Technical Paper No. 415

Alaska Subsistence Harvest of Birds and Eggs, 2014, Alaska Migratory Bird Co-Management Council

Liliana C. Naves

December 2015

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. 415

ALASKA SUBSISTENCE HARVEST OF BIRDS AND EGGS, 2014, ALASKA MIGRATORY BIRD CO-MANAGEMENT COUNCIL

by

Liliana C. Naves
Alaska Department of Fish and Game
Division of Subsistence, Anchorage

Alaska Department of Fish and Game
Division of Subsistence
333 Raspberry Road, Anchorage, AK 99518-1599

December 2015

This report was funded by the U.S. Fish and Wildlife Service (cooperative agreement F12AC00653) and the Alaska Department of Fish and Game Division of Wildlife Conservation (RSA-1155353).

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.

Liliana C. Naves
Alaska Department of Fish and Game, Division of Subsistence
333 Raspberry Road Anchorage, AK 99518-1599

This document should be cited as:
Naves, L. C. 2015. Alaska subsistence harvest of birds and eggs, 2014, Alaska Migratory Bird Co-Management Council. Alaska Department of Fish and Game Division of Subsistence Technical Paper No. 415, Anchorage.

Front cover photo: Wings of harvested birds are saved and used as bait in traps for fur animals. Fort Yukon, 2014. Photo by Liliana C. Naves, ADF&G Division of Subsistence.

TABLE OF CONTENTS

Page

LIST OF TABLES

Table **Page**

LIST OF FIGURES

Figure **Page**

LIST OF APPENDICES

Appendix **Page**

ABSTRACT

This report presents subsistence harvest estimates of birds and their eggs in Alaska for the data year 2014. Data were collected 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 regional and local Alaska Native organizations. Information obtained by this program is used to inform 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 communities 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 communities and households. The sampling 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. Communities with similar harvest patterns are grouped in subregions. Harvests reported by surveyed communities are extrapolated to nonsurveyed communities in the same subregion. Subregions are grouped into regions, which correspond to the designated migratory bird management regions. Data are usually reported at the subregion and region levels. Regions surveyed have been selected annually depending on monitoring priorities and funding availability. In 2014, the harvest survey was conducted in the Cordova subregion (Gulf of Alaska-Cook Inlet region) and in the Upper Yukon subregion (Interior Alaska region).

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.

ACKNOWLEDGMENTS

This subsistence harvest survey would not have been possible without the local support of the Alaska communities. The Alaska Migratory Bird Co-Management Council (AMBCC) and the Alaska Department of Fish and Game (ADF&G) Division of Subsistence are grateful to all households that agreed to report their subsistence harvests. The AMBCC and the ADF&G Division of Subsistence are thankful for the collaboration of the many Alaska Native organizations, national wildlife refuges, village councils, local surveyors, and other partners that coordinated, facilitated, and conducted data collection. Julie Mahler from Fort Yukon (Yukon Flats National Wildlife Refuge, Refuge Information Technician) and Mildred Allen from Arctic Village (Arctic National Wildlife Refuge, Refuge Information Technician) worked as local surveyors. Staff of the Information Management Unit of the ADF&G Division of Subsistence provided data entry and management support. Adam Knight edited this report.

"In the spring, we looked forward to the returning sun and its heat that melted everything until the leaves let go of their fragrance and it filled the air. My siblings and I fought like dogs over the muskrat tails that we roasted on top of the woodstove until they were crisp and tasted like pork rinds, only better. Beaver meat was delicious, too, with its willowy flavor, and we devoured the boiled meat with relish. But there was no comparison to the singed duck soup that my mother made with dried vegetable flakes, adding rice and macaroni. We always ate our duck soup with Pilot Boy crackers spread with margarine. These foods were all we knew, and to this day, I can't say I know of a finer meal."

VelmaWallis
Raising Ourselves:
A Gwich'in coming of age story from the Yukon River

INTRODUCTION

In 1918, Canada and the United States ratified the Migratory Bird Treaty Act (the treaty) to protect migratory bird populations. Among other provisions, the treaty set an annual hunting closure between 10 March and 1 September. However, this provision failed to provide for the spring and summer harvest of migratory birds by northern peoples; these harvests have been historically necessary to their subsistence way of life. Despite the closure, customary and traditional bird hunting in spring and summer continued.

In 1997, the U.S. Congress ratified a treaty amendment recognizing traditional spring and summer subsistence bird harvests by northern peoples. The goal of the amendment was to promote conservation of migratory birds by including subsistence hunting in the regulatory process. The amendment authorized the U.S. Fish and Wildlife Service (USFWS) to open regulated spring and summer subsistence hunts of migratory birds in Alaska. The amendment also mandated that Alaska's Native people play a meaningful role 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 Native entities (65 FR 16405–16409[1]). The AMBCC identified the need for harvest assessment to document traditional uses of migratory birds and levels of harvest. Harvest assessment is also needed 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 first legal spring–summer subsistence hunting season was in 2003.

Annual monitoring of bird and egg harvests happened in 1985–2002 in the Yukon-Kuskokwim Delta region (Y-K Delta) (Copp 1985; Copp and Roy 1986; Wentworth 2007b) in the context of the Goose Management Plan (Zavaleta 1999). Similar surveys were conducted in the Bristol Bay region about every other year in 1995–2002 (Wentworth 2007a). These earlier surveys played an important role in refining survey methods, developing acceptance of harvest surveys in subsistence communities, engaging users in the management process, and together with the AMBCC harvest data (below) constitute a long dataset necessary for the understanding of highly variable harvests.

The AMBCC Harvest Assessment Program (AMBCC-HAP) was based on goose management plan surveys conducted in the Y-K Delta and Bristol Bay and expanded the geographic coverage of birds and eggs harvest monitoring to other Alaska regions (Reynolds 2007)[2]. The AMBCC survey has been conducted annually since 2004 relying on collaboration among USFWS, ADF&G, and Alaska Native partners. The USFWS and the ADF&G have funded the AMBCC-HAP, which is currently coordinated by the ADF&G Division of Subsistence. Data collection is usually implemented by Native partners at the regional and local levels. Data collection in 2004–2009 followed methods described in Naves (2010rev.). In 2008–2009, the survey program was collaboratively revised to streamline program structure and data collection, analysis, and reporting (Naves et al. 2008). The revised survey has been implemented since 2010. The AMBCC-HAP also conducts outreach, education, and research to address specific management issues (Naves and Zeller 2013; Naves 2014b; Rothe et al. 2015). This report is the eighth in a series presenting annual harvest estimates for birds and their eggs based on data collected by the AMBCC-HAP (Naves 2010rev.; Naves 2010; Naves 2011; Naves 2012; Naves 2014a; Naves and Braem 2014; Naves 2015).

Harvest estimates from the AMBCC survey are available to Alaska rural communities (or villages), Native organizations, state and federal resource management and conservation agencies, the Pacific Flyway Council, and the general public. Some uses of the survey data are:

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

1. Federal Register Vol. 65, No. 60 (March 28, 2000) available online: http://www.gpo.gov/fdsys/pkg/FR-2000-03-28/pdf/00-7550.pdf.
2. See also AMBCC (Alaska Migratory Bird Co-Management Council). 2003. Recommendations for a statewide Alaska migratory bird subsistence harvest survey. Unpublished report by the Subsistence Harvest Survey Committee. U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Anchorage.

METHODS

GENERAL SURVEY DESIGN

Current survey methods were described in detail in Naves (2012). The subsistence harvest survey area includes 202 remote communities in 10 survey and management regions (68 FR 43010–43030[3]) (Figure 1, Appendix A). The Southeast Alaska region has not been surveyed (4 communities are eligible only for egg harvests). The survey regions were divided in 31 subregions to better account for geographical variation in harvest patterns. In 2010, the regions had a total population of 89,481 people (U.S. Census Bureau 2011). Regions have been surveyed depending on annual management priorities, funding availability, and factors affecting data collection logistics in remote Alaska (e.g., weather, communication, local partnerships in place) (tables 1, 6, and 7).

In 2014, the survey was conducted in the Upper Yukon subregion (Interior Alaska region; Figure 2) and in the Cordova subregion (Gulf of Alaska-Cook Inlet region; Figure 3). Staff of the Yukon Flats National Wildlife Refuge and the Arctic National Wildlife Refuge participated in data collection in the Upper Yukon. The Native Village of Eyak and the U.S. Forest Service participated in the Cordova hunt registration process, which defines the sampling universe for the Cordova mail-out survey (see below).

From a subsistence harvester's perspective, harvest surveys collect information that commonly is private and sensitive. Subsistence bird harvests are sensitive because spring and summer hunting was illegal until recently. Subsistence users fear that information provided in harvest surveys may be used to direct law enforcement efforts and to limit harvest practices that are essential for their diet and culture. To meet survey objectives, it is necessary to develop and maintain trust and collaboration between subsistence users and resource management agencies. Community and household participation in the survey were voluntary. Community consent to conduct surveys was granted as tribal council resolutions, and ethical principles for social science research were closely observed (Arctic Research Consortium of the United States (ARCUS) 1999:55–59; Naves 2012:7)[4]. Data at the household level are considered confidential. AMBCC-HAP data are usually reported at the subregion and region levels. Specific data release agreements can allow data release at the community level (e.g., Naves and Zeller 2013; Naves 2014b), this report). Archived materials do not include household names or other personal information for anonymity of household harvest reports. Household names are not used in harvest report forms and are not entered in the database (a numeric household identifier is used). Names on household lists are covered; lists not showing names are then photocopied and scanned for digital archiving together with other survey materials. Preliminary harvest estimates based on survey data are submitted to Alaska Native regional partners and other AMBCC partners for review before being adopted by the AMBCC. Information from the survey is not to be used for punitive law enforcement purposes, nor has this been reported to have happened.

In-Person Surveys: Upper Yukon Subregion

The household was the basic sampling unit. The sampling frame encompassed all occupied households in surveyed regions or subregions. At the community level, data collection relied on household lists including all resident households (Appendix B). A household is considered resident if its members have lived in the community for at least the 12 months prior to the survey. Household lists did not include unoccupied dwellings, commercial buildings, and public buildings.

Local surveyors were trained by a regional partner or survey coordination staff. Harvest surveys were completed during in-person interviews conducted by a local surveyor. Survey respondents were instructed (1) to report all bird and egg harvests by all hunters in the household, including those given to other household(s); (2) to report the household's share of harvests done by a multi-individual harvesting party; and (3) not to report birds or eggs received from other household(s). A tracking sheet was used to document household contacts and participation (Appendix C). Alternate households were selected to replace households that declined to participate and households that could not be contacted after 3 reasonable attempts.

The harvest report form for Interior Alaska was used to record the harvest of birds and eggs (Appendix D). The survey form included species important for subsistence uses or of management interest. Harvests of species not

3. Federal Register Vol. 68, No. 139 (July 21, 2003) available online: http://www.gpo.gov/fdsys/pkg/FR-2003-07-21/pdf/03-18097.pdf.
4. See also Alaska Federation of Natives. 2013. "Alaska Federation of Natives Guidelines for Research." Alaska Native Knowledge Network. Accessed February 25, 2014. http://www.ankn.uaf.edu/IKS/afnguide.html.

represented in the form can be reported in the field "other bird." Some species that are difficult to tell apart were combined in categories. The form had a sheet for each survey season (spring: 2 April–30 June, summer: 1 July–31 August, and fall: 1 September–31 October). The bird identification guide had color drawings of birds (Appendix E). A poster with color photographs of all species included in the survey assisted in species identification and outreach (Appendix F). On the poster, close to each photograph, appeared the species' English name and a blank field for writing Native and local names. Data collection staff used lists of local and Alaska Native species names to help in communicating with respondents and in species identification (Appendix G).

Starting in 2012, loon species names were not displayed on the bird identification guide and harvest report form because of confusion generated by the English name "common loon," which is frequently understood as the locally most common species of loon, and because of differences between local ethnotaxonomy and Western taxonomy (Naves and Zeller 2013). A juvenile Pacific loon (*Gavia pacifica)* was added to represent nonbreeding plumages. Drawings depicted size differences among species. The common (*G. immer*) and the yellow-billed loons (*G. adamsii*) were presented side-by-side for comparison. Loon identification was based primarily on drawings related to numbers. The Pacific and Arctic (*G. arctica*) loons were combined, and adults in nonbreeding plumage and juveniles were treated as "nonbreeding" because these categories are difficult to tell apart. Loon harvest data are presented in this report by species names corresponding to the numeric labels used in survey forms [loon 1: Pacific-Arctic loon, loon 2: unidentified loon in nonbreeding plumage, loon 3: yellow-billed loon, loon 4: common loon, and loon 5: red-throated loon (*G. stellata*)].

Table 1.–Number of communities and households included in data analysis, 2004–2014.

Survey year	Communities 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
2011	25	1,335	1,176	1,197	36
2012	3	473	473	445	216
2013	20	600	600	599	b
2014	7	250c	222c	222c	b

Sources Survey results for 2004–2013 were reported in Naves (2010rev.; 2010; 2011; 2012; 2014a; 2015), Naves and Braem (2014).

a. In 2004–2009, for regions and subregions with a winter survey, data were recorded as fall–winter.

b. The subregions surveyed usually have no winter survey.

c. Households surveyed in six Upper Yukon communities (in-person interviews) and in Cordova (mail-out survey). The Cordova survey covered April–May harvests and the sample was 28 completed surveys out of a total of 36 registered households (see below).

In-Person Surveys: Upper Yukon Community Harvest Estimates

In the context of data review for the 2014 survey in the Upper Yukon communities, agreements for data release at the community level were established with the communities of Arctic Village, Beaver, and Chalkyitsik (appendices K, L, and M) for all AMBCC-HAP surveys conducted in 2004–2014 (Arctic Village: 2006 and 2014; Beaver and Chalkyitsik: 2006, 2007, 2010, 2014). These community-level harvest estimates are also presented in this report.

Table 2.–Sampling information for community harvest estimates, Upper Yukon subregion, 2004–2014.

Community	Year	Sampling method	Stratum	Stratum size	Households surveyed		
					Spring	Summer	Fall
Arctic Village	2006	Simple random sampling	Single	53	40	40	40
	2014	Harvester-Other stratification	Harvester	32	27	27	27
			Other	29	8	8	8
Beaver	2006	Simple random sampling	Single	37	33	22	22
	2007	Simple random sampling	Single	31	16	16	16
	2010	Simple random sampling	Single	34	26	25	25
	2014	Harvester-Other stratification	Harvester	14	13	13	13
			Other	14	5	5	5
Chalkyitsik	2006	Simple random sampling	Single	35	34	26	26
	2007	Simple random sampling	Single	35	28	26	26
	2010	Simple random sampling	Single	17	15	15	15
	2014	Harvester-Other stratification	Harvester	19	12	12	12
			Other	8	6	6	6

Sources AMBCC Subsistence Harvest surveys 2006, 2007, 2010, and 2014.
Note For details on sampling methods, see Naves (2010rev.; 2012).

Mail-out Surveys: Cordova Subregion

The Cordova migratory bird subsistence harvest was first authorized in 2014[5]. The season was opened 2–30 April for waterfowl hunting and 1–31 May for gull egg harvesting. A limited list of species was opened to harvest, and only Cordova residents were eligible to participate. Participants were required to obtain a registration issued at the Cordova offices of the U.S. Forest Service and Native Village of Eyak. A total of 36 households registered. The ADF&G Division of Subsistence coordinated the registration and survey process in collaboration with AMBCC and local partners.

A mail-out harvest survey was sent in late June, 2014 to all registered households (Appendix H). Survey reminders were sent in late July and again in late August to registered households that had not yet provided completed surveys. The survey was conducted in the context of the AMBCC-HAP. A total of 28 completed surveys were returned (out of 36 registered households) resulting in a response rate of 78%.

5. Federal Register Vol. 79, No. 67 (April 8, 2014) available online: https://www.gpo.gov/fdsys/pkg/FR-2014-04-08/pdf/FR-2014-04-08.pdf.

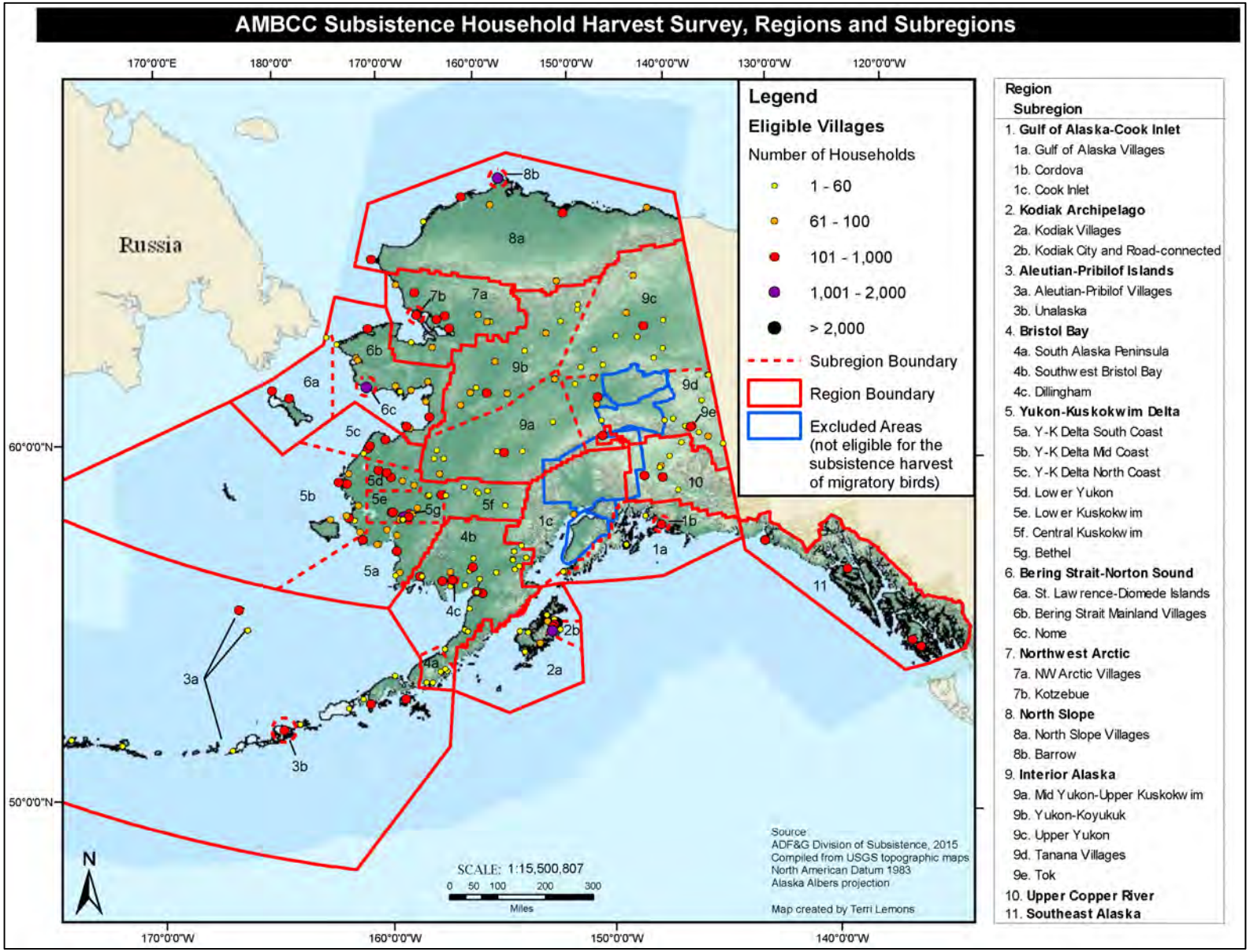


Figure 1.–Regions and subregions of the AMBCC migratory bird subsistence harvest survey.

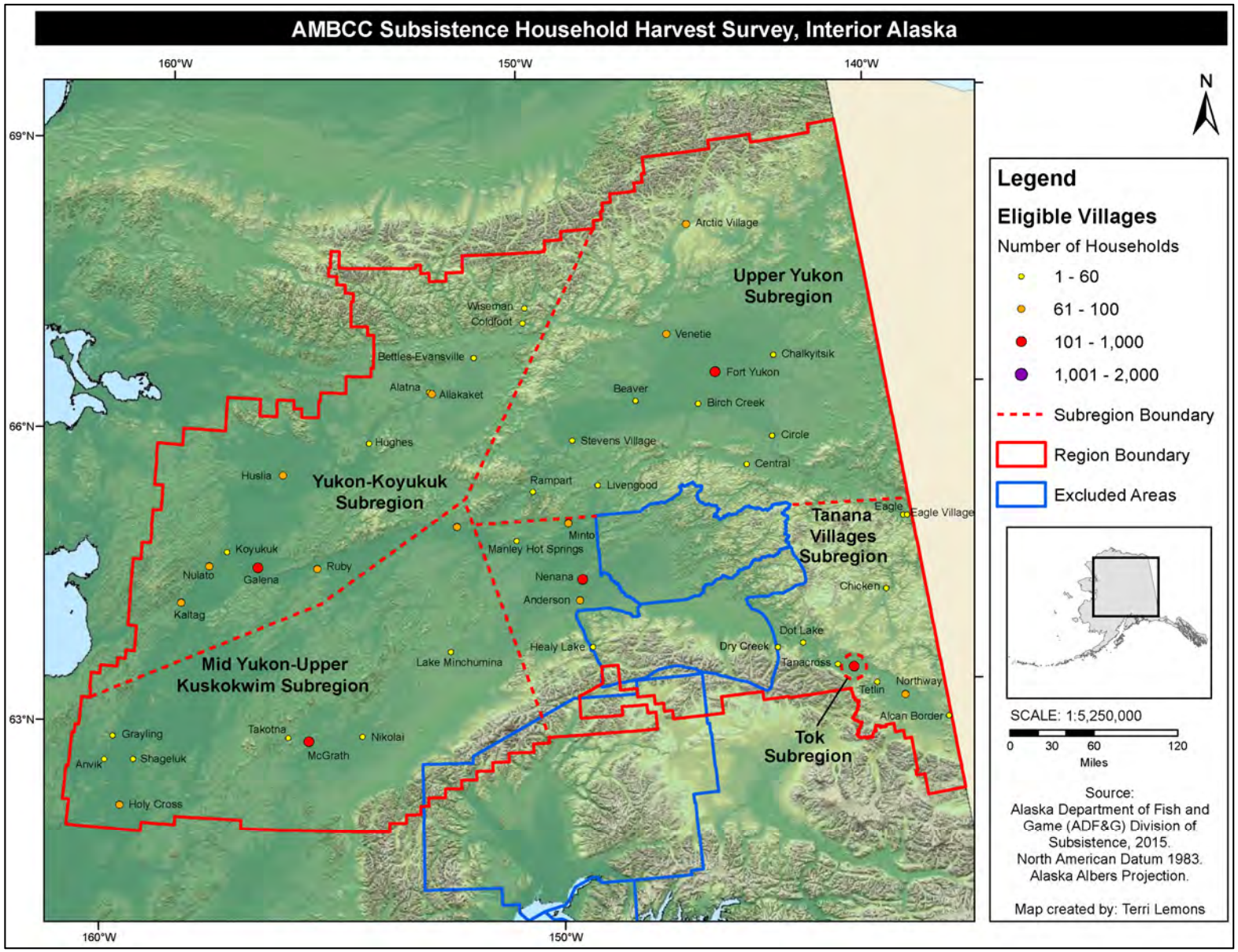


Figure 2.–Interior Alaska region.

