**Technical Paper No. 434**

# Alaska Subsistence Harvest of Birds and Eggs, 2016, Alaska Migratory Bird Co-Management Council

**Liliana C. Naves and David Otis**

**November 2017**

**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, $\chi^2$, 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. 434*

# ALASKA SUBSISTENCE HARVEST OF BIRDS AND EGGS, 2016, ALASKA MIGRATORY BIRD CO-MANAGEMENT COUNCIL

by

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

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Front cover photo: Data collection for the subsistence harvest survey of the Alaska Migratory Bird Co-Management Council relies on collaboration with diverse partners including tribal councils, National Wildlife Refuges, and Alaska Native local and regional organizations. Harvest reports are completed in in-person interviews conducted by Alaska Native surveyors. Regional field coordinators and local surveyors are trained annualy following standard survey methods. This picture was taken in a training session conducted in October 2017, at Anchorage. From left to right are: Cora Demit (Northway Refuge Information Technician - RIT, Tetlin National Wildlife Refuge - NWR), Julie Mahler (Forth Yukon RIT, Yukon Flats NWR), David Therchik (Toksook Bay RIT, Yukon Delta NWR), Shandara Swatling (Huslia RIT, Koyukuk-Nowitna NWR), Mildred Allen (standing; Arctic Village RIT, Arctic NWR), Natalia Bond (New Stuyahok local surveyor), and Jon Dyasuk (Interpreter, Togiak NWR). Refuge Information Technicians are Alaska Native refuge staff that work in the frontline of communication among refuges and subsistence communities in Alaska. Photo by Jacqueline Keating (ADF&G Division of Subsistence).

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# TABLE OF CONTENTS

**Page**

LIST OF TABLES ..... I

LIST OF FIGURES ..... II

LIST OF APPENDICES ..... II

ABSTRACT ..... III

ACKNOWLEDGMENTS ..... IV

INTRODUCTION ..... 1

METHODS ..... 3

Ethical Standards ..... 3
Five-Regions Survey ..... 3
Sampling Design ..... 3

Dividing Large Communities into Parcels ..... 5

Data Collection, Household Visists ..... 6

Data Analysis ..... 13

Cordova Harvest Mail-Out Survey ..... 13
Community and Household Participation Rates ..... 14

RESULTS AND DISCUSSION ..... 14

REFERENCES CITED ..... 32

APPENDICES ..... 34

# LIST OF TABLES

**Table** **Page**

Table 1.–Commonly-harvested species used in analyses of survey performance. ..... 4
Table 2.–Distribution of sampling effort, 2016 survey. ..... 5
Table 3.–Number of communities and households included in data analysis, 2004–2016. ..... 15
Table 4.–Community participation rate, 2016. ..... 15
Table 5.–Household participation rate, 2004–2016. ..... 16
Table 6.–Annual estimated bird harvest (all birds, spring, summer, fall, and winter), AMBCC survey, 2004–2016. ..... 17
Table 7.–Annual estimated egg harvest (all eggs), AMBCC survey, 2004–2016. ..... 18
Table 8.–Estimated bird harvest, Alaska-wide (5-regions index), 2016. ..... 19
Table 9.–Estimated egg harvest, Alaska-wide (5-regions index), 2016. ..... 20
Table 10.–Estimated bird harvest, Bristol Bay region, 2016. ..... 21
Table 11.–Estimated egg harvest, Bristol Bay region, 2016. ..... 22
Table 12.–Estimated bird harvest, Yukon-Kuskokwim Delta region, 2016. ..... 23
Table 13.–Estimated egg harvest, Yukon-Kuskokwim Delta region, 2016. ..... 24
Table 14.–Estimated bird harvest, Bering Strait-Norton Sound region, 2016. ..... 25
Table 15.–Estimated egg harvest, Bering Strait-Norton Sound region, 2016. ..... 26
Table 16.–Estimated bird harvest, North Slope region, 2016. ..... 27
Table 17.–Estimated egg harvest, North Slope region, 2016. ..... 28
Table 18.–Estimated bird harvest, Interior Alaska region, 2016. ..... 29
Table 19.–Estimated egg harvest, Interior Alaska region, 2016. ..... 30
Table 20.–Estimated April–May Cordova bird and egg harvest, 2014–2016. ..... 31

# LIST OF FIGURES

**Figure** **Page**

Figure 1.–Management regions for the Alaska migratory bird subsistence harvest. ..... 7
Figure 2.–Bristol Bay region with sequential numbering of communites for systematic random sampling.. ..... 8
Figure 3.–Yukon-Kuskokwim Delta region with sequential numbering of communites for systematic random sampling. ..... 9
Figure 4.–Bering Strait-Norton Sound region with sequential numbering of communites for systematic random sampling. ..... 10
Figure 5.–North Slope region with sequential numbering of communites for systematic random sampling. ..... 11
Figure 6.–Interior Alaska region with sequential numbering of communites for systematic random sampling..... 12

# LIST OF APPENDICES

**Appendix** **Page**

Appendix A.–Regions and communities included in the 2004–2016 harvest estimates..... 35
Appendix B.–Household list and selection form. ..... 41
Appendix C.–Tracking sheet and household consent form. ..... 42
Appendix D.–Harvest report form, Western Alaska. ..... 43
Appendix E.–Harvest report form, Southern Coastal Alaska. ..... 44
Appendix F.–Harvest report form, North Slope. ..... 45
Appendix G.–Harvest report form, Interior Alaska. ..... 46
Appendix H.–Bird identification guide, Western Alaska. ..... 47
Appendix I.–Bird identification guide, Southern Coastal Alaska. ..... 48
Appendix J.–Bird identification guide, North Slope..... 49
Appendix K.–Bird identification guide, Interior Alaska..... 50
Appendix L.–Bird poster, Western Alaska. ..... 51
Appendix M.–Bird poster, Southern Coastal Alaska. ..... 52
Appendix N.–Bird poster, North Slope. ..... 53
Appendix O.–Bird poster, Interior Alaska. ..... 54
Appendix P.–Formulas used to calculate estimated harvest, variance, and confidence interval percentage. ..... 55
Appendix Q.–Harvest report form and bird identification guide, Cordova mail-out survey. ..... 57
Appendix R.–Summary of Cordova bird and egg harvest estimates produced for community communication. ..... 58

# ABSTRACT

This report presents subsistence harvest estimates of birds and their eggs in Alaska for the data year 2016. 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 subsistence harvest regulations, to document customary and traditional uses of migratory birds in Alaska, and to support sustainable harvest opportunities and conservation of birds. Participation by communities and households in the harvest survey is voluntary. In 2016, the study piloted a revised sampling design. The survey covered 5 migratory bird management regions: Bristol Bay, Yukon-Kuskokwim Delta, Bering Strait-Norton Sound, North Slope, and Interior Alaska. These regions represent more than 90% of the total subsistence bird harvest in Alaska and are used as an index to the total harvest. The survey covers spring, summer, and fall harvest, except that the North Slope region has no fall survey. The survey design treats regions as strata and uses a two-stage sampling design in each region. Within regions, communities are selected by systematic random sampling. Within communities, households are selected by simple random sampling. Harvest reported by surveyed communities is extrapolated to nonsurveyed communities in the same region. Data are reported at the region and survey-wide levels. This report also includes harvest estimates for the Cordova spring bird and egg harvest in the Gulf of Alaska-Cook Inlet region, where a mail-out survey is administered to all households that register to participate in that harvest.

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.

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- Lincoln Shavings (Mekoryuk)
- Margaret Michael (Kwethluk)
- Maryann Frank (Tuntutuliak)
- Nick Henry (Oscarville)
- Noah Agnus (Nightmute)
- Robyn Kasayulie (Akiachak)
- Wassilie Guy (Napaskiak)
- Carl Brown (White Mountain)
- Clyde Jacson (Shaktoolik)
- Clyde Oxereok (Wales)
- Jacob Martin (Nome)
- Robert Soolook Jr. (Diomede)
- Carla Kayotuk (Kaktovik)
- Qaiyaan Harcharek (North Slope Borough; Barrow and Wainwright)
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# INTRODUCTION

In 1916, Canada and the United States ratified the Migratory Bird Treaty (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; this harvest has 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 harvest 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 peoples have a meaningful role in harvest management. 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 harvest amounts. Harvest assessment is also needed to meet the intentions of the amended treaty: (1) subsistence harvest 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 of users and responsive to conservation needs. The first legal spring–summer subsistence hunting season was in 2003.

Subsistence bird and egg harvest assessment occurred annually in 1985–2002 in the Yukon-Kuskokwim Delta region (Y-K Delta) in the context of the Goose Management Plan (Copp 1985; Copp and Roy 1986; Wentworth 2007b; Zavaleta 1999). Similar surveys were conducted in the Bristol Bay region about every other year in 1995–2002 (Wentworth 2007a). These earlier surveys had 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-term dataset necessary for the understanding of harvest data.

The AMBCC Harvest Assessment Program (AMBCC-HAP) was based on the Goose Management Plan surveys conducted in the Y-K Delta and Bristol Bay and expanded the geographic coverage of bird and egg harvest monitoring to other regions in Alaska (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. The ADF&G Division of Subsistence currently coordinates the AMBCC-HAP on behalf of the AMBCC. 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 underwent a first revision to streamline program structure and data collection, analysis, and reporting (Naves et al. 2008). Revised survey methods were implemented in 2010–2015 following methods described in Naves (2012). In 2014–2016, the survey program underwent a second revision, which addressed the distribution of sampling effort among regions and communities and data analysis (George et al. 2015; Otis et al. 2016). The revised survey methods are described in this report. In 2016, the survey piloted the newly revised sampling design.

Information generated by the AMBCC-HAP is 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. This report is the tenth in a series presenting annual harvest estimates for birds and their eggs based on data collected by the AMBCC-HAP (Naves 2010rev., 2010, 2011, 2012, 2014a; Naves and Braem 2014; Naves 2015b, 2015c, 2016). All reports are available at the websites of the AMBCC (https://www.fws.gov/alaska/ambcc/harvest.htm) and the ADF&G (http://www.adfg.alaska.gov/sf/publications/). Harvest estimates produced by the AMBCC-HAP can also be downloaded in electronic version at the AMBCC data portal hosted at the ADF&G website (http://www.adfg.alaska.gov/index.cfm?adfg=subsistence.migratorybird_cmc). The AMBCC-HAP also conducts research, outreach, and education to address specific information needs and

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.

management issues (Naves and Zeller 2013; Naves 2014b; Rothe et al. 2015; Naves 2015a; Naves and Fall 2017; Naves and Zeller 2017). Some uses of the 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 harvest;
- Inform spring–summer migratory bird harvest regulations; and
- Assist in the development of management plans.

# METHODS

## ETHICAL STANDARDS

From a subsistence harvester's perspective, harvest surveys collect information that commonly is private and sensitive. Subsistence bird harvest data 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 is voluntary. Community consent to conduct surveys is granted as tribal council resolutions and ethical principles for social science research are closely observed (Arctic Research Consortium of the United States (ARCUS) 1999:55–59; Naves 2012:7)[3]. Data at the household level are considered confidential. AMBCC-HAP data have been usually reported at the subregion and region levels. Specific data release agreements may allow data release at the community level (e.g., Naves and Zeller 2013; Naves 2014b, 2015c). Archived materials do not include household names or other personal information to maintain anonymity of household harvest reports (a numeric household identifier is used). Names on household lists are covered; lists not showing names are then scanned for digital archiving together with other survey materials. Preliminary harvest estimates 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, and there are no known instances when this may have happened since regular bird harvest surveys started in the 1980s.

## FIVE-REGIONS SURVEY

### Sampling Design

The revised sampling design was based on the objectives, priorities, and funding level for the survey program identified by AMBCC partners during the review process (George et al. 2015; Otis et al. 2016). Alaska-wide harvest estimates were considered the main priority and region-level harvest estimates were considered a secondary priority. Because of challenges in accurately estimating harvest for rarely-harvested species, optimal allocation analyses to distribute sampling effort were based on past harvest estimates for commonly-harvested species ([George et al. 2015:69–70]; Table 1).

The sampling frame includes five regions, which together represent about 90% of the total subsistence bird harvest in Alaska: Yukon-Kuskokwim Delta, Bering Strait-Norton Sound, Interior Alaska, Bristol Bay, and North Slope (Appendix A). Harvest in these five regions is used as an index of the Alaska-wide harvest. The same regions are to be sampled each year (Otis et al. 2016). Harvest data for non-surveyed regions may be occasionally available depending on surveys conducted by other organizations, including Native organizations. The AMBCC-HAP can provide technical assistance in harvest data collection and analysis upon request. Also, depending on priorities, the AMBCC-HAP may conduct dedicated studies to address specific data needs in the nonsurveyed regions. These additional data will not be incorporated in the regular five regions' harvest estimates, but may be provided as separate reports.

The survey uses a stratified, two-stage sampling design. Regions are considered strata. Within each region, communities are first-stage sampling units and households are second-stage sampling units. The clustering of communities into subregions was eliminated because harvest estimates at the region and Alaska-wide levels were considered a priority during the survey revision (Naves 2012; George et al 2015).

3. 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.

Table 1.–Commonly-harvested species used in analyses of survey performance.

| Species | Scientific name |
|---|---|
| American Widgeon[1] | *Anas americana* |
| Black brant[1, 2, 4] | *Branta bernicla* |
| Black Scoter[1, 2, 4] | *Melanitta americana* |
| Cackling/Canada Goose[1] | *Branta hutchinsi/canadensis* |
| Canvasback[2] | *Aythya valisineria* |
| Common Eider[3, 4] | *Somateria mollissima* |
| Greater White-fronted Goose[1] | *Anser albifrons* |
| King Eider[1, 4] | *Somateria spectabilis* |
| Long-tailed Duck[2] | *Clangula hyemalis* |
| Mallard[1, 2] | *Anas platyrhynchos* |
| Northern Pintail[1] | *Anas acuta* |
| Greater/Lesser Scaup[1] | *Aythya marila/affinis* |
| Snow Goose[1] | *Chen caerulescens* |
| Surf Scoter[2] | *Melanitta perspicillata* |
| White-winged Scoter[1] | *Melanitta fusca* |

1: Important subsistence resources (more than 2% of the total subsistence harvest of birds in Alaska, based on 2004–2008 AMBCC harvest estimates).

2: Large proportion (more than 5%) of Alaska breeding population is harvested by subsistence users.

3: Large proportion (more than 5%) of Alaska breeding population is harvested by subsistence users. Harvest during fall and winter includes birds breeding outside of Alaska (mixed populations).

4: Species of conservation concern that are harvestd in significant numbers.

For each region and year, a systematic random sample of communities is selected to be surveyed. With the objective of obtaining a geographically dispersed set of communities, in each region, communities were sequentially numbered following a geographic route (south to north, coastal to inland; figures 1–5). A starting-point community is randomly selected, which then defines the other selected communities (e.g., every 4th community in the sequentially numbered route). Communities are selected randomly regardless of their total number of households. The number of communities to be sampled in each region was based on optimal sampling allocation (Table 2) (Otis et al. 2016).

In the 2016 survey, communities with more than 300 households were divided into parcels. For purposes of sampling, each parcel was treated as an individual community (Dillingham=3 parcels, Bethel=7 parcels, Nome=5 parcels, Utqiaġvik (formerly Barrow)=5 parcels, Tok=2 parcels). Communities with fewer than 10 households in the 2010 census and in the 2011–2015 population estimates were excluded from the sampling frame (U.S. Census Bureau 2011; ADLWD n.d.) (Bristol Bay region: Ivanof Bay, Portage Creek, Ugashik, Pope Vannoy Landing; Interior Alaska region: Lake Minchumina, Coldfoot, Wiseman, Livengood, Chicken, Healy Lake).

Participation in the survey is voluntary at the community and household levels. For each survey year, if a selected community declines to participate or cannot be surveyed because of a major logistical constraint, an alternate community is selected. Following the geographic route established for the systematic random sampling of communities, the first alternate community is that immediately before the originally selected community (Figures 1–5). If a first-alternate community declines to participate or cannot be surveyed because of a major logistical constraint, the community immediately after the originally selected community is selected as the second alternate. Within communities, if a selected household declines to participate or cannot be contacted after three reasonable attempts (as described in Naves [2012]), an alternate household is randomly selected among those not selected in the original drawing, and this process is repeated until the household sampling goal is met.

With the objective of simplifying survey methods, harvest level stratification (harvester, non-harvester) is no longer used. Within each selected community, households are selected by simple random sampling to be surveyed. For the 2016 survey, based on optimal allocation and discussion with AMBCC partners, it was decided that 10 households were to be surveyed in each selected community (Otis et al. 2016). The number of households surveyed per community is lower in the revised AMBCC survey than in other surveys conducted in Alaska because Alaska-wide estimates were defined as a priority during the AMBCC survey revision (George et al. 2015). This change generated concerns among some AMBCC partners because a reduced sample size within communities may incur the possibility of missing some high harvesters, which would in turn result in underestimated harvest at the community level. However, the intent of the survey is to reflect a large scale perspective of the subsistence bird harvest. Harvest estimates will only be produced at the region and survey-wide levels. Harvest estimates at the region level are based on the total number of households sampled in the region, and this larger sample size accurately represents the true proportions of nonharvesters, low harvesters, and high harvesters. An evaluation of the 2016 pilot survey will include an assessment of the optimum allocation analysis. A significant change in the estimated variance of components might lead to an adjustment of the number of villages and households to be sampled in each region.

Table 2.–Distribution of sampling effort, 2016 survey.

| Region | Total communities | Total communities/ parcels[a] | Total households[b] | Communities to be surveyed | Households to be surveyed[c] |
|---|---|---|---|---|---|
| Bristol Bay | 31 | 29 | 2,490 | 4 | 40 |
| Yukon-Kuskokwim Delta | 47 | 53 | 6,854 | 21 | 210 |
| Bering Strait-Norton Sound | 16 | 20 | 2,744 | 5 | 50 |
| North Slope | 8 | 12 | 2,022 | 5 | 50 |
| Interior Alaska | 48 | 41 | 2,962 | 10 | 100 |
| Total | 150 | 155 | 17,072 | 45 | 450 |

a. "Communities/parcels" refer to sampling units, accounting for (a) division of communities with more than 300 households into parcels (Dillingham=3 parcels, Bethel=7 parcels, Nome=5 parcels, Utqiaġvik=5 parcels, Tok=2 parcels); (b) exclusion of communities with fewer than 10 households from the sampling frame; and (c) neighboring communities combined for survey purposes (Bettles-Evansville, Allakakeet-Alatna).

b. Based on 2010 census data.

c. Based on a fixed number of 10 households to be surveyed in each selected community.

## Dividing Large Communities into Parcels

For small communities, a list of households based on family names can be compiled by a person who knows the community well. People often move between communities and between households within communities, thus household lists need to be frequently updated. For large communities, it is impractical to keep updated lists of all households based on family names, and instead, surveys often use lists of physical addresses. Lists of addresses may be obtained from the planning department or other service entities in a community (e.g., electrical company, emergency services). Lists of addresses may identify individual units in multi-unit buildings (apartment buildings, duplexes, etc).

***Utqiaġvik***—A list of residential addresses and a set of plat maps were obtained from the Planning Department of the North Slope Borough. A set of aerial photographs also showing plot numbers was obtained online (http://www.north-slope.org/our-communities/barrow). Consultation with staff of the North Slope Borough Department of Wildlife Management indicated that distribution of demographic categories is homogenous among neighborhoods (e.g., Alaska Native population is not concentrated in some neigborhoods). The list included 1,223 residential addresses. The parcels were composed of sets of nearby streets within recognized parts of the city (Barrow: parcels 1 [227 addresses] and 2 [244 addresses]; Browerville: parcels 3 [264 addresses] and 4 [248 addresses]; and Cakeeater: parcel 5 [240 addresses]).

***Bethel***—A list of addresses used for a salmon harvest survey was obtained from the Division of Commercial Fisheries of the Alaska Department of Fish and Game. This list has been updated and ground-truthed over the years. The list included 2,130 addresses, most of them were residential. A set of plat maps was obtained from the Planning

Department of the city of Bethel (http://www.cityofbethel.org/vertical/sites/%7B86032ACB-92B0-4505-919A-3F45B84FECD9%7D/uploads/City_of_Bethel_Address_Map.pdf). Consultation with staff of the Division of Commercial Fisheries of the Alaska Department of Fish and Game and with staff of the Yukon Delta National Wildlife Refuge indicated that distribution of demographic categories is homogenous among neighborhoods (e.g., Alaska Native population is not concentrated in some neigborhoods). The parcels were composed of sets of close-by streets based on the city maps. Neighborhoods with few addresses were combined (parcel 1 [350 addresses], parcel 2 [290 addresses], parcel 3 [295 addresses], parcel 4 [285 addresses], parcel 5 [381 addresses], parcel 6 [298 addresses], parcel 7 [231 addresses]).

***Dillingham and Nome***—A list of addresses was obtained from the Planning Department of the City of Dillingham. The list was last updated in 2014 and a more recent list was unavailable. The list included 1,109 addresses, but 76 addresses were identified as non-residential and were excluded. Data analysis was based on 726 total households (Evans et al. 2013), which yields three adjusted parcels, each including 242 residential, yearlong households. A list including 2,204 addresses was obtained from the Planning Department of the City of Nome, among which 1,472 addresses were identified as having a structure. For Dillingham and Nome, all addresses not identified as non-residential were considered for household selection. Using the software Microsoft Excel[4], a formula assigned a random number to each address. The lists were sorted from the smallest to the largest random number and divided into sequential parts according to the number of parcels defined for each community (Dillingham had three parcels, and Nome had five parcels). This way, parcels were composed of a random set of addresses within a community. This process ensures that parcels are not biased by potential demographic characteristics of neighborhoods, such as ethnic groups or age classes.

For all communities divided into parcels, within parcels, the top-listed addresses based on the randomly assigned number were selected to be surveyed as the original sample. Many additional addresses were pre-selected as potential alternates to replace addresses of the original sample that were non-residential, non-occupied, or could not be contacted. Alternate addresses were used as needed following the random order in which they were listed.

## Data Collection, Household Visists

Data collection followed methods described in Naves (2012). At the community level, data collection relied on household lists including all resident households, except for the largest communities, where the survey used lists of addresses as described above (Appendix B). A household was 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 any harvest 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 or addresses were selected to replace households that declined to participate and households that could not be contacted after three reasonable attempts. Alternate addresses were selected as needed until the household sampling goal was achieved.

