunt
- Hence, the Quota for 1978 season = 0

Cultural & Subsistence Need: Historic Context

- Alaska Eskimo Whaling Commission (AEWC) formed
  - Nine communities
- December 1977 the US reopened the bowhead issue
- US proposed a limited hunt to satisfy the Eskimo's "subsistence and cultural needs"
- US began a domestic science program to manage the bowhead hunt
  - Bowhead census
  - North Slope Borough – Iñupiat led and financially supported the science with US Government

Cultural & Subsistence Need: Historic Context

- December 1977, IWC reconsidered 0 quota
- IWC 1978 Whaling Season: Quota = 12 Landed or 18 struck
- “Subsistence and cultural needs” & not bowhead science resulted in a limited quota (Tillman 2008)
- Began to address questions:
  - What is aboriginal whaling?
  - What is subsistence use?
  - What is the basis of subsistence and cultural need?
  - How do you determine that need?

1979 Social Science Panel

- 1979: Panel of social science experts met in Seattle to address Aboriginal/Subsistence Whaling (focused on Northern Alaska
  - 1979: Report of the Cultural Anthropology Panel (IWC/S15/ASW12)
  - 9 panel members; 7 anthropologist; 2 ?
  - Provided definition of subsistence uses adopted by IWC in 2004
    - » 25 years later
- "The complex of whaling and associated activities is perhaps the most important single element in the culture and society of north Alaskan whale hunting communities. It provides a focus for the ordering of social integration, political leadership, ceremonial activity, traditional education, personality values, and Eskimo identity."

1979 Social Science Panel Findings

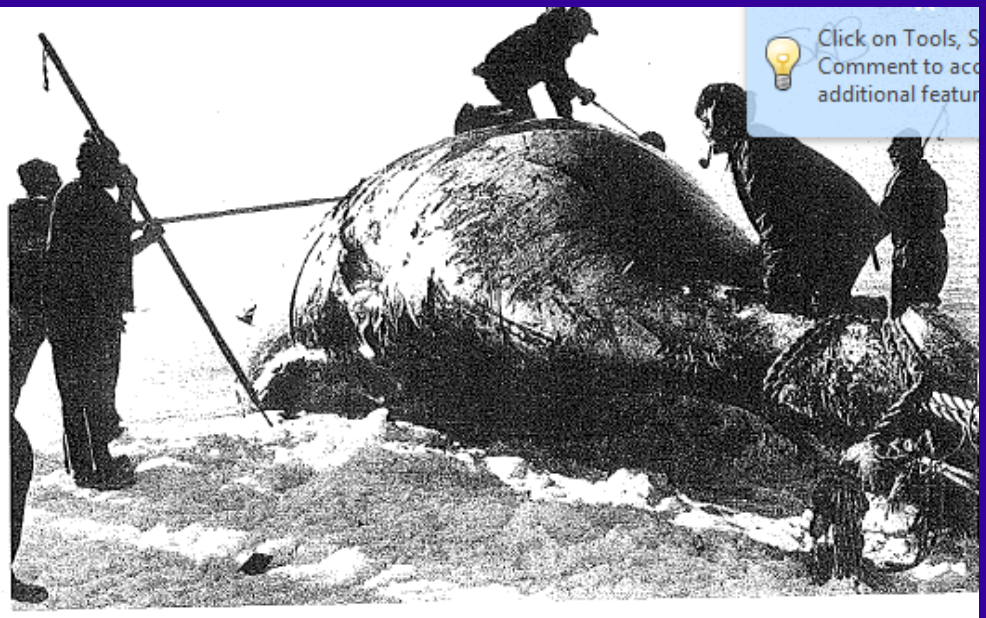
- "Whaling has retained its unique importance in these communities, despite cultural change during the modern era. Technological shifts or replacements have not altered the intrinsic nature, purpose, meaning, and social-cultural role of subsistence whaling."
- Expansion in whaling activity: revitalized interest in traditional culture among younger Eskimos
- From cultural standpoint, whales are not replaceable by alternative resources
- Compilation of biological data and formulation of bowhead management polices should be undertaken with the direct and formal participation of Eskimo whalers

Cultural & Subsistence Need: Historic Context

- 1979: IWC required US to document nutritional, cultural and subsistence needs by Alaska Eskimos for bowhead whales
- 1980: IWC extended this requirement to document need to all member governments with aboriginal subsistence whaling
- 1980 USDOI "Interim Report on Aboriginal/Subsistence Whaling of the Bowhead Whale by Alaska Eskimos"
  - Assessed historical bowhead harvests by community
  - Recommended a method of estimating Eskimo need for bowheads based on cultural requirements and historic catch
  - "traditional" landed tied to present need
- IWC asked for a more thorough investigation of these issues

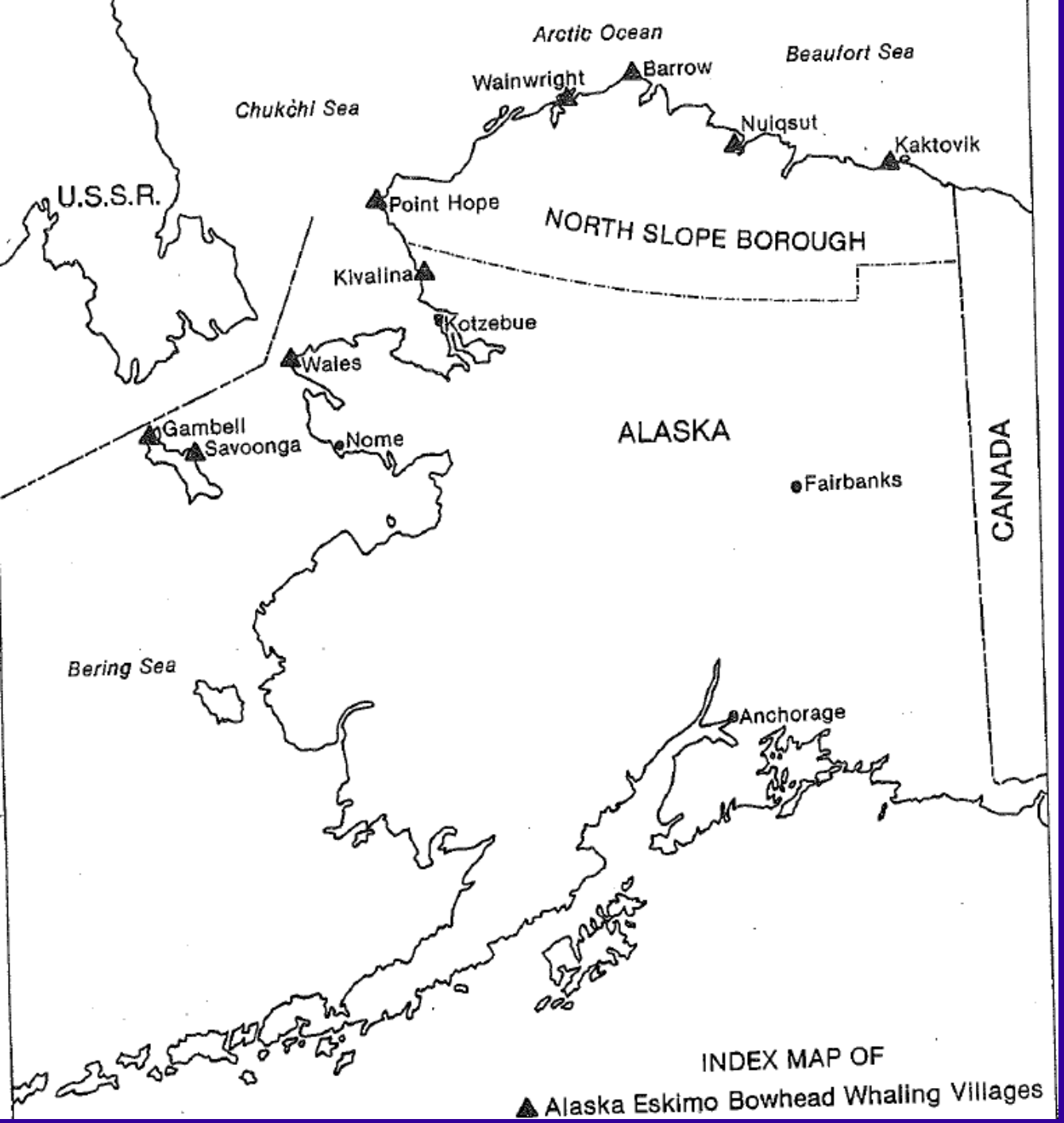
Cultural & Subsistence Need: Historic Context