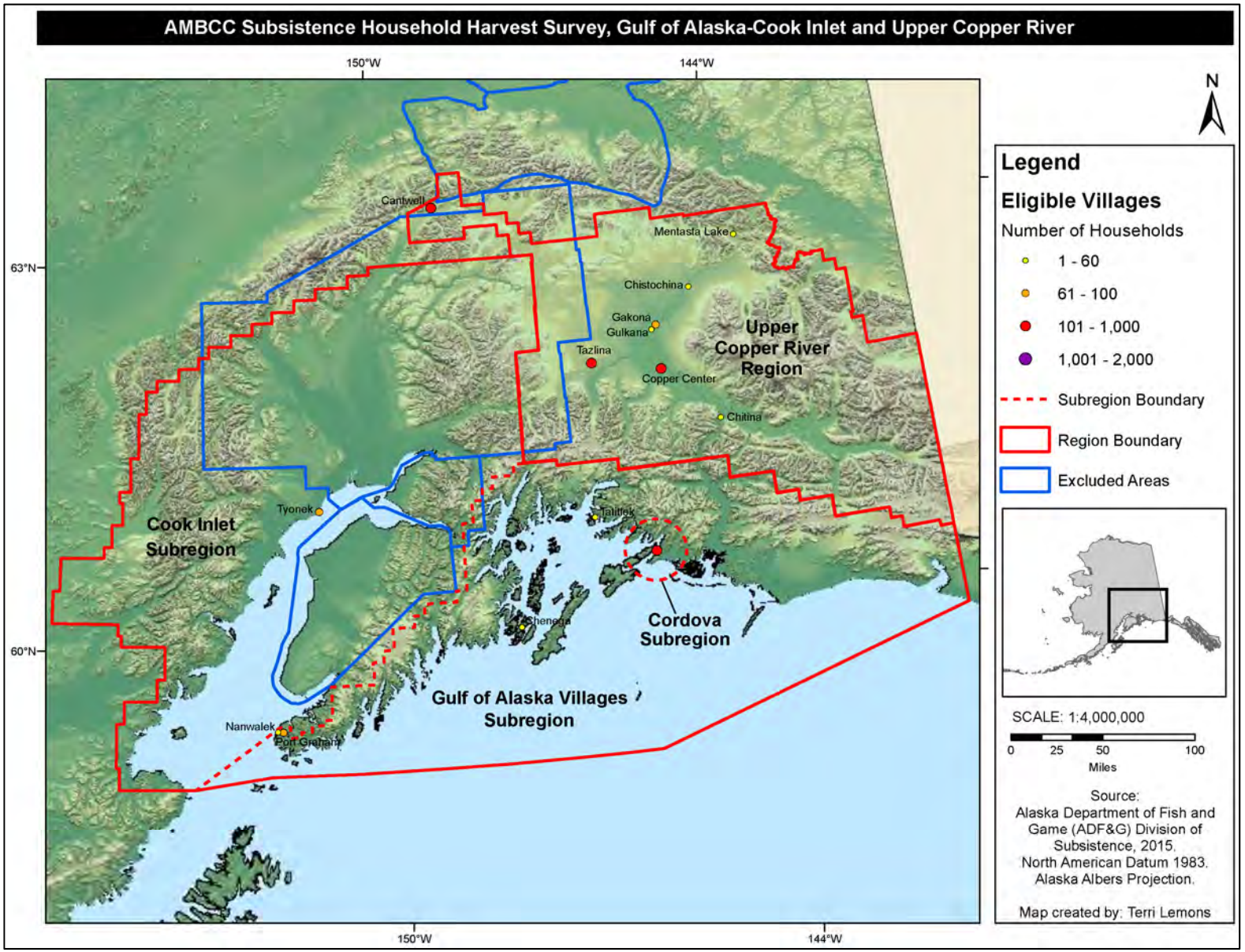


Figure 3.–Gulf of Alaska-Cook Inlet and Upper Copper River regions.

DATA ANALYSIS

Harvest Estimates

Data were entered in Microsoft Office Access 2010[6] forms designed to mimic survey forms. The raw data were stored in a Microsoft SQL Server Management Studio 2008 relational database. Double data entry and logic checks ensure accuracy of the data stored in the database (reported harvests, sampling method used, sample size, strata size). Logic checks and data analysis were done with IBM SPSS Statistics 19.0.0, 2010. Original survey forms were scanned and archived as digital files. To ensure anonymity of household harvest reports, household names and other personal information provided were covered prior to scanning, and the original forms were not archived.

For the Upper Yukon subregion, reported harvests from surveyed communities were extrapolated to nonsurveyed communities in the same subregion. Harvest estimates and confidence intervals were based on Cochran (1977) and Bernard, Bingham, and Alexandersdottir (1998) (Appendix I). Harvest estimates were calculated for each season and annual estimates were calculated as the sum of seasonal harvests. For nonsurveyed communities, the number of occupied households was calculated by dividing 2014 population estimates (Alaska Department of Labor and Workforce Development 2014) by the number of people per household reported in the 2010 census (U.S. Census Bureau 2011). For the Cordova subregion, harvests reported in returned surveys were extrapolated to non-returned surveys. If the low end of confidence intervals was less than the reported harvest, the calculated low end was replaced by the reported harvest. In 2014, a total of 7 communities were surveyed and included in data analysis (Appendix A).

For Arctic Village, Beaver, and Chalkyitsik, community-level harvest estimates and confidence intervals were calculated based on formulas presented in Appendix J, and tables are presented for all AMBCC-HAP surveys conducted in 2004–2014 (Arctic Village: 2006 and 2014; Beaver and Chalkyitsik: 2006, 2007, 2010, 2014).

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. Dedicated harvest surveys and specific analytical procedures would be required to accurately estimate 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.

Community and Household Participation Rates

Community participation rate was calculated as the number of communities that agreed to participate divided by the total number of communities where contact was attempted (Table 3). The total number of communities where contact was attempted included (a) communities that agreed to participate, (b) communities that did not agree to participate, and (c) communities where multiple contact attempts were made without a response (which may suggest lack of interest or willingness to participate in the survey).

In the Upper Yukon communities surveyed by in-person interviews, household participation rate was calculated as the number of households that agreed to participate divided by the total number of households contacted (tables 4 and 5). The total number of households contacted included (a) households that agreed to participate and (b) households that did not agree to participate. For communities with available household consent information, household consent was considered as agreement all for households for which a harvest survey form was provided for any season. This procedure has not been implemented for communities for which household participation information was not available in order to not artificially inflate participation rates in the absence of information on cases of no consent. Detailed information on calculation of household participation rates was presented in Naves

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

(2015:19–20). In the Cordova mail-out survey, the household participation rate was calculated as the proportion of registered households that provided a completed survey.

RESULTS AND DISCUSSION

In 2014, 6 communities were invited to participate in the Upper Yukon subregion survey and all communities agreed to participate (Table 3). The 2014 household participation rates are presented in Table 4.

Annual region and subregion harvest estimates (all species combined) were summarized in tables 6 (birds) and 7 (eggs), which indicate that estimates detailed by species and seasons are available in the following subregion tables (tables 8–10). Community-level harvest estimates for all AMBCC-HAP surveys conducted for Arctic Village (2006 and 2014), Beaver (2006, 2007, 2010, 2014) and Chalkyitsik (2006, 2007, 2010, 2014) were presented in tables 11–30. Harvest estimate tables included all species represented in the harvest report form. The categories duck (unidentified), goose (unidentified), gull (unidentified), and other/unknown bird were included only if harvest in these categories was reported.

Information on sampling effort was presented as footnotes to harvest estimate tables. For subregion tables, "sampling effort" referred to the number of communities included in the analysis (Appendix A) and the proportion of subregion households represented in the sample (number of households in surveyed communities in relation to the total number of households in the subregion). Deviations from standard survey methods (if any occurred) were also presented as table footnotes (e.g., incomplete geographic coverage or nonstandard community sampling approaches). Detected unusually high or low harvest estimates are indicated by an asterisk "*" in the respective tables.

Summaries produced to facilitate data review, communication, and outreach regarding survey results were documented in this report as appendices N (Cordova), O (Arctic Village), P (Beaver), and Q (Chalkyitsik).

Table 3.–Community participation rate for subregions, 2014.

	Communities in subregion	Contacted communities	Communities that agreed to participate in the survey	Community participation rate
Cordova subregion	1	1	1	100%
Upper Yukon subregion	11	6	6	100%

Note Community participation rate equals (=) number of communities that agreed to participate divided by (÷) number of communities contacted.

Table 4.–Household participation rate for Upper Yukon communities, 2004–2014.

Community	Year	Total households	Households contacted	Participation rate
Arctic Village	2006	53	48	94%
	2014	61	37	100%
Beaver	2006	37	33	100%
	2007	31	16	100%
	2010	34	32	100%
	2014	28	18	100%
Chalkyitsky	2006	34	34	100%
	2007	35	28	100%
	2010	17	16	100%
	2014	27	18	100%

Sources AMBCC Subsistence Harvest surveys 2006, 2007, 2010, and 2014.

Note Participation rate equals (=) number households that agreed to participate divided by (÷) number of households contacted.

Table 5.–Household participation rate for regions and subregions, 2004–2014.

Region	2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014	
Subregion	Partici-pation	N	Partici-pation	N	Partici-pation	N	Partici-pation	N	Partici-pation	N	Partici-pation	N	Partici-pation	N	Partici-pation	N	Partici-pation	N	Partici-pation	N	Partici-pation	N
Gulf of Alaska-Cook Inlet	**98%**	**55**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gulf of Alaska Villages	100%	41	-	-	85%	26	-	-	-	-	-	-	100%	65	-	-	-	-	-	-	-	-
Cordova	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78%	36
Cook Inlet	93%	14	71%	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kodiak Archipelago	-	-	-	-	**85%**	**137**	-	-	-	-	-	-	**95%**	**289**	-	-	-	-	-	-	-	-
Kodiak Villages	100%	†65	-	-	99%	76	-	-	-	-	-	-	97%	115	-	-	-	-	-	-	-	-
Kodiak City & Road Connected	-	-	-	-	69%	61	-	-	-	-	-	-	93%	174	-	-	-	-	-	-	-	-
Aleutian-Pribilof Islands	-	-	-	-	-	-	-	-	**100%**	**226**	-	-	-	-	-	-	-	-	-	-	-	-
Aleutian-Pribilof Villages	-	-	98%	40	-	-	100%	25	99%	87	-	-	-	-	-	-	-	-	-	-	-	-
Unalaska	-	-	-	-	-	-	-	-	100%	139	-	-	-	-	-	-	-	-	-	-	-	-
Bristol Bay			**78%**	**249**	-	-	**93%**	**312**	**98%**	**360**	-	-	-	-	**96%**	**407**	-	-	-	-	-	-
South Alaska Peninsula	*	*	-	-	-	-	93%	29	*	*	-	-	-	-	89%	44	-	-	-	-	-	-
Southwest Bristol Bay	*	*	73%	113	*	*	90%	166	96%	156	-	-	-	-	96%	243	-	-	-	-	-	-
Dillingham	-	-	81%	136	-	-	97%	117	100%	204	-	-	-	-	99%	120	-	-	-	-	-	-
Yukon-Kuskokwim Delta	**84%**	**642**	**88%**	**787**	**75%**	**787**	**70%**	**682**	**72%**	**464**	**67%**	**523**	**89%**	**609**	**96%**	**493**	-	-	**98%**	**521**	-	-
Y-K Delta South Coast	95%	106	100%	124	78%	90	92%	144	*	*	68%	95	97%	112	100%	115	-	-	99%	120	-	-
Y-K Delta Mid Coast	82%	214	81%	232	90%	175	77%	92	72%	111	61%	168	80%	155	90%	156	-	-	94%	90	-	-
Y-K Delta North Coast	100%	58	92%	38	58%	107	57%	92	79%	87	80%	99	100%	77	100%	56	-	-	100%	93	-	-
Lower Yukon	83%	42	86%	180	89%	72	67%	231	*	*	*	*	100%	65	99%	88	-	-	100%	101	-	-
Lower Kuskokwim	76%	222	90%	213	69%	270	55%	123	65%	239	63%	161	81%	186	96%	78	-		98%	117	-	-
Central Kuskokwim	*	*	-	-	74%	73	*	*	-	-	-	-	100%	14	-	-	-	-	-	-	-	-
Bethel	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	-	-	-	-	-	-
Bering Strait-Norton Sound	**71%**	**528**	**81%**	**347**	-	-	**90%**	**439**	-	-	-	-	**81%**	**489**	-	-	-	-	-	-	-	-
St. Lawrence-Diomede Islands	76%	112	87%	75	-	-	95%	86	-	-	42%	‡191	76%	308	94%	283	96%	272	-	-	-	-
Bering Strait Mainland Villages	84%	206	79%	142	-	-	93%	161	-	-	-	-	91%	181	-	-	-	-	-	-	-	-
Nome	57%	210	81%	130	-	-	86%	192	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northwest Arctic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northwest Arctic Villages	-	-	-	-	98%	220	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kotzebue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82%	266	-	-	-	-
North Slope	-	-	**93%**	**619**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North Slope Villages	-	-	90%	395	-	-	*	*	*	*	*	*	-	-	-	-	-	-	-	-	-	-
Barrow	-	-	98%	224	-	-	*	*	*	*	*	*	-	-	-	-	-	-	-	-	-	-
Interior	-	-	-	-	**98%**	**544**	-	-	-	-	-	-	**99%**	**523**	-	-	-	-	-	-	-	-
Mid Yukon-Upper Kuskokwin	*	*	*	*	*	*	-	-	-	-	-	-	100%	90	-	-	-	-	-	-	-	-
Yukon-Koyukuk	*	*	*	*	90%	83	100%	52	100%	52	-	-	97%	132	-	-	-	-	-	-	-	-
Upper Yukon	*	*	-	-	98%	274	100%	144	-	-	-	-	100%	109	-	-	-	-	-	-	99%	228
Tanana Villages	99%	102	-	-	100%	127	-	-	-	-	-	-	100%	60	-	-	-	-	-	-	-	-
Tok	-	-	-	-	100%	60	-	-	-	-	-	-	100%	132	-	-	-	-	-	-	-	-
Upper Copper River	**100%**	**55**	-	-	-	-	**94%**	**33**	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Source Household participation rates 2004–2013 from Naves (2015).

Household participation rate equals (=) number of households that agreed to participate divided by (÷) number of households contacted.

N: Number of households contacted ("N" may differ from the number of households actually surveyed).

Gray background: surveyed subregions. -: Subregion, region not surveyed. *: Household consent data not available for analysis.

‡: 2009 Reduced household participation in St. Lawrence-Diomede Islands subregion may have been related to other surveys being conducted in that year.

†: 2004 Data collection not completed in Kodiak Villages subregion, harvest data not available although household participation data was provided.

Table 6.–Annual estimated bird harvest, all subregions and regions (total birds), AMBCC survey, 2004–2014.

Regions, subregions	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Gulf of Alaska-Cook Inlet[e]	**2,995**	*	*	-	-	-	*	-	-	-	*
Gulf of Alaska Villages	2,756	-	596	-	-	-	1,049	-	-	-	-
Cordova	-	-	-	-	-	-	-	-	-	-	42
Cook Inlet	239	13	-	-	-	-	-	-	-	-	-
Kodiak Archipelago	-	-	*	-	-	-	**6,926**	-	-	-	-
Kodiak Villages	-	-	5,552	-	-	-	1,947	-	-	-	-
Kodiak City & Road-connected	-	-	a	-	-	-	4,979	-	-	-	-
Aleutian-Pribilof Islands	-	*	-	*	**8,401**	-	-	-	-	-	-
Aleutian-Pribilof Villages	-	16,876	-	(7,371)	7,642	-	-	-	-	-	-
Unalaska	-	-	-	-	760	-	-	-	-	-	-
Bristol Bay	*	**47,336**	*	**28,285**	**32,995**	-	-	**30,081**	-	-	-
South Alaska Peninsula	801	-	-	968	(115)	-	-	833	-	-	-
Southwest Bristol Bay	14,955	32,769	(26,715)	20,169	(29,352)	-	-	26,601	-	-	-
Dillingham	-	11,769	-	7,148	3,527	-	-	2,650	-	-	-
Yukon-Kuskokwim Delta	**130,343**	**114,514**	**171,856**	**148,715**[b]	**79,088**	**195,082**	**142,834**	**110,611**	-	*	-
Y-K Delta South Coast	25,764	35,508	31,918	33,927	19,999	35,203	17,537	37,834	-	33,417	-
Y-K Delta Mid Coast	34,480	17,546	(61,998)	43,737	17,160	82,654	37,363	13,899	-	58,770	-
Y-K Delta North Coast	8,806	11,206	4,493	1,206	4,867	13,637	4,920	-	-	5,839	-
Lower Yukon	(6,201)	6,815	10,269	3,988	4,727	6,904	(7,748)	-	-	10,863	-
Lower Kuskokwim	46,033	16,557	48,849	58,983	22,813	44,934	(7,1317)	(32,826)	-	(6,5081)	-
Central Kuskokwim	440	-	1,167	219	-	-	(659)	-	-	-	-
Bethel[c]	8,618	23,954	13,163	6,654[b]	7,789	7,478	3,290	2,539	-	-	-
Bering Strait-Norton Sound	**53,576**	**74,115**	-	**123,257**	-	*	*	*	*	-	-
St. Lawrence-Diomede Is.	‡	‡	-	‡	-	41,176	14,054	12,077	8,848	-	-
Bering Strait Mainland Villages	‡	‡	-	‡	-	-	20,719	-	-	-	-
Nome	‡	‡	-	‡	-	-	-	-	-	-	-
Northwest Arctic	-	-	*	-	-	-	-	-	*	-	-
Northwest Arctic Villages	-	-	9,676	-	-	-	-	-	-	-	-
Kotzebue	-	-	-	-	-	-	-	-	4,437	-	-
North Slope	-	**15,615**	-	**44270**[d]	**45,123**	**19,075**	-	-	-	-	-
North Slope Villages	-	‡	-	‡	‡	‡	-	-	-	-	-
Barrow	-	‡	-	‡	‡	‡	-	-	-	-	-
Interior Alaska	**50,995**	*	**37,068**	*	*	-	**32,611**	-	-	-	*
Mid Yukon-Upper Kuskokwim	(3,086)	2,744	697	-	-	-	(786)	-	-	-	-
Yukon-Koyukuk	3,108	(930)	(1,764)	(3,031)	(6,908)	-	4,532	-	-	-	-
Upper Yukon	(14,418)	-	10,927	18,402	-	-	(12,692)	-	-	-	8,271
Tanana Villages	20,388	-	17,358	-	-	-	(14,086)	-	-	-	-
Tok	-	-	6,321[d]	-	-	-	515[d]	-	-	-	-
Upper Copper River	**1,120**	-	-	**247**	-	-	-	-	-	-	-

Source Survey results for 2004–2013 were reported in Naves (2010a; 2010b; 2011; 2012; 2014b; 2015) and Naves and Braem (2014).

-: Region/subregion not surveyed. *****: Less than 75% of region households represented in sample, region harvest estimates not produced.

(In parenthesis): Less than 30% of subregion households represented in the sample and/or only 1 out of several subregion villages surveyed.

‡: Subregion harvest estimates not released.

a: Fall-winter bird harvest data not available for Kodiak City and Road-connected subregion; annual harvest estimates calculated for eggs only.

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: Barrow subregion harvest estimates assumed simple random sampling.

e: A subsistence bird hunt was first authorized in Cordova in 2014. Therefore, 2004 region harvest estimates do not include this subregion.

Table 7.–Annual estimated egg harvest, all subregions and regions (total eggs), AMBCC survey, 2004–2014.

Regions, subregions	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Gulf of Alaska-Cook Inlet[e]	**2,178**	*****	*****	-	-	-	*****	-	-	-	*****
Gulf of Alaska Villages	2,173	-	102	-	-	-	1,366	-	-	-	-
Cordova	-	-	-	-	-	-	-	-	-	-	131
Cook Inlet	5	0	-	-	-	-	-	-	-	-	-
Kodiak Archipelago	-	-	**5,222**	-	-	-	**803**	-	-	-	-
Kodiak Villages	-	-	4,545	-	-	-	771	-	-	-	-
Kodiak City & Road-connected	-	-	(677[a])	-	-	-	32	-	-	-	-
Aleutian-Pribilof Islands	-	*****	-	*****	**4,778**	-	-	-	-	-	-
Aleutian-Pribilof Villages	-	11,733	-	6,127	4,018	-	-	-	-	-	-
Unalaska	-	-	-	-	760	-	-	-	-	-	-
Bristol Bay	*****	**47,799**	*****	**30,801**	**47,653**	-	-	**25,211**	-	-	-
South Alaska Peninsula	409	-	-	651	(106)	-	-	392	-	-	-
Southwest Bristol Bay	54,437	39,206	(31,292)	25,118	(37,630)	-	-	21,105	-	-	-
Dillingham	-	5,768	-	5,032	9,917	-	-	3,716	-	-	-
Yukon-Kuskokwim Delta	**27,288**	**22,268**	**30,723**	**19,153**	**31,195**	**58,995**	**26,965**	**54,075**	-	*****	-
Y-K Delta South Coast	7,768	13,424	7,406	1,746	8,442	29,065	6,208	26,492	-	21,605	-
Y-K Delta Mid Coast	14,598	2,140	(21,354)	11,930	16,195	24,640	19,137	15,213	-	7,963	-
Y-K Delta North Coast	2,466	3,921	188	22	554	345	1,619	-	-	8,240	-
Lower Yukon	(191)	652	232	565	0	386	(0)	-	-	1,392	-
Lower Kuskokwim	2,265	1,302	1,498	4,891	5,298	3,087	(0)	(877)	-	(6,995)	-
Central Kuskokwim	0	-	15	0	-	-	(0)	-	-	-	-
Bethel[b]	0	261	29	0	23	179	0	0	-	-	-
Bering Strait-Norton Sound	**99,494**	**113,082**	-	**146,557**	-	*****	*****	*****	*****	-	-
St. Lawrence-Diomede Is.	‡	‡	-	‡	-	117,174	55,682	20,999	29,701	-	-
Bering Strait Mainland Villages	‡	‡	-	‡	-	-	13,910	-	-	-	-
Nome	‡	‡	-	‡	-	-	-	-	-	-	-
Northwest Arctic	-	-	*****	-	-	-	-	-	*****	-	-
Northwest Arctic Villages	-	-	10,081	-	-	-	-	-	-	-	-
Kotzebue	-	-	-	-	-	-	-	-	5,896	-	-
North Slope	-	**4,705**	-	**2388**[c]	**858**	**2,430**	-	-	-	-	-
North Slope Villages	-	‡	-	‡	‡	‡	-	-	-	-	-
Barrow	-	‡	-	‡	‡	‡	-	-	-	-	-
Interior Alaska	**1,009**	*****	**911**	*****	*****	-	**65**	-	-	-	*****
Mid Yukon-Upper Kuskokwim	(0)	2	0	-	-	-	(0)	-	-	-	-
Yukon-Koyukuk	11	(0)	(0)	(0)	(0)	-	22	-	-	-	-
Upper Yukon	(40)	-	0	0	-	-	(0)	-	-	-	110
Tanana Villages	760	-	875	-	-	-	(43)	-	-	-	-
Tok	-	-	36[c]	-	-	-	0	-	-	-	-
Upper Copper River[d]	**82**	-	-	**0**	-	-	-	-	-	-	-

Source Survey results for 2004–2013 were reported in Naves (2010a; 2010b; 2011; 2012; 2014b; 2015) and Naves and Braem (2014).