The harvest report form was used to record the harvest of birds and eggs (Appendices D–G). The survey form included species important for subsistence uses or of management interest. Harvest of species not 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 (Appendices G–K). A poster with color photographs of all species included in the survey assisted in species identification and outreach (Appendices L–O). 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 (Naves 2010rev.).

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

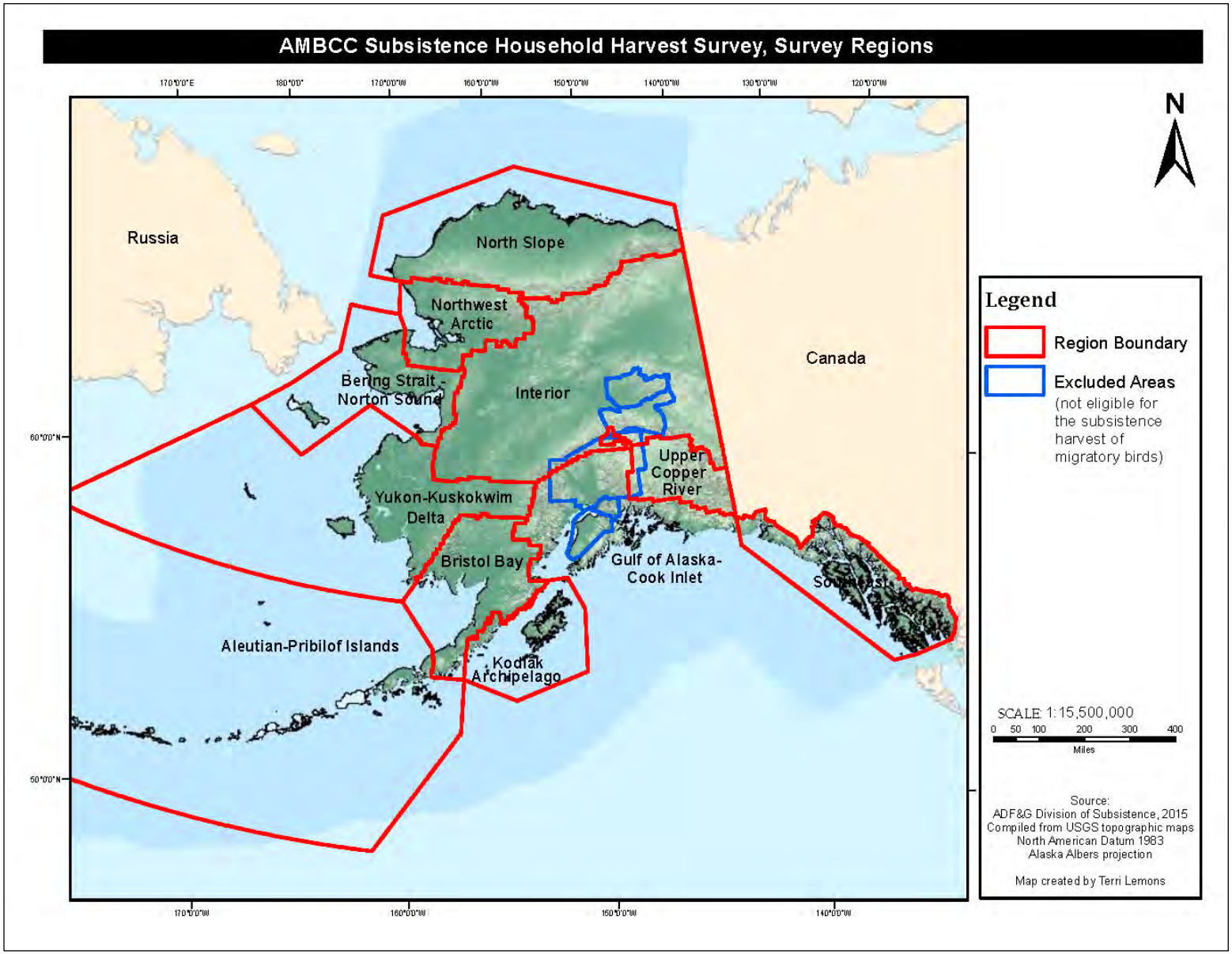


Figure 1.–Management regions for the Alaska migratory bird subsistence harvest.

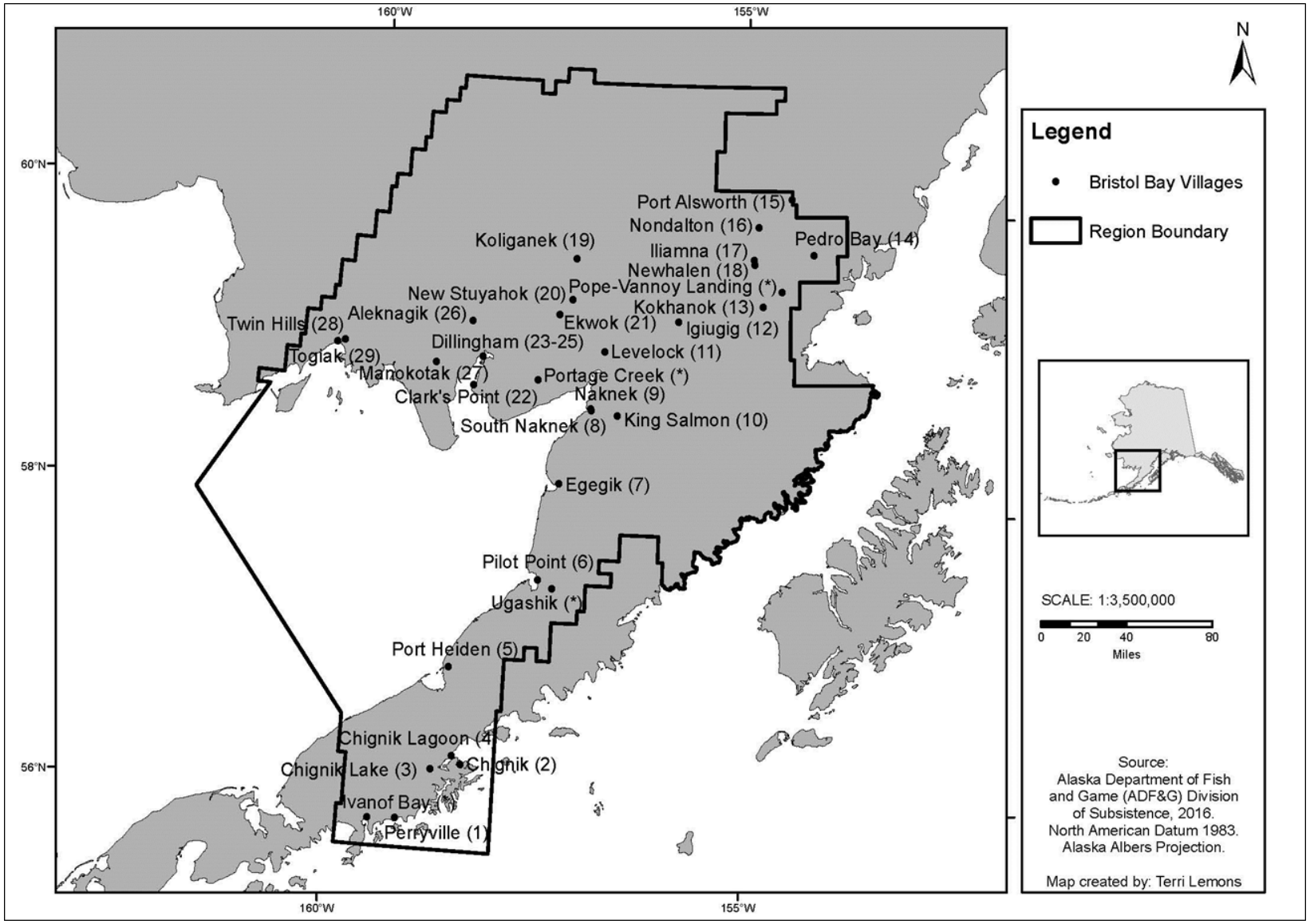


Figure 2.–Bristol Bay region with sequential numbering of communites for systematic random sampling. An asterisk "*" indicates communities with fewer than 10 households, which were excluded from the sampling frame.

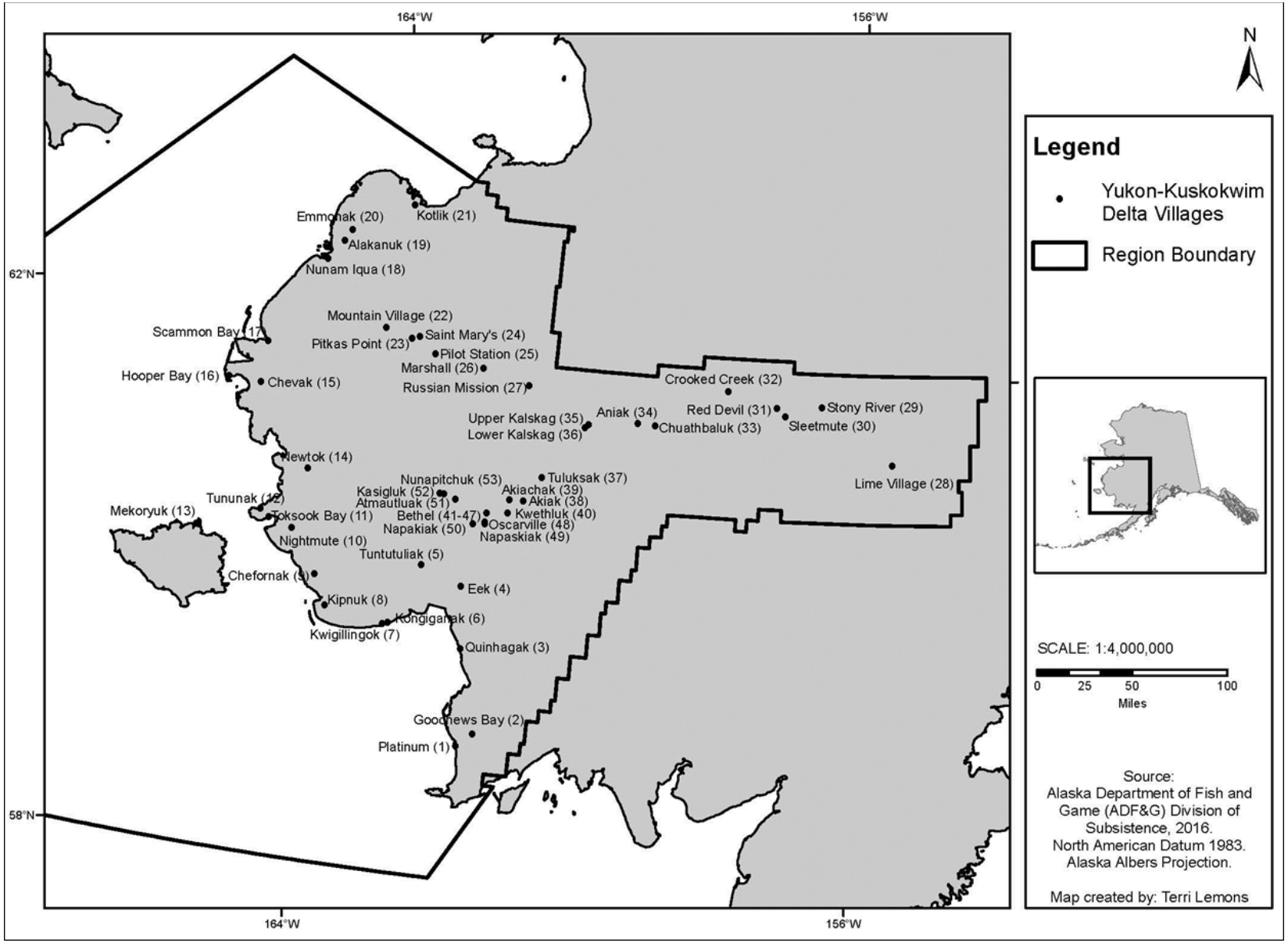


Figure 3.–Yukon-Kuskokwim Delta region with sequential numbering of communites for systematic random sampling.

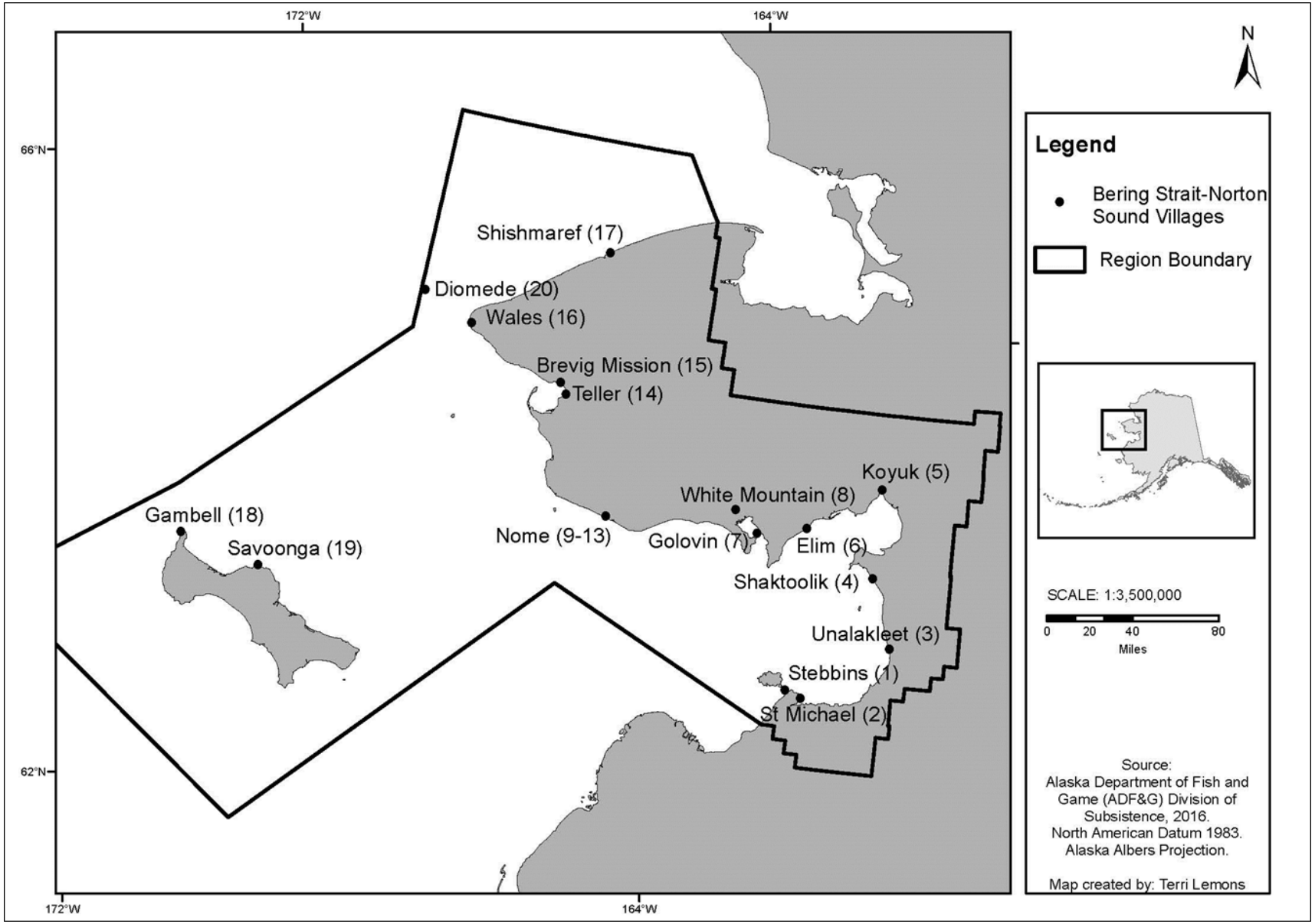


Figure 4.–Bering Strait-Norton Sound region with sequential numbering of communites for systematic random sampling.

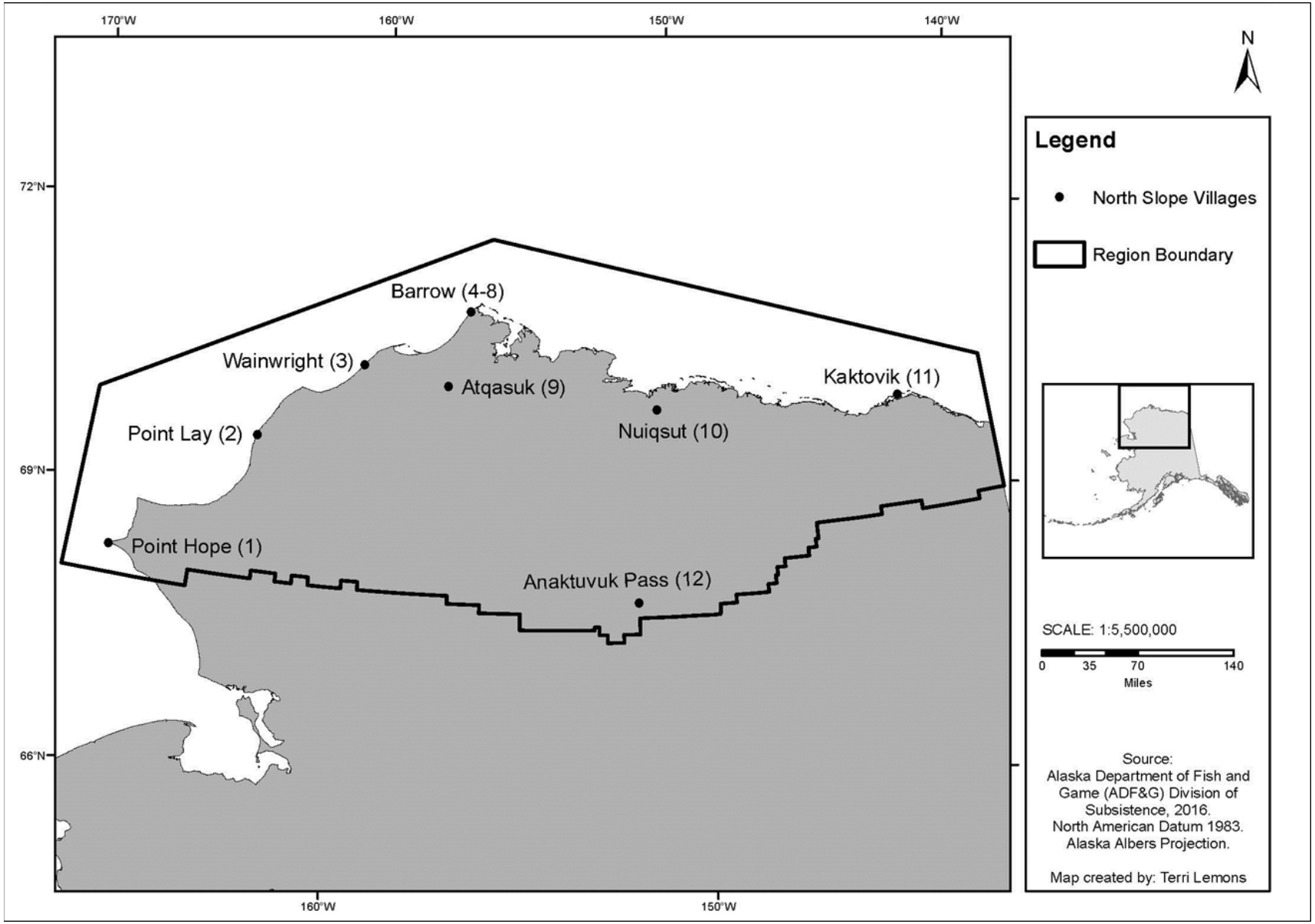


Figure 5.–North Slope region with sequential numbering of communites for systematic random sampling.

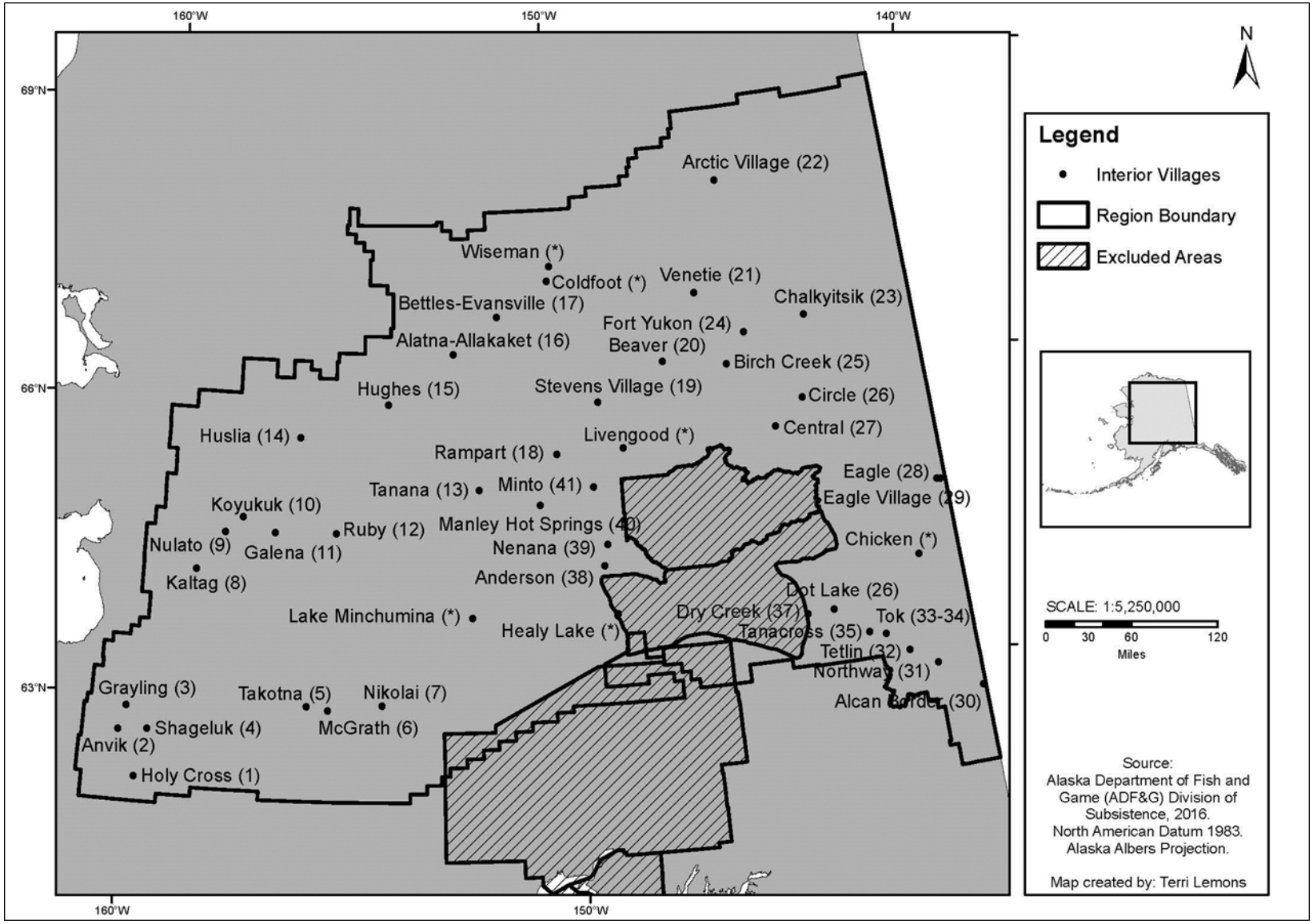


Figure 6.–Interior Alaska region with sequential numbering of communites for systematic random sampling. An asterisk "*" indicates communities with fewer than 10 households, which were excluded from the sampling frame.

