Technical Paper No. 376

Alaska Migratory Bird Subsistence Harvest Estimates, 2010, Alaska Migratory Bird Co-Management Council

Liliana C. Naves

September 2012

Alaska Department of Fish and Game
Division of Subsistence

Alaska Migratory Bird
Co-Management Council

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the reports by the Division of Subsistence. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly-accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly-accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
monetary symbols (U.S.)	$, ¢
months (tables and figures)	first three letters (Jan,...,Dec)
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	two-letter abbreviations (e.g., AK, WA)

Measures (fisheries)

fork length	FL
mideye-to-fork	MEF
mideye-to-tail-fork	METF
standard length	SL
total length	TL

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	e
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	E
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

TECHNICAL PAPER NO. 376

ALASKA MIGRATORY BIRD SUBSISTENCE HARVEST ESTIMATES, 2010, ALASKA MIGRATORY BIRD CO-MANAGEMENT COUNCIL

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The Division of Subsistence Technical Paper series was established in 1979 and represents the most complete collection of information about customary and traditional uses of fish and wildlife resources in Alaska. The papers cover all regions of the state. Some papers were written in response to specific fish and game management issues. Others provide detailed, basic information on the subsistence uses of particular communities which pertain to a large number of scientific and policy questions.

Technical Paper series reports are available through the Alaska Resources Library and Information Services (ARLIS), the Alaska State Library and on the Internet: http://www.adfg.alaska.gov/sf/publications/. This publication has undergone editorial and professional review.

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Front cover photo: A day's worth of subsistence harvests in the Yukon-Kuskokwim Delta, Alaska, spring 2010. As people in cities find their way through markets and groceries stores, Alaska subsistence harvesters negotiate tundra, forests, lakes, rivers, and the seaside. Subsistence hunting requires reading the environment and being able to seize opportunities within diverse ecosystems. Clockwise: northern pike and whitefish, white-fronted goose, scaup, fern shoots, and swan eggs. Photograph by James Van Lanen, ADF&G Division of Subsistence.

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ABSTRACT

This report presents subsistence harvest estimates of migratory birds and their eggs in Alaska for the data year 2010. Data were gathered through the harvest assessment program of the Alaska Migratory Bird Co-Management Council. This program relies on collaboration among the U.S. Fish and Wildlife Service, the Alaska Department of Fish and Game, and a number of regional Alaska Native organizations. Information obtained by this program is used to evaluate federal subsistence harvest regulations, to document customary and traditional uses of migratory birds in Alaska, and to plan for the continued harvest and conservation of birds. Participation of villages and individual households in the harvest survey is voluntary. The survey covers spring, summer, and fall harvests in most regions. Some regions also have a winter survey. Harvest estimates are based on a stratified multistage clustered sample of villages and households. The sample frame encompasses all households in regions eligible for the subsistence harvest of migratory birds and their eggs in Alaska. Households are the basic sampling unit. Data at the household level are confidential and data at the village level are considered sensitive. Villages with similar harvest patterns are grouped in subregions. Harvests reported by surveyed villages are expanded to nonsurveyed villages in the same subregion. Subregions are grouped into regions, which approximately correspond to the designated migratory bird management regions. Within villages, households are stratified by harvest level. Villages and regions are surveyed on a rotating schedule, which is adjusted yearly according to monitoring priorities and funding availability. In 2010, the harvest survey was conducted in 5 regions: Gulf of Alaska-Cook Inlet, Kodiak Archipelago, Yukon-Kuskokwim Delta, Bering Strait-Norton Sound, and Interior Alaska.

Key words: Alaska Migratory Bird Co-Management Council, AMBCC, migratory birds, migratory bird eggs, subsistence harvest, subsistence hunting, subsistence harvest estimates, ducks, geese, swans, cranes, ptarmigans, grouses, seabirds, shorebirds, grebes, loons.

INTRODUCTION

AMBCC SUBSISTENCE HARVEST ASSESSMENT PROGRAM

In 1918, Canada and the United States ratified the Migratory Bird Treaty Act (the treaty) to protect wild bird populations. The treaty later included agreements with Mexico, Japan, and Russia. The treaty set provisions to protect migratory bird populations, including a yearly hunting season closure between March 10 and September 1. However, this provision failed to provide for the harvest of migratory birds by northern peoples in spring and summer; these harvests have been historically necessary to their subsistence way of life. Despite the closure, customary and traditional hunting of migratory birds in spring and summer continued.

In 1997, the U.S. Congress ratified an amendment to the treaty that legally recognized the traditional spring and summer subsistence harvests of migratory birds by northern peoples. The goal of the amendment was to promote conservation of migratory birds by including subsistence hunting in the regulatory process. This amendment authorized the U.S. Fish and Wildlife Service (USFWS) to open regulated spring and summer subsistence hunts of migratory birds in Alaska. The treaty amendment also mandated that Alaska's indigenous inhabitants play a meaningful role in migratory bird conservation by participating in relevant management bodies. As a result of this direction, the Alaska Migratory Bird Co-Management Council (AMBCC) was formed in 2000. The AMBCC is composed of representatives from the USFWS, Alaska Department of Fish and Game (ADF&G), and regional Alaska Native entities (CFR vol. 65, No. 60, pp. 16405–16409, March 28, 2000). The AMBCC first met in October 2000, at which time they discussed the need for harvest assessment to document traditional uses of migratory birds and levels of harvest. Harvest assessment is also necessary to meet the intentions of the amended treaty: 1) subsistence harvests should remain at traditional levels relative to bird population sizes; 2) subsistence harvest data should be integrated with flyway and national harvest management programs; and 3) regulatory processes for all migratory bird hunting should be inclusive to users and responsive to conservation needs. The AMBCC found the available harvest data insufficient to properly address management issues and formed the Subsistence Harvest Survey Committee (AMBCC-HSC). This group of Alaska agency staff, regional partners, and consultants was charged with designing a statewide migratory bird subsistence harvest survey to assess the amount and composition of subsistence harvests.

A statewide harvest survey protocol (AMBCC 2003) was designed based on the surveys conducted in the context of the goose management plan (Pamplin 1986; Zavaleta 1999) for the Yukon-Kuskokwim Delta (Copp and Roy 1986; Wentworth and Seim 1996; Wentworth 1998, 2004, 2007b), Bristol Bay (Seim and Wentworth 1996; Wentworth 2007a), and Bering Strait (Kawerak Inc. 2004), as well as on elements of the USFWS Migratory Bird Harvest Information Program (HIP), which assesses sport harvests of selected migratory bird species (Bales et al. 2002; Padding et al. 2006; Moore et al. 2007; Raftovich et al. 2010). The AMBCC harvest assessment program relies on collaboration between USFWS, ADF&G, and Alaska Native partners; the program is funded by the USFWS. The first legal spring–summer subsistence season was in 2003. The AMBCC statewide subsistence harvest survey was first implemented in 2004. Funding of the survey program has been 40–50% short every year. As a cost-cutting measure, in 2005, the AMBCC-HSC adopted a regional rotation, and since then only the Yukon-Kuskokwim Delta region has been surveyed yearly. Other regions are surveyed approximately every other year. The necessity of reduced, rotating survey coverage has extended the time necessary to detect changes in harvest levels.

The AMBCC and its Harvest Survey Committee recognize the need to conduct an effective survey that provides accurate and timely harvest information in order to meet treaty obligations, to protect subsistence harvest traditions, and to sustain migratory bird populations. In November 2007, the AMBCC-HSC asked the ADF&G Division of Subsistence to assess the performance of the original survey design and challenges to its implementation. Based on the survey assessment report (Naves et al. 2008), the AMBCC-HSC evaluated problems, considered technical improvements to the survey methods, and collaboratively reformulated an operational plan. In June 2008, the AMBCC-HSC presented

recommendations to the AMBCC. After discussions and adjustments, in September 2008, the AMBCC adopted the revised survey methods. During 2009, the revised survey materials were finalized and preparations were made for the transition into the revised survey. The revised survey was first implemented to collect 2010 harvest information presented in this report. The section "Methods" of this report describes the revised survey methods and the revised survey materials are presented as appendices.

This report is the fourth in a series of reports presenting yearly regional and subregional harvest estimates for birds and bird eggs based on data collected by the AMBCC harvest assessment program. Harvest estimates for 2004–2007 were reported in Naves (2010a), harvest estimates for 2008 were reported in Naves (2010b), and harvest estimates for 2009 were reported in Naves (2011).

AMBCC MEMBER ORGANIZATIONS

The Alaska Migratory Bird Co-Management Council is currently composed of representatives from:

- U.S. Fish and Wildlife Service;
- Alaska Department of Fish and Game;
- Chugach Regional Resources Commission;
- Sun'aq Tribe of Kodiak;
- Aleutian-Pribilof Islands Association;
- Bristol Bay Native Association;
- Association of Village Council Presidents;
- Kawerak Inc.;
- Maniilaq Association;
- North Slope Borough;
- Tanana Chiefs Conference; and
- Copper River Native Association.

USES OF THE INFORMATION OF THE SUBSISTENCE HARVEST SURVEY

Harvest estimates from the subsistence harvest survey are available to Alaska rural communities (hereinafter referred to as "villages"), Alaska Native organizations, state and federal resource management and conservation agencies, the Pacific Flyway Council, and the general public. Data at the household level are confidential and data at the village level are considered sensitive. Preliminary harvest estimates based on survey data are submitted to Alaska Native regional partners for review before being adopted by the AMBCC in its yearly spring meeting. Information from the survey is not to be used for punitive enforcement purposes, nor has this been reported to have happened. Some uses of the survey data are:

- Document the importance of customary and traditional uses of migratory birds by Alaska rural villages so that subsistence uses will be protected and conducted in a sustainable manner;
- Document subsistence harvest trends and track changes in harvests;
- Assist the USFWS in the evaluation of spring–summer migratory bird harvest regulations; and
- Assist in the development of management plans by state and federal agencies.

METHODS

DATA COLLECTION

Overall Survey Design

Sampling Strategy

The subsistence harvest survey covers 193 rural villages (Appendix A) within the regions eligible to participate in the subsistence harvest of migratory birds in Alaska (50 CFR, Part 92, Subpart 92.5). According to the 2010 census, these villages have a total population of 89,481 people living in 26,802 households (U.S. Census Bureau 2011). A census survey to evaluate the subsistence harvests of migratory birds within eligible regions would be impractical and cost-prohibitive. Thus, sampling of regions, villages, and households is the basis for the calculation of harvest estimates.

The subsistence harvest survey employs a stratified multistage clustered sampling method where each sampling stage refers to specific sampling units (Cochran 1977:274; Bernard et al. 1998). There are 4 sampling stages in the subsistence harvest survey: 1) the subregions sampled in a region, 2) the villages sampled in a subregion, 3) the harvest level strata sampled in a village, and 4) the households sampled in each harvest level stratum. The number of villages and households varies among subregions. Each step in the calculation of harvest estimates and variances is weighted by the total number of households in the respective sampling stage: region, subregion, village, and harvest level strata within villages.

Sampling Frame

The household is the basic sampling unit. The sampling frame encompasses all yearlong resident households in regions eligible for the subsistence harvest of migratory birds and their eggs in Alaska. In the surveyed villages, data collection relies on a village household list that includes all resident households (Appendix B). A household is considered resident if its members live in the village year-round and have lived in the village for the 12 previous months. The list of resident households also does not include unoccupied dwellings, commercial buildings, and public buildings. The number of occupied households as in the 2010 census was used for the nonsurveyed villages (U.S. Census Bureau 2011).

Precision Goal

The precision goal of the subsistence harvest survey is based on the precision goal of the nationwide Migratory Bird Harvest Information Program (HIP)—95% confidence intervals within 10–20% of the estimated harvest (Bales et al. 2002:70). However, there are difficulties in comparing harvest estimates and confidence intervals from these 2 surveys: 1) HIP currently does not report confidence intervals for harvest estimates of individual species, 2) sport and subsistence hunting patterns may have different effects on the precision of harvest estimates, and 3) subsistence harvest estimates are currently available at the regional and subregional levels whereas sport hunting estimates are available at the state level.

The subsistence harvest survey covers a large geographic area and a large number of species. Some species are abundant and harvested in relatively large numbers. Other species are harvested only occasionally because they have small populations, restricted distribution, or are not widely used for subsistence purposes. Wide-coverage sampling designs such as the AMBCC survey cannot address both commonly- and rarely-harvested species with the same level of precision (Copp and Roy 1986:11, H-15). Few data points for species rarely harvested may result in less accurate harvest estimates and wider confidence intervals as compared to species commonly harvested. After the publication of the first spring–summer subsistence harvest regulations in 2003, the public, biologists, and resource managers expressed strong interest in subsistence harvests of nongame bird species, which are sometimes harvested, although in relatively low numbers. Dedicated harvest surveys and specific analytical procedures would be required to accurately determine the harvests of species that have small populations, low densities, or

limited distributions, and that are less likely to be precisely documented in the regular statewide subsistence harvest survey.

Regions, Subregions, and Villages

Villages with similar harvest patterns are grouped into subregions. Reported harvests from surveyed villages are expanded to nonsurveyed villages in the same subregion. The subregions are grouped into regions (Figure 1), which approximately correspond to the 12 designated migratory bird management regions (CFR vol. 68, No. 139, pp. 43010–43030, July 21, 2003). The survey uses 10 regions—the Gulf of Alaska and Cook Inlet regions were combined because of their small numbers of eligible villages (Figure 2), and the Southeast Alaska region has not been surveyed because of a lack of regional partnerships for data collection and because only a few villages are eligible for the harvest of eggs (Figure 11, Appendix A). Regional hub villages (Kodiak, Unalaska, Dillingham, Bethel, Nome, Kotzebue, Barrow, and Tok) are considered as subregions composed of only 1 village because these larger villages likely have harvest patterns that differ from those of smaller villages (e.g., fewer harvesters and lower harvests per household). The 10 regions are divided in 29 subregions (figures 1–11, Appendix A).

Rotation of Regions and Villages

Rotation of regions (Table 1) and villages has been implemented as a cost reduction measure, but it also contributes to reduce survey burden on Alaska villages, which in a single year may experience multiple surveys for other subsistence resources (e.g., moose, caribou, marine mammals, halibut, salmon) or socio-economic and health assessments. According to the standard rotation schedule, about half of the regions are surveyed in a survey year and half of the villages in the surveyed regions are surveyed. The rotation is based on region grouping codes (“1” and “2”) and village grouping codes (“a” and “b”). Therefore, the rotation of regions and villages operates in a 4-year cycle and each village is surveyed once every 4 years (combinations of regions and villages: “1a,” “2b,” “1b,” “2a;” Appendix A). The Yukon-Kuskokwim Delta and North Slope regions were scheduled to be surveyed yearly, with rotation of villages, because these regions are considered monitoring priorities.

Table 1.–Region rotation schedule.

Regions	Year 1	Year 2	Year 3	Year 4
Gulf of Alaska-Cook Inlet	•		•	
Kodiak Archipelago	•		•	
Aleutian-Pribilof Islands		•		•
Bristol Bay		•		•
Yukon-Kuskokwim Delta	•	•	•	•
Bering Strait-Norton Sound	•		•	
Northwest Arctic		•		•
North Slope	•	•	•	•
Interior Alaska	•		•	
Upper Copper River		•		•
Southeast Alaska[a]	•		•	

• = Region scheduled to be surveyed.

a. Southeast Alaska has not been surveyed.

Village rotation groups were defined by sorting villages within subregions in descending order of village size (total number of households) and alternately assigning a village grouping code (“a” or “b”) to each

village. The number of households in the village was estimated by dividing the 2008 village population estimates[1] by the average household size from the 2000 census (village population divided by number of occupied households; U.S. Census Bureau 2001). If the total number of households to be surveyed in a region was very different between years of the rotation schedule, village grouping codes were rearranged to distribute yearly sampling effort and survey costs more evenly among years. Most regional hub villages (Bethel, Dillingham, Kotzebue, Nome, Kodiak, Unalaska, and Tok) rotate in the same manner as the smaller villages in each region. The North Slope region includes a small number of villages and the hub of Barrow accounts for a large proportion of the households in the region. For this reason, Barrow was scheduled to be surveyed every year together with half of the smaller villages.

The standard rotation schedule serves as a frame for selection of regions and villages to be surveyed each year. However, the standard rotation schedule may be adjusted on a yearly basis to respond to monitoring priorities, funding constrains, village consent to conduct the survey, and fieldwork logistics in remote areas of Alaska (e.g., weather, communication, costs, local partnerships in place for data collection)

In 2010, efforts were made to fully implement year 1 of the region rotation schedule (Table 1), and the AMBCC harvest survey was conducted in 5 regions: Gulf of Alaska-Cook Inlet, Kodiak Archipelago, Yukon-Kuskokwim Delta, Bering Strait-Norton Sound, and Interior Alaska (Table 2). The following organizations participated in the 2010 data collection:

- Gulf of Alaska-Cook Inlet: McLaughlin Environmental Services;
- Kodiak Archipelago: Kodiak National Wildlife Refuge (NWR), Wood Island Tribal Council;
- Yukon-Kuskokwim Delta: Yukon Delta NWR,Togiak NWR;
- Bering Strait-Norton Sound: Kawerak Inc.;
- Interior Alaska: Yukon Flats NWR, Arctic NWR, Kanuti NWR, Koyukuk-Nowitna NWR, Innoko NWR, Tanana Chiefs Conference, Conference of Athabascan Tribal Governments.

In some villages, arrangements were made directly with a local surveyor (Nanwalek, Karluk, Larsen Bay, Port Lions, Alatna, and Allakaket).

Table 2.–Regions surveyed in 2004–2010.

Regions	2004	2005	2006	2007	2008	2009	2010
Gulf of Alaska-Cook Inlet	•	•	•				•
Kodiak Archipelago			•				•
Aleutian-Pribilof Islands		•		•	•		
Bristol Bay	•	•	•	•	•		
Yukon-Kuskokwim Delta	•	•	•	•	•	•	•
Bering Strait-Norton Sound	•	•		•		•	•
Northwest Arctic			•				
North Slope		•		•	•	•	
Interior Alaska	•	•	•	•	•		•
Upper Copper River	•			•			
Southeast Alaska							

Source Survey results for 2004–2009 were reported in Naves (2010a, 2010b, 2011).

1. Alaska Department of Labor and Workforce Development, website http://almis.labor.state.ak.us/?PAGEID=67&SUBID=171 (Accessed 7 July 2008).

Ethical Standards

Households usually consider their subsistence harvests a private matter. From a harvester's perspective, subsistence harvest surveys collect information that commonly is private and sensitive. The subsistence bird harvest is a particularly sensitive topic because it was illegal until very recently (the first legal harvest season was in 2003). In addition, users of subsistence resources fear that information provided in harvest surveys may be used to further regulate, control, and limit subsistence harvest practices that are essential for their diet, culture, and society. To meet the survey objectives, it has been absolutely necessary to develop and maintain trust and collaboration among the local residents and organizations and the resource management agencies. As part of these efforts, the following standards for data collection, management, and release have been defined by the AMBCC and its Harvest Survey Committee:

- Participation in the AMBCC survey is voluntary at the village and the household level.
- Data are reported at the regional and subregional levels. Data at the village level are considered sensitive and data at the household level are confidential. Hub villages are an exception because they are a subregion composed of a single village.
- Although village household lists are necessary to correctly conduct surveys, household names are not used in harvest report forms and are not entered in the database (a numeric household ID is used instead). Before archiving of survey forms, names on household lists are covered, the lists not showing names are photocopied, and the original lists are destroyed.
- The raw data stored in the database and the scanned original survey forms are archived by the ADF&G Division of Subsistence following its ethical standards. Formal requests of access to raw data are considered on a case-by-case basis by the AMBCC executive director and are subject to the ethical standards of the ADF&G Division of Subsistence.

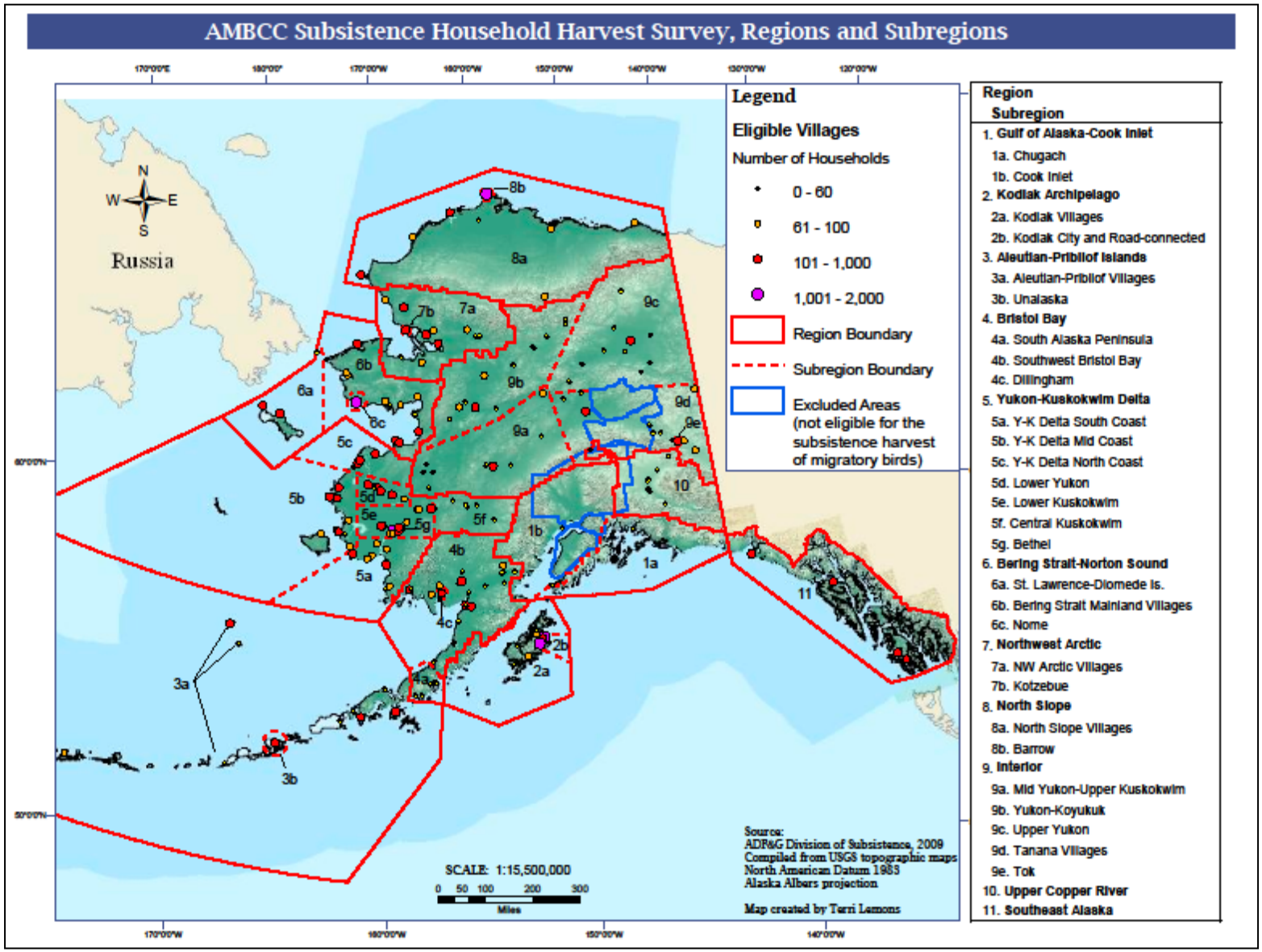

Figure 1.–Regions and subregions of the AMBCC migratory bird subsistence harvest survey.

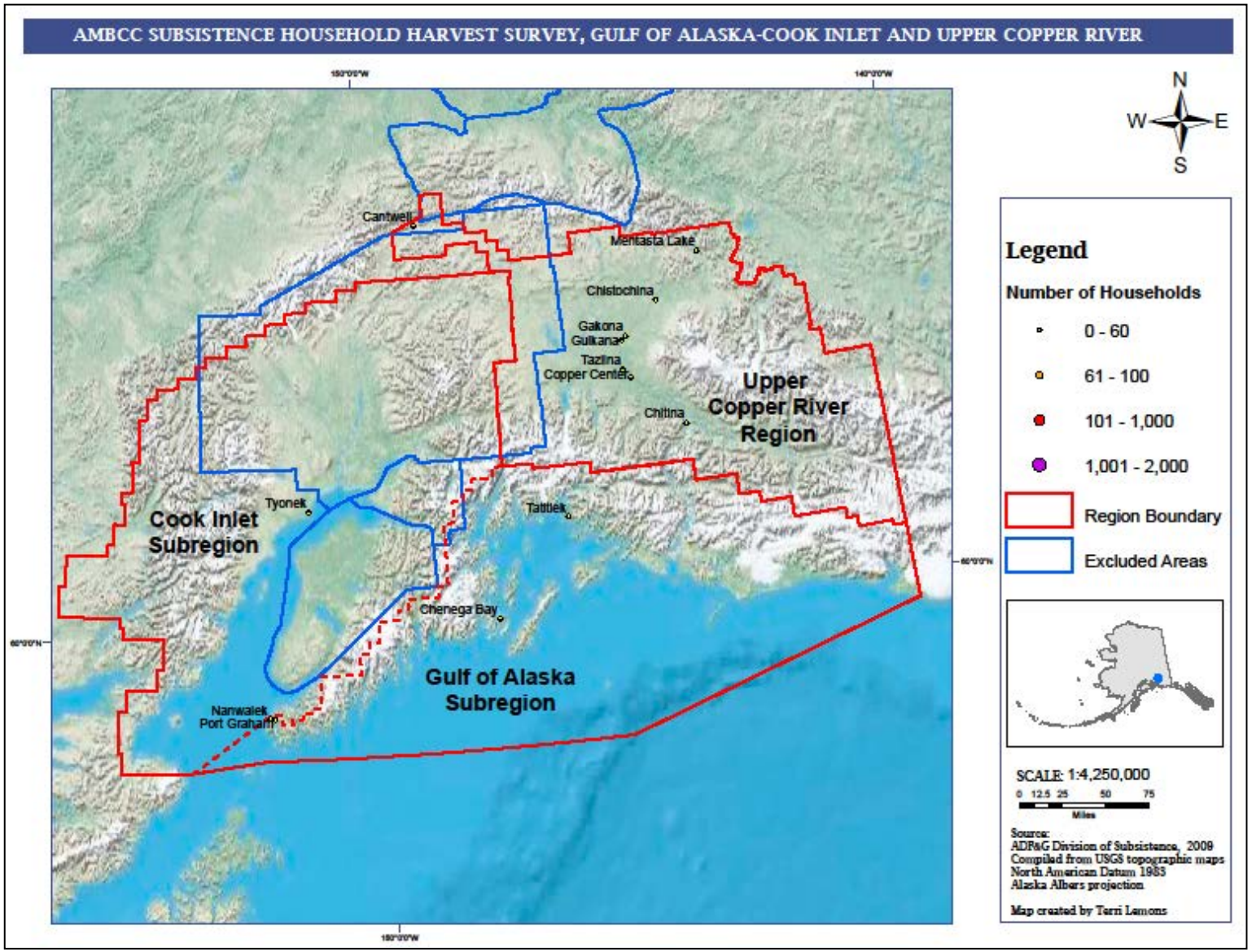

Figure 2.–Gulf of Alaska-Cook Inlet and Upper Copper River regions.

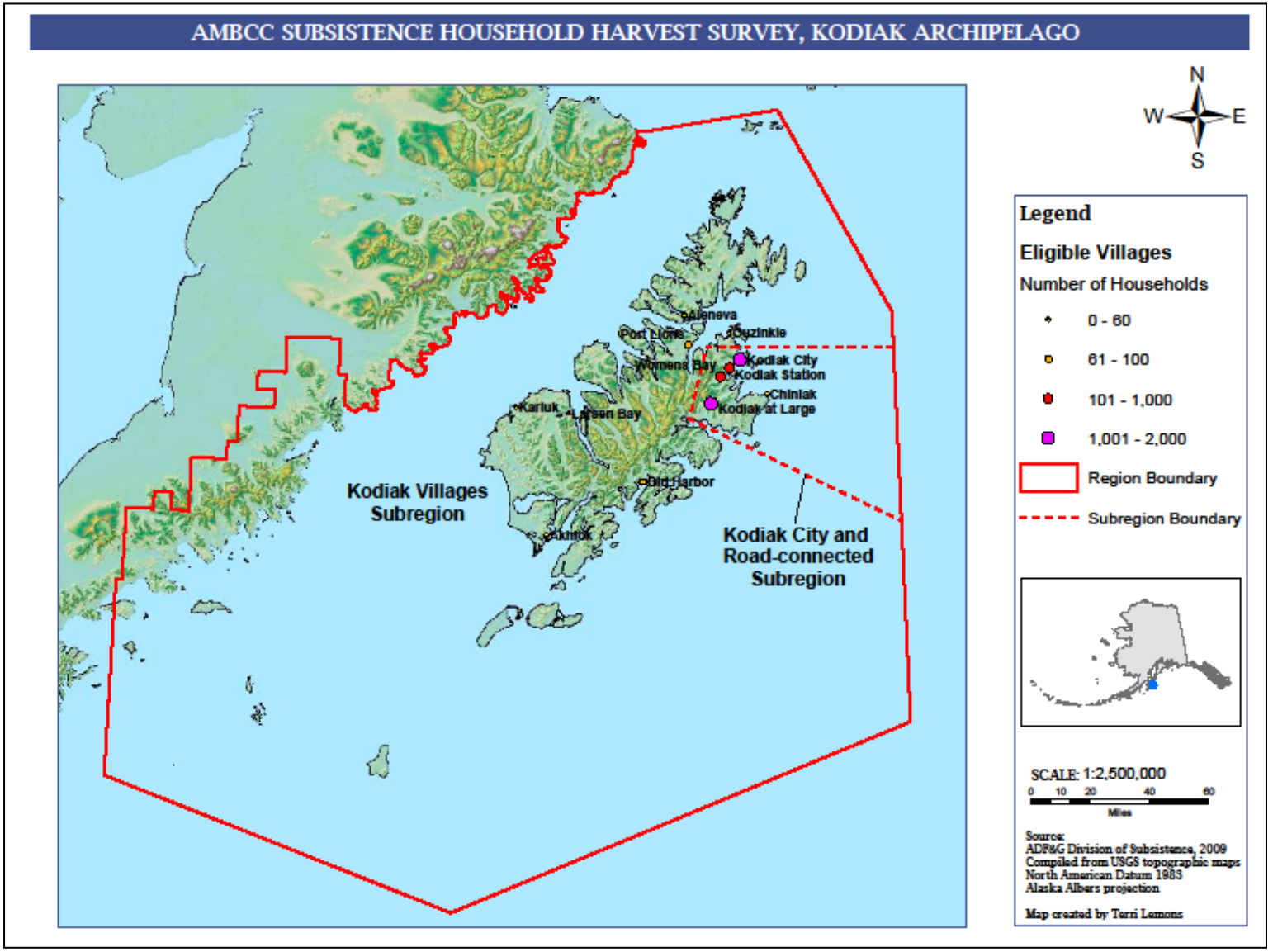

Figure 3.–Kodiak Archipelago region.

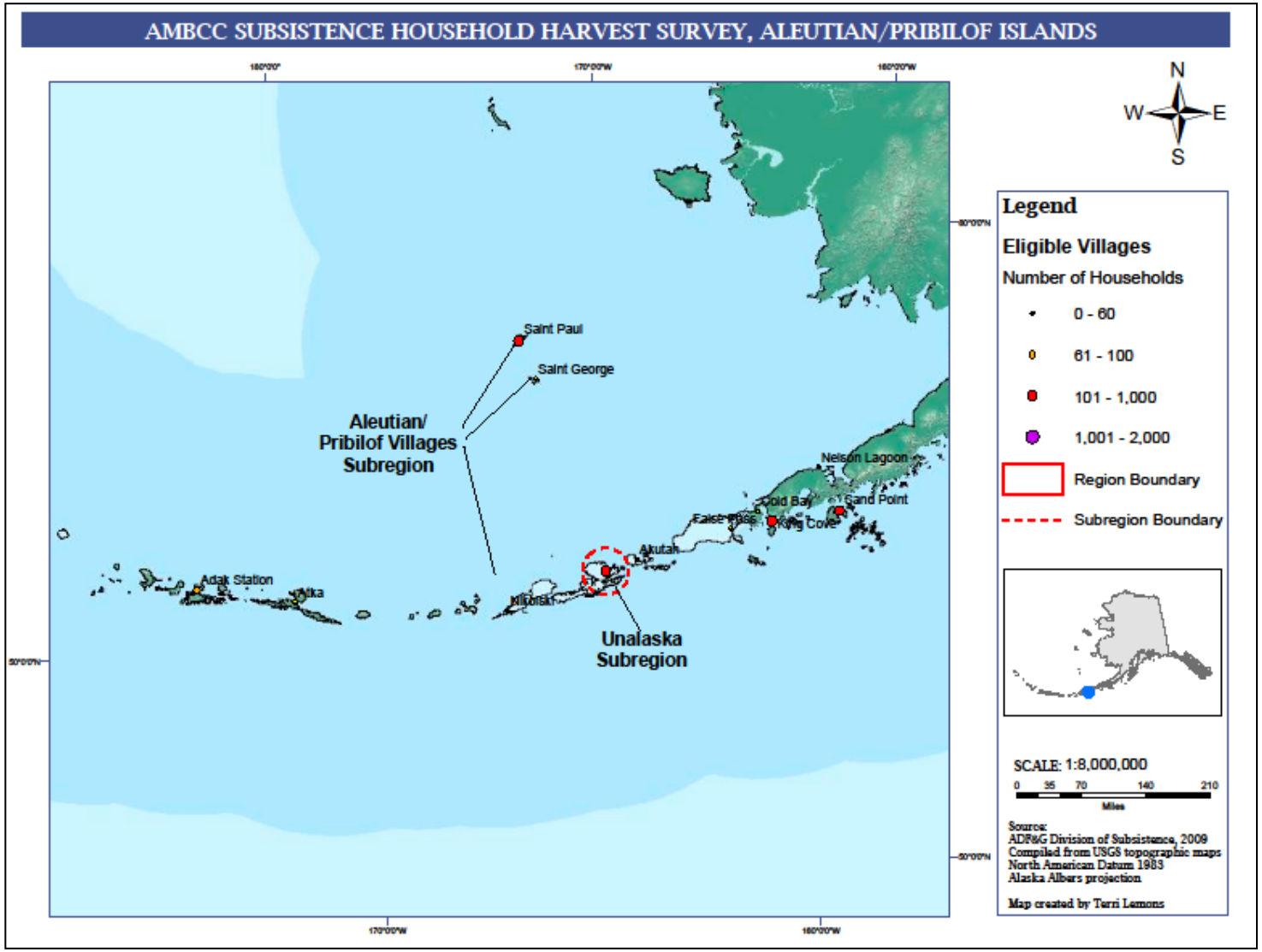

Figure 4.–Aleutian-Pribilof Islands region.

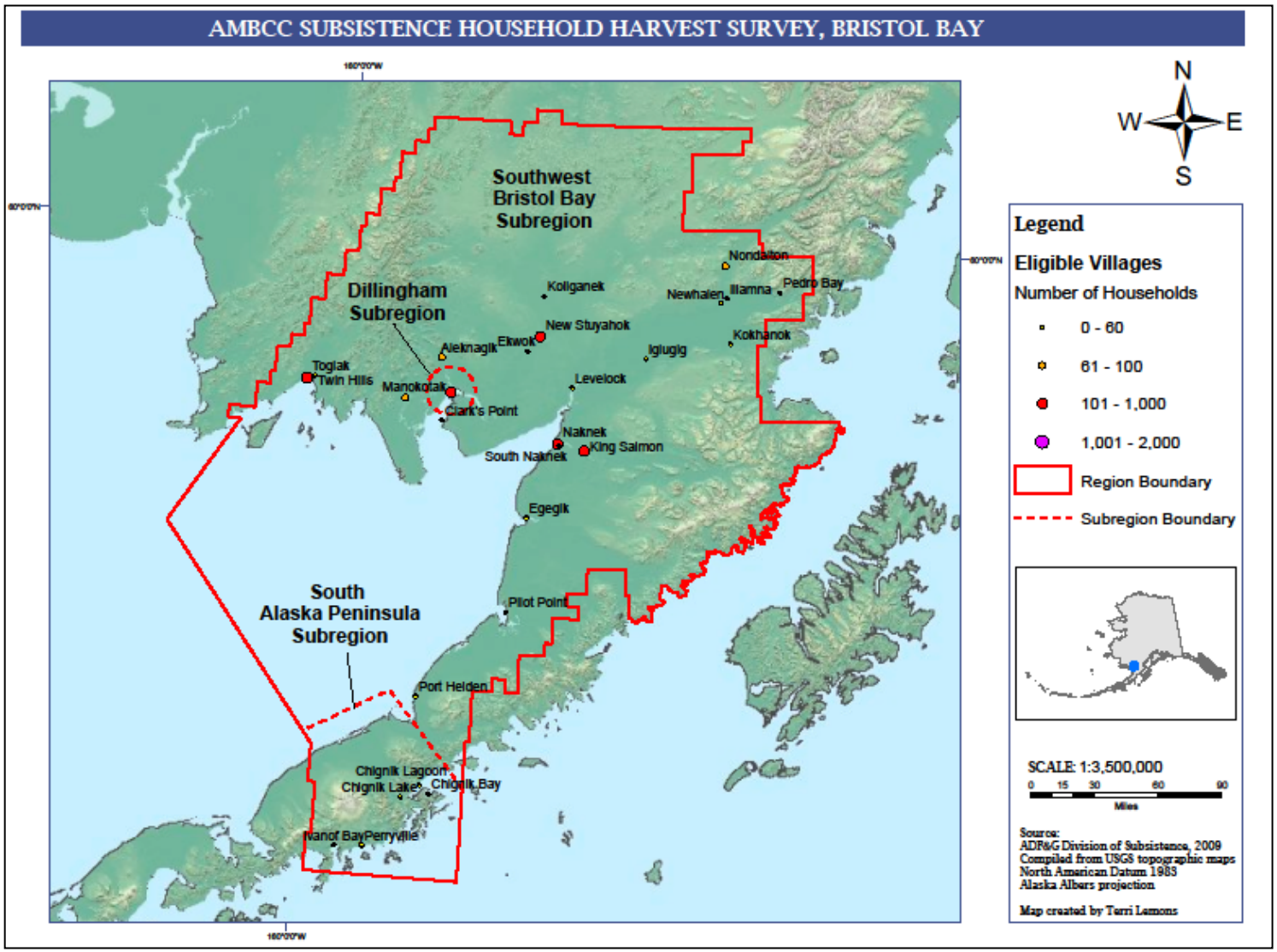

Figure 5.–Bristol Bay region.

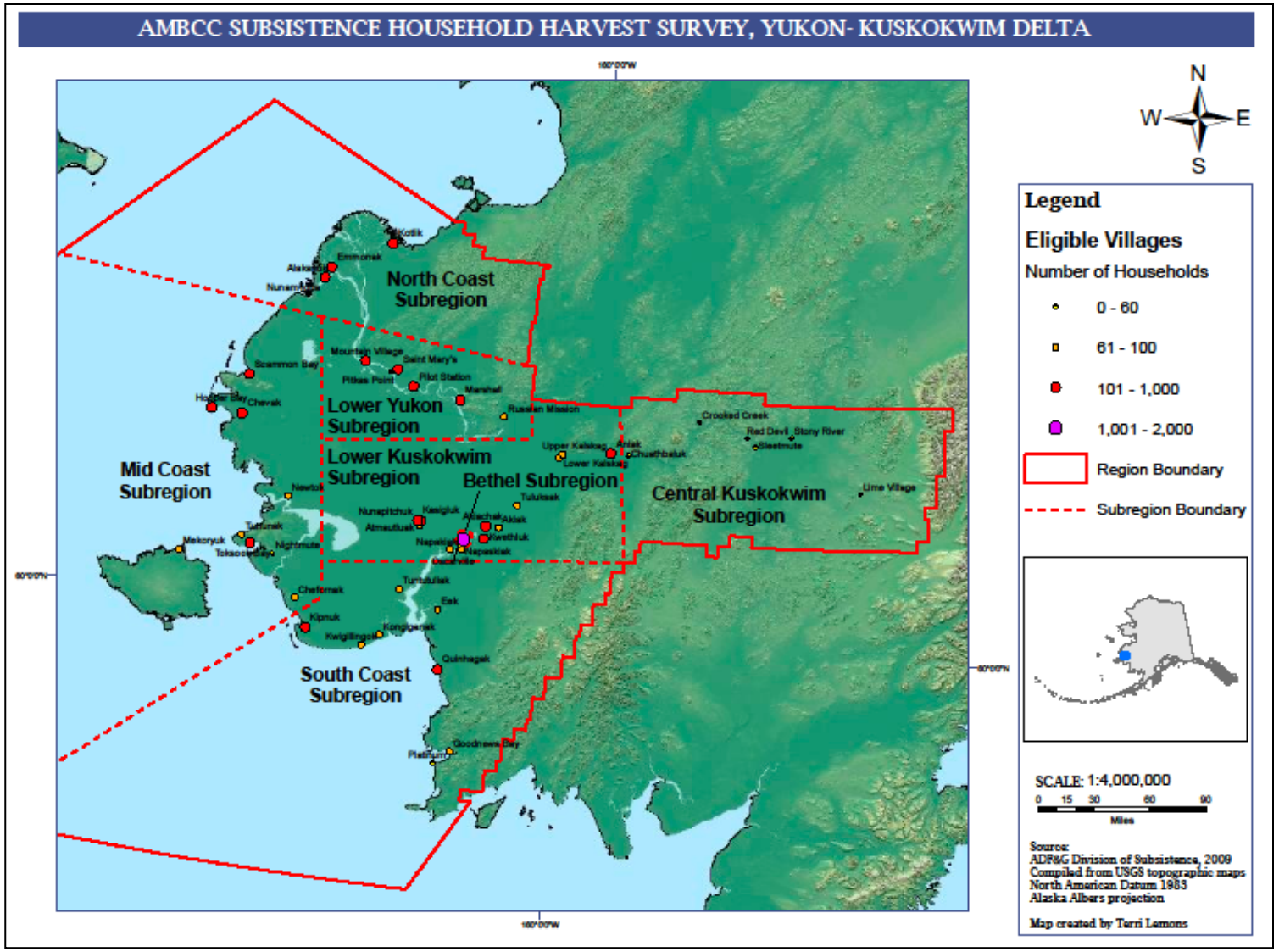

Figure 6.–Yukon-Kuskokwim Delta region.

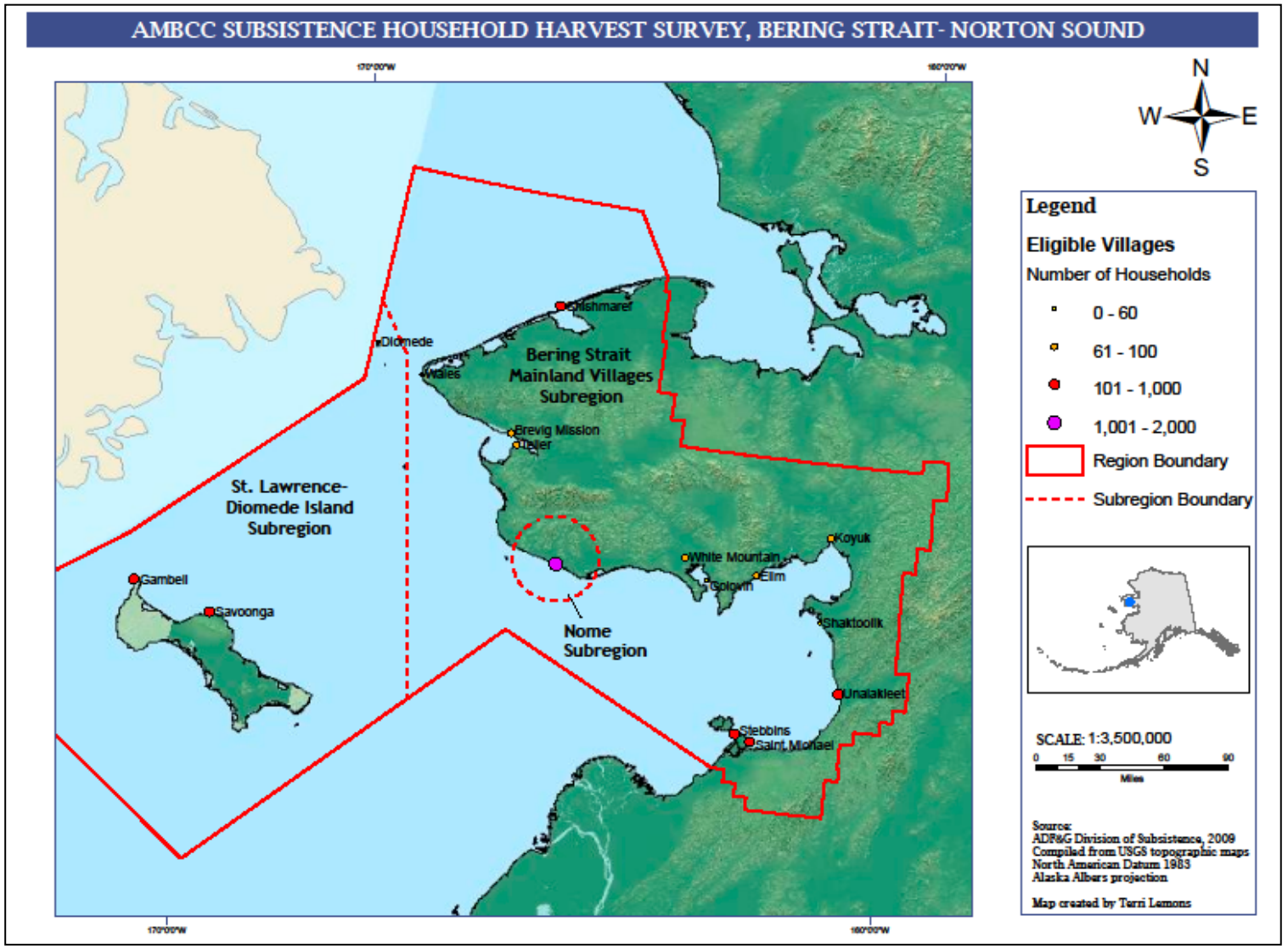

Figure 7.–Bering Strait-Norton Sound region.

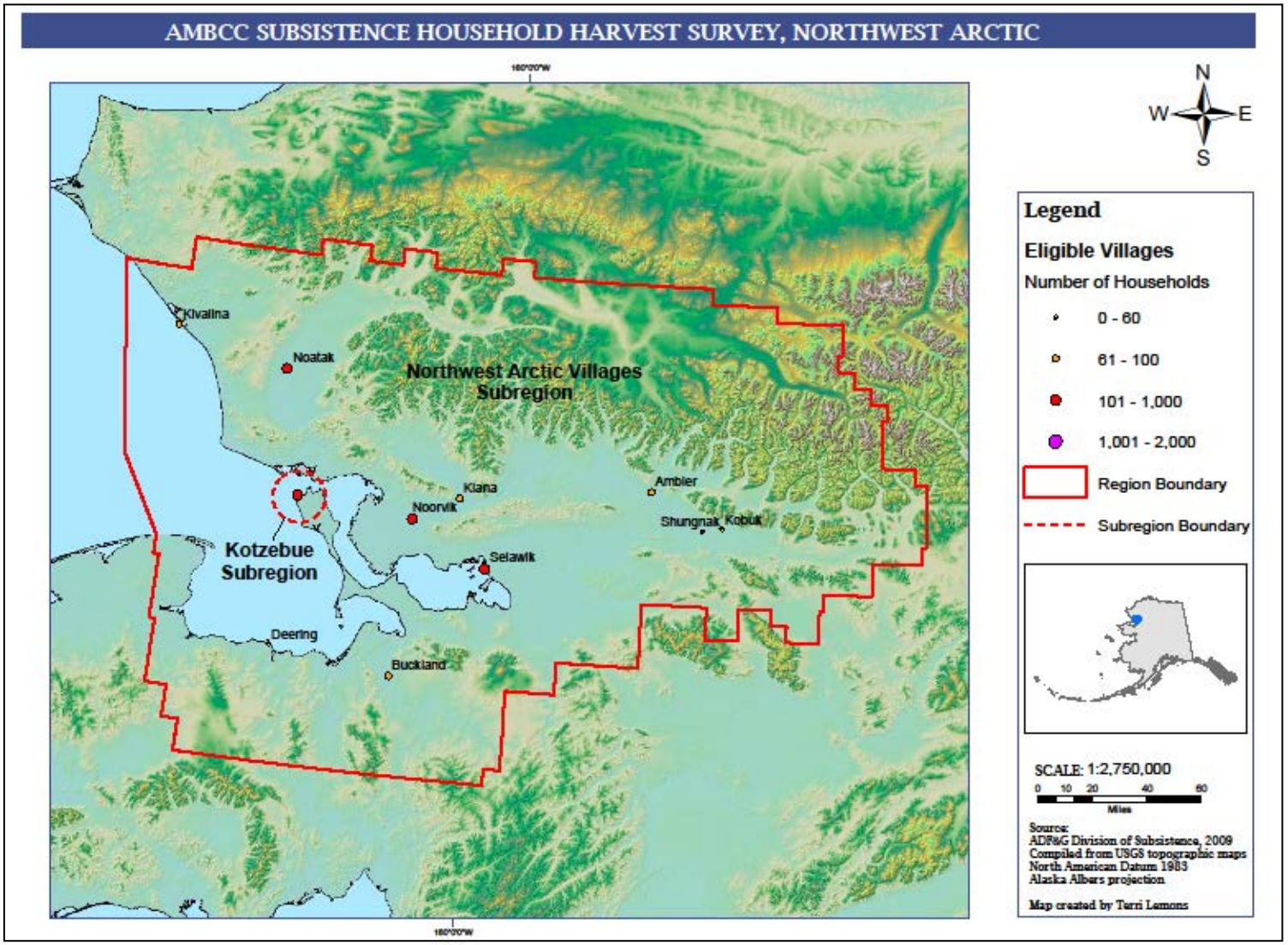

Figure 8.–Northwest Arctic region.