- 1982-3 Subsistence Study in 9 communities – Alaska Consultants & Stephen R. Braund & Assoc. (USDOI)
  - 370 household surveys in nine Alaska bowhead whaling communities
  - What is the importance of bowhead whaling in these communities?
  - Substitute store-bought food for bowhead? No
  - Substitute other subsistence resources for bowhead (beluga, ugruk, ringed seal, walrus, caribou, other)? No
  - Bowhead whale hunt in Northern Alaska culturally important? Yes



SUBSISTENCE STUDY OF ALASKA ESKIMO WHALING VILLAGES

Alaska Consultants, Inc.
with
Stephen Braund & Associates



1982 Household Survey in 9 Alaska Eskimo Whaling Villages

Sample: 370 Households

TABLE 1

SAMPLE SIZE AND RELIABILITY
ALASKA ESKIMO BOWHEAD WHALING VILLAGES SURVEY
1982

Village	Alaska Native Population a/ 1980	Alaska Native Households b/ 1980		Standard Error c/ %	Sampling Error d/ %
		Total Number	Number Interviewed		
Gambell	425	137	51	5.4	8.9
Savoonga	463	125	54	5.0	8.2
Wales	122	41	30	4.6	7.5
Kivalina	237	32	26	4.6	7.5
Point Hope	434	93	37	6.3	10.3
Wainwright	371	82	40	5.5	9.0
Barrow	1,720	447	76	5.0	8.2
Nuiqsut	181	43	30	5.0	8.2
Kaktovik	148	34	26	4.9	8.0
TOTAL	4,101	1,034	370		
All Villages				2.0	3.3

TABLE 131

SHARING OF BOWHEAD WHALE MEAT a/
ALASKA BOWHEAD WHALING VILLAGE RESPONDENTS

Sharing	Percentage Distribution
Share bowhead whale meat b/	97.0
Do not share bowhead whale meat b/	1.6
Don't know	1.4
TOTAL	100.0
(Number of respondents)	(357)

a/ Question asked if respondent's household had shared whale meat or muktuk with others the last year that his or her village got a whale.
b/ Includes muktuk.

Source: Alaska Consultants, Inc./Stephen Braund & Associates. 1983.

TABLE 132

EXTENT OF INTER-VILLAGE BOWHEAD WHALE MEAT SHARING BY VILLAGE a/
ALASKA BOWHEAD WHALING VILLAGE RESPONDENTS

Extent of Sharing	Percentage Distribution									
	Gambell	Savoonga	Wales	Kivalina	Point Hope	Wainwright	Barrow	Nuiqsut	Kaktovik	All Respondents
This village only	0.0	0.0	10.7	4.0	2.7	2.9	12.9	26.7	0.0	6.5
Other villages only	5.9	2.0	0.0	0.0	5.4	8.6	4.2	0.0	0.0	3.4
This village and others	94.1	98.0	89.3	96.0	91.9	88.5	82.9	73.3	100.0	90.1
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
(Number of respondents)	(51)	(52)	(28)	(25)	(37)	(35)	(70)	(30)	(26)	(354)

a/ Question refers to extent of inter-village sharing the last year that the respondent's village had got a whale.

Source: Alaska Consultants, Inc./Stephen Braund & Associates. 1983.

Cultural & Subsistence Need: Historic Context

- 1982-3 Subsistence Study in 9 communities
  - OK, culturally important, but how many whales?
  - Suggestion: One bowhead for nine communities (unrealistic)
- How many are “needed?”
- 1983 Needs Report - 1st attempt to use the method tying quantification of need to historic landed
  - Introduced the concept of “Participation”
  - Requested 26 Landed & 35 strikes
- IWC accepted the method and raised questions
- Lack of data

Cultural & Subsistence Need: Historic Context

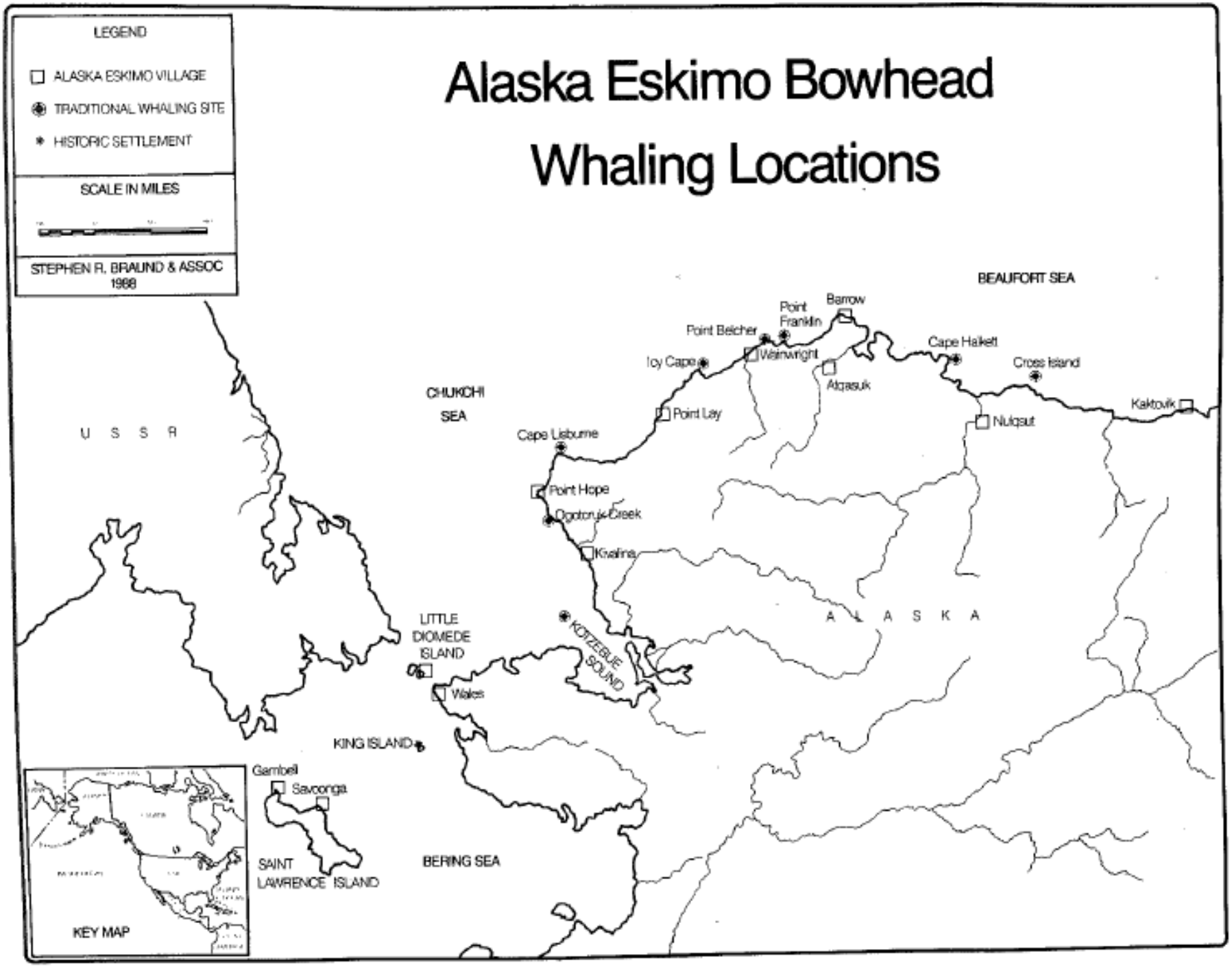
- Additional research ➔ 1988 Needs Statement
- Landed Quota before 1988 Meeting in New Zealand
  - 1978: 12 Landed
  - 1981-1983: 17 landed in one year
  - 1984-85: 27 Landed in one year (1st Needs Report)
- 1988 Needs Report – 41 landed need (Then, IWC granted 44 strikes to land 41 “needed” bowhead whales for 9 communities)