-: Region/subregion not surveyed. *****: Less than 75% of region households represented in sample, region harvest estimates not produced.

‡: Subregion harvest estimates not released.

(In parenthesis): Less than 30% of subregion households represented in the sample and/or only 1 out of several subregion villages surveyed.

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: Barrow subregion harvest estimates assumed simple random sampling.

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

e: A subsistence bird hunt was first authorized in Cordova in 2014. Therefore, 2004 region harvest estimates do not include this subregion.

Table 8.–Estimated April–May bird and egg harvest, Gulf of Alaska-Cook Inlet region, Cordova subregion, 2014.

	Reported number	Estimated harvest	Confidence Interval	
			CIP	Low – High
Birds				
American wigeon	1	1	97%	1 – 3
Teal	1	1	97%	1 – 3
Mallard	11	14	43%	11 – 20
Northern pintail	12	15	47%	12 – 23
Northern shoveler	0	0		-
Black scoter	0	0		-
Surf scoter	0	0		-
White-winged scoter	0	0		-
Bufflehead	0	0		-
Goldeneye	0	0		-
Canvasback	0	0		-
Scaup	0	0		-
Common eider	0	0		-
King eider	0	0		-
Harlequin duck	0	0		-
Long-tailed duck	0	0		-
Merganser	0	0		-
Total ducks	25	32	38%	25 – 44
Greater white-fronted goose	4	5	67%	4 – 9
Snow goose	4	5	57%	4 – 8
Total geese	8	10	49%	8 – 15
Sandhill crane	0	0		-
Total migratory birds	33	42	37%	33 – 58
Total birds	33	42	37%	33 – 58
Eggs				
Gull (unidentified)	102	131	37%	102 – 179

Sampling effort (Cordova subregion, 2014): 1 out of 1 community in the subregion was included in analysis. Harvest estimates based on 28 completed mail-out surveys, out of a total of 36 registered households.

Table 9.–Estimated bird harvest, Interior Alaska region, Upper Yukon subregion, 2014.

Species	Yearly bird harvest				Seasonal estimated bird harvest					
	Reported number	Estimated number	Confidence Interval		Spring		Summer		Fall	
			CIP	Low – High	Number	CIP	Number	CIP	Number	CIP
Ducks										
American wigeon	457	698	13%	606 – 790	562	18%	0		135	32%
Teal	58	87	30%	61 – 113	38	49%	0		48	57%
Mallard	710	1,082	10%	974 – 1,190	782	14%	0		300	23%
Northern pintail	512	775	12%	679 – 872	671	17%	0		105	30%
Northern shoveler	12	18	43%	12 – 26	6	72%	0		12	75%
Black scoter	8	11	79%	8 – 20	11	98%	0		0	
Surf scoter	19	27	40%	19 – 38	14	69%	7	98%	6	98%
White-winged scoter	955	1,495	13%	1,295 – 1,696	1,374	16%	13	93%	108	87%
Bufflehead	22	32	41%	22 – 45	7	58%	0		25	66%
Goldeneye	113	177	23%	136 – 217	79	29%	0		98	50%
Canvasback	57	85	25%	64 – 106	54	37%	4	98%	27	68%
Scaup	38	57	35%	38 – 77	54	47%	0		3	98%
Harlequin duck	0	0		-	0		0		0	
Long-tailed duck	83	124	29%	89 – 160	119	38%	0		6	98%
Merganser	0	0		-	0		0		0	
Duck (unidentified)	7	10	68%	7 – 16	10	80%	0		0	
Total ducks	3,051	4,678	9%	4,255 – 5,101	3,780	11%	25	68%	873	25%
Geese										
Cackling/Canada goose	585	916	12%	802 – 1,030	820	18%	3	98%	94	30%
Greater white-fronted goose	1,563	2,387	12%	2,110 – 2,664	2,329	14%	3	98%	55	37%
Snow goose	137	223	23%	172 – 275	219	33%	0		4	73%
Total geese	2,285	3,527	11%	3,130 – 3,923	3,368	14%	6	98%	153	25%
Swan	8	11	79%	8 – 20	11	98%	0		0	
Sandhill crane	7	10	69%	7 – 17	10	85%	0		0	
Seabirds										
Tern	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	
Total seabirds	0	0		-	0		0		0	
Shorebirds										
Whimbrel/Curlew	0	0		-	0		0		0	
Godwit	0	0		-	0		0		0	
Golden/Black-bellied plover	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	17	24	39%	17 – 34	17	64%	0		7	58%
Pacific loon	14	20	34%	14 – 27	11	59%	3	98%	6	69%
Red-throated loon	1	1	79%	1 – 3	1	98%	0		0	
Loon (non-breeding plumage)	0	0		-	0		0		0	
Grebe	0	0		-	0		0		0	
Total loons and grebes	32	45	26%	34 – 57	30	42%	3	98%	13	43%
Total migratory birds	5,383	8,271*	9%	7,541 – 9,001	7,199	11%	33	53%	1,038	21%
Ptarmigans and grouses										
Grouse	565	886	15%	755 – 1,018	144	33%	0		742	22%
Ptarmigan	157	227	17%	189 – 266	106	29%	7	70%	115	30%
Total ptarmigans and grouses	722	1,114	13%	966 – 1,261	250	24%	7	70%	857	21%
Total birds	6,105	9,384	8%	8,620 – 10,149	7,449	11%	40	47%	1,895	16%

Sampling effort (Upper Yukon subregion, 2014): 6 out of 11 communities in this subregion were included in analysis; 84% of subregion households were represented in the sample. -: No reported harvest. CIP: confidence interval as a percentage of the harvest estimate.

Note *During data review, local and regional AMBCC partners for the Upper Yukon subregion indicated that 2014 weather and ice conditions were unfavorable for bird harvest and that 2014 bird harvests may had been lower compared to other years.

Table 10.–Estimated egg harvest, Interior Alaska region, Upper Yukon subregion, 2014.

Species	Yearly egg harvest				Seasonal estimated egg harvest			
	Reported number	Estimated number	Confidence Interval		Spring		Summer	
			CIP	Low – High	Number	CIP	Number	CIP
Ducks								
American wigeon	3	4	79%	3 – 8	4	98%	0	
Teal	0	0		-	0		0	
Mallard	7	10	47%	7 – 15	10	57%	0	
Northern pintail	0	0		-	0		0	
Northern shoveler	0	0		-	0		0	
Black scoter	0	0		-	0		0	
Surf scoter	3	4	59%	3 – 7	1	98%	3	98%
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	4	6	79%	4 – 10	6	98%	0	
Merganser	0	0		-	0		0	
Total ducks	17	24	34%	17 – 32	21	44%	3	98%
Geese								
Cackling/Canada goose	4	6	79%	4 – 11	6	104%	0	
Greater white-fronted goose	0	0		-	0		0	
Snow goose	0	0		-	0		0	
Total geese	4	6	79%	4 – 11	6	104%	0	
Swan	0	0		-	0		0	
Sandhill crane	0	0		-	0		0	
Seabirds								
Tern	0	0		-	0		0	
Bonaparte's/Sabine's gull	0	0		-	0		0	
Mew gull	48	73	79%	48 – 130	73	104%	0	
Large gull	5	8	79%	5 – 14	8	104%	0	
Total seabirds	53	80	72%	53 – 138	80	94%	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 migratory birds	74	110	53%	74 – 169	107	71%	3	98%
Ptarmigans and grouses								
Grouse	0	0		-	0		0	
Ptarmigan	0	0		-	0		0	
Total ptarmigans and grouses	0	0		-	0		0	
Total eggs	74	110	53%	74 – 169	107	71%	3	98%

Sampling effort (Upper Yukon subregion, 2014): 6 out of 11 communities in this subregion were included in analysis; 84% of subregion households were represented in the sample. -: No reported harvest. CIP: confidence interval as a percentage of the harvest estimate.

Table 11.–Estimated bird harvest, Arctic Village, Upper Yukon subregion, 2006.

Species	Annual bird harvest				Seasonal estimated bird harvest					
	Reported	Estimated	Confidence Interval		Spring		Summer		Fall	
	number	number	CIP	Low – High	Number	CIP	Number	CIP	Number	CIP
Ducks										
American wigeon	9	13	60%	9 – 19	9	55%	4	112%	0	
Teal	0	0		-	0		0		0	
Mallard	41	74	53%	45 – 102	3	96%	66	69%	5	112%
Northern pintail	43	74	54%	45 – 103	12	67%	58	76%	4	112%
Northern shoveler	0	0		-	0		0		0	
Black scoter	0	0		-	0		0		0	
Surf scoter	6	8	75%	6 – 12	8	54%	0		0	
White-winged scoter	214	303	44%	214 – 400	232	36%	35	90%	37	112%
Bufflehead	0	0		-	0		0		0	
Goldeneye	3	4	98%	3 – 7	4	71%	0		0	
Canvasback	1	1	133%	1 – 3	1	96%	0		0	
Scaup	33	44	85%	33 – 71	44	61%	0		0	
Harlequin duck	0	0		-	0		0		0	
Long-tailed duck	169	242	44%	169 – 318	178	40%	64	79%	0	
Merganser	0	0		-	0		0		0	
Total ducks	519	763	36%	563 – 962	490	34%	227	55%	46	92%
Geese										
Canada goose	13	18	92%	13 – 29	16	73%	0		2	112%
Greater white-fronted goose	2	3	133%	2 – 5	3	96%	0		0	
Snow goose	1	1	133%	1 – 3	1	96%	0		0	
Total geese	16	22	80%	16 – 34	20	62%	0		2	112%
Swans	0	0		-	0		0		0	
Sandhill crane	0	0		-	0		0		0	
Seabirds										
Tern	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	
Gull (unidentified)	0	0		-	0		0		0	
Total seabirds	0	0		-	0		0		0	
Shorebirds										
Whimbrel/Curlew	0	0		-	0		0		0	
Godwit	0	0		-	0		0		0	
Golden/Black-bellied plover	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										
Loon (unidentified)	3	5	97%	3 – 9	0		5	112%	0	
Grebe	0	0		-	0		0		0	
Total loons and grebes	3	5	97%	3 – 9	0		5	112%	0	
Total migratory birds	538	790	36%	584 – 996	510	34%	232	56%	48	88%
Ptarmigans and grouses										
Grouse	2	4	97%	2 – 6	0		4	112%	0	
Ptarmigan	6	8	106%	6 – 15	7	96%	2	112%	0	
Total ptarmigans and grouses	8	12	79%	8 – 19	7	96%	5	83%	0	
Total birds	546	802	36%	592 – 1,012	517	34%	238	56%	48	88%

Note For sampling effort, see Table 2.

Table 12.–Estimated egg harvest, Arctic Village, Upper Yukon subregion, 2006.

Species	Annual egg harvest				Seasonal estimated egg harvest			
	Reported number	Estimated number	Confidence Interval		Spring		Summer	
			CIP	Low − High	Number	CIP	Number	CIP
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								
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	0	0		-	0		0	
Sandhill crane	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	
Gull (unidentified)	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								
Loon (unidentified)	0	0		-	0		0	
Grebe	0	0		-	0		0	
Total loons and grebes	0	0		-	0		0	
Total migratory birds	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	
Total eggs	0	0		-	0		0	

Note For sampling effort, see Table 2.

Table 13.–Estimated bird harvest, Arctic Village, Upper Yukon subregion, 2014.

Species	Annual bird harvest				Seasonal estimated bird harvest					
	Reported number	Estimated number	Confidence Interval		Spring		Summer		Fall	
			CIP	Low – High	Number	CIP	Number	CIP	Number	CIP
Ducks										
American wigeon	26	31	27%	26 – 39	23	32%	0		8	38%
Teal	10	12	78%	10 – 21	12	78%	0		0	
Mallard	91	108	16%	91 – 125	68	16%	0		40	24%
Northern pintail	83	98	19%	83 – 117	63	23%	0		36	29%
Northern shoveler	2	2	78%	2 – 4	2	78%	0		0	
Black scoter	8	9	78%	8 – 17	9	78%	0		0	
Surf scoter	19	23	47%	19 – 33	12	54%	6	78%	5	78%
White-winged scoter	90	107	40%	90 – 149	92	38%	0		14	78%
Bufflehead	12	14	30%	12 – 19	6	45%	0		8	44%
Goldeneye	1	1	78%	1 – 2	1	78%	0		0	
Canvasback	15	18	51%	15 – 27	14	55%	4	78%	0	
Scaup	17	20	51%	17 – 30	18	57%	0		2	78%
Harlequin duck	0	0		-	0		0		0	
Long-tailed duck	21	25	46%	21 – 36	20	44%	0		5	78%
Merganser	0	0		-	0		0		0	
Total ducks	395	468	19%	395 – 558	340	20%	9	78%	119	26%
Geese										
Canada goose	44	52	25%	44 – 65	37	22%	2	78%	13	42%
Greater white-fronted goose	96	114	15%	97 – 131	77	16%	2	78%	34	33%
Snow goose	4	5	78%	4 – 8	2	78%	0		2	78%
Total geese	144	171	16%	144 – 199	116	14%	5	78%	50	33%
Swans	8	9	78%	8 – 17	9	78%	0		0	
Sandhill crane	7	8	67%	7 – 14	8	67%	0		0	
Seabirds										
Tern	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	
Gull (unidentified)	0	0		-	0		0		0	
Total seabirds	0	0		-	0		0		0	
Shorebirds										
Whimbrel/Curlew	0	0		-	0		0		0	
Godwit	0	0		-	0		0		0	
Golden/Black-bellied plover	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										
Loon (unidentified)	32	38	26%	32 – 48	25	32%	2	78%	11	33%
Grebe	0	0		-	0		0		0	
Total loons and grebes	32	38	26%	32 – 48	25	32%	2	78%	11	33%
Total migratory birds	586	695	16%	586 – 804	499	16%	17	50%	179	23%
Ptarmigans and grouses										
Grouse	16	19	59%	16 – 30	12	78%	0		7	43%
Ptarmigan	113	134	19%	113 – 160	81	22%	6	55%	47	23%
Total ptarmigans and grouses	129	153	19%	129 – 183	92	22%	6	55%	55	22%
Total birds	715	847	15%	716 – 979	591	16%	23	41%	233	21%

Note For sampling effort, see Table 2.

Table 14.–Estimated egg harvest, Arctic Village, Upper Yukon subregion, 2014.

Species	Annual egg harvest				Seasonal estimated egg harvest			
	Reported number	Estimated number	Confidence Interval		Spring		Summer	
			CIP	Low – High	Number	CIP	Number	CIP
Ducks								
American wigeon	3	4	78%	3 – 6	4	78%	0	
Teal	0	0		-	0		0	
Mallard	7	8	44%	7 – 12	8	44%	0	
Northern pintail	0	0		-	0		0	
Northern shoveler	0	0		-	0		0	
Black scoter	0	0		-	0		0	
Surf scoter	3	4	78%	3 – 6	1	78%	2	78%
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	4	5	78%	4 – 8	5	78%	0	
Merganser	0	0		-	0		0	
Total ducks	17	20	36%	17 – 27	18	34%	2	78%
Geese								
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	0	0		-	0		0	
Sandhill crane	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	
Gull (unidentified)	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								
Loon (unidentified)	0	0		-	0		0	
Grebe	0	0		-	0		0	
Total loons and grebes	0	0		-	0		0	
Total migratory birds	17	20	36%	17 – 27	18	34%	2	78%
Ptarmigans and grouses								
Grouse	0	0		-	0		0	
Ptarmigan	0	0		-	0		0	
Total ptarmigans and grouses	0	0		-	0		0	
Total eggs	17	20	36%	17 – 27	18	34%	2	78%

Note For sampling effort, see Table 2.

Table 15.–Estimated bird harvest, Beaver, Upper Yukon subregion, 2006.

Species	Annual bird harvest				Seasonal estimated bird harvest					
	Reported	**Estimated**	Confidence Interval		Spring		Summer		Fall	
	number	**number**	CIP	Low – High	Number	CIP	Number	CIP	Number	CIP
Ducks										
American wigeon	48	**62**	66%	48 – 84	37	50%	8	108%	17	108%
Teal	0	**0**		-	0		0		0	
Mallard	29	**44**	54%	32 – 57	9	45%	19	76%	17	108%
Northern pintail	6	**8**	62%	6 – 10	4	47%	0		3	108%
Northern shoveler	1	**1**	129%	1 – 2	1	67%	0		0	
Black scoter	0	**0**		-	0		0		0	
Surf scoter	0	**0**		-	0		0		0	
White-winged scoter	223	**291**	60%	223 – 382	168	36%	123	63%	0	
Bufflehead	0	**0**		-	0		0		0	
Goldeneye	3	**3**	129%	3 – 6	3	67%	0		0	
Canvasback	20	**22**	129%	20 – 38	22	67%	0		0	
Scaup	13	**15**	93%	13 – 22	15	48%	0		0	
Harlequin duck	0	**0**		-	0		0		0	
Long-tailed duck	23	**38**	77%	23 – 53	1	67%	37	98%	0	
Merganser	0	**0**		-	0		0		0	
Total ducks	366	**485**	45%	372 – 598	261	27%	187	62%	37	108%
Geese										
Canada goose	73	**95**	44%	73 – 117	56	30%	39	57%	0	
Greater white-fronted goose	336	**440**	69%	336 – 599	251	37%	188	97%	0	
Snow goose	7	**8**	95%	7 – 12	8	49%	0		0	
Total geese	416	**542**	62%	416 – 719	315	34%	227	81%	0	
Swans	0	**0**		-	0		0		0	
Sandhill crane	0	**0**		-	0		0		0	
Seabirds										
Tern	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	
Gull (unidentified)	0	**0**		-	0		0		0	
Total seabirds	0	**0**		-	0		0		0	
Shorebirds										
Whimbrel/Curlew	0	**0**		-	0		0		0	
Godwit	0	**0**		-	0		0		0	
Golden/Black-bellied plover	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										
Loon (unidentified)	0	**0**		-	0		0		0	
Grebe	0	**0**		-	0		0		0	
Total loons and grebes	0	**0**		-	0		0		0	
Total migratory birds	782	**1,027**	53%	782 – 1,314	576	30%	414	72%	37	108%
Ptarmigans and grouses										
Grouse	4	**5**	90%	4 – 7	3	67%	0		2	108%
Ptarmigan	0	**0**		-	0		0		0	
Total ptarmigans and grouses	4	**5**	90%	4 – 7	3	67%	0		2	108%
Total birds	786	**1,032**	53%	786 – 1,319	580	30%	414	72%	39	103%

Note For sampling effort, see Table 2.

Table 16.–Estimated egg harvest, Beaver, Upper Yukon subregion, 2006.

Species	Annual egg harvest				Seasonal estimated egg harvest			
	Reported number	Estimated number	Confidence Interval		Spring		Summer	
			CIP	Low – High	Number	CIP	Number	CIP
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								
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	0	0		-	0		0	
Sandhill crane	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	
Gull (unidentified)	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								
Loon (unidentified)	0	0		-	0		0	
Grebe	0	0		-	0		0	
Total loons and grebes	0	0		-	0		0	
Total migratory birds	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	
Total eggs	0	0		-	0		0	

Note For sampling effort, see Table 2.

Table 17.–Estimated bird harvest, Beaver, Upper Yukon subregion, 2007.

Species	Annual bird harvest				Seasonal estimated bird harvest					
	Reported	Estimated	Confidence Interval		Spring		Summer		Fall	
	number	number	CIP	Low – High	Number	CIP	Number	CIP	Number	CIP
Ducks										
American wigeon	11	21	135%	11 – 50	21	135%	0		0	
Teal	0	0		-	0		0		0	
Mallard	9	17	102%	9 – 35	17	102%	0		0	
Northern pintail	2	4	148%	2 – 10	4	148%	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	99	192	64%	99 – 315	192	64%	0		0	
Bufflehead	0	0		-	0		0		0	
Goldeneye	2	4	148%	2 – 10	4	148%	0		0	
Canvasback	4	8	148%	4 – 19	8	148%	0		0	
Scaup	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	127	246	70%	127 – 419	246	70%	0		0	
Geese										
Canada goose	16	31	75%	16 – 54	31	75%	0		0	
Greater white-fronted goose	108	209	48%	108 – 310	209	48%	0		0	
Snow goose	10	19	104%	10 – 39	19	104%	0		0	
Total geese	134	260	48%	134 – 385	260	48%	0		0	
Swans	0	0		-	0		0		0	
Sandhill crane	0	0		-	0		0		0	
Seabirds										
Tern	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	
Gull (unidentified)	0	0		-	0		0		0	
Total seabirds	0	0		-	0		0		0	
Shorebirds										
Whimbrel/Curlew	0	0		-	0		0		0	
Godwit	0	0		-	0		0		0	
Golden/Black-bellied plover	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										
Loon (unidentified)	0	0		-	0		0		0	
Grebe	0	0		-	0		0		0	
Total loons and grebes	0	0		-	0		0		0	
Total migratory birds	261	506	52%	261 – 768	506	52%	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	
Total birds	261	506	52%	261 – 768	506	52%	0		0	

Note For sampling effort, see Table 2.