Starting in 2012, loon species names have not been displayed on the bird identification guide and harvest report form because of confusion with 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. 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 were 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*)].

## Data Analysis

Electronic data entry of completed surveys was done using Microsoft Office Access 2010 forms. The raw data were stored in a Microsoft SQL Server Management Studio 2008 relational database. Double data entry and logic checks ensured accuracy of the data stored in the database (reported harvest, 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.

Reported harvests from surveyed communities were extrapolated to nonsurveyed communities in the same region. There are several alternative estimators of total harvest for multi-stage sampling designs, and the use of a simple unbiased estimator and a ratio estimator were explored (Cochran 1977; Otis et al. 2016). The unbiased estimator can have slightly larger variance than the ratio estimator in some applications. However, the unbiased estimator was chosen because of its simplicity in estimation of regional and survey-wide harvests and also because the ratio estimator is not unbiased (Appendix P).

For nonsurveyed communities, the number of occupied households was calculated by dividing 2016 population estimates (ADLWD n.d.) by the number of people per household reported in the 2010 census (U.S. Census Bureau 2011). Harvest estimates and variances were calculated for each season and annual estimates were calculated as the sum of seasonal harvest. Harvest estimates and their variances are calculated for each region and then summed to produce survey-wide harvest estimates and variances. In 2016, a total of 43 communities/parcels were surveyed and 41 communities/parcels were included in data analysis (Appendix A).

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; Otis et al. 2016). Few data points for rarely-harvested species results in less accurate harvest estimates and wider confidence intervals as compared to commonly-harvested species. Dedicated harvest surveys and specific analytical procedures would be required to accurately estimate harvest 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.

## CORDOVA HARVEST MAIL-OUT SURVEY

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 register at the Cordova offices of the U.S. Forest Service or Native Village of Eyak. In 2016, a total of 26 households registered for this harvest. The ADF&G Division of Subsistence coordinated the household registration and mail-out survey in collaboration with the local partners (Eyak Tribe, U.S. Forest Service, Alaska Department of Fish and Game, Chugach Regional Resources Commission).

A mail-out harvest survey was sent in late June, 2016 to all registered households (Appendix Q). Survey reminders were sent in late July and again in late August to registered households that had not yet provided completed surveys.

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.

The survey was conducted in the context of the AMBCC-HAP. A total of 22 completed surveys were returned (out of 26 registered households) resulting in a response rate of 85%. Harvests reported in returned surveys were extrapolated to non-returned surveys.

### COMMUNITY AND HOUSEHOLD PARTICIPATION RATES

The community participation rate was calculated as the number of communities that agreed to participate divided by the number of communities where contact was attempted. The 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. No response from communities may suggest lack of interest or willingness to participate in the survey, but it also may also be related to conditions proper to individual communities not related to the survey (e.g., tribal office not staffed, malfunction of local communitcation systems). Thus, as calculated, the community participation rates may underestimate communities' willingness to participate in the survey. Because it may be difficult to differenetiate between causes of no-response, a conservative approach was chosen to calculate community participation rates.

In communities surveyed by in-person interviews (five-region survey), the household participation rate was calculated as the number of households that agreed to participate divided by the number of households contacted. The number of households contacted included households that agreed to participate and 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 of the survey seasons. 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 (2015b: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 2004–2015, the sampling effort varied depending on funding, monitoring priorities, and size of the communities surveyed (Table 3). Starting in 2016, the same 5 regions are to be surveyed annualy, and within regions, a fixed number of communities and households are to be surveyed. In 2016, 56 communities were invited to participate in the survey and 48 communities agreed to participate (Table 4). The 2016 household participation rates are presented in Table 5.

Annual harvest estimates (all species combined) were summarized in tables 5 (birds) and 6 (eggs), which also indicate that estimates detailed by species and seasons are available in the following tables 7–19. Harvest estimate tables include all species represented in the harvest report form. The categories duck (unidentified), goose (unidentified), gull (unidentified), and other/unknown bird are included only if harvest in these categories was reported.

A summary was produced to facilitate data review and community communication regarding the Cordova harvest (Table 20, Appendix R).

The points below reflect discussion among AMBCC partners, including the AMBCC regional bird councils, pertaining to the 2016 harvest estimates:

- Starting in 2016, the revised sampling design defined the annual geographic coverage of the survey to five regions. This design provides Alaska-wide harvest estimates with good precision through the five-regions index. The 2016 five-regions index for all birds (all seasons combined) was comparable to the 2004–2009, 2010–2015, and 2004–2015 averages at the same geographic scale (Tables 6 and 7).
- Using the revised sampling design, the 2016 harvest estimates for all birds (all seasons combined) were similar to the 2004–2015 average for the Bering Strait-Norton Sound region; lower for the Yukon-Kuskokwim Delta; and higher for the Bristol Bay, North Slope, and Interior Alaska regions. Annual harvest estimates show large variation because of socio-economic and environmental factors, natural fluctuations in bird population sizes, and other factors related to the harvest estimation methods (Wolfe et al. 1990; Fall et al. 2013). With the revised survey design, several years of data will be needed to accurately describe the range and trend of annual harvests.

- Overall, the revised survey methods were primarily designed to accurately depict Alaska-wide harvest composition and amounts, while harvest patterns at smaller geographic scales will be less accurate.
- Harvest estimates for individual species at the regional level may be less accurate than in previous survey years, especially for species that are harvested infrequently or in relatively small numbers.
- At its Fall 2017 meeting, the AMBCC and its Harvest Survey Committee supported an evaluation of the upcoming 2017 survey results and allocation of the sampling effort.

Table 3.–Number of communities and households included in data analysis, 2004–2016.

| Survey year | Communities/parcels 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 | 250 | 222[c] | 222[c] | b |
| 2015 | 20 | 907 | 892[c] | 892[c] | b |
| 2016 | 43 | 447 | 425[c] | 373[c] | 10[d] |

*Sources* Survey results for 2004–2015 were reported in Naves (2010rev., 2010, 2011, 2012, 2014a, 2015b, 2015c, 2016) and 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 and regions surveyed usually have no winter survey.

c. The Cordova survey covers April–May harvest only and North Slope survey covers spring and summer only.

d. Only one community had winter survey, thus winter data were not included in harvest expansion.

Table 4.–Community participation rate, 2016.

| Regions | Total communities | Contacted communities | Communities that agreed to participate in the survey | Community participation rate |
|---|---|---|---|---|
| Bristol Bay | 31 | 5 | 4 | 80% |
| Yukon-Kuskokwim Delta | 47 | 28 | 23 | 82% |
| Bering Strait-Norton Sound | 16 | 5 | 5 | 100% |
| North Slope | 8 | 4 | 4 | 100% |
| Interior Alaska | 48 | 13 | 11 | 85% |
| Cordova harvest | 1 | 1 | 1 | 100% |
| Total | 151 | 56 | 48 | 86% |

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

Table 5.–Household participation rate, 2004–2016.

| Region | 2004 | | 2005 | | 2006 | | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | | 2015 | | 2016 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 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 | 75% | 20 | - | - |
| 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** | - | - | - | - | - | - | - | - | **95%** | **40** |
| 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** | - | - | **95%** | **930** | **92%** | **232** |
| Y-K Delta South Coast | 95% | 106 | 100% | 124 | 78% | 90 | 92% | 144 | * | * | 68% | 95 | 97% | 112 | 100% | 115 | - | - | 99% | 120 | - | - | 93% | 128 | - | - |
| Y-K Delta Mid Coast | 82% | 214 | 81% | 232 | 90% | 175 | 77% | 92 | 72% | 111 | 61% | 168 | 80% | 155 | 90% | 156 | - | - | 94% | 90 | - | - | 85% | 113 | - | - |
| Y-K Delta North Coast | 100% | 58 | 92% | 38 | 58% | 107 | 57% | 92 | 79% | 87 | 80% | 99 | 100% | 77 | 100% | 56 | - | - | 100% | 93 | - | - | 100% | 122 | - | - |
| Lower Yukon | 83% | 42 | 86% | 180 | 89% | 72 | 67% | 231 | * | * | * | * | 100% | 65 | 99% | 88 | - | - | 100% | 101 | - | - | 100% | 98 | - | - |
| Lower Kuskokwim | 76% | 222 | 90% | 213 | 69% | 270 | 55% | 123 | 65% | 239 | 63% | 161 | 81% | 186 | 96% | 78 | - | | 98% | 117 | - | - | 99% | 227 | - | - |
| Central Kuskokwim | * | * | - | - | 74% | 73 | * | * | - | - | - | - | 100% | 14 | - | - | - | - | - | - | - | - | - | - | - | - |
| Bethel | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | - | - | - | - | - | - | 92% | 242 | - | - |
| **Bering Strait-Norton Sound** | **71%** | **528** | **81%** | **347** | - | - | **90%** | **439** | - | - | - | - | **81%** | **489** | - | - | - | - | - | - | - | - | - | - | **96%** | **56** |
| 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** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | **100%** | **52** |
| North Slope Villages | - | - | 90% | 395 | - | - | * | * | * | * | * | * | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Barrow | - | - | 98% | 224 | - | - | * | * | * | * | * | * | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Interior** | - | - | - | - | **98%** | **544** | - | - | - | - | - | - | **99%** | **523** | - | - | - | - | - | - | - | - | - | - | **90%** | **80** |
| 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 2004–2015 (Naves 2016).

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 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 were provided.

Table 6.–Annual estimated bird harvest (all birds, spring, summer, fall, and winter), AMBCC survey, 2004–2016.

| Regions, subregions (all birds, all seasons) | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2004-2009 Average | 2010-2015 Average | 2004-2015 Average | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Gulf of Alaska-Cook Inlet** | **2,995** | | | | | | | | | | | | **1,802** | **1,196** | **1,614** | |
| Gulf of Alaska Villages | 2,756 | | 596 | | | | 1,049 | | | | | | 1,676 | 1,049 | 1,467 | |
| Cordova | | | | | | | | | | | 42 | 0 | | 21 | 21 | 80 |
| Cook Inlet | 239 | 13 | | | | | | | | | | | 126 | | 126 | |
| **Kodiak Archipelago** | | | | | | | **6,926** | | | | | | **10,531** | **6,926** | **8,729** | |
| Kodiak Villages | | | 5,552 | | | | 1,947 | | | | | | 5,552 | 1,947 | 3,750 | |
| Kodiak City & Road-connected | | | | | | | 4,979 | | | | | | | 4,979 | 4,979 | |
| **Aleutian-Pribilof Islands** | | | | | **8,401** | | | | | | | | **11,390** | | **11,390** | |
| Aleutian-Pribilof Villages | | 16,876 | | 7,371 | 7,642 | | | | | | | | 10,630 | | 10,630 | |
| Unalaska | | | | | 760 | | | | | | | | 760 | | 760 | |
| **Bristol Bay*** | | **47,336** | | **28,285** | **32,995** | | | **30,081** | | | | | **32,901** | **30,084** | **32,046** | **63,880** |
| South Alaska Peninsula | 801 | | | 968 | 115 | | | 833 | | | | | 628 | 833 | 679 | |
| Southwest Bristol Bay | 14,955 | 32,769 | 26,715 | 20,169 | 29,352 | | | 26,601 | | | | | 24,792 | 26,601 | 25,094 | |
| Dillingham | | 11,769 | | 7,148 | 3,527 | | | 2,650 | | | | | 7,481 | 2,650 | 6,273 | |
| **Yukon-Kuskokwim Delta*** | **130,343** | **114,514** | **171,856** | **148,715** | **79,088** | **195,082** | **142,834** | **110,611** | | | | **110,836** | **138,748** | **134,723** | **137,152** | **78,602** |
| Y-K Delta South Coast | 25,764 | 35,508 | 31,918 | 33,927 | 19,999 | 35,203 | 17,537 | 37,834 | | 33,417 | | 21,381 | 30,387 | 27,542 | 29,249 | |
| Y-K Delta Mid Coast | 34,480 | 17,546 | 61,998 | 43,737 | 17,160 | 82,654 | 37,363 | 13,899 | | 58,770 | | 21,164 | 42,929 | 32,799 | 38,877 | |
| Y-K Delta North Coast | 8,806 | 11,206 | 4,493 | 1,206 | 4,867 | 13,637 | 4,920 | | | 5,839 | | 10,121 | 7,369 | 6,960 | 7,233 | |
| Lower Yukon | 6,201 | 6,815 | 10,269 | 3,988 | 4,727 | 6,904 | 7,748 | | | 10,863 | | 17,114 | 6,484 | 11,908 | 8,292 | |
| Lower Kuskokwim | 46,033 | 16,557 | 48,849 | 58,983 | 22,813 | 44,934 | 71,317 | 32,826 | | 65,081 | | 26,450 | 39,695 | 48,919 | 43,384 | |
| Central Kuskokwim | 440 | | 1,167 | 219 | | | 659 | | | | | | 609 | 659 | 621 | |
| Bethel | 8,618 | 23,954 | 13,163 | 6,654 | 7,789 | 7,478 | 3,290 | 2,539 | | | | 11,978 | 11,276 | 5,936 | 9,496 | |
| **Bering Strait-Norton Sound*** | **53,576** | **74,115** | | **123,257** | | | | | | | | | **83,649** | **32,379** | **39,758** | **36,458** |
| St. Lawrence-Diomede Is. | | | | | | 41,176 | 14,054 | 12,077 | 8,848 | | | | 41,176 | 11,660 | 19,039 | |
| Bering Strait Mainland Villages | | | | | | | 20,719 | | | | | | | 20,719 | 20,719 | |
| Nome | | | | | | | | | | | | | | | | |
| **Northwest Arctic** | | | | | | | | | | | | | | | **14,113** | |
| Northwest Arctic Villages | | | 9,676 | | | | | | | | | | 9,676 | | 9,676 | |
| Kotzebue | | | | | | | | | 4,437 | | | | | 4,437 | 4,437 | |
| **North Slope*** | | **15,615** | | **44,270** | **45,123** | **19,075** | | | | | | | **31,021** | | **31,021** | **76,315** |
| North Slope Villages | | | | | | | | | | | | | | | | |
| Barrow | | | | | | | | | | | | | | | | |
| **Interior Alaska*** | **50,995** | | **37,068** | | | | **32,611** | | | | | | **45,100** | **30,957** | **39,067** | **108,742** |
| Mid Yukon-Upper Kuskokwim | 3,086 | 2,744 | 697 | | | | 786 | | | | | | 2,176 | 786 | 1,828 | |
| Yukon-Koyukuk | 3,108 | 930 | 1,764 | 3,031 | 6,908 | | 4,532 | | | | | | 3,148 | 4,532 | 3,379 | |
| Upper Yukon | 14,418 | | 10,927 | 18,402 | | | 12,692 | | | | 9,384 | | 14,582 | 11,038 | 13,165 | |
| Tanana Villages | 20,388 | | 17,358 | | | | 14,086 | | | | | | 18,873 | 14,086 | 17,277 | |
| Tok | | | 6,321 | | | | 515 | | | | | | 6,321 | 515 | 3,418 | |
| **Upper Copper River** | **1,120** | | | **247** | | | | | | | | | **684** | | **684** | |
| **Alaska-wide (all regions)** | | | | | | | | | | | | | **355,827** | **279,358** | **301,460** | |
| **Five-regions index (regions indicated by *)** | | | | | | | | | | | | | **331,420** | **259,163** | **279,044** | **363,998** |

*Source* Survey results for 2004–2015 were reported in Naves (2010a; 2010b; 2011; 2012; 2014b; 2015b; 2015c; 2016) and Naves and Braem (2014).
Region-level averages calculated as the sum of the averages for the subregions. 'Empty cells denote lack of data.

Table 7.–Annual estimated egg harvest (all eggs), AMBCC survey, 2004–2016.

| Regions, subregions (all eggs) | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2004-2009 Average | 2010-2015 Average | 2004-2015 Average | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Gulf of Alaska-Cook Inlet** | **2,178** | | | | | | | | | | | | **1,140** | **1,566** | **1,413** | |
| Gulf of Alaska Villages | 2,173 | | 102 | | | | 1,366 | | | | | | 1,137 | 1,366 | 1,214 | |
| Cordova | | | | | | | | | | | 131 | 263 | | 197 | 197 | 105 |
| Cook Inlet | 5 | 0 | | | | | | | | | | | 3 | | 3 | |
| **Kodiak Archipelago** | | | **5,222** | | | | **803** | | | | | | **5,222** | **803** | **3,012** | |
| Kodiak Villages | | | 4,545 | | | | 771 | | | | | | 4,545 | 771 | 2,658 | |
| Kodiak City & Road-connected | | | 677 | | | | 32 | | | | | | 677 | 32 | 355 | |
| **Aleutian-Pribilof Islands** | | | | | **4,778** | | | | | | | | **8,053** | | **8,053** | |
| Aleutian-Pribilof Villages | | 11,733 | | 6,127 | 4,018 | | | | | | | | 7,293 | | 7,293 | |
| Unalaska | | | | | 760 | | | | | | | | 760 | | 760 | |
| **Bristol Bay*** | | **47,799** | | **30,801** | **47,653** | | | **25,211** | | | | | **44,831** | **25,213** | **41,296** | **69,367** |
| South Alaska Peninsula | 409 | | | 651 | 106 | | | 392 | | | | | 389 | 392 | 390 | |
| Southwest Bristol Bay | 54,437 | 39,206 | 31,292 | 25,118 | 37,630 | | | 21,105 | | | | | 37,537 | 21,105 | 34,798 | |
| Dillingham | | 5,768 | | 5,032 | 9,917 | | | 3,716 | | | | | 6,906 | 3,716 | 6,108 | |
| **Yukon-Kuskokwim Delta*** | **27,288** | **22,268** | **30,723** | **19,153** | **31,195** | **58,995** | **26,965** | **54,075** | | | | **56,767** | **31,182** | **45,372** | **36,282** | **35,450** |
| Y-K Delta South Coast | 7,768 | 13,424 | 7,406 | 1,746 | 8,442 | 29,065 | 6,208 | 26,492 | | 21,605 | | 15,424 | 11,309 | 17,432 | 13,758 | |
| Y-K Delta Mid Coast | 14,598 | 2,140 | 21,354 | 11,930 | 16,195 | 24,640 | 19,137 | 15,213 | | 7,963 | | 13,400 | 15,143 | 13,928 | 14,657 | |
| Y-K Delta North Coast | 2,466 | 3,921 | 188 | 22 | 554 | 345 | 1,619 | | | 8,240 | | 14,654 | 1,249 | 8,171 | 3,557 | |
| Lower Yukon | 191 | 652 | 232 | 565 | 0 | 386 | 0 | | | 1,392 | | 3,902 | 338 | 1,765 | 813 | |
| Lower Kuskokwim | 2,265 | 1,302 | 1,498 | 4,891 | 5,298 | 3,087 | 0 | 877 | | 6,995 | | 6,873 | 3,057 | 3,686 | 3,309 | |
| Central Kuskokwim | 0 | | 15 | 0 | | | 0 | | | | | | 5 | 0 | 4 | |
| Bethel | 0 | 261 | 29 | 0 | 23 | 179 | 0 | 0 | | | | 1,169 | 82 | 390 | 185 | |
| **Bering Strait-Norton Sound*** | **99,494** | **113,082** | | **146,557** | | | | | | | | | **119,711** | **49,371** | **69,799** | **37,072** |
| St. Lawrence-Diomede Is. | | | | | | 117,174 | 55,682 | 20,999 | 29,701 | | | | 117,174 | 35,461 | 55,889 | |
| Bering Strait Mainland Villages | | | | | | | 13,910 | | | | | | | 13,910 | 13,910 | |
| Nome | | | | | | | | | | | | | | | | |
| **Northwest Arctic** | | | | | | | | | | | | | | | **15,977** | |
| Northwest Arctic Villages | | | 10,081 | | | | | | | | | | 10,081 | | 10,081 | |
| Kotzebue | | | | | | | | | 5,896 | | | | | 5,896 | 5,896 | |
| **North Slope*** | | **4,705** | | **2,388** | **858** | **2,430** | | | | | | | **2,595** | | **2,595** | **26,745** |
| North Slope Villages | | | | | | | | | | | | | | | | |
| Barrow | | | | | | | | | | | | | | | | |
| **Interior Alaska*** | **1,009** | | **911** | | | | **65** | | | | | | **870** | **65** | **662** | **888** |
| Mid Yukon-Upper Kuskokwim | 0 | 2 | 0 | | | | 0 | | | | | | 1 | 0 | 1 | |
| Yukon-Koyukuk | 11 | 0 | 0 | 0 | 0 | | 22 | | | | | | 2 | 22 | 6 | |
| Upper Yukon | 40 | | 0 | 0 | | | 0 | | | | 110 | | 13 | 55 | 30 | |
| Tanana Villages | 760 | | 875 | | | | 43 | | | | | | 817 | 43 | 559 | |
| Tok | | | 36 | | | | 0 | | | | | | 36 | 0 | 18 | |
| **Upper Copper River** | **82** | | | **0** | | | | | | | | | **41** | | **41** | |
| **Alaska-wide (all regions)** | | | | | | | | | | | | | **213,645** | **133,078** | **163,153** | |
| **Five-regions index (regions indicated by *)** | | | | | | | | | | | | | **199,189** | **122,616** | **150,634** | **169,521** |

*Source* Survey results for 2004–2015 were reported in Naves (2010a; 2010b; 2011; 2012; 2014b; 2015b; 2015c; 2016) and Naves and Braem (2014).
Region-level averages calculated as the sum of the averages for the subregions. 'Empty cells denote lack of data.