Quantification of Subsistence & Cultural Need for Bowhead Whales by AK Eskimos – 1988

- Purpose: to determine the level of present cultural & subsistence need for bowhead whales by Alaska Eskimos based on:
    1. Historic bowhead harvest levels
    2. Eskimo populations in 9 communities
- Method based on 1983 methodology that was accepted by IWC in 1986
- Did NOT include nutritional need
- Traditional need to maintain a healthy & viable culture
- Historic per capita harvests multiplied by current population

Researched Historic Bowhead Harvests by Alaska Eskimos

- Archival (Bockstoce, Marquette, Braund) and field research (Braund and Arnold Brower Jr.)
- Bowhead harvest data from 1816
- 1848 – 1909: Yankee whaling (19,000 bowheads)
- 1885-1909: Shore-based whale stations
  - Increased harvest
  - Subsistence mixed with commercial
- Conclusion: Pre-1909 not used to avoid commercial period
- 1970 → High number of Struck & Lost & Landed
- Base Period for historic bowhead harvest: 1910-1969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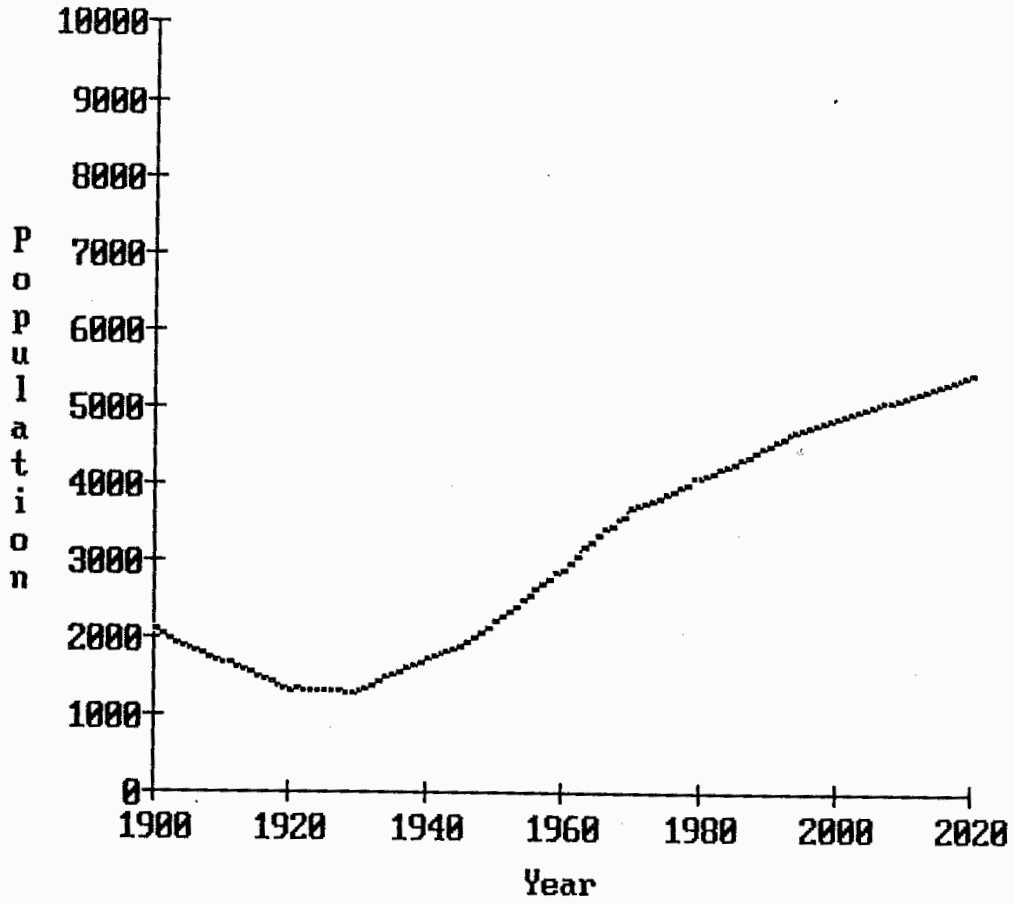
ALASKA ESKIMO VILLAGE
TRADITIONAL WHALING SITE
HISTORIC SETTLEMENT
SCALE IN MILES
STEPHEN R. BRAUND & ASSOC
1988
Alaska Eskimo Bowhead
Whaling Locations
BEAUFORT SEA
Barrow
Point Franklin
Point Belcher
Wainwright
Icy Cape
Atqasuk
Cape Halkett
Cross Island
Kaktovik
Nuiqsut
Point Lay
CHUKCHI SEA
U S S R
Cape Lisburne
Point Hope
Ogotoruk Creek
Kivalina
A L A S K A
KOTZEBUE SOUND
LITTLE DIOMEDE ISLAND
Wales
KING ISLAND
Gambell
Savoonga
SAINT LAWRENCE ISLAND
BERING SEA
KEY MAP

Figure 2: Alaska Eskimo Population Living in Whaling Villages, 1900-2020



Source: Stephen R. Braund & Associates, 1988.

- **Human Population Model**
- **Dr. Jack Kruse UAA, ISER**

Figure 3: Excerpt from Appendix 1 - Data on Shore-Based Bowhead Whaling at Sites in Alaska