Table 18.–Estimated egg harvest, Beaver, Upper Yukon subregion, 2007.

Species	Annual egg harvest				Seasonal estimated egg harvest			
	Reported number	Estimated number	Confidence Interval		Spring		Summer	
			CIP	Low – High	Number	CIP	Number	CIP
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								
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	0	0		-	0		0	
Sandhill crane	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	
Gull (unidentified)	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								
Loon (unidentified)	0	0		-	0		0	
Grebe	0	0		-	0		0	
Total loons and grebes	0	0		-	0		0	
Total migratory birds	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	
Total eggs	0	0		-	0		0	

Note For sampling effort, see Table 2.

Table 19.–Estimated bird harvest, Beaver, Upper Yukon subregion, 2010.

Species	Annual bird harvest				Seasonal estimated bird harvest					
	Reported number	Estimated number	Confidence Interval		Spring		Summer		Fall	
			CIP	Low – High	Number	CIP	Number	CIP	Number	CIP
Ducks										
American wigeon	10	13	60%	10 – 21	13	57%	0		0	
Teal	6	8	51%	6 – 12	5	68%	0		3	63%
Mallard	33	43	36%	33 – 58	38	39%	0		5	63%
Northern pintail	28	37	40%	28 – 51	33	41%	0		4	67%
Northern shoveler	2	3	92%	2 – 5	3	87%	0		0	
Black scoter	0	0		-	0		0		0	
Surf scoter	3	4	68%	3 – 6	4	64%	0		0	
White-winged scoter	82	107	30%	82 – 138	107	28%	0		0	
Bufflehead	2	3	63%	2 – 4	1	87%	0		1	91%
Goldeneye	0	0		-	0		0		0	
Canvasback	5	7	54%	5 – 10	7	51%	0		0	
Scaup	0	0		-	0		0		0	
Harlequin duck	0	0		-	0		0		0	
Long-tailed duck	22	29	55%	22 – 44	29	52%	0		0	
Merganser	1	1	92%	1 – 2	1	87%	0		0	
Total ducks	194	254	27%	194 – 319	241	27%	0		14	55%
Geese										
Canada goose	66	87	28%	66 – 110	78	29%	0		8	51%
Greater white-fronted goose	144	188	25%	144 – 233	184	24%	0		4	67%
Snow goose	8	10	50%	8 – 15	10	47%	0		0	
Total geese	218	286	21%	228 – 343	273	20%	0		12	53%
Swans	0	0		-	0		0		0	
Sandhill crane	2	3	92%	2 – 5	3	87%	0		0	
Seabirds										
Tern	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	
Gull (unidentified)	0	0		-	0		0		0	
Total seabirds	0	0		-	0		0		0	
Shorebirds										
Whimbrel/Curlew	0	0		-	0		0		0	
Godwit	0	0		-	0		0		0	
Golden/Black-bellied plover	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										
Loon (unidentified)	0	0		-	0		0		0	
Grebe	0	0		-	0		0		0	
Total loons and grebes	0	0		-	0		0		0	
Total migratory birds	414	542	22%	430 − 654	517	22%	0		26	45%
Ptarmigans and grouses										
Grouse	21	27	50%	21 – 40	27	47%	0		0	
Ptarmigan	6	8	92%	6 – 15	8	87%	0		0	
Total ptarmigans and grouses	27	35	57%	27 – 55	35	54%	0		0	
Total birds	441	578	23%	453 – 702	552	22%	0		26	45%

Note For sampling effort, see Table 2.

Table 20.–Estimated egg harvest, Beaver, Upper Yukon subregion, 2010.

Species	Annual egg harvest				Seasonal estimated egg harvest			
	Reported number	Estimated number	Confidence Interval		Spring		Summer	
			CIP	Low – High	Number	CIP	Number	CIP
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								
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	0	0		-	0		0	
Sandhill crane	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	
Gull (unidentified)	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								
Loon (unidentified)	0	0		-	0		0	
Grebe	0	0		-	0		0	
Total loons and grebes	0	0		-	0		0	
Total migratory birds	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	
Total eggs	0	0		-	0		0	

Note For sampling effort, see Table 2.

Table 21.–Estimated bird harvest, Beaver, Upper Yukon subregion, 2014.

Species	Annual bird harvest				Seasonal estimated bird harvest					
	Reported number	Estimated number	Confidence Interval		Spring		Summer		Fall	
			CIP	Low – High	Number	CIP	Number	CIP	Number	CIP
Ducks										
American wigeon	10	11	56%	10 – 17	11	56%	0		0	
Teal	0	0		-	0		0		0	
Mallard	24	29	39%	24 – 41	29	39%	0		0	
Northern pintail	14	15	42%	14 – 21	15	42%	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	47	51	31%	47 – 66	51	31%	0		0	
Bufflehead	0	0		-	0		0		0	
Goldeneye	2	2	56%	2 – 3	2	56%	0		0	
Canvasback	0	0		-	0		0		0	
Scaup	0	0		-	0		0		0	
Harlequin duck	0	0		-	0		0		0	
Long-tailed duck	14	15	56%	14 – 24	15	56%	0		0	
Merganser	0	0		-	0		0		0	
Total ducks	111	123	27%	111 – 156	123	27%	0		0	
Geese										
Canada goose	45	83	115%	45 – 178	83	115%	0		0	
Greater white-fronted goose	135	180	55%	135 – 279	180	55%	0		0	
Snow goose	24	43	111%	24 – 91	43	111%	0		0	
Total geese	204	306	79%	204 – 546	306	79%	0		0	
Swans	0	0		-	0		0		0	
Sandhill crane	0	0		-	0		0		0	
Seabirds										
Tern	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	
Gull (unidentified)	0	0		-	0		0		0	
Total seabirds	0	0		-	0		0		0	
Shorebirds										
Whimbrel/Curlew	0	0		-	0		0		0	
Godwit	0	0		-	0		0		0	
Golden/Black-bellied plover	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										
Loon (unidentified)	0	0		-	0		0		0	
Grebe	0	0		-	0		0		0	
Total loons and grebes	0	0		-	0		0		0	
Total migratory birds	315	429	60%	315 – 685	429	60%	0		0	
Ptarmigans and grouses										
Grouse	38	44	35%	38 – 60	0		0		44	35%
Ptarmigan	0	0		-	0		0		0	
Total ptarmigans and grouses	38	44	35%	38 – 60	0		0		44	35%
Total birds	353	473	57%	353 – 741	429	60%	0		44	35%

Note For sampling effort, see Table 2.

Table 22.–Estimated egg harvest, Beaver, Upper Yukon subregion, 2014.

Species	Annual egg harvest				Seasonal estimated egg harvest			
	Reported number	Estimated number	Confidence Interval		Spring		Summer	
			CIP	Low – High	Number	CIP	Number	CIP
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								
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	0	0		-	0		0	
Sandhill crane	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	
Gull (unidentified)	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								
Loon (unidentified)	0	0		-	0		0	
Grebe	0	0		-	0		0	
Total loons and grebes	0	0		-	0		0	
Total migratory birds	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	
Total eggs	0	0		-	0		0	

Note For sampling effort, see Table 2.

Table 23.–Estimated bird harvest, Chalkyitsik, Upper Yukon subregion, 2006.

Species	Annual bird harvest				Seasonal estimated bird harvest					
	Reported number	Estimated number	Confidence Interval		Spring		Summer		Fall	
			CIP	Low – High	Number	CIP	Number	CIP	Number	CIP
Ducks										
American wigeon	52	61	38%	53 – 70	29	17%	0		32	64%
Teal	15	15	95%	15 – 21	15	34%	0		0	
Mallard	63	71	38%	63 – 81	44	15%	0		27	64%
Northern pintail	32	35	38%	32 – 40	27	17%	0		8	91%
Northern shoveler	0	0		-	0		0		0	
Black scoter	0	0		-	0		0		0	
Surf scoter	7	7	72%	7 – 9	7	26%	0		0	
White-winged scoter	254	267	43%	254 – 309	243	17%	0		24	57%
Bufflehead	0	0		-	0		0		0	
Goldeneye	38	42	53%	38 – 50	31	25%	0		11	72%
Canvasback	18	19	57%	18 – 23	16	24%	0		3	91%
Scaup	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	479	518	32%	479 – 578	413	13%	0		105	57%
Geese										
Canada goose	18	19	61%	18 – 23	19	22%	0		0	
Greater white-fronted goose	41	42	56%	41 – 51	42	20%	0		0	
Snow goose	7	7	72%	7 – 9	7	26%	0		0	
Total geese	66	68	55%	66 – 82	68	20%	0		0	
Swans	0	0		-	0		0		0	
Sandhill crane	1	1	95%	1 – 1	1	34%	0		0	
Seabirds										
Tern	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	
Gull (unidentified)	0	0		-	0		0		0	
Total seabirds	0	0		-	0		0		0	
Shorebirds										
Whimbrel/Curlew	0	0		-	0		0		0	
Godwit	0	0		-	0		0		0	
Golden/Black-bellied plover	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										
Loon (unidentified)	0	0		-	0		0		0	
Grebe	0	0		-	0		0		0	
Total loons and grebes	0	0		-	0		0		0	
Total migratory birds	546	587	33%	546 – 657	482	13%	0		105	57%
Ptarmigans and grouses										
Grouse	0	0		-	0		0		0	
Ptarmigan	0	0		-	0		0		0	
Total ptarmigans and grouses	0	0		-	0		0		0	
Total birds	546	587	33%	546 – 657	482	13%	0		105	57%

Note For sampling effort, see Table 2.

Table 24.–Estimated egg harvest, Chalkyitsik, Upper Yukon subregion, 2006.

Species	Annual egg harvest				Seasonal estimated egg harvest			
	Reported number	Estimated number	Confidence Interval		Spring		Summer	
			CIP	Low – High	Number	CIP	Number	CIP
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								
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	0	0		-	0		0	
Sandhill crane	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	
Gull (unidentified)	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								
Loon (unidentified)	0	0		-	0		0	
Grebe	0	0		-	0		0	
Total loons and grebes	0	0		-	0		0	
Total migratory birds	0	0		-	0		0	
Ptarmigans and grouses								
Grouse	0	0		-	0		0	
Ptarmigan	0	0		-	0		0	
Total ptarmigans and grou	0	0		-	0		0	
Total eggs	0	0		-	0		0	

Note For sampling effort, see Table 2.

Table 25.–Estimated bird harvest, Chalkyitsik, Upper Yukon subregion, 2007.

Species	Annual bird harvest				Seasonal estimated bird harvest					
	Reported number	Estimated number	Confidence Interval		Spring		Summer		Fall	
			CIP	Low − High	Number	CIP	Number	CIP	Number	CIP
Ducks										
American wigeon	22	30	67%	22 – 47	0		0		30	70%
Teal	0	0		-	0		0		0	
Mallard	15	20	70%	15 – 33	0		0		20	74%
Northern pintail	5	7	95%	5 – 12	0		0		7	101%
Northern shoveler	0	0		-	0		0		0	
Black scoter	0	0		-	0		0		0	
Surf scoter	0	0		-	0		0		0	
White-winged scoter	659	827	31%	659 – 1,056	776	30%	0		51	71%
Bufflehead	0	0		-	0		0		0	
Goldeneye	27	36	58%	27 – 55	0		0		36	61%
Canvasback	0	0		-	0		0		0	
Scaup	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	728	920	29%	728 – 1,155	776	30%	0		144	49%
Geese										
Canada goose	0	0		-	0		0		0	
Greater white-fronted goose	390	488	37%	390 – 649	488	33%	0		0	
Snow goose	0	0		-	0		0		0	
Total geese	390	488	37%	390 – 649	488	33%	0		0	
Swans	0	0		-	0		0		0	
Sandhill crane	0	0		-	0		0		0	
Seabirds										
Tern	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	
Gull (unidentified)	0	0		-	0		0		0	
Total seabirds	0	0		-	0		0		0	
Shorebirds										
Whimbrel/Curlew	0	0		-	0		0		0	
Godwit	0	0		-	0		0		0	
Golden/Black-bellied plover	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										
Loon (unidentified)	0	0		-	0		0		0	
Grebe	0	0		-	0		0		0	
Total loons and grebes	0	0		-	0		0		0	
Total migratory birds	1,118	1,408	29%	1,118 − 1,773	1,264	28%	0		144	49%
Ptarmigans and grouses										
Grouse	0	0		-	0		0		0	
Ptarmigan	0	0		-	0		0		0	
Total ptarmigans and grouses	0	0		-	0		0		0	
Total birds	1,118	1,408	29%	1,118 − 1,773	1,264	28%	0		144	49%

Note For sampling effort, see Table 2.

Table 26.–Estimated egg harvest, Chalkyitsik, Upper Yukon subregion, 2007.

Species	Annual egg harvest				Seasonal estimated egg harvest			
	Reported number	Estimated number	Confidence Interval		Spring		Summer	
			CIP	Low – High	Number	CIP	Number	CIP
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								
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	0	0		-	0		0	
Sandhill crane	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	
Gull (unidentified)	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								
Loon (unidentified)	0	0		-	0		0	
Grebe	0	0		-	0		0	
Total loons and grebes	0	0		-	0		0	
Total migratory birds	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	
Total eggs	0	0		-	0		0	

Note For sampling effort, see Table 2.

Table 27.–Estimated bird harvest, Chalkyitsik, Upper Yukon subregion, 2010.

Species	Annual bird harvest				Seasonal estimated bird harvest					
	Reported number	Estimated number	Confidence Interval		Spring		Summer		Fall	
			CIP	Low – High	Number	CIP	Number	CIP	Number	CIP
Ducks										
American wigeon	28	32	51%	28 – 48	25	65%	3	71%	3	52%
Teal	4	5	55%	4 – 7	0		0		5	55%
Mallard	42	48	49%	42 – 71	23	71%	11	41%	14	39%
Northern pintail	7	8	39%	7 – 11	0		2	71%	6	50%
Northern shoveler	0	0		-	0		0		0	
Black scoter	0	0		-	0		0		0	
Surf scoter	0	0		-	0		0		0	
White-winged scoter	178	202	56%	178 – 316	114	70%	57	46%	31	41%
Bufflehead	3	3	52%	3 – 5	0		0		3	52%
Goldeneye	9	10	52%	9 – 15	0		5	49%	6	58%
Canvasback	1	1	71%	1 – 2	0		1	71%	0	
Scaup	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	272	308	50%	272 – 462	162	70%	79	40%	67	31%
Geese										
Canada goose	41	46	37%	41 – 64	25	44%	10	45%	11	41%
Greater white-fronted goose	39	44	42%	39 – 63	25	44%	11	51%	8	49%
Snow goose	0	0		-	0		0		0	
Total geese	80	91	38%	80 – 125	50	44%	22	34%	19	40%
Swans	0	0		-	0		0		0	
Sandhill crane	0	0		-	0		0		0	
Seabirds										
Tern	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	
Gull (unidentified)	0	0		-	0		0		0	
Total seabirds	0	0		-	0		0		0	
Shorebirds										
Whimbrel/Curlew	0	0		-	0		0		0	
Godwit	0	0		-	0		0		0	
Golden/Black-bellied plover	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										
Loon (unidentified)	0	0		-	0		0		0	
Grebe	0	0		-	0		0		0	
Total loons and grebes	0	0		-	0		0		0	
Total migratory birds	352	399	46%	352 – 584	212	61%	101	39%	86	31%
Ptarmigans and grouses										
Grouse	0	0		-	0		0		0	
Ptarmigan	0	0		-	0		0		0	
Total ptarmigans and grouses	0	0		-	0		0		0	
Total birds	352	399	46%	352 – 584	212	61%	101	39%	86	31%

Note For sampling effort, see Table 2.

Table 28.–Estimated egg harvest, Chalkyitsik, Upper Yukon subregion, 2010.

Species	Annual egg harvest				Seasonal estimated egg harvest			
	Reported number	Estimated number	Confidence Interval		Spring		Summer	
			CIP	Low – High	Number	CIP	Number	CIP
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								
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	0	0		-	0		0	
Sandhill crane	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	
Gull (unidentified)	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								
Loon (unidentified)	0	0		-	0		0	
Grebe	0	0		-	0		0	
Total loons and grebes	0	0		-	0		0	
Total migratory birds	0	0		-	0		0	
Ptarmigans and grouses								
Grouse	0	0		-	0		0	
Ptarmigan	0	0		-	0		0	
Total ptarmigans and gro	0	0		-	0		0	
Total eggs	0	0		-	0		0	

Note For sampling effort, see Table 2.

Table 29.–Estimated bird harvest, Chalkyitsik, Upper Yukon subregion, 2014.

Species	Annual bird harvest				Seasonal estimated bird harvest					
	Reported number	Estimated number	Confidence Interval		Spring		Summer		Fall	
			CIP	Low – High	Number	CIP	Number	CIP	Number	CIP
Ducks										
American wigeon	32	51	86%	32 – 94	51	86%	0		0	
Teal	0	0		-	0		0		0	
Mallard	53	84	65%	53 – 139	59	74%	0		25	90%
Northern pintail	42	67	68%	42 – 112	67	68%	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	141	223	54%	141 – 343	160	38%	0		63	128%
Bufflehead	0	0		-	0		0		0	
Goldeneye	20	32	70%	20 – 54	16	78%	0		16	128%
Canvasback	1	2	128%	1 – 4	2	128%	0		0	
Scaup	1	2	128%	1 – 4	2	128%	0		0	
Harlequin duck	0	0		-	0		0		0	
Long-tailed duck	6	10	128%	6 – 22	10	128%	0		0	
Merganser	0	0		-	0		0		0	
Total ducks	296	469	47%	296 – 688	364	45%	0		105	116%
Geese										
Canada goose	30	48	59%	30 – 76	48	53%	0		0	
Greater white-fronted goose	50	79	49%	50 – 118	79	49%	0		0	
Snow goose	0	0		-	0		0		0	
Total geese	80	127	46%	80 – 185	127	46%	0		0	
Swans	0	0		-	0		0		0	
Sandhill crane	0	0		-	0		0		0	
Seabirds										
Tern	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	
Gull (unidentified)	0	0		-	0		0		0	
Total seabirds	0	0		-	0		0		0	
Shorebirds										
Whimbrel/Curlew	0	0		-	0		0		0	
Godwit	0	0		-	0		0		0	
Golden/Black-bellied plover	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										
Loon (unidentified)	0	0		-	0		0		0	
Grebe	0	0		-	0		0		0	
Total loons and grebes	0	0		-	0		0		0	
Total migratory birds	376	595	44%	376 – 860	491	44%	0		105	116%
Ptarmigans and grouses										
Grouse	23	36	64%	23 – 60	25	67%	0		11	95%
Ptarmigan	0	0		-	0		0		0	
Total ptarmigans and grouses	23	36	64%	23 – 60	25	67%	0		11	95%
Total birds	399	632	44%	399 – 909	516	42%	0		116	113%

Note For sampling effort, see Table 2.

Table 30.–Estimated egg harvest, Chalkyitsik, Upper Yukon subregion, 2014.

Species	Annual egg harvest				Seasonal estimated egg harvest			
	Reported number	Estimated number	Confidence Interval		Spring		Summer	
			CIP	Low – High	Number	CIP	Number	CIP
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								
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	0	0		-	0		0	
Sandhill crane	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	
Gull (unidentified)	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								
Loon (unidentified)	0	0		-	0		0	
Grebe	0	0		-	0		0	
Total loons and grebes	0	0		-	0		0	
Total migratory birds	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	
Total eggs	0	0		-	0		0	

Note For sampling effort, see Table 2.

REFERENCES CITED

Alaska Department of Labor and Workforce Development. 2014. "Alaska Population Estimates by Borough, Census Area, City and Census Designated Place (CDP), 2010–2014." Alaska Department of Labor and Workforce Development, Research and Analysis Section. http://laborstats.alaska.gov/pop/popest.htm.

Alexander, Virginia, and Clarence Alexander. 2011rev. *Gwich'in to English Dictionary*. Alaska: self-published.

Andersen, David B. and Gretchen Jennings. 2001. "The 2000 Harvest of Migratory Birds in Ten Upper Yukon River Communities, Alaska." Final report no. 1 to USFWS under cooperative agreement no. 701810J252. Alaska Department of Fish and Game Division of Subsistence Technical Paper No. 268. http://www.adfg.alaska.gov/techpap/Tp268.pdf.

Arctic Research Consortium of the United States (ARCUS). 1999. "Arctic Social Sciences: Opportunities in Arctic Research." Fairbanks: Arctic Research Consortium of the United States (ARCUS). http://consortiumlibrary.org/aml/arctichealth/docs/NSF_Arctic%20Social%20Sciences_Opportunities%20in%20Arctic%20Research_June%201999.pdf.

Bernard, David R., Allen E. Bingham, and Marianna Alexandersdottir. 1998. "The Mechanics of Onsite Creel Surveys in Alaska." Anchorage: Alaska Department of Fish and Game Division of Sport Fish, Special Publication No. 98-1. http://www.adfg.alaska.gov/FedAidPDFs/sp98-01.pdf.

Caulfield, Richard A. 1983. "Subsistence Land Use in Upper Yukon Porcupine Communities, Alaska: Dinjii Nats'aa Nan Kak Adagwaandaii." Fairbanks: Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 16. http://www.adfg.alaska.gov/techpap/tp016.pdf.

Cochran, William G. 1977. *Sampling Techniques*. 3rd ed. New York: John Wiley & Sons.

Copp, John D. 1985. "Critique and Analysis of Eskimo Waterfowl Hunter Surveys Conducted by the U.S. Fish and Wildlife Service on the Yukon-Kuskokwim Delta, Alaska, 1980-1984." Corvallis, OR: Oregon State University, Department of Fisheries and Wildlife: report to the U.S. Fish and Wildlife Service, Region 7.

Copp, John D. and Gloria M. Roy. 1986. "Results of the 1985 Survey of Waterfowl Hunting on the Yukon Kuskokwim Delta, Alaska." Anchorage: U.S. Fish and Wildlife Service.

Irving, Laurence. 1958. "Naming of Birds as Part of the Intellectual Culture of Indians at Old Crow, Yukon Territory." *ARCTIC* 11 (2). doi:10.14430/arctic3738.

James, Lillian and Dick Mueller. 1991. "Western Gwich'in Topical Dictionary–draft." Fairbanks: Alaska Native Language Center and the Summer Institute of Linguistics.