Table 8.–Estimated bird harvest, Alaska-wide (5-regions index), 2016.

| Species | Annual bird harvest | | | Spring | | Summer | | Fall | |
|---|---|---|---|---|---|---|---|---|---|
| | Reported | Estimated | CIP | Estimated | CIP | Estimated | CIP | Estimated | CIP |
| **Ducks** | | | | | | | | | |
| ★ American wigeon | 265 | 21,107 | 116% | 11,183 | 121% | 53 | 164% | 9,871 | 112% |
| Teal | 223 | 7,587 | 74% | 4,389 | 116% | 147 | 104% | 3,051 | 78% |
| ★ Mallard | 511 | 28,191 | 109% | 16,166 | 108% | 1,211 | 174% | 10,814 | 121% |
| ★ Northern pintail | 466 | 25,057 | 85% | 17,695 | 102% | 2,793 | 132% | 4,569 | 103% |
| Northern shoveler | 77 | 2,398 | 80% | 1,346 | 71% | 61 | 165% | 992 | 175% |
| ★ Black scoter | 415 | 12,304 | 71% | 9,974 | 82% | 490 | 114% | 1,840 | 81% |
| ★ Surf scoter | 53 | 1,033 | 87% | 955 | 91% | 0 | | 78 | 197% |
| ★ White-winged scoter | 119 | 2,708 | 73% | 2,121 | 79% | 31 | 193% | 557 | 131% |
| Bufflehead | 20 | 387 | 154% | 85 | 136% | 0 | | 302 | 193% |
| Goldeneye | 89 | 3,916 | 90% | 3,297 | 101% | 0 | | 619 | 103% |
| ★ Canvasback | 40 | 1,117 | 117% | 1,033 | 125% | 69 | 132% | 15 | 186% |
| ★ Scaup | 290 | 6,615 | 82% | 5,434 | 86% | 215 | 193% | 966 | 131% |
| ★ Common eider | 275 | 9,127 | 86% | 8,453 | 97% | 674 | 138% | 0 | |
| ★ King eider | 467 | 20,297 | 69% | 11,273 | 73% | 8,922 | 134% | 102 | 146% |
| Spectacled eider | 0 | 0 | | 0 | | 0 | | 0 | |
| Steller's eider | 0 | 0 | | 0 | | 0 | | 0 | |
| Harlequin duck | 19 | 2,180 | 140% | 2,102 | 145% | 0 | | 78 | 197% |
| ★ Long-tailed duck | 95 | 2,402 | 82% | 2,136 | 87% | 110 | 136% | 156 | 197% |
| Merganser | 6 | 68 | 135% | 68 | 135% | 0 | | 0 | |
| Duck (unidentified) | 109 | 2,728 | 110% | 381 | 126% | 1,424 | 158% | 923 | 111% |
| **Total ducks** | 3,539 | 149,222 | 61% | 98,089 | 66% | 16,200 | 87% | 34,933 | 73% |
| **Geese** | | | | | | | | | |
| ★ Black brant | 361 | 14,802 | 95% | 13,912 | 102% | 468 | 195% | 422 | 143% |
| ★ Cackling/Canada goose | 1,207 | 43,233 | 53% | 30,470 | 60% | 869 | 104% | 11,895 | 68% |
| ★ Greater white-fronted goose | 1,505 | 88,313 | 77% | 79,308 | 80% | 412 | 154% | 8,593 | 118% |
| Emperor goose | 64 | 1,468 | 98% | 1,173 | 114% | 139 | 144% | 156 | 123% |
| ★ Snow goose | 309 | 11,202 | 120% | 10,881 | 123% | 120 | 195% | 201 | 111% |
| **Total geese** | 3,446 | 159,019 | 57% | 135,743 | 61% | 2,008 | 81% | 21,267 | 75% |
| **Swans** | 107 | 3,237 | 64% | 2,322 | 63% | 23 | 164% | 892 | 95% |
| **Sandhill crane** | 135 | 5,167 | 75% | 3,285 | 78% | 15 | 170% | 1,867 | 81% |
| **Seabirds** | | | | | | | | | |
| Cormorant | 3 | 43 | 193% | 0 | | 0 | | 43 | 193% |
| Tern | 0 | 0 | | 0 | | 0 | | 0 | |
| Black-legged kittiwake | 0 | 0 | | 0 | | 0 | | 0 | |
| Red-legged kittiwake | 0 | 0 | | 0 | | 0 | | 0 | |
| Bonaparte's/Sabine's gull | 0 | 0 | | 0 | | 0 | | 0 | |
| Mew gull | 0 | 0 | | 0 | | 0 | | 0 | |
| Large gull | 0 | 0 | | 0 | | 0 | | 0 | |
| Auklet | 120 | 1,728 | 183% | 0 | | 1,728 | 183% | 0 | |
| Murre | 0 | 0 | | 0 | | 0 | | 0 | |
| Guillemot | 0 | 0 | | 0 | | 0 | | 0 | |
| Puffin | 0 | 0 | | 0 | | 0 | | 0 | |
| **Total seabirds** | 123 | 1,771 | 182% | 0 | | 1,728 | 183% | 43 | 193% |
| **Shorebirds** | | | | | | | | | |
| Black oystercatcher | 0 | 0 | | 0 | | 0 | | 0 | |
| Whimbrel/Curlew | 4 | 42 | 190% | 42 | 190% | 0 | | 0 | |
| Godwit | 8 | 317 | 181% | 21 | 190% | 296 | 193% | 0 | |
| Golden/Black-bellied plover | 0 | 0 | | 0 | | 0 | | 0 | |
| Turnstone | 0 | 0 | | 0 | | 0 | | 0 | |
| Phalarope | 1 | 58 | 198% | 0 | | 58 | 198% | 0 | |
| Small shorebird | 4 | 230 | 198% | 0 | | 230 | 198% | 0 | |
| **Total shorebirds** | 17 | 647 | 177% | 64 | 190% | 584 | 196% | 0 | |
| **Loons and grebes** | | | | | | | | | |
| Common loon | 2 | 31 | 193% | 31 | 193% | 0 | | 0 | |
| Pacific loon | 1 | 16 | 194% | 16 | 194% | 0 | | 0 | |
| Red-throated loon | 0 | 0 | | 0 | | 0 | | 0 | |
| Yellow-billed loon | 0 | 0 | | 0 | | 0 | | 0 | |
| Loon (non-breeding plumage) | 0 | 0 | | 0 | | 0 | | 0 | |
| Grebe | 4 | 65 | 194% | 65 | 194% | 0 | | 0 | |
| **Total loons and grebes** | 7 | 112 | 148% | 112 | 148% | 0 | | 0 | |
| **Snowy owl** | 0 | 0 | | 0 | | 0 | | 0 | |
| ★ **Total commonly-harvested species** | 6,378 | 287,508 | 60% | 220,991 | 62% | 16,437 | 85% | 50,080 | 71% |
| **Total migratory birds** | 7,374 | 319,175 | 57% | 239,614 | 61% | 20,557 | 71% | 59,003 | 63% |
| **Ptarmigans and grouses** | | | | | | | | | |
| Grouse | 732 | 30,912 | 88% | 3,483 | 105% | 0 | | 27,429 | 96% |
| Ptarmigan | 462 | 13,911 | 63% | 12,346 | 58% | 146 | 194% | 1,419 | 198% |
| **Total ptarmigans and grouses** | 1,194 | 44,824 | 66% | 15,829 | 50% | 146 | 194% | 28,848 | 91% |
| **Total birds** | 8,568 | 363,998 | 56% | 255,444 | 59% | 20,703 | 70% | 87,851 | 67% |

★ : Commonly-harvested species. CIP: Confidence interval as percentage of the estimated harvest.

Table 9.–Estimated egg harvest, Alaska-wide (5-regions index), 2016.

| Species | Annual egg harvest | | | Spring | | Summer | |
|---|---|---|---|---|---|---|---|
| | Reported | Estimated | CIP | Estimated | CIP | Estimated | CIP |
| **Ducks** | | | | | | | |
| ★ American wigeon | 12 | 91 | 186% | 91 | 186% | 0 | |
| Teal | 20 | 307 | 193% | 307 | 193% | 0 | |
| ★ Mallard | 61 | 971 | 98% | 971 | 98% | 0 | |
| ★ Northern pintail | 72 | 914 | 108% | 914 | 108% | 0 | |
| Northern shoveler | 11 | 83 | 186% | 83 | 186% | 0 | |
| ★ Black scoter | 0 | 0 | | 0 | | 0 | |
| ★ Surf scoter | 0 | 0 | | 0 | | 0 | |
| ★ White-winged scoter | 12 | 102 | 188% | 102 | 188% | 0 | |
| Bufflehead | 0 | 0 | | 0 | | 0 | |
| Goldeneye | 0 | 0 | | 0 | | 0 | |
| ★ Canvasback | 0 | 0 | | 0 | | 0 | |
| ★ Scaup | 8 | 123 | 193% | 123 | 193% | 0 | |
| ★ Common eider | 144 | 2,783 | 107% | 2,489 | 122% | 294 | 196% |
| ★ King eider | 0 | 0 | | 0 | | 0 | |
| Spectacled eider | 0 | 0 | | 0 | | 0 | |
| Steller's eider | 0 | 0 | | 0 | | 0 | |
| Harlequin duck | 0 | 0 | | 0 | | 0 | |
| ★ Long-tailed duck | 22 | 289 | 135% | 289 | 135% | 0 | |
| Merganser | 0 | 0 | | 0 | | 0 | |
| Duck (unidentified) | 125 | 2,939 | 138% | 2,804 | 138% | 136 | 198% |
| **Total ducks** | 487 | 8,603 | 62% | 8,173 | 64% | 430 | 148% |
| **Geese** | | | | | | | |
| ★ Black brant | 34 | 633 | 148% | 633 | 148% | 0 | |
| ★ Cackling/Canada goose | 291 | 7,609 | 67% | 7,609 | 67% | 0 | |
| ★ Greater white-fronted goose | 286 | 9,328 | 64% | 9,328 | 64% | 0 | |
| Emperor goose | 39 | 671 | 142% | 671 | 142% | 0 | |
| ★ Snow goose | 18 | 588 | 183% | 588 | 183% | 0 | |
| **Total geese** | 668 | 18,829 | 58% | 18,829 | 58% | 0 | |
| **Swans** | 75 | 1,136 | 78% | 1,136 | 78% | 0 | |
| **Sandhill crane** | 37 | 522 | 74% | 522 | 74% | 0 | |
| **Seabirds** | | | | | | | |
| Cormorant | 0 | 0 | | 0 | | 0 | |
| Tern | 90 | 1,516 | 84% | 1,516 | 84% | 0 | |
| Black-legged kittiwake | 211 | 2,770 | 140% | 2,770 | 140% | 0 | |
| Red-legged kittiwake | 0 | 0 | | 0 | | 0 | |
| Bonaparte's/Sabine's gull | 4 | 42 | 190% | 42 | 190% | 0 | |
| Mew gull | 755 | 69,090 | 174% | 69,090 | 174% | 0 | |
| Large gull | 881 | 18,550 | 55% | 17,462 | 58% | 1,088 | 191% |
| Auklet | 12 | 173 | 193% | 0 | | 173 | 193% |
| Murre | 1,802 | 44,926 | 92% | 10,022 | 92% | 34,904 | 111% |
| Guillemot | 0 | 0 | | 0 | | 0 | |
| Puffin | 0 | 0 | | 0 | | 0 | |
| **Total seabirds** | 3,755 | 137,068 | 96% | 100,903 | 125% | 36,164 | 108% |
| **Shorebirds** | | | | | | | |
| Black oystercatcher | 0 | 0 | | 0 | | 0 | |
| Whimbrel/Curlew | 0 | 0 | | 0 | | 0 | |
| Godwit | 0 | 0 | | 0 | | 0 | |
| Golden/Black-bellied plover | 7 | 108 | 177% | 108 | 177% | 0 | |
| Turnstone | 0 | 0 | | 0 | | 0 | |
| Phalarope | 14 | 215 | 174% | 215 | 174% | 0 | |
| Small shorebird | 81 | 2,279 | 121% | 2,187 | 124% | 92 | 193% |
| **Total shorebirds** | 102 | 2,602 | 115% | 2,510 | 116% | 92 | 193% |
| **Loons and grebes** | | | | | | | |
| Common loon | 0 | 0 | | 0 | | 0 | |
| Pacific loon | 5 | 73 | 193% | 73 | 193% | 0 | |
| Red-throated loon | 0 | 0 | | 0 | | 0 | |
| Yellow-billed loon | 5 | 384 | 184% | 384 | 184% | 0 | |
| Grebe | 0 | 0 | | 0 | | 0 | |
| **Total loons and grebes** | 10 | 456 | 152% | 456 | 152% | 0 | |
| **Snowy owl** | 0 | 0 | | 0 | | 0 | |
| **Other/unknown bird** | 20 | 151 | 186% | 151 | 186% | 0 | |
| ★ **Total commonly-harvested species** | 960 | 23,431 | 47% | 23,137 | 48% | 294 | 196% |
| **Total migratory birds** | 5,154 | 169,368 | 78% | 132,682 | 95% | 36,686 | 106% |
| **Ptarmigans and grouses** | | | | | | | |
| Grouse | 0 | 0 | | 0 | | 0 | |
| Ptarmigan | 10 | 154 | 193% | 154 | 193% | 0 | |
| **Total ptarmigans and grouses** | 10 | 154 | 193% | 154 | 193% | 0 | |
| **Total eggs** | 5,164 | 169,521 | 78% | 132,835 | 95% | 36,686 | 106% |

★ : Commonly-harvested species. CIP: Confidence interval as percentage of the estimated harvest.

Table 10.–Estimated bird harvest, Bristol Bay region, 2016.

| Species | Annual bird harvest | | | Spring | | Summer | | Fall | |
|---|---|---|---|---|---|---|---|---|---|
| | Reported | Estimated | CIP | Estimated | CIP | Estimated | CIP | Estimated | CIP |
| **Ducks** | | | | | | | | | |
| ★ American wigeon | 49 | 5,972 | 192% | 3,245 | 193% | 0 | | 2,727 | 191% |
| Teal | 63 | 3,328 | 146% | 3,089 | 163% | 0 | | 240 | 161% |
| ★ Mallard | 105 | 7,341 | 163% | 4,076 | 167% | 1,053 | 199% | 2,213 | 148% |
| ★ Northern pintail | 73 | 7,417 | 181% | 5,608 | 178% | 1,755 | 199% | 54 | 191% |
| Northern shoveler | 1 | 175 | 199% | 175 | 199% | 0 | | 0 | |
| ★ Black scoter | 35 | 1,225 | 125% | 570 | 180% | 218 | 191% | 438 | 153% |
| ★ Surf scoter | 0 | 0 | | 0 | | 0 | | 0 | |
| ★ White-winged scoter | 0 | 0 | | 0 | | 0 | | 0 | |
| Bufflehead | 16 | 302 | 193% | 0 | | 0 | | 302 | 193% |
| Goldeneye | 10 | 189 | 195% | 0 | | 0 | | 189 | 195% |
| ★ Canvasback | 0 | 0 | | 0 | | 0 | | 0 | |
| ★ Scaup | 0 | 0 | | 0 | | 0 | | 0 | |
| ★ Common eider | 0 | 0 | | 0 | | 0 | | 0 | |
| ★ King eider | 0 | 0 | | 0 | | 0 | | 0 | |
| Spectacled eider | 0 | 0 | | 0 | | 0 | | 0 | |
| Steller's eider | 0 | 0 | | 0 | | 0 | | 0 | |
| Harlequin duck | 8 | 1,404 | 199% | 1,404 | 199% | 0 | | 0 | |
| ★ Long-tailed duck | 0 | 0 | | 0 | | 0 | | 0 | |
| Merganser | 0 | 0 | | 0 | | 0 | | 0 | |
| **Total ducks** | 360 | 27,353 | 164% | 18,166 | 173% | 3,025 | 181% | 6,162 | 140% |
| **Geese** | | | | | | | | | |
| ★ Black brant | 2 | 351 | 199% | 351 | 199% | 0 | | 0 | |
| ★ Cackling/Canada goose | 56 | 7,367 | 184% | 5,087 | 182% | 0 | | 2,281 | 194% |
| ★ Greater white-fronted goose | 121 | 13,037 | 182% | 8,124 | 174% | 0 | | 4,913 | 197% |
| Emperor goose | 0 | 0 | | 0 | | 0 | | 0 | |
| ★ Snow goose | 0 | 0 | | 0 | | 0 | | 0 | |
| **Total geese** | 179 | 20,755 | 182% | 13,562 | 177% | 0 | | 7,193 | 196% |
| **Swans** | 4 | 373 | 185% | 373 | 185% | 0 | | 0 | |
| **Sandhill crane** | 8 | 1,239 | 190% | 888 | 189% | 0 | | 351 | 192% |
| **Seabirds** | | | | | | | | | |
| Cormorant | 0 | 0 | | 0 | | 0 | | 0 | |
| Tern | 0 | 0 | | 0 | | 0 | | 0 | |
| Black-legged kittiwake | 0 | 0 | | 0 | | 0 | | 0 | |
| Red-legged kittiwake | 0 | 0 | | 0 | | 0 | | 0 | |
| Bonaparte's/Sabine's gull | 0 | 0 | | 0 | | 0 | | 0 | |
| Mew gull | 0 | 0 | | 0 | | 0 | | 0 | |
| Large gull | 0 | 0 | | 0 | | 0 | | 0 | |
| Auklet | 0 | 0 | | 0 | | 0 | | 0 | |
| Murre | 0 | 0 | | 0 | | 0 | | 0 | |
| Guillemot | 0 | 0 | | 0 | | 0 | | 0 | |
| Puffin | 0 | 0 | | 0 | | 0 | | 0 | |
| **Total seabirds** | 0 | 0 | | 0 | | 0 | | 0 | |
| **Shorebirds** | | | | | | | | | |
| Black oystercatcher | 0 | 0 | | 0 | | 0 | | 0 | |
| Whimbrel/Curlew | 0 | 0 | | 0 | | 0 | | 0 | |
| Godwit | 0 | 0 | | 0 | | 0 | | 0 | |
| Golden/Black-bellied plover | 0 | 0 | | 0 | | 0 | | 0 | |
| Turnstone | 0 | 0 | | 0 | | 0 | | 0 | |
| Phalarope | 0 | 0 | | 0 | | 0 | | 0 | |
| Small shorebird | 0 | 0 | | 0 | | 0 | | 0 | |
| **Total shorebirds** | 0 | 0 | | 0 | | 0 | | 0 | |
| **Loons and grebes** | | | | | | | | | |
| Common loon | 0 | 0 | | 0 | | 0 | | 0 | |
| Pacific loon | 0 | 0 | | 0 | | 0 | | 0 | |
| Red-throated loon | 0 | 0 | | 0 | | 0 | | 0 | |
| Yellow-billed loon | 0 | 0 | | 0 | | 0 | | 0 | |
| Loon (non-breeding plumage) | 0 | 0 | | 0 | | 0 | | 0 | |
| Grebe | 0 | 0 | | 0 | | 0 | | 0 | |
| **Total loons and grebes** | 0 | 0 | | 0 | | 0 | | 0 | |
| **Total commonly-harvested species** | 441 | 42,710 | 176% | 27,061 | 176% | 3,025 | 181% | 12,625 | 182% |
| ★ **Total migratory birds** | 551 | 49,720 | 172% | 32,989 | 175% | 3,025 | 181% | 13,706 | 170% |
| **Ptarmigans and grouses** | | | | | | | | | |
| Grouse | 142 | 13,394 | 177% | 87 | 191% | 0 | | 13,307 | 179% |
| Ptarmigan | 10 | 767 | 178% | 767 | 178% | 0 | | 0 | |
| **Total ptarmigans and grouses** | 152 | 14,161 | 177% | 854 | 157% | 0 | | 13,307 | 179% |
| **Total birds** | 703 | 63,880 | 172% | 33,843 | 174% | 3,025 | 181% | 27,013 | 170% |

★ : Commonly-harvested species. CIP: Confidence interval as percentage of the estimated harvest.