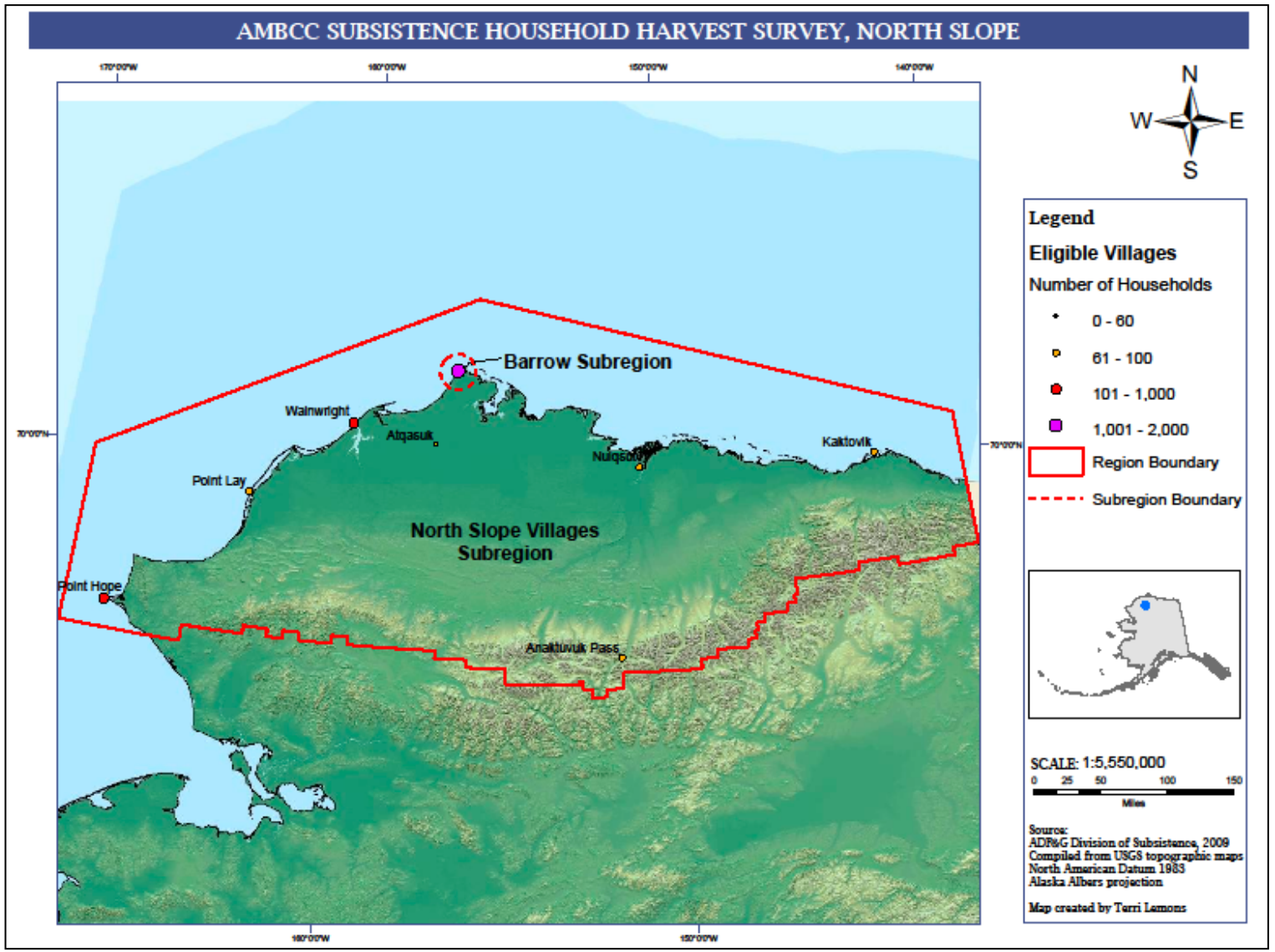

Figure 9.–North Slope region.

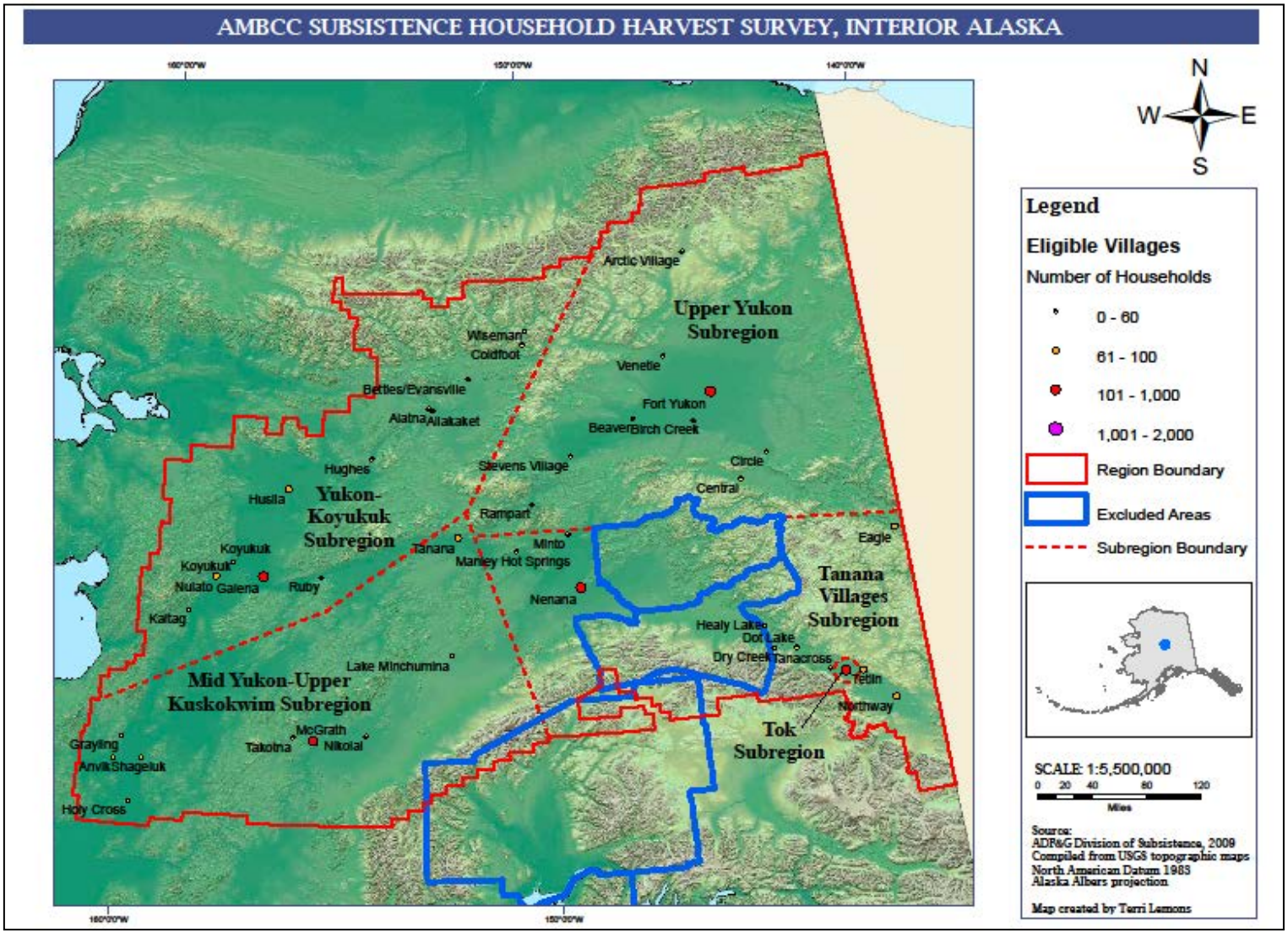

Figure 10.–Interior Alaska region.

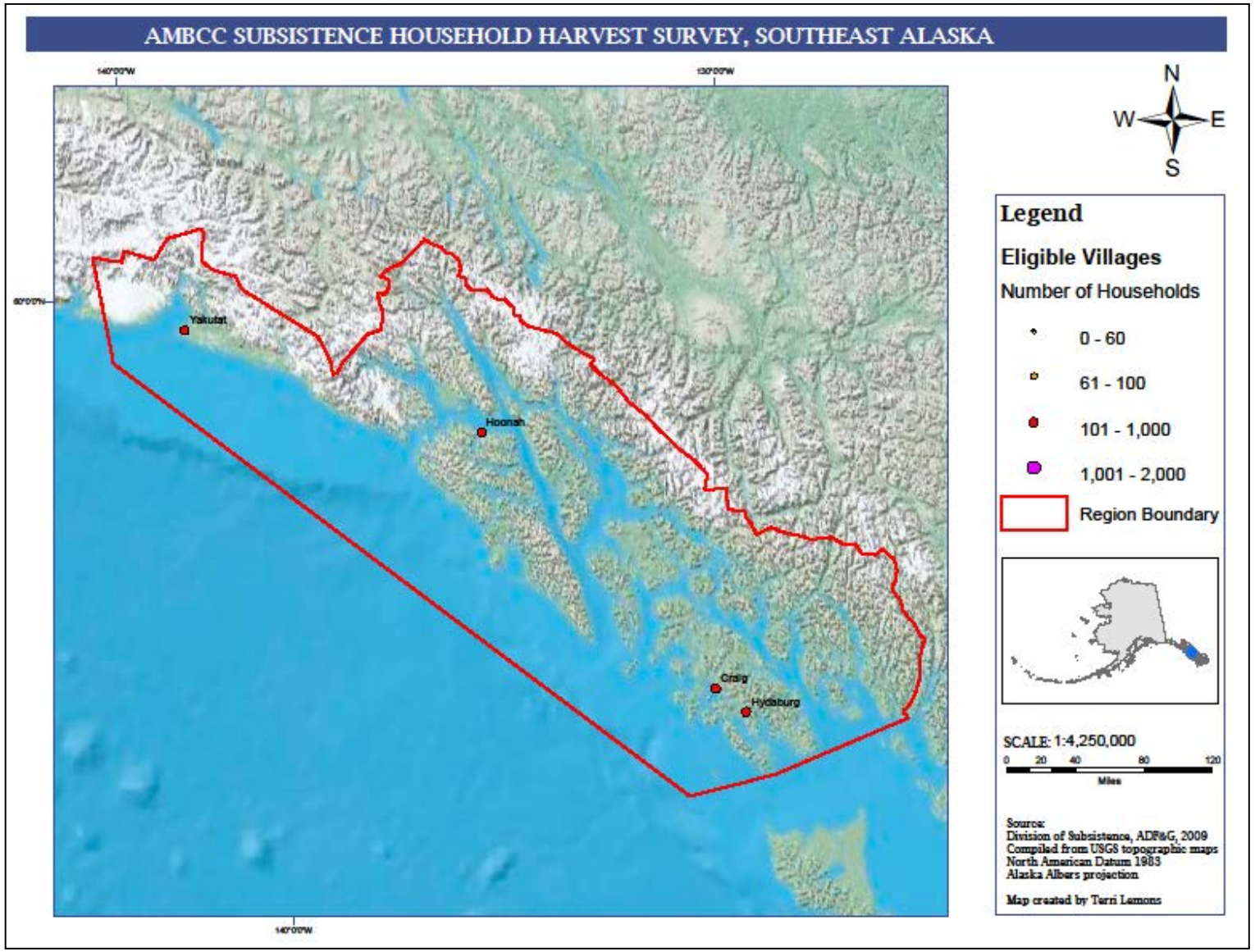

Figure 11.–Southeast Alaska region.

Sampling Methods

Villages surveyed across the state vary in size from a few households to about 2,000 households. Sampling methods compatible with village size are necessary to implement data collection (Naves et al. 2008). To compile or update a complete list of resident households using the "household list and selection form" (Appendix B) is a key step in the early stages of data collection in each village. The sampling method and the sampling proportion are defined according to the total number of households residing in a village for at least the last 12 months (Table 3).

Table 3.–Sampling methods and sampling proportions based on village size.

Village size (total resident households)	Sampling methods and sampling proportions
≤30 households	Census (100% sampling)
31–60 households	Simple random sampling (75%)
61–2,000 households	"Harvester, other" stratification: • Total sampling proportion based on village size. • Sample is composed of 80% of "harvester" and 20% of "other." • If a stratum has 10 or fewer households, all households in that stratum are to be surveyed (depending on household consent). • If the number of households in a stratum is smaller than the stratum sampling goal, all households in that stratum are to be surveyed and enough households are to be surveyed in the other stratum to meet the village sampling goal.
61–100 households	Village sampling proportion = 40%
101–300 households	Village sampling proportion = 30%
301–1,000 households	Village sampling proportion = 25%
1,001–1,500 households	Village sampling proportion = 20%
1,501–1,800 households	Village sampling proportion = 17%
1,801–2,000 households	Village sampling proportion = 15%

Census: 100% Sampling (up to 30 resident households)

In small villages (up to 30 resident households), the survey is conducted by census (100% sampling). A census survey was defined for these villages because implementation of stratification and its stratum-specific sampling proportions with a small total number of households may result in sample sizes that are too small and may lead to a biased sample (i.e., if only "harvester" or only "other" households are represented in the sample). Sampling may be treated as a simple random sampling if a census was attempted but some households could not be contacted or declined to participate.

75% Simple Random Sampling (31–60 resident households)

A simple random sampling with sampling proportion of 75% of the resident households is used in villages of intermediate size (31–60 resident households).

"Harvester, Other" Stratification (more than 60 resident households)

Two-level stratification is used in villages with more than 60 resident households. The stratum "harvester" includes all households that usually harvest birds or collect eggs. The stratum "other" includes non-harvesters and households of unknown hunting pattern. For the purpose of this survey, non-

harvesters were defined as households that have not harvested birds or eggs in any of the last 3 years. The main aspects of this sampling method are:

- The total sampling proportion for the village is based on the village size (Table 3).
- The village sample is constituted of 80% harvester and 20% other households.
- If a stratum has 10 or fewer households, an attempt is made to survey all households in that stratum.
- If the number of households in a stratum is smaller than the stratum sampling goal, an attempt is made to survey all households in that stratum and an attempt is made to survey enough households in the other stratum to meet the village sampling goal.

In villages of small and intermediate size (up to 100 households), the local surveyor usually is familiar with the hunting pattern of most households and know at which stratum ("harvester" or "other") each household better fits in. If the surveyor is unsure to which stratum to assign a household, he/she can directly ask the household or consult with knowledgeable people in the village including people at the tribal or village council. In villages with more than 100 households, surveyors may work with local survey consultants to identify which households usually harvest birds and which do not. Survey consultants can be tribal council members, village elders, or other knowledgeable people in the village. Survey consultants are identified by the surveyor, the field coordinator, or other knowledgeable people in the village. In larger villages, the surveyor may work with more than one survey consultant (Table 4). In this case, each survey consultant assigns each household in the complete household list to a stratum (harvester, other) and the surveyor cross-checks these assignments in order to generate the final stratification.

Table 4.–Method to assess harvest pattern of households.

Village size	Who identifies household harvest level	Suggested number of survey consultants
61–100 households	Local field personnel	a.
101–300 households	Local field personnel and survey consultants	Up to 3
301–1,000 households	Local field personnel and survey consultants	Up to 5
>1,001 households	Local field personnel and survey consultants	Up to 7

a. Survey consultant usually not needed in small villages.

Survey Year and Seasons

Although dates for the open hunting season may vary according to the yearly harvest regulations, for purposes of this survey, the survey year is April 2 through October 31 in most regions, except in Southern Coastal Alaska (Gulf of Alaska-Cook Inlet, Kodiak Archipelago, Aleutian-Pribilof Islands, and the South Alaska Peninsula of Bristol Bay), where the survey year ends on March 9. The survey year is divided into 4 seasons: spring, summer, fall, and winter (Table 5). In some regions, winter harvest is small or does not occur and the survey covers spring, summer, and fall. Regions or subregions with an important winter bird harvest also have a winter survey (Southern Coastal Alaska). In the North Slope, the survey records harvests in spring and summer only because birds migrate out of this region in late summer or early fall. The harvest report form may have 4, 3, or 2 sheets, 1 for each surveyed season. Harvest estimates are calculated for each season and the yearly estimate is calculated as the sum of seasonal harvests.

The primary goal of the survey is to document spring–summer subsistence harvests under subsistence regulations. However, the subsistence survey has covered most of the calendar year to provide a complete description of the harvests important for subsistence. The fall migratory bird hunts (after September 1) are managed under early season frameworks as the "sport hunt." Fall harvests should be captured by the

nationwide Migratory Bird Harvest Information Program (HIP) survey. However, the HIP survey is likely ineffective in documenting fall harvests in most Alaska villages because of low hunter enrollment in the HIP program. For this reason, the AMBCC subsistence harvest survey also covers fall and winter.

Seasonal Harvest Patterns

The survey usually has 3 household visits. The first visit occurs in March–April, when the surveyor informs households about the survey and invites participation. The 2 subsequent visits are for collection of seasonal harvest reports (Table 5). The intent of using 2 seasonal recall periods is to minimize the length of period over which respondents need to recall the number and species of birds and eggs they harvested. Long recall periods may lead to increased recall bias (Westat Inc. 1989). The timing of data collection visits was planned considering regional seasonal harvest patterns to minimize recall bias. Because summer is a season of low or no harvest, summer surveys were combined with another season to reduce survey costs and burden on participating households. Two seasonal harvest patterns were identified based on the season of most harvest in the regions (Wolfe et al. 1990; Paige and Wolfe 1997; Naves 2010a):

- Pacific-Aleutian seasonal pattern: Kodiak Archipelago, Aleutian-Pribilof Islands, Gulf of Alaska-Cook Inlet, South Alaska Peninsula (part of Bristol Bay region), and Southeast Alaska. Data collection occurs after the end of summer to cover spring and summer and after the end of winter to cover fall and winter.
- Arctic-Northwest-Interior seasonal pattern: Yukon-Kuskokwim Delta, Bering Strait-Norton Sound, Northwest Arctic, Interior Alaska, North Slope, and Bristol Bay (except South Alaska Peninsula, which is surveyed following the Pacific-Aleutian schedule). Data collection occurs after the end of spring to cover spring only and after the end of fall to cover summer and fall. In the North Slope, data collection occurs after the end of spring and after the end of summer.

Table 5.–Seasonal survey coverage and household visits.

	Spring 2 Apr–30 Jun			Summer 1 Jul–31 Aug		Fall 1 Sep–31 Oct		Winter 1 Nov–9 Mar				
Regions	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Gulf of Alaska-Cook Inlet	•	•	•	•	•	•	•	•	•	•	•	•
						2nd						1st, 3rd
Kodiak Archipelago	•	•	•	•	•	•	•	•	•	•	•	•
				2nd								1st, 3rd
Aleutian-Pribilof Islands	•	•	•	•	•	•	•	•	•	•	•	•
						2nd						1st, 3rd
South Alaska Peninsula (Bristol Bay region)	•	•	•	•	•	•	•	•	•	•	•	•
						2nd						1st, 3rd
Bristol Bay (except South Alaska Peninsula)	•	•	•	•	•	•	•	○	○	○	○	○
				2nd				3rd				1st
Yukon-Kuskokwim Delta	•	•	•	•	•	•	•	○	○	○	○	○
				2nd				3rd				1st
Bering Strait-Norton Sound	•	•	•	•	•	•	•	○	○	○	○	○
				2nd				3rd				1st
Northwest Arctic	•	•	•	•	•	•	•	○	○	○	○	○
				2nd				3rd				1st
North Slope	•	•	•	•	•	○	○	○	○	○	○	○
				2nd		3rd						1st
Interior Alaska	•	•	•	•	•	•	•	○	○	○	○	○
				2nd				3rd				1st
Upper Copper River	•	•	•	•	•	•	•	○	○	○	○	○
				2nd				3rd				1st
Southeast Alaska	•	•	•	•	•	•	•	○	○	○	○	○
				2nd				3rd				1st

• Seasons surveyed.

○ Seasons not surveyed.

1st First household visit, to invite households to participate in the survey.

2nd Second household visit, to collect spring or spring and summer harvest data.

3rd Third household visit, to collect harvest data for remaining season(s).

A timetable for implementation of the AMBCC subsistence harvest survey was adopted in Septemeber 2009 in the context of the survey revision (Appendix C). This timetable considers the schedule for seasonal data collection in the different regions (Table 5) and data analysis, review, and release of the information.

Village and Household Consent

Village participation in the survey is voluntary. Formal village consent must be granted in writing and it is often given as a tribal or village council resolution. Continuing resolutions allow for conducting the survey indefinitely until the tribal or village council decides for revoking the resolution. To request village consent, the field coordinator presents the survey background and goals and the importance of collecting information on the subsistence harvest of birds. If a village does not respond or does not agree to participate in the survey, an alternate village is selected, preferably in the same subregion. Record is kept on all villages contacted and if consent was granted or denied. This information is used to calculate village participation rates.

Household participation in the survey is also voluntary. After village consent is granted by the tribal council, the surveyor contacts each household selected to participate in the survey to obtain their consent. Individual household consent is documented in the "tracking sheet and household consent form" (Appendix D) and this information is used to calculate household participation rates. During the first visit to each selected household, the surveyor explains the purpose of the survey to an adult household member, explains how the survey works, and invites the household to participate. An alternate household is selected to replace households that decline to participate and households that cannot be contacted after 3 reasonable attempts. If harvest level stratification is used, alternate households must be selected from the same stratum as the no-contact or no-consent households.

Reporting Harvests

The harvest report form is used to record the harvest of birds and their eggs. This form has 1 sheet for each season (spring, summer, fall, winter). Each seasonal sheet has black and white drawings of bird species in breeding plumage. Next to each species drawing, there are fields to record the number of birds and eggs harvested. Because bird species available for harvest varies in different regions of Alaska, there are 4 versions of the harvest report form with different sets of species. This helps to prevent erroneously recording bird species as harvested in areas where they do not usually occur. The 4 versions of this form are:

- Western Alaska Form (Appendix E): 3 sheets (spring, summer, and fall); used in the Bristol Bay (except South Alaska Peninsula), Yukon-Kuskokwim Delta, Bering Strait-Norton Sound, and Northwest Arctic.
- Southern Coastal Alaska Form (Appendix F): 4 sheets (spring, summer, fall, and winter); used in the Gulf of Alaska-Cook Inlet, Kodiak Archipelago, Aleutian-Pribilof Islands, and South Alaska Peninsula (Bristol Bay region).
- Interior Alaska Form (Appendix G): 3 sheets (spring, summer, and fall); used in the Interior Alaska and Upper Copper River.
- North Slope Form (Appendix H): 2 sheets (spring and summer); used in the North Slope.

Appendix I lists the species represented in the 4 versions of the harvest report form and their distribution range in the regions surveyed. Appendix I is not a comprehensive list of all bird species that occur across the state, it rather represents the set of species relevant in the context of the subsistence harvest survey.

To prevent mistakes in reporting egg harvests, fields to record the number of eggs harvested are not available in fall and winter sheets. The nesting period of birds in Alaska usually extends only into July and there are no records of customary and traditional uses of eggs that have failed to hatch.

To avoid double-reporting, if a household harvests birds or eggs and gives them to another household, the harvest is to be reported by the household that originally harvested the birds or eggs, and not by the household that received them. Birds or eggs received from other households are not to be reported on the survey form of the receiving household.

Species Represented on the Harvest Report Form

Subsistence cultures across Alaska use a variety of migratory bird species, subject to seasonal availability, hunter access, and local traditions. The 2003 federal subsistence regulations and the subsequent yearly regulations allowed spring and summer harvests of about 90 species and subspecies of migratory birds, subject to seasons and restrictions (CFR vol. 68. No. 139, pp. 43010–43030, July 21, 2003). Because representing all species open to harvest on the survey form would result in an unwieldy, long survey, the survey form was designed to record harvests of those species that are important for subsistence uses or that are of management interest. The 4 versions of the harvest report form combined show 35–50 species or groups of species. Harvests of species not represented in the survey form can be reported in a field

labeled “other bird.” Some species that are difficult to tell apart were combined in the survey form; the following headings refer to more than 1 species: teal, goldeneye, scaup, merganser, Canada goose, swan, grouse, ptarmigan, cormorant, tern, Bonaparte’s/Sabine’s gull, large gull, auklet, murre, guillemot, puffin, whimbrel/curlew, godwit, golden/black-bellied plover, turnstone, phalarope, small shorebird, Pacific loon, and grebe (Appendix I).

Some bird species and eggs that are closed to subsistence harvests are also shown on the survey form. Birds and eggs closed to harvest vary among regions according to the yearly hunting regulations. The inclusion of species closed to harvest on the survey form is not an endorsement of or consent to engage in the harvest of closed species; rather, it is an attempt to collect accurate harvest data to aid in the sustainable management of all bird species. Management and conservation bodies, such as the AMBCC, the USFWS, and the flyway councils, need to know the numbers of birds and eggs harvested to successfully plan for the sustainable management of bird populations. In order to elicit accurate answers to potentially sensitive questions, it is imperative that information from the survey not be used for punitive enforcement. To aid in this effort, identification of households is protected by strict ethical standards.

Outreach and Bird Identification Tools

Bird Identification Guide

The bird identification guide resembles a sheet of the harvest report form, but it has larger color drawings of birds, and no fields to write numbers of birds or eggs harvested. To be used along with the harvest report form, there are 4 versions of the bird identification guide: Western Alaska (Appendix J), Southern Coastal Alaska, Interior Alaska, and North Slope. At the first household visit, the surveyor offers a copy of the bird identification guide to all contacted households.

Bird Poster

Large full-color posters were produced for further assisting in species identification and outreach related to the harvest survey. The poster has color photographs of the bird species in breeding plumage shown on the survey forms. Close to each photograph, there are the species’ English name and a blank field where village residents, surveyors, and field coordinators can write the Alaska Native and local name of the species (see text about Native and local birds names below). This layout was preferred over having the Native bird names already printed in the posters because different names and spellings are used locally. There are 4 versions of the bird posters for different areas of the state: Western Alaska (Appendix K), Southern Coastal Alaska, Interior Alaska, and North Slope. Surveyors are asked to display posters at central places in each village (e.g., post office, groceries store, tribal council, school) and to have some copies for further distribution.

Lists of Native and local bird names

Alaska Native peoples include many distinct cultural groups, with about 20 languages, 14 dialects, and 17 subdialects (Krauss 2007). Although some regions of the state currently have a high proportion of English speakers, people may use Native and local names to refer to birds and other subsistence resources. Besides the names in the Native language, local bird names may be a “pet” name in English that differs from the usual English name. Bird names may differ between neighboring villages and sometimes the same name is used for different species in different areas. Traditional systems to classify birds and other animals may not correspond with the western scientific classification of species used in the survey materials. Native bird names may refer to vocalizations, behavior, appearance, the kind of habitat used, gender, or to the time of the year (spring migration, summer breeders, and fall migration) (Paige et al. 1996). This cultural diversity sometimes makes communication difficult while collecting subsistence harvest data and may lead to misidentification of species reported as harvested. Efforts are necessary to identify species names likely to be confounded and to develop approaches to facilitate communication in subsistence harvest data collection.

It is impractical to design and manage survey materials to reflect the many Native and local bird names used within a region. The harvest report forms, bird identification guides, and bird posters show only the common English name. To complement these survey materials, lists of Native bird names were compiled based on the available literature to represent languages, dialects, and subdialects for each region of the subsistence survey (Appendices L–V). English local bird names were compiled opportunistically only, while researching Native names. Survey field personnel are instructed to use their regional list to write Native bird names on survey posters and to help respondents completing their harvest survey. The Native bird name lists included the species presented in the harvest report form for each region and are not an attempt to collect names for all species occurring in a geographic area. The sources consulted for Native bird names included dictionaries, reports on subsistence harvest research, and issue papers. If a dictionary was available for a language or dialect, in most cases, the dictionary was considered as the main source of information, although a report or issue paper could have previously documented bird names included in the dictionary.

Different spellings and close variations of a name were commonly found. Also, because the special characters necessary to write Native languages are not commonly included in fonts for computers and other writing machines, different symbols have been used in lieu of the appropriate character. The lists of bird names presented in this report do not include all variations found of a word. Spellings of a word reported in dictionaries and peer-reviewed papers or reports were preferred when other sources of information were considered less consistent. However, dictionaries sometimes presented several variations of a word.

Some documented names indicated a potential for confusion among bird species, the use of multiple names for a species, or the use of a name for multiple species. Decisions on whether or how to include a documented Native bird name in the lists were made considering biological information, geographical distribution, potential for confusion between bird species, as well as other sources of information for Native names and related words. Some cases identified with a high potential for confusion were names used for female eiders (a single name may apply to females of different species), geese, gulls, shorebirds, and loons. Understandably, these categories of birds include look-alike species that can be difficult to tell apart. Another situation likely to lead to confusion is that of species that have the word "common" in their English name (e.g., common loon, common tern), which may be understood as the most common loon or tern in a region. Also, a species commonly found in an area may have had its Native name documented in relation to a species that has the word "common" in its usual English name, but that is not actually common in the region considered. To illustrate these difficulties, some details are presented below on names of gulls.

In the subsistence harvest survey, gulls are divided in 4 categories: kittiwakes, Bonaparte's/Sabine's gulls (gulls with black head in the breeding plumage), mew gulls, and large gulls. In different Native languages, the sources consulted listed a generic word for "gull" or "seagull" likely used for multiple gull species. When researching specific Native names for the different gull species, the generic word for gull was frequently encountered. When compiling the lists of bird names, preference was given to more specific Native names for gulls, and if those were available, the generic word was not listed. For instance, MacLean (2011) translates *nauyaq* as seagull, but also lists related words referring to different species of gull (e.g., *nauyavasugruk* glaucous gull. *L. hyperboreus*, *nauyatchiaq* mew gull *L. canus*).

Gulls also provide example of an issue related to the word "common" in bird names: Romanenko et al. (1997) lists nauyaq as the Inupiaq word for "common black-headed gull" *Larus ridibundus*. However, the black-headed gull *L. ridibundus* is an East coast species that occurs in Alaska just as a rare migrant (Sibley 2000; Dunn and Alderfer 2006). More likely, nauyaq may refer to 1 (or more) gull species that have a black head and that commonly occur in Northwest Alaska, likely the Sabine's gull *Xema sabini*. Supporting this interpretation, a respondent from White Mountain interviewed by Paige et al. (1996:A-125) reported the local English name of the Sabine's gull as "blackheads."

AMBCC regional partners were invited to review the Native bird name lists. A more comprehensive revision of the lists by knowledgeable speakers, linguists, and ornithologists could bring further improvements. The lists presented in this report are open to corrections, additions, comments, and clarifications. For this purpose, the lists provided to field staff include a column for "corrections, comments."

Data Transfer

The surveyor must check completed survey forms for completeness and correctness before sending them to the field coordinator. Upon receiving completed forms from surveyors, field coordinators are expected to organize and review all survey materials and to address issues. This step allows field coordinators to correct potential inconsistencies in data collection and to manage surveyor payment before sending completed surveys for data entry and analysis.

Data Management

Data entry and archiving are completed by the Information Management unit of the ADF&G Division of Subsistence. The statewide survey coordinator works closely with the unit to produce harvest estimates.

Data are entered in Microsoft Office Access 2007 forms designed to mimic survey forms.[2] The multiyear raw data are stored in a Microsoft SQL Server 2008 relational database and backups occur on a monthly basis. The structure of the database is documented in appropriate metadata. Double data entry and logical checks help ensure accuracy of the information stored in the database (reported harvests, sampling method used, sample size, strata size). Logical checks and data analysis are done with SPSS Statistics 17.0.0, 2008.

Original survey forms are scanned and archived as digital files. Archived survey materials do not include household names or other personal information in order to ensure anonymity of household harvest reports. If household names or other personal information are provided in survey forms, the information is covered prior to scanning and the original forms are not archived.

DATA ANALYSIS

Geographic Scale of Harvest Estimates

This report presents subregional and regional harvest estimates. Regional harvest estimates are not presented if less than 75% of the households within the region are represented in the sample (see below). Because of issues related to species of conservation concern, the North Slope and the Bering Strait-Norton Sound regions have requested that only regional harvest estimates be presented, given that at least 75% of the households within the region are represented in the sample.

Subregional and regional harvest estimates may vary considerably between years. A number of factors may contribute to yearly variation in harvest estimates, such as:

- Local abundance of birds (bird population levels, changes in migratory behavior and routes, and changes in the local environment);
- Hunter access to productive hunting grounds (changes in waterways, and timing and pace of spring breakup that may affect travel conditions);
- Hunting effort directed to birds and other subsistence resources (bird harvests are often concurrent to harvests of other resources). Socio-economic factors such as availability of employment in the cash economy may also affect hunting effort.

2. Product names are given for scientific completeness or because they are established standards for the State of Alaska; they do not constitute product endorsement.

Potential data collection issues, such as inappropriate subregional sampling coverage or heterogeneity of harvest patterns in villages within a subregion, may result in apparent yearly variation in harvest estimates. Further analysis will be necessary to evaluate this potential source of error.

To calculate regional and statewide harvest estimates, large yearly variation in subregional harvest estimates requires analytical approaches that account for variability in harvests between years as well within subregions and regions. For a better understanding of yearly variation in harvest estimates, it is therefore important to report subregional harvest estimates for all regions. Development of statewide estimates may require more years of data as well as appropriate coverage of infrequently surveyed regions (Northwest Arctic, Kodiak Archipelago, Aleutian-Pribilof Islands) and nonsurveyed regions (Southeast Alaska).

Subregional Harvest Expansion

Formulas used to calculate subregional harvest estimates and confidence intervals are based on Cochran (1977) and Bernard et al. (1998; Appendix W). The formula used to calculate estimated harvests accounts for missing data at the harvest level stratum. However, if seasonal data are missing for all harvest level strata in a village, additional analytical procedures are necessary to fill in missing data with average harvests. Harvest estimates are calculated for each season and yearly estimates are calculated as the sum of seasonal harvests.

Harvests reported by households sampled in each harvest level stratum are first expanded to all households in that stratum and village. Depending on the sampling method used in a village, the number of harvest level strata may be 2 ("harvester, other") or 1 (census or simple random sampling). The following formula is used for the first expansion:

> Estimated harvest at harvest level stratum = sum of harvests reported by surveyed households in a stratum × (number of households sampled in the stratum ÷ total number of households in the stratum).

At the first expansion, sample sizes refer to each village, season, and harvest level stratum because one or more seasonal sheets of the harvest report form may be missing for individual households. Seasonal data may be missing for a whole harvest level stratum or a village. Calculation of yearly harvest estimates and confidence intervals requires yearly sample sizes. The maximum number of households sampled among seasons is used as the yearly sample size (Table 6).

The subregion average household harvest is used as a substitute for missing data at the harvest level and the season. Harvest estimates per year, village, season, and species are calculated as the sum of the estimated harvest at each harvest level stratum.

Table 6.–Number of villages and households included in data analysis, 2004–2010.

Survey year	Villages included in harvest estimates	Households surveyed			
		Spring	Summer	Fall (or Fall–Winter)	Winter
2004	77	1,770	1,707	1,673	a
2005	75	2,226	2,251	1,742	a
2006	62	1,793	1,773	1,687	a
2007	74	2,076	2,051	1,491	a
2008	44	1,630	1,568	1,189	a
2009	27	923	909	762	a
2010	50	1,875	1,845	1,675	215
2004–2010 average	58	1,756	1,729	1,460	215

Source Survey results for 2004–2009 were reported in Naves (2010a, 2010b, 2011).

a. For the period 2004–2009, in regions and subregions with a winter survey, data was recorded as fall–winter. After the first survey revision, starting in 2010, winter data is separated from fall data.

At the second expansion, estimated harvests in surveyed villages are expanded to all villages within the subregion. Because numbers of households differ among villages within a subregion, the second expansion accounts for the number of households in surveyed and nonsurveyed villages in a subregion. The following formula is used:

> Subregional estimated harvest = sum of the estimated harvest in surveyed villages × (number of households in surveyed villages ÷ total number of households in the subregion).

For surveyed villages, the total number of households represents the number of households resident in the village for at least 12 months and excludes unoccupied dwellings and households that recently moved to the village. The total number of resident households in surveyed villages is provided by the field coordinator as part of the sampling information in the household list. For nonsurveyed villages, the number of occupied households reported in the 2010 federal census (U.S. Census Bureau 2011) was used as the village size.

For surveyed villages, the total number of households in the household lists was compared to the 2010 census data to assess whether household lists were complete. Yearly village size documented in the Division of Subsistence Community Subsistence Information System[3] (CSIS) is also used to assess completeness of household lists. If these sources yield a difference greater than 30–40% in the number of households, efforts are made to contact the field coordinator and verify information on village size. If local information on village size cannot be obtained, CSIS or federal census information on village sizes are used in harvest expansions.

Reported harvests from villages for which sampling information is missing (e.g., household list, sampling method, or harvest level strata size) are not included in the calculation of harvest rates.[4] Such villages are treated like nonsurveyed villages and are accounted for in the estimation of total subregional harvests (average harvest of surveyed villages is applied to nonsurveyed villages).

Regional Harvest Expansion

Formulas used to estimate regional harvests and confidence intervals (Appendix X) are based on Cochran (1977:274) and Bernard et al. (1998). The formula to estimate regional harvests does account for missing data at the harvest level stratum. However, if seasonal data are missing for a harvest level stratum in a village, additional analytical procedures are necessary to fill in missing data with average harvest amounts. Harvest estimates are calculated for each season and the yearly estimate is calculated as the sum of seasonal harvests.

At the third expansion, the estimated harvest in surveyed subregions is expanded to all subregions of a region. Because the number of households in each subregion differs, the third expansion accounts for the number of households in both the surveyed and nonsurveyed subregions as follows:

> Regional estimated harvest = sum of the estimated harvest in surveyed subregions × (number of households in surveyed subregions ÷ total number of households in all subregions of the region).

Subregion estimates are expanded to the region level only if at least 75% of the households within the region are represented in the sample (nonsurveyed subregions must represent less than 25% of the total households in the region).

If the low end of the confidence interval around subregional and regional harvest estimates is less than the reported harvest, the calculated low end is replaced by the reported harvest.

3. http://www.adfg.alaska.gov/sb/CSIS/. Hereinafter cited as CSIS.
4. In 2010, this was 6 out of 56 villages that agreed to participate in the survey.

Conversion of Egg Volume to Number of Eggs

Egg harvests are sometimes reported on this survey by volume, such as the number of "5-gallon buckets" or the number of "1-gallon buckets" filled with eggs. Conversion factors for volumes of eggs to numbers of eggs were estimated by comparing the volume of eggs of wild bird species reported in the "Birds of North America Series[5]" to the volume of "large" domestic chicken eggs (J. Magdanz, Subsistence Resource Specialist, ADF&G, Kotzebue, Alaska, personal communication; Table 7). A 1-gallon bucket holds 48 large chicken eggs (24 oz per dozen, U.S. Department of Agriculture standard). This comparison is necessary because eggs of different sizes and shapes arrange differently in a given volume; i.e., the amount of empty space among eggs depends on egg size and shape. In the future, actual counts of eggs per gallon should be documented on the egg gathering grounds.

Table 7.–Estimated conversion factors, egg volume to number of eggs.

Species	Number of eggs in 5-gallon bucket	Number of eggs in 1-gallon bucket
Mallard[a]	261	52
Northern pintail[b]	327	65
Arctic tern[c]	716	143
Mew gull[d]	261	52
Glaucous gull[e]	121	24
Glaucous-winged gull[f]	147	29
Herring gull[g]	147	29
Murre[h]	126	25

Sources References for egg volumes:

a. Drilling et al. (2002)
b. Austin and Miller (1995)
c. Hatch (2002)
d. Moskoff and Bevier (2002)
e. Gilchrist (2001)
f. Hayward and Verbeek (2008)
g. Pierotti and Good (1994)
h. Ainley et al. (2002)

Village Participation Rate

Village participation in the survey is voluntary. Village participation is documented in the "Village Seasonal Status Report." The field coordinator must complete a seasonal status report for all villages contacted in a survey year whether they had agreed to participate in the survey or not. The following formula is used:

> Village participation rate = number of villages that agreed to participate ÷ total number of villages where contact was attempted.

The total number of villages where contact was attempted includes (a) the villages that agreed to participate, (b) the villages that did not agree to participate, and (c) the villages where multiple contact efforts were made without a response (which may suggest lack of interest or willingness to participate in the survey).

Household Participation Rate

Household participation in the survey also is voluntary. During the first household visit, the surveyor invites each selected household to participate. The surveyor completes the "Tracking Sheet & Household

5. http://bna.birds.cornell.edu/bna/.

Consent Form" documenting whether each selected household agreed to participate, did not agree, or could not be contacted. The following formula is used:

> Household participation rate = number of households that agreed to participate ÷ the total number of households contacted.

The total number of households contacted includes (a) households that agreed to participate and (b) households that did not agree to participate.

RESULTS

VILLAGE PARTICIPATION RATE

Following the region and village rotation schedule (Appendix A), in 2010, 62 villages were invited to participate in the survey. Of this total, 3 villages did not respond to contact attempts. No response from a village to multiple contact attempts spanning over a few months was considered as no consent to conduct the survey. Another 3 villages responded to contacts but declined to participate in the survey. Written consent to conduct the survey was provided by 56 out of the 62 invited villages, resulting in an overall village participation rate of 90% (Table 8).

Table 8.–Regional village participation rates, 2010.

Regions surveyed in 2010	Villages in the region	Villages invited	Villages that consented to the survey	Regional village participation rate
Chugach-Cook Inlet	5	3	2	67%
Kodiak Archipelago	12	6	6	100%
Yukon-Kuskokwim Delta	47	24	22	92%
Bering Strait-Norton Sound	16	9	8	89%
Interior Alaska	43	20	18	90%
Total	123	62	56	90%

HOUSEHOLD PARTICIPATION RATE

Regional and subregional household participation rates refereeing to the villages that agreed to participate in the survey are presented in Table 9.

2010 HARVEST ESTIMATES

Yearly regional and subregional harvest estimates for birds and eggs (all species combined) are summarized in Table 10 (birds) and Table 11 (eggs). Regional and subregional estimates in these tables indicate that estimates detailed by species and seasons are available in the regional and subregional tables that follow (tables 12–51).

A regional table precedes the tables for its subregions unless survey coverage was insufficient to allow calculation of regional estimates. Regional estimates are not presented if nonsurveyed subregions represent more than 25% of the regional households. For 2010 data, regional harvest estimates were not presented for the Gulf of Alaska-Cook Inlet and the Bering Strait-Norton Sound regions.

If not all subregions in a region were surveyed, regional harvest estimates may be larger than the sum of the surveyed subregions because expanded estimates account for nonsurveyed subregions.

Harvest estimate tables presented in this report include the bird species represented in the version of the harvest report form used in each region or subregion (Appendix I). The species categories "Duck (unidentified)," Goose (unidentified),"and "Other and unknown bird" are included in tables only if harvest in these categories was reported.

Information on sampling effort is presented as a footnote to each harvest estimate table. For subregional tables, “sampling effort” refers to the number of villages included in the analysis (Appendix Y) and the proportion of subregion households represented in the sample (number of households in surveyed villages in relation to the total number of households in the subregion). For regional tables, sampling effort refers to the number of villages and subregions surveyed. Significant deviations from the standard survey methods, such as incomplete geographic coverage or nonstandard village sampling approaches, are also presented as table footnotes.

Table 9.–Household participation rate, 2004–2010.

Region / Subregion	2004 Household participation rate	2004 Houseolds contacted	2005 Household participation rate	2005 Houseolds contacted	2006 Household participation rate	2006 Houseolds contacted	2007 Household participation rate	2007 Houseolds contacted	2008 Household participation rate	2008 Houseolds contacted	2009 Household participation rate	2009 Houseolds contacted	2010 Household participation rate	2010 Houseolds contacted
Gulf of Alaska-Cook Inlet	**97%**	**32**	-	-	-	-	-	-	-	-	-	-	-	-
Gulf of Alaska	100%	18	-	-	79%	24	-	-	-	-	-	-	100%	65
Cook Inlet	93%	14	71%	17	-	-	-	-	-	-	-	-	-	-
Kodiak Archipelago	-	-	-	-	**72%**	**233**	-	-	-	-	-	-	**94%**	**288**
Kodiak Villages	100%	65	-	-	75%	169	-	-	-	-	-	-	97%	113
Kodiak City & Road Connected	-	-	-	-	64%	64	-	-	-	-	-	-	93%	175
Aleutian-Pribilof Islands	-	-	-	-	-	-	-	-	**97%**	**189**	-	-	-	-
Aleutian-Pribilof Villages	-	-	97%	38	-	-	100%	25	95%	73	-	-	-	-
Unalaska	-	-	-	-	-	-	-	-	99%	116	-	-	-	-
Bristol Bay	-	-	-	-	-	-	**89%**	**354**	**98%**	**357**	-	-	-	-
South Alaska Peninsula	-	-	-	-	-	-	93%	29	-	-	-	-	-	-
Southwest Bristol Bay	-	-	-	-	-	-	85%	214	96%	155	-	-	-	-
Dillingham	-	-	-	-	-	-	97%	111	100%	202	-	-	-	-
Yukon-Kuskokwim Delta	-	-	-	-	-	-	-	-	**62%**	**1,300**	-	-	**86%**	**641**
Y-K Delta South Coast	-	-	-	-	78%	90	86%	283	73%	173	-	-	97%	104
Y-K Delta Mid Coast	-	-	-	-	81%	156	54%	257	50%	400	-	-	78%	149
Y-K Delta North Coast	-	-	-	-	56%	107	44%	255	63%	300	-	-	100%	75
Lower Yukon	-	-	-	-	84%	56	60%	211	98%	94	-	-	98%	66
Lower Kuskokwim	-	-	-	-	63%	294	60%	602	61%	333	-	-	78%	233
Central Kuskokwim	-	-	-	-	74%	73	-	-	-	-	-	-	100%	14
Bethel	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bering Strait-Norton Sound	**71%**	**525**	**80%**	**354**	-	-	**90%**	**436**	-	-	-	-	-	-
St. Lawrence-Diomede Islands	75%	109	87%	75	-	-	95%	86	-	-	42%	191	76%	308
Bering Strait Mainland Villages	85%	206	78%	143	-	-	93%	159	-	-	-	-	91%	181
Nome	57%	210	77%	136	-	-	86%	191	-	-	-	-	-	-
Northwest Arctic	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northwest Arctic Villages	-	-	-	-	86%	242	-	-	-	-	-	-	-	-
Kotzebue	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North Slope	-	-	**91%**	**600**	-	-	-	-	-	-	-	-	-	-
North Slope Villages	-	-	87%	394	-	-	-	-	-	-	-	-	-	-
Barrow	-	-	98%	206	-	-	-	-	-	-	-	-	-	-
Interior	-	-	-	-	-	-	-	-	-	-	-	-	**99%**	**508**
Mid Yukon-Upper Kuskokwin	-	-	-	-	-	-	-	-	-	-	-	-	100%	90
Yukon-Koyukuk	100%	18	-	-	90%	83	100%	50	100%	51	-	-	97%	125
Upper Yukon	-	-	-	-	95%	246	100%	147	-	-	-	-	100%	102
Tanana Villages	99%	100	-	-	99%	123	-	-	-	-	-	-	100%	59
Tok	-	-	-	-	100%	60	-	-	-	-	-	-	100%	132
Upper Copper River	**96%**	**57**	-	-	-	-	**84%**	**38**	-	-	-	-	-	-

Household Participation Rate = Number of households that agreed to participate ÷ Total number of households contacted.

Gray background: surveyed subregions.

-: Region/subregion not surveyed or household participation data not available for analysis. 2004–2009 Participation rates from Naves (2010a, 2010b, 2011).

Note: The number of households contacted may differ from the actual number of households surveyed.

Table 10.–Yearly estimated bird harvest at subregions and regions (total birds), 2004–2010.