Mueller, R. J. 1964. *A Short Illustrated Topical Dictionary of Western Kutchin*. Fairbanks: Summer Institute of Linguistics.

Naves, Liliana C. 2010rev. "[2009] Alaska Migratory Bird Subsistence Harvest Estimates, 2004–2007, Alaska Migratory Bird Co-Management Council." Anchorage: Alaska Department of Fish and Game Division of Subsistence Technical Paper No. 349. http://www.adfg.alaska.gov/techpap/TP349.pdf.

———. 2010. "Alaska Migratory Bird Subsistence Harvest Estimates, 2008, Alaska Migratory Bird Co-Management Council." Anchorage: Alaska Department of Fish and Game Division of Subsistence Technical Paper No. 353. http://www.adfg.alaska.gov/techpap/tp353.pdf.

———. 2011. "Alaska Migratory Bird Subsistence Harvest Estimates, 2009, Alaska Migratory Bird Co-Management Council." Anchorage: Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 364. http://www.adfg.alaska.gov/techpap/TP%20364.pdf.

———. 2012. "Alaska Migratory Bird Subsistence Harvest Estimates, 2010, Alaska Migratory Bird Co-Management Council." Anchorage: Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 376. http://www.adfg.alaska.gov/techpap/TP%20376.pdf.

———. 2014a. "Alaska Subsistence Harvests of Birds and Eggs, 2011, Alaska Migratory Bird Co-Management Council." Anchorage: Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 395. http://www.adfg.alaska.gov/techpap/TP395.pdf.

———. 2014b. "Subsistence Harvests of Birds and Eggs, Gambell and Savoonga, 2002–2010, Alaska Migratory Bird Co-Management Council." Anchorage: Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 391. http://www.adfg.alaska.gov/techpap/TP391.pdf.

———. 2015. "Alaska Subsistence Harvest of Birds and Eggs, 2013, Alaska Migratory Bird Co-Management Council." Anchorage: Alaska Department of Fish and Game Division of Subsistence Technical Paper No. 409. http://www.adfg.alaska.gov/techpap/TP409.pdf.

Naves, Liliana C. and Nicole M. Braem. 2014. "Alaska Subsistence Harvest of Birds and Eggs, 2012, Alaska Migratory Bird Co-Management Council." Anchorage: Alaska Department of Fish and Game Division of Subsistence Technical Paper No. 397.

Naves, Liliana C., David Koster, Marianne G. See, Bridget Easley, and Lisa Olson. 2008. "Alaska Migratory Bird Co-Management Council Migratory Bird Subsistence Harvest Survey: Assessment of the Survey Methods and Implementation." Anchorage: Alaska Department of Fish and Game Division of Subsistence, Special Publication No. 2008-05.

Naves, Liliana C. and Tamara K. Zeller. 2013. "Saint Lawrence Island Subsistence Harvest of Birds and Eggs, 2011–2012, Addressing Yellow-Billed Loon Conservation Concerns." Anchorage: Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 384. http://www.adfg.alaska.gov/techpap/TP384.pdf.

Reynolds, Joel H. 2007. "Investigating the Impact of Sampling Effort on Annual Migratory Bird Subsistence Harvest Survey Estimates. Final Report for USFWS MBM Order No. 701812M816." Anchorage: Solutions Statistical Consulting.

Rothe, Thomas C., Paul I. Padding, Liliana C. Naves, and Gregory J. Robertson. 2015. "Harvest of Sea Ducks in North America: A Contemporary Summary." In *Ecology and Conservation of North American Sea Ducks*, 46:369–415. Studies in Avian Biology. London: CRC Press.

U.S. Census Bureau. 2011. "2010 Census." Washington, D.C.: U.S. Census Bureau. http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.

Wallis, Velma. 2004. *Raising Ourselves: A Gwich'in Coming of Age Story from the Yukon River*. Kenmore, WA: Epicenter Press.

Wentworth, Cynthia. 2007a. "Subsistence Migratory Bird Harvest Survey, Bristol Bay, 2001–2005 with 1995–2005 Species Tables." Anchorage: U.S. Fish and Wildlife Service, Migratory Birds and State Programs.

———. 2007b. "Subsistence Migratory Bird Harvest Survey, Yukon-Kuskokwim Delta, 2001–2005 with 1985–2005 Species Tables." Anchorage: U.S. Fish and Wildlife Service, Migratory Birds and State Programs.

Zavaleta, Erika. 1999. "The Emergence of Waterfowl Conservation among Yup'ik Hunters in the Yukon-Kuskokwim Delta, Alaska." *Human Ecology* 27 (2): 231–66.

APPENDICES

Appendix A.–Regions and communities included in the 2004–2014 harvest estimates.

Region, *subregion*, community	House-holds¶	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Gulf of Alaska-Cook Inlet												
Gulf of Alaska Villages												
Chenega	31	-	-	x	-	-	-	x	-	-	-	-
Nanwalek	55	x	-	-	-	-	-	x	-	-	-	-
Port Graham	79	x	-	x	-	-	-	-	-	-	-	-
Tatitlek	36	x	-	-	-	-	-	-	-	-	-	-
Cordova†	922	-	-	-	-	-	-	-	-	-	-	x
Cook Inlet												
Tyonek	70	x	x	-	-	-	-	-	-	-	-	-
Kodiak Archipelago												
Kodiak Villages												
Akhiok	19	-	-	x	-	-	-	x	-	-	-	-
Karluk	12	-	-	x	-	-	-	x	-	-	-	-
Larsen Bay	34	-	-	x	-	-	-	x	-	-	-	-
Old Harbor	84	-	-	x	-	-	-	-	-	-	-	-
Ouzinkie	56	-	-	x	-	-	-	-	-	-	-	-
Port Lions	77	-	-	-	-	-	-	x	-	-	-	-
Kodiak City and Road-connected												
Aleneva	9	-	-	-	-	-	-	-	-	-	-	-
Chiniak	20	-	-	-	-	-	-	-	-	-	-	-
Kodiak City	2,039	-	-	x	-	-	-	-	-	-	-	-
Kodiak Station	332	-	-	-	-	-	-	-	-	-	-	-
Womens Bay	283	-	-	-	-	-	-	x	-	-	-	-
Balance of Kodiak Is. Borough	1,665	-	-	-	-	-	-	x	-	-	-	-
Aleutian-Pribilof Islands												
Aleutian-Pribilof Villages												
Adak	44	-	-	-	-	-	-	-	-	-	-	-
Akutan	40	-	x	-	x	x	-	-	-	-	-	-
Atka	24	-	x	-	-	-	-	-	-	-	-	-
Cold Bay	46	-	x	-	-	-	-	-	-	-	-	-
False Pass	15	-	-	-	-	x	-	-	-	-	-	-
King Cove	181	-	x	-	-	x	-	-	-	-	-	-
Nelson Lagoon	22	-	-	-	-	-	-	-	-	-	-	-
Nikolski	13	-	-	-	-	-	-	-	-	-	-	-
Sand Point	246	-	-	-	-	x	-	-	-	-	-	-
Saint George	42	-	-	-	-	-	-	-	-	-	-	-
Saint Paul	162	-	-	-	-	-	-	-	-	-	-	-
Unalaska	927	-	-	-	-	x	-	-	-	-	-	-
Bristol Bay												
South Alaska Peninsula												
Chignik	41	x	-	-	x	-	-	-	x	-	-	-
Chignik Lagoon	29	x	-	-	-	-	-	-	-	-	-	-
Chignik Lake	27	x	-	-	-	x	-	-	-	-	-	-

-continued-

Region, *subregion*, community	House-holds¶	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Ivanof Bay	2	-	-	-	-	-	-	-	-	-	-	-
Perryville	38	x	-	-	x	-	-	-	x	-	-	-
Southwest Bristol Bay												
Aleknagik	71	x	-	-	x	x	-	-	x	-	-	-
Clark's Point	24	x	x	-	x	x	-	-	-	-	-	-
Egegik	29	-	x	-	x	-	-	-	-	-	-	-
Ekwok	37	x	-	-	x	x	-	-	x	-	-	-
Igiugig	16	-	-	-	-	-	-	-	-	-	-	-
Iliamna	39	-	x	-	x	-	-	-	-	-	-	-
King Salmon	157	-	x	-	-	-	-	-	-	-	-	-
Kokhanok	52	x	x	-	x	x	-	-	x	-	-	-
Koliganek	55	-	x	-	x	-	-	-	-	-	-	-
Levelock	27	x	x	-	-	x	-	-	x	-	-	-
Manokotak	121	-	x	-	x	-	-	-	x	-	-	-
Naknek	231	x	-	-	x	-	-	-	x	-	-	-
New Stuyahok	114	-	x	-	x	-	-	-	-	-	-	-
Newhalen	50	x	x	-	-	x	-	-	-	-	-	-
Nondalton	57	x	x	-	-	-	-	-	-	-	-	-
Pedro Bay	19	-	x	-	-	-	-	-	-	-	-	-
Pilot Point	27	-	x	-	-	-	-	-	-	-	-	-
Pope-Vannoy Landing‡	3	-	-	-	-	-	-	-	-	-	-	-
Portage Creek‡	1	-	-	-	-	-	-	-	-	-	-	-
Port Heiden	35	-	x	-	-	-	-	-	x	-	-	-
Port Alsworth‡	44	-	-	-	-	-	-	-	-	-	-	-
South Naknek	35	-	x	-	x	-	-	-	-	-	-	-
Togiak	231	x	-	x	x	-	-	-	x	-	-	-
Twin Hills	29	x	x	-	x	-	-	-	-	-	-	-
Ugashik‡	7	-	-	-	-	-	-	-	-	-	-	-
Dillingham	855	-	x	-	x	x	-	-	x	-	-	-
Yukon-Kuskokwim Delta												
Y-K Delta South Coast												
Eek	91	x	x	-	x	x	-	x	x	-	-	-
Goodnews Bay	76	-	-	x	-	-	-	x	-	-	x	-
Kipnuk	153	-	x	x	x	-	x	-	x	-	-	-
Kongiganak	94	-	x	x	x	x	-	-	-	-	-	-
Kwigillingok	82	-	-	-	-	-	-	-	-	-	-	-
Platinum	19	-	x	x	-	-	-	x	-	-	x	-
Quinhagak	165	x	x	x	x	-	-	-	x	-	x	-
Tuntutuliak	96	x	-	x	-	x	x	x	-	-	x	-
Y-K Delta Mid Coast												
Chefornak	92	x	-	x	x	-	x	x	-	-	x	-
Chevak	209	x	-	-	-	-	x	x	-	-	-	-
Hooper Bay	256	x	x	-	-	x	-	-	x	-	-	-

-continued-

Region, ***subregion***, community	House-holds¶	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Mekoryuk	70	-	x	-	x	x	-	-	x	-	-	-
Newtok	70	-	x	x	-	x	x	-	-	-	x	-
Nightmute	59	x	-	x	x	-	x	-	x	-	-	-
Scammon Bay	96	-	-	x	-	x	x	x	-	-	x	-
Toksook Bay	125	x	x	-	x	-	-	-	-	-	x	-
Tununak	84	x	x	-	x	x	-	-	x	-	x	-
Y-K Delta North Coast												
Alakanuk	160	x	-	x	-	-	x	x	-	-	x	-
Emmonak	185	-	x	x	x	x	x	-	-	-	x	-
Kotlik	128	x	x	-	-	-	-	-	-	-	-	-
Nunam Iqua	43	-	x	x	-	x	x	x	-	-	-	-
Lower Yukon												
Marshall	100	x	x	-	x	x	-	x	-	-	-	-
Mountain Village	184	-	x	-	x	x	-	-	-	-	x	-
Pilot Station	121	-	x	x	-	x	x	-	-	-	-	-
Pitkas Point	31	x	-	x	x	-	x	x	-	-	x	-
Russian Mission	73	-	x	x	-	x	x	-	-	-	-	-
Saint Mary's	151	-	x	-	x	-	x	-	-	-	x	-
Lower Kuskokwim												
Akiachak	150	-	-	x	-	-	x	-	-	-	-	-
Akiak	90	-	x	x	x	-	-	x	-	-	-	-
Aniak	166	x	x	-	-	x	-	-	-	-	-	-
Atmautluak	63	x	-	-	x	x	-	-	-	-	x	-
Kasigluk	113	x	-	x	x	-	x	-	-	-	x	-
Kwethluk	172	x	x	x	x	-	x	x	-	-	-	-
Lower Kalskag	75	x	-	x	x	x	x	x	-	-	-	-
Napakiak	96	-	-	-	x	-	-	-	-	-	x	-
Napaskiak	94	-	x	x	x	x	x	-	x	-	-	-
Nunapitchuk	124	x	x	-	x	x	-	-	x	-	-	-
Oscarville	15	-	-	x	x	-	x	x	-	-	x	-
Tuluksak	92	-	x	x	-	x	-	-	x	-	-	-
Upper Kalskag	60	-	x	x	-	-	-	-	x	-	x	-
Central Kuskokwim												
Chuathbaluk	36	x	-	-	-	-	-	-	-	-	-	-
Crooked Creek	38	x	-	x	-	-	-	-	-	-	-	-
Lime Village	11	-	-	x	-	-	-	x	-	-	-	-
Red Devil	12	-	-	-	x	-	-	-	-	-	-	-
Sleetmute	36	-	-	x	x	-	-	-	-	-	-	-
Stony River	20	x	-	x	-	-	-	-	-	-	-	-
Bethel	1,896	x	x	x	x	x	x	x	x	-	-	-
Bering Strait-Norton Sound												
St. Lawrence-Diomede Islands												
Diomede	38	-	x	-	x	-	-	x	-	-	-	-

-continued-

Region, *subregion*, community	House-holds¶	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Gambell	164	x	x	-	x	-	x	x	x	x	-	-
Savoonga	166	x	x	-	x	-	x	x	x	x	-	-
Bering Strait Mainland Villages												
Brevig Mission	93	x	-	-	x	-	-	x	-	-	-	-
Elim	89	x	x	-	-	-	-	-	-	-	-	-
Golovin	49	-	x	-	x	-	-	x	-	-	-	-
Koyuk	89	-	x	-	x	-	-	x	-	-	-	-
Shaktoolik	64	-	-	-	x	-	-	x	-	-	-	-
Shishmaref	141	x	x	-	-	-	-	-	-	-	-	-
Saint Michael	96	x	-	-	x	-	-	-	-	-	-	-
Stebbins	134	-	x	-	x	-	-	x	-	-	-	-
Teller	72	x	x	-	-	-	-	-	-	-	-	-
Unalakleet	225	x	-	-	x	-	-	-	-	-	-	-
Wales	43	x	x	-	-	-	-	-	-	-	-	-
White Mountain	65	x	-	-	x	-	-	-	-	-	-	-
Nome	1,216	x	x	-	x	-	-	-	-	-	-	-
Northwest Arctic												
Northwest Arctic Villages												
Ambler	75	-	-	-	-	-	-	-	-	-	-	-
Buckland	98	-	-	x	-	-	-	-	-	-	-	-
Deering	44	-	-	-	-	-	-	-	-	-	-	-
Kiana	101	-	-	-	-	-	-	-	-	-	-	-
Kivalina	85	-	-	-	-	-	-	-	-	-	-	-
Kobuk	36	-	-	x	-	-	-	-	-	-	-	-
Noatak	114	-	-	-	-	-	-	-	-	-	-	-
Noorvik	153	-	-	-	-	-	-	-	-	-	-	-
Selawik	186	-	-	x	-	-	-	-	-	-	-	-
Shungnak	62	-	-	x	-	-	-	-	-	-	-	-
Kotzebue	954	-	-	-	-	-	-	-	-	x	-	-
North Slope												
North Slope Villages												
Anaktuvuk Pass	99	-	x	-	x	-	-	-	-	-	-	-
Atqasuk	64	-	x	-	x	-	-	-	-	-	-	-
Kaktovik	72	-	x	-	x	x	x	-	-	-	-	-
Nuiqsut	114	-	-	-	-	x	x	-	-	-	-	-
Point Hope	186	-	x	-	-	x	-	-	-	-	-	-
Point Lay	60	-	x	-	-	-	-	-	-	-	-	-
Wainwright	147	-	x	-	x	x	x	-	-	-	-	-
Barrow	1,280	-	x	-	x	x	x	-	-	-	-	-
Interior Alaska												
Mid Yukon-Upper Kuskokwim												
Anvik	33	x	x	x	-	-	-	x	-	-	-	-
Grayling	55	-	x	x	-	-	-	-	-	-	-	-

-continued-

Region, ***subregion***, community	House-holds¶	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Holy Cross	64	x	x	x	-	-	-	x	-	-	-	-
Lake Minchumina	6	x	-	x	-	-	-	-	-	-	-	-
McGrath	147	-	-	-	-	-	-	-	-	-	-	-
Nikolai	37	x	x	x	-	-	-	-	-	-	-	-
Shageluk	36	-	x	-	-	-	-	-	-	-	-	-
Takotna	22	-	x	-	-	-	-	x	-	-	-	-
Tanana	100	-	-	-	-	-	-	-	-	-	-	-
Yukon-Koyukuk												
Alatna	12	x	-	x	x	x	-	x	-	-	-	-
Allakaket	62	x	-	x	x	x	-	x	-	-	-	-
Bettles-Evansville	21	-	-	x	-	-	-	-	-	-	-	-
Coldfoot	6	-	-	-	-	-	-	x	-	-	-	-
Galena	190	x	-	-	-	-	-	-	-	-	-	-
Hughes	31	x	-	-	-	-	-	-	-	-	-	-
Huslia	91	x	-	-	-	-	-	x	-	-	-	-
Kaltag	70	x	-	-	-	-	-	-	-	-	-	-
Koyukuk	42	x	x	-	-	-	-	-	-	-	-	-
Nulato	92	x	x	-	-	-	-	-	-	-	-	-
Ruby	62	x	x	-	-	-	-	x	-	-	-	-
Wiseman	5	-	-	-	-	-	-	x	-	-	-	-
Upper Yukon												
Arctic Village	65	-	-	x	-	-	-	-	-	-	-	x
Beaver	36	-	-	x	x	-	-	x	-	-	-	x
Birch Creek	17	-	-	-	x	-	-	-	-	-	-	-
Central	53	-	-	x	-	-	-	x	-	-	-	-
Chalkyitsik	24	-	-	x	x	-	-	x	-	-	-	x
Circle	40	-	-	x	x	-	-	-	-	-	-	x
Fort Yukon	246	x	-	x	x	-	-	-	-	-	-	x
Livengood‡	7	-	-	-	-	-	-	-	-	-	-	-
Rampart	10	-	-	-	-	-	-	x	-	-	-	-
Stevens Village	26	-	-	-	-	-	-	-	-	-	-	-
Venetie	61	-	-	x	x	-	-	x	-	-	-	x
Tanana Villages												
Alcan Border‡		-	-	-	-	-	-	-	-	-	-	-
Anderson‡	90	-	-	-	-	-	-	-	-	-	-	-
Chicken‡	5	-	-	-	-	-	-	-	-	-	-	-
Dot Lake	26	x	-	-	-	-	-	-	-	-	-	-
Dry Creek	29	-	-	-	-	-	-	-	-	-	-	-
Eagle	41	x	-	-	-	-	-	-	-	-	-	-
Eagle Village	31	x	-	-	-	-	-	-	-	-	-	-
Healy Lake	7	-	-	-	-	-	-	-	-	-	-	-
Manley Hot Springs	41	x	-	-	-	-	-	-	-	-	-	-
Minto	65	-	-	x	-	-	-	x	-	-	-	-

-continued-

Region, *subregion*, community	House-holds¶	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Nenana‡	185	x	-	x	-	-	-	-	-	-	-	-
Northway	77	x	-	-	-	-	-	-	-	-	-	-
Tanacross	53	-	-	x	-	-	-	-	-	-	-	-
Tetlin	43	-	-	-	-	-	-	x	-	-	-	-
Tok	532	-	-	x	-	-	-	x	-	-	-	-
Upper Copper River												
Cantwell	104	-	-	-	x	-	-	-	-	-	-	-
Chistochina	36	x	-	-	x	-	-	-	-	-	-	-
Chitina	52	x	-	-	-	-	-	-	-	-	-	-
Copper Center	123	x	-	-	x	-	-	-	-	-	-	-
Gakona	86	x	-	-	x	-	-	-	-	-	-	-
Gulkana	36	x	-	-	x	-	-	-	-	-	-	-
Mentasta Lake	46	x	-	-	x	-	-	-	-	-	-	-
Tazlina	111	-	-	-	-	-	-	-	-	-	-	-
Southeast Alaska[a]												
Craig	470	-	-	-	-	-	-	-	-	-	-	-
Hoonah	305	-	-	-	-	-	-	-	-	-	-	-
Hydaburg	128	-	-	-	-	-	-	-	-	-	-	-
Yakutat	270	-	-	-	-	-	-	-	-	-	-	-

*Source*s Survey results for 2004–2013 were reported in Naves (2010rev.; 2010; 2011; 2012; 2014a; 2015); Naves and Braem (2014).

Households: Total number of occupied households based on 2011 Census.

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

Note ‡: The communities of Alcan Border, Anderson, Chicken, Livengood, Pope-Vanoy Landing, Portage Creek, Port Alsworth, and Ugashik were added to the sampling universe in 2014. Also at this revision, the Four Mile Road CDP was added to the community of Nenana.

Note †The subregion Cordova was included in 2014 when the spring hunt was first authorized.

Note Allakaket includes Allalaket City and New Allakaket CDP.

Note Dot Lake includes Dot Lake Village and Dot Lake CDP.

Note Bettles-Evansville includes both Bettles and Evansville.

Note Northway includes Northway Village, Northway Junction, and Northway CDP.

Note Nenana includes Nenana City and Four Mile Road CDP.

Note Balance of Kodiak Island Borough listed as Kodiak at Large in previous AMBCC documents.

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

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 harvested birds or eggs in any of the last 3 years.*
[d] ***Other:** non-harvesters (did not harvest birds or eggs in any of the last 3 years) and households of unknown harvest pattern.*

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

Appendix C.–Tracking sheet and household consent form (original size 8.5x11 inches).