Table 11.–Estimated egg harvest, Bristol Bay region, 2016.

| Species | Annual egg harvest | | | Spring | | Summer | |
|---|---|---|---|---|---|---|---|
| | Reported | Estimated | CIP | Estimated | CIP | Estimated | CIP |
| **Ducks** | | | | | | | |
| ★ American wigeon | 0 | 0 | | 0 | | 0 | |
| Teal | 0 | 0 | | 0 | | 0 | |
| ★ Mallard | 6 | 65 | 191% | 65 | 191% | 0 | |
| ★ Northern pintail | 24 | 348 | 193% | 348 | 193% | 0 | |
| Northern shoveler | 0 | 0 | | 0 | | 0 | |
| ★ Black scoter | 0 | 0 | | 0 | | 0 | |
| ★ Surf scoter | 0 | 0 | | 0 | | 0 | |
| ★ White-winged scoter | 0 | 0 | | 0 | | 0 | |
| Bufflehead | 0 | 0 | | 0 | | 0 | |
| Goldeneye | 0 | 0 | | 0 | | 0 | |
| ★ Canvasback | 0 | 0 | | 0 | | 0 | |
| ★ Scaup | 0 | 0 | | 0 | | 0 | |
| ★ Common eider | 0 | 0 | | 0 | | 0 | |
| ★ King eider | 0 | 0 | | 0 | | 0 | |
| Spectacled eider | 0 | 0 | | 0 | | 0 | |
| Steller's eider | 0 | 0 | | 0 | | 0 | |
| Harlequin duck | 0 | 0 | | 0 | | 0 | |
| ★ Long-tailed duck | 0 | 0 | | 0 | | 0 | |
| Merganser | 0 | 0 | | 0 | | 0 | |
| **Total ducks** | 30 | 413 | 156% | 413 | 156% | 0 | |
| **Geese** | | | | | | | |
| ★ Black brant | 0 | 0 | | 0 | | 0 | |
| ★ Cackling/Canada goose | 0 | 0 | | 0 | | 0 | |
| ★ Greater white-fronted goose | 0 | 0 | | 0 | | 0 | |
| Emperor goose | 0 | 0 | | 0 | | 0 | |
| ★ Snow goose | 0 | 0 | | 0 | | 0 | |
| **Total geese** | 0 | 0 | | 0 | | 0 | |
| **Swans** | 0 | 0 | | 0 | | 0 | |
| **Sandhill crane** | 0 | 0 | | 0 | | 0 | |
| **Seabirds** | | | | | | | |
| Cormorant | 0 | 0 | | 0 | | 0 | |
| Tern | 25 | 272 | 188% | 272 | 188% | 0 | |
| Black-legged kittiwake | 0 | 0 | | 0 | | 0 | |
| Red-legged kittiwake | 0 | 0 | | 0 | | 0 | |
| Bonaparte's/Sabine's gull | 0 | 0 | | 0 | | 0 | |
| Mew gull | 369 | 61,450 | 196% | 61,450 | 196% | 0 | |
| Large gull | 329 | 7,232 | 84% | 6,144 | 98% | 1,088 | 191% |
| Auklet | 0 | 0 | | 0 | | 0 | |
| Murre | 0 | 0 | | 0 | | 0 | |
| Guillemot | 0 | 0 | | 0 | | 0 | |
| Puffin | 0 | 0 | | 0 | | 0 | |
| **Total seabirds** | 723 | 68,953 | 180% | 67,866 | 184% | 1,088 | 191% |
| **Shorebirds** | | | | | | | |
| Black oystercatcher | 0 | 0 | | 0 | | 0 | |
| Whimbrel/Curlew | 0 | 0 | | 0 | | 0 | |
| Godwit | 0 | 0 | | 0 | | 0 | |
| Golden/Black-bellied plover | 0 | 0 | | 0 | | 0 | |
| Turnstone | 0 | 0 | | 0 | | 0 | |
| Phalarope | 0 | 0 | | 0 | | 0 | |
| Small shorebird | 0 | 0 | | 0 | | 0 | |
| **Total shorebirds** | 0 | 0 | | 0 | | 0 | |
| **Loons and grebes** | | | | | | | |
| Common loon | 0 | 0 | | 0 | | 0 | |
| Pacific loon | 0 | 0 | | 0 | | 0 | |
| Red-throated loon | 0 | 0 | | 0 | | 0 | |
| Yellow-billed loon | 0 | 0 | | 0 | | 0 | |
| Grebe | 0 | 0 | | 0 | | 0 | |
| **Total loons and grebes** | 0 | 0 | | 0 | | 0 | |
| ★ **Total commonly-harvested species** | 30 | 413 | 156% | 413 | 156% | 0 | |
| **Total migratory birds** | 753 | 69,367 | 179% | 68,279 | 182% | 1,088 | 191% |
| **Ptarmigans and grouses** | | | | | | | |
| Grouse | 0 | 0 | | 0 | | 0 | |
| Ptarmigan | 0 | 0 | | 0 | | 0 | |
| **Total ptarmigans and grouses** | 0 | 0 | | 0 | | 0 | |
| **Total eggs** | 753 | 69,367 | 179% | 68,279 | 182% | 1,088 | 191% |

★ : Commonly-harvested species. CIP: Confidence interval as percentage of the estimated harvest.

Table 12.–Estimated bird harvest, Yukon-Kuskokwim Delta region, 2016.

| Species | Annual bird harvest | | | Spring | | Summer | | Fall | |
|---|---|---|---|---|---|---|---|---|---|
| | Reported | Estimated | CIP | Estimated | CIP | Estimated | CIP | Estimated | CIP |
| **Ducks** | | | | | | | | | |
| ★ American wigeon | 100 | 3,249 | 84% | 1,042 | 105% | 53 | 164% | 2,154 | 97% |
| Teal | 77 | 1,951 | 93% | 488 | 74% | 101 | 125% | 1,361 | 132% |
| ★ Mallard | 180 | 3,655 | 50% | 2,402 | 56% | 84 | 147% | 1,169 | 58% |
| ★ Northern pintail | 229 | 4,018 | 52% | 1,754 | 63% | 646 | 147% | 1,618 | 61% |
| Northern shoveler | 71 | 2,014 | 93% | 962 | 88% | 61 | 165% | 992 | 175% |
| ★ Black scoter | 349 | 7,211 | 62% | 5,536 | 64% | 273 | 136% | 1,402 | 94% |
| ★ Surf scoter | 45 | 836 | 98% | 758 | 103% | 0 | | 78 | 197% |
| ★ White-winged scoter | 108 | 2,239 | 82% | 1,652 | 91% | 31 | 193% | 557 | 131% |
| Bufflehead | 4 | 85 | 136% | 85 | 136% | 0 | | 0 | |
| Goldeneye | 56 | 1,540 | 104% | 1,110 | 106% | 0 | | 430 | 121% |
| ★ Canvasback | 30 | 446 | 98% | 363 | 108% | 69 | 132% | 15 | 186% |
| ★ Scaup | 274 | 5,664 | 92% | 4,717 | 96% | 215 | 193% | 731 | 161% |
| ★ Common eider | 1 | 16 | 194% | 16 | 194% | 0 | | 0 | |
| ★ King eider | 30 | 972 | 111% | 870 | 124% | 0 | | 102 | 146% |
| Spectacled eider | 0 | 0 | | 0 | | 0 | | 0 | |
| Steller's eider | 0 | 0 | | 0 | | 0 | | 0 | |
| Harlequin duck | 6 | 189 | 166% | 111 | 149% | 0 | | 78 | 197% |
| ★ Long-tailed duck | 49 | 956 | 91% | 689 | 88% | 110 | 136% | 156 | 197% |
| Merganser | 2 | 31 | 193% | 31 | 193% | 0 | | 0 | |
| Duck (unidentified) | 109 | 2,728 | 110% | 381 | 126% | 1,424 | 158% | 923 | 111% |
| **Total ducks** | 1,720 | 37,801 | 47% | 22,967 | 58% | 3,066 | 88% | 11,767 | 64% |
| **Geese** | | | | | | | | | |
| ★ Black brant | 59 | 1,142 | 75% | 1,031 | 78% | 8 | 186% | 103 | 145% |
| ★ Cackling/Canada goose | 641 | 14,409 | 43% | 10,053 | 44% | 432 | 103% | 3,924 | 69% |
| ★ Greater white-fronted goose | 449 | 11,593 | 57% | 8,952 | 63% | 8 | 186% | 2,633 | 86% |
| Emperor goose | 64 | 1,468 | 98% | 1,173 | 114% | 139 | 144% | 156 | 123% |
| ★ Snow goose | 14 | 219 | 124% | 136 | 178% | 0 | | 83 | 162% |
| **Total geese** | 1,227 | 28,832 | 47% | 21,345 | 51% | 586 | 98% | 6,900 | 58% |
| **Swans** | 99 | 2,487 | 74% | 1,596 | 69% | 23 | 164% | 868 | 97% |
| **Sandhill crane** | 79 | 1,664 | 52% | 1,220 | 58% | 15 | 170% | 428 | 76% |
| **Seabirds** | | | | | | | | | |
| Cormorant | 0 | 0 | | 0 | | 0 | | 0 | |
| Tern | 0 | 0 | | 0 | | 0 | | 0 | |
| Black-legged kittiwake | 0 | 0 | | 0 | | 0 | | 0 | |
| Bonaparte's/Sabine's gull | 0 | 0 | | 0 | | 0 | | 0 | |
| Mew gull | 0 | 0 | | 0 | | 0 | | 0 | |
| Large gull | 0 | 0 | | 0 | | 0 | | 0 | |
| Auklet | 0 | 0 | | 0 | | 0 | | 0 | |
| Murre | 0 | 0 | | 0 | | 0 | | 0 | |
| Guillemot | 0 | 0 | | 0 | | 0 | | 0 | |
| Puffin | 0 | 0 | | 0 | | 0 | | 0 | |
| **Total seabirds** | 0 | 0 | | 0 | | 0 | | 0 | |
| **Shorebirds** | | | | | | | | | |
| Whimbrel/Curlew | 4 | 42 | 190% | 42 | 190% | 0 | | 0 | |
| Godwit | 3 | 29 | 147% | 21 | 190% | 8 | 186% | 0 | |
| Golden/Black-bellied plover | 0 | 0 | | 0 | | 0 | | 0 | |
| Turnstone | 0 | 0 | | 0 | | 0 | | 0 | |
| Phalarope | 0 | 0 | | 0 | | 0 | | 0 | |
| Small shorebird | 0 | 0 | | 0 | | 0 | | 0 | |
| **Total shorebirds** | 7 | 71 | 171% | 64 | 190% | 8 | 186% | 0 | |
| **Loons and grebes** | | | | | | | | | |
| Common loon | 2 | 31 | 193% | 31 | 193% | 0 | | 0 | |
| Pacific loon | 1 | 16 | 194% | 16 | 194% | 0 | | 0 | |
| Red-throated loon | 0 | 0 | | 0 | | 0 | | 0 | |
| Yellow-billed loon | 0 | 0 | | 0 | | 0 | | 0 | |
| Loon (non-breeding plumage) | 0 | 0 | | 0 | | 0 | | 0 | |
| Grebe | 4 | 65 | 194% | 65 | 194% | 0 | | 0 | |
| **Total loons and grebes** | 7 | 112 | 148% | 112 | 148% | 0 | | 0 | |
| ★ **Total commonly-harvested species** | 2,558 | 56,626 | 45% | 39,972 | 49% | 1,928 | 87% | 14,727 | 56% |
| **Total migratory birds** | 3,139 | 70,965 | 42% | 47,304 | 49% | 3,698 | 77% | 19,963 | 54% |
| **Ptarmigans and grouses** | | | | | | | | | |
| Grouse | 59 | 1,278 | 108% | 288 | 124% | 0 | | 990 | 119% |
| Ptarmigan | 295 | 6,359 | 79% | 6,351 | 79% | 0 | | 8 | 187% |
| **Total ptarmigans and grouses** | 354 | 7,637 | 68% | 6,639 | 76% | 0 | | 998 | 118% |
| **Total birds** | 3,493 | 78,602 | 43% | 53,943 | 50% | 3,698 | 77% | 20,961 | 53% |

★ : Commonly-harvested species. CIP: Confidence interval as percentage of the estimated harvest.

Table 13.–Estimated egg harvest, Yukon-Kuskokwim Delta region, 2016.

| Species | Annual egg harvest | | | Spring | | Summer | |
|---|---|---|---|---|---|---|---|
| | Reported | Estimated | CIP | Estimated | CIP | Estimated | CIP |
| **Ducks** | | | | | | | |
| ★ American wigeon | 12 | 91 | 186% | 91 | 186% | 0 | |
| Teal | 20 | 307 | 193% | 307 | 193% | 0 | |
| ★ Mallard | 55 | 906 | 104% | 906 | 104% | 0 | |
| ★ Northern pintail | 42 | 474 | 151% | 474 | 151% | 0 | |
| Northern shoveler | 11 | 83 | 186% | 83 | 186% | 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 | 8 | 123 | 193% | 123 | 193% | 0 | |
| ★ Common eider | 15 | 242 | 194% | 242 | 194% | 0 | |
| ★ King eider | 0 | 0 | | 0 | | 0 | |
| Spectacled eider | 0 | 0 | | 0 | | 0 | |
| Steller's eider | 0 | 0 | | 0 | | 0 | |
| Harlequin duck | 0 | 0 | | 0 | | 0 | |
| ★ Long-tailed duck | 22 | 289 | 135% | 289 | 135% | 0 | |
| Merganser | 0 | 0 | | 0 | | 0 | |
| Duck (unidentified) | 125 | 2,939 | 138% | 2,804 | 138% | 136 | 198% |
| **Total ducks** | 310 | 5,455 | 81% | 5,319 | 80% | 136 | 198% |
| **Geese** | | | | | | | |
| ★ Black brant | 34 | 633 | 148% | 633 | 148% | 0 | |
| ★ Cackling/Canada goose | 275 | 7,377 | 69% | 7,377 | 69% | 0 | |
| ★ Greater white-fronted goose | 229 | 6,687 | 79% | 6,687 | 79% | 0 | |
| Emperor goose | 39 | 671 | 142% | 671 | 142% | 0 | |
| ★ Snow goose | 18 | 588 | 183% | 588 | 183% | 0 | |
| **Total geese** | 595 | 15,957 | 67% | 15,957 | 67% | 0 | |
| **Swans** | 50 | 633 | 99% | 633 | 99% | 0 | |
| **Sandhill crane** | 26 | 340 | 95% | 340 | 95% | 0 | |
| **Seabirds** | | | | | | | |
| Cormorant | 0 | 0 | | 0 | | 0 | |
| Tern | 65 | 1,244 | 94% | 1,244 | 94% | 0 | |
| Black-legged kittiwake | 79 | 856 | 160% | 856 | 160% | 0 | |
| Bonaparte's/Sabine's gull | 4 | 42 | 190% | 42 | 190% | 0 | |
| Mew gull | 216 | 2,564 | 100% | 2,564 | 100% | 0 | |
| Large gull | 380 | 5,621 | 103% | 5,621 | 103% | 0 | |
| Auklet | 0 | 0 | | 0 | | 0 | |
| Murre | 0 | 0 | | 0 | | 0 | |
| Guillemot | 0 | 0 | | 0 | | 0 | |
| Puffin | 0 | 0 | | 0 | | 0 | |
| **Total seabirds** | 744 | 10,327 | 70% | 10,327 | 70% | 0 | |
| **Shorebirds** | | | | | | | |
| Whimbrel/Curlew | 0 | 0 | | 0 | | 0 | |
| Godwit | 0 | 0 | | 0 | | 0 | |
| Golden/Black-bellied plover | 7 | 108 | 177% | 108 | 177% | 0 | |
| Turnstone | 0 | 0 | | 0 | | 0 | |
| Phalarope | 14 | 215 | 174% | 215 | 174% | 0 | |
| Small shorebird | 71 | 2,079 | 131% | 1,987 | 135% | 92 | 193% |
| **Total shorebirds** | 92 | 2,402 | 123% | 2,310 | 125% | 92 | 193% |
| **Loons and grebes** | | | | | | | |
| Common loon | 0 | 0 | | 0 | | 0 | |
| Pacific loon | 0 | 0 | | 0 | | 0 | |
| Red-throated loon | 0 | 0 | | 0 | | 0 | |
| Yellow-billed loon | 2 | 31 | 193% | 31 | 193% | 0 | |
| Grebe | 0 | 0 | | 0 | | 0 | |
| **Total loons and grebes** | 2 | 31 | 193% | 31 | 193% | 0 | |
| **Other/unknown bird** | 20 | 151 | 186% | 151 | 186% | 0 | |
| ★ **Total commonly-harvested species** | 710 | 17,410 | 60% | 17,410 | 60% | 0 | |
| **Total migratory birds** | 1,839 | 35,296 | 45% | 35,069 | 45% | 228 | 139% |
| **Ptarmigans and grouses** | | | | | | | |
| Grouse | 0 | 0 | | 0 | | 0 | |
| Ptarmigan | 10 | 154 | 193% | 154 | 193% | 0 | |
| **Total ptarmigans and grouses** | 10 | 154 | 193% | 154 | 193% | 0 | |
| **Total eggs** | 1,849 | 35,450 | 45% | 35,222 | 45% | 228 | 139% |

★ : Commonly-harvested species. CIP: Confidence interval as percentage of the estimated harvest.

Table 14.–Estimated bird harvest, Bering Strait-Norton Sound region, 2016.

| Species | Annual bird harvest | | | Spring | | Summer | | Fall | |
|---|---|---|---|---|---|---|---|---|---|
| | Reported | Estimated | CIP | Estimated | CIP | Estimated | CIP | Estimated | CIP |
| **Ducks** | | | | | | | | | |
| ★ American wigeon | 2 | 235 | 199% | 235 | 199% | 0 | | 0 | |
| Teal | 34 | 1,531 | 135% | 353 | 199% | 0 | | 1,178 | 122% |
| ★ Mallard | 14 | 220 | 133% | 102 | 183% | 0 | | 118 | 123% |
| ★ Northern pintail | 57 | 4,565 | 161% | 1,678 | 169% | 0 | | 2,887 | 159% |
| Northern shoveler | 1 | 118 | 199% | 118 | 199% | 0 | | 0 | |
| ★ Black scoter | 0 | 0 | | 0 | | 0 | | 0 | |
| ★ Surf scoter | 0 | 0 | | 0 | | 0 | | 0 | |
| ★ White-winged scoter | 3 | 353 | 199% | 353 | 199% | 0 | | 0 | |
| Bufflehead | 0 | 0 | | 0 | | 0 | | 0 | |
| Goldeneye | 5 | 588 | 199% | 588 | 199% | 0 | | 0 | |
| ★ Canvasback | 0 | 0 | | 0 | | 0 | | 0 | |
| ★ Scaup | 6 | 706 | 199% | 470 | 199% | 0 | | 235 | 199% |
| ★ Common eider | 0 | 0 | | 0 | | 0 | | 0 | |
| ★ King eider | 0 | 0 | | 0 | | 0 | | 0 | |
| Spectacled eider | 0 | 0 | | 0 | | 0 | | 0 | |
| Steller's eider | 0 | 0 | | 0 | | 0 | | 0 | |
| Harlequin duck | 5 | 588 | 199% | 588 | 199% | 0 | | 0 | |
| ★ Long-tailed duck | 4 | 470 | 185% | 470 | 185% | 0 | | 0 | |
| Merganser | 0 | 0 | | 0 | | 0 | | 0 | |
| **Total ducks** | 131 | 9,373 | 156% | 4,955 | 174% | 0 | | 4,419 | 140% |
| **Geese** | | | | | | | | | |
| ★ Black brant | 143 | 8,390 | 152% | 8,071 | 160% | 0 | | 319 | 183% |
| ★ Cackling/Canada goose | 288 | 9,327 | 108% | 3,305 | 113% | 400 | 195% | 5,622 | 109% |
| ★ Greater white-fronted goose | 5 | 100 | 184% | 20 | 195% | 40 | 195% | 40 | 195% |
| Emperor goose | 0 | 0 | | 0 | | 0 | | 0 | |
| ★ Snow goose | 43 | 1,366 | 106% | 1,128 | 121% | 120 | 195% | 118 | 152% |
| **Total geese** | 479 | 19,183 | 109% | 12,524 | 133% | 560 | 195% | 6,099 | 98% |
| **Swans** | 4 | 377 | 173% | 353 | 187% | 0 | | 25 | 196% |
| Sandhill crane | 44 | 2,149 | 137% | 1,061 | 168% | 0 | | 1,088 | 121% |
| **Seabirds** | | | | | | | | | |
| Cormorant | 3 | 43 | 193% | 0 | | 0 | | 43 | 193% |
| Tern | 0 | 0 | | 0 | | 0 | | 0 | #NULL! |
| Black-legged kittiwake | 0 | 0 | | 0 | | 0 | | 0 | |
| Bonaparte's/Sabine's gull | 0 | 0 | | 0 | | 0 | | 0 | |
| Mew gull | 0 | 0 | | 0 | | 0 | | 0 | |
| Large gull | 0 | 0 | | 0 | | 0 | | 0 | |
| Auklet | 120 | 1,728 | 183% | 0 | | 1,728 | 183% | 0 | |
| Murre | 0 | 0 | | 0 | | 0 | | 0 | |
| Guillemot | 0 | 0 | | 0 | | 0 | | 0 | |
| Puffin | 0 | 0 | | 0 | | 0 | | 0 | |
| **Total seabirds** | 123 | 1,771 | 182% | 0 | | 1,728 | 183% | 43 | 193% |
| **Shorebirds** | | | | | | | | | |
| Whimbrel/Curlew | 0 | 0 | | 0 | | 0 | | 0 | |
| Godwit | 0 | 0 | | 0 | | 0 | | 0 | |
| Golden/Black-bellied plover | 0 | 0 | | 0 | | 0 | | 0 | |
| Turnstone | 0 | 0 | | 0 | | 0 | | 0 | |
| Phalarope | 0 | 0 | | 0 | | 0 | | 0 | |
| Small shorebird | 0 | 0 | | 0 | | 0 | | 0 | |
| **Total shorebirds** | 0 | 0 | | 0 | | 0 | | 0 | |
| **Loons and grebes** | | | | | | | | | |
| Common loon | 0 | 0 | | 0 | | 0 | | 0 | |
| Pacific loon | 0 | 0 | | 0 | | 0 | | 0 | |
| Red-throated loon | 0 | 0 | | 0 | | 0 | | 0 | |
| Yellow-billed loon | 0 | 0 | | 0 | | 0 | | 0 | |
| Loon (non-breeding plumage) | 0 | 0 | | 0 | | 0 | | 0 | |
| Grebe | 0 | 0 | | 0 | | 0 | | 0 | |
| **Total loons and grebes** | 0 | 0 | | 0 | | 0 | | 0 | |
| ★ **Total commonly-harvested species** | 565 | 25,731 | 119% | 15,832 | 138% | 560 | 195% | 9,339 | 103% |
| **Total migratory birds** | 781 | 32,853 | 112% | 18,892 | 144% | 2,288 | 136% | 11,673 | 103% |
| **Ptarmigans and grouses** | | | | | | | | | |
| Grouse | 0 | 0 | | 0 | | 0 | | 0 | |
| Ptarmigan | 54 | 3,605 | 172% | 2,194 | 155% | 0 | | 1,411 | 199% |
| **Total ptarmigans and grouses** | 54 | 3,605 | 172% | 2,194 | 155% | 0 | | 1,411 | 199% |
| **Total birds** | 835 | 36,458 | 116% | 21,086 | 142% | 2,288 | 136% | 13,084 | 108% |

★ : Commonly-harvested species. CIP: Confidence interval as percentage of the estimated harvest.