Region	2004		2005		2006		2007		2008		2009		2010	
Subregion	Number	95% CI	Number	95% CI	Number	95% CI	Number	95% CI	Number	95% CI	Number	95% CI	Number	95% CI
Gulf of Alaska-Cook Inlet	**2,995**	**32%**	*		*		-	-	-	-	-	-	*	
Gulf of Alaska	2,756	17%	-	-	596	42%	-	-	-	-	-	-	1,049	45%
Cook Inlet	239	30%	13	57%	-	-	-	-	-	-	-	-	-	-
Kodiak Archipelago	-	-	-	-			-	-	-	-	-	-	**6,926**	**24%**
Kodiak Villages	-	-	-	-	5,552	28%	-	-	-	-	-	-	1,947	30%
Kodiak City & Road-connected	-	-	-	-	a		-	-	-	-	-	-	4,979	17%
Aleutian-Pribilof Islands	-	-	*		-	-	*		**8,401**	**30%**	-	-	-	-
Aleutian-Pribilof Villages	-	-	16,876	35%	-	-	(7,371)	(77%)	7,642	21%	-	-	-	-
Unalaska	-	-	-	-	-	-	-	-	760	41%	-	-	-	-
Bristol Bay	*		**47,336**	**32%**	*		**28,285**	**20%**	**32,995**	**14%**	-	-	-	-
South Alaska Peninsula	801	24%	-	-	-	-	968	50%	(115)	(111%)	-	-	-	-
Southwest Bristol Bay	14,955	10%	32,769	18%	(26,715)	(22%)	20,169	15%	(29,352)	(14%)	-	-	-	-
Dillingham	-	-	11,769	30%	-	-	7,148	25%	3,527	15%	-	-	-	-
Yukon-Kuskokwim Delta	**130,343**	**6%**	**114,514**	**8%**	**171,856**	**7%**	**148,715**[b]	8%	**79,088**	**9%**	**195,082**	**6%**	**142,834**	**9%**
Y-K Delta South Coast	25,764	11%	35,508	7%	31,918	8%	33,927	11%	19,999	12%	35,203	15%	17,537	18%
Y-K Delta Mid Coast	34,480	8%	17,546	11%	(61,998)	(12%)	43,737	13%	17,160	15%	82,654	7%	37,363	15%
Y-K Delta North Coast	8,806	17%	11,206	14%	4,493	21%	1,206	31%	4,867	22%	13,637	13%	4,920	16%
Lower Yukon	(6,201)	(19%)	6,815	9%	10,269	12%	3,988	15%	4,727	16%	6,904	12%	(7,748)	15%
Lower Kuskokwim	46,033	15%	16,557	11%	48,849	8%	58,983	7%	22,813	14%	44,934	9%	(7,1317)	13%
Central Kuskokwim	440	32%	-	-	1,167	35%	219	79%	-	-	-	-	(659)	108%
Bethel[c]	8,618	17%	23,954	24%	13,163	24%	6,654[b]	28%	7,789	16%	7,478	14%	3,290	15%
Bering Strait-Norton Sound	**53,576**	**8%**	**74,115**	**17%**	-	-	**123,257**	**10%**	-	-	*		*	
St. Lawrence-Diomede Is.	33,600	7%	30,481	9%	-	-	88,362	8%	-	-	41,176	16%	14,054	4%
Bering Strait Mainland Villages	17,195	9%	37,482	18%	-	-	31,169	10%	-	-	-	-	20,719	18%
Nome	2,782	21%	6,152	31%	-	-	3,726	37%	-	-	-	-	-	-
Northwest Arctic	-	-	-	-	*		-	-	-	-	-	-	-	-
Northwest Arctic Villages	-	-	-	-	9,676	21%	-	-	-	-	-	-	-	-
Kotzebue	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North Slope	-	-	**15,615**	**11%**	-	-	**44,270**	**23%**	**45,123**	**22%**	**19,075**	**24%**	-	-
North Slope Villages	-	-	4,672	12%	-	-	6,118	24%	9,873	38%	10,411	20%	-	-
Barrow	-	-	10,943	10%	-	-	38,152[d]	15%	35,250	17%	8,664	21%	-	-
Interior Alaska	**50,995**	**13%**	*		**37,068**	**17%**	*		*		-	-	**32,611**	**25%**
Mid Yukon-Upper Kuskokwim	(3,086)	(43%)	2,744	29%	697	36%	-	-	-	-	-	-	(786)	54%
Yukon-Koyukuk	3,108	18%	(930)	(44%)	(1,764)	(60%)	(3,031)	(72%)	(6,908)	(89%)	-	-	4,532	26%
Upper Yukon	(14,418)	(16%)	-	-	10,927	12%	18,402	14%	-	-	-	-	(12,692)	22%
Tanana Villages	20,388	16%	-	-	17,358	14%	-	-	-	-	-	-	(14,086)	42%
Tok	-	-	-	-	6,321[d]	31%	-	-	-	-	-	-	515[d]	38%
Upper Copper River[e]	**1,120**	**30%**	-	-	-	-	**247**	**30%**	-	-	-	-	-	-

-: Region/subregion not surveyed. *: Less than 75% of region households represented in sample, harvest estimates not produced at the regional level. (In parenthesis): Less than 30% of subregion households represented in the sample and/or only 1 out of several subregion villages surveyed. Source: 2004–2009 Harvest estimates from Naves (2010a, 2010b, 2011).

a: Fall bird harvest data not available for Kodiak City & Road-connected subregion; annual harvest estimates not available.

b: Does not include fall bird harvest for Bethel subregion.

c: Bethel harvest expansions assume that harvester households account for 30% of the total village households (village size estimates).

d: Subregional harvest estimates assumed simple random sampling.

e: Sampling and harvest expansions represent Alaska Native households only.

Table 11.–Yearly estimated egg harvest at subregions and regions (total eggs), 2004–2010.

Region	2004		2005		2006		2007		2008		2009		2010	
Subregion	Number	95% CI	Number	95% CI	Number	95% CI	Number	95% CI	Number	95% CI	Number	95% CI	Number	95% CI
Gulf of Alaska-Cook Inlet	**2,178**	**17%**	*		*		-	-	-	-	-	-	*	
Gulf of Alaska	2,173	24%	-	-	102	115%	-	-	-	-	-	-	1,366	81%
Cook Inlet	5	75%	0	**	-	-	-	-	-	-	-	-	-	-
Kodiak Archipelago	-	-	-	-	**5,222**	**73%**	-	-	-	-	-	-	**803**	**30%**
Kodiak Villages	-	-	-	-	4,545	56%	-	-	-	-	-	-	771	38%
Kodiak City & Road-connected	-	-	-	-	(677[a])	(41%)	-	-	-	-	-	-	32	89%
Aleutian-Pribilof Islands	-	-	*		-	-	*		**4,778**	**43%**	-	-	-	-
Aleutian-Pribilof Villages	-	-	11,733	38%	-	-	6,127	74%	4,018	30%	-	-	-	-
Unalaska	-	-	-	-	-	-	-	-	760	80%	-	-	-	-
Bristol Bay	*		**47,799**	**35%**	*		**30,801**	**27%**	**47,653**	**30%**	-	-	-	-
South Alaska Peninsula	409	49%	-	-	-	-	651	81%	(106)	(104%)	-	-	-	-
Southwest Bristol Bay	54,437	20%	39,206	24%	(31,292)	(26%)	25,118	21%	(37,630)	(18%)	-	-	-	-
Dillingham	-	-	5,768	74%	-	-	5,032	56%	9,917	74%	-	-	-	-
Yukon-Kuskokwim Delta	**27,288**	**14%**	**22,268**	**11%**	**30,723**	**20%**	**19,153**	**16%**	**31,195**	**15%**	**58,995**	**14%**	**26,965**	**14%**
Y-K Delta South Coast	7,768	20%	13,424	13%	7,406	23%	1,746	28%	8,442	23%	29,065	19%	6,208	27%
Y-K Delta Mid Coast	14,598	17%	2,140	25%	(21,354)	(27%)	11,930	19%	16,195	18%	24,640	14%	19,137	17%
Y-K Delta North Coast	2,466	40%	3,921	43%	188	50%	22	118%	554	66%	345	35%	1,619	36%
Lower Yukon	(191)	(69%)	652	71%	232	42%	565	54%	0	**	386	40%	(0)	**
Lower Kuskokwim	2,265	32%	1,302	31%	1,498	27%	4,891	19%	5,298	23%	3,087	28%	(0)	**
Central Kuskokwim	0	**	-	-	15	93%	0	**	-	-	-	-	(0)	**
Bethel[b]	0	**	261	60%	29	96%	0	**	23	91%	179	84%	0	**
Bering Strait-Norton Sound	**99,494**	**15%**	**113,082**	**19%**	-	-	**146,557**	**13%**	-	-	*		*	
St. Lawrence-Diomede Is.	81,675	17%	75,373	17%	-	-	129,656	13%	-	-	117,174	17%	55,682	7%
Bering Strait Mainland Villages	16,467	17%	29,321	31%	-	-	12,240	16%	-	-	-	-	13,910	24%
Nome	1,351	26%	8,387	28%	-	-	4,661	33%	-	-	-	-	-	-
Northwest Arctic	-	-	-	-	*		-	-	-	-	-	-	-	-
Northwest Arctic Villages	-	-	-	-	10,081	51%	-	-	-	-	-	-	-	-
Kotzebue	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North Slope	-	-	**4,705**	**35%**	-	-	**2,388**	**117%**	**858**	**70%**	**2,430**	**66%**	-	-
North Slope Villages	-	-	4,672	30%	-	-	606	64%	654	62%	2,341	42%	-	-
Barrow	-	-	32	78%	-	-	1,783[c]	109%	204	46%	88	99%	-	-
Interior Alaska	**1,009**	**104%**	-	-	**911**	**58%**	*		*		-	-	**65**	**99%**
Mid Yukon-Upper Kuskokwim	(0)	**	2	149%	0	**	-	-	-	-	-	-	(0)	**
Yukon-Koyukuk	11	78%	(0)	**	(0)	**	(0)	**	(0)	**	-	-	22	143%
Upper Yukon	(40)	(121%)	-	-	0	**	0	**	-	-	-	-	(0)	**
Tanana Villages	760	73%	-	-	875	44%	-	-	-	-	-	-	(43)	126%
Tok	-	-	-	-	36[c]	93%	-	-	-	-	-	-	0	**
Upper Copper River[d]	**82**	**101%**	-	-	-	-	**0**	**	-	-	-	-	-	-

-: Region/subregion not surveyed. *: Less than 75% of region households represented in sample, harvest estimates not produced at the regional level. **: No reported harvest. (In parenthesis): Less than 30% of subregion households represented in the sample and/or only 1 out of several subregion villages surveyed. Source: 2004–2009 Harvest estimates from Naves (2010a, 2010b, 2011).

a: Harvest estimates based on a sample of only known harvester households.

b: Bethel harvest expansions assume that harvester households account for 30% of the total village households (village size estimates).

c: Subregional harvest estimates assumed simple random sampling.

d: Sampling and harvest expansions represent Alaska Native households only.

Table 12.–Estimated bird harvest, Gulf of Alaska-Cook Inlet region, Gulf of Alaska subregion, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest							
	Number	Confidence Interval		Spring		Summer		Fall		Winter	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI	Number	95% CI
Ducks											
American wigeon	0	-	-	0	-	0	-	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-	0	-
Mallard	388	48%	201 – 574	94	50%	0	-	54	126%	240	58%
Northern pintail	0	-	-	0	-	0	-	0	-	0	-
Northern shoveler	0	-	-	0	-	0	-	0	-	0	-
Black scoter	112	88%	31 – 210	15	122%	0	-	96	102%	0	-
Surf scoter	61	76%	17 – 107	0	-	0	-	32	89%	29	126%
White-winged scoter	44	87%	12 – 82	0	-	19	122%	25	126%	0	-
Bufflehead	87	68%	27 – 146	19	122%	0	-	11	126%	57	90%
Goldeneye	62	71%	19 – 106	15	122%	0	-	0	-	47	82%
Canvasback	0	-	-	0	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-	0	-
Common eider	0	-	-	0	-	0	-	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-	0	-
Merganser	209	46%	114 – 304	34	72%	0	-	50	69%	125	53%
Total ducks	962	47%	514 – 1,409	177	43%	19	122%	268	90%	498	56%
Geese											
Black brant	0	-	-	0	-	0	-	0	-	0	-
Cackling/Canada goose	21	73%	6 – 37	0	-	0	-	7	89%	14	99%
Greater white-fronted goose	0	-	-	0	-	0	-	0	-	0	-
Emperor goose	0	-	-	0	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-	0	-
Total geese	21	73%	6 – 37	0	-	0	-	7	89%	14	99%
Swans											
Swan	4	121%	1 – 8	0	-	0	-	0	-	4	126%
Cranes											
Sandhill crane	0	-	-	0	-	0	-	0	-	0	-
Ptarmigans and grouses											
Grouse	16	96%	6 – 32	5	154%	0	-	3	148%	8	148%
Ptarmigan	0	-	-	0	-	0	-	0	-	0	-
Total ptarmigans and grouses	16	96%	6 – 32	5	154%	0	-	3	148%	8	148%
Seabirds											
Cormorant	0	-	-	0	-	0	-	0	-	0	-
Tern	0	-	-	0	-	0	-	0	-	0	-
Black-legged kittiwake	0	-	-	0	-	0	-	0	-	0	-
Red-legged kittiwake	0	-	-	0	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-	0	-
Large gull	30	76%	8 – 53	30	77%	0	-	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-	0	-
Puffin	15	92%	4 – 29	4	122%	11	122%	0	-	0	-
Total seabirds	45	63%	17 – 74	34	72%	11	122%	0	-	0	-
Shorebirds											
Black oystercatcher	0	-	-	0	-	0	-	0	-	0	-
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-	0	-
Loons and grebes											
Common loon	0	-	-	0	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-	0	-
Total birds	1,049	45%	573 – 1,524	217	41%	30	88%	278	89%	524	57%

Sampling effort (Gulf of Alaska subregion, 2010): 2 out of 4 villages in this subregion were included in analysis; 38% of subregion households were represented in the sample. -: No reported harvest.

Table 13.–Estimated egg harvest, Gulf of Alaska-Cook Inlet region, Gulf of Alaska subregion, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest							
	Number	Confidence Interval		Spring		Summer		Fall		Winter	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI	Number	95% CI
Ducks											
American wigeon	0	-	-	0	-	0	-	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-	0	-
Mallard	0	-	-	0	-	0	-	0	-	0	-
Northern pintail	0	-	-	0	-	0	-	0	-	0	-
Northern shoveler	0	-	-	0	-	0	-	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-	0	-
Common eider	0	-	-	0	-	0	-	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-	0	-
Total ducks	0	-	-	0	-	0	-	0	-	0	-
Geese											
Black brant	0	-	-	0	-	0	-	0	-	0	-
Cackling/Canada goose	8	157%	3 – 20	8	154%	0	-	0	-	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-	0	-
Emperor goose	0	-	-	0	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-	0	-
Total geese	8	157%	3 – 20	8	154%	0	-	0	-	0	-
Swans											
Swan	0	-	-	0	-	0	-	0	-	0	-
Cranes											
Sandhill crane	0	-	-	0	-	0	-	0	-	0	-
Ptarmigans and grouses											
Grouse	0	-	-	0	-	0	-	0	-	0	-
Ptarmigan	0	-	-	0	-	0	-	0	-	0	-
Total ptarmigans and grouses	0	-	-	0	-	0	-	0	-	0	-
Seabirds											
Cormorant	0	-	-	0	-	0	-	0	-	0	-
Tern	0	-	-	0	-	0	-	0	-	0	-
Black-legged kittiwake	21	157%	8 – 54	21	154%	0	-	0	-	0	-
Red-legged kittiwake	0	-	-	0	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-	0	-
Large gull	1,337	83%	354 – 2,440	1,337	85%	0	-	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-	0	-
Total seabirds	1,358	81%	362 – 2,463	1,358	84%	0	-	0	-	0	-
Shorebirds											
Black oystercatcher	0	-	-	0	-	0	-	0	-	0	-
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-	0	-
Loons and grebes											
Common loon	0	-	-	0	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-	0	-
Total eggs	1,366	81%	365 – 2,472	1,366	83%	0	-	0	-	0	-

Sampling effort (Gulf of Alaska subregion, 2010): 2 out of 4 villages in this subregion were included in analysis; 38% of subregion households were represented in the sample. -: No reported harvest.

Table 14.–Estimated bird harvest, Kodiak Archipelago region, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest							
	Number	Confidence Interval		Spring		Summer		Fall		Winter	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI	Number	95% CI
Ducks											
American wigeon	32	70%	10 – 55	7	143%	6	132%	9	127%	11	74%
Teal	656	38%	409 – 902	54	75%	0	-	16	118%	585	44%
Mallard	1,069	23%	823 – 1,314	73	63%	18	98%	311	41%	667	25%
Northern pintail	60	57%	26 – 94	0	-	0	-	49	68%	11	85%
Northern shoveler	0	-	-	0	-	0	-	0	-	0	-
Black scoter	45	81%	15 – 81	7	143%	0	-	0	-	38	91%
Surf scoter	48	29%	34 – 61	7	143%	0	-	30	89%	11	74%
White-winged scoter	122	47%	64 – 180	13	143%	0	-	41	89%	68	62%
Bufflehead	175	34%	116 – 234	81	56%	0	-	0	-	94	34%
Goldeneye	673	25%	504 – 842	108	57%	15	108%	175	54%	376	24%
Canvasback	0	-	-	0	-	0	-	0	-	0	-
Scaup	16	72%	5 – 28	0	-	0	-	0	-	16	74%
Common eider	0	-	-	0	-	0	-	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-	0	-
Harlequin duck	114	52%	55 – 173	0	-	18	132%	49	82%	47	45%
Long-tailed duck	27	43%	15 – 38	0	-	0	-	0	-	27	45%
Merganser	95	29%	68 – 123	30	77%	0	-	61	89%	4	143%
Total ducks	3,131	19%	2,528 – 3,734	379	59%	56	99%	742	37%	1,955	23%
Geese											
Black brant	0	-	-	0	-	0	-	0	-	0	-
Cackling/Canada goose	19	124%	6 – 42	0	-	0	-	19	127%	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-	0	-
Emperor goose	0	-	-	0	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-	0	-
Total geese	19	124%	6 – 42	0	-	0	-	19	127%	0	-
Swans											
Swan	0	-	-	0	-	0	-	0	-	0	-
Cranes											
Sandhill crane	0	-	-	0	-	0	-	0	-	0	-
Ptarmigans and grouses											
Grouse	11	143%	5 – 26	11	143%	0	-	0	-	0	-
Ptarmigan	3,761	33%	2,525 – 4,996	28	113%	0	-	776	37%	2,957	43%
Total ptarmigans and grouses	3,772	33%	2,536 – 5,007	39	94%	0	-	776	37%	2,957	43%
Seabirds											
Cormorant	0	-	-	0	-	0	-	0	-	0	-
Tern	0	-	-	0	-	0	-	0	-	0	-
Black-legged kittiwake	2	143%	1 – 5	0	-	0	-	0	-	2	143%
Red-legged kittiwake	0	-	-	0	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-	0	-
Total seabirds	2	143%	1 – 5	0	-	0	-	0	-	2	143%
Shorebirds											
Black oystercatcher	0	-	-	0	-	0	-	0	-	0	-
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-	0	-
Loons and grebes											
Common loon	0	-	-	0	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-	0	-
Other/unknown bird	3	124%	1 – 7	0	-	0	-	3	127%	0	-
Total birds	6,926	24%	5,256 – 8,597	418	58%	56	99%	1,539	26%	4,914	34%

Sampling effort (Kodiak Archipelago region, 2010): 6 out of 12 villages in this subregion were included in analysis; 2 out of 2 subregions were surveyed. -: No reported harvest.

Table 15.–Estimated egg harvest, Kodiak Archipelago region, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest							
	Number	Confidence Interval		Spring		Summer		Fall		Winter	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI	Number	95% CI
Ducks											
American wigeon	0	-	-	0	-	0	-	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-	0	-
Mallard	0	-	-	0	-	0	-	0	-	0	-
Northern pintail	0	-	-	0	-	0	-	0	-	0	-
Northern shoveler	0	-	-	0	-	0	-	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-	0	-
Bufflehead	43	143%	20 – 105	43	143%	0	-	0	-	0	-
Goldeneye	35	127%	16 – 79	35	127%	0	-	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-	0	-
Common eider	0	-	-	0	-	0	-	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-	0	-
Total ducks	78	135%	36 – 184	78	136%	0	-	0	-	0	-
Geese											
Black brant	0	-	-	0	-	0	-	0	-	0	-
Cackling/Canada goose	0	-	-	0	-	0	-	0	-	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-	0	-
Emperor goose	0	-	-	0	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-	0	-
Total geese	0	-	-	0	-	0	-	0	-	0	-
Swans											
Swan	0	-	-	0	-	0	-	0	-	0	-
Cranes											
Sandhill crane	0	-	-	0	-	0	-	0	-	0	-
Ptarmigans and grouses											
Grouse	0	-	-	0	-	0	-	0	-	0	-
Ptarmigan	0	-	-	0	-	0	-	0	-	0	-
Total ptarmigans and grouses	0	-	-	0	-	0	-	0	-	0	-
Seabirds											
Cormorant	0	-	-	0	-	0	-	0	-	0	-
Tern	13	143%	6 – 32	13	143%	0	-	0	-	0	-
Black-legged kittiwake	72	48%	37 – 106	72	48%	0	-	0	-	0	-
Red-legged kittiwake	0	-	-	0	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-	0	-
Mew gull	15	143%	7 – 37	15	143%	0	-	0	-	0	-
Large gull	626	27%	458 – 793	626	27%	0	-	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-	0	-
Total seabirds	725	26%	538 – 912	725	26%	0	-	0	-	0	-
Shorebirds											
Black oystercatcher	0	-	-	0	-	0	-	0	-	0	-
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-	0	-
Loons and grebes											
Common loon	0	-	-	0	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-	0	-
Total eggs	803	30%	564 – 1,042	803	30%	0	-	0	-	0	-

Sampling effort (Kodiak Archipelago region, 2010): 6 out of 12 villages in this subregion were included in analysis; 2 out of 2 subregions were surveyed. -: No reported harvest.

Table 16.–Estimated bird harvest, Kodiak Archipelago region, Kodiak Villages subregion, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest							
	Number	Confidence Interval		Spring		Summer		Fall		Winter	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI	Number	95% CI
Ducks											
American wigeon	7	145%	3 – 16	7	143%	0	-	0	-	0	-
Teal	72	66%	33 – 119	54	75%	0	-	13	143%	4	143%
Mallard	703	31%	483 – 922	67	67%	0	-	302	42%	334	31%
Northern pintail	45	65%	19 – 74	0	-	0	-	34	80%	11	85%
Northern shoveler	0	-	-	0	-	0	-	0	-	0	-
Black scoter	34	101%	13 – 68	7	143%	0	-	0	-	27	126%
Surf scoter	7	145%	3 – 16	7	143%	0	-	0	-	0	-
White-winged scoter	100	57%	43 – 158	13	143%	0	-	41	89%	46	84%
Bufflehead	147	41%	86 – 208	69	61%	0	-	0	-	78	40%
Goldeneye	590	31%	406 – 774	102	60%	0	-	172	55%	317	28%
Canvasback	0	-	-	0	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-	0	-
Common eider	0	-	-	0	-	0	-	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-	0	-
Harlequin duck	32	105%	12 – 65	0	-	0	-	27	126%	4	143%
Long-tailed duck	0	-	-	0	-	0	-	0	-	0	-
Merganser	35	73%	16 – 60	30	77%	0	-	0	-	4	143%
Total ducks	1,770	30%	1,239 – 2,300	355	62%	0	-	589	44%	826	25%
Geese											
Black brant	0	-	-	0	-	0	-	0	-	0	-
Cackling/Canada goose	0	-	-	0	-	0	-	0	-	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-	0	-
Emperor goose	0	-	-	0	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-	0	-
Total geese	0	-	-	0	-	0	-	0	-	0	-
Swans											
Swan	0	-	-	0	-	0	-	0	-	0	-
Cranes											
Sandhill crane	0	-	-	0	-	0	-	0	-	0	-
Ptarmigans and grouses											
Grouse	11	145%	5 – 27	11	143%	0	-	0	-	0	-
Ptarmigan	165	51%	81 – 248	28	113%	0	-	30	93%	106	59%
Total ptarmigans and grouses	176	49%	89 – 262	39	94%	0	-	30	93%	106	59%
Seabirds											
Cormorant	0	-	-	0	-	0	-	0	-	0	-
Tern	0	-	-	0	-	0	-	0	-	0	-
Black-legged kittiwake	2	145%	1 – 5	0	-	0	-	0	-	2	143%
Red-legged kittiwake	0	-	-	0	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-	0	-
Total seabirds	2	145%	1 – 5	0	-	0	-	0	-	2	143%
Shorebirds											
Black oystercatcher	0	-	-	0	-	0	-	0	-	0	-
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-	0	-
Loons and grebes											
Common loon	0	-	-	0	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-	0	-
Total birds	1,947	30%	1,370 – 2,525	394	61%	0	0%	619	43%	934	24%

Sampling effort (Kodiak Villages subregion, 2010): 4 out of 6 villages in this subregion were included in analysis; 46% of subregion households were represented in the sample. -: No reported harvest.

Table 17.–Estimated egg harvest, Kodiak Archipelago region, Kodiak Villages subregion, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest							
	Number	Confidence Interval		Spring		Summer		Fall		Winter	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI	Number	95% CI
Ducks											
American wigeon	0	-	-	0	-	0	-	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-	0	-
Mallard	0	-	-	0	-	0	-	0	-	0	-
Northern pintail	0	-	-	0	-	0	-	0	-	0	-
Northern shoveler	0	-	-	0	-	0	-	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-	0	-
Bufflehead	43	145%	20 – 106	43	143%	0	-	0	-	0	-
Goldeneye	35	129%	16 – 79	35	127%	0	-	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-	0	-
Common eider	0	-	-	0	-	0	-	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-	0	-
Total ducks	78	137%	36 – 185	78	136%	0	-	0	-	0	-
Geese											
Black brant	0	-	-	0	-	0	-	0	-	0	-
Cackling/Canada goose	0	-	-	0	-	0	-	0	-	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-	0	-
Emperor goose	0	-	-	0	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-	0	-
Total geese	0	-	-	0	-	0	-	0	-	0	-
Swans											
Swan	0	-	-	0	-	0	-	0	-	0	-
Cranes											
Sandhill crane	0	-	-	0	-	0	-	0	-	0	-
Ptarmigans and grouses											
Grouse	0	-	-	0	-	0	-	0	-	0	-
Ptarmigan	0	-	-	0	-	0	-	0	-	0	-
Total ptarmigans and grouses	0	-	-	0	-	0	-	0	-	0	-
Seabirds											
Cormorant	0	-	-	0	-	0	-	0	-	0	-
Tern	13	145%	6 – 32	13	143%	0	-	0	-	0	-
Black-legged kittiwake	72	53%	34 – 109	72	48%	0	-	0	-	0	-
Red-legged kittiwake	0	-	-	0	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-	0	-
Mew gull	15	145%	7 – 37	15	143%	0	-	0	-	0	-
Large gull	593	35%	383 – 804	593	28%	0	-	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-	0	-
Total seabirds	693	35%	452 – 934	693	27%	0	-	0	-	0	-
Shorebirds											
Black oystercatcher	0	-	-	0	-	0	-	0	-	0	-
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-	0	-
Loons and grebes											
Common loon	0	-	-	0	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-	0	-
Total eggs	771	38%	478 – 1,064	771	31%	0	-	0	-	0	-

Sampling effort (Kodiak Villages subregion, 2010): 4 out of 6 villages in this subregion were included in analysis; 46% of subregion households were represented in the sample. -: No reported harvest.

Table 18.–Estimated bird harvest, Kodiak Archipelago region, Kodiak City and Road-connected subregion, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest							
	Number	Confidence Interval		Spring		Summer		Fall		Winter	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI	Number	95% CI
Ducks											
American wigeon	26	59%	11 – 41	0	-	6	132%	9	127%	11	74%
Teal	584	22%	457 – 711	0	-	0	-	3	127%	581	44%
Mallard	366	19%	297 – 435	6	132%	18	98%	9	95%	333	39%
Northern pintail	15	118%	5 – 34	0	-	0	-	15	127%	0	-
Northern shoveler	0	-	-	0	-	0	-	0	-	0	-
Black scoter	11	48%	6 – 16	0	-	0	-	0	-	11	52%
Surf scoter	41	21%	32 – 50	0	-	0	-	30	142%	11	74%
White-winged scoter	21	68%	7 – 36	0	-	0	-	0	-	21	74%
Bufflehead	28	58%	12 – 44	12	132%	0	-	0	-	16	43%
Goldeneye	83	33%	55 – 110	6	132%	15	108%	3	127%	59	39%
Canvasback	0	-	-	0	-	0	-	0	-	0	-
Scaup	16	68%	5 – 27	0	-	0	-	0	-	16	74%
Common eider	0	-	-	0	-	0	-	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-	0	-
Harlequin duck	82	43%	47 – 117	0	-	18	132%	22	98%	43	47%
Long-tailed duck	27	41%	16 – 38	0	-	0	-	0	-	27	45%
Merganser	61	15%	51 – 70	0	-	0	-	61	142%	0	-
Total ducks	1,361	16%	1,138 – 1,584	23	132%	56	99%	153	91%	1,129	35%
Geese											
Black brant	0	-	-	0	-	0	-	0	-	0	-
Cackling/Canada goose	19	118%	6 – 41	0	-	0	-	19	127%	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-	0	-
Emperor goose	0	-	-	0	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-	0	-
Total geese	19	118%	6 – 41	0	-	0	-	19	127%	0	-
Swans											
Swan	0	-	-	0	-	0	-	0	-	0	-
Cranes											
Sandhill crane	0	-	-	0	-	0	-	0	-	0	-
Ptarmigans and grouses											
Grouse	0	-	-	0	-	0	-	0	-	0	-
Ptarmigan	3,596	18%	2,942 – 4,250	0	-	0	-	745	44%	2,851	45%
Total ptarmigans and grouses	3,596	18%	2,942 – 4,250	0	-	0	-	745	44%	2,851	45%
Seabirds											
Cormorant	0	-	-	0	-	0	-	0	-	0	-
Tern	0	-	-	0	-	0	-	0	-	0	-
Black-legged kittiwake	0	-	-	0	-	0	-	0	-	0	-
Red-legged kittiwake	0	-	-	0	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-	0	-
Shorebirds											
Black oystercatcher	0	-	-	0	-	0	-	0	-	0	-
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-	0	-
Loons and grebes											
Common loon	0	-	-	0	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-	0	-
Other/unknown bird	3	118%	1 – 7	0	-	0	-	3	127%	0	-
Total birds	4,979	17%	4,128 – 5,830	23	132%	56	99%	920	43%	3,980	42%

Sampling effort (Kodiak City and Road-connected subregion, 2010): 2 out of 6 villages in this subregion were included in analysis; 42% of subregion households were represented in the sample. -: No reported harvest.

Table 19.–Estimated egg harvest, Kodiak Archipelago region, Kodiak City and Road-connected subregion, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest							
	Number	Confidence Interval		Spring		Summer		Fall		Winter	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI	Number	95% CI
Ducks											
American wigeon	0	-	-	0	-	0	-	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-	0	-
Mallard	0	-	-	0	-	0	-	0	-	0	-
Northern pintail	0	-	-	0	-	0	-	0	-	0	-
Northern shoveler	0	-	-	0	-	0	-	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-	0	-
Common eider	0	-	-	0	-	0	-	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-	0	-
Total ducks	0	-	-	0	-	0	-	0	-	0	-
Geese											
Black brant	0	-	-	0	-	0	-	0	-	0	-
Cackling/Canada goose	0	-	-	0	-	0	-	0	-	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-	0	-
Emperor goose	0	-	-	0	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-	0	-
Total geese	0	-	-	0	-	0	-	0	-	0	-
Swans											
Swan	0	-	-	0	-	0	-	0	-	0	-
Cranes											
Sandhill crane	0	-	-	0	-	0	-	0	-	0	-
Ptarmigans and grouses											
Grouse	0	-	-	0	-	0	-	0	-	0	-
Ptarmigan	0	-	-	0	-	0	-	0	-	0	-
Total ptarmigans and grouses	0	-	-	0	-	0	-	0	-	0	-
Seabirds											
Cormorant	0	-	-	0	-	0	-	0	-	0	-
Tern	0	-	-	0	-	0	-	0	-	0	-
Black-legged kittiwake	0	-	-	0	-	0	-	0	-	0	-
Red-legged kittiwake	0	-	-	0	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-	0	-
Large gull	32	89%	11 – 61	32	93%	0	-	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-	0	-
Total seabirds	32	89%	11 – 61	32	93%	0	-	0	-	0	-
Shorebirds											
Black oystercatcher	0	-	-	0	-	0	-	0	-	0	-
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-	0	-
Loons and grebes											
Common loon	0	-	-	0	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-	0	-
Total eggs	32	89%	11 – 61	32	93%	0	-	0	-	0	-

Sampling effort (Kodiak City and Road-connected subregion, 2010): 2 out of 6 villages in this subregion were included in analysis; 42% of subregion households were represented in the sample. -: No reported harvest.

Table 20.–Estimated bird harvest, Yukon-Kuskokwim Delta region, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	4,628	16%	3,887 – 5,370	1,338	27%	1,093	28%	2,197	16%
Teal	2,727	19%	2,201 – 3,253	408	37%	462	44%	1,857	22%
Mallard	12,744	10%	11,481 – 14,008	5,290	13%	2,625	22%	4,829	12%
Northern pintail	7,814	17%	6,449 – 9,180	2,152	19%	3,404	27%	2,258	20%
Northern shoveler	2,465	17%	2,045 – 2,884	735	37%	600	28%	1,130	23%
Black scoter	10,339	13%	8,985 – 11,694	8,837	14%	97	54%	1,405	27%
Surf scoter	2,691	18%	2,200 – 3,182	2,374	20%	78	156%	239	37%
White-winged scoter	7,645	17%	6,308 – 8,983	6,810	19%	522	42%	313	41%
Bufflehead	313	39%	192 – 435	163	44%	0	-	150	52%
Goldeneye	5,659	15%	4,806 – 6,513	3,767	17%	201	74%	1,691	21%
Canvasback	2,097	24%	1,587 – 2,607	1,741	23%	64	54%	292	51%
Scaup	7,546	18%	6,172 – 8,920	6,052	21%	602	48%	892	33%
Common eider	680	44%	383 – 976	211	38%	149	85%	319	65%
King eider	5,597	25%	4,173 – 7,021	5,390	26%	37	98%	170	59%
Spectacled eider	137	90%	26 – 259	0	-	0	-	137	90%
Steller's eider	135	90%	22 – 256	3	138%	62	98%	69	88%
Harlequin duck	119	43%	68 – 170	119	44%	0	-	0	-
Long-tailed duck	1,851	29%	1,312 – 2,390	913	45%	124	98%	814	36%
Merganser	146	56%	64 – 228	33	91%	25	98%	88	74%
Duck (unidentified)	250	37%	157 – 343	140	58%	110	45%	0	-
Total ducks	75,584	11%	67,588 – 83,581	46,478	12%	10,256	21%	18,850	13%
Geese									
Black brant	6,279	16%	5,256 – 7,303	4,609	19%	526	48%	1,144	28%
Cackling/Canada goose	15,269	9%	13,967 – 16,571	10,511	9%	1,909	28%	2,849	15%
Greater white-fronted goose	19,255	8%	17,631 – 20,879	15,202	9%	1,265	24%	2,788	15%
Emperor goose	2,094	18%	1,720 – 2,468	1,481	22%	105	53%	509	26%
Snow goose	454	27%	331 – 578	280	32%	24	58%	151	57%
Goose (unidentified)	20	104%	1 – 40	20	109%	0	-	0	-
Total geese	43,371	8%	39,851 – 46,892	32,102	9%	3,828	24%	7,441	12%
Swans									
Swan	4,511	9%	4,105 – 4,917	3,334	11%	300	23%	877	16%
Cranes									
Sandhill crane	2,879	11%	2,554 – 3,203	2,404	13%	166	31%	308	22%
Ptarmigans and grouses									
Grouse	736	35%	482 – 991	55	72%	130	156%	552	27%
Ptarmigan	13,833	11%	12,301 – 15,365	13,302	11%	248	98%	282	54%
Total ptarmigans and grouses	14,569	11%	13,020 – 16,119	13,357	11%	378	84%	834	26%
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	100	79%	21 – 178	100	79%	0	-	0	-
Black-legged kittiwake	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	112	69%	34 – 190	112	69%	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-
Total seabirds	211	52%	101 – 322	211	52%	0	-	0	-
Shorebirds									
Whimbrel/Curlew	21	81%	4 – 38	7	108%	14	110%	0	-
Godwit	1,530	37%	964 – 2,096	8	92%	1,522	37%	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	7	107%	1 – 15	7	108%	0	-	0	-
Total shorebirds	1,558	36%	992 – 2,125	23	59%	1,536	37%	0	-
Loons and grebes									
Common loon	41	65%	15 – 68	41	66%	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	57	44%	32 – 82	0	-	19	59%	38	59%
Total loons and grebes	98	38%	61 – 135	41	66%	19	59%	38	59%
Other/unknown bird	51	75%	18 – 90	6	138%	14	118%	31	111%
Total birds	142,834	9%	130,620 – 155,048	97,958	9%	16,497	21%	28,379	12%

Sampling effort (Yukon-Kuskokwim Delta region, 2010): 17 out of 47 villages in this region were included in analysis; 7 out of 7 subregions were surveyed. -: No reported harvest.

Table 21.–Estimated egg harvest, Yukon-Kuskokwim Delta region, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	86	108%	7 – 178	86	108%	0	-	0	-
Teal	143	63%	52 – 234	143	64%	0	-	0	-
Mallard	125	76%	30 – 221	125	76%	0	-	0	-
Northern pintail	420	45%	229 – 611	420	46%	0	-	0	-
Northern shoveler	144	71%	42 – 245	144	71%	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	59	90%	7 – 112	59	90%	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	8	90%	1 – 16	8	90%	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Common eider	0	-	-	0	-	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-
Spectacled eider	0	-	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Duck (unidentified)	64	79%	13 – 115	64	80%	0	-	0	-
Total ducks	1,049	31%	724 – 1,375	1,049	31%	0	-	0	-
Geese									
Black brant	3,917	20%	3,119 – 4,715	3,917	21%	0	-	0	-
Cackling/Canada goose	5,845	18%	4,816 – 6,875	5,845	18%	0	-	0	-
Greater white-fronted goose	7,168	18%	5,857 – 8,480	7,168	18%	0	-	0	-
Emperor goose	522	35%	339 – 706	522	35%	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-
Total geese	17,453	16%	14,635 – 20,272	17,453	16%	0	-	0	-
Swans									
Swan	993	32%	676 – 1,310	993	32%	0	-	0	-
Cranes									
Sandhill crane	1,009	33%	676 – 1,343	1,009	33%	0	-	0	-
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	118	59%	49 – 187	118	59%	0	-	0	-
Total ptarmigans and grouses	118	59%	49 – 187	118	59%	0	-	0	-
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	1,225	54%	558 – 1,892	169	59%	1,056	63%	0	-
Black-legged kittiwake	144	71%	42 – 245	144	71%	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	652	42%	379 – 925	373	48%	279	74%	0	-
Large gull	2,403	29%	1,711 – 3,094	2,310	30%	93	98%	0	-
Auklet	0	-	-	0	-	0	-	0	-
Murre	925	90%	110 – 1,756	925	90%	0	-	0	-
Guillemot	34	90%	4 – 64	34	90%	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-
Total seabirds	5,382	27%	3,934 – 6,829	3,954	28%	1,428	66%	0	-
Shorebirds									
Whimbrel/Curlew	118	88%	17 – 222	118	88%	0	-	0	-
Godwit	69	70%	21 – 118	69	71%	0	-	0	-
Golden/Black-bellied plover	225	67%	74 – 376	101	90%	124	98%	0	-
Turnstone	92	90%	11 – 176	92	90%	0	-	0	-
Phalarope	92	149%	28 – 228	92	149%	0	-	0	-
Small shorebird	360	55%	160 – 559	260	67%	99	98%	0	-
Total shorebirds	957	47%	509 – 1,405	733	54%	224	98%	0	-
Loons and grebes									
Common loon	3	149%	1 – 8	3	149%	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	3	149%	1 – 8	3	149%	0	-	0	-
Total eggs	26,965	14%	23,068 – 30,861	25,313	15%	1,652	65%	0	-

Sampling effort (Yukon-Kuskokwim Delta region, 2010): 17 out of 47 villages in this region were included in analysis; 7 out of 7 subregions were surveyed. -: No reported harvest.

Table 22.–Estimated bird harvest, Yukon-Kuskokwim Delta region, South Coast subregion, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	435	35%	284 – 587	0	-	197	73%	239	42%
Teal	572	31%	396 – 747	0	-	345	56%	226	43%
Mallard	979	24%	745 – 1,213	101	59%	299	58%	578	32%
Northern pintail	994	27%	725 – 1,263	193	46%	366	50%	435	45%
Northern shoveler	288	33%	193 – 383	50	67%	104	62%	134	56%
Black scoter	680	22%	531 – 829	491	30%	44	104%	146	57%
Surf scoter	109	46%	59 – 158	59	53%	0	-	50	98%
White-winged scoter	737	29%	523 – 951	311	36%	295	58%	130	77%
Bufflehead	56	87%	9 – 104	0	-	0	-	56	98%
Goldeneye	304	54%	139 – 470	0	-	149	84%	155	79%
Canvasback	40	60%	16 – 64	34	90%	0	-	6	98%
Scaup	431	43%	245 – 618	235	47%	0	-	196	104%
Common eider	468	48%	245 – 691	0	-	149	85%	319	65%
King eider	112	67%	37 – 187	0	-	37	98%	75	98%
Spectacled eider	137	79%	29 – 244	0	-	0	-	137	90%
Steller's eider	131	61%	51 – 212	0	-	62	98%	69	88%
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	211	61%	83 – 339	0	-	124	98%	87	77%
Merganser	106	61%	41 – 170	0	-	25	98%	81	80%
Total ducks	6,789	24%	5,167 – 8,412	1,475	28%	2,196	50%	3,119	38%
Geese									
Black brant	1,252	32%	851 – 1,653	84	90%	452	56%	716	43%
Cackling/Canada goose	1,851	20%	1,476 – 2,226	635	27%	311	57%	905	31%
Greater white-fronted goose	2,848	20%	2,284 – 3,413	2,322	25%	152	61%	374	39%
Emperor goose	301	40%	180 – 423	0	-	75	71%	227	50%
Snow goose	35	68%	11 – 59	0	-	0	-	35	87%
Total geese	6,288	18%	5,162 – 7,414	3,041	23%	990	51%	2,258	31%
Swans									
Swan	303	31%	209 – 397	146	40%	25	98%	132	72%
Cranes									
Sandhill crane	640	21%	503 – 777	484	29%	64	64%	92	47%
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	3,516	21%	2,765 – 4,267	3,010	27%	248	98%	258	59%
Total ptarmigans and grouses	3,516	21%	2,765 – 4,267	3,010	27%	248	98%	258	59%
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	0	-	-	0	-	0	-	0	-
Black-legged kittiwake	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total birds	17,537	18%	14,295 – 20,779	8,156	22%	3,523	53%	5,858	34%

Sampling effort (Yukon-Kuskokwim Delta South Coast subregion, 2010): 4 out of 8 villages in this subregion were included in analysis; 34% of the subregion households were represented in the sample. -: No reported harvest.

Table 23.–Estimated egg harvest, Yukon-Kuskokwim Delta region, South Coast subregion, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	0	-	-	0	-	0	-	0	-
Teal	143	50%	71 – 215	143	64%	0	-	0	-
Mallard	50	70%	15 – 86	50	90%	0	-	0	-
Northern pintail	420	37%	264 – 577	420	46%	0	-	0	-
Northern shoveler	101	70%	30 – 171	101	90%	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	59	70%	18 – 100	59	90%	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	8	70%	3 – 14	8	90%	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Common eider	0	-	-	0	-	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-
Spectacled eider	0	-	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Total ducks	782	32%	534 – 1,029	782	38%	0	-	0	-
Geese									
Black brant	0	-	-	0	-	0	-	0	-
Cackling/Canada goose	361	55%	161 – 562	361	71%	0	-	0	-
Greater white-fronted goose	950	54%	433 – 1,467	950	69%	0	-	0	-
Emperor goose	0	-	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-
Total geese	1,311	45%	719 – 1,904	1,311	57%	0	-	0	-
Swans									
Swan	277	50%	138 – 417	277	63%	0	-	0	-
Cranes									
Sandhill crane	160	45%	88 – 231	160	56%	0	-	0	-
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	118	47%	63 – 173	118	59%	0	-	0	-
Total ptarmigans and grouses	118	47%	63 – 173	118	59%	0	-	0	-
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	1,173	52%	561 – 1,786	118	78%	1,056	63%	0	-
Black-legged kittiwake	101	70%	30 – 171	101	90%	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	498	45%	273 – 723	219	72%	279	74%	0	-
Large gull	253	47%	133 – 372	160	70%	93	98%	0	-
Auklet	0	-	-	0	-	0	-	0	-
Murre	925	70%	279 – 1,570	925	90%	0	-	0	-
Guillemot	34	70%	10 – 57	34	90%	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-
Total seabirds	2,983	37%	1,874 – 4,093	1,555	57%	1,428	66%	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	34	70%	10 – 57	34	90%	0	-	0	-
Golden/Black-bellied plover	225	57%	96 – 354	101	90%	124	98%	0	-
Turnstone	92	70%	28 – 157	92	90%	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	225	49%	115 – 336	126	70%	99	98%	0	-
Total shorebirds	577	42%	332 – 821	353	52%	224	98%	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total eggs	6,208	27%	4,516 – 7,901	4,556	35%	1,652	65%	0	-

Sampling effort (Yukon-Kuskokwim Delta South Coast subregion, 2010): 4 out of 8 villages in this subregion were included in analysis; 34% of the subregion households were represented in the sample. -: No reported harvest.

Table 24.–Estimated bird harvest, Yukon-Kuskokwim Delta region, Mid Coast subregion, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	1,288	23%	991 – 1,586	124	79%	653	39%	510	37%
Teal	77	55%	34 – 119	50	79%	0	-	27	117%
Mallard	1,626	21%	1,286 – 1,966	100	68%	1,049	30%	478	31%
Northern pintail	3,558	24%	2,690 – 4,427	100	68%	2,509	35%	950	36%
Northern shoveler	478	29%	338 – 618	17	79%	407	38%	54	82%
Black scoter	309	71%	90 – 527	66	79%	0	-	242	104%
Surf scoter	54	70%	16 – 92	0	-	0	-	54	82%
White-winged scoter	43	72%	12 – 74	0	-	0	-	43	85%
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	41	66%	14 – 69	41	79%	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	856	31%	595 – 1,118	41	79%	599	48%	215	50%
Common eider	211	33%	141 – 282	211	38%	0	-	0	-
King eider	5,210	27%	3,828 – 6,593	5,210	27%	0	-	0	-
Spectacled eider	0	-	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	808	35%	528 – 1,087	81	87%	0	-	727	40%
Merganser	0	-	-	0	-	0	-	0	-
Duck (unidentified)	50	71%	15 – 85	50	92%	0	-	0	-
Total ducks	14,610	19%	11,844 – 17,377	6,091	25%	5,218	32%	3,301	34%
Geese									
Black brant	3,366	22%	2,614 – 4,117	3,297	22%	19	62%	50	79%
Cackling/Canada goose	3,889	16%	3,265 – 4,512	1,813	18%	1,269	38%	806	32%
Greater white-fronted goose	4,820	16%	4,037 – 5,603	4,140	17%	596	40%	83	79%
Emperor goose	1,337	23%	1,028 – 1,645	1,327	24%	9	87%	0	-
Snow goose	116	58%	49 – 183	0	-	0	-	116	69%
Total geese	13,527	16%	11,374 – 15,680	10,578	17%	1,894	38%	1,055	30%
Swans									
Swan	559	21%	440 – 679	461	28%	81	40%	18	59%
Cranes									
Sandhill crane	1,243	18%	1,016 – 1,470	1,216	19%	27	66%	0	-
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	5,697	16%	4,783 – 6,610	5,697	15%	0	-	0	-
Total ptarmigans and grouses	5,697	16%	4,783 – 6,610	5,697	15%	0	-	0	-
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	100	66%	34 – 165	100	79%	0	-	0	-
Black-legged kittiwake	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	112	58%	47 – 177	112	69%	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-
Total seabirds	211	45%	117 – 306	211	52%	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	1,516	35%	984 – 2,048	8	92%	1,508	38%	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	1,516	35%	984 – 2,048	8	92%	1,508	38%	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total birds	37,363	15%	31,593 – 43,133	24,263	16%	8,728	31%	4,373	31%

Sampling effort (Yukon-Kuskokwim Delta Mid Coast subregion, 2010): 3 out of 9 villages in this subregion were included in analysis; 34% of the subregion households were represented in the sample. -: No reported harvest.

Table 25.–Estimated egg harvest, Yukon-Kuskokwim Delta region, Mid Coast subregion, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	0	-	-	0	-	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-
Mallard	75	103%	15 – 152	75	112%	0	-	0	-
Northern pintail	0	-	-	0	-	0	-	0	-
Northern shoveler	0	-	-	0	-	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Common eider	0	-	-	0	-	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-
Spectacled eider	0	-	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Total ducks	75	103%	15 – 152	75	112%	0	-	0	-
Geese									
Black brant	3,891	19%	3,167 – 4,616	3,891	21%	0	-	0	-
Cackling/Canada goose	5,257	17%	4,337 – 6,176	5,257	19%	0	-	0	-
Greater white-fronted goose	6,218	18%	5,113 – 7,324	6,218	18%	0	-	0	-
Emperor goose	451	30%	313 – 588	451	37%	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-
Total geese	15,817	17%	13,172 – 18,462	15,817	17%	0	-	0	-
Swans									
Swan	618	32%	420 – 817	618	41%	0	-	0	-
Cranes									
Sandhill crane	785	33%	526 – 1,044	785	41%	0	-	0	-
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	0	-	-	0	-	0	-	0	-
Total ptarmigans and grouses	0	-	-	0	-	0	-	0	-
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	30	103%	6 – 61	30	112%	0	-	0	-
Black-legged kittiwake	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	1,812	30%	1,267 – 2,357	1,812	37%	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-
Total seabirds	1,842	30%	1,293 – 2,391	1,842	36%	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total eggs	19,137	17%	15,906 – 22,369	19,137	18%	0	-	0	-

Sampling effort (Yukon-Kuskokwim Delta Mid Coast subregion, 2010): 3 out of 9 villages in this subregion were included in analysis; 34% of the subregion households were represented in the sample. -: No reported harvest.