AMBCC Harvest Survey
OMB FWS Form 3-2380 Expires 09/30/2018

page ____ / ____

Tracking Sheet & Household Consent Form

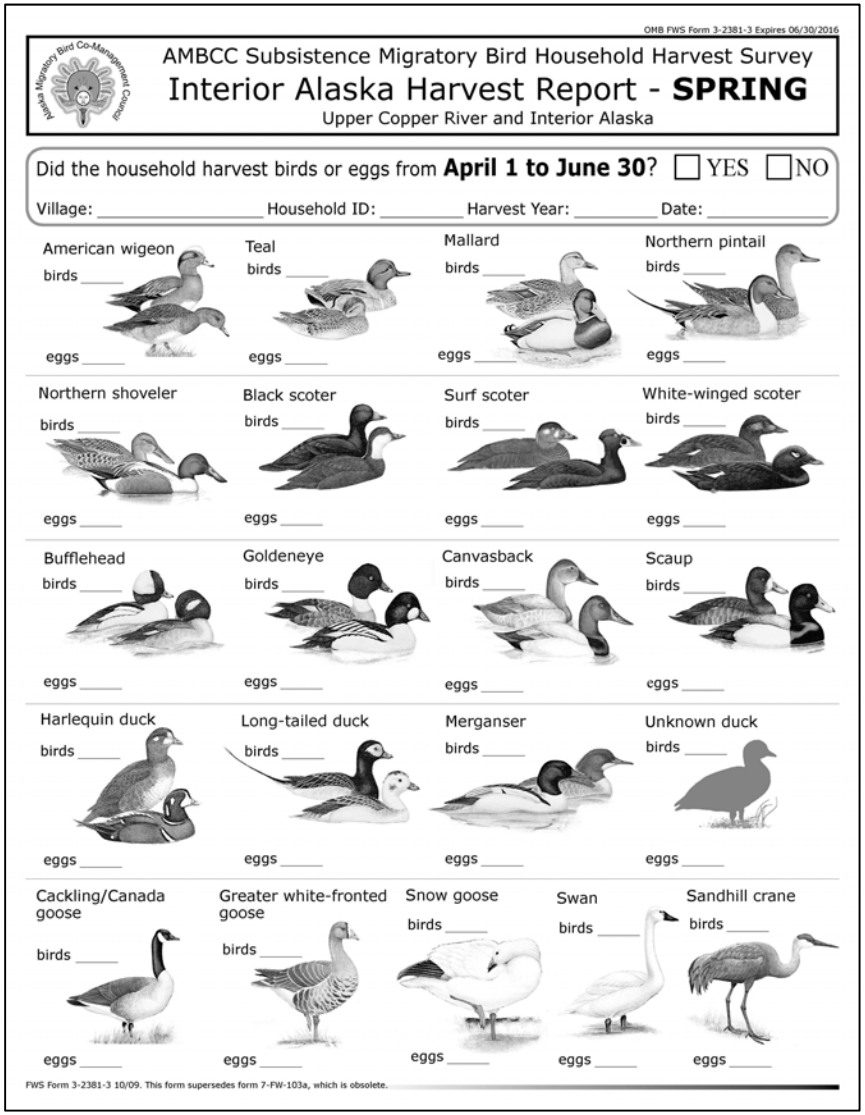
Copy here only the households selected to be surveyed.

Village: _____ Harvest Year: _____ Surveyor: _____

House-hold ID	Household name	Household consent				Harvest report *(spring, summer, and fall)*	Comments *(Why no contact? Moved?)*
		Agreed	Refu-sed	No contact	Date completed (mm/dd/yyyy)	Date completed (mm/dd/yyyy)	
					/ /	/ /	
					/ /	/ /	
					/ /	/ /	
					/ /	/ /	
					/ /	/ /	
					/ /	/ /	
					/ /	/ /	
					/ /	/ /	
					/ /	/ /	
					/ /	/ /	
					/ /	/ /	
					/ /	/ /	
					/ /	/ /	
					/ /	/ /	
					/ /	/ /	
					/ /	/ /	
					/ /	/ /	

OMB Form 3060-1 (xxxx) This form supersedes form(s) 102, which is obsolete.

Appendix D.–Harvest report form, Interior Alaska (spring sheet, both sides, original size 8.5x11 inches each side).



OMB FWS Form 3-2381-3 Expires 06/30/2016

AMBCC Subsistence Migratory Bird Household Harvest Survey

Interior Alaska Harvest Report - **SPRING**

Upper Copper River and Interior Alaska

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 ____

Harlequin duck — birds ____ eggs ____

Long-tailed duck — birds ____ eggs ____

Merganser — birds ____ eggs ____

Unknown duck — birds ____ eggs ____

Cackling/Canada goose — birds ____ eggs ____

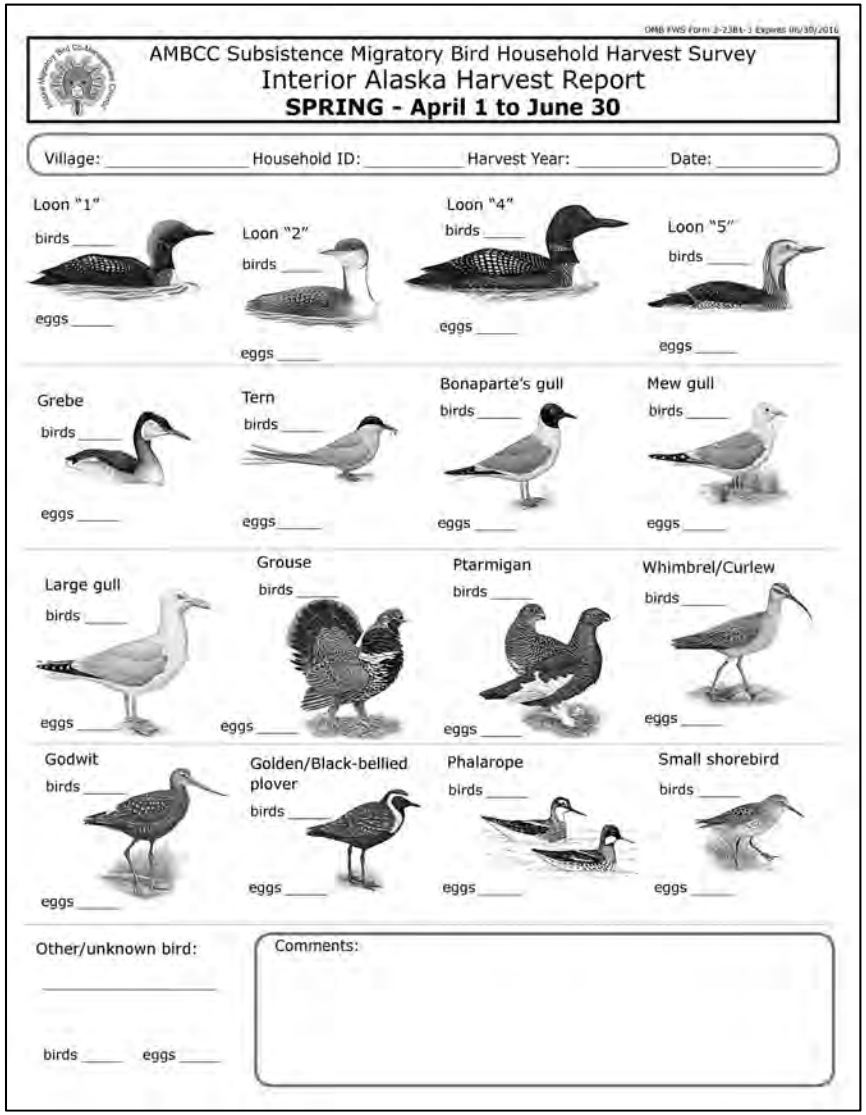
Greater white-fronted goose — birds ____ eggs ____

Snow goose — birds ____ eggs ____

Swan — birds ____ eggs ____

Sandhill crane — birds ____ eggs ____

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



OMB FWS Form 3-2381-3 Expires 06/30/2016

AMBCC Subsistence Migratory Bird Household Harvest Survey

Interior Alaska Harvest Report

SPRING - April 1 to June 30

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

Loon "1" — birds ____ eggs ____

Loon "2" — birds ____ eggs ____

Loon "4" — birds ____ eggs ____

Loon "5" — birds ____ eggs ____

Grebe — birds ____ eggs ____

Tern — birds ____ eggs ____

Bonaparte's gull — birds ____ eggs ____

Mew gull — birds ____ eggs ____

Large gull — birds ____ eggs ____

Grouse — birds ____ eggs ____

Ptarmigan — birds ____ eggs ____

Whimbrel/Curlew — birds ____ eggs ____

Godwit — birds ____ eggs ____

Golden/Black-bellied plover — birds ____ eggs ____

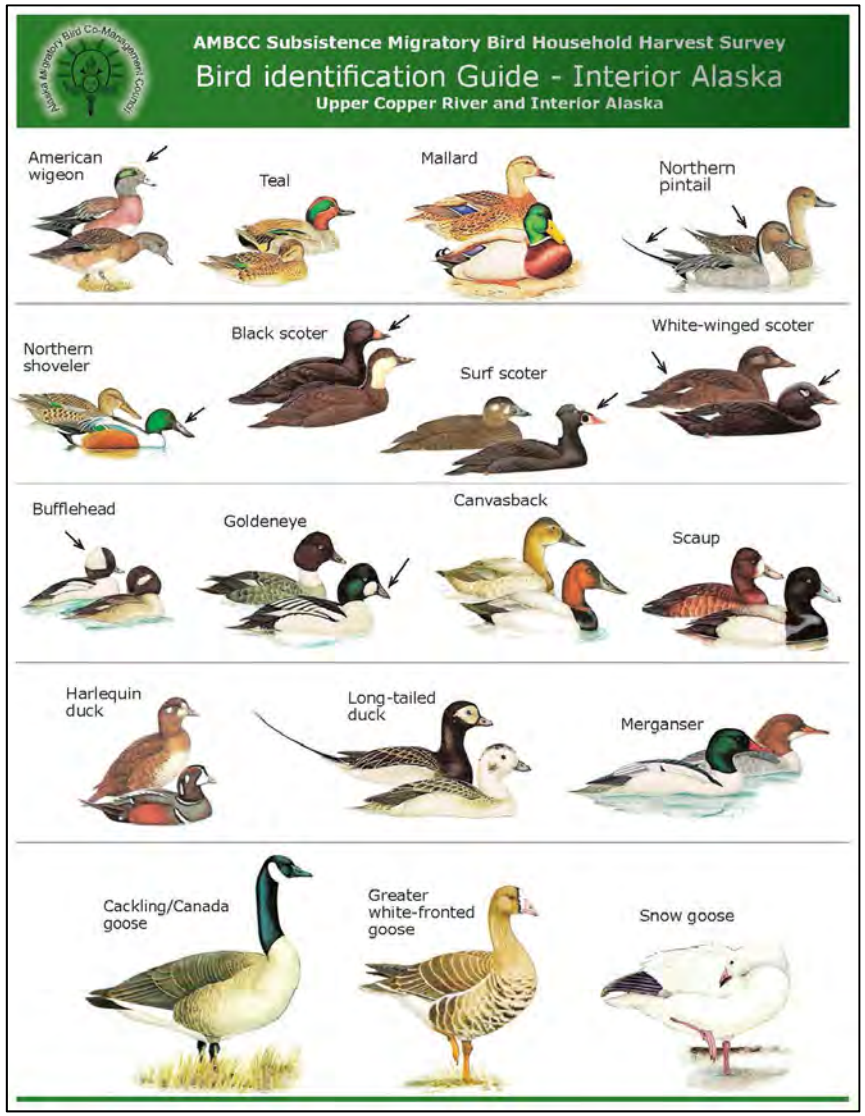
Phalarope — birds ____ eggs ____

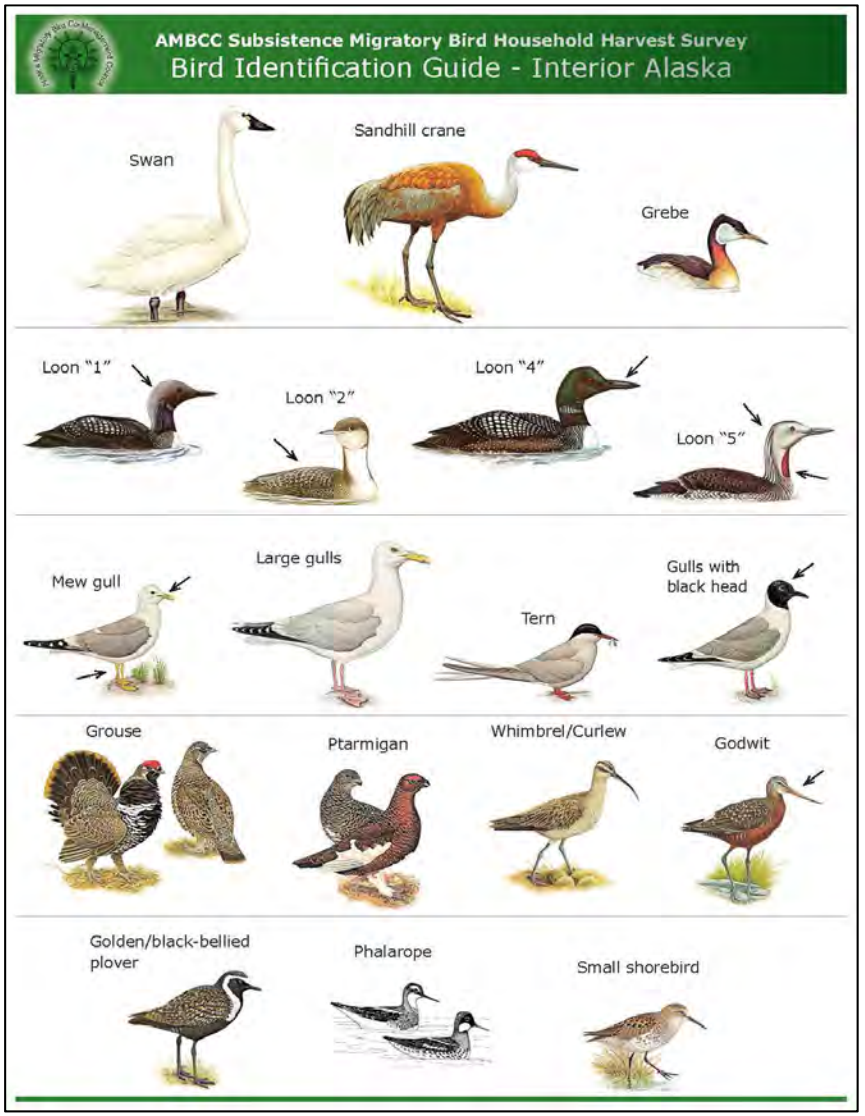
Small shorebird — birds ____ eggs ____

Other/unknown bird: _____ birds ____ eggs ____

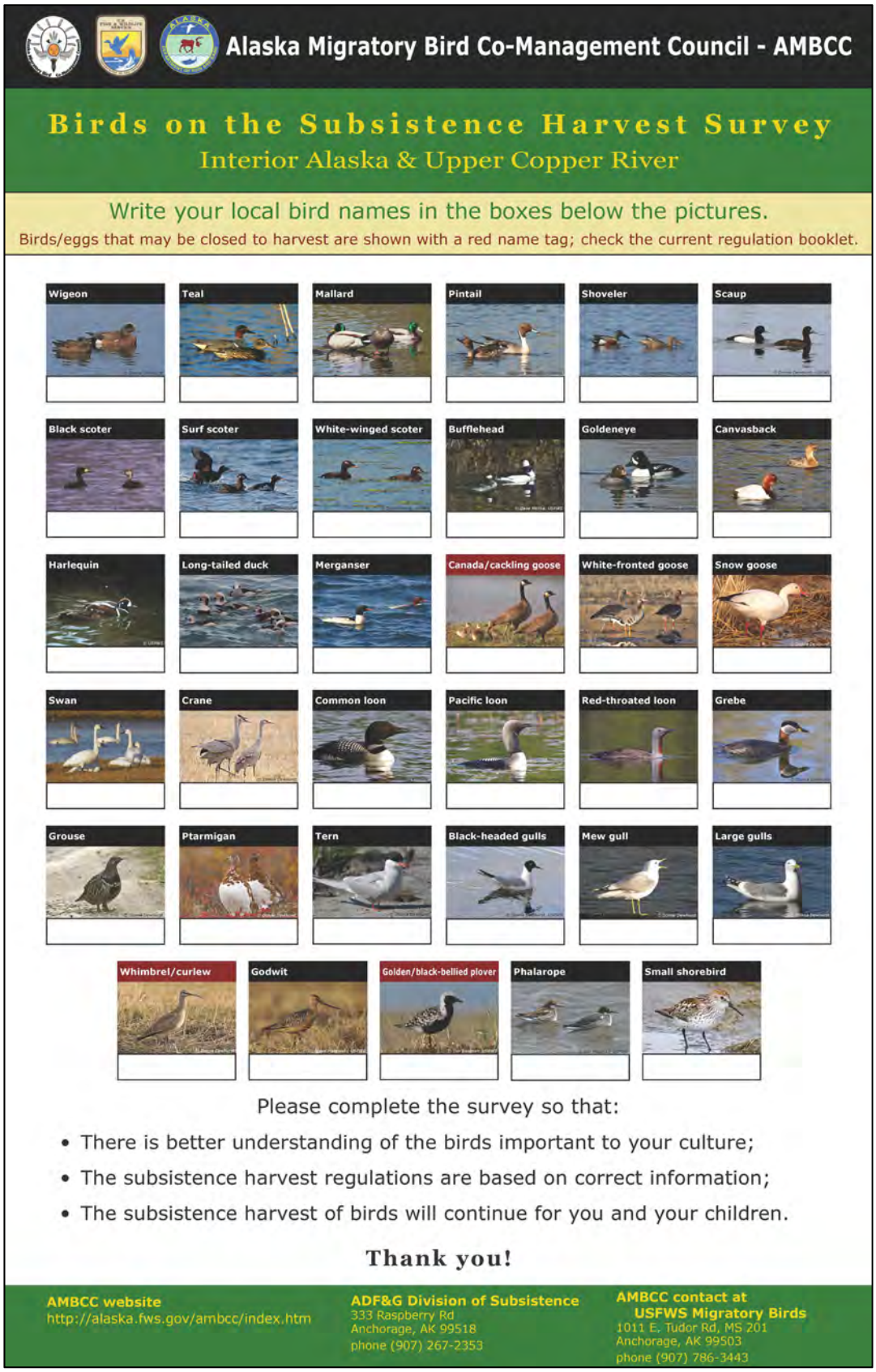
Comments:

Appendix E.–Bird identification guide, Interior Alaska (both sides, original size 8.5x11 inches each side).





Appendix F.–Bird poster, Interior Alaska (original size 23x36 inches).



Appendix G.–Alaska Native and local bird names, Upper Yukon.

Species	Upper Yukon Gwich'in	Old Crow Gwich'in[1]
American wigeon *Anas americana*	Chalvii[2]	Kaloree
Teal* Green-winged teal *A. crecca* (1) Blue-winged teal *A. discors* (2)	(1) Ch'idzin[2]	(1) Tarui kahka
Mallard *A. platyrhynchos*	Neet'ak choo[3], neet'aji̱i̱[4]	Natakcho
Northern pintail *A. acuta*	Ch'iri-njaa[2]	Chinchityo, nakostikyi
Northern shoveler *A. clypeata*	Dehdrik[2]	Tetrik
Black scoter *Melanitta nigra*	Dats'an neelzhraji̱i̱[4]	
Surf scoter *M. perspicillata*	Deetree'aah[2]	Tetre la
White-winged scoter *M. fusca*	Njaa[2], black duck[5]	Nya
Bufflehead *Bucephala albeola*	Tł'aandii'[2]	
Goldeneye* Common goldeneye *B. clangula* (1) Barrow's gondeneye *B. islandica* (2)	Kiik'ii[A], chiik'ii̱[2]	 (1) Tovi (2) Tesitit kyi
Canvasback *Aythya valisineria*	T'aavii[2]	
Scaup* Greater scaup *A. marila* (1) Lesser scaup *A. affinis* (2)	Taiinchoo'[2], tsiinchoo[6]	 (1) Tani cho (2) Nityitin
Harlequin duck *Histrionicus histrionicus*	Kiiteegwilik[3], kiiteegwiluk[4]	Tsi tut kwiluk
Long-tailed duck *Clangula hyemalis*	Aahaalak-ikhyaa̱[2], ahiilak[6], ikhyii[6]	Ahaluk
Merganser* Common merganser *Mergus merganser* (1) Red-breasted merganser *M. serrator* (2)	Traa̱[2] (saw bill?)	 (2) Ttrah
Black brant *Branta bernicla*	Dzehgak[4]	Ttsun tratesil
Canada goose *B. canadensis parvipes*	Khaaih[2], khee[2]	Kyha
Greater white-fronted goose *Anser albifrons*	Deechy'a[2], speckled-belly[7]	Techyo
Lesser snow goose *C. caerulescens*	Gwigeh[2]	Kookeh
Swan* Tundra swan *Cygnus columbianus* (1) Trumpeter swan *C. buccinators* (2)	Daa-zhraji̱i̱[2], daazhraji̱i̱ choo[4]	 (1) Tarui
Sandhill crane *Grus canadensis*	Jyah[2]	Chya
Grouse* Spruce grouse *Falcipennis canadensis* (1) Ruffed grouse *Bonasa umbellus* (2) Sharp-tailed grouse *Tympanuchus phasianellus* (3)	 (1): Da̱i̱[2], spruce hen[7] (2): Treegwat[3], willow grouse[7] (3): Ch'ahtal[3]	 (1) Tui (2) Chut tul
Ptarmigan* Willow ptarmigan *Lagopus lagopus* (1) Rock ptarmigan *L. muta* (2) White-tailed ptarmigan *L. leucura* (3)	Daagǫǫ[2, 7]	 (1) Taka (2) Tako
Arctic tern *Sterna paradisea*	Ch'itry'uu[2]	Kkya notetutgga
Bonaparte's gull *Larus philadelphia*	Khakyaa-zhraji̱i̱[2], khachyaa-zhraji̱i̱[2]	Chit tryo
Mew gull *Larus canus*	Vidigeh[4], vyu̱[7]	Vyou
Large gulls* Herring gull *L. argentatus* (1) Glaucous gull *L. hyperboreus* (2)	Tetyet kkya[6] (1) Vyu̱[2]	 (1) Tetyet kkya (2) Tyittet kkya
Whimbrel *Numenius phaeopus*	Deenyaa[4], deenjuu[4] (also long-billed dowitcher, marbled godwit, curlew sandpiper), zheeyah[7]	Tetnjyo
Hudsonian godwit *L. haemastica*		

Species	Upper Yukon Gwich'in	Old Crow Gwich'in[1]
Golden/black-bellied plover* American golden plover *Pluvialis dominica* Pacific golden plover *P. squatarola* Black-bellied plover *P. fulva*	Ts'ilaai'[2], ts'ilaaih[2], ts'alaih[6]	
Phalarope* Red-necked phalarope *Phalaropus lobatus* (1) Red phalarope *P. fulicaria* (2)	Toilaii[7], nehthajal[7]	 (1) Trevug
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)	Teeghaiits'il: sandpipers with short legs[7]. Dil: sandpipers with long legs[7]. (5) Teeghaii ts'il vee[4] (6) Teegheets'il[2], ts'il tsal[4], tagatsil[6], teeghaii teekeets'il[6] (13) Khyaa'aai[2], shyaa'aai[2], khyaa'aii[4], shini' jaa'aii[4] (14) Dil[2], techuh[4] (16) Tue[4] (17) Traruk[4] (18) Ch'idriivak[2] (unidentified surf bird, phalarope) (19) Ddhah teedil[4] (22) Deenjyah (23) Deenjyaa[2] (24) Zheezhya[2]	 (2) Teggetesel (5) Teggetsel ve (6) Tagatsil (13) Shishenetyei (14) Tachoh (16) Tue (17) Traruk (24) Jazyah
Common loon *Gavia immer*	Daadzaii[2], deedzaii[2]	Ttretetere
Pacific loon *G. pacifica*	Ts'ałvit[2], th'ałvit[3]	Thulvit
Red-throated loon *G. stellata*	Tee'itree[2]	
Yellow-billed loon *G. adamsii*		
Grebe* Red-necked grebe *Podiceps griseana* (1) Horned grebe *P. auritus* (2)	 (1) Teekwe'[2, 7] (2) Nootsik[2], noktsik[4]	 (1) Tekkui (2) Notsik

* Species categories used in the AMBCC harvest survey.