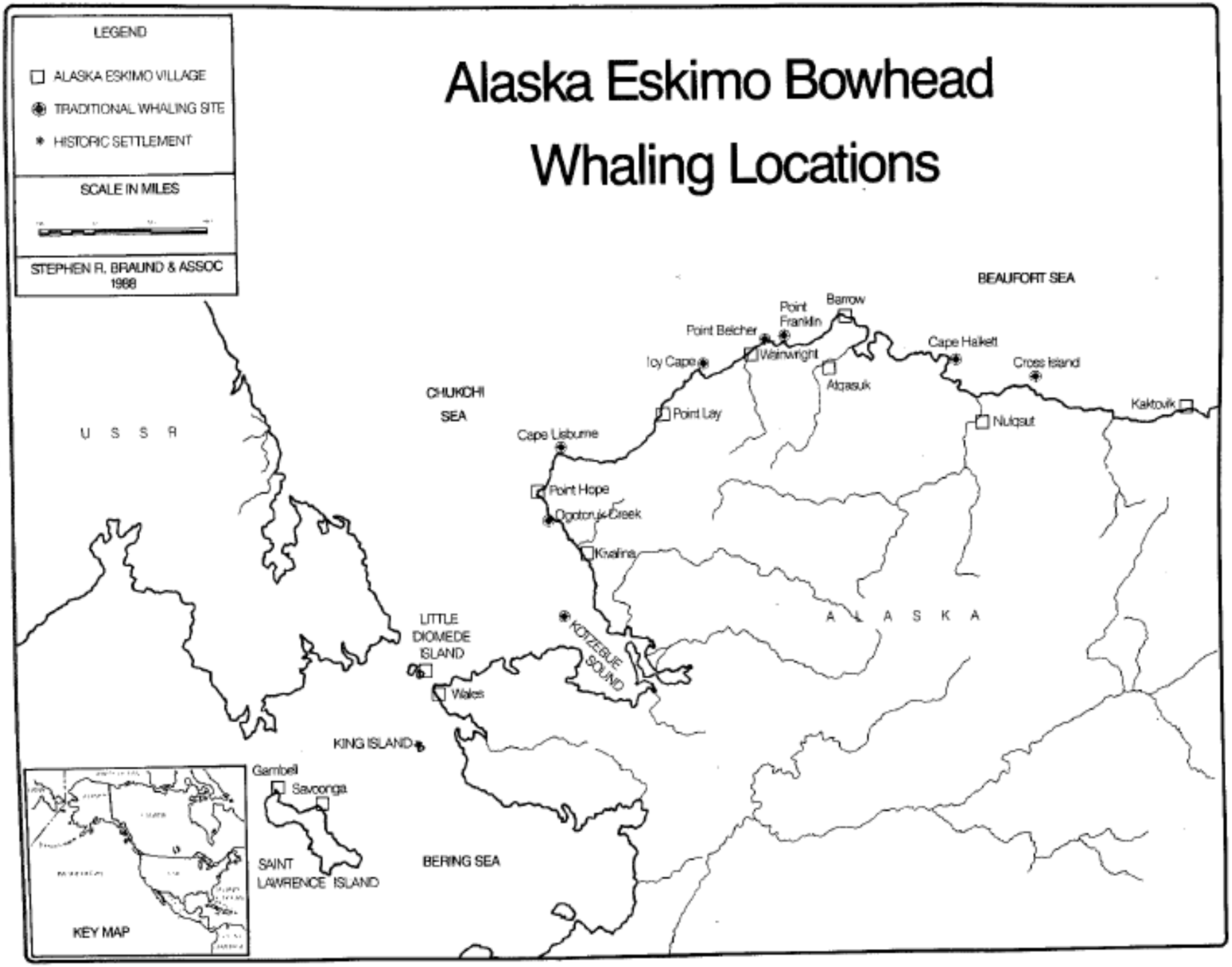
Site and Year	No. of Crews	Number of whales: Struck and Lost	Number of whales: Landed	Number of whales: Killed but Lost	Number of whales: Total Killed	Sources (** indicates source is in the Bibliography of Unpublished Works)
Wainwright (Continued)						
1939			2		2	Braund (1987g Fieldwork - Wainwright)**
1940			1		1	Braund (1987g Fieldwork - Wainwright)**
1940			0*		0*	Eskimo (1941)
1941	1		1		1	Alaska Sportsman (1941); Milan (1977)**; Braund (1987g Fieldwork - Wainwright)**
1942			1*		1*	Sonnenfeld (1960)
1942			2		2	Braund (1987g Fieldwork - Wainwright)**
1943	1		1		1	Durham (1979c); Poor (1945); Braund (1987g Fieldwork - Wainwright)**
1944	3		2		2	Maher & Wilimovsky (1963); Wilson (1944)**
1945	3		6		6	Milan (1977)**
1946	6		1		1	Minner (1948); Milan (1977)**
1947	3		2		2	Milan (1977)**; Bodfish & Minner (1947); Nelson (1981) Minner (1948)
1948	6					
1949			2		2	Milan (1977)**
1950			2		2	Maher & Wilimovsky (1963)
1952			2		2	Bee & Hall (1956)
1953			1		1	Braund (1987g Fieldwork - Wainwright)**
1954			1		1	Sonnenfeld (1956)**
1955	3	1	1		1	Milan (1964)
1956			2		2	Taber (1958)
1957			0		0	Milan (1977)**
1958			0		0	Milan (1977)**
1959			0		0	Milan (1977)**
1960			0		0	Milan (1977)**
1961	5		1		1	Rice (1964)**; Rice (1979)**
1962			1		1	Rice (1964)**
1963	3		2		2	Milan (1977)**; Nelson (1981)
1964	2	1	1		1	Milan (1977)**; Nelson (1965)**
1965			2		2	Nelson (1965)**
1966	1		1		1	Nelson (1969); Milan (1977)**
1967			0		0	Milan (1977)**
1968	5		2		2	Milan (1977)**
1969			4		4	Durham (1979c)
1970	4	30	0		0	Durham (1979c); Durham (1979a); McVay (1973); NARL (1972a)**

Source: Stephen R. Braund & Associates, 1988

- **16 Page Appendix that catalogs all known shore-based landed bowheads from 1816 to 1987**

List of Alaska Sites for Shore-Based Whaling Data

Saint Lawrence Island Gambell Savoonga	Point Belcher & Point Franklin	Cape Lisburne
Wales	Barrow	Cape Halkett
Kivalina	Nuiqsut	Cross Is/Prudhoe Bay
Point Hope	Kaktovik, Barter Is	Ogotoruk Creek
Point Lay	King Island	Shaktoolik
Icy Cape	Little Diomede Island	Unlocated
Wainwright	Kotzebue Sound	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Wales
KING ISLAND
Gambell
Savoonga
SAINT LAWRENCE ISLAND
BERING SEA
KEY MAP

Table 4: List of Consolidated Alaska Sites for Subsistence Whaling Data

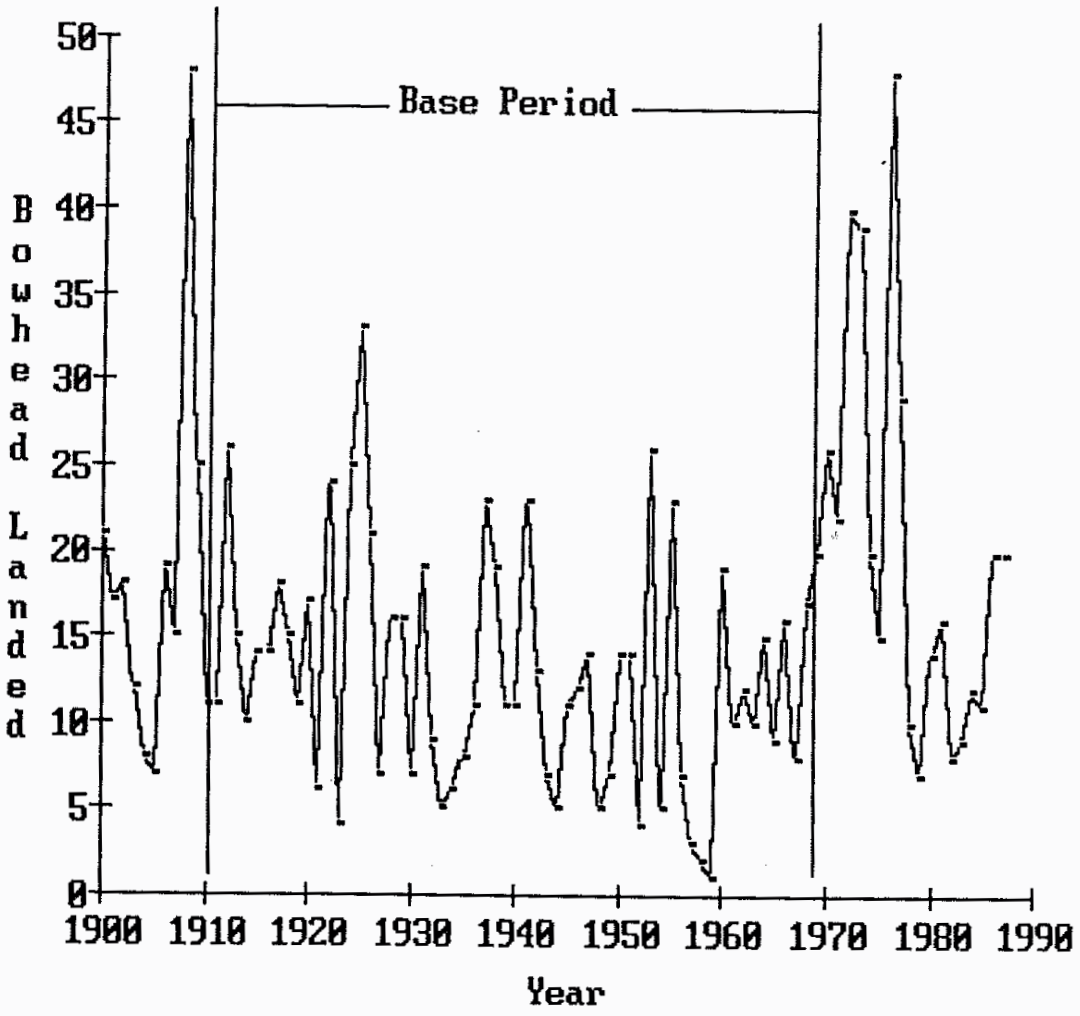
Nine Current Whaling Villages	+	Historic Whaling Sites
Gambell		
Savoonga		
Wales		
Kivalina		Kotzebue Sound
Point Hope		Cape Lisburne and Ogotoruk Creek
Wainwright		Icy Cape, Point Belcher and Point Franklin
Barrow		Cape Halkett and Cross Island/Prudhoe Bay
Nuiqsut		
Kaktovik (Barter Island)		

Sites not included in the analysis

- Point Lay
- King Island
- Little Diomede Island
- Shaktoolik
- Unlocated

Source: Stephen R. Braund & Associates, 1988.