Table 26.–Estimated bird harvest, Yukon-Kuskokwim Delta region, North Coast subregion, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	45	49%	23 – 67	31	90%	14	77%	0	-
Teal	0	-	-	0	-	0	-	0	-
Mallard	128	29%	92 – 165	52	60%	49	39%	27	63%
Northern pintail	95	39%	58 – 132	26	117%	48	42%	21	77%
Northern shoveler	104	37%	65 – 142	41	82%	49	39%	14	110%
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-
Canvasback	28	53%	13 – 43	7	108%	7	110%	14	110%
Scaup	7	83%	1 – 13	7	108%	0	-	0	-
Common eider	0	-	-	0	-	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-
Spectacled eider	0	-	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	16	147%	5 – 40	16	149%	0	-	0	-
Merganser	7	86%	1 – 13	0	-	0	-	7	110%
Duck (unidentified)	83	45%	46 – 121	48	71%	35	65%	0	-
Total ducks	514	25%	388 – 640	230	47%	201	29%	83	48%
Geese									
Black brant	566	17%	469 – 663	172	33%	56	37%	338	21%
Cackling/Canada goose	957	19%	775 – 1,139	305	40%	10	88%	642	20%
Greater white-fronted goose	436	49%	223 – 649	395	53%	34	51%	7	110%
Emperor goose	351	20%	280 – 422	74	35%	21	62%	256	27%
Snow goose	126	23%	98 – 155	105	26%	21	62%	0	-
Total geese	2,436	17%	2,016 – 2,857	1,051	28%	142	32%	1,243	20%
Swans									
Swan	640	19%	521 – 759	298	31%	38	45%	304	19%
Cranes									
Sandhill crane	551	21%	434 – 668	364	27%	56	37%	131	33%
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	726	24%	555 – 898	726	25%	0	-	0	-
Total ptarmigans and grouses	726	24%	555 – 898	726	25%	0	-	0	-
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	0	-	-	0	-	0	-	0	-
Black-legged kittiwake	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	21	64%	8 – 34	7	108%	14	110%	0	-
Godwit	14	86%	2 – 26	0	-	14	110%	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	7	83%	1 – 13	7	108%	0	-	0	-
Total shorebirds	42	61%	17 – 68	14	76%	28	110%	0	-
Loons and grebes									
Common loon	10	147%	3 – 24	10	149%	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	10	147%	3 – 24	10	149%	0	-	0	-
Total birds	4,920	16%	4,145 – 5,694	2,694	20%	465	27%	1,761	19%

Sampling effort (Yukon-Kuskokwim Delta North Coast subregion, 2010): 2 out of 4 villages in this subregion were included in analysis; 34% of the subregion households were represented in the sample. -: No reported harvest.

Table 27.–Estimated eggs harvest, Yukon-Kuskokwim Delta region, North Coast subregion, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	86	72%	24 – 147	86	108%	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-
Mallard	0	-	-	0	-	0	-	0	-
Northern pintail	0	-	-	0	-	0	-	0	-
Northern shoveler	43	83%	7 – 79	43	108%	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Common eider	0	-	-	0	-	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-
Spectacled eider	0	-	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Duck (unidentified)	64	62%	24 – 105	64	80%	0	-	0	-
Total ducks	193	43%	110 – 275	193	59%	0	-	0	-
Geese									
Black brant	26	147%	8 – 65	26	149%	0	-	0	-
Cackling/Canada goose	227	59%	93 – 362	227	75%	0	-	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-
Emperor goose	72	83%	12 – 131	72	108%	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-
Total geese	325	61%	126 – 524	325	77%	0	-	0	-
Swans									
Swan	97	65%	34 – 160	97	73%	0	-	0	-
Cranes									
Sandhill crane	64	49%	33 – 96	64	62%	0	-	0	-
Ptarmigans and grouses									
Grouse	0	-	–	0	-	0	-	0	-
Ptarmigan	0	-	–	0	-	0	-	0	-
Total ptarmigans and grouses	0	-	–	0	-	0	-	0	-
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	21	83%	4 – 39	21	108%	0	-	0	-
Black-legged kittiwake	43	83%	7 – 79	43	108%	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	154	41%	90 – 218	154	56%	0	-	0	-
Large gull	338	33%	226 – 450	338	41%	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-
Total seabirds	557	29%	398 – 715	557	34%	0	-	0	-
Shorebirds									
Whimbrel/Curlew	118	66%	40 – 197	118	88%	0	-	0	-
Godwit	36	83%	6 – 66	36	108%	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-
Phalarope	92	147%	28 – 227	92	149%	0	-	0	-
Small shorebird	134	110%	35 – 282	134	113%	0	-	0	-
Total shorebirds	380	88%	85 – 716	380	91%	0	-	0	-
Loons and grebes									
Common loon	3	147%	1 – 8	3	149%	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	3	147%	1 – 8	3	149%	0	-	0	-
Total eggs	1,619	36%	1,043 – 2,195	1,619	38%	0	-	0	-

Sampling effort (Yukon-Kuskokwim Delta North Coast subregion, 2010): 2 out of 4 villages in this subregion were included in analysis; 34% of the subregion households were represented in the sample. -: No reported harvest.

Table 28.–Estimated bird harvest, Yukon-Kuskokwim Delta region, Lower Yukon subregion, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	405	9%	368 – 442	23	164%	51	0%	332	0%
Teal	398	0%	398 – 398	0	-	21	0%	377	0%
Mallard	1,322	6%	1,236 – 1,407	193	46%	244	0%	885	0%
Northern pintail	332	9%	303 – 362	57	57%	84	0%	191	0%
Northern shoveler	266	11%	238 – 294	17	164%	13	0%	236	0%
Black scoter	444	45%	245 – 643	171	116%	17	0%	256	0%
Surf scoter	38	0%	38 – 38	0	-	0	-	38	0%
White-winged scoter	84	0%	84 – 84	0	-	51	0%	34	0%
Bufflehead	21	0%	21 – 21	0	-	0	-	21	0%
Goldeneye	401	3%	390 – 411	13	97%	0	-	387	0%
Canvasback	71	0%	71 – 71	0	-	13	0%	59	0%
Scaup	122	23%	94 – 150	17	164%	0	-	105	0%
Common eider	0	-	-	0	-	0	-	0	-
King eider	25	0%	25 – 25	0	-	0	-	25	0%
Spectacled eider	0	-	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	131	137%	23 – 311	131	137%	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Duck (unidentified)	17	-	17 – 17	0	-	17	0%	0	-
Total ducks	4,078	11%	3,633 – 4,522	622	70%	510	0%	2,946	0%
Geese									
Black brant	13	0%	13 – 13	0	-	0	-	13	0%
Cackling/Canada goose	794	31%	547 – 1,040	642	37%	55	0%	97	0%
Greater white-fronted goose	1,834	24%	1,397 – 2,271	1,238	33%	93	0%	503	0%
Emperor goose	4	0%	4 – 4	0	-	0	-	4	0%
Snow goose	79	60%	32 – 127	79	61%	0	-	0	-
Total geese	2,723	24%	2,063 – 3,383	1,959	31%	147	0%	617	0%
Swans									
Swan	630	27%	462 – 797	502	32%	34	0%	94	0%
Cranes									
Sandhill crane	31	30%	21 – 40	6	164%	4	0%	21	0%
Ptarmigans and grouses									
Grouse	164	0%	164 – 164	0	-	0	-	164	0%
Ptarmigan	110	79%	23 – 196	105	97%	0	-	4	0%
Total ptarmigans and grouses	273	32%	187 – 359	105	97%	0	-	168	0%
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	0	-	-	0	-	0	-	0	-
Black-legged kittiwake	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	13	0%	-	0	-	4	0%	8	0%
Total loons and grebes	13	0%	-	0	-	4	0%	8	0%
Total birds	7,748	15%	6,608 – 8,887	3,194	33%	699	0%	3,854	0%

Sampling effort (Lower Yukon subregion, 2010): 2 out of 6 villages in this subregion were included in analysis; 19% of the subregion households were represented in the sample. -: No reported harvest.

Table 29.–Estimated egg harvest, Yukon-Kuskokwim Delta region, Lower Yukon subregion, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	0	-	-	0	-	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-
Mallard	0	-	-	0	-	0	-	0	-
Northern pintail	0	-	-	0	-	0	-	0	-
Northern shoveler	0	-	-	0	-	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Common eider	0	-	-	0	-	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-
Spectacled eider	0	-	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Total ducks	0	-	-	0	-	0	-	0	-
Geese									
Black brant	0	-	-	0	-	0	-	0	-
Cackling/Canada goose	0	-	-	0	-	0	-	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-
Emperor goose	0	-	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-
Total geese	0	-	-	0	-	0	-	0	-
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	0	-	-	0	-	0	-	0	-
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	0	-	-	0	-	0	-	0	-
Total ptarmigans and grouses	0	-	-	0	-	0	-	0	-
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	0	-	-	0	-	0	-	0	-
Black-legged kittiwake	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total eggs	0	-	-	0	-	0	-	0	-

Sampling effort (Lower Yukon subregion, 2010): 2 out of 6 villages in this subregion were included in analysis; 19% of the subregion households were represented in the sample. -: No reported harvest.

Table 30.–Estimated bird harvest, Yukon-Kuskokwim Delta region, Lower Kuskokwim subregion, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	2,411	18%	1,973 – 2,848	1,160	30%	176	47%	1,075	26%
Teal	1,626	23%	1,245 – 2,007	332	43%	73	76%	1,220	33%
Mallard	8,297	14%	7,138 – 9,456	4,747	14%	835	49%	2,715	19%
Northern pintail	2,652	18%	2,170 – 3,134	1,754	22%	282	45%	615	37%
Northern shoveler	1,325	25%	1,000 – 1,651	610	44%	27	103%	688	36%
Black scoter	8,403	16%	7,073 – 9,734	7,640	16%	36	73%	727	37%
Surf scoter	2,397	19%	1,937 – 2,856	2,299	20%	0	-	97	59%
White-winged scoter	6,691	18%	5,476 – 7,907	6,409	20%	176	76%	106	66%
Bufflehead	237	31%	162 – 311	163	44%	0	-	73	76%
Goldeneye	4,853	17%	4,014 – 5,692	3,712	17%	0	-	1,140	30%
Canvasback	1,928	20%	1,544 – 2,313	1,672	24%	44	76%	213	69%
Scaup	6,057	19%	4,884 – 7,229	5,690	22%	0	-	367	50%
Common eider	0	-	-	0	-	0	-	0	-
King eider	70	76%	17 – 123	0	-	0	-	70	97%
Spectacled eider	0	-	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-
Harlequin duck	113	42%	65 – 160	113	46%	0	-	0	-
Long-tailed duck	684	41%	406 – 962	684	52%	0	-	0	-
Merganser	33	88%	5 – 63	33	91%	0	-	0	-
Duck (unidentified)	59	60%	23 – 94	0	-	59	76%	0	-
Total ducks	47,836	14%	41,292 – 54,379	37,018	14%	1,710	39%	9,108	19%
Geese									
Black brant	1,051	38%	656 – 1,446	1,024	46%	0	-	27	103%
Cackling/Canada goose	7,270	14%	6,243 – 8,296	6,782	13%	191	66%	297	30%
Greater white-fronted goose	8,253	14%	7,120 – 9,387	6,358	14%	323	46%	1,573	23%
Emperor goose	101	47%	53 – 149	79	73%	0	-	22	102%
Snow goose	95	56%	42 – 148	95	73%	0	-	0	-
Total geese	16,770	14%	14,472 – 19,067	14,337	13%	514	39%	1,919	21%
Swans									
Swan	2,337	15%	1,984 – 2,690	1,904	15%	117	45%	315	26%
Cranes									
Sandhill crane	353	24%	268 – 437	274	31%	15	76%	64	44%
Ptarmigans and grouses									
Grouse	391	33%	261 – 520	55	72%	0	-	336	45%
Ptarmigan	3,556	21%	2,797 – 4,314	3,541	25%	0	-	15	76%
Total ptarmigans and grouses	3,946	20%	3,163 – 4,730	3,596	24%	0	-	351	43%
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	0	-	-	0	-	0	-	0	-
Black-legged kittiwake	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	32	56%	14 – 49	32	73%	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	44	46%	24 – 64	0	-	15	76%	29	76%
Total loons and grebes	76	37%	48 – 104	32	73%	15	76%	29	76%
Total birds	71,317	13%	61,833 – 80,801	57,161	13%	2,370	37%	11,785	18%

Sampling effort (Lower Kuskokwim subregion, 2010): 4 out of 13 villages in this subregion were included in analysis; 25% of the subregion households were represented in the sample. -: No reported harvest.

Table 31.–Estimated egg harvest, Yukon-Kuskokwim Delta region, Lower Kuskokwim subregion, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	0	-	-	0	-	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-
Mallard	0	-	-	0	-	0	-	0	-
Northern pintail	0	-	-	0	-	0	-	0	-
Northern shoveler	0	-	-	0	-	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Common eider	0	-	-	0	-	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-
Spectacled eider	0	-	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Total ducks	0	-	-	0	-	0	-	0	-
Geese									
Black brant	0	-	-	0	-	0	-	0	-
Cackling/Canada goose	0	-	-	0	-	0	-	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-
Emperor goose	0	-	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-
Total geese	0	-	-	0	-	0	-	0	-
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	0	-	-	0	-	0	-	0	-
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	0	-	-	0	-	0	-	0	-
Total ptarmigans and grouses	0	-	-	0	-	0	-	0	-
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	0	-	-	0	-	0	-	0	-
Black-legged kittiwake	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total eggs	0	-	-	0	-	0	-	0	-

Sampling effort (Lower Kuskokwim subregion, 2010): 4 out of 13 villages in this subregion were included in analysis; 25% of the subregion households were represented in the sample. -: No reported harvest.

Table 32.–Estimated bird harvest, Yukon-Kuskokwim Delta region, Central Kuskokwim subregion, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	2	0%	2 – 2	0	-	0	-	2	0%
Teal	7	0%	7 – 7	0	-	0	-	7	0%
Mallard	218	113%	14 – 466	78	109%	130	156%	10	0%
Northern pintail	7	0%	7 – 7	0	-	0	-	7	0%
Northern shoveler	3	0%	3 – 3	0	-	0	-	3	0%
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	78	170%	6 – 211	0	-	78	156%	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	52	170%	4 – 141	0	-	52	156%	0	-
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Common eider	0	-	-	0	-	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-
Spectacled eider	0	-	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Total ducks	367	126%	24 – 829	78	109%	260	156%	29	0%
Geese									
Black brant	0	-	-	0	-	0	-	0	-
Cackling/Canada goose	12	0%	12 – 12	0	-	0	-	12	0%
Greater white-fronted goose	0	-	-	0	-	0	-	0	-
Emperor goose	0	-	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-
Goose (unidentified)	20	114%	1 – 42	20	109%	0	-	0	-
Total geese	32	70%	9 – 54	20	109%	0	-	12	0%
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	0	-	-	0	-	0	-	0	-
Ptarmigans and grouses									
Grouse	182	122%	10 – 404	0	-	130	156%	52	0%
Ptarmigan	78	114%	4 – 167	78	109%	0	-	0	-
Total ptarmigans and grouses	260	95%	14 – 508	78	109%	130	156%	52	0%
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	0	-	-	0	-	0	-	0	-
Black-legged kittiwake	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total birds	659	108%	39 – 1,374	176	109%	390	156%	94	0%

Sampling effort (Central Kuskokwim subregion, 2010): 1 out of 6 villages in this subregion were included in analysis; 9% of the subregion households were represented in the sample. -: No reported harvest.

Table 33.–Estimated egg harvest, Yukon-Kuskokwim Delta region, Central Kuskokwim subregion, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	0	-	-	0	-	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-
Mallard	0	-	-	0	-	0	-	0	-
Northern pintail	0	-	-	0	-	0	-	0	-
Northern shoveler	0	-	-	0	-	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Common eider	0	-	-	0	-	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-
Spectacled eider	0	-	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Total ducks	0	-	-	0	-	0	-	0	-
Geese									
Black brant	0	-	-	0	-	0	-	0	-
Cackling/Canada goose	0	-	-	0	-	0	-	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-
Emperor goose	0	-	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-
Total geese	0	-	-	0	-	0	-	0	-
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	0	-	-	0	-	0	-	0	-
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	0	-	-	0	-	0	-	0	-
Total ptarmigans and grouses	0	-	-	0	-	0	-	0	-
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	0	-	-	0	-	0	-	0	-
Black-legged kittiwake	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total eggs	0	-	-	0	-	0	-	0	-

Sampling effort (Central Kuskokwim subregion, 2010): 1 out of 6 villages in this subregion were included in analysis; 9% of the subregion households were represented in the sample. -: No reported harvest.

Table 34.–Estimated bird harvest, Yukon-Kuskokwim Delta region, Bethel subregion, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	42	48%	22 – 63	0	-	3	143%	39	90%
Teal	48	47%	25 – 70	26	138%	22	101%	0	-
Mallard	174	34%	115 – 233	19	103%	19	79%	135	74%
Northern pintail	176	30%	123 – 228	23	106%	114	69%	39	105%
Northern shoveler	0	-	-	0	-	0	-	0	-
Black scoter	503	30%	354 – 652	469	60%	0	-	34	143%
Surf scoter	16	71%	5 – 28	16	138%	0	-	0	-
White-winged scoter	90	71%	28 – 154	90	138%	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	8	81%	3 – 15	0	-	0	-	8	143%
Canvasback	29	51%	14 – 44	29	98%	0	-	0	-
Scaup	72	50%	36 – 109	61	113%	3	143%	8	143%
Common eider	0	-	-	0	-	0	-	0	-
King eider	180	55%	81 – 279	180	106%	0	-	0	-
Spectacled eider	0	-	-	0	-	0	-	0	-
Steller's eider	3	71%	1 – 6	3	138%	0	-	0	-
Harlequin duck	6	71%	2 – 11	6	138%	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Duck (unidentified)	42	71%	13 – 72	42	138%	0	-	0	0%
Total ducks	1,390	20%	1,110 – 1,671	964	53%	161	55%	265	54%
Geese									
Black brant	32	48%	17 – 48	32	93%	0	-	0	-
Cackling/Canada goose	497	16%	416 – 577	334	41%	72	55%	90	55%
Greater white-fronted goose	1,064	15%	904 – 1,223	749	35%	67	79%	248	53%
Emperor goose	0	-	-	0	-	0	-	0	-
Snow goose	3	83%	1 – 5	0	-	3	143%	0	-
Total geese	1,595	13%	1,383 – 1,808	1,115	32%	142	50%	338	48%
Swans									
Swan	42	25%	31 – 53	23	65%	6	101%	14	85%
Cranes									
Sandhill crane	61	24%	46 – 76	61	47%	0	-	0	-
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	150	69%	47 – 254	145	138%	0	-	6	143%
Total ptarmigans and grouses	150	69%	47 – 254	145	138%	0	-	6	143%
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	0	-	-	0	-	0	-	0	-
Black-legged kittiwake	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Other/unknown bird	51	43%	29 – 73	6	138%	14	118%	31	111%
Total birds	3,290	15%	2,810 – 3,770	2,315	37%	322	43%	654	41%

Sampling effort (Bethel subregion, 2010): 1 out of 1 village in this subregion was included in analysis. Harvest expansion assumed that harvester households account for 30% of the total village households. -: No reported harvest.

Table 35.–Estimated egg harvest, Yukon-Kuskokwim Delta region, Bethel subregion, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	0	-	-	0	-	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-
Mallard	0	-	-	0	-	0	-	0	-
Northern pintail	0	-	-	0	-	0	-	0	-
Northern shoveler	0	-	-	0	-	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Common eider	0	-	-	0	-	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-
Spectacled eider	0	-	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Total ducks	0	-	-	0	-	0	-	0	-
Geese									
Black brant	0	-	-	0	-	0	-	0	-
Cackling/Canada goose	0	-	-	0	-	0	-	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-
Emperor goose	0	-	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-
Total geese	0	-	-	0	-	0	-	0	-
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	0	-	-	0	-	0	-	0	-
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	0	-	-	0	-	0	-	0	-
Total ptarmigans and grouses	0	-	-	0	-	0	-	0	-
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	0	-	-	0	-	0	-	0	-
Black-legged kittiwake	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Auklet	0	-	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total eggs	0	-	-	0	-	0	-	0	-

Sampling effort (Bethel subregion, 2010): 1 out of 1 village in this subregion was included in analysis. Harvest expansion assumed that harvester households account for 30% of the total village households. -: No reported harvest.

Table 36.–Estimated bird harvest, Bering Strait-Norton Sound region, St. Lawrence-Diomede Islands subregion, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	0	-	-	0	-	0	-	0	-
Teal	9	50%	6 – 14	0	-	3	117%	6	117%
Mallard	10	44%	7 – 15	3	101%	8	96%	0	-
Northern pintail	22	52%	14 – 33	0	-	16	117%	6	117%
Northern shoveler	3	67%	2 – 5	0	-	3	117%	0	-
Black scoter	2	67%	1 – 3	0	-	2	117%	0	-
Surf scoter	2	67%	1 – 3	0	-	2	117%	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	35	9%	32 – 39	0	-	5	86%	31	54%
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Common eider	516	3%	498 – 534	58	23%	234	15%	225	24%
King eider	108	25%	82 – 135	4	74%	39	40%	66	70%
Spectacled eider	45	6%	43 – 48	3	63%	19	38%	23	55%
Steller's eider	19	16%	16 – 23	1	109%	18	47%	0	-
Harlequin duck	53	15%	45 – 61	7	47%	46	39%	0	-
Long-tailed duck	169	7%	158 – 181	1	63%	74	37%	94	45%
Merganser	2	67%	1 – 3	0	-	2	117%	0	-
Duck (unidentified)	6	67%	4 – 10	0	-	0	-	6	117%
Total ducks	1,002	6%	944 – 1,060	77	20%	469	20%	457	24%
Geese									
Black brant	26	44%	17 – 37	9	87%	17	107%	0	-
Cackling/Canada goose	5	67%	3 – 8	0	-	5	117%	0	-
Greater white-fronted goose	2	67%	1 – 3	0	-	2	117%	0	-
Emperor goose	75	7%	70 – 81	3	109%	27	43%	46	79%
Snow goose	38	13%	33 – 43	9	82%	3	94%	26	71%
Total geese	145	13%	127 – 164	21	72%	53	54%	72	75%
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	11	38%	7 – 16	0	-	4	129%	8	89%
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	0	-	-	0	-	0	-	0	-
Total ptarmigans and grouses	0	-	-	0	-	0	-	0	-
Seabirds									
Cormorant	2,429	3%	2,353 – 2,505	32	64%	1,053	11%	1,344	18%
Tern	0	-	-	0	-	0	-	0	-
Black-legged kittiwake	3	29%	2 – 4	0	-	3	94%	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	10	63%	7 – 17	10	109%	0	-	0	-
Large gull	205	8%	189 – 220	10	109%	78	33%	116	33%
Auklet	3,584	12%	3,159 – 4,009	2,052	20%	1,453	42%	79	82%
Murre	3,442	5%	3,257 – 3,628	3,392	7%	51	107%	0	-
Guillemot	3,030 a	2%	2,955 – 3,104	0	-	1,582	10%	1,448	18%
Puffin	65	67%	34 – 108	0	-	0	-	65	129%
Total seabirds	12,767	4%	12,272 – 13,263	5,496	9%	4,220	16%	3,052	16%
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-
Phalarope	68	48%	44 – 101	0	-	31	117%	37	117%
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	68	48%	44 – 101	0	-	31	117%	37	117%
Loons and grebes									
Common loon	50	8%	46 – 54	0	-	38	28%	11	55%
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	8	67%	5 – 13	0	-	8	117%	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	2	67%	1 – 3	0	-	2	117%	0	-
Total loons and grebes	59	15%	50 – 68	0	-	47	37%	11	55%
Total birds	14,054	4%	13,523 – 14,584	5,593	9%	4,823	16%	3,637	16%

Sampling effort (St. Lawrence-Diomede subregion, 2010): 3 out of 3 villages in this subregion were included in analysis. -: No reported harvest.

a: During data review process, regional partners indicated that guillemot harvest estimates seemed too high. Data available from previous studies support this comment. Data entry and analysis were checked for correctness. Total reported harvest was 1,360 guillemots.

Table 37.–Estimated egg harvest, Bering Strait-Norton Sound region, St. Lawrence-Diomede Islands subregion, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	0	-	-	0	-	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-
Mallard	0	-	-	0	-	0	-	0	-
Northern pintail	0	-	-	0	-	0	-	0	-
Northern shoveler	0	-	-	0	-	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Common eider	3	37%	3 – 5	3	63%	0	-	0	-
King eider	0	-	-	0	-	0	-	0	-
Spectacled eider	0	-	-	0	-	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Total ducks	3	37%	3 – 5	3	63%	0	-	0	-
Geese									
Black brant	0	-	-	0	-	0	-	0	-
Cackling/Canada goose	0	-	-	0	-	0	-	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-
Emperor goose	0	-	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-
Total geese	0	-	-	0	-	0	-	0	-
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	0	-	-	0	-	0	-	0	-
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	0	-	-	0	-	0	-	0	-
Total ptarmigans and grouses	0	-	-	0	-	0	-	0	-
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	0	-	-	0	-	0	-	0	-
Black-legged kittiwake	209	53%	120 – 318	209	90%	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Auklet	106	49%	57 – 159	23	91%	84	117%	0	-
Murre	55,307	7%	51,517 – 59,098	46,566	8%	8,741	56%	0	-
Guillemot	0	-	-	0	-	0	-	0	-
Puffin	56	69%	32 – 95	52	128%	4	129%	0	-
Total seabirds	55,678	7%	51,870 – 59,486	46,850	9%	8,829	56%	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total eggs	55,682	7%	51,874 – 59,490	46,853	9%	8,829	56%	0	-

Sampling effort (St. Lawrence-Diomede subregion, 2010): 3 out of 3 villages in this subregion were included in analysis. -: No reported harvest.

Table 38.–Estimated bird harvest, Bering Strait-Norton Sound region, Mainland Villages subregion, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	112	41%	66 – 158	19	75%	47	70%	45	85%
Teal	369	33%	247 – 490	52	54%	158	75%	159	78%
Mallard	470	23%	360 – 581	157	50%	153	50%	161	51%
Northern pintail	1,669	19%	1,348 – 1,990	674	41%	323	51%	673	37%
Northern shoveler	128	33%	85 – 171	42	84%	22	105%	64	72%
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	33	53%	15 – 50	0	-	11	105%	22	105%
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-
Canvasback	44	70%	13 – 75	0	-	0	-	44	105%
Scaup	21	73%	6 – 37	21	106%	0	-	0	-
Common eider	448	76%	110 – 786	72	67%	375	108%	0	-
King eider	0	-	-	0	-	0	-	0	-
Spectacled eider	14	73%	4 – 23	14	109%	0	-	0	-
Steller's eider	21	100%	4 – 42	0	-	21	117%	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Duck (unidentified)	17	74%	4 – 29	17	88%	0	-	0	-
Total ducks	3,345	17%	2,767 – 3,923	1,069	29%	1,110	45%	1,167	31%
Geese									
Black brant	1,029	35%	664 – 1,393	877	41%	152	91%	0	-
Cackling/Canada goose	4,578	16%	3,854 – 5,301	1,382	26%	662	57%	2,534	27%
Greater white-fronted goose	764	25%	575 – 953	584	32%	98	65%	82	83%
Emperor goose	97	44%	55 – 140	26	104%	61	79%	10	98%
Snow goose	5,801	22%	4,522 – 7,081	5,240	29%	350	80%	211	70%
Total geese	12,269	15%	10,425 – 14,113	8,109	23%	1,324	46%	2,836	25%
Swans									
Swan	301	25%	226 – 375	89	42%	22	105%	190	47%
Cranes									
Sandhill crane	1,595	21%	1,259 – 1,931	360	35%	48	79%	1,186	30%
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	689	30%	485 – 893	203	59%	110	105%	377	64%
Total ptarmigans and grouses	689	30%	485 – 893	203	59%	110	105%	377	64%
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	0	-	-	0	-	0	-	0	-
Black-legged kittiwake	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	2,389	94%	403 – 4,629	0	-	2,356	115%	33	105%
Auklet	0	-	-	0	-	0	-	0	-
Murre	0	-	-	0	-	0	-	0	-
Guillemot	0	-	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-
Total seabirds	2,389	94%	403 – 4,629	0	-	2,356	115%	33	105%
Shorebirds									
Whimbrel/Curlew	22	70%	7 – 37	0	-	0	-	22	105%
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Turnstone	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	76	55%	34 – 118	21	106%	0	-	55	105%
Total shorebirds	98	46%	53 – 143	21	106%	0	-	77	80%
Loons and grebes									
Common loon	11	73%	3 – 18	11	106%	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	–	0	-	0	-	0	-
Yellow-billed loon	22	59%	9 – 36	22	89%	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	33	46%	18 – 48	33	69%	0	-	0	-
Total birds	20,719	18%	17,023 – 24,414	9,883	22%	4,970	69%	5,866	20%

Sampling effort (Bering Strait Mainland Villages subregion, 2010): 5 out of 12 villages in this subregion were included in analysis; 33% of the subregion households were repreented in the sample. -: No reported harvest.

Table 39.–Estimated egg harvest, Bering Strait-Norton Sound region, Mainland Villages subregion, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	0	-	-	0	-	0	-	0	-
Teal	169	73%	46 – 292	169	106%	0	-	0	-
Mallard	54	67%	18 – 90	33	96%	21	117%	0	-
Northern pintail	407	32%	278 – 537	360	43%	47	115%	0	-
Northern shoveler	85	73%	23 – 146	85	106%	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Common eider	4,689	50%	2,324 – 7,053	4,135	67%	554	54%	0	-
King eider	135	62%	52 – 219	108	109%	27	109%	0	-
Spectacled eider	49	72%	14 – 84	49	88%	0	-	0	-
Steller's eider	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Total ducks	5,588	43%	3,188 – 7,988	4,939	57%	649	49%	0	-
Geese									
Black brant	180	49%	91 – 269	121	74%	59	94%	0	-
Cackling/Canada goose	449	41%	265 – 634	349	54%	100	68%	0	-
Greater white-fronted goose	21	100%	4 – 42	0	-	21	117%	0	-
Emperor goose	0	-	-	0	-	0	-	0	-
Snow goose	151	67%	51 – 252	151	97%	0	-	0	-
Total geese	802	29%	572 – 1,032	622	41%	180	50%	0	-
Swans									
Swan	54	59%	22 – 85	43	86%	11	117%	0	-
Cranes									
Sandhill crane	175	39%	107 – 243	62	64%	113	72%	0	-
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	51	59%	21 – 80	51	79%	0	-	0	-
Total ptarmigans and grouses	51	59%	21 – 80	51	79%	0	-	0	-
Seabirds									
Cormorant	0	-	-	0	-	0	-	0	-
Tern	717	29%	511 – 922	397	45%	320	60%	0	-
Black-legged kittiwake	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	124	88%	28 – 233	82	132%	42	117%	0	-
Large gull	3,624	26%	2,685 – 4,562	2,920	36%	703	39%	0	-
Auklet	0	-	-	0	-	0	-	0	-
Murre	786	38%	485 – 1,087	403	62%	384	80%	0	-
Guillemot	0	-	-	0	-	0	-	0	-
Puffin	0	-	-	0	-	0	-	0	-
Total seabirds	5,251	20%	4,175 – 6,327	3,802	30%	1,449	34%	0	-
Shorebirds									
Whimbrel/Curlew	18	95%	3 – 34	18	115%	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	189	50%	94 – 283	165	64%	24	115%	0	-
Turnstone	0	-	-	0	-	0	-	0	-
Phalarope	407	43%	233 – 580	275	75%	132	105%	0	-
Small shorebird	1,187	42%	689 – 1,685	838	66%	349	67%	0	-
Total shorebirds	1,800	33%	1,204 – 2,396	1,296	50%	504	68%	0	-
Loons and grebes									
Common loon	156	45%	86 – 227	156	54%	0	-	0	-
Pacific loon	22	70%	7 – 37	0	-	22	105%	0	-
Red-throated loon	12	95%	2 – 23	0	-	12	115%	0	-
Yellow-billed loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	190	39%	117 – 263	156	54%	34	79%	0	-
Total eggs	13,910	24%	10,547 – 17,273	10,970	33%	2,940	32%	0	-

Sampling effort (Bering Strait Mainland Villages subregion, 2010): 5 out of 12 villages in this subregion were included in analysis; 33% of the subregion households were repreented in the sample. -: No reported harvest.

Table 40.–Estimated bird harvest, Interior Alaska region, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	1,128	32%	765 – 1,492	783	37%	46	104%	300	53%
Teal	362	42%	209 – 515	249	54%	33	79%	81	56%
Mallard	4,635	22%	3,631 – 5,640	2,810	21%	402	64%	1,423	34%
Northern pintail	2,020	41%	1,198 – 2,843	1,324	34%	11	114%	684	59%
Northern shoveler	1,207	66%	411 – 2,003	640	62%	0	-	567	70%
Black scoter	1,338	61%	526 – 2,150	696	61%	86	130%	556	71%
Surf scoter	96	68%	30 – 162	51	76%	0	-	46	119%
White-winged scoter	4,906	28%	3,540 – 6,272	3,491	26%	195	101%	1,220	39%
Bufflehead	1,134	70%	339 – 1,928	561	71%	0	-	573	69%
Goldeneye	1,199	66%	403 – 1,994	564	70%	58	99%	576	69%
Canvasback	1,203	28%	862 – 1,544	1,017	31%	107	106%	79	59%
Scaup	1,486	55%	665 – 2,307	902	49%	0	-	584	68%
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	1,556	52%	745 – 2,368	1,000	43%	0	-	556	71%
Merganser	5	134%	1 – 11	5	134%	0	-	0	-
Duck (unidentified)	113	60%	46 – 181	44	81%	15	95%	55	84%
Total ducks	22,389	33%	14,953 – 29,825	14,136	28%	953	53%	7,300	49%
Geese									
Cackling/Canada goose	3,421	22%	2,678 – 4,163	2,589	20%	72	60%	760	43%
Greater white-fronted goose	4,471	21%	3,516 – 5,426	4,208	22%	39	110%	224	56%
Snow goose	63	54%	29 – 98	63	54%	0	-	0	-
Total geese	7,955	18%	6,558 – 9,352	6,860	18%	111	57%	985	39%
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	69	50%	35 – 103	50	53%	0	-	19	87%
Total ptarmigans and grouses									
Grouse	1,289	34%	850 – 1,729	463	50%	44	118%	783	41%
Ptarmigan	678	51%	334 – 1,022	582	57%	0	-	95	59%
Total ptarmigans and grouses	1,967	36%	1,256 – 2,678	1,045	51%	44	118%	878	38%
Seabirds									
Tern	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Other/unknown bird	231	92%	27 – 444	103	130%	0	-	129	130%
Total birds	32,611	25%	24,353 – 40,870	22,193	21%	1,108	49%	9,310	42%

Sampling effort (Interior Alaska region, 2010): 17 out of 43 villages in this region were included in analysis; 5 out of 5 subregions were surveyed. -: No reported harvest.

Table 41.–Estimated egg harvest, Interior Alaska region, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	0	-	-	0	-	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-
Mallard	0	-	-	0	-	0	-	0	-
Northern pintail	22	146%	6 – 54	22	146%	0	-	0	-
Northern shoveler	0	-	-	0	-	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-
Canvasback	43	130%	5 – 98	43	130%	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Total ducks	65	99%	11 – 129	65	99%	0	-	0	-
Geese									
Cackling/Canada goose	0	-	-	0	-	0	-	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-
Total geese	0	-	-	0	-	0	-	0	-
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	0	-	-	0	-	0	-	0	-
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	0	-	-	0	-	0	-	0	-
Total ptarmigans and grouses	0	-	-	0	-	0	-	0	-
Seabirds									
Tern	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total eggs	65	99%	11 – 129	65	99%	0	-	0	-

Sampling effort (Interior Alaska region, 2010): 17 out of 43 villages in this region were included in analysis; 5 out of 5 subregions were surveyed. -: No reported harvest.

Table 42.–Estimated bird harvest, Interior Alaska region, Mid Yukon-Upper Kuskokwim subregion, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	58	76%	14 – 101	52	77%	0	-	5	175%
Teal	79	70%	24 – 133	58	78%	0	-	21	123%
Mallard	95	68%	30 – 160	63	73%	0	-	32	128%
Northern pintail	99	79%	21 – 178	79	90%	0	-	21	123%
Northern shoveler	37	105%	7 – 75	26	126%	0	-	10	175%
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Total ducks	367	56%	163 – 571	277	58%	0	-	90	102%
Geese									
Cackling/Canada goose	184	68%	58 – 309	147	73%	0	-	37	133%
Greater white-fronted goose	73	93%	14 – 141	73	89%	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-
Total geese	257	64%	93 – 420	220	65%	0	-	37	133%
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	0	-	-	0	-	0	-	0	-
Ptarmigans and grouses									
Grouse	163	128%	30 – 371	0	-	0	-	163	126%
Ptarmigan	0	-	-	0	-	0	-	0	-
Total ptarmigans and grouses	163	128%	30 – 371	0	-	0	-	163	126%
Seabirds									
Tern	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total birds	786	54%	366 – 1,207	497	59%	0	-	289	84%

Sampling effort (Mid Yukon-Upper Kuskokwim subregion, 2010): 3 out of 9 villages in this subregion were included in analysis; 19% of the subregion households were repreented in the sample. -: No reported harvest.

Table 43.–Estimated egg harvest, Interior Alaska region, Mid Yukon-Upper Kuskokwim subregion, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	0	-	-	0	-	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-
Mallard	0	-	-	0	-	0	-	0	-
Northern pintail	0	-	-	0	-	0	-	0	-
Northern shoveler	0	-	-	0	-	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Total ducks	0	-	-	0	-	0	-	0	-
Geese									
Cackling/Canada goose	0	-	-	0	-	0	-	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-
Total geese	0	-	-	0	-	0	-	0	-
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	0	-	-	0	-	0	-	0	-
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	0	-	-	0	-	0	-	0	-
Total ptarmigans and grouses	0	-	-	0	-	0	-	0	-
Seabirds									
Tern	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total eggs	0	-	-	0	-	0	-	0	-

Sampling effort (Mid Yukon-Upper Kuskokwim subregion, 2010): 3 out of 9 villages in this subregion were included in analysis; 19% of the subregion households were repreented in the sample. -: No reported harvest.

Table 44.–Estimated bird harvest, Interior Alaska region, Yukon-Koyukuk subregion, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	432	36%	275 – 589	267	59%	0	-	165	79%
Teal	62	67%	21 – 103	62	81%	0	-	0	-
Mallard	601	28%	435 – 767	456	39%	0	-	145	42%
Northern pintail	362	32%	247 – 478	323	37%	0	-	39	73%
Northern shoveler	7	143%	2 – 18	7	146%	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	67	92%	19 – 129	22	147%	0	-	46	119%
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	8	81%	1 – 14	8	102%	0	-	0	-
Canvasback	39	87%	11 – 73	11	147%	0	-	28	108%
Scaup	92	57%	39 – 144	88	79%	0	-	4	149%
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	126	59%	52 – 199	126	62%	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Total ducks	1,796	25%	1,348 – 2,245	1,370	34%	0	-	427	46%
Geese									
Cackling/Canada goose	1,061	26%	791 – 1,332	907	34%	0	-	155	51%
Greater white-fronted goose	910	42%	527 – 1,293	847	66%	0	-	63	63%
Snow goose	11	143%	3 – 27	11	146%	0	-	0	-
Total geese	1,982	29%	1,407 – 2,557	1,765	43%	0	-	217	47%
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	33	43%	19 – 47	22	71%	0	-	11	102%
Ptarmigans and grouses									
Grouse	391	58%	163 – 618	231	84%	0	-	160	85%
Ptarmigan	330	91%	90 – 630	330	92%	0	-	0	-
Total ptarmigans and grouses	721	69%	224 – 1,218	561	85%	0	-	160	85%
Seabirds									
Tern	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total birds	4,532	26%	3,355 – 5,709	3,718	35%	0	-	815	40%

Sampling effort (Yukon-Koyukuk subregion, 2010): 6 out of 12 villages in this subregion were included in analysis; 32% of the subregion households were repreented in the sample. -: No reported harvest.

Table 45.–Estimated egg harvest, Interior Alaska region, Yukon-Koyukuk subregion, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	0	-	-	0	-	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-
Mallard	0	-	-	0	-	0	-	0	-
Northern pintail	22	143%	6 – 53	22	146%	0	-	0	-
Northern shoveler	0	-	-	0	-	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Total ducks	22	143%	6 – 53	22	146%	0	-	0	-
Geese									
Cackling/Canada goose	0	-	-	0	-	0	-	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-
Total geese	0	-	-	0	-	0	-	0	-
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	0	-	-	0	-	0	-	0	-
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	0	-	-	0	-	0	-	0	-
Total ptarmigans and grouses	0	-	-	0	-	0	-	0	-
Seabirds									
Tern	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total eggs	22	143%	6 – 53	22	146%	0	-	0	-

Sampling effort (Yukon-Koyukuk subregion, 2010): 6 out of 12 villages in this subregion were included in analysis; 32% of the subregion households were repreented in the sample. -: No reported harvest.

Table 46.–Estimated bird harvest, Interior Alaska region, Upper Yukon subregion, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	476	38%	295 – 656	335	51%	12	150%	129	69%
Teal	136	42%	79 – 193	44	79%	33	79%	60	62%
Mallard	2,087	22%	1,621 – 2,552	1,408	25%	145	52%	534	31%
Northern pintail	376	38%	232 – 520	323	47%	11	114%	41	66%
Northern shoveler	50	56%	22 – 78	50	58%	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	29	66%	10 – 48	29	74%	0	-	0	-
White-winged scoter	3,654	27%	2,666 – 4,642	2,795	29%	195	101%	664	39%
Bufflehead	21	74%	5 – 36	5	134%	0	-	16	88%
Goldeneye	35	83%	9 – 64	0	-	16	106%	20	124%
Canvasback	975	31%	670 – 1,281	921	32%	4	150%	51	70%
Scaup	281	57%	121 – 442	258	73%	0	-	24	104%
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	318	43%	182 – 454	318	46%	0	-	0	-
Merganser	5	130%	1 – 10	5	134%	0	-	0	-
Duck (unidentified)	87	50%	43 – 130	44	81%	15	95%	28	73%
Total ducks	8,530	23%	6,541 – 10,518	6,532	24%	430	61%	1,567	26%
Geese									
Cackling/Canada goose	1,045	23%	802 – 1,288	871	23%	72	60%	102	48%
Greater white-fronted goose	2,571	27%	1,878 – 3,264	2,490	26%	39	110%	41	78%
Snow goose	44	63%	16 – 71	44	64%	0	-	0	-
Total geese	3,660	24%	2,798 – 4,521	3,406	21%	111	57%	143	50%
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	36	62%	14 – 58	28	76%	0	-	8	151%
Ptarmigans and grouses									
Grouse	319	46%	172 – 467	95	75%	44	118%	181	65%
Ptarmigan	148	63%	54 – 241	121	89%	0	-	27	89%
Total ptarmigans and grouses	467	42%	270 – 664	215	67%	44	118%	208	64%
Seabirds									
Tern	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total birds	12,692	22%	9,946 – 15,439	10,181	20%	585	56%	1,926	24%

Sampling effort (Upper Yukon subregion, 2010): 5 out of 10 villages in this subregion were included in analysis; 29% of the subregion households were repreented in the sample. -: No reported harvest.

Table 47.–Estimated egg harvest, Interior Alaska region, Upper Yukon subregion, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	0	-	-	0	-	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-
Mallard	0	-	-	0	-	0	-	0	-
Northern pintail	0	-	-	0	-	0	-	0	-
Northern shoveler	0	-	-	0	-	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Total ducks	0	-	-	0	-	0	-	0	-
Geese									
Cackling/Canada goose	0	-	-	0	-	0	-	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-
Total geese	0	-	-	0	-	0	-	0	-
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	0	-	-	0	-	0	-	0	-
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	0	-	-	0	-	0	-	0	-
Total ptarmigans and grouses	0	-	-	0	-	0	-	0	-
Seabirds									
Tern	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total eggs	0	-	-	0	-	0	-	0	-

Sampling effort (Upper Yukon subregion, 2010): 5 out of 10 villages in this subregion were included in analysis; 29% of the subregion households were repreented in the sample. -: No reported harvest.

Table 48.–Estimated bird harvest, Interior Alaska region, Tanana Villages subregion, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	163	103%	19 – 331	129	130%	34	130%	0	-
Teal	86	126%	10 – 193	86	130%	0	-	0	-
Mallard	1,706	40%	1,027 – 2,386	884	48%	257	96%	565	70%
Northern pintail	1,156	50%	573 – 1,738	599	66%	0	0%	556	71%
Northern shoveler	1,113	52%	533 – 1,693	556	71%	0	0%	556	71%
Black scoter	1,338	47%	709 – 1,966	696	61%	86	130%	556	71%
Surf scoter	0	-	-	0	-	0	-	0	-
White-winged scoter	1,252	49%	634 – 1,870	696	61%	0	-	556	71%
Bufflehead	1,113	52%	533 – 1,693	556	71%	0	-	556	71%
Goldeneye	1,156	50%	573 – 1,739	556	71%	43	130%	556	71%
Canvasback	189	76%	45 – 332	86	107%	103	110%	0	-
Scaup	1,113	52%	533 – 1,693	556	71%	0	-	556	71%
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	1,113	52%	533 – 1,693	556	71%	0	-	556	71%
Merganser	0	-	-	0	-	0	-	0	-
Total ducks	11,496	47%	6,140 – 16,852	5,957	60%	523	84%	5,016	71%
Geese									
Cackling/Canada goose	1,131	42%	657 – 1,604	664	54%	0	-	467	65%
Greater white-fronted goose	917	49%	471 – 1,363	797	52%	0	-	120	97%
Snow goose	9	126%	1 – 19	9	130%	0	-	0	-
Total geese	2,056	39%	1,255 – 2,858	1,470	46%	0	-	587	61%
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	0	-	-	0	-	0	-	0	-
Ptarmigans and grouses									
Grouse	177	55%	80 – 274	83	71%	0	-	93	84%
Ptarmigan	125	57%	53 – 197	83	71%	0	-	42	100%
Total ptarmigans and grouses	302	52%	144 – 460	167	71%	0	-	135	78%
Seabirds									
Tern	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Other/unknown bird	231	90%	27 – 440	103	130%	0	-	129	130%
Total birds	14,086	42%	8,219 – 19,952	7,696	51%	523	84%	5,867	65%

Sampling effort (Tanana Villages subregion, 2010): 2 out of 11 villages in this subregion were included in analysis; 17% of the subregion households were repreented in the sample. -: No reported harvest.

Table 49.–Estimated egg harvest, Interior Alaska region, Tanana Villages subregion, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	0	-	-	0	-	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-
Mallard	0	-	-	0	-	0	-	0	-
Northern pintail	0	-	-	0	-	0	-	0	-
Northern shoveler	0	-	-	0	-	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-
Canvasback	43	126%	5 – 97	43	130%	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Total ducks	43	126%	5 – 97	43	130%	0	-	0	-
Geese									
Cackling/Canada goose	0	-	-	0	-	0	-	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-
Total geese	0	-	-	0	-	0	-	0	-
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	0	-	-	0	-	0	-	0	-
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	0	-	-	0	-	0	-	0	-
Total ptarmigans and grouses	0	-	-	0	-	0	-	0	-
Seabirds									
Tern	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total eggs	43	126%	5 – 97	43	130%	0	-	0	-

Sampling effort (Tanana Villages subregion, 2010): 2 out of 11 villages in this subregion were included in analysis; 17% of the subregion households were repreented in the sample. -: No reported harvest.

Table 50.–Estimated bird harvest, Interior Alaska region, Tok subregion, 2010.

Species	Annual estimated bird harvest			Seasonal estimated bird harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	0	-	-	0	-	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-
Mallard	147	82%	55 – 267	0	-	0	-	147	141%
Northern pintail	27	89%	10 – 51	0	-	0	-	27	155%
Northern shoveler	0	-	-	0	-	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Duck (unidentified)	27	89%	10 – 51	0	-	0	-	27	155%
Total ducks	200	74%	75 – 347	0	-	0	-	200	128%
Geese									
Cackling/Canada goose	0	-	-	0	-	0	-	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-
Total geese	0	-	-	0	-	0	-	0	-
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	0	-	-	0	-	0	-	0	-
Ptarmigans and grouses									
Grouse	240	41%	142 – 338	53	155%	0	-	187	79%
Ptarmigan	75	62%	29 – 121	48	155%	0	-	27	109%
Total ptarmigans and grouses	315	41%	187 – 442	101	155%	0	-	213	73%
Seabirds									
Tern	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total birds	515	38%	320 – 709	101	155%	0	-	413	72%

Sampling effort (Tok subregion, 2010): 1 out of 1 village in this subregion was included in analysis. Harvest expansion was based on simple random sampling. -: No reported harvest.

Table 51.–Estimated egg harvest, Interior Alaska region, Tok subregion, 2010.