( ) Numbers in parenthesis indicate species likely to occur in the Upper Yukon.

[ ] Numbers in brackets refer to sources for bird names: [1] Irving (1958), [2] Mueller (1964), [3] Caulfield (1983), [4] James and Mueller (1991), [5] Andersen and Jennings (2001), [6] Alexander and Alexander (2011rev.), [7] contributions of survey respondents in this study.

Note Irving (1958) compiled Native bird names used in Old Crow (Yukon Territory, Canada); these names are presented here for reference.

Note When compiling Native bird names used in the Upper Yukon subregion (Alaska), preference was given to spellings in earlier sources by date of publication (Mueller 1964, Caulfield 1983, James and Mueller 1994, Andersen and Jennings 2001, Alexander and Alexander 2011rev.). Similar spellings and repeated names in later publications were not presented.

Appendix H.–Harvest report form and bird identification guide, Cordova mail-out survey (original size 8.5x11 inches each side).

Alaska Migratory Bird Co-Management Council (AMBCC)
Subsistence Household Harvest Survey, Cordova Harvest Report – **SPRING 2014**

1. Household registration #: _____ (2 letters followed by 3 numbers) 2. Date survey was completed: _____ /_____ /2014

3. How many people listed under this household registration tried to harvest: birds (_____) eggs (_____)

4. Did the household harvest birds or eggs from 2 April to 31 May, 2014? (checkmark) YES ☐ NO ☐

Below, please report numbers of birds and eggs harvested by your household:

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 elder birds_____

King elder birds_____

Harlequin duck birds_____

Long-tailed duck birds_____

Merganser birds_____

Greater white-fronted goose birds_____

Snow goose birds_____

Sandhill crane birds_____

Gull eggs_____

Other/unknown bird: _____ birds:_____ eggs:_____

Comments:

FWS form 3-281-2 10/09. This form supersedes form 7-FW-103b, which is obsolete.

Instructions for Birds and Eggs Household Harvest Survey

TO AVOID FUTURE NOTIFICATIONS, PLEASE COMPLETE AND RETURN THIS SURVEY NOW.
It is very important that you participate even if your household did not harvest.

Harvest estimates from this survey are used to:

- Show the importance of subsistence uses of migratory birds.
- Protect subsistence harvests.
- Assess whether harvest regulations are appropriate.
- Plan for the conservation of birds.

1. Please complete one survey per household including harvests by all household members listed in your registration.
2. Respond to questions 1 through 4 at top of survey form.
3. In the fields provided close to the bird drawings, report all birds and eggs harvested by your household, including those that you gave to other household(s).
4. Do not report in your survey birds or eggs received from other household(s).
5. If you harvested with people from other household(s), report in your survey only your household's share of the harvest.
6. Report numbers of birds and eggs as individual units. For instance, if you harvested eggs using a 5-gal bucket or other kind of container, specify how many eggs.
7. Write comments in the box provided at the bottom of the survey form (weather, hunting conditions, access to hunting areas, unusual birds seen, household registration and survey process, etc.).
8. Fold this survey and put it in the pre-stamped envelope provided, close it, and mail it to the pre-printed address.

Thank your for participating in this survey! We'll distribute survey results in your community.

Questions about this survey? Give us a call:

Division of Subsistence, Alaska Department of Fish and Game: 907-267-2302 (Anchorage)
Migratory Birds Management Division, U.S. Fish and Wildlife Service: 907-786-3499 (Anchorage)

The Native Village of EYAK

Paperwork Reduction Act Statement

In accordance with the Paperwork Reduction Act (44 U.S.C. 3501 et seq.), please note the following information.

This survey is authorized by the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.) and the Migratory Bird Treaty Act Protocol Amendment (1995) and its letter of submittal from the Department of State to the White House, which specifies the need for harvest monitoring.

Your participation in the survey is voluntary. We will use the information your household provides to estimate subsistence migratory bird harvest in subsistence eligible areas of Alaska. Household harvest reports are anonymous and no names are used on harvest report forms. Harvest estimates are calculated at the regional and subregional levels. With help of a surveyor, we estimate it will take about 5 minutes each to provide household consent and to report your seasonal bird/egg harvest.

The Office of Management and Budget has approved this information collection and assigned control number 1018-0124, which expires 6/30/2016. We may not conduct or sponsor and you are not required to respond to a survey unless it displays a current OMB control number.

You may provide comments on the estimated burden or any other aspect of FWS Forms 3-2380, 3-2381-1, 3-2381-2, 3-2381-3, and 3-2381-4 to the Information Collection Officer, Mail Stop 2042-PDM, U.S. Fish and Wildlife Service, 4401 N Fairfax Dr., Arlington, VA 22203.

Appendix I.–Formulas used to calculate subregion estimated harvest, variance, and confidence interval (3-stage stratified cluster sampling).

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

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

$$CI(X_s) = t_{\alpha/2} \times \sqrt{\text{var}(X_s)}$$

$$CIP(X_s) = \frac{CI(X_s)}{X_s}$$

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

$$p_{3sij} = N_{3sij} - n_{3sij}$$

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

$$s_{3sij}^2 = \frac{\sum_{k=1}^{n_{3sij}} \left(x_{sijk} - \bar{x}_{sij} \right)^2}{n_{3sij}}$$

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

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

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

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

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

$CI(X_s)$ = confidence interval around the harvest estimate (confidence level 95%).

$CIP(X_s)$ = confidence interval as a percentage of the harvest estimate.

s = first-stage units (subregion).

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

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

k = households.

h = number of communities sampled in a subregion.

hi = number of strata sampled in the community.

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

n_{1s} = total number of households in sampled communities in subregion s.

N_{2si} = total number of households in all strata of a community in subregion s.

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

N_{3sij} = total number of households in each stratum of a community in subregion s.

n_{3sij} = number of households sampled in each stratum of a community 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 community household harvest.

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

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

$t_{\alpha/2}$ = Student's t distribution value with significance level (tail area probability) $\alpha = 0.05$.

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

	Harvester	Other	
Total households	40	50	$N_{2si} = 90$
Sampled households	40	0	$n_{2si} = 40$

Appendix J.–Formulas used to calculate community estimated harvest, variance, and confidence interval.

$$\hat{X}_k = \sum_{j=1}^{k}\left[\left(\sum_{i=1}^{n_j} x_{ji}\right)\times\frac{N_j}{n_j}\right] \qquad CIP(\hat{X}_k) = \frac{t_{\alpha/2}\times\sqrt{\mathrm{var}(\hat{X}_k)}}{\left(\hat{X}_k \div N_k\right)}$$

$$\mathrm{var}(\hat{X}_k) = \sum_{j=1}^{k} N_j \times (N_j - n_j)\times\frac{s_j^2}{n_j}$$

$$s_j^2 = \frac{\sum_{i=1}^{n_j}\left(x_i - \bar{x}_{ji}\right)^2}{n_j - 1} \qquad \bar{x}_{ji} = \frac{\frac{N_j}{n_j}\left(\sum_{i=1}^{n_j} x_{ji}\right)}{N_j}$$

$\hat{X}_k$ = estimated village harvest.

CIP = 95% confidence interval percentile.

$\mathrm{var}\left(\hat{X}_k\right)$ = variance of estimated village harvest.

s_j^2 = harvest level strata variance.

$\bar{x}_{ji}$ = sample average for stratum *j* (average household harvest for stratum *j*).

i = households.

j = harvest level strata (harvester, nonharvester).

k = village.

x_{ij} = harvest reported by individual households.

N_j = total number of households in stratum *j*.

n_j = number of households surveyed in stratum *j*.

N_k = total number of households in village *k*.

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

Appendix K.–Community-level data release agreement, Arctic Village.

Alaska Migratory Bird Co-Management Council (AMBCC)

Community Data Release Agreement

The community of Arctic Village has collaborated with the Division of Subsistence of the Alaska Department of Fish and Game and the U.S. Fish and Wildlife Service to conduct the 2014 harvest survey of the Alaska Migratory Bird Co-Management Council (AMBCC). The Arctic Village Traditional Council has reviewed the AMBCC survey results and data release options as explained below:

Geographical level of harvest estimates

Option (1.A) Release community-level data. AMBCC harvest data have been reported at the region and subregion levels because Native Partners, at least in the past, had concerns that community harvest data could be used to direct law enforcement efforts. However, over the years, community-level data from many other surveys have not been used for this purpose. The main objectives for collecting harvest data are to document and protect subsistence uses and to ensure that resources will be available in the long-term. Data reported at the appropriate geographic level are more effective for protecting and managing subsistence uses and harvests. Community-level data make it easier to obtain effective data review from knowledgeable local residents and are more useful for local communities than subregion- or region-level data. Under this option, the AMBCC report would include community-level estimates. The report would also present subregion harvest estimates (data for all surveyed communities are lumped together, harvest of surveyed communities are expanded to non-surveyed communities).

Option (1.B) Release only Upper Yukon subregion-level data. The report will not present harvest estimates for individual communities.

Timing for release of 2014 harvest estimates

Option (2.A) Expedite data release in relation to the AMBCC 2-year cycle so data are available in a timely manner. Expedite data release is possible because of efficiency gains in data collection and data review processes. Under this option, data could be released without further delay.

Option (2.B) Release the data under the regular AMBCC calendar, according to which adoption of 2014 harvest estimates is scheduled to occur in the spring of 2016.

The Arctic Village Traditional Council has decided to support the options indicated with an "X" in the boxes below:

[X] **Option (1.A)** Release community-level data for our community including all AMBCC data available (2006 and 2014). We want to have harvest estimates for our community because it easier for us to understand and review survey results and they are more useful for our community. Data will also be presented at the subregion level as usual.

[ ] **Option (1.B)** Release only subregion-level data (*check this box only if not supporting Option 1.A*).

[ ] **Option (2.A)** Expedite data release based on the fact that we have already reviewed the survey results. We want the publication of the final report in the short term and without delays, including comments and suggestions offered by our community during data review.

[ ] **Option (2.B)** Release data at the AMBCC regular calendar (spring 2016) (*check this box only if not supporting Option 2.A*).

The Arctic Village Traditional Council may re-assess and modify these decisions in the future.

1

Passed and approved this 14th day of 23, 2015 with agreement of the Arctic Village Traditional Council.

President

Administrator

The Arctic Village Traditional Council will keep the signed agreement and will provide a copy to the AMBCC Harvest Survey Program records to the attention of:

Liliana Naves
Alaska Department of Fish and Game, Division of Subsistence
333 Raspberry Road
Anchorage AK 99518
907-267-2302 (phone), liliana.naves@alaska.gov

The AMBCC Harvest Survey Program will then provide copies this agreement to the following AMBCC members:

Patty Schwalenberg
Alaska Migratory Bird Co-Management Council (AMBCC), Executive Director
1840 Bragaw Street, Suite 150
Anchorage, AK 99508
334-3002 (phone), 907-227-8537 (cell), 334-9005 (fax)
patty@crrcalaska.org

Randy Mayo
Tanana Chiefs Conference, AMBCC Interior Alaska Region Representative
P.O. Box 70866
Fairbanks, AK 99707
699-2128 (phone)
randymayo@gmail.com

Bruce Dale
Alaska Department of Fish and Game, Division of Wildlife Conservation
1800 Glenn Hwy, Suite 4
Palmer, AK 99645
861-2101 (phone), 746-6305 (fax)
bruce.dale@alaska.gov

Pete Probasco
U.S. Fish and Wildlife Service, Migratory Birds and State Programs
1011 E. Tudor Road
Anchorage, AK 99503
786-3375 (phone), 786-3641 (fax)
pete_probasco@fws.gov

2

Appendix L.–Community-level data release agreement, Beaver.

Alaska Migratory Bird Co-Management Council (AMBCC)

Community Data Release Agreement

The community of Beaver has collaborated with the Division of Subsistence of the Alaska Department of Fish and Game and the U.S. Fish and Wildlife Service to conduct the 2014 harvest survey of the Alaska Migratory Bird Co-Management Council (AMBCC). The Beaver Tribal Council has reviewed the AMBCC survey results and data release options as explained below:

Geographical level of harvest estimates

Option (1.A) Release community-level data. AMBCC harvest data have been reported at the region and subregion levels because Native Partners, at least in the past, had concerns that community harvest data could be used to direct law enforcement efforts. However, over the years, community-level data from many other surveys have not been used for this purpose. The main objectives for collecting harvest data are to document and protect subsistence uses and to ensure that resources will be available in the long-term. Data reported at the appropriate geographic level are more effective for protecting and managing subsistence uses and harvests. Community-level data make it easier to obtain effective data review from knowledgeable local residents and are more useful for local communities than subregion- or region-level data. Under this option, the AMBCC report would include community-level estimates. The report would also present subregion harvest estimates (data for all surveyed communities are lumped together, harvest of surveyed communities are expanded to non-surveyed communities).

Option (1.B) Release only Upper Yukon subregion-level data. The report will not present harvest estimates for individual communities.

Timing for release of 2014 harvest estimates

Option (2.A) Expedite data release in relation to the AMBCC 2-year cycle so data are available in a timely manner. Expedite data release is possible because of efficiency gains in data collection and data review processes. Under this option, data could be released without further delay.

Option (2.B) Release the data under the regular AMBCC calendar, according to which adoption of 2014 harvest estimates is scheduled to occur in the spring of 2016.

The Beaver Tribal Council has decided to support the options indicated with an "X" in the boxes below:

☒ **Option (1.A)** Release community-level data for our community including all AMBCC data available (2006, 2007, 2010, and 2014). We want to have harvest estimates for our community because it easier for us to understand and review survey results and they are more useful for our community. Data will also be presented at the subregion level as usual.

☐ **Option (1.B)** Release only subregion-level data (*check this box only if not supporting Option 1.A*).

☐ **Option (2.A)** Expedite data release based on the fact that we have already reviewed the survey results. We want the publication of the final report in the short term and without delays, including comments and suggestions offered by our community during data review.

☐ **Option (2.B)** Release data at the AMBCC regular calendar (spring 2016) (*check this box only if not supporting Option 2.A*).

The Beaver Tribal Council may re-assess and modify these decisions in the future.

Passed and approved this 22 day of June, 2015 with agreement of the Beaver Tribal Council.

President

Administrator

The Beaver Tribal Council will keep the signed agreement and will provide a copy to the AMBCC Harvest Survey Program records to the attention of:

Liliana Naves
Alaska Department of Fish and Game, Division of Subsistence
333 Raspberry Road
Anchorage AK 99518
907-267-2302 (phone), liliana.naves@alaska.gov

The AMBCC Harvest Survey Program will then provide copies this agreement to the following AMBCC members:

Patty Schwalenberg
Alaska Migratory Bird Co-Management Council (AMBCC), Executive Director
1840 Bragaw Street, Suite 150
Anchorage, AK 99508
334-3002 (phone), 907-227-8537 (cell), 334-9005 (fax)
patty@crrcalaska.org

Randy Mayo
Tanana Chiefs Conference, AMBCC Interior Alaska Region Representative
P.O. Box 70866
Fairbanks, AK 99707
699-2128 (phone)
randymayo@gmail.com

Bruce Dale
Alaska Department of Fish and Game, Division of Wildlife Conservation
1800 Glenn Hwy, Suite 4
Palmer, AK 99645
861-2101 (phone), 746-6305 (fax)
bruce.dale@alaska.gov

Pete Probasco
U.S. Fish and Wildlife Service, Migratory Birds and State Programs
1011 E. Tudor Road
Anchorage, AK 99503
786-3375 (phone), 786-3641 (fax)
pete_probasco@fws.gov

Appendix M.–Community-level data release agreement, Chalkyitsik.

Alaska Migratory Bird Co-Management Council (AMBCC)

Community Data Release Agreement

The community of Chalkyitsik has collaborated with the Division of Subsistence of the Alaska Department of Fish and Game and the U.S. Fish and Wildlife Service to conduct the 2014 harvest survey of the Alaska Migratory Bird Co-Management Council (AMBCC). The Chalkyitsik Village Council has reviewed the AMBCC survey results and data release options as explained below:

Geographical level of harvest estimates

Option (1.A) Release community-level data. AMBCC harvest data have been reported at the region and subregion levels because Native Partners, at least in the past, had concerns that community harvest data could be used to direct law enforcement efforts. However, over the years, community-level data from many other surveys have not been used for this purpose. The main objectives for collecting harvest data are to document and protect subsistence uses and to ensure that resources will be available in the long-term. Data reported at the appropriate geographic level are more effective for protecting and managing subsistence uses and harvests. Community-level data make it easier to obtain effective data review from knowledgeable local residents and are more useful for local communities than subregion- or region-level data. Under this option, the AMBCC report would include community-level estimates. The report would also present subregion harvest estimates (data for all surveyed communities are lumped together, harvest of surveyed communities are expanded to non-surveyed communities).

Option (1.B) Release only Upper Yukon subregion-level data. The report will not present harvest estimates for individual communities.

Timing for release of 2014 harvest estimates

Option (2.A) Expedite data release in relation to the AMBCC 2-year cycle so data are available in a timely manner. Expedite data release is possible because of efficiency gains in data collection and data review processes. Under this option, data could be released without further delay.

Option (2.B) Release the data under the regular AMBCC calendar, according to which adoption of 2014 harvest estimates is scheduled to occur in the spring of 2016.

The Chalkyitsik Village Council has decided to support the options indicated with an "X" in the boxes below:

☒ **Option (1.A)** Release community-level data for our community including all AMBCC data available (2006, 2007, 2010, and 2014). We want to have harvest estimates for our community because it easier for us to understand and review survey results and they are more useful for our community. Data will also be presented at the subregion level as usual.

☐ **Option (1.B)** Release only subregion-level data (*check this box only if not supporting Option 1.A*).

☐ **Option (2.A)** Expedite data release based on the fact that we have already reviewed the survey results. We want the publication of the final report in the short term and without delays, including comments and suggestions offered by our community during data review.

☐ **Option (2.B)** Release data at the AMBCC regular calendar (spring 2016) (*check this box only if not supporting Option 2.A*).

The Chalkyitsik Village Council may re-assess and modify these decisions in the future.

Passed and approved this 1st day of July 2015 with agreement of the Chalkyitsik Village Council.

~~President~~ 1st Chief

Administrator

The Chalkyitsik Village Council will keep the signed agreement and will provide a copy to the AMBCC Harvest Survey Program records to the attention of:

Liliana Naves
Alaska Department of Fish and Game, Division of Subsistence
333 Raspberry Road
Anchorage AK 99518
907-267-2302 (phone), liliana.naves@alaska.gov

The AMBCC Harvest Survey Program will then provide copies this agreement to the following AMBCC members:

Patty Schwalenberg
Alaska Migratory Bird Co-Management Council (AMBCC), Executive Director
1840 Bragaw Street, Suite 150
Anchorage, AK 99508
334-3002 (phone), 907-227-8537 (cell), 334-9005 (fax)
patty@crrcalaska.org

Randy Mayo
Tanana Chiefs Conference, AMBCC Interior Alaska Region Representative
P.O. Box 70866
Fairbanks, AK 99707
699-2128 (phone)
randymayo@gmail.com

Bruce Dale
Alaska Department of Fish and Game, Division of Wildlife Conservation
1800 Glenn Hwy, Suite 4
Palmer, AK 99645
861-2101 (phone), 746-6305 (fax)
bruce.dale@alaska.gov

Pete Probasco
U.S. Fish and Wildlife Service, Migratory Birds and State Programs
1011 E. Tudor Road
Anchorage, AK 99503
786-3375 (phone), 786-3641 (fax)
pete_probasco@fws.gov

Appendix N.–Summary of Cordova bird and egg harvest estimates produced for outreach and communication.

Alaska Migratory Bird Co-Management Council (AMBCC)

Cordova Bird and Egg Harvest Estimates, 2014

September, 2015

Prepared by Liliana Naves, ADF&G Division of Subsistence, Anchorage

The Cordova migratory bird subsistence harvest was first authorized in 2014. The season was opened 2–30 April for waterfowl hunting and 1–31 May for gull egg harvesting. A limited list of species was opened to harvest and only Cordova residents were eligible to participate. Participants were required to obtain a registration issued at the Cordova offices of the U.S. Forest Service and Native Village of Eyak. A total of 36 households registered (Table 1). The Division of Subsistence of the Alaska Department of Fish and Game (ADF&G) coordinated the registration and survey process in collaboration with AMBCC and local partners.

A mail-out harvest survey was sent in late June, 2014 to all registered households. Survey reminders were sent in late July and late August to permit holders that had not yet provided completed surveys. The survey was conducted in the context of the AMBCC Harvest Survey Program. Data collection and analysis were conducted by the ADF&G Division of Subsistence. A total of 28 surveys were returned (out of 36 registered households) resulting in a response rate of 78%. The estimated harvest was 32 ducks, 10 geese, and 131 gull eggs (Table 2).

Table 1. Participation in the 2014 Cordova spring harvest of migratory birds.