Figure 4: Number of Bowhead Landed by Year by the Alaska Eskimo, 1900-1987



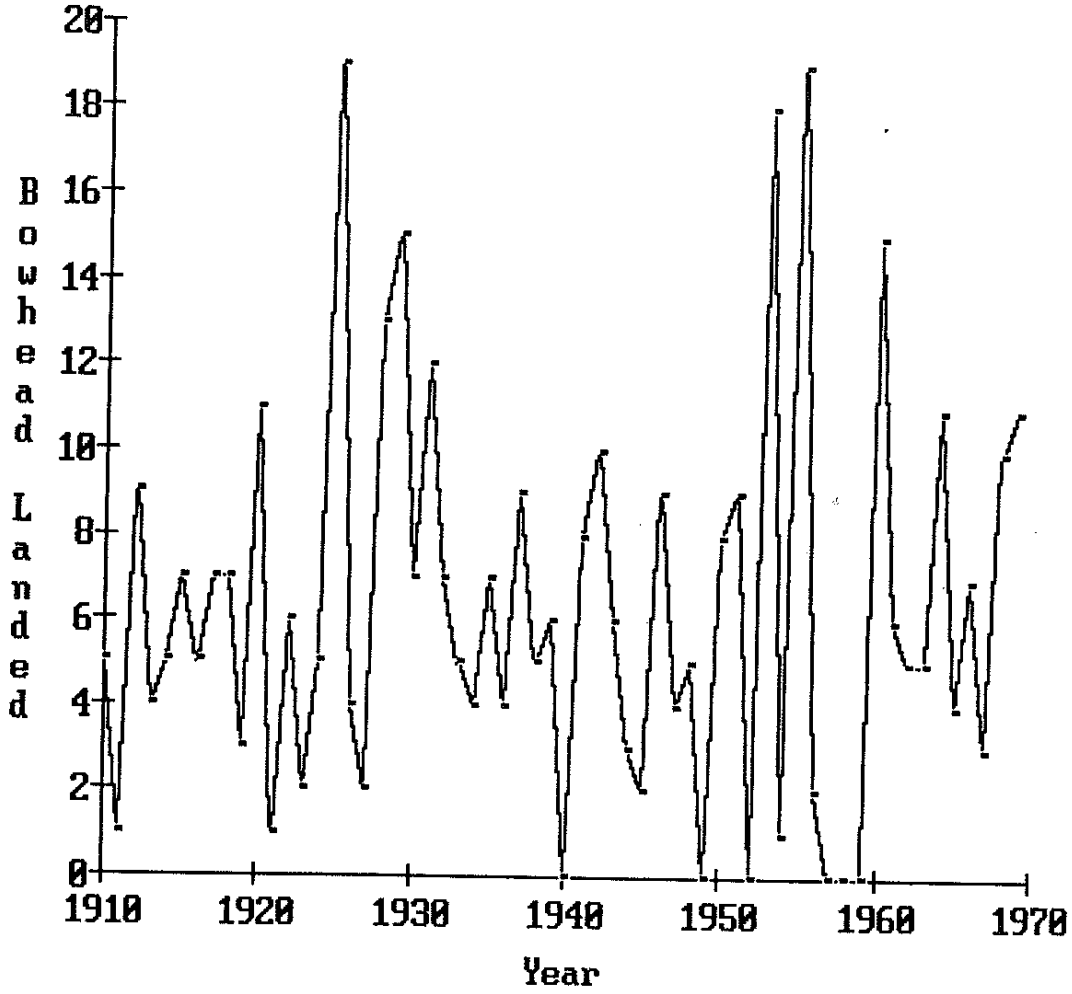
Source: Stephen R. Braund & Associates, 1988.

Number of Bowhead Landed by Year: 1900 - 1986

Needs Assessment Base Period: 1910 – 1969

Conservative: Depleted whale population Low Eskimo population

Figure 5: Number of Bowhead Landed by the Barrow, Alaska Eskimo, 1910-1969



Source: Stephen R. Braund & Associates, 1988.

Barrow: 1910-1969

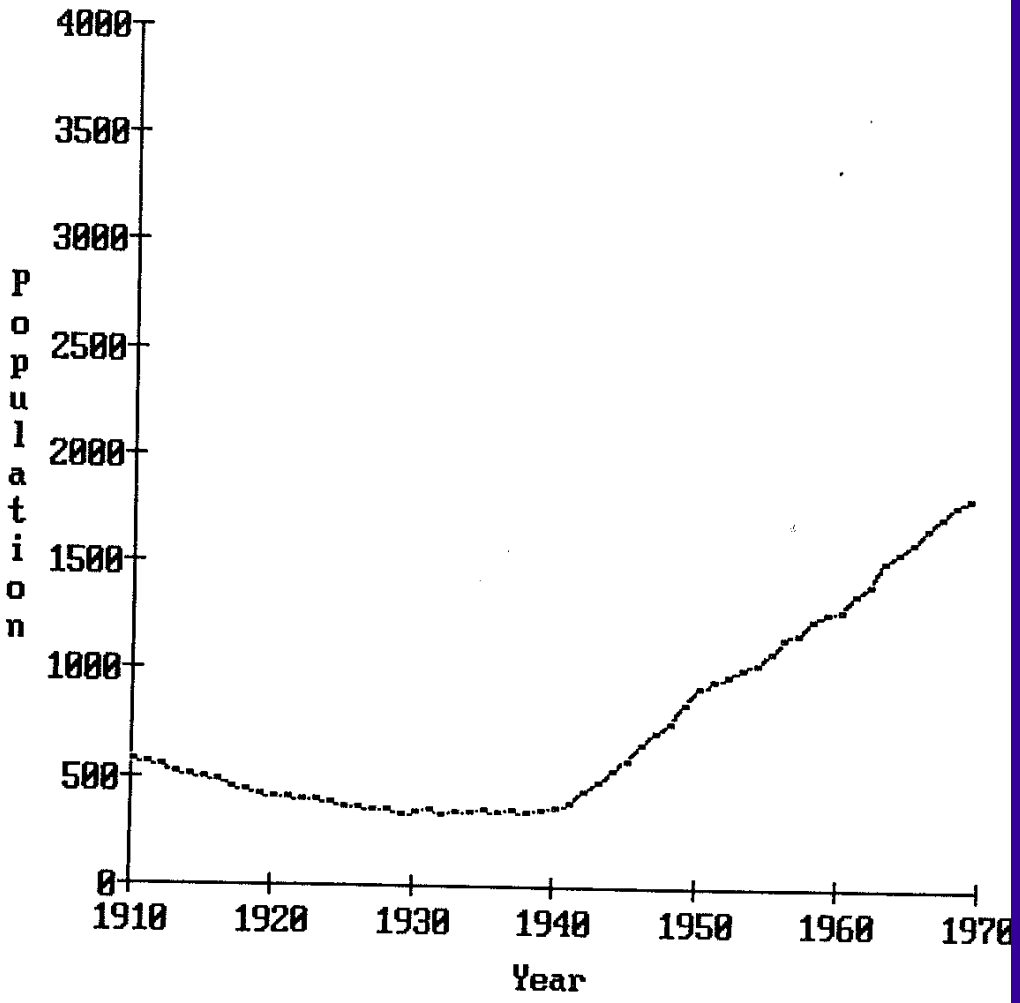
High year to year variability in Barrow landed bowheads 1910 – 1969.

Barrow landed data available for all 60 years of base period.

No evidence variability due to lack of effort.

Environmental Conditions.

Figure 6: Barrow, Alaska Eskimo Population, 1910-1969



Source: Stephen R. Braund & Associates, 1988.