Species	Annual estimated egg harvest			Seasonal estimated egg harvest					
	Number	Confidence Interval		Spring		Summer		Fall	
		95% CI	Low – High	Number	95% CI	Number	95% CI	Number	95% CI
Ducks									
American wigeon	0	-	-	0	-	0	-	0	-
Teal	0	-	-	0	-	0	-	0	-
Mallard	0	-	-	0	-	0	-	0	-
Northern pintail	0	-	-	0	-	0	-	0	-
Northern shoveler	0	-	-	0	-	0	-	0	-
Black scoter	0	-	-	0	-	0	-	0	-
Surf scoter	0	-	-	0	-	0	-	0	-
White-winged scoter	0	-	-	0	-	0	-	0	-
Bufflehead	0	-	-	0	-	0	-	0	-
Goldeneye	0	-	-	0	-	0	-	0	-
Canvasback	0	-	-	0	-	0	-	0	-
Scaup	0	-	-	0	-	0	-	0	-
Harlequin duck	0	-	-	0	-	0	-	0	-
Long-tailed duck	0	-	-	0	-	0	-	0	-
Merganser	0	-	-	0	-	0	-	0	-
Total ducks	0	-	-	0	-	0	-	0	-
Geese									
Cackling/Canada goose	0	-	-	0	-	0	-	0	-
Greater white-fronted goose	0	-	-	0	-	0	-	0	-
Snow goose	0	-	-	0	-	0	-	0	-
Total geese	0	-	-	0	-	0	-	0	-
Swans									
Swan	0	-	-	0	-	0	-	0	-
Cranes									
Sandhill crane	0	-	-	0	-	0	-	0	-
Ptarmigans and grouses									
Grouse	0	-	-	0	-	0	-	0	-
Ptarmigan	0	-	-	0	-	0	-	0	-
Total ptarmigans and grouses	0	-	-	0	-	0	-	0	-
Seabirds									
Tern	0	-	-	0	-	0	-	0	-
Bonaparte's/Sabine's gull	0	-	-	0	-	0	-	0	-
Mew gull	0	-	-	0	-	0	-	0	-
Large gull	0	-	-	0	-	0	-	0	-
Total seabirds	0	-	-	0	-	0	-	0	-
Shorebirds									
Whimbrel/Curlew	0	-	-	0	-	0	-	0	-
Godwit	0	-	-	0	-	0	-	0	-
Golden/Black-bellied plover	0	-	-	0	-	0	-	0	-
Phalarope	0	-	-	0	-	0	-	0	-
Small shorebird	0	-	-	0	-	0	-	0	-
Total shorebirds	0	-	-	0	-	0	-	0	-
Loons and grebes									
Common loon	0	-	-	0	-	0	-	0	-
Pacific loon	0	-	-	0	-	0	-	0	-
Red-throated loon	0	-	-	0	-	0	-	0	-
Grebe	0	-	-	0	-	0	-	0	-
Total loons and grebes	0	-	-	0	-	0	-	0	-
Total eggs	0	-	-	0	-	0	-	0	-

Sampling effort (Tok subregion, 2010): 1 out of 1 village in this subregion was included in analysis. Harvest expansion was based on simple random sampling. -: No reported harvest.

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APPENDICES

Appendix A.–Rotation of regions and villages, 4-year cycle.

Region, subregion, village	Total households[a]	Region and village rotation			
		Year 1	Year 2	Year 3	Year 4
Gulf of Alaska-Cook Inlet					
Chugach					
Chenega Bay	19			X	
Nanwalek	58	X			
Port Graham	56			X	
Tatitlek	36	X			
Cook Inlet					
Tyonek	53			X	
Kodiak Archipelago					
Kodiak Villages					
Akhiok	15	X			
Karluk	13	X			
Larsen Bay	23	X			
Old Harbor	61			X	
Ouzinke	55			X	
Port Lions	66	X			
Kodiak City and Road-connected					
Aleneva	12			X	
Chiniak	21			X	
Kodiak at large	1,375	X			
Kodiak City	1,883			X	
Kodiak Station	476			X	
Women's Bay	255	X			
Aleutian-Pribilof Islands					
Aleutian-Pribilof Villages					
Adak	90		X		
Akutan	38				X
Atka	25				X
Cold Bay	37				X
False Pass	13		X		
King Cove	161		X		
Nelson Lagoon	24		X		
Nikolski	10				X
Saint George Island	38		X		
Saint Paul Island	150				X
Sand Point	230				X
Unalaska	691		X		
Bristol Bay					
South Alaska Peninsula					
Chignik Bay	22		X		
Chignik Lagoon	23				X

-continued-

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Region, subregion, village	Total households[a]	Region and village rotation			
		Year 1	Year 2	Year 3	Year 4
Chignik Lake	29				X
Ivanof Bay	0		X		
Perryville	41		X		
Southwest Bristol Bay					
Aleknagik	77		X		
Clarks Point	17				X
Egegik	24				X
Ekwok	39		X		
Igiugig	12				X
Iliamna	33				X
King Salmon	181		X		
Kokhanok	53		X		
Koliganek	51				X
Levelock	26		X		
Manokotak	100		X		
Naknek	201		X		
New Stuyahok	109				X
Newhalen	39				X
Nondalton	62		X		
Pedro Bay	15		X		
Pilot Point	21		X		
Port Heiden	31		X		
South Naknek	23		X		
Togiak	200		X		
Twin Hills	26				X
Dillingham	841				X
Yukon-Kuskokwim Delta					
Y-K Delta South Coast					
Eek	74		X		X
Goodnews Bay	69	X		X	
Kipnuk	148		X		X
Kongiganak	98	X		X	
Kwigillingok	76	X		X	
Platinum	19	X		X	
Quinhagak	163		X		X
Tuntutuliak	95		X		X
Y-K Delta Mid Coast					
Chefornak	89	X		X	
Chevak	201	X		X	
Hooper Bay	260		X		X
Mekoryuk	68		X		X
Newtok	70	X		X	

-continued-

Region, subregion, village	Total households[a]	Region and village rotation			
		Year 1	Year 2	Year 3	Year 4
Nightmute	56		X		X
Scammon Bay	110	X		X	
Toksook Bay	121		X		X
Tununak	84		X		X
Y-K Delta North Coast					
Alakanuk	143	X		X	
Emmonak	196		X		X
Kotlik	121		X		X
Nunam Iqua	33	X		X	
Lower Yukon					
Marshall	109	X		X	
Mountain Village	185		X		X
Pilot Station	116		X		X
Pitka's Point	30	X		X	
Russian Mission	86		X		X
Saint Mary's	148	X		X	
Lower Kuskokwim					
Akiachak	150	X		X	
Akiak	76	X		X	
Aniak	150		X		X
Atmautluak	62		X		X
Kasigluk	108	X		X	
Kwethluk	101	X		X	
Lower Kalskag	63	X		X	
Napakiak	89	X		X	
Napaskiak	91		X		X
Nunapitchuk	122		X		X
Oscarville	23	X		X	
Tuluksak	100		X		X
Upper Kalskag	63		X		X
Central Kuskokwim					
Chuathbaluk	24	X		X	
Crooked Creek	37		X		X
Lime Village	13	X		X	
Red Devil	17	X		X	
Sleetmute	23		X		X
Stony River	16		X		X
Bethel	1,803	X		X	
Bering Strait-Norton Sound					
St. Lawrence-Diomede Islands					
Diomede	38	X			
Gambell	165	X			

-continued-

Region, subregion, village	Total households[a]	Region and village rotation			
		Year 1	Year 2	Year 3	Year 4
Savoonga	163	X			
Bering Strait Mainland Villages					
Brevig Mission	86	X			
Elim	75			X	
Golovin	50	X			
Koyuk	90	X			
Saint Michael	106			X	
Shaktoolik	58	X			
Shishmaref	148			X	
Stebbins	130	X			
Teller	74			X	
Unalakleet	217	X			
Wales	45			X	
White Mountain	65			X	
Nome	1,206			X	
Northwest Arctic					
Northwest Arctic Villages					
Ambler	66		X		
Buckland	95		X		
Deering	41				X
Kiana	96				X
Kivalina	84				X
Kobuk	26				X
Noatak	120		X		
Noorvik	138		X		
Selawik	188		X		
Shungnak	60		X		
Kotzebue	902				X
North Slope					
North Slope Villages					
Anaktuvuk Pass	85		X		X
Atqasuk	53	X		X	
Kaktovik	83	X		X	
Nuiqsut	97		X		X
Point Hope	169		X		X
Point Lay	63		X		X
Wainwright	145	X		X	
Barrow	1,213	X	X	X	X
Interior Alaska					
Mid Yukon-Upper Kuskokwim					
Anvik	32	X			
Grayling	40			X	

-continued-

Appendix A.–Page 5 of 6.

Region, subregion, village	Total households[a]	Region and village rotation			
		Year 1	Year 2	Year 3	Year 4
Holy Cross	55	X			
Lake Minchumina	9			X	
McGrath	115			X	
Nikolai	36			X	
Shageluk	28	X			
Takotna	17	X			
Tanana	99			X	
Yukon-Koyukuk					
Alatna	10	X			
Allakaket	48	X			
Bettles/Evansville	14			X	
Coldfoot	6	X			
Galena	186			X	
Hughes	27			X	
Huslia	83	X			
Kaltag	56			X	
Koyukuk	34			X	
Nulato	74			X	
Ruby	58	X			
Wiseman	5			X	
Upper Yukon					
Arctic Village	54			X	
Beaver	24	X			
Birch Creek	9			X	
Central	48	X			
Chalkyitsik	30	X			
Circle	32			X	
Fort Yukon	222			X	
Rampart	7	X			
Stevens Village	23			X	
Venetie	55	X			
Tanana Villages					
Dot Lake	12	X			
Dry Creek	27			X	
Eagle City	58	X			
Eagle Village	30	X			
Healy Lake	6			X	
Manley Hot Springs	39			X	
Minto	54	X			
Nenana	148			X	
Northway	69	X			

-continued-

Appendix A.–Page 6 of 6.

Region, subregion, village	Total households[a]	Region and village rotation			
		Year 1	Year 2	Year 3	Year 4
Tanacross	57			X	
Tetlin	67	X			
Tok	530	X			
Upper Copper River					
Cantwell	24				X
Chistochina	23				X
Chitina	26				X
Copper Center	54				X
Gakona	15		X		
Gulkana	32		X		
Mentasta	29		X		
Tazlina	25		X		
Southeast Alaska					
Craig[b]	517				
Hoonah[b]	287				
Hydaburg[b]	119				
Yakutat[b]	226				

a. Total village households based on 2008 village population estimates (Alaska Department of Labor and Workforce Development, http://almis.labor.state.ak.us/?PAGEID=67&SUBID=171, accessed June 7, 2009).

b. Communities eligible only to harvest of Glaucous-winged Gull eggs.

Appendix B.–Household list and selection form (original size 8.5x11 in).

AMBCC Harvest Survey. Household Names are Confidential. page ____ / ____

Household List & Selection Form

Village:_____ Surveyor:_____ Harvest Year:_____

Total resident households: _____

Sampling method [a]*:*
- ☐ *Census (up to 30 households in total)*
- ☐ *75% Simple Random Sampling (31-60 households in total)*
- ☐ *"Harvester/Other" Stratification (61+ households in total)*

[a] *After counting the total number of resident households, checkmark the sampling method to be used.*
[b] *Classify households as "**harvester" or "other" only if using harvest/other stratification.***
[c] ***Harvester**: households that usually harvest birds or eggs.* [d] ***Other:** non-harvesters and households of unknown harvest pattern.*

Household ID	Household Name *List only households resident in the village since at least 12 months.*	*Select only one* [b]*:* Harvester [c]	Other [d]	Selected	Alternate	No contact/ consent

Appendix C.–Timetable for implementation of the AMBCC subsistence harvest survey.

	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Fieldwork preparation												
Develop partnerships and contracts for data collection		x	x	x	x							
Prepare survey materials, train field coordinators				x	x							
Conduct village outreach and obtain village consent						x	x					
Contract and train local surveyors, distribute village survey packages						x	x					
Data collection (year *t*)												
1st Household visit (household information and consent)							x	x				
2nd Household visit (harvest report)	x [a]										x [b, c]	
3rd Household visit (harvest report)	x [c]		x [b]				x [a]	x [a]				
Regional field coordinators send completed forms to statewide survey coordinator		x [c]	x [c]	x [b]	x [b]				x [a]	x [a]		
Data analysis, review, and release												
Data management and analysis (year *t*-1)						x	x	x	x	x	x	x
Release draft report (year *t*-1) for review and present survey results (AMBCC fall meeting)	x											
Data review by AMBCC Regional Councils and partners (year *t*-1)	x	x	x	x	x	x	x					
Adopt annual harvest estimates (year *t*-2) (AMBCC Spring meeting)								x				
Release yearly final report (year *t*-2)									x			
Pacific Flyway Council meetings							x				x	
FWS Ecological Services: Biological Opinion for Subsistence Hunting Regulations (BO)	x											x
FWS Ecological Services: Candidate Notice of Review for endangered species (CNoR)								x				

a: Pacific-Aleutian Seasonal Pattern: Kodiak, Aleutian-Pribilof Islands, Gulf of Alaska-Cook Inlet, South Alaska Peninsula (Bristol Bay region), and Southeast Alaska.

b: Arctic-NW-Interior Seasonal Pattern: Y-K Delta, Bering Strait-Norton Sound, NW Arctic, Interior, Bristol Bay (except South Alaska Peninsula).

c: North Slope: also Arctic-NW-Interior Seasonal Pattern, but surveyed only for spring and summer.

Year *t*: current calendar year

Appendix D.–Tracking sheet and household consent form (original size 8.5x11 in).

AMBCC Harvest Survey
OMB Control No. 1018-0124 Expires 04/30/2013.

page ____ / ____

Tracking Sheet & Household Consent Form

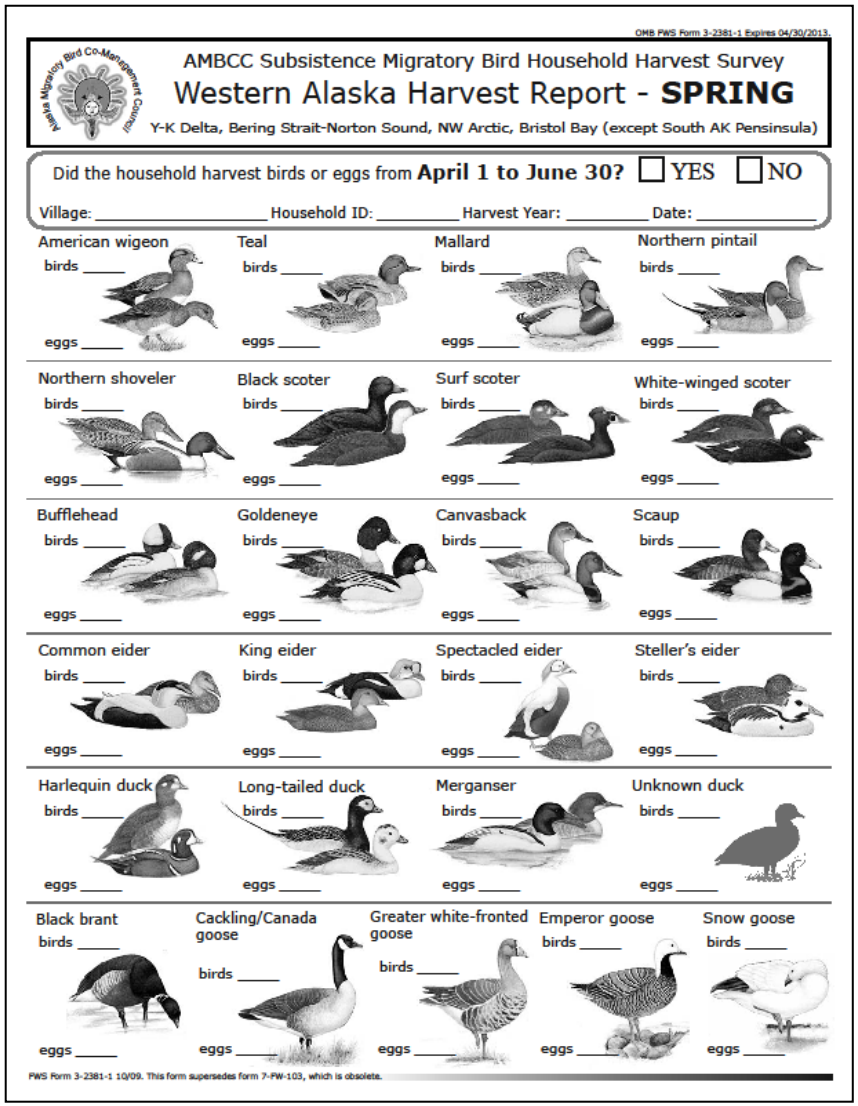
Village: _____ Harvest Year: _____ Surveyor:_____

Copy here only the household IDs **selected to be surveyed.*

House-hold ID*	Household name	Household Consent *1st hh visit*				Harvest report *2nd hh visit*	Harvest report *3rd hh visit*	Comments *(Why no contact? Moved?)*
		Agreed	Refu-sed	No contact	Date completed	Date completed	Date completed	

FWS Form 3-2380 10/09. This form supersedes form R7-102, which is obsolete.

Appendix E.–Harvest report form, Western Alaska (spring sheet, both sides, original size 8.5x11 in each side).



OMB FWS Form 3-2381-1 Expires 04/30/2013.

AMBCC Subsistence Migratory Bird Household Harvest Survey

Western Alaska Harvest Report - **SPRING**

Y-K Delta, Bering Strait-Norton Sound, NW Arctic, Bristol Bay (except South AK Pensinsula)

Did the household harvest birds or eggs from **April 1 to June 30?** ☐ YES ☐ NO

Village: _____ Household ID: _____ Harvest Year: _____ Date: _____

American wigeon — birds ____ eggs ____

Teal — birds ____ eggs ____

Mallard — birds ____ eggs ____

Northern pintail — birds ____ eggs ____

Northern shoveler — birds ____ eggs ____

Black scoter — birds ____ eggs ____

Surf scoter — birds ____ eggs ____

White-winged scoter — birds ____ eggs ____

Bufflehead — birds ____ eggs ____

Goldeneye — birds ____ eggs ____

Canvasback — birds ____ eggs ____

Scaup — birds ____ eggs ____

Common eider — birds ____ eggs ____

King eider — birds ____ eggs ____

Spectacled eider — birds ____ eggs ____

Steller's eider — birds ____ eggs ____

Harlequin duck — birds ____ eggs ____

Long-tailed duck — birds ____ eggs ____

Merganser — birds ____ eggs ____

Unknown duck — birds ____ eggs ____

Black brant — birds ____ eggs ____

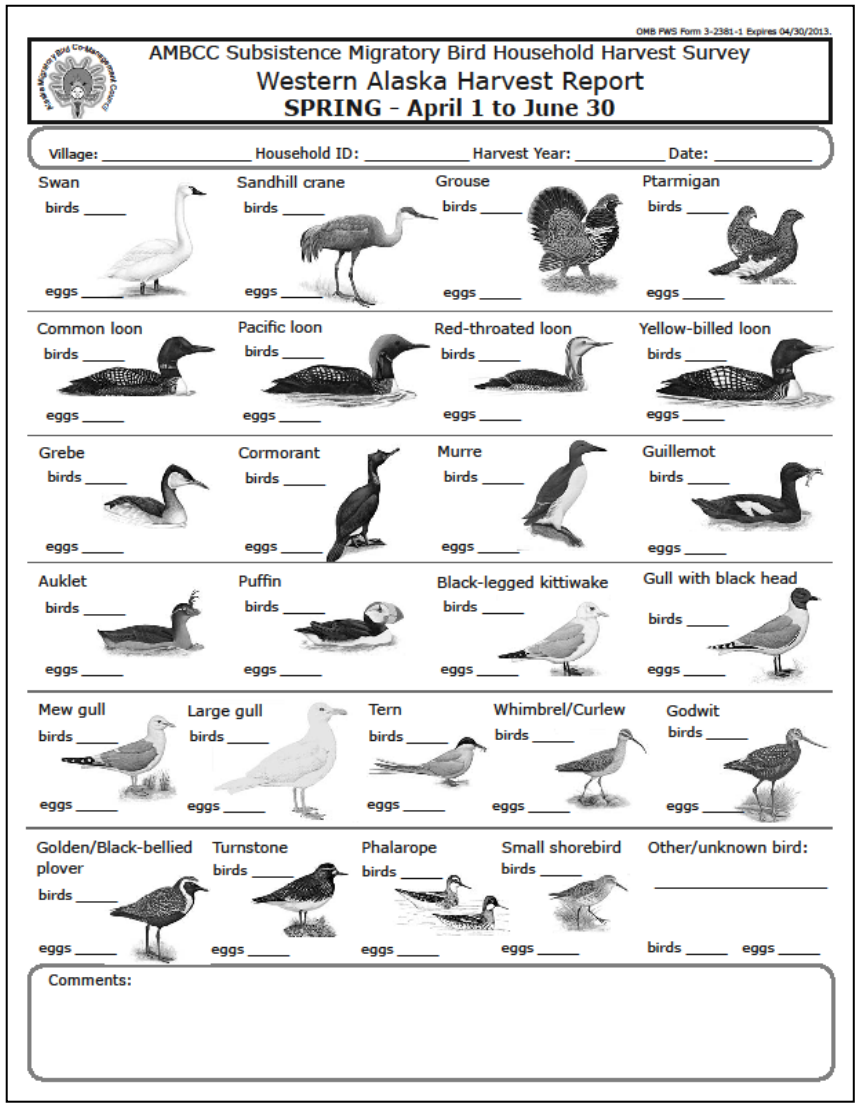
Cackling/Canada goose — birds ____ eggs ____

Greater white-fronted goose — birds ____ eggs ____

Emperor goose — birds ____ eggs ____

Snow goose — birds ____ eggs ____

FWS Form 3-2381-1 10/09. This form supersedes form 7-FW-103, which is obsolete.



OMB FWS Form 3-2381-1 Expires 04/30/2013.

AMBCC Subsistence Migratory Bird Household Harvest Survey

Western Alaska Harvest Report

SPRING - April 1 to June 30

Village: _____ Household ID: _____ Harvest Year: _____ Date: _____

Swan — birds ____ eggs ____

Sandhill crane — birds ____ eggs ____

Grouse — birds ____ eggs ____

Ptarmigan — birds ____ eggs ____

Common loon — birds ____ eggs ____

Pacific loon — birds ____ eggs ____

Red-throated loon — birds ____ eggs ____

Yellow-billed loon — birds ____ eggs ____

Grebe — birds ____ eggs ____

Cormorant — birds ____ eggs ____

Murre — birds ____ eggs ____

Guillemot — birds ____ eggs ____

Auklet — birds ____ eggs ____

Puffin — birds ____ eggs ____

Black-legged kittiwake — birds ____ eggs ____

Gull with black head — birds ____ eggs ____

Mew gull — birds ____ eggs ____

Large gull — birds ____ eggs ____

Tern — birds ____ eggs ____

Whimbrel/Curlew — birds ____ eggs ____

Godwit — birds ____ eggs ____

Golden/Black-bellied plover — birds ____ eggs ____

Turnstone — birds ____ eggs ____

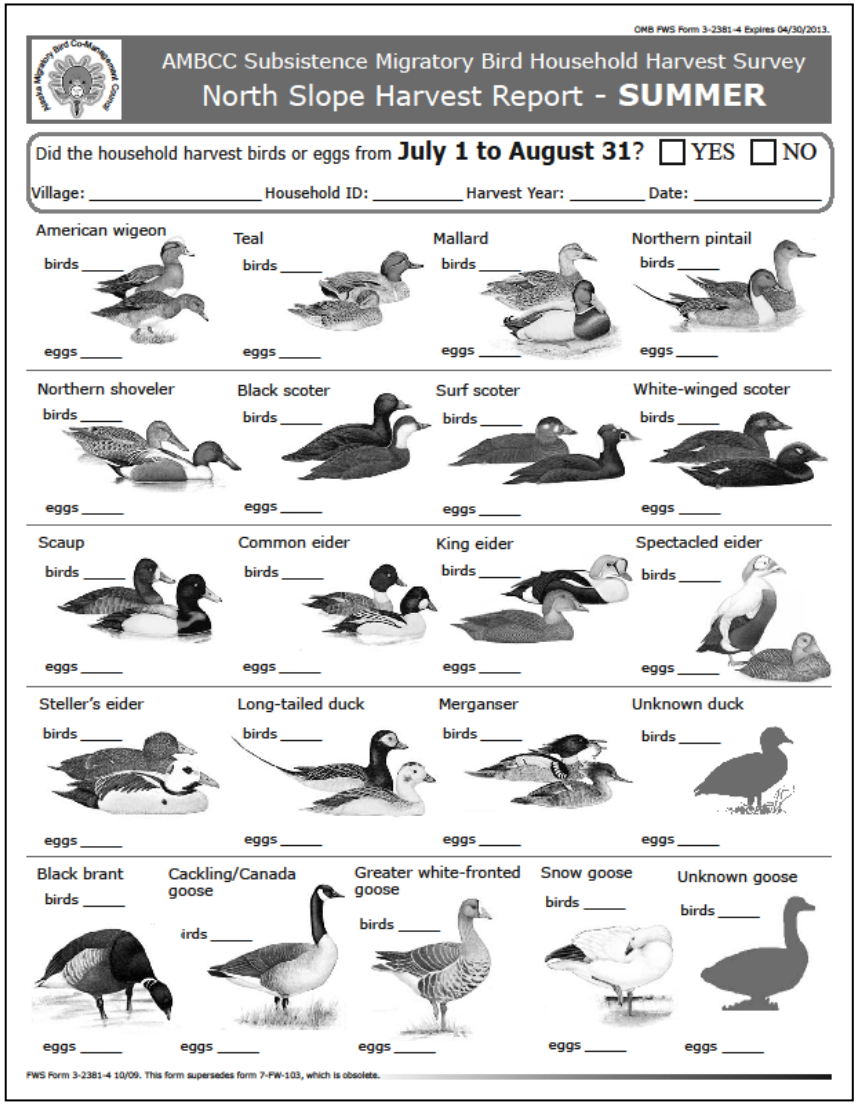
Phalarope — birds ____ eggs ____

Small shorebird — birds ____ eggs ____

Other/unknown bird: _____ birds ____ eggs ____

Comments:

Appendix F.–Harvest report form, North Slope (summer sheet, both sides, original size 8.5x11 in each side).



OMB FWS Form 3-2381-4 Expires 04/30/2013.

AMBCC Subsistence Migratory Bird Household Harvest Survey

North Slope Harvest Report - **SUMMER**

Did the household harvest birds or eggs from **July 1 to August 31**? ☐ YES ☐ NO

Village: _____ Household ID: _____ Harvest Year: _____ Date: _____

American wigeon — birds ____ eggs ____

Teal — birds ____ eggs ____

Mallard — birds ____ eggs ____

Northern pintail — birds ____ eggs ____

Northern shoveler — birds ____ eggs ____

Black scoter — birds ____ eggs ____

Surf scoter — birds ____ eggs ____

White-winged scoter — birds ____ eggs ____

Scaup — birds ____ eggs ____

Common eider — birds ____ eggs ____

King eider — birds ____ eggs ____

Spectacled eider — birds ____ eggs ____

Steller's eider — birds ____ eggs ____

Long-tailed duck — birds ____ eggs ____

Merganser — birds ____ eggs ____

Unknown duck — birds ____ eggs ____

Black brant — birds ____ eggs ____

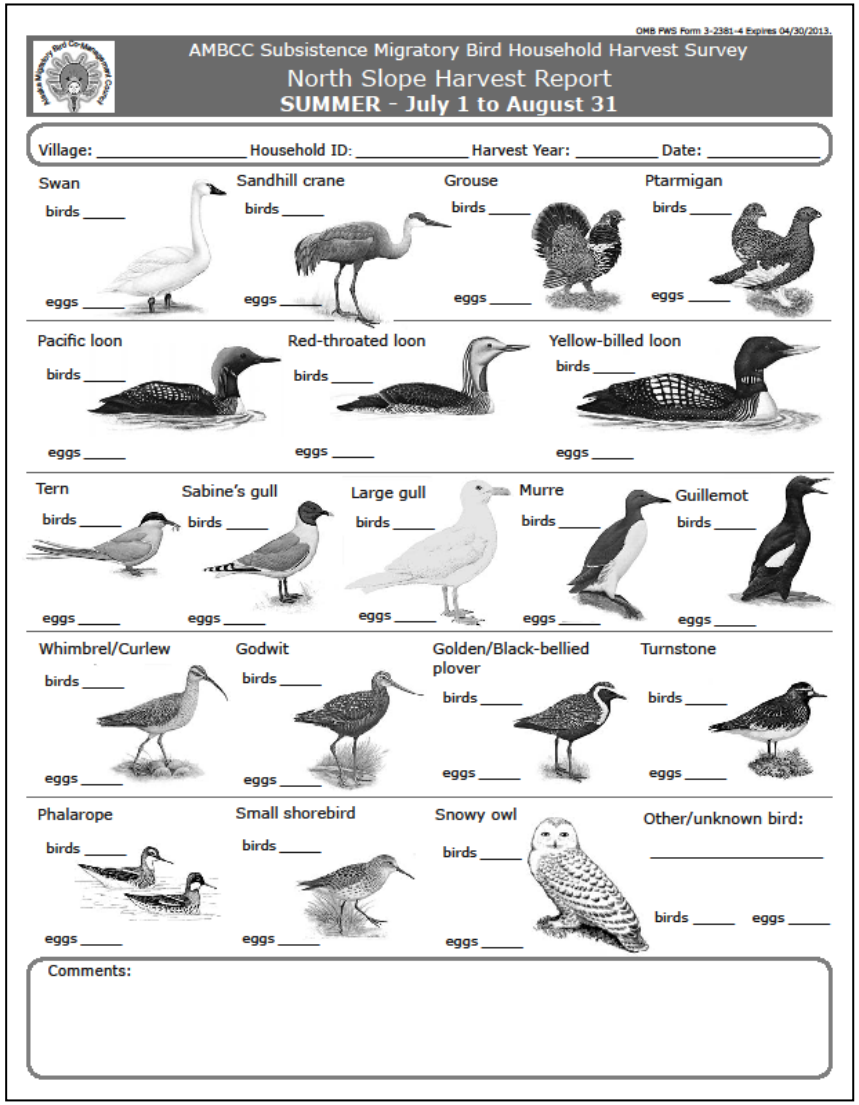
Cackling/Canada goose — birds ____ eggs ____

Greater white-fronted goose — birds ____ eggs ____

Snow goose — birds ____ eggs ____

Unknown goose — birds ____ eggs ____

FWS Form 3-2381-4 10/09. This form supersedes form 7-FW-103, which is obsolete.



OMB FWS Form 3-2381-4 Expires 04/30/2013.

AMBCC Subsistence Migratory Bird Household Harvest Survey

North Slope Harvest Report

SUMMER - July 1 to August 31

Village: _____ Household ID: _____ Harvest Year: _____ Date: _____

Swan — birds ____ eggs ____

Sandhill crane — birds ____ eggs ____

Grouse — birds ____ eggs ____

Ptarmigan — birds ____ eggs ____

Pacific loon — birds ____ eggs ____

Red-throated loon — birds ____ eggs ____

Yellow-billed loon — birds ____ eggs ____

Tern — birds ____ eggs ____

Sabine's gull — birds ____ eggs ____

Large gull — birds ____ eggs ____

Murre — birds ____ eggs ____

Guillemot — birds ____ eggs ____

Whimbrel/Curlew — birds ____ eggs ____

Godwit — birds ____ eggs ____

Golden/Black-bellied plover — birds ____ eggs ____

Turnstone — birds ____ eggs ____

Phalarope — birds ____ eggs ____

Small shorebird — birds ____ eggs ____

Snowy owl — birds ____ eggs ____

Other/unknown bird: _____ birds ____ eggs ____

Comments:

Appendix G.–Harvest report form, Interior Alaska (fall sheet, both sides, original size 8.5x11 in each side).

OMB FWS Form 3-2381-3 Expires 04/30/2013.

AMBCC Subsistence Migratory Bird Household Harvest Survey

Interior Alaska Harvest Report - **FALL**

Upper Copper River and Interior Alaska

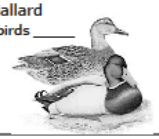
Did the household harvest birds or eggs from **September 1 to October 31**? ☐ YES ☐ NO

Village: _____ Household ID: _____ Harvest Year: _____ Date: _____

American wigeon birds ____

Teal birds ____

Mallard birds ____



Northern pintail birds ____

Northern shoveler birds ____

Black scoter birds ____

Surf scoter birds ____

White-winged scoter birds ____

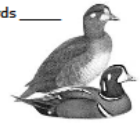
Bufflehead birds ____

Goldeneye birds ____

Canvasback birds ____

Scaup birds ____

Harlequin duck birds ____



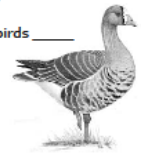
Long-tailed duck birds ____

Merganser birds ____

Unknown duck birds ____

Cackling/Canada goose birds ____

Greater white-fronted goose birds ____



Snow goose birds ____

Swan birds ____

Sandhill crane birds ____

FWS Form 3-2381-3 10/09. This form supersedes form 7-FW-103a, which is obsolete.

OMB FWS Form 3-2381-3 Expires 04/30/2013.

AMBCC Subsistence Migratory Bird Household Harvest Survey

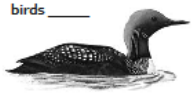
Interior Alaska Harvest Report

FALL - September 1 to October 31

Village: _____ Household ID: _____ Harvest Year: _____ Date: _____

Common loon birds ____

Pacific loon birds ____



Red-throated loon birds ____

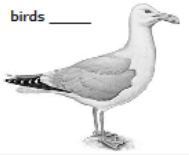
Grebe birds ____

Tern birds ____

Bonaparte's gull birds ____

Mew gull birds ____

Large gull birds ____



Grouse birds ____

Ptarmigan birds ____

Whimbrel/Curlew birds ____

Godwit birds ____

Golden/Black-bellied plover birds ____

Phalarope birds ____

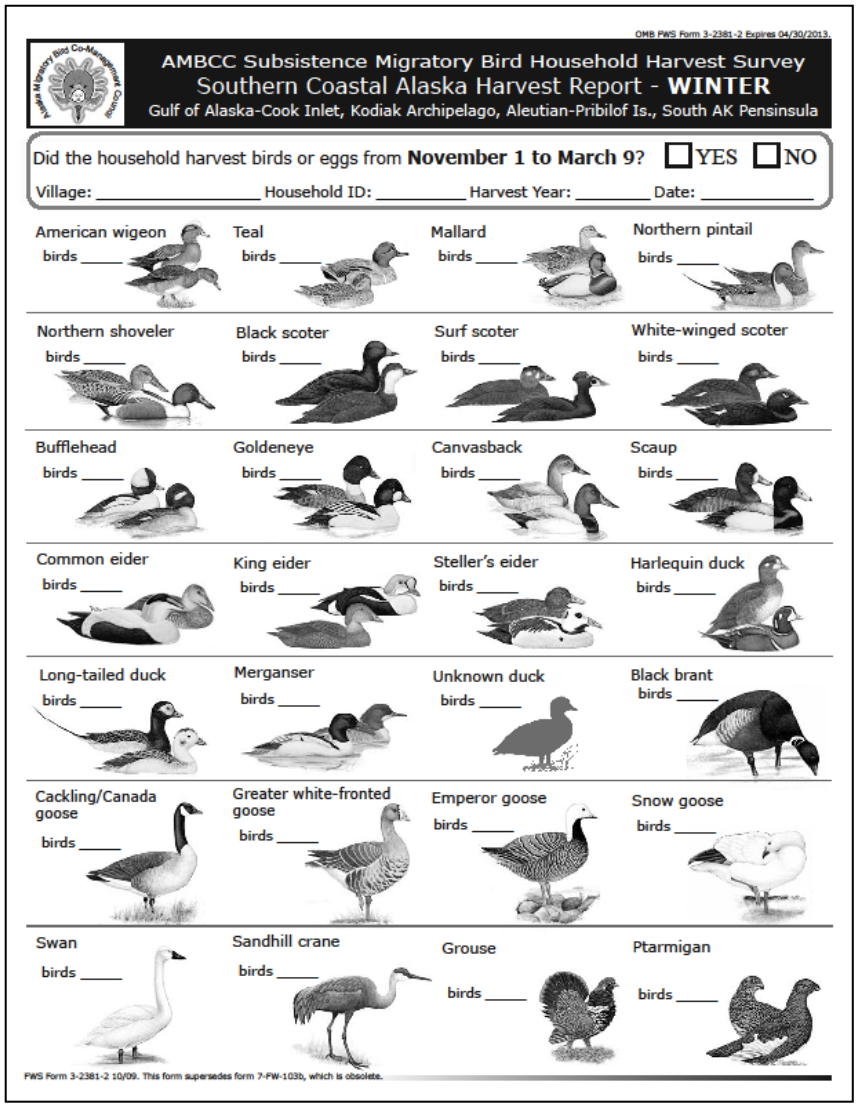
Small shorebird birds ____

Other/unknown bird: _____

birds ____

Comments:

Appendix H.–Harvest report form, Southern Coastal Alaska (winter sheet, both sides, original size 8.5x11 in each side).



OMB FWS Form 3-2381-2 Expires 04/30/2013.

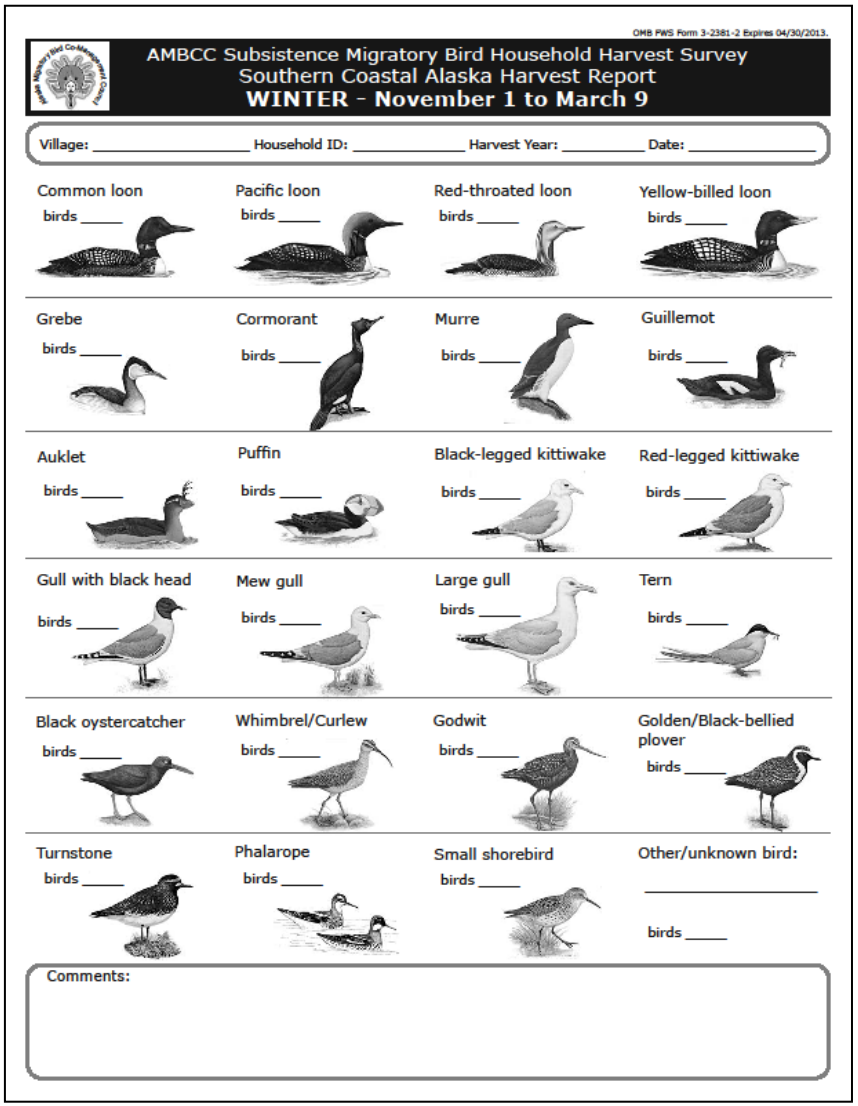
AMBCC Subsistence Migratory Bird Household Harvest Survey
Southern Coastal Alaska Harvest Report - **WINTER**
Gulf of Alaska-Cook Inlet, Kodiak Archipelago, Aleutian-Pribilof Is., South AK Pensinsula

Did the household harvest birds or eggs from **November 1 to March 9**? ☐ YES ☐ NO

Village: _____ Household ID: _____ Harvest Year: _____ Date: _____

American wigeon birds ____
Teal birds ____
Mallard birds ____
Northern pintail birds ____
Northern shoveler birds ____
Black scoter birds ____
Surf scoter birds ____
White-winged scoter birds ____
Bufflehead birds ____
Goldeneye birds ____
Canvasback birds ____
Scaup birds ____
Common eider birds ____
King eider birds ____
Steller's eider birds ____
Harlequin duck birds ____
Long-tailed duck birds ____
Merganser birds ____
Unknown duck birds ____
Black brant birds ____
Cackling/Canada goose birds ____
Greater white-fronted goose birds ____
Emperor goose birds ____
Snow goose birds ____
Swan birds ____
Sandhill crane birds ____
Grouse birds ____
Ptarmigan birds ____

FWS Form 3-2381-2 10/09. This form supersedes form 7-FW-103b, which is obsolete.



OMB FWS Form 3-2381-2 Expires 04/30/2013.

AMBCC Subsistence Migratory Bird Household Harvest Survey
Southern Coastal Alaska Harvest Report
WINTER - November 1 to March 9

Village: _____ Household ID: _____ Harvest Year: _____ Date: _____

Common loon birds ____
Pacific loon birds ____
Red-throated loon birds ____
Yellow-billed loon birds ____
Grebe birds ____
Cormorant birds ____
Murre birds ____
Guillemot birds ____
Auklet birds ____
Puffin birds ____
Black-legged kittiwake birds ____
Red-legged kittiwake birds ____
Gull with black head birds ____
Mew gull birds ____
Large gull birds ____
Tern birds ____
Black oystercatcher birds ____
Whimbrel/Curlew birds ____
Godwit birds ____
Golden/Black-bellied plover birds ____
Turnstone birds ____
Phalarope birds ____
Small shorebird birds ____
Other/unknown bird: _____ birds ____

Comments:

Appendix I.–Species represented in the 4 versions of the harvest report form and their distribution range in Alaska.

Species category Species[a]	Southern Coastal Alaska form				Western Alaska form				North Slope form	Interior Alaska form	
	Gulf of Alaska-Cook Inlet	Kodiak Archipelago	Aleutian-Pribilof Islands	South Alaska Peninsula[b]	Bristol Bay	Yukon-Kuskokwim Delta	Bering Strait-Norton Sound	North-west Arctic	North Slope	Interior Alaska	Upper Copper River
Ducks											
American wigeon *Anas americana*	x	x	x	x	x	x	x	x	x	x	x
Teal Green-winged teal *A. crecca* (1) Blue-winged teal *A. discors* (2)	x (1, 2)	x (1, 2)	x (1)	x (1)	x (1)	x (1)	x (1)	x (1)	x (1)	x (1, 2)	x (1, 2)
Mallard *A. platyrhynchos*	x	x	x	x	x	x	x	x	x	x	x
Northern pintail *A. acuta*	x	x	x	x	x	x	x	x	x	x	x
Northern shoveler *A. clypeata*	x	x	x	x	x	x	x	x	x	x	x
Black scoter *Melanitta nigra*	x	x	x	x	x	x	x	x	x	x	x
Surf scoter *M. perspicillata*	x	x	x	x	x	x	x	x	x	x	x
White-winged scoter *M. fusca*	x	x	x	x	x	x	x	x	x	x	x
Bufflehead *Bucephala albeola*	x[c]	x[c]	x[c]	x[c]	x	x	x	x	-	x	x
Goldeneye Common goldeneye *Bucephala clangula* (1) Barrow's gondeneye *B. islandica* (2)	x (1, 2)	x (1, 2)	x (1, 2)	x (1, 2)	x (1, 2)	x (1, 2)	x (1)	x (1)	-	x (1, 2)	x (1, 2)
Canvasback *Aythya valisineria*	x[c]	x[c]	x[c]	x[c]	x	x	x	x	-	x	x
Scaup Greater scaup *Aythya marila* (1) Lesser scaup *A. affinis* (2)	x (1, 2)	x (1, 2)	x (1, 2)	x (1, 2)	x (1, 2)	x (1, 2)	x (1, 2)	x (1, 2)	x (1)	x (1, 2)	x (1, 2)
Common eider *Somateria mollissima*	x	x	x	x	x	x	x	x	x	-	-
King eider *S. spectabilis*	x[c]	x[c]	x[c]	x[c]	x	x	x	x	x	-	-
Spectacled eider *S. fischeri**	-	-	-	-	x	x	x	x	x	-	-
Steller's eider *Polysticta stelleri**	x[c]	x[c]	x[c]	x[c]	x	x	x	x	x	-	-
Harlequin duck *Histrionicus histrionicus*	x	x	x	x	x	x	x	x	-	x	x
Long-tailed duck *Clangula hyemalis*	x	x	x	x	x	x	x	x	x	x	x
Merganser Common merganser *Mergus merganser* (1) Red-breasted merganser *M. serrator* (2)	x (1, 2)	x (1, 2)	x (1, 2)	x (1, 2)	x (1, 2)	x (1, 2)	x (1, 2)	x (1, 2)	x (2)	x (1, 2)	x (1, 2)

-continued-

Species category Species[a]	Southern Coastal Alaska form				Western Alaska form				North Slope form	Interior Alaska form	
	Gulf of Alaska-Cook Inlet	Kodiak Archipelago	Aleutian-Pribilof Islands	South Alaska Peninsula[b]	Bristol Bay	Yukon-Kuskokwim Delta	Bering Strait-Norton Sound	North-west Arctic	North Slope	Interior Alaska	Upper Copper River
Duck (unidentified)	x	x	x	x	x	x	x	x	x	x	x
Geese											
Black brant *Branta bernicla*	x[c]	x[c]	x[c]	x[c]	x	x	x	x	x	-	-
Canada/cackling goose	x	x	x	x	x	x	x	x	x	x	x
Taverner's Canada goose *Branta hutchinsii taverneri* (1) Cackling Canada goose *B. h. minima* (2) Aleutian Canada goose *B. h. leucopareia* (3) Lesser Canada goose *B. canadensis parvipes* (4) Dusky Canada goose *B. c. occidentalis* (5)	(4, 5)	(3, 4?)	(3, 4?)	(4?)	(2?, 4)	(1, 2, 4)	(1, 4?)	(1, 4?)	(1)	(4)	(4)
Greater white-fronted goose *Anser albifrons*	x	x	x	x	x	x	x	x	x	x	x
Emperor goose *Chen canagica**	x[c]	x[c]	x[c]	x[c]	x	x	x	x	-	-	-
Lesser snow goose *C. caerulescens*	x[c]	x[c]	x[c]	x[c]	x	x	x	x	x	x	x
Goose (unidentified)	-	-	-	-	-	-	-	-	x	-	-
Swans											
Swan	x	x	x	x	x	x	x	x	x	x	x
Tundra swan *Cygnus columbianus* (1) Trumpeter swan *C. buccinator** (2)	(1, 2)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1, 2)	(1, 2)
Cranes											
Sandhill crane *Grus canadensis*	x	x	x	x	x	x	x	x	x	x	x
Ptarmigans and grouses											
Grouse	x	x(-)	x(-)	x(-)	x	x	x	x	x	x	x
Spruce grouse *Falcipennis canadensis* (1) Ruffed grouse *Bonasa umbellus* (2) Sharp-tailed grouse *Tympanuchus phasianellus* (3)	(1, 2)				(1)	(1, 2)	(1)	(1)	(1, 3)	(1, 2, 3)	(1, 2, 3)

-continued-

Species category Species[a]	Southern Coastal Alaska form				Western Alaska form				North Slope form	Interior Alaska form	
	Gulf of Alaska-Cook Inlet	Kodiak Archipelago	Aleutian-Pribilof Islands	South Alaska Peninsula[b]	Bristol Bay	Yukon-Kuskokwim Delta	Bering Strait-Norton Sound	North-west Arctic	North Slope	Interior Alaska	Upper Copper River
Ptarmigan	x	x	x	x	x	x	x	x	x	x	x
Willow ptarmigan *Lagopus lagopus* (1)	(1, 2, 3)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2, 3)	(1, 2)	(1, 2)	(1, 2)	(1, 2, 3)	(1, 2, 3)
Rock ptarmigan *L. muta* (2)											
White-tailed ptarmigan *L. leucura* (3)											
Seabirds											
Cormorant	x	x	x	x	x	x	x	x	-	-	-
Pelagic cormorant *Phalacrocorax pelagicus* (1)	(1, 2, 3)	(1, 2, 3)	(1, 2, 3)	(1, 2, 3)	(1, 2, 3)	(1, 2, 3)	(1)	(1)			
Double-crested cormornat *P. auritus* (2)											
Red-faced cormorant *P. urile** (3)											
Tern	x	x	x	x	x	x	x	x	x	x	x
Arctic tern *Sterna paradisea* (1)	(1)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1)	(1)	(1)
Aleutian tern *S. aleutica* (2)											
Black-legged kittiwake *Rissa tridactyla*	x	x	x	x	x	x	x	x	-	-	-
Red-legged kittiwake *R. brevirostris*	x(-)	x(-)	x	x(-)	-	-	-	-	-	-	-
Bonaparte's/Sabine's gull	x	x	x	x	x	x	x	x	x	x	x
Bonaparte's gull *Larus philadelphia* (1)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(2)	(2)	(2)	(1)	(1)
Sabine's gull *Xema sabini* (2)											
Mew gull *Larus canus*	x	x	x(-)	x(-)	x	x	x	x	-	x	x
Large gull	x	x	x	x	x	x	x	x	x	x	x
Glaucous-winged gull *L. glaucescens* (1)	(1, 3)	(1, 3)	(1, 3)	(1, 3)	(1, 2)	(2)	(2, 3)	(2)	(2)	(3)	(3)
Glaucous gull *L. hyperboreus* (2)											
Herring gull *L. argentatus* (3)											
Auklet	x	x	x	x	x	x	x	x	-	-	-
Cassin's auklet *Ptychoramphus aleuticus* (1)	(1, 2, 4, 6)	(1, 2, 3, 4, 6)	(1, 2, 3, 4, 5, 6)	(1, 2, 3, 4, 5, 6)	(1, 2, 3, 4, 6)	(2, 3, 4, 6)	(2, 3, 4, 6)	(2, 3, 4, 6)			
Crested auklet *Aethia cristatella* (2)											
Least auklet *A. pusilla* (3)											
Parakeet auklet *A. psittacula* (4)											
Whiskered auklet *A. pygmaea* (5)											
Rhinoceros auklet *Cerorhinca monocerata* (6)											