Total households in Cordova[1]:	922
Household registrations issued:	36
Total Cordova population[1]:	2,239
People listed in all registrations:	65
People per registration[2]:	1–4
People trying to harvest birds[3]:	8
Households harvesting birds[3]:	7
People trying to harvest eggs[3]:	14
Households harvesting egg[3]:	10

1: 2010 Census (U.S. Census Bureu, 2011).
2: Permit holder and other household members listed.
3: Based on 24 returned surveys.

Summer in the community of Cordova: Eyak Lake (left) and tidal flats (right).

Table 2. Spring harvest of birds and eggs, Cordova, April–May 2014.

	Number reported	Estimated harvest	Confidence Interval			
			CIP	Low	–	High
Birds						
American wigeon	1	1	97%	1	–	3
Teal	1	1	97%	1	–	3
Mallard	11	14	43%	11	–	20
Northern pintail	12	15	47%	12	–	23
Northern shoveler	0	0	-		-	
Black scoter	0	0	-		-	
Surf scoter	0	0	-		-	
White-winged scoter	0	0	-		-	
Bufflehead	0	0	-		-	
Goldeneye	0	0	-		-	
Canvasback	0	0	-		-	
Scaup	0	0	-		-	
Common eider	0	0	-		-	
King eider	0	0	-		-	
Harlequin duck	0	0	-		-	
Long-tailed duck	0	0	-		-	
Merganser	0	0	-		-	
Total ducks	25	32	38%	25	–	44
Greater white-fronted goose	4	5	67%	4	–	9
Snow goose	4	5	57%	4	–	8
Total geese	8	10	49%	8	–	15
Sandhill crane	0	0	0		-	
Total birds	33	42	37%	33	–	58
Eggs						
Gull (unidentified)	102	131	37%	102	–	179

CIP: Confidence interval as a percentage of estimated harvests.

Comments provided in surveys:

"Althought we did not gather, it was nice to have the legal option to harvest our subsistence foods."
"I wasn't able to get out and participate - next year!"
"I was called away in family emergency and did not get to hunt or harvest this spring."
"Hunted Egg Island. Lots of pintails, teal, mallards. Only hunted one day."
"Wish I had more time to hunt. Awesome opportunity."
"Hunted one day. Gathered eggs two days."
"Did not go out to hunt. Area or barrier islands difficult access, bad weather."
"Didn't harvest much, but was cool to watch spring migration. Longer season."

Acknowledgments
We thank all households that participated in this survey and shared information about their subsistence harvests. John Whissel (Native Village of Eyak), Milo Burcham (U.S. Forest Service), Patty Brown-Schwalenberg (Chugach Regional Resources Commission), Donna Dewhurst (USFWS-AMBCC Program), Charlote Westing (ADF&G Wildlife Conservation), and Theresa Quiner (ADF&G Subsistence) among other people assisted in the registration process, community outreach and communication, and harvest data collection.

Appendix O.–Summary of Arctic Village bird and egg harvest estimates produced for outreach and communication.

Alaska Migratory Bird Co-Management Council (AMBCC)

Harvest Survey Results

September, 2015

Table 1. Bird and Egg Harvest Estimates Available for Arctic Village.

Species (Gwich'in names are shown in red)	Bird Harvest				Egg Harvest			
	2000	2006	2014	2000-2014 Average	2000	2006	2014	2000-2014 Average
America wigeon Chalvii	10	13	31	18	0	0	4	1
Teal Ch'idzin	0	0	12	4	0	0	0	0
Mallard Neet'ak choo	49	74	108	77	0	0	8	3
Northern pintail Ch'irrnjaa	12	74	98	61	0	0	0	0
Northern shoveler Dehdrik	0	0	2	1	0	0	0	0
Black scoter	–	0	9	5	–	0	0	0
Surf scoter Deetree'ah	25	8	23	19	0	0	4	1
White-winged scoter Njaa	162	303	107	191	0	0	0	0
Bufflehead Tl'anndii'	0	0	14	5	0	0	0	0
Goldeneye Chiik'ii	6	4	1	4	0	0	0	0
Canvasback T'aavii	7	1	18	9	0	0	0	0
Scaup Taiinchoo'	81	44	20	48	0	0	0	0
Harlequin duck Kiiteegwilik	–	0	0	0	–	0	0	0
Long-tailed duck 'Aahaalak, 'Ikhyąą	67	242	25	111	0	0	5	2
Merganser Traą	–	0	0	0	–	0	0	0
Duck (unidentified)	2	0	0	1	0	0	0	0
Canada goose Khaih	6	18	52	25	0	0	0	0
White-fronted goose Deechy'ah	10	3	114	42	0	0	0	0
Snow goose Gwigeh	0	1	5	2	0	0	0	0
Swan Daa-zhrąąi	–	0	9	5	–	0	0	0
Sandhill crane Jyah	0	0	8	3	0	0	0	0
Tern, gulls Ch'itry'uu, Vyuh	–	0	0	0	–	0	0	0
Plovers, sandpipers, etc	–	0	0	0	–	0	0	0
Loons Ts'alvit, Deedzaąi, Tee'itree	–	5	38	22	–	0	0	0
Grebes Teekwe , Nootsik	–	0	0	0	–	0	0	0
Grouses Daįh, Treegwat, Ch'ahtal	–	4	19	12	–	0	0	0
Ptarmigans Daagoo, Daaky'ąą	–	8	134	71	–	0	0	0
Total	–	802	847	740	–	0	20	7

Harvest Data Sources and Notes:

- **2000**: Andersen and Jennings (2001). The 2000 survey covered April–September 2000 harvests; this survey reported results only for migratory birds (results for resident grouse and ptarmigan were not presented). No "Total" value presented because this survey did not include grouses and ptarmigans.
- **2006, 2014**: AMBCC harvest data. The 2006 and 2014 surveys covered April–October harvests. 2006 Data have been released as Upper Yukon subregion (Naves 2010). Harvests of grouses (locally known as willow grouse and spruce hen) may be under-represented in these surveys because of confusion with bird names in survey forms.
- "–" Species not detailed in survey.

1

Birds that may be harvested or mentioned in harvest surveys on the Upper Yukon subregion

(Western Gwich'in names are shown in red)

Ducks	
American wigeon: chalvii	bufflehead: tl'anndii'
teal: ch'idzin	goldeneyes: chiik'ii (common goldeneye, Barrow's goldeneye)
mallard: neet'ak choo	canvasback: t'aavii
northern pintail: ch'irrnjaa	scaup: taiinchoo' (greater scaup, lesser scaup)
northern shoveler: dehdrik	harlequin duck: kiiteegwilik
surf scoter: deetree'ah	long-tailed duck: 'aahaalak, 'ikhyąą
white-winged scoter: njaa	red-breasted merganser: traą
Geese, Swans, Crane, Grouses, Ptarmigans	
brant: dzehgak	snow goose: gwigeh
Canada goose: khaih	swans: daa-zhrąąi (tundra swan, trumpeter swan)
greater white-fronted goose: deechy'ah	sandhill crane: jyah
ptarmigan: daagoo (willow ptarmigan), daaky'ąą (rock ptarmigan)	grouses: daįh (spruce grouse, a.k.a. spruce hen), treegwat (ruffed grouse, a.k.a. willow grouse), ch'ahtal (sharp-tailed grouse)
Seabirds, Shorebirds	
Arctic tern: ch'itry'uu	red-necked phalarope: nehthajal, ch'idrijvak
Bonaparte's gull: khakyaa-zhrąįi	sandpipers (short legs): teegheets'il
gull: vyuh (several species)	sandpipers (long legs): dil
whimbrel: deenju	dowitcher: deenjyaa
golden/black-bellied plover: ts'ilaai'	Wilson's snipe: zheezhyah
semipalmated plover: khyaa'aai	
Loons and Grebes	
common loon: deedzaąi	red-throated loon: tee'itree
Pacific loon: ts'alvit	grebes: teekwe' (red-necked grebe), nootsik (horned grebe)

Sources of Gwich'in birds names: Mueller (1964), Caufield (1983), and James and Mueller (1994).

Note: this list did not intend to represent all bird species occurring on the Upper Yukon area. For comments, corrections, and updates to this list, please see contact information at bottom of this page.

Literature cited

Andersen, DB and Jennings, G (2001) The 2000 harvest of migratory birds in ten Upper Yukon River communities, Alaska. Alaska Department of Fish and Game Division of Subsistence Technical Paper 268.

Caulfield RA (1983) Subsistence land use in Upper Yukon Porcupine communities, Alaska. Dinjii Nats'aa Nan Kak Adagwaandaii. Alaska Department of Fish and Game Division of Subsistence Technical Paper 16.

James L and Mueller D (unpublished draft) Western Gwich'in topical dictionary. Draft Manuscript March 1994 converted to Word in 2007 by James Kari. Alaska Native Language Center and Summer Institute of Linguistics.

Mueller RJ (1964) A short illustrated topical dictionary of Western Kutchin. Summer Institute of Linguistics. Fairbanks, Alaska.

Naves, LC (2010) Alaska migratory bird subsistence harvest estimates, 2004–2007. Alaska Migratory Bird Co-Management Council. Alaska Department of Fish and Game Division of Subsistence. Technical Paper 349.

Naves, LC (in preparation) Alaska subsistence harvests of birds and eggs, 2014. Alaska Migratory Bird Co-Management Council. Alaska Department of Fish and Game Division of Subsistence, Technical Paper NNN.

Prepared by Liliana Naves. ADF&G Division of Subsistence. 333 Raspberry Rd. Anchorage, AK 99518. liliana.naves@alaska.gov

2

Appendix P.–Summary of Beaver bird and egg harvest estimates produced for outreach and communication.

Table 1. Bird and Egg Harvest Estimates Available for Beaver.

Species (Gwich'in names are shown in red)	1985	2000	2006	2007	2010	2011	2014	2000-2014 Average
American wigeon Chalvii	–	39	62	21	13	9	11	26
Teal Ch'idzin	–	0	0	0	8	3	0	2
Mallard Neet'ak choo	–	51	44	17	43	109	29	49
Northern pintail Ch'irrinjaa	–	10	8	4	37	12	15	14
Northern shoveler Dehdrik	–	0	1	0	3	–	0	1
Black scoter	–	–	0	0	0	226	0	45
Surf scoter Deetree'ah	–	–	0	0	4	–	0	1
White-winged scoter Njaa	–	–	291	192	107	–	51	160
Scoters (unidentified)	–	142	–	–	–	–	–	142
Bufflehead Tl'anndii	–	–	0	0	3	–	0	1
Goldeneye Chiik'ii	–	4	3	4	0	6	2	3
Canvasback T'aavii	–	5	22	8	7	3	0	8
Scaup Tainchoo	–	0	15	0	0	–	0	3
Harlequin duck Kiiteegwiilik	–	–	0	0	0	–	0	0
Long-tailed duck 'Aahaalak	–	0	38	0	29	25	15	18
Merganser Traą	–	–	0	0	1		0	0
Duck (unidentified)	669	1	–	–	–	–	–	–
Canada goose Khaih	–	126	95	31	87	143	83	94
White-fronted goose Deechy'ah	–	355	440	209	188	477	180	308
Snow goose Gwigeh	–	108	8	19	10	32	43	37
Goose (unidentified)	484	–	–	–	–	–	–	–
Swan Daa-zhraąi	–	0	0	0	0	0	0	0
Sandhill crane Jyah	7	0	0	0	3	0	0	1
Tern, gulls Ch'itry'uu, Vyuh	–	–	0	0	0	–	0	0
Plovers, sandpipers, etc	–	–	0	0	0	–	0	0
Loons Ts'alvii, Deedzaąi, Tee'itree	–	–	0	0	0	–	0	0
Grebes Teekwe', Nootsik	–	–	0	0	0	–	0	0
Grouses Dajh, Treegwal, Ch'ahtal	290	**	5	0	27	89	44	33
Ptarmigans Daagoo, Daaky'aą	85	**	0	0	8	15	0	5
Total birds	1,535	841	1,032	505	578	1,149	473	763
Bird eggs (unidentified)	–	0	–	–	–	–	–	–
Geese eggs (unidentified)	–	–	0	0	0	14	0	2
Total eggs	–	0	0	0	0	14	0	2

Harvest Data Sources and Notes:

- **1985**: Sumida (1989). This survey covered November 1985–October 1986 harvests; it did not ask about egg harvest.
- **2000**: Andersen and Jennings (2001). This survey covered April–September 2000 harvests; **it reported results only for migratory birds (results for resident grouse and ptarmigan were not presented).
- **2011**: Holen et al. (2012).
- **2006, 2007, 2010, 2014**: AMBCC harvest surveys. These surveys covered April–October harvests. Harvests of grouses (locally known as willow grouse and spruce hen) may be under-represented in these surveys, especially in 2004–2007, because of confusion with bird names in survey forms. 2004–2007 Data has been released as Upper Yukon subregion (Naves 2010).
- "–" Species not detailed in survey.

Alaska Migratory Bird Co-Management Council (AMBCC)

Harvest Survey Results

September, 2015

Birds that may be harvested or mentioned in harvest surveys on the Upper Yukon subregion

(Western Gwich'in names are shown in red)

Ducks	
American wigeon: chalvii	bufflehead: tl'anndii'
teal: ch'idzin	goldeneyes: chiik'ii (common goldeneye, Barrow's goldeneye)
mallard: neet'ak choo	canvasback: t'aavii
northern pintail: ch'irrinjaa	scaup: tainchoo' (greater scaup, lesser scaup)
northern shoveler: dehdrik	harlequin duck: kiiteegwiilik
surf scoter: deetree'ah	long-tailed duck: 'aahaalak, 'ikhyąą
white-winged scoter: njaa	red-breasted merganser: traą
Geese, Swans, Crane, Grouses, Ptarmigans	
brant: dzehgak	snow goose: gwigeh
Canada goose: khaih	swans: daa-zhraąi (tundra swan, trumpeter swam)
greater white-fronted goose: deechy'ah	sandhill crane: jyah
ptarmigan: daagoo (willow ptarmigan), daaky'aą (rock ptarmigan)	grouses: dajh (spruce grouse, a.k.a. spruce hen), treegwal (ruffed grouse, a.k.a. willow grouse), ch'ahtal (sharp-tailed grouse)
Seabirds, Shorebirds	
Arctic tern: ch'itry'uu	red-necked phalarope: nehthajal, ch'idriivak
Bonaparte's gull: khakyaa-zhraii	sandpipers (short legs): teegheets'il
gull: vyuh (several species)	sandpipers (long legs): dil
whimbrel: deenju	dowitcher: deenjyaa
golden/black-bellied plover: ts'ilaai'	Wilson's snipe: zheezhyah
semipalmated plover: khyaa'aai	
Loons and Grebes	
common loon: deedzaąi	red-throated loon: tee'itree
Pacific loon: ts'alvii	grebes: teekwe' (red-necked grebe), nootsik (horned grebe)

Sources of Gwich'in birds names: Mueller (1964), Caufield (1983), and James and Mueller (1994).

Note: this list did not intend to represent all bird species occurring on the Upper Yukon area. For comments, corrections, and updates to this list, please see contact information at bottom of this page.

Literature cited

Andersen, DB and Jennings, G (2001) The 2000 harvest of migratory birds in ten Upper Yukon River communities, Alaska. Alaska Department of Fish and Game Division of Subsistence Technical Paper 268.

Holen D, Hazell SM, and Koster DS (2012) Subsistence harvests and uses of wild resources by communities in the Eastern Interior of Alaska, 2011. Alaska Department of Fish and Game Division of Subsistence Technical Paper 372.

James L and Mueller D (unpublished draft) Western Gwich'in topical dictionary. Draft Manuscript March 1994 converted to Word in 2007 by James Kari. Alaska Native Language Center and Summer Institute of Linguistics.

Mueller RJ (1964) A short illustrated topical dictionary of Western Kutchin. Summer Institute of Linguistics. Fairbanks, Alaska.

Naves, LC (2010) Alaska migratory bird subsistence harvest estimates, 2004–2007. Alaska Migratory Bird Co-Management Council. Alaska Department of Fish and Game Division of Subsistence, Technical Paper 349.

Naves, LC (in preparation) Alaska subsistence harvests of birds and eggs, 2014. Alaska Migratory Bird Co-Management Council. Alaska Department of Fish and Game Division of Subsistence, Technical Paper NNN.

Sumida, AV (1989) Patterns of fish and wildlife harvest and use in Beaver, Alaska. Alaska Department of Fish and Game Division of Subsistence Technical Paper 140.

Prepared by Liliana Naves, ADF&G Division of Subsistence, 333 Raspberry Rd, Anchorage, AK 99518, liliana.naves@alaska.gov

Appendix Q.–Summary of Chalkyitsik bird and egg harvest estimates produced for outreach and communication.

Alaska Migratory Bird Co-Management Council (AMBCC)

Harvest Survey Results

November, 2015

Table 1. Bird and Egg Harvest Estimates Available for Chalkyitsik.

Species (Gwich'in names are shown in red)	2006	2007	2010	2014	2006-2014 Average
American wigeon Chalvii	61	30	32	51	43
Teal Ch'idzin	15	0	5	0	5
Mallard Neet'ak choo	71	20	48	84	55
Northern pintail Ch'irrinjaa	35	7	8	67	29
Northern shoveler Dehdrik	0	0	0	0	0
Black scoter	0	0	0	0	0
Surf scoter Deetree'ah	7	0	0	0	2
White-winged scoter Njaa	267	827	202	223	378
Bufflehead Tl'anndii'	0	0	3	0	1
Goldeneye Chiik'ii	42	36	10	32	30
Canvasback T'aavii	19	0	1	2	6
Scaup Taiinchoo'	0	0	0	2	1
Harlequin duck Kiiteegwiik	0	0	0	0	0
Long-tailed duck 'Aahaalak	0	0	0	10	3
Merganser Traa	0	0	0	0	0
Canada goose Khaih	19	0	46	48	28
White-fronted goose Deechy'ah	42	488	44	79	163
Snow goose Gwigeh	7	0	0	0	2
Swan Daa-zhraai	0	0	0	0	0
Sandhill crane Jyah	1	0	0	0	0
Tern, gulls Ch'itry'uu, Vyuh	0	0	0	0	0
Plovers, sandpipers, etc	0	0	0	0	0
Loons Ts'alvit, Deedzaai, Tee'itree	0	0	0	0	0
Grebes Teekwe', Nootsik	0	0	0	0	0
Grouses Daih, Treegwat, Ch'ahtal	0	0	0	36	9
Ptarmigans Daagoo, Daaky'aa	0	0	0	0	0
Total birds	587	1,408	399	634	753
Total eggs	0	0	0	0	0

Harvest Data Sources and Notes:

• **2006, 2007, 2010, 2014**: AMBCC harvest surveys. These surveys covered April–October harvests. Harvests of grouses (locally known as willow grouse and spruce hen) may be under-represented in these surveys, especially in 2004–2007, because of confusion with bird names in survey forms. 2004–2007 Data has been released as Upper Yukon subregion (Naves 2010).

Birds that may be harvested or mentioned in harvest surveys on the Upper Yukon subregion

(Western Gwich'in names are shown in red)

Ducks	
American wigeon: chalvii	bufflehead: tl'anndii'
teal: ch'idzin	goldeneyes: chiik'ii (common goldeneye, Barrow's goldeneye)
mallard: neet'ak choo	canvasback: t'aavii
northern pintail: ch'irrinjaa	scaup: taiinchoo' (greater scaup, lesser scaup)
northern shoveler: dehdrik	harlequin duck: kiiteegwiik
surf scoter: deetree'ah	long-tailed duck: 'aahaalak, 'ikhyaa
white-winged scoter: njaa	red-breasted merganser: traa
Geese, Swans, Crane, Grouses, Ptarmigans	
brant: dzehgak	snow goose: gwigeh
Canada goose: khaih	swans: daa-zhraai (tundra swan, trumpeter swan)
greater white-fronted goose: deechy'ah	sandhill crane: jyah
ptarmigan: daagoo (willow ptarmigan), daaky'aa (rock ptarmigan)	grouses: daih (spruce grouse, a.k.a. spruce hen), treegwat (ruffed grouse, a.k.a. willow grouse), ch'ahtal (sharp-tailed grouse)
Seabirds, Shorebirds	
Arctic tern: ch'itry'uu	red-necked phalarope: nehthajal, ch'idriivak
Bonaparte's gull: khakyaa-zhraii	sandpipers (short legs): teegheets'il
gull: vyuh (several species)	sandpipers (long legs): dil
whimbrel: deenju	dowitcher: deenjyaa
golden/black-bellied plover: ts'ilaai'	Wilson's snipe: zheezhyah
semipalmated plover: khyaa'aai	
Loons and Grebes	
common loon: deedzaai	red-throated loon: tee'itree
Pacific loon: ts'alvit	grebes: teekwe' (red-necked grebe), nootsik (horned grebe)

Sources of Gwich'in birds names: Mueller (1964), Caufield (1983), and James and Mueller (1994).

Note: this list did not intend to represent all bird species occurring on the Upper Yukon area. For comments, corrections, and updates to this list, please see contact information at bottom of this page.

Literature cited

James L and Mueller D (unpublished draft) Western Gwich'in topical dictionary. Draft Manuscript March 1994 converted to Word in 2007 by James Kari. Alaska Native Language Center and Summer Institute of Linguistics.

Mueller RJ (1964) A short illustrated topical dictionary of Western Kutchin. Summer Institute of Linguistics, Fairbanks, Alaska.

Naves, LC (2010) Alaska migratory bird subsistence harvest estimates, 2004–2007. Alaska Migratory Bird Co-Management Council. Alaska Department of Fish and Game Division of Subsistence, Technical Paper 349.

Naves, LC (in preparation) Alaska subsistence harvests of birds and eggs, 2014. Alaska Migratory Bird Co-Management Council. Alaska Department of Fish and Game Division of Subsistence, Technical Paper NNN.

Prepared by Liliana Naves. ADF&G Division of Subsistence. 333 Raspberry Rd, Anchorage, AK 99518. liliana.naves@alaska.gov

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.

References

Fienup-Riordan, Ann. 1983. The Nelson Island Eskimo: Social Structure and Ritual Distribution. The Alaskana Book Series no. 40. Alaska Pacific University Press, Anchorage. Cited in this report as Fienup-Riordan 1983.

Fienup-Riordan, Ann. 1996. The Living Tradition of Yup'ik Masks: Agayuliyararput = Our Way of Making Prayer. University of Washington Press, Seattle. Cited in this report as Fienup-Riordan 1996.

Pete, Mary C. 1989. "The Universe in a Mask." Alaska Fish and Game 21 (6): 38–39. Alaska Department of Fish and Game, Juneau. Cited in this report as Pete 1989.