Barrow Population, 1910-1969

Low population between 1900 and 1940

Table 5: Example from Appendix 2, Whale Harvest and Human Population Data for Barrow, Alaska, 1910-1969

Village	Year	Number Crews	Number Bowhead Landed	Eskimo Population
Barrow				
	1910	55	5	571
	1911	20	1	564
	1912	9	9	551
	1913	2	4	520
	1914	1	5	507
	1915	.	7	494
	1916	4	5	481
	1917	9	7	454
	1918	14	7	442
	1919	2	3	416
	1920	.	11	409
	1921	8	1	410
	1922	2	6	396
	1923	1	2	394
	1924	.	5	380
	1925	5	19	366
	1926	12	4	365
	1927	2	2	350
	1928	14	12	349
	1929	.	15	335
	1930	1	7	337
	1931	2	12	348
	1932	2	7	332
	1933	.	5	342
	1934	.	4	340
	1935	1	7	349
	1936	.	4	343
	1937	.	9	352
	1938	1	5	345
	1939	10	6	354
	1940	.	0	362
	1941	.	8	385
	1942	7	10	445
	1943	7	6	489
	1944	.	3	537
	1945	2	2	588
	1946	1	9	660
	1947	.	4	716
	1948	.	5	759
	1949	.	0	849
	1950	3	8	929
	1951	7	9	956
	1952	3	0	982
	1953	8	19	1011

To calculate per capita need, matched bowheads landed and Eskimo population for each community for each year for which there were bowhead landed

Table 5: Example from Appendix 2, Whale Harvest and Human Population Data for Barrow, Alaska, 1910-1969 (Cont.)

Village	Year	Number Crews	Number Bowhead Landed	Eskimo Population
Barrow				
	1954	.	1	1041
	1955	10	19	1097
	1956	.	2	1158
	1957	9	0	1186
	1958	10	0	1248
	1959	1	0	1281
	1960	18	15	1295
	1961	18	6	1369
	1962	17	5	1414
	1963	21	5	1525
	1964	7	11	1571
	1965	19	4	1614
	1966	15	7	1674
	1967	7	3	1731
	1968	10	10	1794
	1969	11	11	1825
Totals for Barrow		379	44687	
Bowhead Landed per Capita		.008481		
Number of Observations		60		

. = No data available.

Table 6: Alaska Eskimo Whaling Villages' Subsistence and Cultural Need For Landed Bowhead Whales, 1988.\1

Village	Number of Observations\2	Total Eskimo Population for ea. yr. of a Bowhead Observation\3	Bowheads Landed 1910-1969\4	Mean Landed Per Capita 1910-1969\5	1983-87 Eskimo Population\6	1987 Bowhead Need (Landed)\7	1987 Need (Landed) (Rounded)\8
Gambell	39	11,883	68	0.005722	495	2.8	3
Savoonga \9	0	----	----	0.005722	485	2.8	3
Wales	42	6,907	5	0.000724	154	0.1	1
Kivalina	7	926	3	0.003240	275	0.9	1
Point Hope	50	12,467	209	0.016764	534	9.0	9
Wainwright	49	10,723	108	0.010072	445	4.5	5
Barrow	60	44,687	379	0.008481	1,823	15.5	16
Nuiqsut \9	0	----	----	0.008481	227	1.9	2
Kaktovik	3	327	3	0.009174	154	1.4	1
Totals	250	87,920	775		4,592	38.8	41
Region\10	250	87,920	775	0.008815	4,592	40.5	41

\1 Subsistence and cultural need is based on historic per capita harvest per community multiplied by present village population.

\2 The number of observations represents the number of years for which data on landed whales were available for each community (See Appendices 1 and 2).

\3 Total Eskimo population represents the sum of the Eskimo population for each year there was an observation of a landed bowhead whale.

\4 Represents the sum of the observed bowheads landed between 1910 and 1969.

\5 The mean per capita landed whales is based on the total number of whales landed between 1910 and 1969 for each community divided by the sum of the total Eskimo population for each village for each year landed whale data existed between 1910 and 1969 (See Appendices 1 and 2). The sum of the total Eskimo population was calculated by adding the population estimates for each village for each year that there was a landed whale observation. For example, Barrow's 379 landed whales from 1910-1969 was divided by the total Eskimo population sum of 44,687 for this 60 year period (i.e., 379 divided by 44,687 = .008481).

\6 See Table 7 for the source of Eskimo population data for each community.

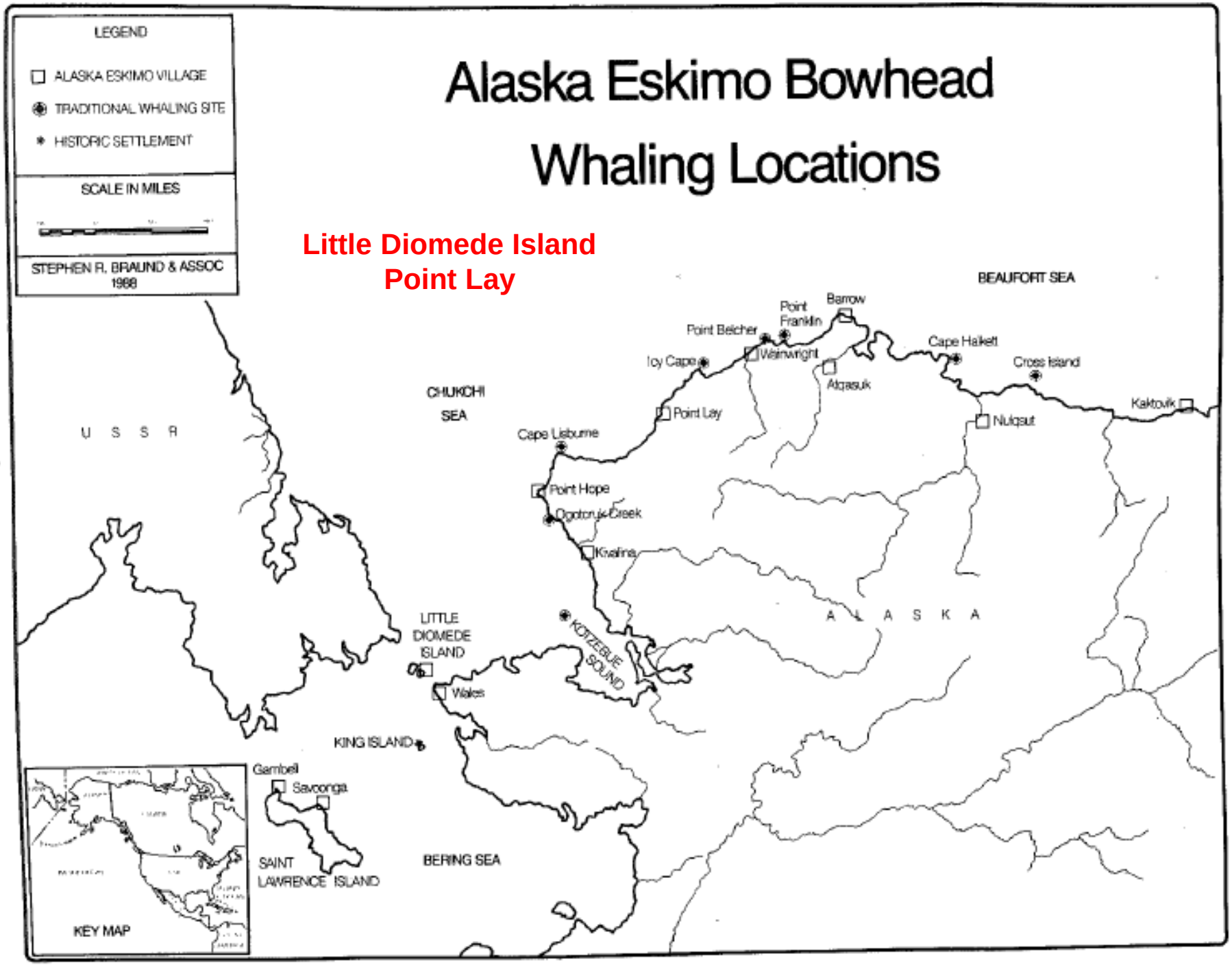
\7 The number of bowheads needed is derived by multiplying the mean per capita landed whales (1910-1969) by the most current Eskimo population figure available for each community.