Table 15.–Estimated egg harvest, Bering Strait-Norton Sound region, 2016.

| Species | Annual egg harvest | | | Spring | | Summer | |
|---|---|---|---|---|---|---|---|
| | Reported | Estimated | CIP | Estimated | CIP | Estimated | CIP |
| **Ducks** | | | | | | | |
| ★ American wigeon | 0 | 0 | | 0 | | 0 | |
| Teal | 0 | 0 | | 0 | | 0 | |
| ★ Mallard | 0 | 0 | | 0 | | 0 | |
| ★ Northern pintail | 6 | 93 | 149% | 93 | 149% | 0 | |
| Northern shoveler | 0 | 0 | | 0 | | 0 | |
| ★ Black scoter | 0 | 0 | | 0 | | 0 | |
| ★ Surf scoter | 0 | 0 | | 0 | | 0 | |
| ★ White-winged scoter | 0 | 0 | | 0 | | 0 | |
| Bufflehead | 0 | 0 | | 0 | | 0 | |
| Goldeneye | 0 | 0 | | 0 | | 0 | |
| ★ Canvasback | 0 | 0 | | 0 | | 0 | |
| ★ Scaup | 0 | 0 | | 0 | | 0 | |
| ★ Common eider | 76 | 1,574 | 150% | 1,280 | 188% | 294 | 196% |
| ★ King eider | 0 | 0 | | 0 | | 0 | |
| Spectacled eider | 0 | 0 | | 0 | | 0 | |
| Steller's eider | 0 | 0 | | 0 | | 0 | |
| Harlequin duck | 0 | 0 | | 0 | | 0 | |
| ★ Long-tailed duck | 0 | 0 | | 0 | | 0 | |
| Merganser | 0 | 0 | | 0 | | 0 | |
| **Total ducks** | 82 | 1,667 | 141% | 1,373 | 176% | 294 | 196% |
| **Geese** | | | | | | | |
| ★ Black brant | 0 | 0 | | 0 | | 0 | |
| ★ Cackling/Canada goose | 16 | 232 | 193% | 232 | 193% | 0 | |
| ★ Greater white-fronted goose | 0 | 0 | | 0 | | 0 | |
| Emperor goose | 0 | 0 | | 0 | | 0 | |
| ★ Snow goose | 0 | 0 | | 0 | | 0 | |
| **Total geese** | 16 | 232 | 193% | 232 | 193% | 0 | |
| **Swans** | 22 | 319 | 181% | 319 | 181% | 0 | |
| Sandhill crane | 11 | 182 | 120% | 182 | 120% | 0 | |
| **Seabirds** | | | | | | | |
| Cormorant | 0 | 0 | | 0 | | 0 | |
| Tern | 0 | 0 | | 0 | | 0 | |
| Black-legged kittiwake | 132 | 1,914 | 190% | 1,914 | 190% | 0 | |
| Bonaparte's/Sabine's gull | 0 | 0 | | 0 | | 0 | |
| Mew gull | 170 | 5,077 | 99% | 5,077 | 99% | 0 | |
| Large gull | 155 | 4,942 | 113% | 4,942 | 113% | 0 | |
| Auklet | 12 | 173 | 193% | 0 | | 173 | 193% |
| Murre | 1,122 | 21,942 | 94% | 10,022 | 92% | 11,920 | 130% |
| Guillemot | 0 | 0 | | 0 | | 0 | |
| Puffin | 0 | 0 | | 0 | | 0 | |
| **Total seabirds** | 1,591 | 34,048 | 71% | 21,955 | 67% | 12,093 | 129% |
| **Shorebirds** | | | | | | | |
| Whimbrel/Curlew | 0 | 0 | | 0 | | 0 | |
| Godwit | 0 | 0 | | 0 | | 0 | |
| Golden/Black-bellied plover | 0 | 0 | | 0 | | 0 | |
| Turnstone | 0 | 0 | | 0 | | 0 | |
| Phalarope | 0 | 0 | | 0 | | 0 | |
| Small shorebird | 10 | 200 | 195% | 200 | 195% | 0 | |
| **Total shorebirds** | 10 | 200 | 195% | 200 | 195% | 0 | |
| **Loons and grebes** | | | | | | | |
| Common loon | 0 | 0 | | 0 | | 0 | |
| Pacific loon | 5 | 73 | 193% | 73 | 193% | 0 | |
| Red-throated loon | 0 | 0 | | 0 | | 0 | |
| Yellow-billed loon | 3 | 353 | 199% | 353 | 199% | 0 | |
| Grebe | 0 | 0 | | 0 | | 0 | |
| **Total loons and grebes** | 8 | 425 | 162% | 425 | 162% | 0 | |
| **Total commonly-harvested species** | 98 | 1,899 | 121% | 1,605 | 148% | 294 | 196% |
| ★ **Total migratory birds** | 1,740 | 37,072 | 69% | 24,685 | 64% | 12,387 | 125% |
| **Ptarmigans and grouses** | | | | | | | |
| Grouse | 0 | 0 | | 0 | | 0 | |
| Ptarmigan | 0 | 0 | | 0 | | 0 | |
| **Total ptarmigans and grouses** | 0 | 0 | | 0 | | 0 | |
| **Total eggs** | 1,740 | 37,072 | 69% | 24,685 | 64% | 12,387 | 125% |

★ : Commonly-harvested species. CIP: Confidence interval as percentage of the estimated harvest.

Table 16.–Estimated bird harvest, North Slope region, 2016.

| Species | Annual bird harvest | | | Spring | | Summer | |
|---|---|---|---|---|---|---|---|
| | Reported | Estimated | CIP | Estimated | CIP | Estimated | CIP |
| **Ducks** | | | | | | | |
| ★ American wigeon | 0 | 0 | | 0 | | 0 | |
| Teal | 0 | 0 | | 0 | | 0 | |
| ★ Mallard | 0 | 0 | | 0 | | 0 | |
| ★ Northern pintail | 6 | 346 | 198% | 0 | | 346 | 198% |
| 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 | |
| ★ Scaup | 0 | 0 | | 0 | | 0 | |
| ★ Common eider | 274 | 9,111 | 86% | 8,437 | 97% | 674 | 138% |
| ★ King eider | 437 | 19,325 | 72% | 10,403 | 79% | 8,922 | 134% |
| Spectacled eider | 0 | 0 | | 0 | | 0 | |
| Steller's eider | 0 | 0 | | 0 | | 0 | |
| ★ Long-tailed duck | 9 | 164 | 166% | 164 | 166% | 0 | |
| Merganser | 0 | 0 | | 0 | | 0 | |
| **Total ducks** | 726 | 28,945 | 56% | 19,004 | 77% | 9,942 | 128% |
| **Geese** | | | | | | | |
| ★ Black brant | 157 | 4,920 | 116% | 4,459 | 131% | 461 | 198% |
| ★ Cackling/Canada goose | 37 | 939 | 114% | 903 | 117% | 36 | 194% |
| ★ Greater white-fronted goose | 610 | 29,767 | 77% | 29,402 | 78% | 365 | 173% |
| ★ Snow goose | 242 | 8,370 | 157% | 8,370 | 157% | 0 | |
| **Total geese** | 1,046 | 43,996 | 46% | 43,134 | 47% | 862 | 122% |
| **Swans** | 0 | 0 | | 0 | | 0 | |
| **Sandhill crane** | 1 | 58 | 198% | 58 | 198% | 0 | |
| **Seabirds** | | | | | | | |
| Tern | 0 | 0 | | 0 | | 0 | |
| Bonaparte's/Sabine's gull | 0 | 0 | | 0 | | 0 | |
| Large gull | 0 | 0 | | 0 | | 0 | |
| Murre | 0 | 0 | | 0 | | 0 | |
| Guillemot | 0 | 0 | | 0 | | 0 | |
| **Total seabirds** | 0 | 0 | | 0 | | 0 | |
| **Shorebirds** | | | | | | | |
| Whimbrel/Curlew | 0 | 0 | | 0 | | 0 | |
| Godwit | 5 | 288 | 198% | 0 | | 288 | 198% |
| Golden/Black-bellied plover | 0 | 0 | | 0 | | 0 | |
| Turnstone | 0 | 0 | | 0 | | 0 | |
| Phalarope | 1 | 58 | 198% | 0 | | 58 | 198% |
| Small shorebird | 4 | 230 | 198% | 0 | | 230 | 198% |
| **Total shorebirds** | 10 | 576 | 198% | 0 | | 576 | 198% |
| **Loons and grebes** | | | | | | | |
| Pacific loon | 0 | 0 | | 0 | | 0 | |
| Red-throated loon | 0 | 0 | | 0 | | 0 | |
| Yellow-billed loon | 0 | 0 | | 0 | | 0 | |
| Loon (non-breeding plumage) | 0 | 0 | | 0 | | 0 | |
| **Total loons and grebes** | 0 | 0 | | 0 | | 0 | |
| Snowy owl | 0 | 0 | | 0 | | 0 | |
| ★ **Total commonly-harvested species** | 1,772 | 72,941 | 46% | 62,137 | 44% | 10,804 | 118% |
| **Total migratory birds** | 1,783 | 73,575 | 46% | 62,195 | 44% | 11,380 | 113% |
| **Ptarmigans and grouses** | | | | | | | |
| Grouse | 0 | 0 | | 0 | | 0 | |
| Ptarmigan | 75 | 2,740 | 125% | 2,594 | 132% | 146 | 194% |
| **Total ptarmigans and grouses** | 75 | 2,740 | 125% | 2,594 | 132% | 146 | 194% |
| **Total birds** | 1,858 | 76,315 | 44% | 64,789 | 42% | 11,526 | 111% |

★ : Commonly-harvested species. CIP: Confidence interval as percentage of the estimated harvest.

Table 17.–Estimated egg harvest, North Slope region, 2016.

| Species | Annual egg harvest | | | Spring | | Summer | |
|---|---|---|---|---|---|---|---|
| | Reported | Estimated | CIP | Estimated | CIP | Estimated | 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 | |
| ★ Scaup | 0 | 0 | | 0 | | 0 | |
| ★ Common eider | 53 | 967 | 184% | 967 | 184% | 0 | |
| ★ King eider | 0 | 0 | | 0 | | 0 | |
| Spectacled eider | 0 | 0 | | 0 | | 0 | |
| Steller's eider | 0 | 0 | | 0 | | 0 | |
| ★ Long-tailed duck | 0 | 0 | | 0 | | 0 | |
| Merganser | 0 | 0 | | 0 | | 0 | |
| **Total ducks** | 53 | 967 | 184% | 967 | 184% | 0 | |
| **Geese** | | | | | | | |
| ★ Black brant | 0 | 0 | | 0 | | 0 | |
| ★ Cackling/Canada goose | 0 | 0 | | 0 | | 0 | |
| ★ Greater white-fronted goose | 49 | 2,573 | 103% | 2,573 | 103% | 0 | |
| ★ Snow goose | 0 | 0 | | 0 | | 0 | |
| **Total geese** | 49 | 2,573 | 103% | 2,573 | 103% | 0 | |
| **Swans** | 3 | 184 | 141% | 184 | 141% | 0 | |
| **Sandhill crane** | 0 | 0 | | 0 | | 0 | |
| **Seabirds** | | | | | | | |
| Tern | 0 | 0 | | 0 | | 0 | |
| Bonaparte's/Sabine's gull | 0 | 0 | | 0 | | 0 | |
| Large gull | 2 | 36 | 194% | 36 | 194% | 0 | |
| Murre | 680 | 22,984 | 155% | 0 | | 22,984 | 155% |
| Guillemot | 0 | 0 | | 0 | | 0 | |
| **Total seabirds** | 682 | 23,020 | 155% | 36 | 194% | 22,984 | 155% |
| **Shorebirds** | | | | | | | |
| Whimbrel/Curlew | 0 | 0 | | 0 | | 0 | |
| Godwit | 0 | 0 | | 0 | | 0 | |
| Golden/Black-bellied plover | 0 | 0 | | 0 | | 0 | |
| Turnstone | 0 | 0 | | 0 | | 0 | |
| Phalarope | 0 | 0 | | 0 | | 0 | |
| Small shorebird | 0 | 0 | | 0 | | 0 | |
| **Total shorebirds** | 0 | 0 | | 0 | | 0 | |
| **Loons and grebes** | | | | | | | |
| Pacific loon | 0 | 0 | | 0 | | 0 | |
| Red-throated loon | 0 | 0 | | 0 | | 0 | |
| Yellow-billed loon | 0 | 0 | | 0 | | 0 | |
| **Total loons and grebes** | 0 | 0 | | 0 | | 0 | |
| **Snowy owl** | 0 | 0 | | 0 | | 0 | |
| ★ **Total commonly-harvested species** | 102 | 3,540 | 77% | 3,540 | 77% | 0 | |
| **Total migratory birds** | 787 | 26,745 | 129% | 3,761 | 78% | 22,984 | 155% |
| **Ptarmigans and grouses** | | | | | | | |
| Grouse | 0 | 0 | | 0 | | 0 | |
| Ptarmigan | 0 | 0 | | 0 | | 0 | |
| **Total ptarmigans and grouses** | 0 | 0 | | 0 | | 0 | |
| **Total eggs** | 787 | 26,745 | 129% | 3,761 | 78% | 22,984 | 155% |

★ : Commonly-harvested species. CIP: Confidence interval as percentage of the estimated harvest.

Table 18.–Estimated bird harvest, Interior Alaska region, 2016.

| Species | Annual bird harvest | | | Spring | | Summer | | Fall | |
|---|---|---|---|---|---|---|---|---|---|
| | Reported | Estimated | CIP | Estimated | CIP | Estimated | CIP | Estimated | CIP |
| **Ducks** | | | | | | | | | |
| ★ American wigeon | 114 | 11,651 | 184% | 6,660 | 179% | 0 | | 4,990 | 192% |
| Teal | 49 | 778 | 107% | 459 | 97% | 46 | 189% | 272 | 188% |
| ★ Mallard | 212 | 16,975 | 167% | 9,587 | 167% | 74 | 189% | 7,314 | 172% |
| ★ Northern pintail | 101 | 8,711 | 168% | 8,656 | 169% | 46 | 189% | 9 | 189% |
| Northern shoveler | 4 | 91 | 158% | 91 | 158% | 0 | | 0 | |
| ★ Black scoter | 31 | 3,867 | 190% | 3,867 | 190% | 0 | | 0 | |
| ★ Surf scoter | 8 | 197 | 188% | 197 | 188% | 0 | | 0 | |
| ★ White-winged scoter | 8 | 116 | 129% | 116 | 129% | 0 | | 0 | |
| Bufflehead | 0 | 0 | | 0 | | 0 | | 0 | |
| Goldeneye | 18 | 1,599 | 180% | 1,599 | 180% | 0 | | 0 | |
| ★ Canvasback | 10 | 670 | 184% | 670 | 184% | 0 | | 0 | |
| ★ Scaup | 10 | 246 | 189% | 246 | 189% | 0 | | 0 | |
| Harlequin duck | 0 | 0 | | 0 | | 0 | | 0 | |
| ★ Long-tailed duck | 33 | 812 | 185% | 812 | 185% | 0 | | 0 | |
| Merganser | 4 | 37 | 189% | 37 | 189% | 0 | | 0 | |
| **Total ducks** | 602 | 45,750 | 163% | 32,998 | 160% | 167 | 189% | 12,585 | 174% |
| **Geese** | | | | | | | | | |
| ★ Cackling/Canada goose | 185 | 11,190 | 129% | 11,122 | 130% | 0 | | 68 | 194% |
| ★ Greater white-fronted goose | 320 | 33,816 | 174% | 32,809 | 173% | 0 | | 1,007 | 197% |
| ★ Snow goose | 10 | 1,248 | 191% | 1,248 | 191% | 0 | | 0 | |
| **Total geese** | 515 | 46,254 | 162% | 45,179 | 162% | 0 | | 1,075 | 183% |
| **Swans** | 0 | 0 | | 0 | | 0 | | 0 | |
| Sandhill crane | 3 | 58 | 157% | 58 | 157% | 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 | 0 | 0 | | 0 | | 0 | | 0 | |
| Pacific loon | 0 | 0 | | 0 | | 0 | | 0 | |
| Red-throated loon | 0 | 0 | | 0 | | 0 | | 0 | |
| Loon (non-breeding plumage) | 0 | 0 | | 0 | | 0 | | 0 | |
| Grebe | 0 | 0 | | 0 | | 0 | | 0 | |
| **Total loons and grebes** | 0 | 0 | | 0 | | 0 | | 0 | |
| ★ **Total commonly-harvested species** | 1,042 | 89,499 | 164% | 75,990 | 162% | 121 | 189% | 13,389 | 177% |
| **Total migratory birds** | 1,120 | 92,062 | 162% | 78,235 | 161% | 167 | 189% | 13,661 | 173% |
| **Ptarmigans and grouses** | | | | | | | | | |
| Grouse | 531 | 16,241 | 81% | 3,108 | 117% | 0 | | 13,133 | 84% |
| Ptarmigan | 28 | 440 | 126% | 440 | 126% | 0 | | 0 | |
| **Total ptarmigans and grouses** | 559 | 16,680 | 77% | 3,548 | 100% | 0 | | 13,133 | 84% |
| **Total birds** | 1,679 | 108,742 | 147% | 81,782 | 157% | 167 | 189% | 26,793 | 120% |

★ : Commonly-harvested species. CIP: Confidence interval as percentage of the estimated harvest.

Table 19.–Estimated egg harvest, Interior Alaska region, 2016.

| Species | Annual egg harvest | | | Spring | | Summer | |
|---|---|---|---|---|---|---|---|
| | Reported | Estimated | CIP | Estimated | CIP | Estimated | 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 | 12 | 102 | 188% | 102 | 188% | 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** | 12 | 102 | 188% | 102 | 188% | 0 | |
| **Geese** | | | | | | | |
| ★ Cackling/Canada goose | 0 | 0 | | 0 | | 0 | |
| ★ Greater white-fronted goose | 8 | 68 | 188% | 68 | 188% | 0 | |
| ★ Snow goose | 0 | 0 | | 0 | | 0 | |
| **Total geese** | 8 | 68 | 188% | 68 | 188% | 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 | 15 | 719 | 198% | 719 | 198% | 0 | |
| **Total seabirds** | 15 | 719 | 198% | 719 | 198% | 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 commonly-harvested species** | 20 | 169 | 188% | 169 | 188% | 0 | |
| **Total migratory birds** | 35 | 888 | 159% | 888 | 159% | 0 | |
| **Ptarmigans and grouses** | | | | | | | |
| Grouse | 0 | 0 | | 0 | | 0 | |
| Ptarmigan | 0 | 0 | | 0 | | 0 | |
| **Total ptarmigans and grouses** | 0 | 0 | | 0 | | 0 | |
| **Total eggs** | 35 | 888 | 159% | 888 | 159% | 0 | |

★ : Commonly-harvested species. CIP: Confidence interval as percentage of the estimated harvest.

Table 20.–Estimated April–May Cordova bird and egg harvest, 2014–2016.

| Species | 2014 | | | 2015 | | | 2016 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Reported | Estimated | CIP | Reported | Estimated | CIP | Reported | Estimated | CIP |
| **Birds** | | | | | | | | | |
| American wigeon | 1 | 1 | 97% | 0 | 0 | | 1 | 1 | 82% |
| Teal | 1 | 1 | 97% | 0 | 0 | | 0 | 0 | |
| Mallard | 11 | 14 | 43% | 0 | 0 | | 16 | 19 | 36% |
| Northern pintail | 12 | 15 | 47% | 0 | 0 | | 56 | 66 | 31% |
| Northern shoveler | 0 | 0 | | 0 | 0 | | 2 | 2 | 82% |
| Black scoter | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Surf scoter | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| White-winged scoter | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Bufflehead | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Goldeneye | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Canvasback | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Scaup | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Common eider | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| King eider | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Harlequin duck | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Long-tailed duck | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Merganser | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| **Total ducks** | **25** | **32** | **38%** | **0** | **0** | | **75** | **89** | **29%** |
| Greater white-fronted goose | 4 | 5 | 67% | 0 | 0 | | 0 | 0 | |
| Snow goose | 4 | 5 | 57% | 0 | 0 | | 5 | 6 | 67% |
| **Total geese** | **8** | **10** | **49%** | 0 | 0 | | 5 | 6 | 67% |
| Sandhill crane | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| **Total birds** | **33** | **42** | **37%** | **0** | **0** | | **80** | **95** | **27%** |
| **Eggs** | | | | | | | | | |
| Gull (unidentified) | 102 | 131 | 37% | 197 | 263 | 51% | 105 | 124 | 47% |
| **Total eggs** | 102 | 131 | 37% | 197 | 263 | 51% | 105 | 124 | 47% |

CIP: confidence interval as percentage of the estimated harvest.