-continued-

Species category Species[a]	Southern Coastal Alaska form				Western Alaska form				North Slope form	Interior Alaska form	
	Gulf of Alaska-Cook Inlet	Kodiak Archipelago	Aleutian-Pribilof Islands	South Alaska Peninsula[b]	Bristol Bay	Yukon-Kuskokwim Delta	Bering Strait-Norton Sound	North-west Arctic	North Slope	Interior Alaska	Upper Copper River
Murre	x	x	x	x	x	x	x	x	x	-	-
Common murre *Uria aalge* (1)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)		
Thick-billed murre *U. lomvia* (2)											
Guillemot	x	x	x	x	x	x	x	x	x	-	-
Pigeon guillemot *Cepphus columba* (1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1, 2)	(2)		
Black guillemot *C. grylle* (2)											
Puffin	x	x	x	x	x	x	x	x	-	-	-
Tufted puffin *Fratercula cirrhata* (1)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)			
Horned puffin *F. corniculata* (2)											
Shorebirds											
Black oystercatcher *Haematopus bachmani*	x	x	x	x	-	-	-	-	-	-	-
Whimbrel/curlew	x	x	x(-)	x	x	x	x	x	x	x	x
Whimbrel *Numenius phaeopus** (1)	(1)	(1)		(1)	(1)	(1, 2)	(1, 2)	(1)	(1)	(1)	(1)
Bristle-thighed curlew *N. tahitiensis** (2)											
Godwit	x	x(-)	x(-)	x	x	x	x	x	x	x	x(-)
Bar-tailed godwit *Limosa lapponica* (1)	(2)			(1)	(1, 2, 3)	(1, 2)	(1, 2)	(1, 2)	(1)	(2)	
Hudsonian godwit *L. haemastica** (2)											
Marbled godwit *L. fedoa** (3)											
Golden/black-bellied plover	x	x	x	x	x	x	x	x	x	x	x
American golden plover *Pluvialis dominica** (1)	(1, 2, 3)	(1, 2, 3)	(1, 2, 3)	(1, 2, 3)	(1, 2, 3)	(1, 2, 3)	(1, 2, 3)	(1, 3)	(1, 2, 3)	(1, 2, 3)	(1, 2, 3)
Pacific golden plover *P. squatarola** (2)											
Black-bellied plover *P. fulva* (3)											
Turnstone	x	x	x	x	x	x	x	x	x	-	-
Ruddy turnstone *Arenaria interpres* (1)	(2)	(1, 2)	(1)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)		
Black turnstone *A. melanocephala** (2)											
Phalarope	x	x	x	x	x	x	x	x	x	x	x
Red-necked phalarope *Phalaropus lobatus* (1)	(1)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)
Red phalarope *P. fulicaria* (2)											

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Species category / Species[a]	Southern Coastal Alaska form				Western Alaska form				North Slope form	Interior Alaska form	
	Gulf of Alaska-Cook Inlet	Kodiak Archipelago	Aleutian-Pribilof Islands	South Alaska Peninsula[b]	Bristol Bay	Yukon-Kuskokwim Delta	Bering Strait-Norton Sound	North-west Arctic	North Slope	Interior Alaska	Upper Copper River
Small shorebird	x	x	x	x	x	x	x	x	x	x	x
Dunlin *Calidris alpina* (1)	(1, 2, 3, 4,	(1, 2, 3, 4,	(1, 3, 4,	(1, 2, 3, 4,	(1, 2,	(1, 2, 3, 4,	(1, 2, 3,	(1, 2, 3,	(1, 2, 4,	(1, 2, 3,	(1, 2,
Pectoral sandpiper *C. melanotos** (2)	5, 6, 7, 11,	5, 6, 7, 11,	6, 7, 11,	5, 6, 7,	3, 4,	5, 6, 7, 11,	4, 5, 6,	4, 5, 6,	5, 6, 7,	4, 5, 6,	3, 4,
Rock sandpiper *C. ptilocnemis** (3)	13, 14, 15,	13, 14, 15,	13, 17,	11, 13,	5, 6,	12, 13, 14,	7, 11,	7, 11,	8, 9, 10,	7, 11,	5, 6,
Western sandpiper *C. mauri* (4)	16, 17, 18,	16, 17, 18,	19, 23,	14, 15,	7, 11,	15, 16, 17,	12, 13,	12, 13,	11, 12,	13, 14,	7, 11,
Semipalmated sandpiper *C. pusilla* (5)	19, 22, 23,	19, 22, 23,	24)	16, 17,	13,	18, 19, 22,	14, 15,	14, 15,	13, 14,	15, 16,	13,
Least sandpiper *C. minutilla* (6)	24)	24)		18, 19,	14,	23, 24)	16, 17,	16, 17,	17, 18,	17, 18,	14,
Baird's sandpiper *C. bairdii* (7)				22, 23,	15,		18, 19,	18, 19,	19, 20,	19, 20,	15,
White-rumped sandpiper *C. fuscicollis** (8)				24)	16,		22, 23,	22, 23,	21, 23,	22, 23,	16,
Stilt sandpiper *C. himantopus** (9)					17,		24)	24)	24)	24)	17,
Red-necked stint *C. ruficollis** (10)					18,						18,
Sanderling *C. alba** (11)					19,						19,
Sharp-tailed sandpiper *C. acuminata* (12)					22,						20,
Semipalmated plover *Charadrius*					23,						22,
*semipalmatus** (13)					24)						23,
Lesser yellowlegs *Tringa flavipes* (14)											24)
Greater yellowlegs *T. melanoleuca* (15)											
Solitary sandpiper *T. solitaria** (16)											
Spotted sandpiper *Actitis macularia* (17)											
Surfbird *Aphirza virgata** (18)											
Wandering tatler *Heteroscelus incanus** (19)											
Upland sandpiper *Bartramia longicauda** (20)											
Buff-breasted sandpiper *Tryngites subruficolis**(21)											
Short-billed dowitcher *Limnodromus griseus** (22)											
Long-billed dowitcher *L. scolopaceus* (23)											
Wilson's snipe *Gallinago delicata* (24)											

-continued-

Species category / Species[a]	Southern Coastal Alaska form				Western Alaska form				North Slope form	Interior Alaska form	
	Gulf of Alaska-Cook Inlet	Kodiak Archipelago	Aleutian-Pribilof Islands	South Alaska Peninsula[b]	Bristol Bay	Yukon-Kuskokwim Delta	Bering Strait-Norton Sound	North-west Arctic	North Slope	Interior Alaska	Upper Copper River
Loons and grebes											
Common loon *Gavia immer*	x	x	x	x	x	x	x	x	-	x	x
Pacific loon	x	x	x	x	x	x	x	x	x	x	x
Pacific loon *G. pacifica* (1) Arctic loon *G. arctica* (2)	(1)	(1)	(1)	(1)	(1)	(1, 2)	(1, 2)	(1, 2)	(1)	(1)	(1)
Red-throated loon *G. stellata*	x	x	x	x	x	x	x	x	x	x	x
Yellow-billed loon *G. adamsii**	x[c]	x[c]	x[c]	x[c]	x	x	x	x	x	-	-
Grebe	x	x	x	x	x	x	x	x	-	x	x
Red-necked grebe *Podiceps griseana* (1) Horned grebe *P. auritus* (2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)	(1, 2)		(1, 2)	(1, 2)
Owls											
Snowy owl *Nyctea scandiaca*	-	-	-	-	-	-	-	-	x	-	-
Other/unknown bird	x	x	x	x	x	x	x	x	x	x	x

Sources For information on distribution range of species: Johnson and Herter (1989), Timm et al. (1994), MacIntosh (1998), National Geographic Society (1999), Pearce et al. (2000), Banks et al. (2004), Sibley Guides (2004), The Birds of North America Series, Sea Duck Joint Venture (2003–2005), Denlinger (2006), Warren (2006), Johnson et al. (2007), Alaska Shorebird Group (2008), Bowman (2008), Pacific Flyway Council (2010 *unpublished*), Lanctot (R. Lanctot, Migratory Bird Management, USFWS, Anchorage, personal communication), Taylor (E. Taylor, Migratory Bird Management, USFWS, Anchorage, personal communication), Dewhurst (D. Dewhurst, Migratory Bird Management, USFWS, Anchorage, personal communication), Irons (D. Irons, Migratory Bird Management, USFWS, Anchorage, personal communication), Dau (C. Dau, Migratory Bird Management, USFWS, Anchorage, personal communication), Rosenberg (D. Rosenberg, Division of Wildlife Conservation, ADF&G, Anchorage, personal communication).

a. If more than one species is listed, the first name is the one used on the harvest survey form.

b. The South Alaska Peninsula is a subregion of the Bristol Bay region; most of the Bristol Bay region is surveyed with the Western Alaska Form, but the South Alaska Peninsula is surveyed with the Southern Coastal Alaska form.

c. Included in spring, fall, and winter sheets only; species breeds in other region(s) during summer.

x The species is included in the harvest report form used in the region. Numbers in parenthesis indicate the species likely to occur in each region.

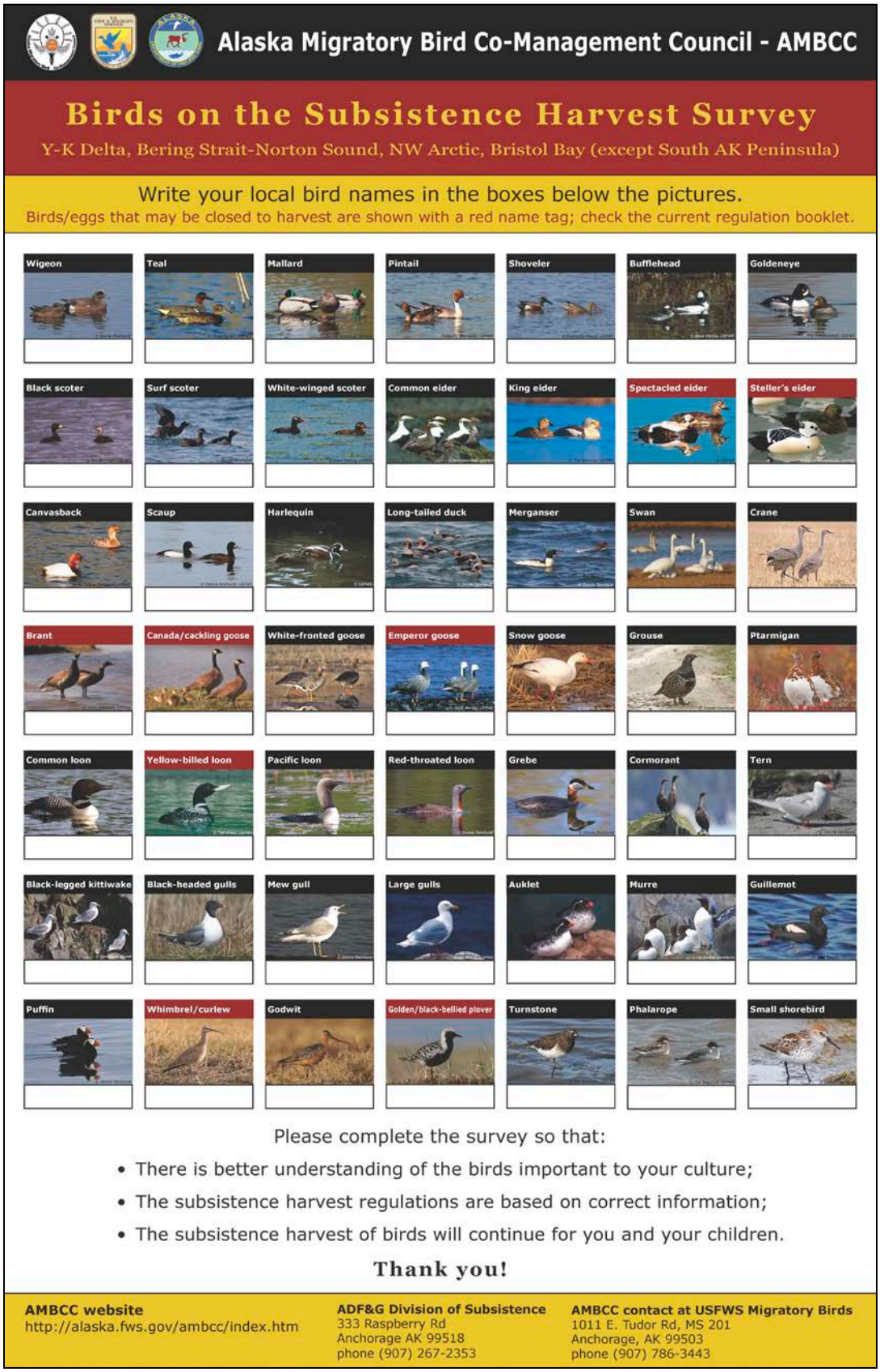
- The species is not included in the harvest report form used in the region.

x(-) The species is included in the harvest report form but it is unlike to occur in the region.

* Species closed to harvest of birds or eggs, at least in certain management units.

Appendix J.–Bird identification guide, Western Alaska (both sides, original size 8.5x11 in each side).

Appendix K.–Bird poster, Western Alaska (original size 23 x 36 in).



Appendix L.–Alaska Native and local bird names, Gulf of Alaska-Cook Inlet region.

Species or species group	Gulf of Alaska Language: Alutiiq (Sugpiaq) Dialect: Chugach Alutiiq		Cook Inlet Language: Dena'ina Dialect: Upper Cook Inlet[5] (Tyonek)	Comments, corrections
	Subdialect: East Chugach Alutiiq (Prince William Sound)	Subdialect: West Chugach Alutiiq (Kenai Peninsula)[CW]. Chugach Alutiiq[C] and Alutiiq[AAY] also shown		
Ducks	Ungusaq[1], ungusuq[2]	Saquleq[C1], saqulek[3]		
American wigeon *Anas americana*			Ben dałishla, sheshinya	
Teal Green-winged teal *A. crecca* (1) Blue-winged teal *A. discors* (2)	Apa'ariilnguq[1]		Qutnelyesha	
Mallard *A. platyrhynchos*	Seqtaq[1]	Nillqitaaq[CW2], nillqitaq[C1], ngillqitaq[C1]	Qadelchigi	
Northern pintail *A. acuta*		Eteqsurtuliq[CW2], amutaarualek[C1]	Kadi nasa	
Northern shoveler *A. clypeata*			Duyeshtala	
Black scoter *Melanitta nigra*	Sukumyaaq[1]	Cúwahnaq[4]	Ułkesa qilt'ani, quk'ełdeł	
Surf scoter *M. perspicillata*		Tunuculek[CW1]		
White-winged scoter *M. fusca*	Gaalerualek[1]			
Bufflehead *Bucephala albeola*		Nacallngaayak[C1]	Tajehi, bentl'u qelch'eli, k'entl'uc'ela	
Goldeneye Common goldeneye *B. clangula* (1) Barrow's gondeneye *B. islandica* (2)		Nasqurtuliq[CW], qapugnaq[C]	Tsiq'unya	
Canvasback *Aythya valisineria*	Tengyuq[1], egtuk[1], blue-billed			see canvasback
Scaup Greater scaup *A. marila* (1) Lesser scaup *A. affinis* (2)		anguletgwalek[CW2], bluebill		see scaup
Common eider *Somateria mollissima*		Qaanillqaacak[C1], may refer to female eiders in general	Qanił qats'i	
King eider *S. spectabilis*		Qe✱a✖ek[AAY1]		
Steller's eider *Polysticta stelleri*		Qe✱a✖ek[4]		
Harlequin duck *Histrionicus histrionicus*	Qaingiaq[1]	Lluuyulinguaq[CW2]	Denyi hdałishla, qeshqa betsa'a	
Long-tailed duck *Clangula hyemalis*	Oldsquaw[1]	Aarrangiiq[CW2], arrangkiluk[C1]	Aĥanya	
Merganser Common merganser *Mergus merganser* (1) Red-breasted merganser *M. serrator* (2)	Sawbill duck (2): Iisuuteklek[1]	Paiq[C, CW1]	Cheghesh	

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Species or species group	Gulf of Alaska Language: Alutiiq (Sugpiaq) Dialect: Chugach Alutiiq — Subdialect: East Chugach Alutiiq (Prince William Sound)	Gulf of Alaska Language: Alutiiq (Sugpiaq) Dialect: Chugach Alutiiq — Subdialect: West Chugach Alutiiq (Kenai Peninsula)[CW]. Chugach Alutiiq[C] and Alutiiq[AAY] also shown	Cook Inlet Language: Dena'ina Dialect: Upper Cook Inlet[5] (Tyonek)	Comments, corrections
Geese	Tengmiaq[1]	Temngiaq[3]		
Black brant *Branta bernicla*	Kam$_o$uk[1]			
Canada/cackling goose Lesser Canada goose *B. canadensis parvipes* (1) Dusky Canada goose *B. c. occidentalis* (2)		Lagiq[CW2], neqlleq[CW2]	Nut'aq'i	
Greater white-fronted goose *Anser albifrons*			Ndalbay	
Emperor goose *Chen canagica*				
Snow goose *C. caerulescens*			Ch'iluna, ch'enluyna	
Swans				
Swan Tundra swan *Cygnus columbianus* (1) Trumpeter swan *C. buccinator* (2)	Uquirpak[1]	Saqulegpak[CW2], qugyuq[CW2]	(1): Tava, quggesh (2): Dult'iya, kiłqa dudedli, tsitut'aq'a	
Cranes				
Sandhill crane *Grus canadensis*		Tatellgaq[C1, CW2]	Ndał	
Ptarmigans and grouses				
Grouse Spruce grouse *Falcipennis canadensis* (1) Ruffed grouse *Bonasa umbellus* (2)		Elcaayuq[CW2], egtugtuliq[3]	(1): Ełyuni (2): Chugget'a	
Ptarmigan Willow ptarmigan *Lagopus lagopus* (1) Rock ptarmigan *L. muta* (2) White-tailed ptarmigan *L. leucura* (3)	Qategyuk[2]	Qategyuk[CW2]	(1): Delggema (2): Q'ach'ema (3): Dzeł yicheghi	
Seabirds				
Cormorant Pelagic cormorant *Phalacrocorax pelagicus* (1) Double-crested cormornat *P. auritus* (2) Red-faced cormorant *P. urile* (3)	Agayuuq[2] (3?): Plaatuugualek[1]	Agayuuq[C1] (1): Uyalek[AAY1, CW2] (2): Agayuurpak[C1]	(2): Tsaltsiggi	
Arctic tern *Sterna paradisea*		Ayusaq[C1]	Ts'ik'nal'i	
Black-legged kittiwake *Rissa tridactyla*	Qay'aqaaq[1]		Gedeyaq	Egyaq[4]?
Red-legged kittiwake *R. brevirostris*		Kiuksaa'aq[CW1]		

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Species or species group	Gulf of Alaska Language: Alutiiq (Sugpiaq) Dialect: Chugach Alutiiq — Subdialect: East Chugach Alutiiq (Prince William Sound)	Gulf of Alaska Language: Alutiiq (Sugpiaq) Dialect: Chugach Alutiiq — Subdialect: West Chugach Alutiiq (Kenai Peninsula)[CW]. Chugach Alutiiq[C] and Alutiiq[AAY] also shown	Cook Inlet Language: Dena'ina Dialect: Upper Cook Inlet[5] (Tyonek)	Comments, corrections
Bonaparte's/Sabine's gulls Bonaparte's gull *Larus philadelphia* (1) Sabine's gull *Xema sabini* (2)		Marayaaq[CW1]	(1): Tsilyeni	Egiaq[3]?
Mew gull *Larus canus*				Egiaq[3]?
Large gulls Glaucous-winged gull *L. glaucescens* (1) Herring gull *L. argentatus* (2)		Naruyaq[3]	(1): Vach kegh (2): Tl'iq'a beja	Egyaaq[C1] ?
Auklet Cassin's auklet *Ptychoramphus aleuticus* (1) Crested auklet *Aethia cristatella* (2) Parakeet auklet *A. psittacula* (3) Rhinoceros auklet *Cerorhinca monocerata* (4)	Akllegaq[1]			
Murre Common murre *Uria aalge* (1) Thick-billed murre *U. lomvia* (2)	(1): Quanaaq[1]	Allpaq[C1]		
Guillemot Pigeon guillemot *Cephus columba*	Cugaq[1]			
Puffin Tufted puffin *F. cirrhata* (1) Horned puffin *Fratercula corniculata* (2)	Ngaq'ngaq[2] (2): Qilangaak[1]	Ngaqngaaq[CW2], qagi'a (baby puffin)[CW2] (1): Ngaq'ngaaq[C1]	Duyiya delcheyi	
Shorebirds				
Black oystercatcher *Haematopus bachmani*	Kiggwikiaq[1]			
Whimbrel/curlew Whimbrel *Numenius phaeopus*				
Godwit Hudsonian godwit *L. haemastica*				
Golden/black-bellied plover American golden plover *Pluvialis dominica* (1) Pacific golden plover *P. squatarola* (2) Black-bellied plover *P. fulva* (3)			Ggulyit	
Turnstone Black turnstone *A. melanocephala*				
Phalarope Red-necked phalarope *Phalaropus lobatus*	Uqui'aq[1]		Tutl'ila	

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Species or species group	Gulf of Alaska Language: Alutiiq (Sugpiaq) Dialect: Chugach Alutiiq Subdialect: East Chugach Alutiiq (Prince William Sound)	Gulf of Alaska Language: Alutiiq (Sugpiaq) Dialect: Chugach Alutiiq Subdialect: West Chugach Alutiiq (Kenai Peninsula)[CW]. Chugach Alutiiq[C] and Alutiiq[AAY] also shown	Cook Inlet Language: Dena'ina Dialect: Upper Cook Inlet[5] (Tyonek)	Comments, corrections
Small shorebird		Ayakutaq[C1], kui'im ayakutaa[C1], ayakutaq[3]		
Dunlin *Calidris alpina* (1)				
Pectoral sandpiper *C. melanotos* (2)				
Rock sandpiper *C. ptilocnemis* (3)			(4, 5, 6): Qenghesh k'ela	
Western sandpiper *C. mauri* (4)				
Semipalmated sandpiper *C. pusilla* (5)				
Least sandpiper *C. minutilla* (6)				
Baird's sandpiper *C. bairdii* (7)				
Sanderling *C. alba* (11)				
Semipalmated plover *Charadrius semipalmatus* (13)			(13): Talyiya	
Lesser yellowlegs *Tringa flavipes* (14)			(14, 15): Sudiya, sudya	
Greater yellowlegs *T. melanoleuca* (15)				
Solitary sandpiper *T. solitaria* (16)				
Spotted sandpiper *Actitis macularia* (17)			(17): Tabagh telggesha	
Surfbird *Aphirza virgata* (18)				
Wandering tatler *Heteroscelus incanus* (19)				
Short-billed dowitcher *Limnodromus griseus* (22)		(22): Kukukuaq[1]		
Long-billed dowitcher *L. scolopaceus* (23)				
Wilson's snipe *Gallinago delicata* (24)	(24): Kulickiiq[1]	(24): Kulickiiq[3]	(24): Yuyił	
Loons and grebes				
Common loon *Gavia immer*	Tuullek[2]	Tuullek[1], kakaraq[2]	Dujeni	
Pacific loon *G. pacifica*	Quiriiq[1], tuullek[2]	Tuullek[1], kakaraq[2]	Qulchun	
Red-throated loon *G. stellata*	Quiriiq[1], tuullek[2]	Tuullek[1], kakaraq[2]	Quk'ełdełi	
Yellow-billed loon *G. adamsii*	Tuullek[2]	Tuullek[1], kakaraq[2]		
Grebe		Qaqataq[CW2]		
Red-necked grebe *Podiceps griseana* (1)	(1): Atatarpak[1]	(1): Atatak[CW1]	(1): Senya	
Horned grebe *P. auritus* (2)	(2): Atataa'aq[1]			

Gray background indicates bird names used for more than one species.

( ): Numbers in parenthesis indicate the species or the set of species likely to occur in the region.

[ ]: Numbers in brackets refer to the source of the local bird name.

[1] Preikshot and Leer (1999)

[2] Smelcer (2010)

[3] Leer et al. (2003)

[4] Tanape (N. Tanape, Village of Nanwalek, personal communication, 19 May 2010)

[5] Kari (2007)

Appendix M.–Alaska Native and local bird names, Kodiak Archipelago region.

Species or species group	Language: Alutiiq (Sugpiaq) Dialect: Alutiiq Koniag Subdialect: Eastern Koniag	Comments, corrections
Ducks		
American wigeon *Anas americana*		
Teal Green-winged teal *A. crecca* (1) Blue-winged teal *A. discors* (2)		
Mallard *A. platyrhynchos*	Nillqitaaq[2]	
Northern pintail *A. acuta*	Pamyurtuliq[2], kanarautusqat[2]	
Northern shoveler *A. clypeata*		
Black scoter *Melanitta nigra*		
Surf scoter *M. perspicillata*		
White-winged scoter *M. fusca*		
Bufflehead *Bucephala albeola*		
Goldeneye Common goldeneye *B. clangula* (1) Barrow's gondeneye *B. islandica* (2)		
Canvasback *Aythya valisineria*		
Scaup Greater scaup *A. marila* (1) Lesser scaup *A. affinis* (2)	Alungutgwalek[2], bluebill	
Common eider *Somateria mollissima*		
King eider *S. spectabilis*		
Steller's eider *Polysticta stelleri*		
Harlequin duck *Histrionicus histrionicus*	Qainiaq[2]	
Long-tailed duck *Clangula hyemalis*	Aaarangiiq[2]	
Merganser Common merganser *Mergus merganser* (1) Red-breasted merganser *M. serrator* (2)	Pairpak[2]	
Geese		
Black brant *Branta bernicla*		
Canada/cackling goose Aleutian Canada goose *Branta hutchinsii leucopareia* (1) Lesser Canada goose *B. canadensis parvipes* (2)	Lagiq[2]	
Greater white-fronted goose *Anser albifrons*	Neqlleq[1]	
Emperor goose *Chen canagica*		
Snow goose *C. caerulescens*		
Swans		
Swan Tundra swan *Cygnus columbianus* (1) Trumpeter swan *C. buccinator* (2)	Qugyuk[2]	
Cranes		
Sandhill crane *Grus canadensis*		
Ptarmigans and grouses		
Ptarmigan Willow ptarmigan *Lagopus lagopus* (1) Rock ptarmigan *L. muta* (2)		

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Species or species group	Language: Alutiiq (Sugpiaq) Dialect: Alutiiq Koniag Subdialect: Eastern Koniag	Comments, corrections
Seabirds		
Cormorant Pelagic cormorant *Phalacrocorax pelagicus* (1) Double-crested cormornat *P. auritus* (2) Red-faced cormorant *P. urile* (3)		
Tern Arctic tern *Sterna paradisea* (1) Aleutian tern *Sterna aleutica* (2)		
Black-legged kittiwake *Rissa tridactyla*		
Bonaparte's/Sabine's gulls Bonaparte's gull *Larus philadelphia* (1) Sabine's gull *Xema sabini* (2)	Egyaaq[2]	
Mew gull *Larus canus*		
Large gulls Glaucous-winged gull *L. glaucescens* (1) Herring gull *L. argentatus* (2)	Qatayaq[2]?	
Auklet Cassin's auklet *Ptychoramphus aleuticus* (1) Crested auklet *Aethia cristatella* (2) Least auklet *A. pusilla* (3) Parakeet auklet *A. psittacula* (4) Rhinoceros auklet *Cerorhinca monocerata* (5)		
Murre Common murre *Uria aalge* (1) Thick-billed murre *U. lomvia* (2)		
Guillemot Pigeon guillemot *Cephus columba*		
Puffin Tufted puffin *F. cirrhata* (1) Horned puffin *Fratercula corniculata* (2)	Tunn*g*aq[2], qagiyaq[2]	
Shorebirds		
Black oystercatcher *Haematopus bachmani*		
Whimbrel/curlew Bristle-thighed crulew *Numenius tahitiensis**		
Golden/black-bellied plover American golden plover *Pluvialis dominica* (1) Pacific golden plover *P. squatarola* (2) Black-bellied plover *P. fulva* (3)		
Turnstone Ruddy turnstone *Arenaria interpres* (1) Black turnstone *A. melanocephala* (2)		
Phalarope Red-necked phalarope *Phalaropus lobatus* (1) Red phalarope *P. fulicaria* (2)		

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Species or species group	Language: Alutiiq (Sugpiaq) Dialect: Alutiiq Koniag Subdialect: Eastern Koniag	Comments, corrections
Small shorebird Dunlin *Calidris alpina* (1) Pectoral sandpiper *C. melanotos* (2) Rock sandpiper *C. ptilocnemis* (3) Western sandpiper *C. mauri* (4) Semipalmated sandpiper *C. pusilla* (5) Least sandpiper *C. minutilla* (6) Baird's sandpiper *C. bairdii* (7) Sanderling *C. alba* (11) Semipalmated plover *Charadrius semipalmatus* (13) Lesser yellowlegs *Tringa flavipes* (14) Greater yellowlegs *T. melanoleuca* (15) Solitary sandpiper *T. solitaria* (16) Spotted sandpiper *Actitis macularia* (17) Surfbird *Aphirza virgata* (18) Wandering tatler *Heteroscelus incanus* (19) Short-billed dowitcher *Limnodromus griseus* (22) Long-billed dowitcher *L. scolopaceus* (23) Wilson's snipe *Gallinago delicata* (24)	Kulickiiq[2]	
Loons and grebes		
Common loon *Gavia immer*		
Pacific loon *G. pacifica*	Tuullek[1]	
Red-throated loon *G. stellata*	Qaqaaqaaq[1]	
Yellow-billed loon *G. adamsii*		
Grebe Red-necked grebe *Podiceps griseana* (1) Horned grebe *P. auritus* (2)		

( ): Numbers in parenthesis indicate the species or the set of species likely to occur in this region.

[ ]: Numbers in brackets refer to the source of the local bird name.

[1] Preiksot and Leer (1999)

[2] Leer (1978)

Appendix N.–Alaska Native and local names, Aleutian-Pribilof Islands region.

Species or species group	Language: Aleut, Dialect: (E) Eastern Aleut Subdialects: Eb: Belkofski (at King Cove) Ea: Akutan Eu: Unalaska Ek: Kashega (at Akutan and Unalaska) Ep: Pribilof Islands En: Nikolski, Umnak Islands	Language: Aleut Dialect: Atkan Aleut Subdialect: Atka	Comments, corrections
Ducks			
American wigeon *Anas americana*			
Teal Green-winged teal *A. crecca*	Atax̂chiiya-x̂[E1], atax̂chiida-x̂[En1], chiruuka-x̂[E1], turiika-x̂[En1]	Qiix̂chiidax̂[1]	
Mallard *A. platyrhynchos*	Hani(m) saa[E1], zilizina-x̂[Eb1], qiix̂chiida-x̂[En1]	Aaĝix̂[1]	
Northern pintail *A. acuta*	Tuuklu-x̂[En1]	Amtatux̂[1]	
Northern shoveler *A. clypeata*	Uchukatu-x̂[En1]		
Black scoter *Melanitta nigra*	Qugaang[E1], qugaangi-x̂[Ea1]	Qugaangi-x̂[1]	
Surf scoter *M. perspicillata*	Tamgaaluugamax[En1]		
White-winged scoter *M. fusca*	Tamgaalu-x̂[E1], turpaana-x̂[Eu1], tirpaana-x̂[Ep1]	Tamgaalux̂[1]	
Bufflehead *Bucephala albeola*	Idimitx̂i-x̂[En1]	Midimitx̂ix̂[1]	
Goldeneye Common goldeneye *B. clangula* (1) Barrow's gondeneye *B. islandica* (2)	Guugila-x̂[Ep1], kuchuchuda-x̂[En1]	Hanim kamgituu[1]	
Canvasback *Aythya valisineria*	Umxayu-x̂[En1]		
Scaup Greater scaup *A. marila* (1) Lesser scaup *A. affinis* (2)		Kuchutux̂[1]	
Common eider *Somateria mollissima*	Kasima-x̂[E1], kasami-x̂[E1]	Kasamix̂[1]	
King eider *S. spectabilis*	Saaku-x̂[E1]	Saakux̂[1]	
Steller's eider *Polysticta stelleri*	Qachiiya-x̂[E1]		
Harlequin duck *Histrionicus histrionicus*	Kaminuuska-x̂[E1], kaminuuski-x̂[Eu1], kaangadgi-x̂[E1], limgi-x̂[E1]	Kaaxadgix̂[1]	
Long-tailed duck *Clangula hyemalis*	Aalngaax̂[E1, Ep1], Oldsquaw	Aalngaax̂[1], aanglaaĝix̂[2]	
Merganser Common merganser *Mergus merganser* (1) Red-breasted merganser *M. serrator* (2)	(1): Taka-x̂taqusa-x̂[Ea1], aĝlaayam quhmaa[En1] (2): Aĝlaaya-x̂[E1, Ea1, En1], kraxaali-x̂ [Eu1]	(1): Aĝlaayam quhmaa[1] (2): Aĝlaaya-x̂[1]	
Geese			
Black brant *Branta bernicla*	Ilĝilĝi-x̂[Eb1]	Lagim tugidaa[1]	

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Species or species group	Language: Aleut, Dialect: (E) Eastern Aleut Subdialects: Eb: Belkofski (at King Cove) Ea: Akutan Eu: Unalaska Ek: Kashega (at Akutan and Unalaska) Ep: Pribilof Islands En: Nikolski, Umnak Islands	Language: Aleut Dialect: Atkan Aleut Subdialect: Atka	Comments, corrections
Canada/cackling goose Aleutian Canada goose *Branta hutchinsii leucopareia* (1) Lesser Canada goose *B. canadensis parvipes* (2)	(1): Lax[E1], lagix[1]	(1): Lax[1], Lagi-x̂[1]	
Greater white-fronted goose *Anser albifrons*	Uuxali-x̂[En1], speckle belly		
Emperor goose *Chen canagica*	Qamgaang[E1], qamgaangi-x̂[E1]	Qagmang[1], qagmangix̂[2]	
Snow goose *C. caerulescens*			
Swans			
Swan Tundra swan *Cygnus columbianus*	Qunqix̂[E1], qunqigi-x̂[Eb1], qunqi-x̂[Ea1, Ep1]	Quqinĝi-x̂[1], qukingix̂[1]	
Cranes			
Sandhill crane *Grus canadensis*	Qudĝaax̂[E1]		
Ptarmigans and grouses			
Ptarmigan Willow ptarmigan *Lagopus lagopus* (1) Rock ptarmigan *L. muta* (2)	Aĝdiika-x̂[E1], kulupaaska-x̂[E1] (1): Tagalax̂taasa-x̂[En1]	Aĝdiika-x̂[1] (2): Aĝdiikas[2]	
Seabirds			
Cormorant Pelagic cormorant *Phalacrocorax pelagicus* (1) Double-crested cormornat *P. auritus* (2) Red-faced cormorant *P. urile* (3)	Agayuux̂[E1, Ea1, En1], anulgi-x̂[E1] (1): Agayuuĝim kahnuliisx̂ii[Ep1, En1] (2): Agayuuĝim tukungin[Eb1, En1, txax[E1, Ea1], txang[1]	Agayuux̂[1] (1): Qilitaqa-x̂[1], aagayuuĝi-x̂[2] (3): Ingatu-x̂[1]	
Tern Arctic tern *Sterna paradise* (1) Aleutian tern *S. aleutica* (2)	Qitiqda-x̂[Ea1], qitmiyaaka-x̂[En1]	Qitiqda-x̂[1]	
Black-legged kittiwake *Rissa tridactyla*	Gidaax̂[E1], gidaaĝi-x̂[E1, Ep1]	Tiigilgaax̂[1], tiigilgaadax̂[1]	
Red-legged kittiwake *R. brevirostris*	Qaĝaya-x̂[E1, Ep1], qaĝ(a)yaada-x̂[Ep1]		
Bonaparte's/Sabine's gulls Bonaparte's gull *Larus philadelphia* (1) Sabine's gull *Xema sabini* (2)			

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Species or species group	Language: Aleut, Dialect: (E) Eastern Aleut Subdialects: Eb: Belkofski (at King Cove) Ea: Akutan Eu: Unalaska Ek: Kashega (at Akutan and Unalaska) Ep: Pribilof Islands En: Nikolski, Umnak Islands	Language: Aleut Dialect: Atkan Aleut Subdialect: Atka	Comments, corrections
Large gulls Glaucous-winged gull *L. glaucescens* (1) Herring gull *L. argentatus* (2)	(1): Sluka-x̂[E1, adult], chuluugida-x̂[E1, Eb1, young] (2): Slukaada-x̂[En1]	(1): Sluka-x̂[1]	
Auklet Cassin's auklet *Ptychoramphus aleuticus* (1) Crested auklet *Aethia cristatella* (2) Least auklet *A. pusilla* (3) Parakeet auklet *A. psittacula* (4) Whiskered auklet *A. pygmaea* (5) Rhinoceros auklet *Cerorhinca monocerata* (6)	(1): Aluuĝaaya-x̂[En1], aluĝaaya-x̂[En1, small brown seabird], chikanangi-x̂[Ea1] (2): Kunugyu-x̂[Eu1, Ea1], kuhnugyu-x̂[Eu1], kunugya-x̂[En1] (3): Chuuchiix̂[E1], chuuchiiĝi-x̂[E1] (4): Agaluuya-x̂[Ep1], saasa-x̂[E1] (5): Kdiix[E1, En1], kniix[E1]	(1): Hmaxchiida-x̂[1] (4): Qihmuugda-x̂[1] (5): Tuhmu-x̂[1]	
Murre Common murre *Uria aalge* (1) Thick-billed murre *U. lomvia* (2)	Sakita-x̂[E1], ulux̂txa-x̂[E1]	Ulux̂txa-x̂[E1], ulungtx̂ax̂[1]	
Guillemot Pigeon guillemot *Cephus columba*	Qachiida-x̂[Ep1], siimlu-x̂[E1, Ea1]	Siihmlux̂[1]	
Puffin Tufted puffin *Fratercula cirrhata* (1) Horned puffin *F. corniculata* (2)	(1): Uxchu-x̂[E1, Eb1] (2): Qagida-x̂[E1, Ea1]	(1): Uxchux̂[1] (2): Qagidax̂[1]	
Shorebirds			
Black oystercatcher *Haematopus bachmani*	Hiix[E1]	Hiix[E1], hiigix̂[2]	
Godwit Hudsonian godwit *L. haemastica*	Chuyngi-x̂[E1]	Chuygi-x̂[1]	
Golden/black-bellied plover American golden plover *Pluvialis dominica* (1) Pacific golden plover *P. squatarola* (2) Black-bellied plover *P. fulva* (3)			
Turnstone Ruddy turnstone *Arenari interpres*	Kidmalix[En1], chiiĝyaada-x̂[E, Ep, Ek1]	Kidmalix[1]	
Phalarope Red-necked phalarope *Phalaropus lobatus* (1) Red phalarope *P. fulicaria* (2)	Chimtxu-x̂[E1]		

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Species or species group	Language: Aleut, Dialect: (E) Eastern Aleut Subdialects: Eb: Belkofski (at King Cove) Ea: Akutan Eu: Unalaska Ek: Kashega (at Akutan and Unalaska) Ep: Pribilof Islands En: Nikolski, Umnak Islands	Language: Aleut Dialect: Atkan Aleut Subdialect: Atka	Comments, corrections
Small shorebird Dunlin *Calidris alpina* (1) Pectoral sandpiper *C. melanotos* (2) Rock sandpiper *C. ptilocnemis* (3) Western sandpiper *C. mauri* (4) Least sandpiper *C. minutilla* (6) Baird's sandpiper *C. bairdii* (7) Sanderling *C. alba* (11) Semipalmated plover *Charadrius semipalmatus* (13) Spotted sandpiper *Actitis macularia* (17) Wandering tatler *Heteroscelus incanus* (19) Long-billed dowitcher *L. scolopaceus* (23) Wilson's snipe *Gallinago delicata* (24)	Kind of snipe: chigidadax̂[E1,], qidgulita-x̂[E1], siluta-x̂[E1], unalikachiya-x̂[E1], tix̂likna-x̂[E1] (2): Chix̂isngi-x̂[En1] (3): Talgudgasix̂[E1, Ep1], chulika-x̂[Ep1], chulikaaya-x̂[En1] (7): Chuĝuucha-x̂[E1, Eb1] (19): Smiix̂[E1]	 (2): Chiĝiisingi-x̂[1] (3): Chulikda-x̂[1], chulixtax̂[2] (19): Smiix̂[1], smiiĝi-x̂[1]	
Loons and grebes			
Common loon *Gavia immer*	Qigux[E1], qigugi-x̂[E1]	Qigux̂[1], qigugi-x̂[1]	
Pacific loon *G. pacifica*		Qaqax̂[1], Qaqaĝi-x̂[1]	
Red-throated loon *G. stellata*	Chngachada-x̂[E1]	Qaqaĝi-x̂[2]	
Yellow-billed loon *G. adamsii*			
Grebe Red-necked grebe *Podiceps griseana* (1) Horned grebe *P. auritus* (2)	Chamdaaya-x̂[E1]		

Gray background indicates bird names used for more than one species.

( ): Numbers in parenthesis indicate the species or the set of species likely to occur in the region.

[ ]: Numbers in brackets refer to the source of the local bird name.

[1] Bergsland (1994)

[2] Dirks (http://www.ankn.uaf.edu/ancr/aleut/atkanbirds/index.html, consulted on 11 October 2011).

Appendix O.–Alaska Native and local bird names, Bristol Bay region.