\8 The number of whales needed is rounded to the nearest whole number unless the product was less than .5; such cases were rounded up to one.

\9 Because there are no landed bowhead data for neither Nuiqsut nor Savoonga between 1910-1969, the mean per capita landed whales for Gambell was used for Savoonga and the mean for Barrow was used for Nuiqsut.

\10 The mean per capita landed whales for the region represents the total number of whales landed for all communities between 1910 and 1969 divided by the sum of the total Eskimo population for all communities for each year landed whale data existed bewteeen 1910 and 1969 (i.e., 775 whales divided by 87,920 = .008815).

- 1988 Need = 41 landed
- 9 communities
- Note: Savoonga from Gambell; Nuiqsut from Barrow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KOTZEBUE SOUND
Wales
KING ISLAND
Gambell
Savoonga
SAINT LAWRENCE ISLAND
BERING SEA
KEY MAP

Nine Alaska Bowhead Communities to 10

- Little Diomede Island – not included in 1980, 1983, or 1988 analyses or 1982-83 household survey
- Remote and isolated; poor communication
- Boat or plane (no more); helicopter (unreliable service)
- No data; little known
- When community learned about a quota, requested to be included
- Accepted into AEWC in 1988
- Contracted to prepare Little Diomede Needs Statement
  - Literature & archive review; fieldwork

Nine Alaska Bowhead Communities to 10

- Braund to Little Diomede in March 1991 – embarrassed
- A “rock” in Bering Strait
- To survive & flourish on that island incredible
- Rely on marine resources that swim by
- Heard yesterday – Human Rights:
  1. The right to self determination
  2. The right to land, territory, resources
  3. Cultural rights
- This was common sense to me in 1991
- Presented findings to at IWC in Glasglow

10 Alaska Bowhead Communities to 11

- Point Lay – 11th AEWC Whaling Community in Alaska
- Conducted literature, archival, and field research in 2007
- Funded by the North Slope Borough
- Prepared the Point Lay Subsistence and Cultural Needs Study in March 2008
- Point Lay accepted into AEWC and given quota from existing quota

Table 1: Eleven Alaska Eskimo Whaling Villages' Subsistence & Cultural Need For Landed Bowhead Whales, 2010[1]

Community	Number of Observations[2]	Total Eskimo Population for ea. yr. of a Bowhead Observation[3]	Number of Bowheads Landed 1910-1969[4]	Mean Landed Per Capita 1910-1969[5]	2010 Alaska Native Population[6]	2010 Bowhead Need (Landed)[7]	2010 Need (Landed) Rounded[8]
Gambell	39	11,883	68	0.005722	654	3.7	4
Savoonga[9]	0	----	----	0.005722	637	3.6	4
Wales	42	6,907	5	0.000724	136	0.1	1
Diomede[10]	30	3,250	11	0.003678	110	0.4	1
Kivalina	7	926	3	0.003240	366	1.2	1
Point Hope	50	12,467	209	0.016764	629	10.5	11
Point Lay	34	2,080	8	0.003846	168	0.6	1
Wainwright	49	10,723	108	0.010072	510	5.1	5
Barrow	60	44,687	379	0.008481	2889	24.5	25
Nuiqsut[9]	0	----	----	0.008481	360	3.1	3
Kaktovik	3	327	3	0.009174	215	2.0	2
Totals	314	93,250	794		6,674	54.9	58
Region[11]	314	93,250	794	0.008515	6,674	56.8	57

[1] Subsistence and cultural need is based on historic per capita harvest per community multiplied by the 2010 Alaska Native population of each community.

[2] The number of observations represents the number of years for which data on landed whales were available for each community (See Appendices 1 & 2 of Braund, Stoker & Kruse 1988, Table 1 of Stephen R. Braund & Assoc. 1991, and Table 17 of Stephen R. Braund & Assoc. 2008).

[3] Total Eskimo population represents the sum of the Eskimo population for each year there was an observation of a landed bowhead whale (only includes the 1910-1969 "Base Period;" see Braund, Stoker & Kruse 1988).

[4] Number of bowheads landed represents the sum of the observed bowheads landed between 1910 and 1969.

[5] The mean landed bowhead whales per capita is based on the total number of whales landed between 1910 and 1969 for each community divided by the sum of the total Eskimo population for each village for each year landed whale data existed between 1910 and 1969 (See Appendices 1 & 2 in Braund, Stoker & Kruse 1988, Tables 1 and 3 in Stephen R. Braund & Assoc. 1991, and Tables 2 and 17 in Stephen R. Braund & Assoc. 2008). The sum of the total Eskimo population was calculated by adding the Population estimates for each community for each year that there was a landed whale observation. For example, Barrow's 379 landed whales from 1910-1969 was divided by the total Eskimo population sum of 44,687 for this 60 Year period (i.e., 379 divided by 44,687 = .008481).

[6] 2010 Alaska Native population data for each community are from the 2010 U. S. Census. They represent the category "American Indian or Alaska Native alone or in combination with one or more other races."

[7] The number of bowheads needed is derived by multiplying the mean per capita landed whales (1910-1969) by the 2010 Alaska Native population for each community. The true column total of 54.9 is shown and is less than the sum of its parts because of their being rounded up.

[8] The number of bowhead whales needed per individual community is rounded to the nearest whole number unless the product was less than .5; such cases were rounded up to one.

[9] Because there are no landed bowhead data for either Savoonga or Nuiqsut between 1910-1969, the mean per capita landed whales for Gambell was used for Savoonga and the mean for Barrow was used for Nuiqsut.

[10] Due to uncertainties in the landed whale data for Little Diomede Island, four different calculations of subsistence and cultural need, ranging from .4 to 1.0 bowheads, were presented (see Table 4 Stephen R. Braund & Assoc. 1991). The Little Diomede mean landed whale per capita (1910-1969) in this table represents the mean of these four calculations.

[11] The mean per capita landed whales for the region represents the total number of whales landed for all 11 communities between 1910 and 1969 divided by the sum of the total Native population for all communities for each year landed whale data existed between 1910 and 1969 (i.e., 794 whales divided by 93,250 = .008515).

Stephen R. Braund & Associates, 2012.

- **2010** Need = 57 landed
- 11 communities

Table 6: Alaska Eskimo Whaling Villages' Subsistence and Cultural Need For Landed Bowhead Whales, 1988.\1

Village	Number of Observations\2	Total Eskimo Population for ea. yr. of a Bowhead Observation\3	Bowheads Landed 1910-1969\4	Mean Landed Per Capita 1910-1969\5	1983-87 Eskimo Population\6	1987 Bowhead Need (Landed)\7	1987 Need (Landed) (Rounded)\8
Gambell	39	11,883	68	0.005722	495	2.8	3
Savoonga \9	0	----	----	0.005722	485	2.8	3
Wales	42	6,907	5	0.000724	154	0.1	1
Kivalina	7	926	3	0.003240	275	0.9	1
Point Hope	50	12,467	209	0.016764	534	9.0	9
Wainwright	49	10,723	108	0.010072	445	4.5	5
Barrow	60	44,687	379	0.008481	1,823	15.5	16
Nuiqsut \9	0	----	----	0.008481	227	1.9	2
Kaktovik	3	327	3	0.009174	154	1.4	1
Totals	250	87,920	775		4,592	38.8	41
Region\10	250	87,920	775	0.008815	4,592	40.5	41

- **1988:** 41 landed 4,592 persons in 9 communities

Table 1: Eleven Alaska Eskimo Whaling Villages' Subsistence & Cultural Need For Landed Bowhead Whales, 2010[1]