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# APPENDICES

**Appendix A.–Regions and communities included in the 2004–2016 harvest estimates.**

| Region, community | House-holds¶ | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Gulf of Alaska-Cook Inlet** | | | | | | | | | | | | | | |
| Chenega | 31 | - | - | x | - | - | - | x | - | - | - | - | - | - |
| Cordova† | 922 | - | - | - | - | - | - | - | - | - | - | x | x | x |
| Nanwalek | 55 | x | - | - | - | - | - | x | - | - | - | - | - | - |
| Port Graham | 79 | x | - | x | - | - | - | - | - | - | - | - | - | - |
| Tatitlek | 36 | x | - | - | - | - | - | - | - | - | - | - | - | - |
| Tyonek | 70 | x | x | - | - | - | - | - | - | - | - | - | - | - |
| **Kodiak Archipelago** | | | | | | | | | | | | | | |
| Akhiok | 19 | - | - | x | - | - | - | x | - | - | - | - | - | - |
| Aleneva | 9 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Balance of Kodiak Is. Borough | 1,665 | - | - | - | - | - | - | x | - | - | - | - | - | - |
| Chiniak | 20 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Karluk | 12 | - | - | x | - | - | - | x | - | - | - | - | - | - |
| Kodiak City | 2,039 | - | - | x | - | - | - | - | - | - | - | - | - | - |
| Kodiak Station | 332 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Larsen Bay | 34 | - | - | x | - | - | - | x | - | - | - | - | - | - |
| Old Harbor | 84 | - | - | x | - | - | - | - | - | - | - | - | - | - |
| Ouzinkie | 56 | - | - | x | - | - | - | - | - | - | - | - | - | - |
| Port Lions | 77 | - | - | - | - | - | - | x | - | - | - | - | - | - |
| Womens Bay | 283 | - | - | - | - | - | - | x | - | - | - | - | - | - |
| **Aleutian-Pribilof Islands** | | | | | | | | | | | | | | |
| 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 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Saint George | 42 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Saint Paul | 162 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Sand Point | 246 | - | - | - | - | x | - | - | - | - | - | - | - | - |
| Unalaska | 927 | - | - | - | - | x | - | - | - | - | - | - | - | - |
| **Bristol Bay** | | | | | | | | | | | | | | |
| Aleknagik | 71 | x | - | - | x | x | - | - | x | - | - | - | - | - |
| Chignik | 41 | x | - | - | x | - | - | - | x | - | - | - | - | - |
| Chignik Lagoon | 29 | x | - | - | - | - | - | - | - | - | - | - | - | x |
| Chignik Lake | 27 | x | - | - | - | x | - | - | - | - | - | - | - | - |
| Clarks Point | 24 | x | x | - | x | x | - | - | - | - | - | - | - | - |
| Dillingham | 855 | - | x | - | x | x | - | - | x | - | - | - | - | x |
| Egegik | 29 | - | x | - | x | - | - | - | - | - | - | - | - | - |
| Ekwok | 37 | x | - | - | x | x | - | - | x | - | - | - | - | - |
| Igiugig | 16 | - | - | - | - | - | - | - | - | - | - | - | - | - |

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| **Region,** community | House-holds¶ | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Iliamna | 39 | - | x | - | x | - | - | - | - | - | - | - | - | x |
| Ivanof Bay | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| King Salmon | 157 | - | x | - | - | - | - | - | - | - | - | - | - | - |
| Kokhanok | 52 | x | x | - | x | x | - | - | x | - | - | - | - | - |
| Koliganek | 55 | - | x | - | x | - | - | - | - | - | - | - | - | - |
| Levelock | 27 | x | 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 | - | - | - | - | - | - | - | - | - | - | - |
| Perryville | 38 | x | - | - | x | - | - | - | x | - | - | - | - | - |
| Pilot Point | 27 | - | x | - | - | - | - | - | - | - | - | - | - | - |
| Pope-Vannoy Landing‡ | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Port Alsworth‡ | 44 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Port Heiden | 35 | - | x | - | - | - | - | - | x | - | - | - | - | - |
| Portage Creek‡ | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| South Naknek | 35 | - | x | - | x | - | - | - | - | - | - | - | - | - |
| Togiak | 231 | x | - | x | x | - | - | - | x | - | - | - | - | - |
| Twin Hills | 29 | x | x | - | x | - | - | - | - | - | - | - | - | - |
| Ugashik‡ | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Yukon-Kuskokwim Delta** | | | | | | | | | | | | | | |
| Akiachak | 150 | - | - | x | - | - | x | - | - | - | - | - | x | x |
| Akiak | 90 | - | x | x | x | - | - | x | - | - | - | - | x | x |
| Alakanuk | 160 | x | - | x | - | - | x | x | - | - | x | - | x | - |
| Aniak | 166 | x | x | - | - | x | - | - | - | - | - | - | x | x |
| Atmautluak | 63 | x | - | - | x | x | - | - | - | - | x | - | - | x |
| Bethel | 1,896 | x | x | x | x | x | x | x | x | - | - | - | x | x |
| Chefornak | 92 | x | - | x | x | - | x | x | - | - | x | - | - | - |
| Chevak | 209 | x | - | - | - | - | x | x | - | - | - | - | x | - |
| Chuathbaluk | 36 | x | - | - | - | - | - | - | - | - | - | - | - | x |
| Crooked Creek | 38 | x | - | x | - | - | - | - | - | - | - | - | - | - |
| Eek | 91 | x | x | - | x | x | - | x | x | - | - | - | x | - |
| Emmonak | 185 | - | x | x | x | x | x | - | - | - | x | - | - | x |
| Goodnews Bay | 76 | - | - | x | - | - | - | x | - | - | x | - | - | - |
| Hooper Bay | 256 | x | x | - | - | x | - | - | x | - | - | - | x | x |
| Kasigluk | 113 | x | - | x | x | - | x | - | - | - | x | - | - | - |
| Kipnuk | 153 | - | x | x | x | - | x | - | x | - | - | - | - | - |
| Kongiganak | 94 | - | x | x | x | x | - | - | - | - | - | - | - | - |
| Kotlik | 128 | x | x | - | - | - | - | - | - | - | - | - | x | - |
| Kwethluk | 172 | x | x | x | x | - | x | x | - | - | - | - | x | x |
| Kwigillingok | 82 | - | - | - | - | - | - | - | - | - | - | - | - | - |

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| **Region,** community | House-holds¶ | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lime Village | 11 | - | - | x | - | - | - | x | - | - | - | - | - | - |
| Lower Kalskag | 75 | x | - | x | x | x | x | x | - | - | - | - | - | - |
| Marshall | 100 | x | x | - | x | x | - | x | - | - | - | - | x | - |
| Mekoryuk | 70 | - | x | - | x | x | - | - | x | - | - | - | - | x |
| Mountain Village | 184 | - | x | - | x | x | - | - | - | - | x | - | - | - |
| Napakiak | 96 | - | - | - | x | - | - | - | - | - | x | - | - | - |
| Napaskiak | 94 | - | x | x | x | x | x | - | x | - | - | - | x | x |
| Newtok | 70 | - | x | x | - | x | x | - | - | - | x | - | - | - |
| Nightmute | 59 | x | - | x | x | - | x | - | x | - | - | - | - | x |
| Nunam Iqua | 43 | - | x | x | - | x | x | x | - | - | - | - | x | x |
| Nunapitchuk | 124 | x | x | - | x | x | - | - | x | - | - | - | - | x |
| Oscarville | 15 | - | - | x | x | - | x | x | - | - | x | - | - | x |
| Pilot Station | 121 | - | x | x | - | x | x | - | - | - | - | - | x | - |
| Pitkas Point | 31 | x | - | x | x | - | x | x | - | - | x | - | - | - |
| Platinum | 19 | - | x | x | - | - | - | x | - | - | x | - | - | - |
| Quinhagak | 165 | x | x | x | x | - | - | - | x | - | x | - | x | x |
| Red Devil | 12 | - | - | - | x | - | - | - | - | - | - | - | - | - |
| Russian Mission | 73 | - | x | x | - | x | x | - | - | - | - | - | x | - |
| Saint Marys | 151 | - | x | - | x | - | x | - | - | - | x | - | - | - |
| Scammon Bay | 96 | - | - | x | - | x | x | x | - | - | x | - | - | - |
| Sleetmute | 36 | - | - | x | x | - | - | - | - | - | - | - | - | - |
| Stony River | 20 | x | - | x | - | - | - | - | - | - | - | - | - | x |
| Toksook Bay | 125 | x | x | - | x | - | - | - | - | - | x | - | x | x |
| Tuluksak | 92 | - | x | x | - | x | - | - | x | - | - | - | x | - |
| Tuntutuliak | 96 | x | - | x | - | x | x | x | - | - | x | - | x | x |
| Tununak | 84 | x | x | - | x | x | - | - | x | - | x | - | - | - |
| Upper Kalskag | 60 | - | x | x | - | - | - | - | x | - | x | - | - | x |
| **Bering Strait-Norton Sound** | | | | | | | | | | | | | | |
| Brevig Mission | 93 | x | - | - | x | - | - | x | - | - | - | - | - | - |
| Diomede | 38 | - | x | - | x | - | - | x | - | - | - | - | - | x |
| Elim | 89 | x | x | - | - | - | - | - | - | - | - | - | - | - |
| Gambell | 164 | x | x | - | x | - | x | x | x | x | - | - | - | - |
| Golovin | 49 | - | x | - | x | - | - | x | - | - | - | - | - | - |
| Koyuk | 89 | - | x | - | x | - | - | x | - | - | - | - | - | - |
| Nome | 1,216 | x | x | - | x | - | - | - | - | - | - | - | - | x |
| Saint Michael | 96 | x | - | - | x | - | - | - | - | - | - | - | - | - |
| Savoonga | 166 | x | x | - | x | - | x | x | x | x | - | - | - | - |
| Shaktoolik | 64 | - | - | - | x | - | - | x | - | - | - | - | - | x |
| Shishmaref | 141 | x | x | - | - | - | - | - | - | - | - | - | - | - |
| Stebbins | 134 | - | x | - | x | - | - | x | - | - | - | - | - | - |
| Teller | 72 | x | x | - | - | - | - | - | - | - | - | - | - | - |
| Unalakleet | 225 | x | - | - | x | - | - | - | - | - | - | - | - | - |
| Wales | 43 | x | x | - | - | - | - | - | - | - | - | - | - | x |

-continued-

| **Region,** community | House-holds¶ | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| White Mountain | 65 | x | - | - | x | - | - | - | - | - | - | - | - | x |
| **Northwest Arctic** | | | | | | | | | | | | | | |
| Ambler | 75 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Buckland | 98 | - | - | x | - | - | - | - | - | - | - | - | - | - |
| Deering | 44 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Kiana | 101 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Kivalina | 85 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Kobuk | 36 | - | - | x | - | - | - | - | - | - | - | - | - | - |
| Kotzebue | 954 | - | - | - | - | - | - | - | - | x | - | - | - | - |
| Noatak | 114 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Noorvik | 153 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Selawik | 186 | - | - | x | - | - | - | - | - | - | - | - | - | - |
| Shungnak | 62 | - | - | x | - | - | - | - | - | - | - | - | - | - |
| **North Slope** | | | | | | | | | | | | | | |
| Anaktuvuk Pass | 99 | - | x | - | x | - | - | - | - | - | - | - | - | - |
| Atqasuk | 64 | - | x | - | x | - | - | - | - | - | - | - | - | - |
| Kaktovik | 72 | - | x | - | x | x | x | - | - | - | - | - | - | x |
| Nuiqsut | 114 | - | - | - | - | x | x | - | - | - | - | - | - | - |
| Point Hope | 186 | - | x | - | - | x | - | - | - | - | - | - | - | x |
| Point Lay | 60 | - | x | - | - | - | - | - | - | - | - | - | - | - |
| Utqiaġvik (Barrow) | 1,280 | - | x | - | x | x | x | - | - | - | - | - | - | x |
| Wainwright | 147 | - | x | - | x | x | x | - | - | - | - | - | - | x |
| **Interior Alaska** | | | | | | | | | | | | | | |
| Alatna | 12 | x | - | x | x | x | - | x | - | - | - | - | - | - |
| Alcan Border‡ | | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Allakaket | 62 | x | - | x | x | x | - | x | - | - | - | - | - | - |
| Allakaket-Alatna | 74 | - | - | - | - | - | - | - | - | - | - | - | - | x |
| Anderson‡ | 90 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Anvik | 33 | x | x | x | - | - | - | x | - | - | - | - | - | x |
| Arctic Village | 65 | - | - | x | - | - | - | - | - | - | - | x | - | - |
| Beaver | 36 | - | - | x | x | - | - | x | - | - | - | x | - | - |
| Bettles-Evansville | 21 | - | - | x | - | - | - | - | - | - | - | - | - | x |
| Birch Creek | 17 | - | - | - | x | - | - | - | - | - | - | - | - | x |
| Central | 53 | - | - | x | - | - | - | x | - | - | - | - | - | - |
| Chalkyitsik | 24 | - | - | x | x | - | - | x | - | - | - | x | - | - |
| Chicken‡ | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Circle | 40 | - | - | x | x | - | - | - | - | - | - | x | - | - |
| Coldfoot | 6 | - | - | - | - | - | - | x | - | - | - | - | - | - |
| Dot Lake | 26 | x | - | - | - | - | - | - | - | - | - | - | - | - |
| Dry Creek | 29 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Eagle | 41 | x | - | - | - | - | - | - | - | - | - | - | - | - |
| Eagle Village | 31 | x | - | - | - | - | - | - | - | - | - | - | - | |
| Fort Yukon | 246 | x | - | x | x | - | - | - | - | - | - | x | - | x |

-continued-

| **Region,** community | House-holds¶ | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Galena | 190 | x | - | - | - | - | - | - | - | - | - | - | - | - |
| Grayling | 55 | - | x | x | - | - | - | - | - | - | - | - | - | - |
| Healy Lake | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Holy Cross | 64 | x | x | x | - | - | - | x | - | - | - | - | - | - |
| Hughes | 31 | x | - | - | - | - | - | - | - | - | - | - | - | - |
| Huslia | 91 | x | - | - | - | - | - | x | - | - | - | - | - | - |
| Kaltag | 70 | x | - | - | - | - | - | - | - | - | - | - | - | - |
| Koyukuk | 42 | x | x | - | - | - | - | - | - | - | - | - | - | - |
| Lake Minchumina | 6 | x | - | x | - | - | - | - | - | - | - | - | - | - |
| Livengood‡ | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Manley Hot Springs | 41 | x | - | - | - | - | - | - | - | - | - | - | - | - |
| McGrath | 147 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Minto | 65 | - | - | x | - | - | - | x | - | - | - | - | - | - |
| Nenana‡ | 185 | x | - | x | - | - | - | - | - | - | - | - | - | - |
| Nikolai | 37 | x | x | x | - | - | - | - | - | - | - | - | - | - |
| Northway | 77 | x | - | - | - | - | - | - | - | - | - | - | - | - |
| Nulato | 92 | x | x | - | - | - | - | - | - | - | - | - | - | x |
| Rampart | 10 | - | - | - | - | - | - | x | - | - | - | - | - | - |
| Ruby | 62 | x | x | - | - | - | - | x | - | - | - | - | - | - |
| Shageluk | 36 | - | x | - | - | - | - | - | - | - | - | - | - | - |
| Stevens Village | 26 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Takotna | 22 | - | x | - | - | - | - | x | - | - | - | - | - | x |
| Tanacross | 53 | - | - | x | - | - | - | - | - | - | - | - | - | - |
| Tanana | 100 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Tetlin | 43 | - | - | - | - | - | - | x | - | - | - | - | - | - |
| Tok | 532 | - | - | x | - | - | - | x | - | - | - | - | - | - |
| Venetie | 61 | - | - | x | x | - | - | x | - | - | - | x | - | - |
| Wiseman | 5 | - | - | - | - | - | - | 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 | - | - | - | - | - | - | - | - | - | - | - | - | - |

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*Source*s Survey results for 2004–2015 were reported in Naves (2010rev., 2010, 2011, 2012, 2014a, 2015b, 2016) and Naves and Braem (2014).

Households: Total number of occupied households based on 2010 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* † Cordova was included in 2014 when the spring hunt was first authorized.

*Note* Allakaket includes Allalaket City and New Allakaket CDP. Starting in 2016, the communities of Alatna and Allakakeet were combined for the purposes of this survey.

*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 CDPs.

*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:** _____

| Household ID | Household Name<br>*List only households resident in the village for at least the last 12 months.* | Selected | Alternate | No contact/ consent |
|---|---|---|---|---|
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**Appendix C.–Tracking sheet and household consent form (original size 8.5x11 inches).**

AMBCC Harvest Survey

OMB Form 3-2080 Expires 10/31/2019

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 completed Date (mm/dd/yy) | Comments (Why no contact? Moved?) |
|---|---|---|---|---|---|---|---|---|
| | | Attempt | Date (mm/dd/yy) | Agreed | Refu-sed | No contact | | |
| | | 1st | / / | | | | / / | |
| | | 2nd | / / | | | | / / | |
| | | 3rd | / / | | | | / / | |
| | | 1st | / / | | | | / / | |
| | | 2nd | / / | | | | / / | |
| | | 3rd | / / | | | | / / | |
| | | 1st | / / | | | | / / | |
| | | 2nd | / / | | | | / / | |
| | | 3rd | / / | | | | / / | |
| | | 1st | / / | | | | / / | |
| | | 2nd | / / | | | | / / | |
| | | 3rd | / / | | | | / / | |
| | | 1st | / / | | | | / / | |
| | | 2nd | / / | | | | / / | |
| | | 3rd | / / | | | | / / | |
| | | 1st | / / | | | | / / | |
| | | 2nd | / / | | | | / / | |
| | | 3rd | / / | | | | / / | |
| | | 1st | / / | | | | / / | |
| | | 2nd | / / | | | | / / | |
| | | 3rd | / / | | | | / / | |
| | | 1st | / / | | | | / / | |
| | | 2nd | / / | | | | / / | |
| | | 3rd | / / | | | | / / | |

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

AMBCC Subsistence Migratory Bird Household Harvest Survey

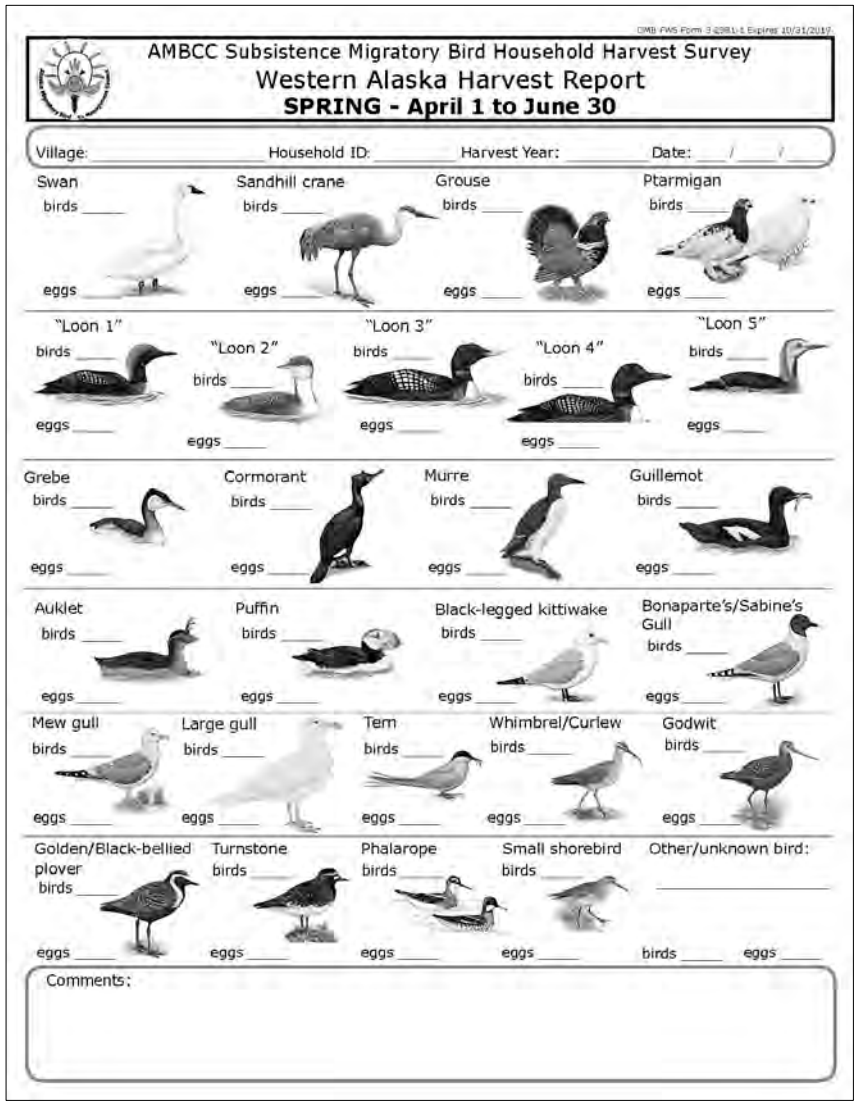
Western Alaska Harvest Report - **SPRING**

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

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

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

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



AMBCC Subsistence Migratory Bird Household Harvest Survey

Western Alaska Harvest Report

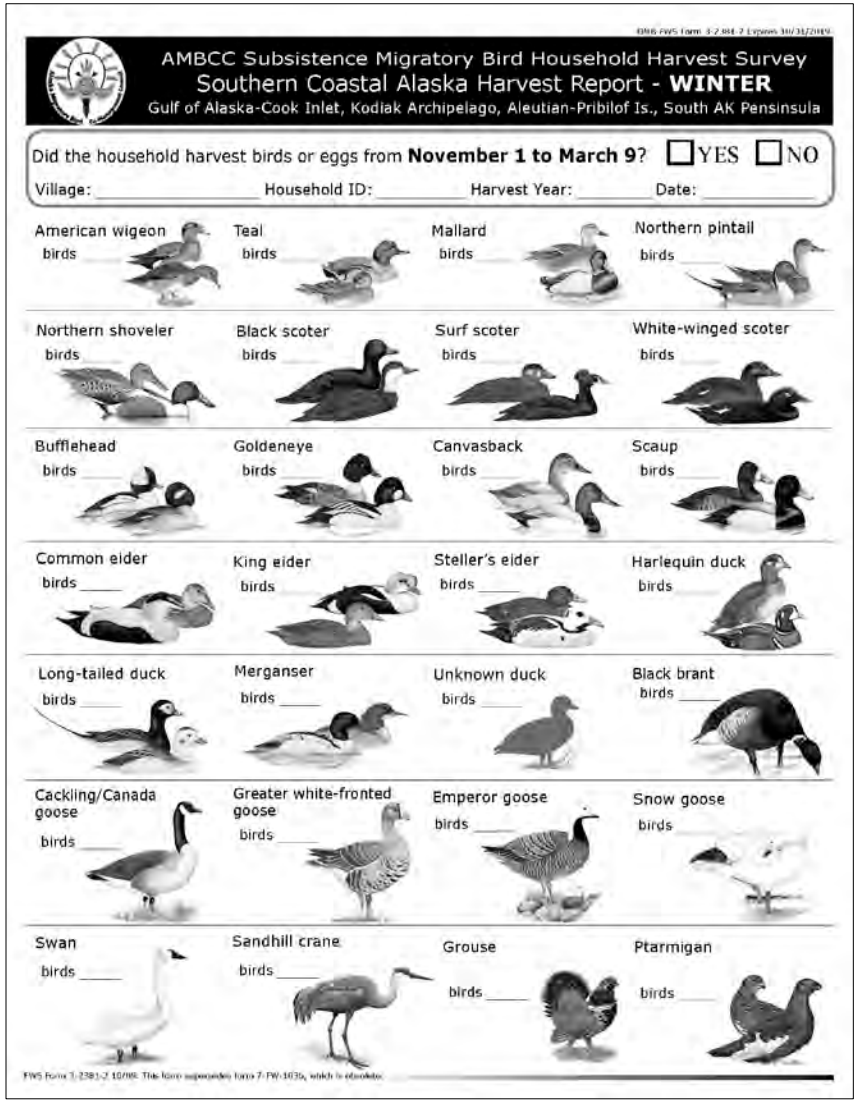
**SPRING - April 1 to June 30**

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

Swan birds ____ eggs ____
Sandhill crane birds ____ eggs ____
Grouse birds ____ eggs ____
Ptarmigan birds ____ eggs ____
"Loon 1" birds ____ eggs ____
"Loon 2" birds ____ eggs ____
"Loon 3" birds ____ eggs ____
"Loon 4" birds ____ eggs ____
"Loon 5" birds ____ eggs ____
Grebe birds ____ eggs ____
Cormorant birds ____ eggs ____
Murre birds ____ eggs ____
Guillemot birds ____ eggs ____
Auklet birds ____ eggs ____
Puffin birds ____ eggs ____
Black-legged kittiwake birds ____ eggs ____
Bonaparte's/Sabine's Gull birds ____ eggs ____
Mew gull birds ____ eggs ____
Large gull birds ____ eggs ____
Tern birds ____ eggs ____
Whimbrel/Curlew birds ____ eggs ____
Godwit birds ____ eggs ____
Golden/Black-bellied plover birds ____ eggs ____
Turnstone birds ____ eggs ____
Phalarope birds ____ eggs ____
Small shorebird birds ____ eggs ____
Other/unknown bird: _____ birds ____ eggs ____