Species or species group	Southwest Bristol Bay and Dillingham			South Alaska Peninsula		Comments, corrections
	Birds in the survey	Language: Central Alaskan Yup'ik Dialect: General Central Yup'ik Subdialects: BB: Bristol Bay, NR: Nushagak River, LI: Lake Iliamna	Language: Dena'ina Dialect: Upper Cook Inlet[5] (villages of Nondalton, Pedro Bay, Newhalen)	Birds in the survey	Language: Alutiiq (Sugpiaq), Dialect: Koniag, Subdialect: Western Koniag	
Ducks						
American wigeon *Anas americana*	x	Qatkeggliq[1]	Sheshinya	x	Qacaaq[3], tengyunguaq[3]	
Teal Green-winged teal *A. crecca*	x	Cikiutnaar(aq)[1], tengesqaar(aq)[1]	Qulchixa	x	Qacaaq[3], tengyunguaq[3]	
Mallard *A. platyrhynchos*	x	Uqulkatagpak[1], nelqitaaq[LI1], perayak[NR1]	Chadutl'ech'i, chadatl'ech'i	x		
Northern pintail *A. acuta*	x	Uqulkatak[1], uqulegaq[1]	Chendghinlggesh, kadghiłnazi	x		
Northern shoveler *A. clypeata*	x	Curcurpak[1], sugg'erpak[1]	Veduzhizha dghiłtali, vedushqula	x		Sugg'erpak: shoveler, dowitcher, yellowlegs
Black scoter *Melanitta nigra*	x	Kukumyar(aq)[1], tungunkeggliq[1], tunguleq[1]	Venchix va'idetsiggi	x		
Surf scoter *M. perspicillata*	x	Akacakayak[BB1]	Venchix va'ilch'eli, veduzhizha dasdeli	x		
White-winged scoter *M. fusca*	x	Akacakayak[BB1]	Venaq'a qa'ilch'eli	x		
Bufflehead *Bucephala albeola*	x		Sukna tsighał	x		
Goldeneye Common goldeneye *B. clangula* (1) Barrow's goldeneye *B. islandica* (2)	x (1, 2)	Qamiqurpak[1], qamiqurpayaq[1], qamirvayagaq[1], anarnissakaq[BB1]	Tsiq'unya	x (1, 2)		
Canvasback *Aythya valisineria*	x		Veq'es dasdeli	x		
Scaup Greater scaup *A. marila* (1) Lesser scaup *A. affinis* (2)	x (1, 2)	Kep'alek[1]	Jija vek'ilggeyi, vech'enlna q'enk'elggeyi, naltseghi	x (1, 2)		
Common eider *Somateria mollissima*	x	Metraq[1], nayangaryaq (female)[1]		x		
King eider *S. spectabilis*	x	Qengallek[1]		x		

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Species or species group	Southwest Bristol Bay and Dillingham: Birds in the survey	Southwest Bristol Bay and Dillingham: Language: Central Alaskan Yup'ik Dialect: General Central Yup'ik Subdialects: BB: Bristol Bay, NR: Nushagak River, LI: Lake Iliamna	Southwest Bristol Bay and Dillingham: Language: Dena'ina Dialect: Upper Cook Inlet[5] (villages of Nondalton, Pedro Bay, Newhalen)	South Alaska Peninsula: Birds in the survey	South Alaska Peninsula: Language: Alutiiq (Sugpiaq), Dialect: Koniag, Subdialect: Western Koniag	Comments, corrections
Spectacled eider *S. fischeri*	x	Qaugeq[1], quagiiq[1], ackiilek[1]		-	Qayarriq[3]	not in South Alaska Peninsula
Steller's eider *Polysticta stelleri*	x	Caqiar(aq)[1]		x		
Harlequin duck *Histrionicus histrionicus*	x	Cetuskar(aq)[1]	Tus qet'ay	x		
Long-tailed duck *Clangula hyemalis*	x	Aarraangiiq[1], aarraaliq[1], allgiar(aq)[1], olsdsqaw	Aĥanya	x		
Merganser Common merganser *Mergus merganser* (1) Red-breasted merganser *M. serrator* (2)	x (1, 2)	Payiq[1], payirpak[1]	(1): Cheghesh (2): Yucheghesh	x (1, 2)		
Geese		Lagiq[1], neqleq[1], leqleq[1]				
Black brant *Branta bernicla*	x	Neqlernaq[1], leqlernaq[1], laqeciagaq[2]	Chulyin viy'a	x		
Canada goose Cackling Canada goose *Branta hutchinsii minima* (1) Lesser Canada goose *B. canadensis parvipes* (2)	x (1?, 2)	Tuutangayak[1], lagilugpiaq[1], lagipiaq[1], lagirpak[1] (1): Tuutaalquciq[2] (2): Tuutangayagpak[2]	Nut'aq'i, dalvaya, ventl'u ch'anlch'eli	x (2?)	Laγiq[3]	
Greater white-fronted goose *Anser albifrons*	x	Neqlepik[1]	K'dut'aq'a	x		
Emperor goose *Chen canagica*	x	Nacaullek[1]		x		
Lesser snow goose *C. caerulescens*	x	Kanguq[1], kangniq[1]	Ch'iluzhena, ch'elzheni	x		
Swans						
Swan Tundra swan *Cygnus columbianus*	x	Qugyuk[1]	Tava, dult'iya	x	Saqulegpak[3]	
Cranes						
Sandhill crane *Grus canadensis*	x	Qut'raaq[1], qucillgaq[1], qucillngaq[1], qut'rauk[LI1]	Ndał, nedał	x		

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Species or species group	Southwest Bristol Bay and Dillingham: Birds in the survey	Language: Central Alaskan Yup'ik Dialect: General Central Yup'ik Subdialects: BB: Bristol Bay, NR: Nushagak River, LI: Lake Iliamna	Language: Dena'ina Dialect: Upper Cook Inlet[5] (villages of Nondalton, Pedro Bay, Newhalen)	South Alaska Peninsula: Birds in the survey	Language: Alutiiq (Sugpiaq), Dialect: Koniag, Subdialect: Western Koniag	Comments, corrections
Ptarmigans and grouses						
Spruce grouse *Falcipennis canadensis*	x	Egtuk[1], egtuuk[1]	Ełdyin	x(-)		
Ptarmigan Willow ptarmigan *Lagopus lagopus* (1) Rock ptarmigan *L. muta* (2)	x (1, 2)	Kangqiiq[1], qangqiiq[1], taqikataq[BB1] (1): Aqesgiq[1]	(1): Q'ach'ema (2): Jeł q'ach'ema, dghili q'ah'ema	x (1, 2)		
Seabirds						
Cormorant Pelagic cormorant *Phalacrocorax pelagicus* (1) Double-crested cormornat *P. auritus* (2) Red-faced cormorant *P. urile* (3)	x (1, 2, 3)	(1): Uyalek[1] (2): Uyalegpak[1]	Yeq	x (1, 2, 3)		
Tern Arctic tern *Sterna paradisea* (1) Aleutian tern *S. aleutica* (2)	x (1, 2)	Teqiyaar(aq)[1], tegalqingayar(aq)[NR1]	Ch'ink'nul'ay	x (1, 2)	Teki'aq[3]	
Black-legged kittiwake *Rissa tridactyla*	x	Arliaq[1], naruyacuaq[1], iingirayuli[2]	Gadayaq	x		s
Bonaparte's/ Sabine's gull Bonaparte's gull *Larus hiladelphia* (1) Sabine's gull *Xema sabini* (2)	x (1, 2)	(2): Nacallngaar(aq)[1], nacallngaq[1]	(1): Chilzhena	x (1, 2)		
Mew gull *Larus canus*	x	Ingirauq[2], naruyayagaq[2], egiaq[BB1], tarliaq[NR1]	Shagela vaja	x(-)		
Large gull Glaucous-winged gull *L. glaucescens* (1) Glaucous gull *L. hyperboreus* (2) Herring gull *L. argentatus* (3)	x (1, 2)	Narusvak[1], kukusvak[1]	Vach kegh (3): łiq'a vaja	x (1, 3)	(2): Kukiswak[3]	

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Species or species group	Southwest Bristol Bay and Dillingham: Birds in the survey	Southwest Bristol Bay and Dillingham: Language: Central Alaskan Yup'ik Dialect: General Central Yup'ik Subdialects: BB: Bristol Bay, NR: Nushagak River, LI: Lake Iliamna	Southwest Bristol Bay and Dillingham: Language: Dena'ina Dialect: Upper Cook Inlet[5] (villages of Nondalton, Pedro Bay, Newhalen)	South Alaska Peninsula: Birds in the survey	South Alaska Peninsula: Language: Alutiiq (Sugpiaq), Dialect: Koniag, Subdialect: Western Koniag	Comments, corrections
Auklet Cassin's auklet *Ptychoramphus aleuticus* (1) Crested auklet *Aethia cristatella* (2) Least auklet *A. pusilla* (3) Parakeet auklet *A. psittacula* (4) Whiskered auklet *A. pygmaea* (5) Rhinoceros auklet *Cerorhinca monocerata* (6)	x (1, 2, 3, 4, 6)			x (1, 2, 3, 4, 5, 6)		
Murre Common murre *Uria aalge* (1) Thick-billed murre *U. lomvia* (2)	x (1, 2)	Alpak[1], alpa[1]		x (1, 2)		
Guillemot Pigeon guillemot *Cephus columba*	x	Qayagpagayuli[1]		x		
Puffin Tufted puffin *Fratercula cirrhata* (1) Horned puffin *F. corniculata* (2)	x (1, 2)	Qilangaq[1] (2): Qengacuar(aq)[1]	Duzhizha delchezhi	x (1, 2)		
Shorebirds						
Black oystercatcher *Haematopus bachmani*	-			x		
Whimbrel *Numenius phaeopus*	x	Ciivikaaq[1], pipipiaq[1]	Nuduyesdghulggesha	x		
Godwit Bar-tailed godwit *Limosa lapponica* (1) Hudsonian godwit *L. haemastica* (2) Marbled godwit *L. fedoa* (3)	x (1, 2, 3)			x (1)		
Golden/black-bellied plover American golden plover *Pluvialis dominica* (1) Pacific golden plover *P. squatarola* (2) Black-bellied plover *P. fulva* (3)	x (1, 2, 3)	Tuusiik[1], tuuyiik[1], tevatevaaq[1]	Ggulyit	x (1, 2, 3)		

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Species or species group	Southwest Bristol Bay and Dillingham: Birds in the survey	Language: Central Alaskan Yup'ik Dialect: General Central Yup'ik Subdialects: BB: Bristol Bay, NR: Nushagak River, LI: Lake Iliamna	Language: Dena'ina Dialect: Upper Cook Inlet[5] (villages of Nondalton, Pedro Bay, Newhalen)	South Alaska Peninsula: Birds in the survey	Language: Alutiiq (Sugpiaq), Dialect: Koniag, Subdialect: Western Koniag	Comments, corrections
Turnstone Ruddy turnstone *Arenaria interpres* (1) Black turnstone *A. melanocephala* (2)	x (1, 2)	(1): Uyarr'uyaq[1] (2): Ciilmak[1], qiuracetaaq[1]		x (1, 2)		
Phalarope Red-necked phalarope *Phalaropus lobatus* (1) Red phalarope *P. fulicaria* (2)	x (1, 2)	(1): Ceqcaaq[1], imaqcaar(aq)[1] (2): Ayungnaar(aq)[1]*	(1): Hdiłghatl'a	x (1, 2)		
Small shorebird Dunlin *Calidris alpina* (1) Pectoral sandpiper *C. melanotos* (2) Rock sandpiper *C. ptilocnemis* (3) Western sandpiper *C. mauri* (4) Semipalmated sandpiper *C. pusilla* (5) Least sandpiper *C. minutilla* (6) Baird's sandpiper *C. bairdii* (7) White-rumped sandpiper *C. fuscicollis* (8) Stilt sandpiper *C. himantopus* (9) Red-necked stint *C. ruficollis* (10) Sanderling *C. alba* (11) Sharp-tailed sandpiper *C. acuminata* (12) Semipalmated plover *Charadrius semipalmatus* (13) Lesser yellowlegs *Tringa flavipes* (14) Greater yellowlegs *T. melanoleuca* (15) *(continued next page)*	x (1, 2, 3, 4, 5, 6, 7, 11, 13, 14, 15, 16, 17, 18, 19, 22, 23, 24)	Cenarmiutaq[2] (1): Cenairpak[1], ceremraq[1] (2): Tukutukuar(aq)[1], temtemtag[1], uquirq(aq)[1], qugugugaq[NR1] (3): Cenaqiiq [NR1] (13): Uyarr'uyaq[1] (14, 15): Nayangkayuli[1], sugg'erpak[1], tuntussiik[1]	(4, 5, 6): Qenghish k'ela (13): Sank'tnal'ay (14, 15): Sadya	x (1, 2, 3, 4, 5, 6, 7, 11, 13, 14, 15, 16, 17, 18, 19, 22, 23, 24)		(4) see (14, 15) (14, 15): see 4

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Species or species group	Southwest Bristol Bay and Dillingham: Birds in the survey	Southwest Bristol Bay and Dillingham: Language: Central Alaskan Yup'ik Dialect: General Central Yup'ik Subdialects: BB: Bristol Bay, NR: Nushagak River, LI: Lake Iliamna	Southwest Bristol Bay and Dillingham: Language: Dena'ina Dialect: Upper Cook Inlet[5] (villages of Nondalton, Pedro Bay, Newhalen)	South Alaska Peninsula: Birds in the survey	South Alaska Peninsula: Language: Alutiiq (Sugpiaq), Dialect: Koniag, Subdialect: Western Koniag	Comments, corrections
(continued from previous)						
Solitary sandpiper *T. solitaria* (16)		(16): Tuntussiik[1], Kiakiaq[LI1]				Sugg'erpak: shoveler, dowitcher, yellowlegs
Spotted sandpiper *Actitis macularia* (17)		(17): Elagayuli[1]				
Surfbird *Aphirza virgata* (18)			(17): Delvizha			
Wandering tatler *Heteroscelus incanus* (19)			(18): Yudi ghelkala			
Upland sandpiper *Bartramia longicauda* (20)						
Buff-breasted sandpiper *Tryngites subruficolis* (21)						
Short-billed dowitcher *Limnodromus griseus* (22)		(22, 23): Pipipiaq[1], qayaruartalek[1], sugg'erpak[1], tulikaq[BB1]	(22, 23): Kadantsa			
Long-billed dowitcher *L. scolopaceus* (23)						
Wilson's snipe *Gallinago delicata* (24)		(24): Kukukuaq[1]	(24): Yuził			
Loons and grebes						
Loon *Gavia* sp.		Tuullek[1]				
Common loon *Gavia immer*	x		Dujeni	x		
Pacific loon *G. pacifica*	x	Tunutellek[1], tunucellek[1], tunullek[1], yaqulegpak[LI1]	Ggulchun	x		
Red-throated loon *G. stellata*	x	Qaqataq[1], qaqaq[1]	Shdutvuyi	x		
Yellow-billed loon *G. adamsii*	x			x		
Grebe	x	Qaleqcuuk[1], tusairnaq[1]		x		
Red-necked grebe *Podiceps griseana* (1)	(1, 2)	(1): Aarayuli[1]	(1): Taqa'a	(1, 2)		
Horned grebe *P. auritus* (2)			(2): Nachandghelahi			

Gray background indicates bird names used for more than one species.

x: Species/species group is included in the harvest report form used in the region.

( ): Numbers in parenthesis indicate the species or the composition of species likely to occur in each region.

x(-): Species/species group is included in the harvest report form, but it unlike to occur in the region.

-: Species/species group is not included in the harvest report form used in the region.

[ ] Numbers in brackets refer to the source of the local bird name:

[1] Jacobson (1984)

[2] USFWS poster “Naqumalrit yaqulget nertukput - Birds of the subsistence harvest survey”. ~ 2004.

[3] Preiksot and Leer (1999)

[4] Leer (1978)

[5] Kari (1978)

Appendix P.–Local and Alaska Native bird names, Yukon-Kuskokwim Delta region.

Species or species group	Language: Central Alaskan Yup'ik Dialect: General Central Yup'ik Subdialects: Y: Yukon NI: Nelson Is. K: Kuskokwim UK: Upper Kuskokwim	Dialect: Nunivak Island	Dialect: Hooper Bay and Chevak	Dialect: Norton Sound (and Southern Norton Sound-Kotlik)	Comments, corrections
Ducks					
American wigeon *Anas americana*	Qatkeggliq[1]			Auuguraq[2]	
Teal Green-winged teal *A. crecca*	Cikiutnaar(aq)[1], tengesqaar(aq)[1]			Kemeksungaraq[2]	
Mallard *A. platyrhynchos*	Uqulkatagpak[1], uqsuqerpak[K1], uqsurtaq[NI1], uutkaaq[Y1]		Iyukarpak[1]		
Northern pintail *A. acuta*	Uqulegaq[1], uqulkatak[1], uutkaaq[Y1], uqsuqaq[K1]		Iyukaq[1]	Uutkaaq[2]	
Northern shoveler *A. clypeata*	Curcurpak[1], sugg'erpak[1]			Qasuuciaq[2]	Sugg'erpak: shoveler, dowitcher, yellowlegs
Black scoter *Melanitta nigra*	Kukumyar(aq)[1], tungunkeggliq[1], tunguleq[1]				
Surf scoter *M. perspicillata*					
White-winged scoter *M. fusca*					
Bufflehead *Bucephala albeola*	Pugtaqutayagaq[K2, Y2]				
Goldeneye Common goldeneye *B. clangula* (1) Barrow's goldeneye *B. islandica* (2)	Qamiqurpak[1], qamiqurpayaq[1], qamirvayagaq[1], anarnilnguq[K1], anarnissakaq[K1]				
Canvasback *Aythya valisineria*					
Scaup Greater scaup *A. marila* (1) Lesser scaup *A. affinis* (2)	Kep'alek[1]			Athnernaq[2]	
Common eider *Somateria mollissima*	Metraq[1], Nayangaryaq (female)[1]				
King eider *S. spectabilis*	Qengallek[1]				
Spectacled eider *S. fischeri*	Qaugeq[1], quagiiq[1], ackiilek[1]	Aangikvak[1]	Aangikvak[1]		
Steller's eider *Polysticta stelleri*	Caqiar(aq)[1]				

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Species or species group	Language: Central Alaskan Yup'ik Dialect: General Central Yup'ik Subdialects: Y: Yukon NI: Nelson Is. K: Kuskokwim UK: Upper Kuskokwim	Dialect: Nunivak Island	Dialect: Hooper Bay and Chevak	Dialect: Norton Sound (and Southern Norton Sound-Kotlik)	Comments, corrections
Harlequin duck *Histrionicus histrionicus*	Cetuskar(aq)[1]				
Long-tailed duck *Clangula hyemalis*	Aarraangiiq[1], aarraaliq[1], allgiar(aq)[1]	Aarraangiir(aq)[1]	Olsdsqaw	Aa'aaliq[2]	
Merganser Common merganser *Mergus merganser* (1) Red-breasted merganser *M. serrator* (2)	Payiq[1], payirpak[1]				
Geese	Lagiq[1], neqleq[1], leqleq[1]				
Black brant *Branta bernicla*	Neqlernaq[1], leqlernaq[1]				
Canada/cackling goose Taverner's Canada goose *B. hutchinsii taverneri* (1) Cackling Canada goose *B. h.minima* (2) Lesser Canada goose *B. canadensis parvipes* (3)	Tuutangayak[1], lagilugpiaq[1], lagipiaq[1], lagirpak[1] (2): Tuutaalquciq[2] (3): Tuutangayagpak[2]			(3): Tengmiaq[2]	
Greater white-fronted goose *Anser albifrons*	Neqlepik[1]			Lagilugpiaq[2]	
Emperor goose *Chen canagica*	Nacaullek[1]				
Lesser snow goose *C. caerulescens*	Kanguq[1], kangniq[1]				
Swans					
Tundra swan *Cygnus columbianus*	Qugyuk[1]			Qugsuk[1]	
Cranes					
Sandhill crane *Grus canadensis*	Qut'raaq[1], qucillgaq[1], qucillngaq[1], erinatuli[K1, Y1]	Qucilkuryuk[1]			
Ptarmigans and grouses					
Grouse Spruce grouse *Falcipennis canadensis* (1) Ruffed grouse *Bonasa umbellus* (2)	(1): Egtuk[1], egtuuk[1] (2): Egelruciayuli[1]				

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Species or species group	Language: Central Alaskan Yup'ik Dialect: General Central Yup'ik Subdialects: Y: Yukon NI: Nelson Is. K: Kuskokwim UK: Upper Kuskokwim	Dialect: Nunivak Island	Dialect: Hooper Bay and Chevak	Dialect: Norton Sound (and Southern Norton Sound-Kotlik)	Comments, corrections
Ptarmigan Willow ptarmigan *Lagopus lagopus* (1) Rock ptarmigan *L. muta* (2) White-tailed ptarmigan *L. leucura* (3)	Kangqiiq[1], qangqiiq[1] (1): Aqesgiq[1]		(1): Aqeygiq[1]		
Seabirds					
Cormorant Pelagic cormorant *Phalacrocorax pelagicus* (1) Double-crested cormornat *P. auritus* (2)	Agayuuq[Y1] (1): Uyalek[1] (2): Uyalegpak[1]			Agasuuq[1, 2]	
Tern Arctic tern *Sterna paradisea* (1) Aleutian tern *S. aleutica* (2)	Teqiyaar(aq)[1], teqirayuli[Y1]			Tegalquasarq[2], teqiyauq[2]	
Black-legged kittiwake *Rissa tridactyla*	Arliaq[1], naruyacuaq[1]	Tengaurta[1]			see mew gull
Bonaparte's/Sabine's gulls Bonaparte's gull *Larus philadelphia* (1) Sabine's gull *Xema sabini* (2)	(2): Nacallngaar(aq)[1], nacallngaq[1]				
Mew gull *Larus canus*	Arliaq[1], naruyaq[3]			Narusaq[2]	see black-legged kittiwake
Large gull Glaucous gull *L. hyperboreus*	Narusvak[1], kukusvak[1], kukisvak[Y1]			Kukisvak[2]	
Auklet Crested auklet *Aethia cristatella* (1) Least auklet *A. pusilla* (2) Parakeet auklet *A. psittacula* (3) Rhinoceros auklet *Cerorhinca monocerata* (4)					

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Species or species group	Language: Central Alaskan Yup'ik Dialect: General Central Yup'ik Subdialects: Y: Yukon NI: Nelson Is. K: Kuskokwim UK: Upper Kuskokwim	Dialect: Nunivak Island	Dialect: Hooper Bay and Chevak	Dialect: Norton Sound (and Southern Norton Sound-Kotlik)	Comments, corrections
Guillemot Pigeon guillemot *Cephus columba*	Qayagpagayuli[1]				
Puffin Tufted puffin *Fratercula cirrhata* (1) Horned puffin *F. corniculata* (2)	Qilangaq[1] (2): Qengacuar(aq)[1]	Tunngaq[1]			
Shorebirds					
Whimbrel/curlew Whimbrel *Numenius phaeopus* (1) Bristle-thighed curlew *N. tahitiensis* (2)	Ciivikaaq[1], pipipiaq[1]		Cuugerrpak[3]		
Godwit Bar-tailed godwit *Limosa lapponica* (1) Hudsonian godwit *L. haemastica* (2)			Tevatevaaq[2]	Kayaruaq[2]	
Golden/black-bellied plover American golden plover *Pluvialis dominica* (1) Pacific golden plover *P. squatarola* (2) Black-bellied plover *P. fulva* (3)	Tuusiik[1], tuuyiik[1], tevatevaaq[1],				
Turnstone Ruddy turnstone *Arenaria interpres* (1) Black turnstone *A. melanocephala* (2)	(1): Uyarr'uyaq[1] (2): Ciilmak[1], qiuracetaaq[1]				
Phalarope Red-necked phalarope *Phalaropus lobatus* (1) Red phalarope *P. fulicaria* (2)	(1): Ceqcaaq[1], imaqcaar(aq)[1] (2): Ayungnaar(aq)[1]	(2): Augtuar(aq)[1]		(1) Cepirluraq[2]	

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Species or species group	Language: Central Alaskan Yup'ik Dialect: General Central Yup'ik Subdialects: Y: Yukon NI: Nelson Is. K: Kuskokwim UK: Upper Kuskokwim	Dialect: Nunivak Island	Dialect: Hooper Bay and Chevak	Dialect: Norton Sound (and Southern Norton Sound-Kotlik)	Comments, corrections
Small shorebird	Cenarmiutaq[2], iisuayuaq[3], iisuraar[3]				
Dunlin *Calidris alpina* (1)				(1): Curemraq[2]	
Pectoral sandpiper *C. melanotos* (2)	(1): Cenairpak[1], ceremraq[1]				
Rock sandpiper *C. ptilocnemis* (3)	(2): Tukutukuar(aq)[1], temtemtaaq[1], uquirq(aq)[1]		(2): teguteguaq[1]		
Western sandpiper *C. mauri* (4)				(4): Ellunyaraq[2], iisuraaraq[2]	(4) see (14, 15)
Semipalmated sandpiper *C. pusilla* (5)			(4): Iisuraar(aq)[1], iiyuraar(aq)[1]		
Least sandpiper *C. minutilla* (6)					
Baird's Sandpiper *C. bairdii* (7)					Sugg'erpak: shoveler, dowitcher, yellowlegs
Sanderling *C. alba* (11)					
Sharp-tailed sandpiper *C. acuminata* (12)					
Semipalmated plover *Charadrius semipalmatus* (13)					
Lesser yellowlegs *Tringa flavipes* (14)					
Greater yellowlegs *T. melanoleuca* (15)	(13): Uyarr'uyaq[1]				
Solitary sandpiper *T. solitaria* (16)	(14, 15): Nayangkayuli [1], sugg'erpak[1], tuntussiik[1]				
Spotted sandpiper *Actitis macularia* (17)			(16): Iisuraar(aq)[1], iiyuraar(aq)[1]		
Surfbird *Aphirza virgata* (18)	(16): Tuntussiik[1]				
Wandering tatler *Heteroscelus incanus* (19)	(17): Elagayuli[1]				(14, 15): see 4
Short-billed dowitcher *Limnodromus griseus* (22)					
Long-billed dowitcher *L. scolopaceus* (23)	(22, 23): Pipipiaq[1], qayaruartalek[1], sugg'erpak[1]	(22, 23): Cevyirar(aq)[1]			
Wilson's snipe *Gallinago delicata* (24)	(24): Kukuaq[1]	(24): Cen'aq[1], tuyek[1]			
Loons and grebes					
Loon *Gavia* sp.	Tuullek[1]	Qucuniq[1]	Qucuniq[1]		
Common loon *Gavia immer*					

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Species or species group	Language: Central Alaskan Yup'ik Dialect: General Central Yup'ik Subdialects: Y: Yukon NI: Nelson Is. K: Kuskokwim UK: Upper Kuskokwim	Dialect: Nunivak Island	Dialect: Hooper Bay and Chevak	Dialect: Norton Sound (and Southern Norton Sound-Kotlik)	Comments, corrections
Pacific loon Pacific loon *G. pacifica* (1) Arctic loon *G. arctica* (2)	Tunutellek[1], tunucellek[1], tunullek[1]		Tunucillek[1]		
Red-throated loon *G. stellata*	Qaqataaq[1], qaqaq[1]			Qaqacuk[2]	
Yellow-billed loon *G. adamsii*					
Grebe Red-necked grebe *Podiceps griseana* (1) Horned grebe *P. auritus* (2)	Qaleqcuuk[1], tusairnaq[1] (1): Aarayuli[1], aayuli[Y1]		(1): Aayuli[1]	Aatititaaq[2]	

Gray background indicates bird names used for more than one species.

( ) Numbers in parenthesis indicate the species or the composition of species likely to occur in each region.

[ ] Numbers in brackets refer to the source of the local bird name.

[1] Jacobson (1984)

[2] Wentworth (2007)

[3] USFWS poster "Naqumalrit yaqulget nertukput - Birds of the subsistence harvest survey". ~ 2004.

Appendix Q.–Local and Alaska Native bird names, Bering Strait-Norton Sound region.

Species or species group	Mainland Villages and Nome Language Iñupiat, dialects Bering Strait and Qawiaraq	St. Lawrence-Diomede Is. Language: Central Siberian Yupik, dialect St. Lawrence Is. Yupik	Comments, corrections
Ducks			
American wigeon *Anas americana*	Uuwiuhiq[3], ugiihiq[1]		
Teal Green-winged teal *A. crecca*	Tengesqaar[3], qaiŋŋiq[1], pocket ducks[3]		
Mallard *A. platyrhynchos*	Yuu_uaruk[3], iugakpak[3], iugaqak[5], uqsuqerrpak[3], ivugasrugruk[1]		
Northern pintail *A. acuta*	Yuu_huk[3], iugak[3], iugaq[3], kurugaq[1], uqsuqaq[3], sprigs[3]	Aqfasuk[2], ngiikaq[2], nqiikaaq[1, 2], quulvekesiiq[2]	
Northern shoveler *A. clypeata*	Curcurpet[3], qaqɬuqpalik[5], alluutaq[1], spoonbill[3]	Pekutaghraak[1, 2]	
Black scoter *Melanitta nigra*	Kukumyeq[3], nayaŋŋak[1], tuunġaaġrupiaq[1], uviñauyuk[1], uyunŋiaqtuyuut[6]	Metghasaak[1], whistlers[3], butterballs[3]	
Surf scoter *M. perspicillata*	Cenayaq[3], tuungaagruk[1], uyunŋiaqtuyuut[6]		
White-winged scoter *M. fusca*	Killalik[1], uyunŋiaqtuyuut[6]		
Bufflehead *Bucephala albeola*	Nunuqsigiilaq[1]		
Goldeneye Common goldeneye *Bucephala clangula*			
Canvasback *Aythya valisineria*			
Scaup Greater scaup *Aythya marila* (1) Lesser scaup *A. affinis* (2)	Kep'alek[3], qaqɬutuuq[3], qaqtuqpalik[1], bluebill[3]		
Common eider *Somateria mollissima*	Iyuiqiik[3], mitiq[5], aayuik[6], amaullik[1], qauqe (male)[3], metraq (female)[3]	Metghaq[1, 2], metghaqpik[2], gatepak[2], tagrapak[2], uskulla[2]	
King eider *S. spectabilis*	Kiiniiliq[3], qiŋalik[1]	Qengalek[1, 2]	
Spectacled eider *S. fischeri*	Qaugeq[3], qavaasuk[1]. mitiapak[6]	Iyegaatelek[2], livghaan[1, 2]	
Steller's eider *Polysticta stelleri*	lgŋiqauqtuq[1], mitiapak[6]	Aglekeseqaq[1, 2]	
Harlequin duck *Histrionicus histrionicus*	Sagvaq tiŋmiaq[1]	Qagingik[1, 2]	
Long-tailed duck *Clangula hyemalis*	Aa'aaŋiq[6], ahahniq[3], aliaaliq[3], aahaaliq[1], oldsquaw[3, 4], pintail[3]	Aahaangwliq[2], kangghwaak[1, 2] (female), uyangsaq[2], ugeyiighaq(male)[2]	see pintail
Merganser Common merganser *Mergus merganser* (1) Red-breasted merganser *M. serrator* (2)	Pies[4], fish duck[3], sawbill[3] (1): Payit[3], iŋitqaq[1] (2): Pai[3], payiq[3], paisugruk[1]	Iikaaq[2] (2): Aqfasuk[1, 2]	

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Species or species group	Mainland Villages and Nome Language Iñupiat, dialects Bering Strait and Qawiaraq	St. Lawrence-Diomede Is. Language: Central Siberian Yupik, dialect St. Lawrence Is. Yupik	Comments, corrections
Geese			
Black brant *Branta bernicla*	Liqliqnaq[3], ɬiɬinu±[3], neqlernaq[3], nigligŋaq[1], liġlanaq[6]	Teghqillkak[1, 2], qefteq[1]	
Canada/cackling goose Taverner's Canada goose *Branta hutcnhinsii taverneri* (1) Lesser Canada goose *B. canadensis parvipes* (4)	ɬiɬirairuuk[3], tuutangayak[3], iqsragutilik[1] (1): Liġliq[6] (4): Tuutalhusig[3]	Qefteq[1, 2]	
Greater white-fronted goose *Anser albifrons*	tuuɬiq[3], liqlivik[3], neqleq[3], natchauɬlik[3], kigiyuk[1], yellow leg, yellow foot(ers)[3, 4], freckle breast[3], speckle-bellies[3, 4]		See emperor goose
Emperor goose *Chen canagica*	Nazauɬik[6], nachaullek[3]. mitilugruaq[1], yellow-footers[3]	Leghlleq[1, 2]	See greater white-fronted goose
Snow goose *C. caerulescens*	Kaŋuq[5], ka±uuq[3], kanguq[3], iqsragutihk[1], quvanuaqpak[6]	Kaanguq[2], kaangu[1], white goose[3]	
Swans			
Tundra swan *Cygnus columbianus*	Qugruk[1], qukruk[3], qugyak[3], qugsuk[5]	Quuk[1, 2]	
Cranes			
Sandhill crane *Grus canadensis*	Tati_zhiq[3], tattirgak[1], quciilagaq[3], tatigzhiq[3]	Satelgaq[1, 2]	
Ptarmigans and grouses			
Grouse Spruce grouse *Falcipennis canadensis*	Ellciiyak[3], iktuk[3], napaaqtum aqargia[1]		
Ptarmigan Willow ptarmigan *Lagopus lagopus* (1) Rock ptarmigan *L. muta* (2)	Ahshu_hiq[3], aqasiigiq[3], aġagriq[6] (2): Aġarġiqpiaġruk[3], ituuk[3], niqsaaqtuŋiq[1]	Aqergiiq[1, 2]	
Seabirds			
Northern fulmar *Fulmarus glacialis*		Aghqulluk[1]	
Short-tailed shearwater *Puffinus tenuirostris*		Kaputaghaq[1]	
Cormorant Pelagic cormorant *Phalacrocorax pelagicus*	Pautɬuk[6], agasuuq[5]	Ngelqaq[1, 2]	
Tern Arctic tern *Sterna paradisea* (1) Aleutian tern *S. aleutica* (2)	Kiyuak[3], teqiyaar[3], tiġitquayaq[3], mitqutaiiaq[1]	(1): Tekeyiighaq[1, 2]	

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Species or species group	Mainland Villages and Nome Language Iñupiat, dialects Bering Strait and Qawiaraq	St. Lawrence-Diomede Is. Language: Central Siberian Yupik, dialect St. Lawrence Is. Yupik	Comments, corrections
Black-legged kittiwake *Rissa tridactyla*	Iiraq[6]	Qaqsungiighaq[5], qaqsungiq[2]	
Sabine's gull *Xema sabini*	Nachtnaq[3], aqargiyiaq[1], blackheads[3]	Nasallenguq[1, 2]	
Mew gull *Larus canus*	Niuyuk[3], kuuksiugayuk[3], nauyatchiaq[1]	Naghuya (used for different species of gulls)[2]	
Large gull Glaucous gull *Larus hyperboreus* (1) Herring gull *L. argentatus* (2)	Nauyaq[3], narusuak[3], nauyawak[6] (1): Nauqavasrugruk[1]	Naghuyapik[1, 2]	
Auklet Crested auklet *Aethia cristatella* (1) Least auklet *A. pusilla* (2) Parakeet auklet *A. psittacula* (3) Rhinoceros auklet *Cerorhinca monocerata* (5)	(1): Tayaq[6] (2): Atpaliuraq[6] (3): Sayuġuyuuq[6]	(1): Sukilpaq[1, 2] (2): Akmaliighaq[1, 2] (3): Suklugraq[1, 2]	
Murre Common murre *Uria aalge* (1) Thick-billed murre *U. lomvia* (2)	Alpaq[3], atpa[4], atpak[6]	Alpa[1, 2] (1): Kuwaaq[1, 2] (2): Aqevgaghnak[1, 2], alpapiget[1]	
Guillemot Pigeon guillemot *Cephus columba* (1) Black guillemot *C. grille* (2)	(1): Siġvauraq[6] (2):Siġvaq[6]	Samseghhaghaq[1, 2] (adult in breeding plumage)[8], sipelaaghhaq[2] (juvenile or adult in nonbreeding plumage)[8]	
Puffin Tufted puffin *Fratercula. cirrhata* (1) Horned puffin *F. corniculata* (2)	(1): Tunŋaq[6] (2): Qilaŋaq[6]	Ugraaq[5] (1): Pagrugaq[1, 2] (2): Quprughaq[2]	
Shorebirds	Snipe[3]		
Whimbrel/curlew Whimbrel *Numenius phaeopus* (1) Bristle-thighed curlew *N. tahitiensis* (2)	Siituvak[1]	(1): Sugtuvak[1, 2]	
Godwit Bar-tailed godwit *Limosa lapponica* (1) Hudsonian godwit *L. haemastica* (2)	Turraaturaq[1]		
Golden/black-bellied plover American golden plover *Pluvialis dominica* (1) Pacific golden plover *P. squatarola* (2) Black-bellied plover *P. fulva* (3)	tuuliq[3], qiuracitak[3], quraq_quraq[3], iliktaatuqhiq[6] (1): Tullik[1] (3): Tullikpak[1]	Turiik[1, 2]	
Turnstone Ruddy turnstone *Arenaria interpres* (1) Black turnstone *A. melanocephala* (2)	(1): Tullignaq[1]	(1): Sagelmak[1, 2]	
Phalarope Red-necked phalarope *Phalaropus lobatus* (1) Red phalarope *P. fulicaria* (2)	(1): Qayyugun[1], suuġmaq[6] (2): Quksruaq[1], aukpalantiŋiq[6]	(2): Qulighyak[2], sughmeghaq[1, 2]	

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Species or species group	Mainland Villages and Nome Language Iñupiat, dialects Bering Strait and Qawiaraq	St. Lawrence-Diomede Is. Language: Central Siberian Yupik, dialect St. Lawrence Is. Yupik	Comments, corrections
Small shorebird Dunlin *Calidris alpina* (1) Pectoral sandpiper *C. melanotos* (2) Rock sandpiper *C. ptilocnemis* (3) Western sandpiper C. mauri (4) Semipalmated sandpiper *C. pusilla* (5) Least sandpiper *C. minutilla* (6) Baird's sandpiper *C. bairdii* (7) Sanderling *C. alba* (11) Sharp-tailed sandpiper *C. acuminata* (12) Semipalmated plover *Charadrius semipalmatus* (13) Lesser yellowlegs *Tringa flavipes* (14) Greater yellowlegs *T. melanoleuca* (15) Solitary sandpiper *T. solitaria* (16) Spotted sandpiper *Actitis macularia* (17) Surfbird *Aphirza virgata* (18) Wandering tatler *Heteroscelus incanus* (19) Short-billed dowitcher *Limnodromus griseus* (22) Long-billed dowitcher *L. scolopaceus* (23) Wilson's snipe *Gallinago delicata* (24)	Nuiɬqhiq[6], nuiɬhaŋuapak[6] (1): Siyukpaligauraq[1] (2): Puviaqtuuq[1] (5): Livilivillakpak[1] (6): Livilivillauraq[1] (7): Puviaqtuuyaaq[1] (11): Aqpaqsruqti[1] (13): Qurraquraq[1] (14): Tiŋmiam qipmia[1] (17): Iksriktaayuuq[1] (23): Siyukpalik[1] (24): Nuugɬiq[3], kuukukiaq[1], pikpipiulaq[3], ikikiaqtuŋiq[6]	Qateghyiighaq[5] (1, 2): Terateriiq[2] (3): Teraateriiq[1] (4): Iglagllengiiq[1, 2] (19): Qalmesam qawaaga[1, 2]	
Loons and grebes			
Loon *Gavia* sp.		Yugayu[7], yuwayu[7] (any species), yuwayuaghaq[7] (juvenile or nonbreeding adult of any loon species)	
Common loon *Gavia immer*	Kaqshuk[3], tuullek[3], taachiŋiq[1], qaqsrauq[6]		
Pacific loon Pacific loon *G. pacifica* (1) Arctic loon *G. arctica* (2)	Kaqɬatuuk[3], malgi[1], qaqsrauq[6]	Melqupak[1, 2].	
Red-throated loon *G. stellata*	Qaqatak[3], qaqsrauq[6]	Eghqaaq[1, 2]	
Yellow-billed loon *G. adamsii*	Tuuɬik[5], tuutlik[1], king loon[4]	Nangqwalek[1, 2]	
Grebe Red-necked *grebe Podiceps griseana* (1) Horned grebe *P. auritus* (2)	(1): Suglitchauraq[1] (2): Sugliq[1]	Aqfasuget[1]	

Gray background indicates bird names used for more than one species.

( ): Numbers in parenthesis indicate the species or the composition of species likely to occur in each region.

[ ]: Numbers in brackets refer to the source of the local bird name.

[1] Romanenko et al. (1997)

[2] Jacobson et al. (2008)

[3] Paige et al. (1996)

[4] Ahmasuk and Trigg (2007)

[5] USFWS poster “Tiŋmiaġruich Maani Nunaptitni Qanutun Aŋuruamaŋaataɬhat - Birds of the subsistence harvest survey”. ~ 2004.

[6] Nelson et al. (2010)

[7] Zeller and Naves (unpublished)

[8] Mitchell Kiyuklook (Native Village of Savoonga, personal communication)

Appendix R.–Local and Alaska Native bird names, Northwest Arctic region.

Species or species group	Language: Iñupiat		Comments, corrections
	Dialect: North Slope Iñupiat (Kivalina)	Dialect: Malimiut Iñupiat (other Northwest Arctic villages)	
Ducks		Tiŋmiaġruich[7]	
American wigeon *Anas americana*	Ugiihiq[1, 2], uuwiuhiq	Ugiihiq, ubiiqhiq[7]	
Teal Green-winged teal *A. crecca*	Qaiŋŋiq[1, 2]	Qaiŋŋiq[1, 2, 7]	
Mallard *A. platyrhynchos*	Ivugasrugruk[1], ivugaq[3], kurugaqtaq[2], ugiuguk[6]	Ivugasrugruk[1], kuruġasugruk[7]	
Northern pintail *A. acuta*	Kurugaq[1, 2, 4], long-tailed duck[2], kuluraq[6]	Ivugaq, kuruġaq[7]	
Northern shoveler *A. clypeata*	Alluutaq[1], aluuttaq[2]	Aluuttaq[2, 7]	
Black scoter *Melanitta nigra*	Tuunġaaġrupiaq[1], nayaŋŋaĸ[1], uviñauyuk[1]	Tuunġaaġruk[7]	
Surf scoter *M. perspicillata*	Tuunġaaġruk[1], aviḷuktuq[3]	Killalik[1]	
White-winged scoter *M. fusca*	Killalik[1]		
Bufflehead *Bucephala albeola*		Nunuqsiġiiḷaq[1]	
Goldeneye Common goldeneye *B. clangula*	Anarniilnguq		
Canvasback *Aythya valisineria*			
Scaup Greater scaup *Aythya marila* (1) Lesser scaup *A. affinis* (2)	Qaqťukpalik[1], qaqťuktuuq[1, 2]	Qaqťuktuuq[1, 2], qaqťutuuq[7]	
Common eider *Somateria mollissima*	Amauligruaq[1, 2], amauligaaluk[6]	Amautligruaq, mitiq[7]	
King eider *S. spectabilis*	Kiŋalik[1], qiŋalik[2], kigaligaaluk[6]	Qiŋalik[2]	
Spectacled eider *S. fischeri*	Kiŋalik[1], qiŋalik[2], qavaasuk[6]	Qavaasuk[6]	
Steller's eider *Polysticta stelleri*	Igniqauqtuq[1, 2]	Iŋniqauqtuq	
Harlequin duck *Histrionicus histrionicus*	Saġvaq tiŋmiaq	Saġvam tiŋmiaq	
Long-tailed duck *Clangula hyemalis*	Ahaalik[1], aaqhaaliq[2], ahaaliq[6], oldsquaw, pintail[2]	Aahaaliq, ahaaliq[7], oldsquaw	
Merganser Common merganser *Mergus merganser* (1) Red-breasted merganser *M. serrator* (2)	Paisugruk[1], aqpaqsruyuuq[2]	(1): Suġliq, suġlitchauraq (2): Paisugruk	
Duck (unidentified)	Mitik(q)[1], kaugak[1]		
Geese		Liġliq[7]	
Brant Branta bernicla	Niġlinġak[1], niġlinġaq[2], nigliq[6]	Nigliġnauraq[7]	
Canada/cackling goose Taverner's Canada goose *Branta hutchinsii taverneri* (1) Lesser Canada goose *B. canadensis parvipes* (4)	Iqsraġutilik[1, 2], niglivik[6]	Iqsraġutilik[7]	
Greater white-fronted goose *Anser albifrons*	Niġlivaiḷuk[1], niġliq[2], Canada goose[2]	Kigiyuk[7]	
Emperor goose *Chen canagica*	mitilugruaq	Ligliqpak	

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Species or species group	Language: Iñupiat		Comments, corrections
	Dialect: North Slope Iñupiat (Kivalina)	Dialect: Malimiut Iñupiat (other Northwest Arctic villages)	
Lesser snow goose *C. caerulescens*	Kaŋuk[1], kaŋŋuq[2], kuŋuq[6]	Kaŋuq[7]	
Swans			
Tundra swan *Cygnus columbianus*	Quġruk[1, 2], kukzuk[6]	Qugruk[7]	
Cranes			
Sandhill crane *Grus canadensis*	Tatirgaq[1], tatirgak[2], tatizigaq[6]	Tattirgaq[7]	
Ptarmigans and grouses			
Spruce grouse *Falcipennis canadensis*	Napaaqtum aqargiq[1]	Napaaqtum aqargiq[7]	
Ptarmigan Willow ptarmigan *Lagopus lagopus* (1) Rock ptarmigan *L. muta* (2)	Aqargiq[1, 2] (1): Aarġiq, aqalgiq[1], kadgivik[4] (2): Niqsaaqtuŋiq[1], aqazigiq[6], niksaaktuŋiq[2], niksaktongik[4],	(1): Aqargiq[7]	
Seabirds			
Cormorant Pelagic cormorant *Phalacrocorax pelagicus*			
Tern Arctic tern *Sterna paradisea* (1) Aleutian tern *S. aleutica* (2)	Mitqutaiļaq[1], mitqutailļaq	Mitqutaiļaq	
Black-legged kittiwake *Rissa tridactyla*			
Sabine's gull *Xema sabini* (2)	Aqargiyiaq[1]	Aqargiyiaq	
Mew gull *Larus canus*		Nauyatchiaq	
Large gull Glaucous gull *L. hyperboreus*	Nauyavasrugruk[1], nauyyaq[2]	Nauyatchiaq	
Auklet Crested auklet *Aethia cristatella* (2) Least auklet *A. pusilla* (3) Parakeet auklet *A. psittacula* (4) Rhinoceros auklet *Cerorhinca monocerata* (6)			
Murre Common murre *Uria aalge* (1) Thick-billed murre *U. lomvia* (2)	Aqpak[1], akpa[2], atpa[3] (1): Aakpaliq[6] (2): Aakpaluuzaq[6]	Aqpa	
Guillemot Pigeon guillemot *Cephus columba* (1) Black guillemot *C. grille* (2)	Iŋaġiq[1, 2]	Iŋaġiq	
Puffin Tufted puffin F. *cirrhata* (1) Horned puffin *Fratercula corniculata* (2)	(1): Qiļaŋaq		
Shorebirds			
Whimbrel/curlew Whimbrel *Numenius phaeopus*	Siituvak[1], siituvuk[2]	Siituvuk	

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Species or species group	Language: Iñupiat		Comments, corrections
	Dialect: North Slope Iñupiat (Kivalina)	Dialect: Malimiut Iñupiat (other Northwest Arctic villages)	
Godwit Bar-tailed godwit *Limosa lapponica* (1) Hudsonian godwit *L. haemastica* (2)	Turraaturaq[1, 2]		
Golden/black-bellied plover American golden plover *Pluvialis dominica* (1) Black-bellied plover *P. fulva* (3)	Tuuligluk[5] (1): Tullik[1], tulik[2] (3): Tullikpak[1]	Tullik	
Turnstone Ruddy turnstone *Arenaria interpres* (1) Black turnstone *A. melanocephala* (2)	(1): Tullignaq[1], taliqvak[2]		
Phalarope Red-necked phalarope *Phalaropus lobatus* (1) Red phalarope *P. fulicaria* (2)	(1): Qayyiuġun[1, 2] (2): Auksruaq[1, 2]		
Small shorebird Dunlin *Calidris alpina* (1) Pectoral sandpiper *C. melanotos* (2) Rock sandpiper *C. ptilocnemis* (3) Western sandpiper *C. mauri* (4) Semipalmated sandpiper *C. pusilla* (5) Least sandpiper *C. minutilla* (6) Baird's sandpiper *C. bairdii* (7) Sanderling *C. alba* (11) Sharp-tailed sandpiper *C. acuminata* (12) Semipalmated plover *Charadrius semipalmatus* (13) Lesser yellowlegs *Tringa flavipes* (14) Greater yellowlegs *T. melanoleuca* (15) Solitary sandpiper *T. solitaria* (16) Spotted sandpiper *Actitis macularia* (17) Surfbird *Aphirza virgata* (18) Wandering tatler *Heteroscelus incanus* (19) Short-billed dowitcher *Limnodromus griseus* (22) Long-billed dowitcher *L. scolopaceus* (23) Wilson's snipe *Gallinago delicata* (24)	Saavġaq[2], Navliguarak[5] (1): Siyukpaligauraq[1], iḷḷauqtulik[2] (2): Puviaqtuuq[1], puvviagtuuq[2] (5): Livilivillakpak[1], liva livaqpauraq[2] (6): Livilivillauraq[1], laualuġauraq[2] (7): Puviaqtuuyaaq[1] (11): Aqpaqsruqti[1] (13): Qurraquraq[1], qurraaquraq[2] (14): Tiŋmiam qipmia[1] (17): Iksriktaayuuq[1] (23): Siyukpalik[1], siggukpalik[2] (24): Kuukukiaq[1]		
Loons and grebes			
Common loon *Gavia immer*		Taatchiŋiq	
Pacific loon Pacific loon *G. pacifica* (1) Arctic loon *G. arctica* (2)	Malġi[1], qaqsrauq[2]	Malġi	

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Species or species group	Language: Iñupiat		Comments, corrections
	Dialect: North Slope Iñupiat (Kivalina)	Dialect: Malimiut Iñupiat (other Northwest Arctic villages)	
Red-throated loon *G. stellata*	Qaksrauq[1], qaqsraupiabruk[2]	Qaksrauq, qaqsrauq, qaqsraupiabruk	
Yellow-billed loon *G. adamsii*	Tuutlik[1]	Tuutlik	
Grebe Red-necked grebe *Podiceps griseana* (1) Horned grebe *P. auritus* (2)	Malġi, qaqsrauq		

Gray background indicates bird names used for more than one species.

( ): Numbers in parenthesis indicate the species or the composition of species likely to occur in each region.

[ ]: numbers in brackets refer to the source of the local bird name.

[1] Webster et al. (1970) Note: the letter "k" with a dot underneath was replaced by "q."

[2] Bacon et al. (2009)

[3] USFWS poster "Tiŋmiaġruich Maani Nunaptitni Qanutun Aŋuruamaŋaataŀhat - Birds of the subsistence harvest survey". ~ 2004.

[5] Adams (B. Adams, North Slope Borough, Department of Wildlife Management, personal communication, 20 May 2010).

[6] Burch (1985).

[7] Georgette and Loon (1993)

Appendix S.–Local and Alaska Native bird names, North Slope region. Language: Iñupiat

Species or species group	Dialect: General North Slope	Dialect: Tikigak (Point Hope)	Dialect: Anaktuvuk Pass[3]	Comments, corrections
Ducks				
American wigeon *Anas americana*	Kurugaġnaq[1], ugiihiq[1], baldpate		Kurukaaluġusiq[1]	
Green-winged teal *A. crecca*	Kurukaaɬhusiq[1], qaiŋŋiq[1]		Korualorgosik[3]	
Mallard *A. platyrhynchos*	Ivugasrugruk[2], kurugaqtaq[4]		Ukhiukhiuq[1], ogiuguk[3]	
Northern pintail *A. acuta*	Ivugaq[2], Kurugak[1]		Kurugaq[3]	May refer to long-tailed duck[4]
Northern shoveler *A. clypeata*	Alluutaq[2]			
Black scoter *Melanitta nigra*	Tuunġaaġrupiaq[1], nayaŋŋak[1], uviñauyuk[1]			
Surf scoter *M. perspicillata*	Aiɬ,uqtuq[1], aviɬ,uqtuq[1], aviɬ,uqtaq[1], tuunġaaġruk[1]		Avilyuktok[3]	
White-winged scoter *M. fusca*	Killalik[1]		Tuunġaaġruk[1], tongargakruk[3]	
Scaup *Aythya* sp.	Qaqɬuqpalik[1], qaqɬuqtuuq[1]		Kaklutuk[3]	
Common eider *Somateria mollissima*	Amaullik[1], amauligruaq[1]	Amaulligaaluk[1]		
King eider *S. spectabilis*	Qiŋalik[1]	Qiŋaligaaluk[1]		
Spectacled eider *S. fischeri*	Qavaasuk[1]	Pirulliq[1] (male)		
Steller's eider *Polysticta stelleri*	Tuutalluk igniqauqtuq[1], igniqauqtuq[1]			
Female eider	aġnaviaq[1]			
Eider	mitiq[1]			
Harlequin duck *Histrionicus histrionicus*	Saġvaqsiuyuk[1], saġvaq tiŋmiaq[2]		Ahaliknak[3]	not in the survey form
Long-tailed duck *Clangula hyemalis*	Aaqhaaliq[1], arqiq[1], oldsquaw, pintail	Aaġaaliq[1]	Aahaaliq[1]	see northern pintail[4]
Red-breasted merganser *Mergus serrator*	Paisugruk[1], aqpaqsruayuuq[4]		Akpaksruayook[3]	
Geese				
Black brant *Branta bernicla*	Niġliŋġaq[1]		Niklinagak[3]	

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Species or species group	Dialect: General North Slope	Dialect: Tikigak (Point Hope)	Dialect: Anaktuvuk Pass[3]	Comments, corrections
Canada goose *B. hutchinsii taverneri*	Iqsraġutilik[1]		Eksrahgotolik[3]	see white-fronted goose[4]
Greater white-fronted goose *Anser albifrons*	Niġlivik[1], niġlivialuk[1], Canada goose[4]		Niklivik[3]	
Lesser snow goose *C. caerulescens*	Kaŋuk[1]		Kangok[3]	
Swans				
Tundra swan *Cygnus columbianus*	Qugruk[1]		Kogruk[3]	
Cranes				
Sandhill crane *Grus canadensis*	Tatirgak[1]		Tattidgak[3]	
Ptarmigans and grouses				
Grouse Spruce grouse *Falcipennis canadensis* (1) Sharp-tailed grouse *Tympanuchus phasianellus* (3)	(1): Napaaqtum aqargia[1] (1): Urgiiļgim aqargiq[2]		(1): Napaktom kadgia[3] (3): Odgillyim kadgia[3]	
Ptarmigan Willow ptarmigan *Lagopus lagopus* (1) Rock ptarmigan *L. muta* (2)	Qarqiq[1] (1): Aqargiq[1] (2): Niksaaktuŋiq[1]	(1): Aqalgiq[2]	(1): Kadgivik[3] (2): Niksaktongik[3]	
Female ptarmigan	Aġnavik[1]			
Seabirds				
Arctic tern *Sterna paradisea*	Mitqutaiƚaq[1]		Mitkotailyak[3]	
Sabine's gull *Xema sabini*	Igirraq[1], iqirgagiaq[1], aqargigiaq[2]		Qargagiaq[1], kadgagiak[3]	
Mew gull *Larus canus*	Nauyatchiaq[1]		Nauyatcheak[3]	not in the survey form
Large gull Glaucous gull *L. hyperboreus*	Nauyavasugruk[1]		Nauygavak[3]	
Murre Common murre *Uria aalge* (1) Thick-billed murre *U. lomvia* (2)	Akpa[1], atpa[1], aqpaq[2]	Akpaaluuraq[1]		
Black guillemot *C. grille*	Iŋaġiq[1]	Iŋaġiaq[1]		
Shorebirds				
Whimbrel/curlew Whimbrel *Numenius phaeopus*	Siituvak[1], siutuvak[2]		Sigguktuvak[1]	
Bar-tailed godwit *Limosa lapponica*	Turraaturaq[1]		Toratoruk[3]	
Golden/black-bellied plover American golden plover *Pluvialis dominica* (1) Pacific golden plover *P. squatarola* (2) Black-bellied plover *P. fulva* (3)	(1): Tuulligƚuk[4] (3): Tullisugruq[1], tuullikpak[1]		(1): Tullik[1], todlik[3] (3): Tullivak[1], todlivak[3]	

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Species or species group	Dialect: General North Slope	Dialect: Tikigak (Point Hope)	Dialect: Anaktuvuk Pass[3]	Comments, corrections
Turnstone Ruddy turnstone *Arenaria interpres* (1) Black turnstone *A. melanocephala* (2)	(1): Tullignaq[1], taliqvak[4]		Talivikeak[3]	
Phalarope Red-necked phalarope *Phalaropus lobatus* (1) Red phalarope *P. fulicaria* (2)	(1): Qayyiiġun[1], qayyiuġun[1] (2): Auksruaq[1]		(1): Kaiyiorgon[3] (2): Auksruak[3]	
Small shorebird Dunlin *Calidris alpina* (1) Pectoral sandpiper *C. melanotos* (2) Western sandpiper *C. mauri* (4) Semipalmated sandpiper *C. pusilla* (5) Least sandpiper *C. minutilla* (6) Baird's sandpiper *C. bairdii* (7) White-rumped sandpiper *C. fuscicollis* (8) Stilt sandpiper *C. himantopus* (9) Red-necked stint *C. ruficollis* (10) Sanderling *C. alba* (11) Sharp-tailed sandpiper *C. acuminata* (12) Semipalmated plover *Charadrius semipalmatus* (13) Lesser yellowlegs *Tringa flavipes* (14) Spotted Sandpiper *Actitis macularia* (17) Surfbird *Aphirza virgata* (18) Wandering tatler *Heteroscelus incanus* (19) Upland sandpiper *Bartramia longicauda* (20) Buff-breasted sandpiper *Tryngites subruficolis* (21) Long-billed dowitcher *L. scolopaceus* (23) Wilson's snipe *Gallinago delicata* (24)	Saavġaq[4], Navliguarak[5] (1): Qayuuttavak[1], siggukpaligauraq[1], iłłauqtulik[4] (2): Aiviqiaq[1], puviaqtuuq[2] (5): Livilivillakpak[2], liva livaqpauraq[4] (6): Livaluġauraq[1], lavluġauraq[1], livilivillauraq[2], laualuġauraq[4] (7): Puvviaqtuuyaaq[1] (8): Qupilġupsiuyuk[4] (11): Aqpaqsruqti[2] (13): Kurrakuraq[1], qurraquraq[1] (14): Tiŋmiam qipmia[2] (17): Iksriktaayuuq[2] (19): Siɬ,iɬ,isuqtuq[1] (21): Satqagiiɬ,aq[1] (23): Siiyukpalik[2] (24): Kuukukiaq[1], saavġaq[1]		(1): Kayutavak[3] (2): Poviaktook[3] (5): Livalivaq[1], liva liva[3] (6): Livalivauraq[1] (7): Nuvaksruk[1] (11): Kimmitquiɬ,aq [1] (13): Kodrakoruk[3] (14): Uviñŋuayuuq[1], Ovingoayook[3] (17): Uqɬaqtaq[1] (19): Silyirisoktok[3] (21): Aklaktak[3] (23): Kilyaktalik[3] (24): Avikiak[4]	
Loons and grebes				
Common loon *Gavia immer*	Taasiŋiq[1], taachiŋiq[1]		Tasingik[3]	not in the survey form
Pacific loon *G. pacifica*	Malġi[1]		Malirgik[3]	
Red-throated loon *G. stellata*	Qaqsrauq[1], qaqsraupiaġruk[4]		Qaksrauq[3]	
Yellow-billed loon *G. adamsii*	Tuutlik[2]		Tootlik[3]	
Owls				
Snowy owl *Nyctea scandiaca*	Ukpik[1]			

Gray background indicates bird names used for more than one species.