Community	Number of Observations[2]	Total Eskimo Population for ea. yr. of a Bowhead Observation[3]	Number of Bowheads Landed 1910-1969[4]	Mean Landed Per Capita 1910-1969[5]	2010 Alaska Native Population[6]	2010 Bowhead Need (Landed)[7]	2010 Need (Landed) Rounded[8]
Gambell	39	11,883	68	0.005722	654	3.7	4
Savoonga[9]	0	----	----	0.005722	637	3.6	4
Wales	42	6,907	5	0.000724	136	0.1	1
Diomede[10]	30	3,250	11	0.003678	110	0.4	1
Kivalina	7	926	3	0.003240	366	1.2	1
Point Hope	50	12,467	209	0.016764	629	10.5	11
Point Lay	34	2,080	8	0.003846	168	0.6	1
Wainwright	49	10,723	108	0.010072	510	5.1	5
Barrow	60	44,687	379	0.008481	2889	24.5	25
Nuiqsut[9]	0	----	----	0.008481	360	3.1	3
Kaktovik	3	327	3	0.009174	215	2.0	2
Totals	314	93,250	794		6,674	54.9	58
Region[11]	314	93,250	794	0.008515	6,674	56.8	57

- **2010:** 57 landed 6,674 persons in 11 communities

Table 1: Eleven Alaska Eskimo Whaling Villages' Subsistence & Cultural Need For Landed Bowhead Whales, 2010[1]

Community	Number of Observations[2]	Total Eskimo Population for ea. yr. of a Bowhead Observation[3]	Number of Bowheads Landed 1910-1969[4]	Mean Landed Per Capita 1910-1969[5]	2010 Alaska Native Population[6]	2010 Bowhead Need (Landed)[7]	2010 Need (Landed) Rounded[8]
Gambell	39	11,883	68	0.005722	654	3.7	4
Savoonga[9]	0	----	----	0.005722	637	3.6	4
Wales	42	6,907	5	0.000724	136	0.1	1
Diomede[10]	30	3,250	11	0.003678	110	0.4	1
Kivalina	7	926	3	0.003240	366	1.2	1
Point Hope	50	12,467	209	0.016764	629	10.5	11
Point Lay	34	2,080	8	0.003846	168	0.6	1
Wainwright	49	10,723	108	0.010072	510	5.1	5
Barrow	60	44,687	379	0.008481	2889	24.5	25
Nuiqsut[9]	0	----	----	0.008481	360	3.1	3
Kaktovik	3	327	3	0.009174	215	2.0	2
Totals	314	93,250	794		6,674	54.9	58
Region[11]	314	93,250	794	0.008515	6,674	56.8	57

Cash and Subsistence in Alaska

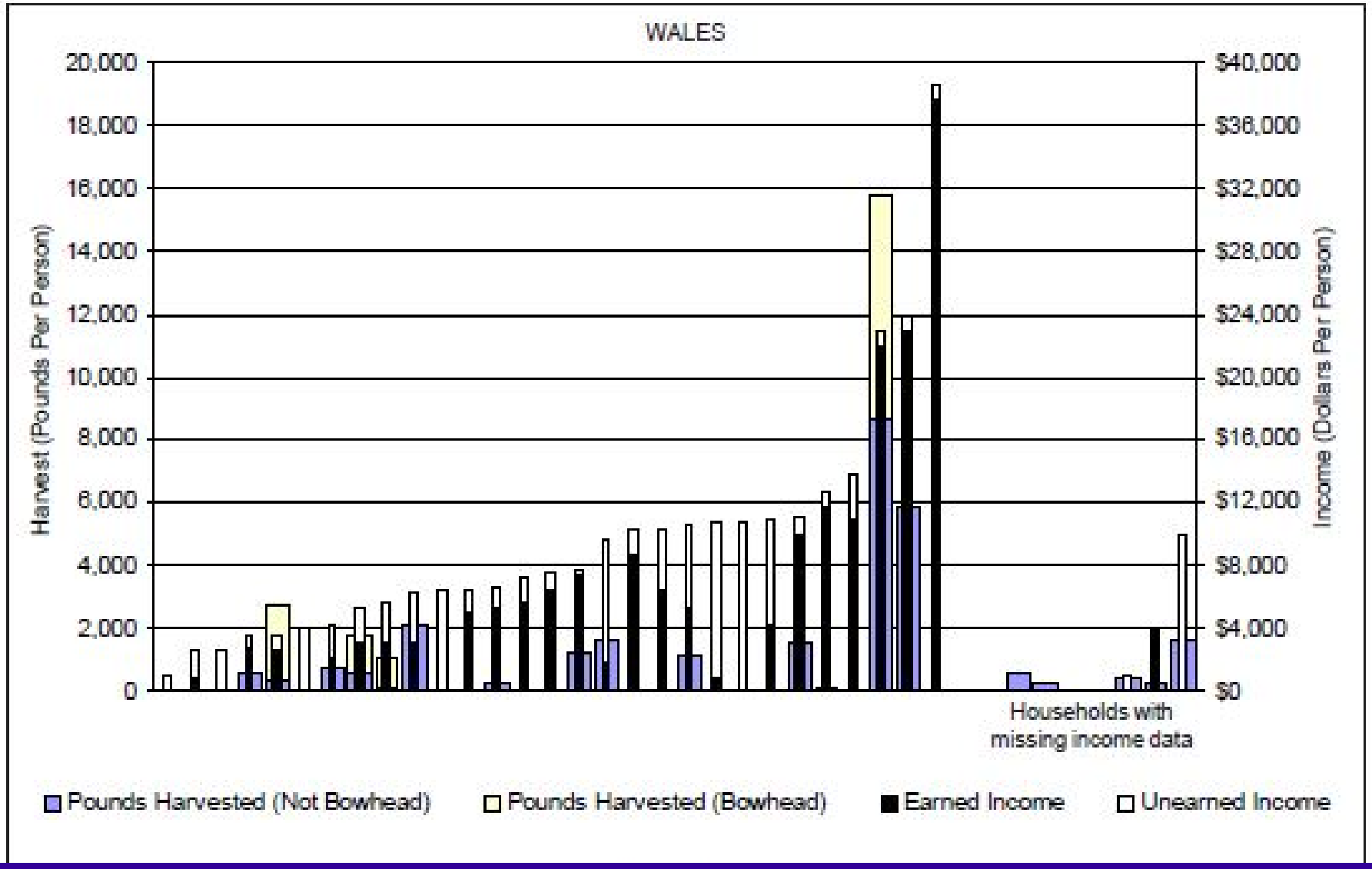
- Rural Alaskan communities characterized as "mixed-cash subsistence economy"
- Jobs supplies money to support subsistence activities
- Often, those with money support hunters who provide subsistence food for others in community
- Cash is a means to support subsistence harvesting
- Capital costs (boats, motors, snow machines, rifles) and expenses (gas, ammunition, food, repairs)

“30-70” Rule in Rural Alaska Subsistence

- In many rural Alaska communities, 30% of households generate 70% or more of subsistence harvest
- The “30-70” rule (Wolfe 1987)
- In Wales, 31% (11) of sampled households provided 85% of total community harvest
- Four of 11 households participated in bowhead harvest in study year
- Removing bowhead, 10 high harvesting households accounted for 83% of total harvest

Cash and Subsistence in Alaska

- Often the higher the income – greater the harvest



Proposed Recommendation #1

- Quota based on three elements:

1. Bowhead population sustainable; enough whales for a harvest?
2. Document Social and Cultural Importance
3. Quantify "Need"
   - Periodically based on new information

- **Recommendation:** No. 2 above - Documentation of Social and Cultural Importance is complete for the five current aboriginal subsistence whale fisheries (West Greenland, Chukotka, St. Vincent and the Grenadines, Makah, Alaska Eskimos)
- Respondent Burden

Proposed Recommendation #2

- Changes in technology associated with whaling activities do not alter the intrinsic nature, purpose, meaning, and sociocultural role of subsistence whaling
- Improved technology results in efficiency, safety, and faster time to death
- Penthrite bombs, snow machines, CB radios/cell phones, GPS instruments, aluminum boats, outboard motors, plastic floats, nylon rope do not change the significance or essence of subsistence whaling
- **Recommendation:** Finding from this workshop that technological changes in hunting methods do not compromise the integrity of traditional subsistence whaling activities

Quyanaq

Questions?