( ): Numbers in parenthesis indicate the species or the composition of species likely to occur in each region.

[ ]: numbers in brackets refer to the source of the local bird name.

[1] MacLean (2011)

[2] Webster and Zibell (1970)

[3] Irving (1953)

[4] Bacon et al. (2009)

[5] Adams (B. Adams, personal communication, North Slope Borough, Department of Wildlife Management. 20 May 2010).

Appendix T.–Local and Alaska Native bird names, Interior Alaska region.

Species or species group	Yukon-Koyukuk Language: Koyukon[6]	Mid Yukon-Upper Kuskokwim Language: Holikachuk[7]	Tanana subregion Language: Tanana [1, 2]	Upper Yukon subregion Language: Gwich'in [3, 4, 5]	Comments, corrections
Ducks					
American wigeon *Anas americana*	Seseeye, seey		Shah ąi ɣ[2]	Chalvi[5], chalvii[4]	
Teal Green-winged teal *A. crecca* (1) Blue-winged teal *A. discors* (2)	Hʉndzʉghʉtl, k'etsutl, tobaa he'eɬghele, tobaa he'et'eggee		Tuhtsil[2]	Chi'idzinh[5]	
Mallard *A. platyrhynchos*	Tletkkʉghuyh		T'aiy choh[2]	Neet'ak cho[5]	
Northern pintail *A. acuta*	K'edzonule, k'eeɬnaaɬge		Dzehnia[2]	Ch'irrinjaa[5]	
Northern shoveler *A. clypeata*	Delolegge		dilahchuuiy[2], dałahɬ'ag[2], spoonbill[1]	Dehdrik[4]	
Black scoter *Melanitta nigra*	Dets'en zene, zen				
Surf scoter *M. perspicillata*	Dotson'elaaye, dotso'ole		Taatsqąą'al[2]	Deetree'aa[4]	
White-winged scoter *M. fusca*	Ts'enh daadleggʉye		Black duck[1], nal[2]	Black duck[3], njaa[d]	
Bufflehead *Bucephala albeola*	Kk'oloy telkkege	Butterball[7]		Tɬ'aandii[3]	
Goldeneye Common goldeneye *B. clangula* (1) Barrow's gondeneye *B. islandica* (2)	Bentl'o dzaah ledloye, dekeenoye	Copperhead[7]		Chiikii[5], chiik'ii[4]	
Canvasback *Aythya valisineria*					
Scaup Greater scaup *A. marila* (1) Lesser scaup *A. affinis* (2)	Tontseedle, tontsegheedle		nal t̲hoo[2], bluebill[1]	(1): Taiinchoo[5]	
Harlequin duck *Histrionicus histrionicus*					
Long-tailed duck *Clangula hyemalis*	Aanhaage, k'edeetenaale, nodebaaye, oldsquaw			aahalak[5], aahaalak[4]	
Merganser Common merganser *Mergus merganser* (1) Red-breasted merganser *M. serrator* (2)	Tseghuɬ				

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Species or species group	Yukon-Koyukuk Language: Koyukon[6]	Mid Yukon-Upper Kuskokwim Language: Holikachuk[7]	Tanana subregion Language: Tanana [1, 2]	Upper Yukon subregion Language: Gwich'in [3, 4, 5]	Comments, corrections
Geese					
Black brant *Branta bernicla*	K'edeełgho nodaale, dets'en yoze				Species not in the Interior Alaska form
Lesser Canada goose *B. canadensis parvipes*	Belaalzene, delgahaa'e, huh		T'aaxadn[2], xah[2]	Khaih[5]	
Greater white-fronted goose *Anser albifrons*	K'edot'aagge		dzanthat[2], speckle-bellies[1], laughing goose[3]	deechy'ah[5]	
Lesser snow goose *C. caerulescens*	Hʉggʉh			Gwigeh[5]	
Swans	Tobaa				
Swan Tundra swan *Cygnus columbianus* (1) Trumpeter swan *C. buccinator* (2)			Taagoh[2]		
Cranes					
Sandhill crane *Grus canadensis*				Jyah[4]	
Ptarmigans and grouses					
Grouse Spruce grouse *Falcipennis canadensis* (1) Ruffed grouse *Bonasa umbellus* (2) Sharp-tailed grouse *Tympanuchus phasianellus* (3)	Tsonggude, donaatlyeedze, k'edełnenee, tsonggude, k'etlede		(1): Daih[2] (2): Ch'ahtagn[2] (3): Tsąą'ts'uu[2]	(1): Daih[4] (2): Treeqwat[4] (3): Ch'ahtal[4]	
Ptarmigan Willow ptarmigan *Lagopus lagopus* (1) Rock ptarmigan *L. muta* (2) White-tailed ptarmigan *L. leucura* (3)	Daaggoo, daak'aa		(1): K'atbah[2]	(1): Daagoo[4] (2): Daaky'aa[4]	
Seabirds					
Arctic tern *Sterna paradisea*	Chaalggeze				
Bonaparte's gull *Larus philadelphia*	Tleelzene, keel yoze				
Mew gull *Larus canus*					

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Species or species group	Yukon-Koyukuk Language: Koyukon[6]	Mid Yukon-Upper Kuskokwim Language: Holikachuk[7]	Tanana subregion Language: Tanana [1, 2]	Upper Yukon subregion Language: Gwich'in [3, 4, 5]	Comments, corrections
Large gulls Herring gull *L. argentatus*	Tsusge				
Shorebirds					
Whimbrel *Numenius phaeopus*	Bedelts'edle				
Godwit Hudsonian godwit *L. haemastica*					
Golden/black-bellied plover American golden plover *Pluvialis dominica* (1) Pacific golden plover *P. squatarola* (2) Black-bellied plover *P. fulva* (3)	Bebede ses				
Phalaropes Red-necked phalarope *Phalaropus lobatus* (1) Red phalarope *P. fulicaria* (2)	Tolyedle, nekkaa'ule, tolghedle, negge doole				
Small shorebird Dunlin *Calidris alpina* (1) Pectoral sandpiper *C. melanotos* (2) Rock sandpiper *C. ptilocnemis* (3) Western sandpiper *C. mauri* (4) Semipalmated sandpiper *C. pusilla* (5) Least sandpiper *C. minutilla* (6) Baird's sandpiper *C. bairdii* (7) Sanderling *C. alba* (11) Semipalmated plover *Charadrius semipalmatus* (13) Lesser yellowlegs *Tringa flavipes* (14) Greater yellowlegs *T. melanoleuca* (15) *(continued on next page)*					

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Species or species group	Yukon-Koyukuk Language: Koyukon[6]	Mid Yukon-Upper Kuskokwim Language: Holikachuk[7]	Tanana subregion Language: Tanana [1, 2]	Upper Yukon subregion Language: Gwich'in [3, 4, 5]	Comments, corrections
Solitary sandpiper *T. solitaria* (16) Spotted sandpiper *Actitis macularia* (17) Surfbird *Aphirza virgata* (18) Wandering tatler *Heteroscelus incanus* (19) Upland sandpiper *Bartramia longicauda* (20) Short-billed dowitcher *Limnodromus griseus* (22) Long-billed dowitcher *L. scolopaceus* (23) Wilson's snipe *Gallinago delicata* (24)					
Loons and grebes					
Common loon *Gavia immer*	Dodzene				
Pacific loon *G. pacifica*	Tl'edlebaa, ts'edlemaa				
Red-throated loon *G. stellata*	Tok'ootseghe				
Yellow-billed loon *G. adamsii*	Dodebeeye				Species not in the Interior Alaska form
Grebe Red-necked grebe *Podiceps griseana* (1) Horned grebe *P. auritus* (2)	Dzeeyaakk, yaakk, todzaagge, tokkaa'e				

Gray background indicates bird names used for more than one species.

( ) Numbers in parenthesis indicate the species or the composition of species likely to occur in each region.

[ ] Numbers in brackets refer to the source of the local bird name.

[1] Andersen and Jennings (2001a)

[2] Haynes and Simeone (2007)

[3] Andersen and Jennings (2001b)

[4] Sumida and Andersen (1990)

[5] Caulfield (1983)

[6] Jules and Jones (2000)

[7] Holen et al. (2006)

Appendix U.–Local and Alaska Native bird names, Upper Copper region.

Species or species group	Language: Ahtna[1]	Comments, corrections
Ducks		
American wigeon *Anas americana*	Sahsiin	
Teal Green-winged teal *A. crecca* (1) Blue-winged teal *A. discors* (2)	Tsos	
Mallard *A. platyrhynchos*	Kedeltsiigi	
Northern pintail *A. acuta*	Sahnaezi, sehnaezi	
Northern shoveler *A. clypeata*	Dalałagga, udaditaani	
Black scoter *Melanitta nigra*	Neli	
Surf scoter *M. perspicillata*		
White-winged scoter *M. fusca*	C'udełyiisi, tatsaan'eli, tatsaan'leh	
Bufflehead *Bucephala albeola*	Kaskae utse'e, tuhtsedl	
Goldeneye Common goldeneye *B. clangula* (1) Barrow's gondeneye *B. islandica* (2)	Kaskae utse'e	
Canvasback *Aythya valisineria*	Ndzeli	
Scaup Greater scaup *A. marila* (1) Lesser scaup *A. affinis* (2)	Tsitk'aani, naltsoghi	
Harlequin duck *Histrionicus histrionicus*	Dzeł dziidze'	
Long-tailed duck *Clangula hyemalis*	'Ah'ala'	
Merganser Common merganser *Mergus merganser* (1) Red-breasted merganser *M. serrator* (2)	tseghos	
Geese		
Lesser Canada goose *B. canadensis parvipes*	Xax	
Greater white-fronted goose *Anser albifrons*	Daghedi	
Lesser snow goose *C. caerulescens*	Ts'enlazeni	
Swans		
Swan Tundra swan *Cygnus columbianus* (1) Trumpeter swan *C. buccinator* (2)	 (1): Nalt'uuy (2): Kaggos	
Cranes		
Sandhill crane *Grus canadensis*		
Ptarmigans and gouses		
Grouse Spruce grouse *Falcipennis canadensis* (1) Ruffed grouse *Bonasa umbellus* (2) Sharp-tailed grouse *Tympanuchus phasianellus* (3)	 Tsaan' ts'uus, c'ełtagi, deyh, 'eł dyaani	
Ptarmigan Willow ptarmigan *Lagopus lagopus* (1) Rock ptarmigan *L. muta* (2) White-tailed ptarmigan *L. leucura* (3)	 Lacbeh, laggoni, dzeł k'aale'	
Seabirds		
Arctic tern *Sterna paradisea*	Cidelggezi, tl'ests'aey	
Bonaparte's gull *Larus philadelphia*	Tsidelt'uudzi	
Mew gull *L. canus*	Bentah nalbaey	

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Species or species group	Language: Ahtna[1]	Comments, corrections
Large gulls Herring gull *L. argentatus*	Ts'itu' nalbaey	
Shorebirds		
Whimbrel *Numenius phaeopus*		
Godwit *Limosa* sp.		
Golden/black-bellied plover American golden plover *Pluvialis dominica* (1) Pacific golden plover *P. squatarola* (2) Black-bellied plover *P. fulva* (3)	Sos dghaec dit'aenn	
Phalarope Red-necked phalarope *Phalaropus lobatus* (1) Red phalarope *P. fulicaria* (2)	Tekastnisigi	
Small shorebird Dunlin *Calidris alpina* (1) Pectoral sandpiper *C. melanotos* (2) Rock sandpiper *C. ptilocnemis* (3) Western sandpiper *C. mauri* (4) Semipalmated sandpiper *C. pusilla* (5) Least sandpiper *C. minutilla* (6) Baird's sandpiper *C. bairdii* (7) Sanderling *C. alba* (11) Semipalmated plover *Charadrius semipalmatus* (13) Lesser yellowlegs *Tringa flavipes* (14) Greater yellowlegs *T. melanoleuca* (15) Solitary sandpiper *T. solitaria* (16) Spotted sandpiper *Actitis macularia* (17) Surfbird *Aphirza virgata* (18) Wandering tatler *Heteroscelus incanus* (19) Upland sandpiper *Bartramia longicauda* (20) Short-billed dowitcher *Limnodromus griseus* (22) Long-billed dowitcher *L. scolopaceus* (23) Wilson's snipe *Gallinago delicata* (24)		
Loons and grebes		
Common loon *Gavia immer*	Dadzeni	
Pacific loon *G. pacifica*	Ts'elbae	
Red-throated loon *G. stellata*		
Grebe Red-necked grebe *Podiceps griseana* (1) Horned grebe *P. auritus* (2)	Senaye, łighay'bet'	

Gray background indicates bird names used for more than one species.

( ) Numbers in parenthesis indicate the species or the composition of species likely to occur in each region.

[ ]: Numbers in brackets refer to the source of the local bird name.

[1] Kari (1990)

Appendix V.–Local and Alaska Native bird names, Southeast Alaska region.

Species or species group	Language: Tlingit	Comments, corrections
Ducks		
American wigeon *Anas americana*		
Teal Green-winged teal *A. crecca* (1) Blue-winged teal *A. discors* (2)	S'elasheesh[1] (1) Kindachooneit[1], atsik'íye[2] (?)	Kindachooneit may also refer to northern pintail or canvasback [1]
Mallard *A. platyrhynchos*	Kindachooneit[1, 3]	see green-winged teal, northern pintail and canvasback
Northern pintail *A. acuta*	Kindachooneit[1]	Kindachooneit may also refer to green-winged teal, northern pintail and/or canvasback. [1]
Northern shoveler *A. clypeata*	S'elasheesh[2] (?), flathead duck?[3]	
Black scoter *Melanitta nigra*		
Surf scoter *M. perspicillata*	Lak'eech'wú[1], tlakwch'ísh [1]	see rhinoceros auklet
White-winged scoter *M. fusca*	Wakkals'óox' gáaxw[1]	
Bufflehead *Bucephala albeola*	Hintakx'was'gi[1, 3], dipper bottom	
Goldeneye Common goldeneye *B. clangula* (1) Barrow's gondeneye *B. islandica* (2)	Hinyik-gáaxu[1, 3], lingit-gáaxu[1]	
Canvasback *Aythya valisineria*		
Scaup Greater scaup *A. marila* (1) Lesser scaup *A. affinis* (2)	Atsik'íye[1], bluebill	
Harlequin duck *Histrionicus histrionicus*	S'ús'[1, 3], hinyík káawu [1]	
Long-tailed duck *Clangula hyemalis*	Yaa.aa.uné[1, 3], aa.aa.uné[1], oldsquaw, pintail	
Merganser Common merganser *Mergus merganser* (1) Red-breasted merganser *M. serrator* (2)	Salxúts[1], shalxwáts[1], chaax[1], kaax[1, 3], sawbill[3]	Chaax or kaax are commonly also applied to grebes and marbled murrelet [1]
Geese		
Black brant *Branta bernicla*	Kín[1, 3]	see greater white-fronted goose
Canada goose Vancouver Canada goose *B. canadensis fulva* (6)	T'aawák[1, 3]	
Greater white-fronted goose *Anser albifrons*	Kín[1]	
Snow goose *C. caerulescens*		
Swans		
Swan Tundra swan *Cygnus columbianus* (1) Trumpeter swan *C. buccinator* (2)	Gúkl'[1, 3]	
Cranes		
Sandhill crane *Grus canadensis*	Dool[1, 3]	

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Species or species group	Language: Tlingit	Comments, corrections
Ptarmigans and grouses		
Grouse Spruce grouse *Falcipennis canadensis* (1) Ruffed grouse *Bonasa umbellus* (2) Blue grouse *Dendragapus obscurus* (4)	Káax'[3] (1) Ltaayí[1], fool hen (2) Kus'oolgé[1] (4) Núkt[1] (male), káax'[1] (female)	
Ptarmigan Willow ptarmigan *Lagopus lagopus* (1) Rock ptarmigan *L. muta* (2) White-tailed ptarmigan *L. leucura* (3)	 (1) X'eis'awáa[1, 3] (2) Shaayadaa x'eis'awáayi[1]	
Seabirds		
Cormorant Pelagic cormorant *Phalacrocorax pelagicus* (1) Double-crested cormornat *P. auritus* (2)	 (1) Yook[1, 3] (2) X'adaax'aan[1]	
Arctic tern *Sterna paradisea*	Kootl'éet'aa[1], kool'éit'áa[1], kichyaat[2, 3]	
Black-legged kittiwake *Rissa tridactyla*	K'eikw'w[1]	
Bonaparte's gull *Larus philadelphia*	Kootl'éet'aa, kool'éit'áa[1]	could also refer to arctic tern or mew gull[1]
Mew gull *Larus canus*	Kootl'éet'aa[1], kool'éit'áa[1]	could also refer to arctic tern or mew gull[1]
Large gulls Glaucous-winged gull *L. glaucescens* (1) Herring gull *L. argentatus* (3)	Kéidladi[1] kéidladiyéis'[1], kéidladik'í[1]: brownish young gulls. lawúxh[1]: general term for immature gulls.	
Auklet Cassin's auklet *Ptychoramphus aleuticus* (1) Rhinoceros auklet *Cerorhinca monocerata* (6)	 (6) Tlakwch'ísh[1], lakwch'ísh[1], xík[3]	tlakwch'ísh: see surf scoter
Murre Common murre *Uria aalge* (1) Thick-billed murre *U. lomvia* (2)	Keel[1]	
Pigeon guillemot *Cephus columba*	X'adaax'aan[1]	
Puffin Tufted puffin *F. cirrhata* (1) Horned puffin *Fratercula corniculata* (2)	 (1) Xík[1], lugán[3] (2) Lugwáach'[1], lugwát[1]	lugwáach', lugwát may also refer to rhinoceros auklet[1]
Shorebirds	At'akéenyu.aa[1], daak'u[1], t'aak'u[1], snipe, sand snipe	
Black oystercatcher *Haematopus bachmani*	Lugán[1]	
Whimbrel *Numenius phaeopus*	Ayaheeyáa[1, 3]	
Golden/black-bellied plover American golden plover *Pluvialis dominica* (1) Pacific golden plover *P. squatarola* (2) Black-bellied plover *P. fulva* (3)		
Turnstone Ruddy turnstone *Arenaria interpres* (1) Black turnstone *A. melanocephala* (2)	 (2) X'at'daayéejayi[1]	

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Species or species group	Language: Tlingit	Comments, corrections
Red-necked phalarope *Phalaropus lobatus*	Ch'eet[1]	
Small shorebird Dunlin *Calidris alpina* (1) Pectoral sandpiper *C. melanotos* (2) Rock sandpiper *C. ptilocnemis* (3) Red knot *C. canutus* (25) Western sandpiper *C. mauri* (4) Semipalmated sandpiper *C. pusilla* (5) Least sandpiper *C. minutilla* (6) Sanderling *C. alba* (11) Semipalmated plover *Charadrius semipalmatus* (13) Lesser yellowlegs *Tringa flavipes* (14) Greater yellowlegs *T. melanoleuca* (15) Solitary sandpiper *T. solitaria* (16) Spotted sandpiper *Actitis macularia* (17) Surfbird *Aphirza virgata* (18) Wandering tatler *Heteroscelus incanus* (19) Short-billed dowitcher *Limnodromus griseus* (22) Long-billed dowitcher *L. scolopaceus* (23) Wilson's snipe *Gallinago delicata* (24)	Hinxukadzéedzi[1], snipe (4) Hinxukadzéedzi[1] (5) Sedaadak'éedaa[1], sedaadakh'éedaa (6) Gus'yadóoli[1], hinxhukadzéedzi[2] (13)Sedaadak'éedaa[1] (14) Séitaa[1] (15) Séitaa tlein[1] (22) Ėek lukakées'i[1] (23) Lu.áadaa[1]	
Loons and grebes		
Common loon *Gavia immer*	Kagit[1]	
Pacific loon *G. pacifica*	Yeekagáaxi[1]	
Red-throated loon *G. stellata*	Yeekagáaxi[1]	
Grebe Red-necked grebe *Podiceps griseana* (1) Horned grebe *P. auritus* (2)	Chaax[1, 3], kaax[1], hell diver (1) Ch'eet[1]	

( ): Numbers in parenthesis indicate the species or the set of species likely to occur in this region.

[ ]: Numbers in brackets refer to the source of the local bird name.

[1] Hunn and Thornton (2010)

[2] Hunn et al (2002)

[3] Davis and Leer (1976)

Appendix W.–Formulas to calculate subregion estimated harvests, variances, and confidence intervals (3-stage stratified cluster sampling).

$$X_s = \frac{N_{1s}}{n_{1s}}\left[\sum_{i=1}^{h}\frac{N_{2si}}{n_{2si}}\left[\sum_{j=1}^{h_i}\frac{N_{3sij}}{n_{3sij}}\left[\sum_{k=1}^{n_{3sij}} x_{sijk}\right]\right]\right]$$

This formula accounts for missing strata, but it does not account for missing seasons. If a whole season is missing for any village, analytical procedures are necessary to fill out missing data with average harvests.

$$Var(X_s) = N_{1s}^2\left(1-\frac{n_{1s}}{N_{1s}}\right)\frac{s_{1s}^2}{n_{1s}} + \frac{N_{1s}}{n_{1s}}\left[\sum_{i=1}^{h} N_{2si}^2\left(1-\frac{n_{2si}}{N_{2si}}\right)\frac{s_{2si}^2}{n_{2si}}\right] + \frac{N_{1s}}{n_s}\left[\sum_{i=1}^{h}\frac{N_{2si}}{n_{2si}}\left[\sum_{j=1}^{h_i} N_{3sij}^2\left(1-\frac{n_{3sij}}{N_{3sij}}\right)\frac{s_{3sij}^2}{n_{3sij}}\right]\right]$$

$$CI(X_s) = t_{1/\alpha}\times\sqrt{\mathrm{var}(X_s)} \qquad CIP(X_s) = t_{1/\alpha}\times\sqrt{\mathrm{var}(X_s)}\,\frac{1}{X_s}$$

Where:

$$s_{1s}^2 = \frac{\sum_{i=1}^{h}\left[\sum_{j=1}^{h_i}\left[\left[\sum_{k=1}^{n_{3sij}}\left(x_{sijk}-\bar{x}_s\right)^2\right]+\left(\bar{x}_{sij}-\bar{x}_s\right)^2 p_{3sij}\right]\right]}{n_{1s}} \qquad p_{3sij} = N_{3sij} - n_{3sij}$$

$$s_{2si}^2 = \frac{\sum_{j=1}^{h_i}\left[\left[\sum_{k=1}^{n_{3sij}}\left(x_{sijk}-\bar{x}_{si}\right)^2\right]+\left(\bar{x}_{sij}-\bar{x}_{si}\right)^2 p_{3sij}\right]}{n_{2si}} \qquad s_{3sij}^2 = \frac{\left[\sum_{k=1}^{n_{3sij}}\left(x_{sijk}-\bar{x}_{sij}\right)^2\right]}{n_{3sij}}$$

$$\bar{x}_s = \frac{\frac{N_{1s}}{n_{1s}}\left[\sum_{i=1}^{h}\frac{N_{2si}}{n_{2si}}\left[\sum_{j=1}^{h_i}\frac{N_{3sij}}{n_{3sij}}\left[\sum_{k=1}^{n_{3sij}} x_{sijk}\right]\right]\right]}{N_{1s}}$$

$$\bar{x}_{si} = \frac{\frac{N_{2si}}{n_{2si}}\left[\sum_{j=1}^{h_i}\frac{N_{3sij}}{n_{3sij}}\left[\sum_{k=1}^{n_{3sij}} x_{sijk}\right]\right]}{N_{2si}}$$

$$\bar{x}_{sij} = \frac{\frac{N_{3sij}}{n_{3sij}}\left[\sum_{k=1}^{n_{3sij}} x_{sijk}\right]}{N_{3sij}}$$

X_S = Subregion estimated harvest.

$Var(X_s)$ = Variance of subregional harvest estimate.

CI = Confidence interval.

CIP = Confidence interval percentile.

s = Subscript that denotes first-stage units (subregion).

i = Subscript that denotes second-stage units (sampled harvest level strata).

j = Subscript that denotes third-stage unit (harvest level strata).

k = Subscript that denotes households.

h = Total number of villages sampled in a subregion.

h_i = Total number of strata sampled in the village.

N_{1s} = Total number of households in subregion *s.*

n_{1s} = Total number of households in sampled villages in subregion *s.*

N_{2si} = Total number of households in all strata of a village in subregion *s.*

n_{2si} = Total number of households in sampled strata of a village in subregion *s.*

N_{3sij} = Total number of households in each stratum of a village in subregion *s.*

n_{3sij} = Number of households sampled in each stratum of a village in subregion *s.*

x_{sijk} = Individual household reported harvest.

s_1^2 = First-stage sample variance.

s_2^2 = Second-stage sample variance.

s_3^2 = Third-stage sample variance (harvest level strata).

$\bar{x}$ = Weighted household harvest average.

$\bar{x}_s$ = average subregional household harvest.

$\bar{x}_{si}$ = average village household harvest.

$\bar{x}_{sij}$ = average household harvest at harvest level strata.

P_{3sij} = Factor to account for variance of non-sampled households for which a average harvest was applied.

$t_{1/\alpha}$ = Student's *t* distribution value with tail area probability α.

Note: The term "N_{2si}/n_{2s}" accounts for missing stratum at the village level; this term equals 1 if all strata in the village have been surveyed. For instance:

	None	*Low*	*High*	
Total households	20	40	20	$N_{2si} = 80$
Sampled households	0	20	20	$n_{2si} = 60$

Appendix X.–Formulas to calculate region estimated harvests, variances, and confidence intervals (4-stage stratified sampling)

$$X_r = \frac{N_{1r}}{n_{1r}}\left[\sum_{s=1}^{h}\frac{N_{2rs}}{n_{2rs}}\left[\sum_{i=1}^{h_s}\frac{N_{3rsi}}{n_{3rsi}}\left[\sum_{j=1}^{h_{si}}\frac{N_{4rsij}}{n_{4rsij}}\left[\sum_{k=1}^{n_{4rsij}}x_{rsijk}\right]\right]\right]\right]$$

This formula accounts for missing strata, but it does not account for missing seasons. If a whole season is missing for any village, analytical procedures are necessary to fill out missing data with average harvests.

$$Var(X_r) = N_{1r}^2\left(1-\frac{n_{1r}}{N_{1r}}\right)\frac{s_{1r}^2}{n_{1r}} + \frac{N_{1r}}{n_{1r}}\left[\sum_{s=1}^{h}N_{2rs}^2\left(1-\frac{n_{2rs}}{N_{2rs}}\right)\frac{s_{2rs}^2}{n_{2rs}}\right] + \frac{N_{1r}}{n_{1r}}\left[\sum_{s=1}^{h}\frac{N_{2rs}}{n_{2rs}}\left[\sum_{i=1}^{h_s}N_{3rsi}^2\left(1-\frac{n_{3rsi}}{N_{3rsi}}\right)\frac{s_{3rsi}^2}{n_{3rsi}}\right]\right]$$

$$+\frac{N_{1r}}{n_{1r}}\left[\sum_{s=1}^{h}\frac{N_{2rs}}{n_{2rs}}\left[\sum_{i=1}^{h_s}\frac{N_{3rsi}}{n_{3rsi}}\left[\sum_{j=1}^{h_{si}}N_{4rsij}^2\left(1-\frac{n_{4rsij}}{N_{4rsij}}\right)\frac{s_{4rsij}^2}{n_{4rsij}}\right]\right]\right]$$

$$CI(X_r) = t_{1/\alpha}\times\sqrt{\mathrm{var}(X)} \qquad CIP(X_r) = t_{1/\alpha}\times\sqrt{\mathrm{var}(X)}\,\frac{1}{X_r}$$

Where:

$$s_{1r}^2 = \frac{\sum_{s=1}^{h}\left(\sum_{i=1}^{h_s}\left[\sum_{j=1}^{h_{si}}\left[\left[\sum_{k=1}^{n_{4rsij}}\left(x_{rsijk}-\bar{x}_r\right)^2\right]+(\bar{x}_{rsij}-\bar{x}_r)^2\,p_{4rsij}\right]\right]\right)}{n_{1r}} \qquad p_{4rsij} = N_{4rsij}-n_{4rsij}$$

$$s_{2rs}^2 = \frac{\sum_{i=1}^{h_s}\left[\sum_{j=1}^{h_{si}}\left[\left[\sum_{k=1}^{n_{4rsij}}\left(x_{rsijk}-\bar{x}_{rs}\right)^2\right]+(\bar{x}_{rsij}-\bar{x}_{rs})^2\,p_{4rsij}\right]\right]}{n_{2rs}}$$

$$s_{3rsi}^2 = \frac{\sum_{j=1}^{h_{si}}\left[\left[\sum_{k=1}^{n_{4rsij}}\left(x_{rsijk}-\bar{x}_{rsi}\right)^2\right]+(\bar{x}_{rsij}-\bar{x}_{rsi})^2\,p_{4rsij}\right]}{n_{3rsi}} \qquad s_{4rsij}^2 = \frac{\left[\sum_{k=1}^{n_{4rsij}}\left(x_{rsijk}-\bar{x}_{rsij}\right)^2\right]}{n_{4rsij}}$$

$$\bar{x}_r = \frac{\frac{N_{1r}}{n_{1r}}\left[\sum_{s=1}^{h}\frac{N_{2rs}}{n_{2rs}}\left[\sum_{i=1}^{h_s}\frac{N_{3rsi}}{n_{3rsi}}\left[\sum_{j=1}^{h_{si}}\frac{N_{4rsij}}{n_{4rsij}}\left[\sum_{k=1}^{n_{4rsij}}x_{rsijk}\right]\right]\right]\right]}{N_{1r}} \qquad \bar{x}_{rs} = \frac{\frac{N_{2rs}}{n_{2rs}}\left[\sum_{i=1}^{h_s}\frac{N_{3rsi}}{n_{3rsi}}\left[\sum_{j=1}^{h_{si}}\frac{N_{4rsij}}{n_{4rsij}}\left[\sum_{k=1}^{n_{4rsij}}x_{rsijk}\right]\right]\right]}{N_{2rs}}$$

$$\bar{x}_{rsi} = \frac{\frac{N_{3rsi}}{n_{3rsi}}\left[\sum_{j=1}^{h_{si}}\frac{N_{4rsij}}{n_{4rsij}}\left[\sum_{k=1}^{n_{4rsij}}x_{rsijk}\right]\right]}{N_{3rsi}} \qquad \bar{x}_{rsij} = \frac{\frac{N_{4rsij}}{n_{4rsij}}\left[\sum_{k=1}^{n_{4rsij}}x_{rsijk}\right]}{N_{4rsij}}$$

X_r = Region estimated harvest.
$\mathrm{Var}(X_r)$ = Variance of region harvest estimate.
r = Subscript denoting first-stage units (region).
s = Subscript denoting second-stage units (subregion).
i = Subscript denoting third-stage units (sampled harvest level strata).
j = Subscript denoting fourth-stage unit (harvest level strata).
k = Subscript denoting individual households.
h = Total sampled subregions in region r.
h_s = total sampled villages in subregion s.
h_{si} = Total sampled strata in the village.
N_{1r} = Total number of households in region *r*.
n_{1r} = Total number of households in sampled subregions in region *r*.
N_{2rs} = Total number of households in subregion *s*.
n_{2rs} = Total number of households in sampled villages in subregion *s*.
N_{3rsi} = Total number of households in all strata of a village.
n_{3rsi} = Total number of households in sampled strata of a village.
N_{4rsij} = Total number of households in each stratum of a village.
n_{4rsij} = Number of households sampled in each stratum of a village.
x_{rsijk} = Individual household reported harvest.
s_1^2 = First-stage sample variance.
s_2^2 = Second-stage sample variance.
s_3^2 = Third-stage sample variance.
s_4^2 = Fourth-stage sample variance.
$\bar{x}$ = Weighted household harvest average.
$\bar{x}_r$ = average regional household harvest.
$\bar{x}_{rs}$ = average subregional household harvest.
$\bar{x}_{rsi}$ = average village household harvest.
$\bar{x}_{rsij}$ = average household harvest at harvest level strata.
P_{4rsij} = Factor to account for variance of non-sampled households for which a average harvest was applied.
CI = Confidence interval.
CIP = Confidence interval percentile.
$t_{1/\alpha}$ = Student's *t* distribution value with tail area probability α.

Note: The term "N3rsi/n3rsi" accounts for missing stratum at the village level; this term equals 1 if all strata in the village have been surveyed. For instance:

	None	*Low*	*High*	
Total households	20	40	20	$N_{3rsi} = 80$
Sampled households	0	20	20	$n_{3rsi} = 60$

Appendix Y.–Regions, subregions, and villages surveyed, 2004–2010.

Region, subregion, village	2004	2005	2006	2007	2008	2009	2010
Gulf of Alaska-Cook Inlet							
Gulf of Alaska							
Chenega Bay	-	-	x	-	-	-	x
Nanwalek	x	-	-	-	-	-	x
Port Graham	x	-	x	-	-	-	-
Tatitlek	x	-	-	-	-	-	-
Cook Inlet							
Tyonek	x	x	-	-	-	-	-
Kodiak Archipelago							
Kodiak Villages							
Akhiok	-	-	x	-	-	-	x
Karluk	-	-	x	-	-	-	x
Larsen Bay	-	-	x	-	-	-	x
Old Harbor	-	-	x	-	-	-	-
Ouzinkie	-	-	x	-	-	-	-
Port Lions	-	-	-	-	-	-	x
Kodiak City and Road-connected							
Aleneva	-	-	-	-	-	-	-
Chiniak	-	-	-	-	-	-	-
Kodiak City	-	-	x	-	-	-	-
Kodiak Station	-	-	-	-	-	-	-
Kodiak at large (remainder of Kodiak Island Borough)	-	-	-	-	-	-	x
Women's Bay	-	-	-	-	-	-	x
Aleutian-Pribilof Islands							
Aleutian-Pribilof Villages							
Adak	-	-	-	-	-	-	-
Akutan	-	x	-	x	x	-	-
Atka	-	x	-	-	-	-	-
Cold Bay	-	x	-	-	-	-	-
False Pass	-	-	-	-	x	-	-
King Cove	-	x	-	-	x	-	-
Nelson Lagoon	-	-	-	-	-	-	-
Nikolski	-	-	-	-	-	-	-
Sand Point	-	-	-	-	x	-	-
Saint George Island	-	-	-	-	-	-	-
Saint Paul Island	-	-	-	-	-	-	-
Unalaska	-	-	-	-	x	-	-
Bristol Bay							
South Alaska Peninsula							
Chignik Bay	x	-	-	x	-	-	-
Chignik Lagoon	x	-	-	-	-	-	-

-continued-

Region, subregion, village	2004	2005	2006	2007	2008	2009	2010
Chignik Lake	x	-	-	-	x	-	-
Ivanof Bay	-	-	-	-	-	-	-
Perryville	x	-	-	x	-	-	-
Southwest Bristol Bay							
Aleknagik	x	-	-	x	x	-	-
Clark's Point	x	x	-	x	x	-	-
Egegik	-	x	-	x	-	-	-
Ekwok	x	-	-	x	x	-	-
Igiugig	-	-	-	-	-	-	-
Iliamna	-	x	-	x	-	-	-
King Salmon	-	x	-	-	-	-	-
Kokhanok	x	x	-	x	x	-	-
Koliganek	-	x	-	x	-	-	-
Levelock	x	x	-	-	x	-	-
Manokotak	-	x	-	x	-	-	-
Naknek	x	-	-	x	-	-	-
New Stuyahok	-	x	-	x	-	-	-
Newhalen	x	x	-	-	x	-	-
Nondalton	x	x	-	-	-	-	-
Pedro Bay	-	x	-	-	-	-	-
Pilot Point	-	x	-	-	-	-	-
Port Heiden	-	x	-	-	-	-	-
South Naknek	-	x	-	x	-	-	-
Togiak	x	-	x	x	-	-	-
Twin Hills	x	x	-	x	-	-	-
Dillingham	-	x	-	x	x	-	-
Yukon-Kuskokwim Delta							
Y-K Delta South Coast							
Eek	x	x	-	x	x	-	x
Goodnews Bay	-	-	x	-	-	-	x
Kipnuk	-	x	x	x	-	x	-
Kongiganak	-	x	x	x	x	-	-
Kwigillingok	-	-	-	-	-	-	-
Platinum	-	x	x	-	-	-	x
Quinhagak	x	x	x	x	-	-	-
Tuntutuliak	x	-	x	-	x	x	x
Y-K Delta Mid Coast							
Chefornak	x	-	x	x	-	x	x
Chevak	x	-	-	-	-	x	x
Hooper Bay	x	x	-	-	x	-	-
Mekoryuk	-	x	-	x	x	-	-
Newtok	-	x	x	-	x	x	-
Nightmute	x	-	x	x	-	x	-

-continued-

Region, subregion, village	2004	2005	2006	2007	2008	2009	2010
Scammon Bay	-	-	x	-	x	x	x
Toksook Bay	x	x	-	x	-	-	-
Tununak	x	x	-	x	x	-	-
Y-K Delta North Coast							
Alakanuk	x	-	x	-	-	x	x
Emmonak	-	x	x	x	x	x	-
Kotlik	x	x	-	-	-	-	-
Nunam Iqua (Sheldon Point)	-	x	x	-	x	x	x
Lower Yukon							
Marshall (Fortuna Lodge)	x	x	-	x	x	-	x
Mountain Village	-	x	-	x	x	-	-
Pilot Station	-	x	x	-	x	x	-
Pitkas Point	x	-	x	x	-	x	x
Russian Mission	-	x	x	-	x	x	-
Saint Mary's (Andreafsky)	-	x	-	x	-	x	-
Lower Kuskokwim							
Akiachak	-	-	x	-	-	x	-
Akiak	-	x	x	x	-	-	x
Aniak	x	x	-	-	x	-	-
Atmautluak	x	-	-	x	x	-	-
Kasigluk	x	-	x	x	-	x	-
Kwethluk	x	x	x	x	-	x	x
Lower Kalskag	x	-	x	x	x	x	x
Napakiak	-	-	-	x	-	-	-
Napaskiak	-	x	x	x	x	x	-
Nunapitchuk	x	x	-	x	x	-	-
Oscarville	-	-	x	x	-	x	x
Tuluksak	-	x	x	-	x	-	-
Upper Kalskag	-	x	x	-	-	-	-
Central Kuskokwim							
Chuathbaluk	x	-	-	-	-	-	-
Crooked Creek	x	-	x	-	-	-	-
Lime Village	-	-	x	-	-	-	x
Red Devil	-	-	-	x	-	-	-
Sleetmute	-	-	x	x	-	-	-
Stony River	x	-	x	-	-	-	-
Bethel	x	x	x	x	x	x	x
Bering Strait-Norton Sound							
St. Lawrence-Diomede Islands							
Diomede	-	x	-	x	-	-	x
Gambell	x	x	-	x	-	x	x
Savoonga	x	x	-	x	-	x	x
Bering Strait Mainland Villages							

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Region, subregion, village	2004	2005	2006	2007	2008	2009	2010
Brevig Mission	x	-	-	x	-	-	x
Elim	x	x	-	-	-	-	-
Golovin	-	x	-	x	-	-	x
Koyuk	-	x	-	x	-	-	x
Shaktoolik	-	-	-	x	-	-	x
Shishmaref	x	x	-	-	-	-	-
Saint Michael	x	-	-	x	-	-	-
Stebbins	-	x	-	x	-	-	x
Teller	x	x	-	-	-	-	-
Unalakleet	x	-	-	x	-	-	-
Wales	x	x	-	-	-	-	-
White Mountain	x	-	-	x	-	-	-
Nome	x	x	-	x	-	-	-
Northwest Arctic							
Northwest Arctic Villages							
Ambler	-	-	-	-	-	-	-
Buckland	-	-	x	-	-	-	-
Deering	-	-	-	-	-	-	-
Kiana	-	-	-	-	-	-	-
Kivalina	-	-	-	-	-	-	-
Kobuk	-	-	x	-	-	-	-
Noatak	-	-	-	-	-	-	-
Noorvik	-	-	-	-	-	-	-
Selawik	-	-	x	-	-	-	-
Shungnak	-	-	x	-	-	-	-
Kotzebue	-	-	-	-	-	-	-
North Slope							
North Slope Villages							
Anaktuvuk Pass	-	x	-	x	-	-	-
Atqasuk	-	x	-	x	-	-	-
Kaktovik	-	x	-	x	x	x	-
Nuiqsut	-	-	-	-	x	x	-
Point Hope	-	x	-	-	x	-	-
Point Lay	-	x	-	-	-	-	-
Wainwright	-	x	-	x	x	x	-
Barrow	-	x	-	x	x	x	-
Interior Alaska							
Mid Yukon-Upper Kuskokwim							
Anvik	x	x	x	-	-	-	x
Grayling	-	x	x	-	-	-	-
Holy Cross	x	x	x	-	-	-	x
Lake Minchumina	x	-	x	-	-	-	-
McGrath	-	-	-	-	-	-	-

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Region, subregion, village	2004	2005	2006	2007	2008	2009	2010
Nikolai	x	x	x	-	-	-	-
Shageluk	-	x	-	-	-	-	-
Takotna	-	x	-	-	-	-	x
Tanana	-	-	-	-	-	-	-
Yukon-Koyukuk							
Alatna	x	-	x	x	x	-	x
Allakaket	x	-	x	x	x	-	x
Bettles/Evansville	-	-	x	-	-	-	-
Coldfoot	-	-	-	-	-	-	x
Galena	x	-	-	-	-	-	-
Hughes	x	-	-	-	-	-	-
Huslia	x	-	-	-	-	-	x
Kaltag	x	-	-	-	-	-	-
Koyukuk	x	x	-	-	-	-	-
Nulato	x	x	-	-	-	-	-
Ruby	x	x	-	-	-	-	x
Wiseman	-	-	-	-	-	-	x
Upper Yukon							
Arctic Village	-	-	x	-	-	-	-
Beaver	-	-	x	x	-	-	x
Birch Creek	-	-	-	x	-	-	-
Central	-	-	x	-	-	-	x
Chalkyitsik	-	-	x	x	-	-	x
Circle	-	-	x	x	-	-	-
Fort Yukon	x	-	x	x	-	-	-
Rampart	-	-	-	-	-	-	x
Stevens Village	-	-	-	-	-	-	-
Venetie	-	-	x	x	-	-	x
Tanana Villages							
Dot Lake	x	-	-	-	-	-	-
Dry Creek	-	-	-	-	-	-	-
Eagle City	x	-	-	-	-	-	-
Eagle Village	x	-	-	-	-	-	-
Healy Lake	-	-	-	-	-	-	-
Manley Hot Springs	x	-	-	-	-	-	-
Minto	-	-	x	-	-	-	x
Nenana	x	-	x	-	-	-	-
Northway	x	-	-	-	-	-	-
Tanacross	-	-	x	-	-	-	-
Tetlin	-	-	-	-	-	-	x
Tok	-	-	x	-	-	-	x

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Region, subregion, village	2004	2005	2006	2007	2008	2009	2010
Upper Copper River							
Cantwell	-	-	-	x	-	-	-
Cheesh'na (Chistochina)	x	-	-	x	-	-	-
Chitina	x	-	-	-	-	-	-
Copper Center	x	-	-	x	-	-	-
Gakona	x	-	-	x	-	-	-
Gulkana	x	-	-	x	-	-	-
Mentasta Lake	x	-	-	x	-	-	-
Tazlina	-	-	-	-	-	-	-
Southeast Alaska							
Craig[a]	-	-	-	-	-	-	-
Hoonah[a]	-	-	-	-	-	-	-
Hydaburg[a]	-	-	-	-	-	-	-
Yakutat[a]	-	-	-	-	-	-	-

Source 2004–2007 Survey results reported in Naves (2010a), 2008 in Naves (2010b), and 2009 in Naves (2011).

a. Communities eligible only to harvest of glaucous-winged gull eggs (FR vol. 75, No. 70, pp. 18764–18773, April 13, 2010).

A NOTE ON THE AMBCC LOGO

Indigenous Yup'ik peoples live in Western, Southwestern, and Southcentral Alaska, as well as in the Russian Far East. In the traditional Yup'ik universe, each animal species has its own world, where they live in communities, like people, and which shamans can visit. Historically, artists carved masks to represent the shaman's spirit helpers and the spirits of fish and wildlife. The different levels of the universe inhabited by the spirits of the animals were represented by rings around a mask. Masks were used during a winter ceremony called *Kelek*, or "Inviting-In Feast." The host community invited people of other communities, as well as the spirits of people who had died and the spirits of the animals, to participate in the ceremony. During Kelek, people sang, drummed, and danced with masks to ask for plentiful harvests in the coming year, to appease animal spirits that may have been offended, and to avoid misfortune in the relationship between people and animals. The masks also could be funny, abstract, fearsome, representations of human faces, and very small or very large. Most Kelek masks were destroyed after the ceremony. Today, masks are important items in Native art and economies and are designed to be displayed rather than worn. Yup'ik animal masks are beautiful materializations of the Yup'ik appreciation and respect for the natural resources they depend upon. To learn more about Kelek and Yup'ik masks see Fienup-Riordan (1983, 1996) and Pete (1989).

The logo of the Alaska Migratory Bird Co-Management Council (AMBCC) incorporates the drawing of a Yup'ik mask by artist Katie Curtis from Toksook Bay, Alaska. Some people refer to this drawing as "The Goose Mask." The U.S. Fish and Wildlife Service commissioned this drawing in the late 1990s during the process of creating the AMBCC. An actual mask was not carved. The original drawing is black and white; the colors used here were added in 2009 when new outreach materials were produced for the AMBCC subsistence harvest survey. The choice of colors was based on historical and current Yup'ik artwork. Katie Curtis was consulted during this process and agreed with the use of the colors. The mask depicts a Canada goose surrounded by 8 feathers. The feathers represent the 8 steps to implement a legal, regulated spring subsistence bird hunt: 1) Notify people of the intent to form management bodies; 2) Meet to share ideas; 3) Send out ideas and listen; 4) Choose the form of management bodies; 5) Start rule-making; 6) Recommend rules for Alaska; 7) Link with management in other U.S. flyways; and 8) Link with the nation. Since its inception, this new regulatory framework has been designed to promote true collaboration among a diversity of stakeholders as cultures intermingle in the history of wildlife management and conservation in Alaska.