Comments:

**Appendix E.–Harvest report form, Southern Coastal Alaska (spring sheet, both sides, original size 8.5x11 inches).**



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

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

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

American wigeon birds ____ | Teal birds ____ | Mallard birds ____ | Northern pintail birds ____

Northern shoveler birds ____ | Black scoter birds ____ | Surf scoter birds ____ | White-winged scoter birds ____

Bufflehead birds ____ | Goldeneye birds ____ | Canvasback birds ____ | Scaup birds ____

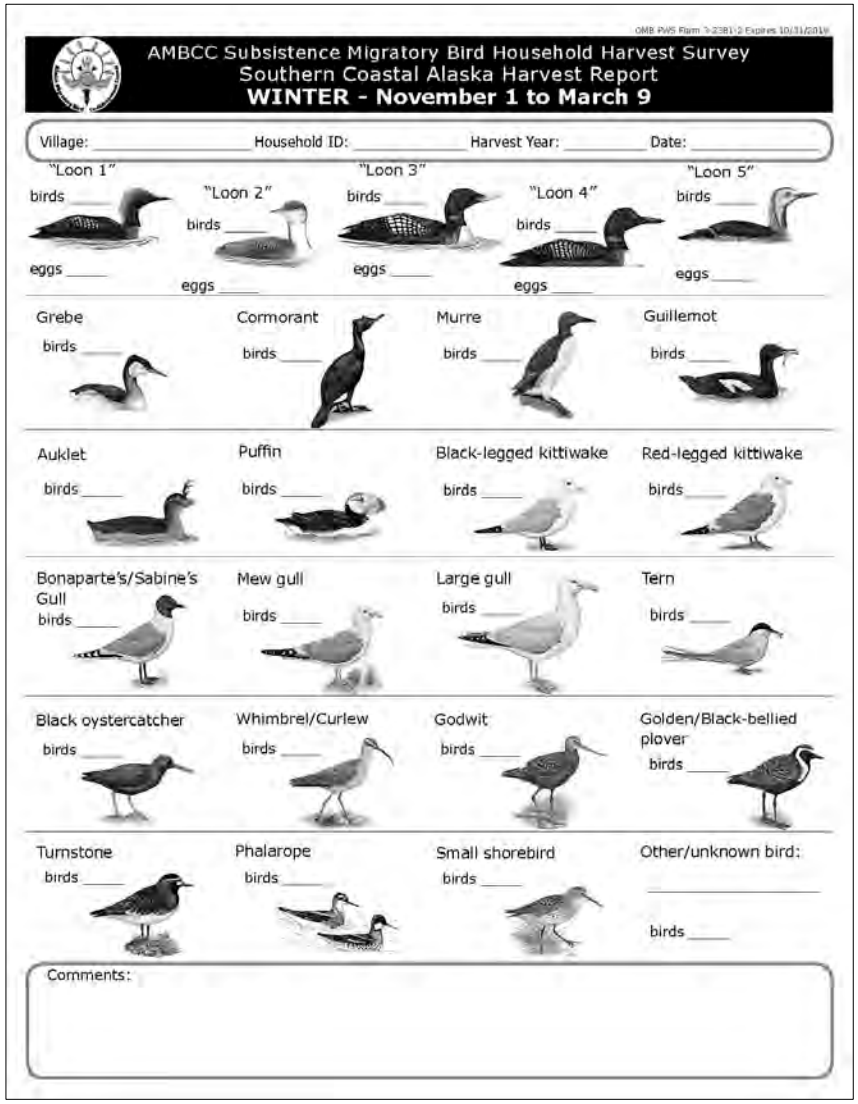
Common eider birds ____ | King eider birds ____ | Steller's eider birds ____ | Harlequin duck birds ____

Long-tailed duck birds ____ | Merganser birds ____ | Unknown duck birds ____ | Black brant birds ____

Cackling/Canada goose birds ____ | Greater white-fronted goose birds ____ | Emperor goose birds ____ | Snow goose birds ____

Swan birds ____ | Sandhill crane birds ____ | Grouse birds ____ | Ptarmigan birds ____

FWS form 3-2381-2 10/08. This form supersedes form 7-FW-1036, which is obsolete.



OMB FWS Form 3-2381-2 Expires 10/31/2019

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

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

"Loon 1" birds ____ eggs ____ | "Loon 2" birds ____ eggs ____ | "Loon 3" birds ____ eggs ____ | "Loon 4" birds ____ eggs ____ | "Loon 5" birds ____ eggs ____

Grebe birds ____ | Cormorant birds ____ | Murre birds ____ | Guillemot birds ____

Auklet birds ____ | Puffin birds ____ | Black-legged kittiwake birds ____ | Red-legged kittiwake birds ____

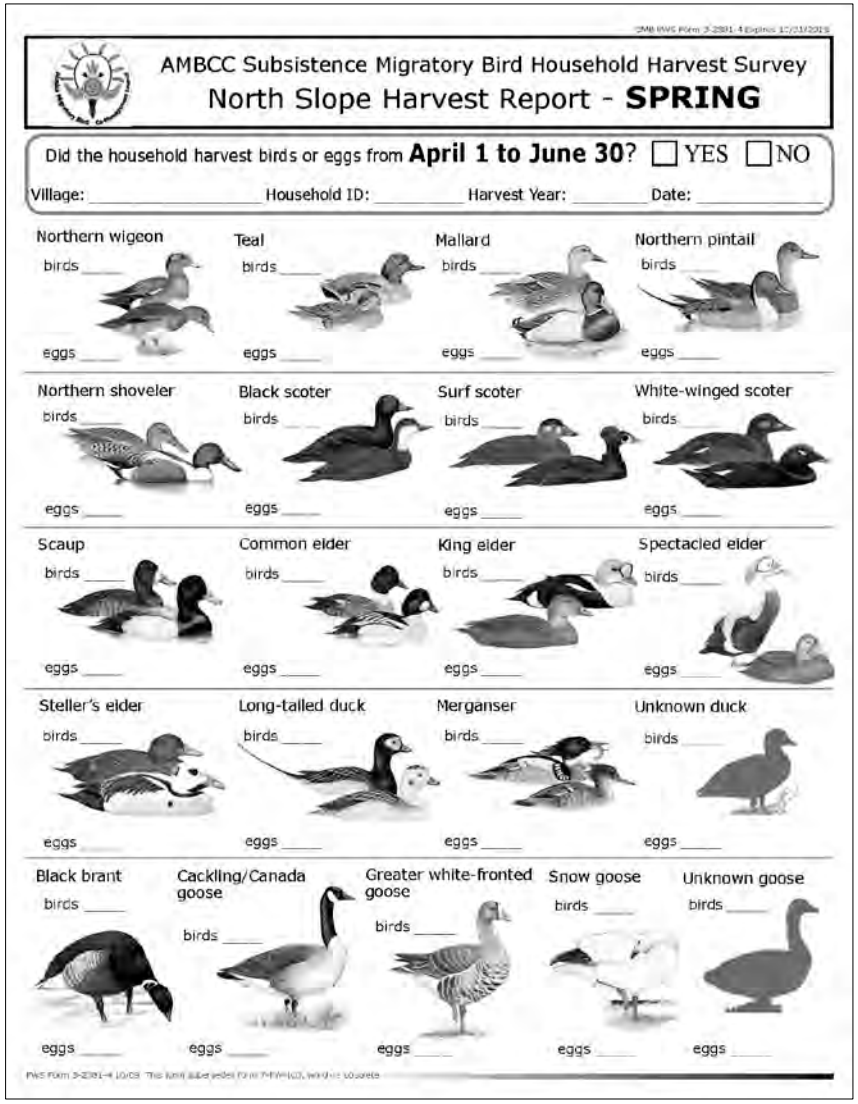
Bonaparte's/Sabine's Gull birds ____ | Mew gull birds ____ | Large gull birds ____ | Tern birds ____

Black oystercatcher birds ____ | Whimbrel/Curlew birds ____ | Godwit birds ____ | Golden/Black-bellied plover birds ____

Turnstone birds ____ | Phalarope birds ____ | Small shorebird birds ____ | Other/unknown bird: _____ birds ____

Comments:

**Appendix F.–Harvest report form, North Slope (spring sheet, both sides, original size 8.5x11 inches).**

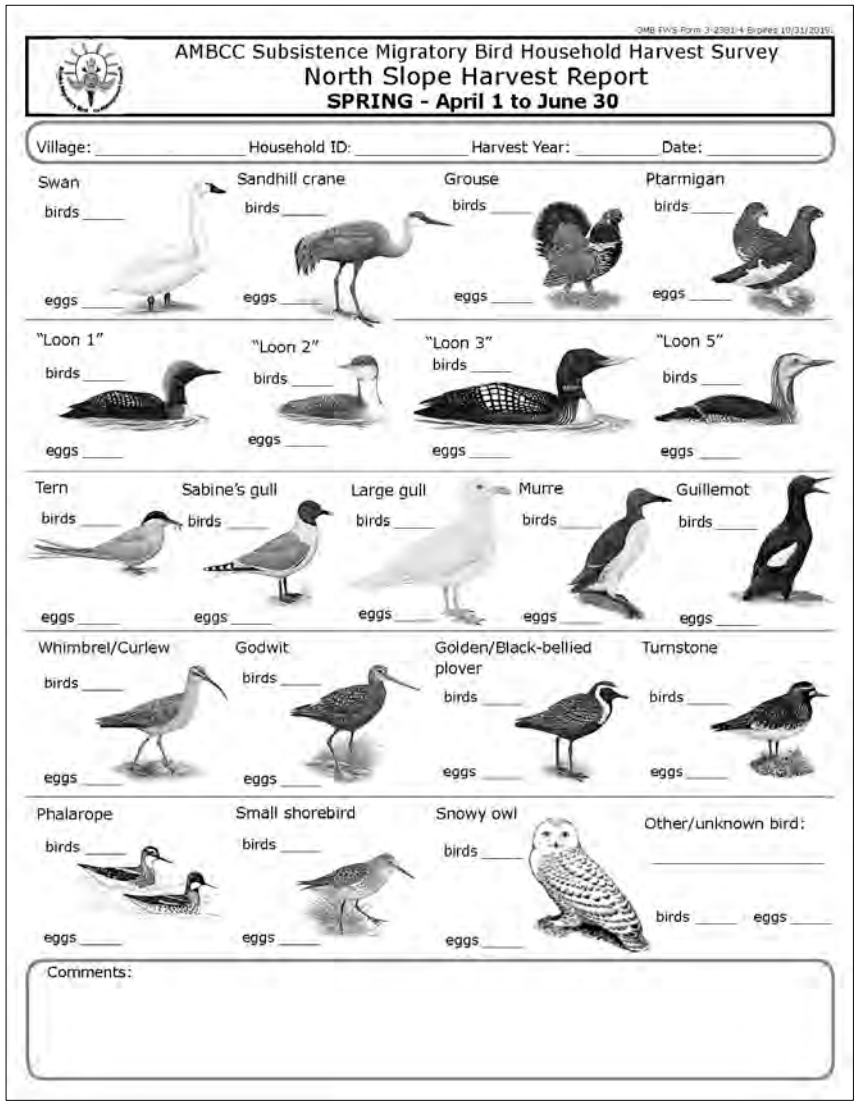


AMBCC Subsistence Migratory Bird Household Harvest Survey
North Slope Harvest Report - **SPRING**

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

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

Northern wigeon birds ____ eggs ____
Teal birds ____ eggs ____
Mallard birds ____ eggs ____
Northern pintail birds ____ eggs ____
Northern shoveler birds ____ eggs ____
Black scoter birds ____ eggs ____
Surf scoter birds ____ eggs ____
White-winged scoter birds ____ eggs ____
Scaup birds ____ eggs ____
Common eider birds ____ eggs ____
King eider birds ____ eggs ____
Spectacled eider birds ____ eggs ____
Steller's eider birds ____ eggs ____
Long-tailed duck birds ____ eggs ____
Merganser birds ____ eggs ____
Unknown duck birds ____ eggs ____
Black brant birds ____ eggs ____
Cackling/Canada goose birds ____ eggs ____
Greater white-fronted goose birds ____ eggs ____
Snow goose birds ____ eggs ____
Unknown goose birds ____ eggs ____



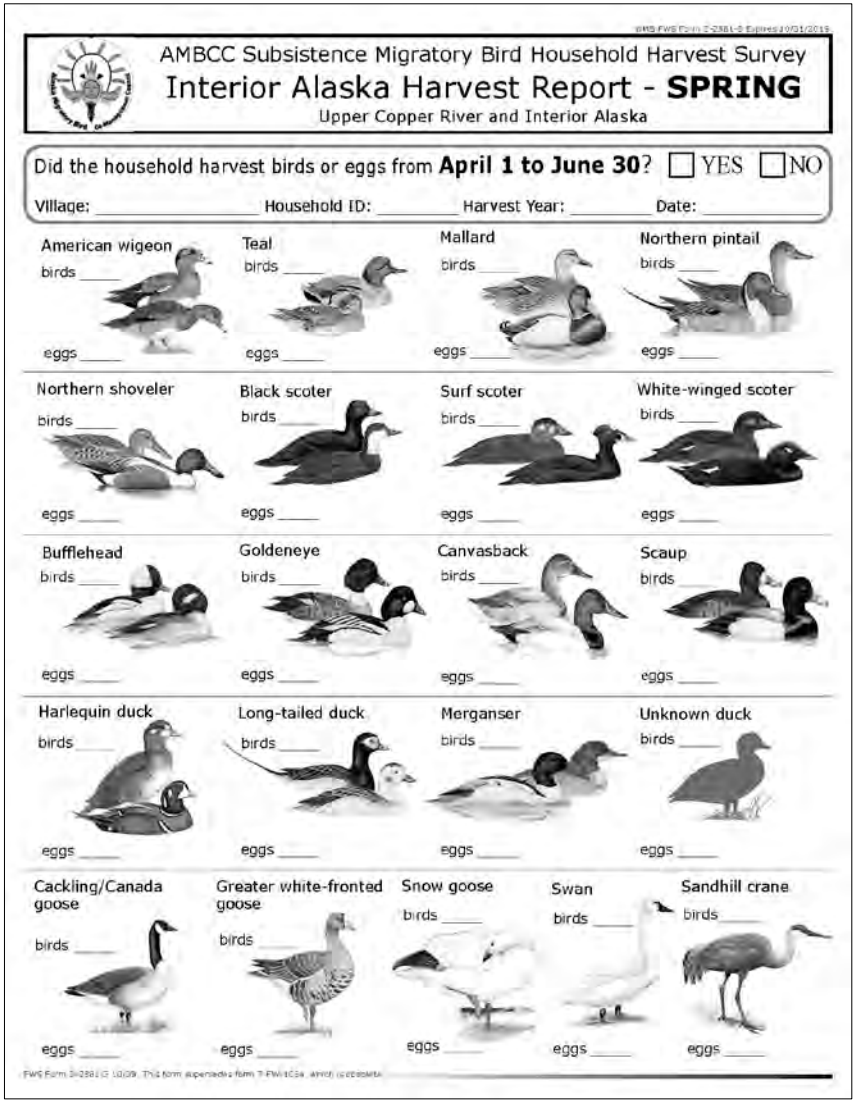
AMBCC Subsistence Migratory Bird Household Harvest Survey
North Slope Harvest Report
**SPRING - April 1 to June 30**

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

Swan birds ____ eggs ____
Sandhill crane birds ____ eggs ____
Grouse birds ____ eggs ____
Ptarmigan birds ____ eggs ____
"Loon 1" birds ____ eggs ____
"Loon 2" birds ____ eggs ____
"Loon 3" birds ____ eggs ____
"Loon 5" birds ____ eggs ____
Tern birds ____ eggs ____
Sabine's gull birds ____ eggs ____
Large gull birds ____ eggs ____
Murre birds ____ eggs ____
Guillemot birds ____ eggs ____
Whimbrel/Curlew birds ____ eggs ____
Godwit birds ____ eggs ____
Golden/Black-bellied plover birds ____ eggs ____
Turnstone birds ____ eggs ____
Phalarope birds ____ eggs ____
Small shorebird birds ____ eggs ____
Snowy owl birds ____ eggs ____
Other/unknown bird: _____ birds ____ eggs ____

Comments:

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



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 ____

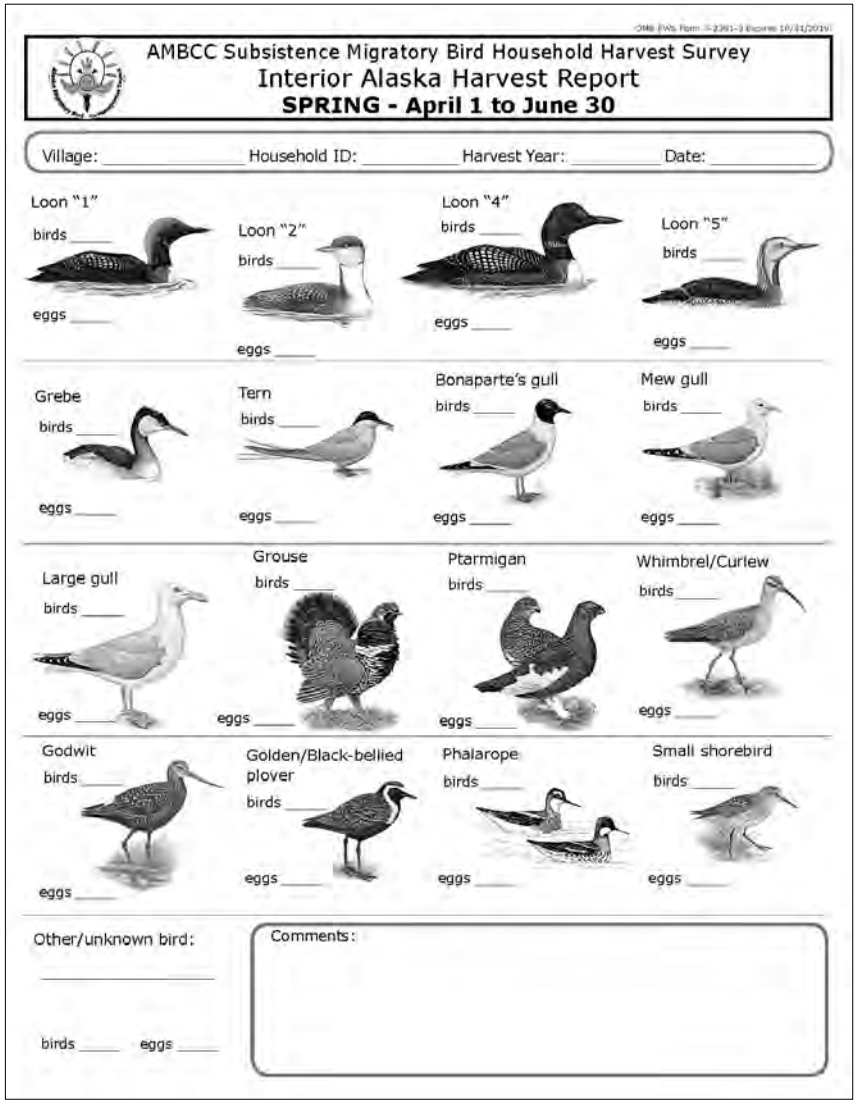
Cackling/Canada goose birds ____ eggs ____

Greater white-fronted goose birds ____ eggs ____

Snow goose birds ____ eggs ____

Swan birds ____ eggs ____

Sandhill crane birds ____ eggs ____



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 ____

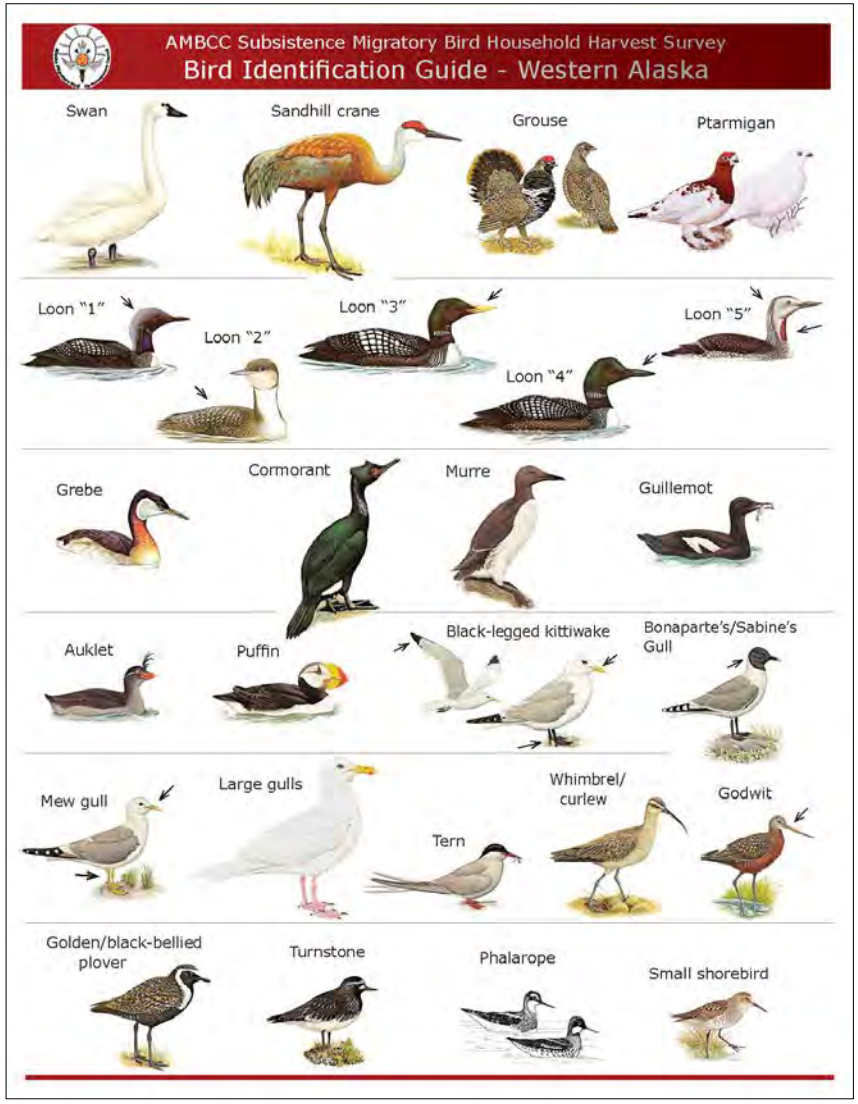
Phalarope birds ____ eggs ____

Small shorebird birds ____ eggs ____

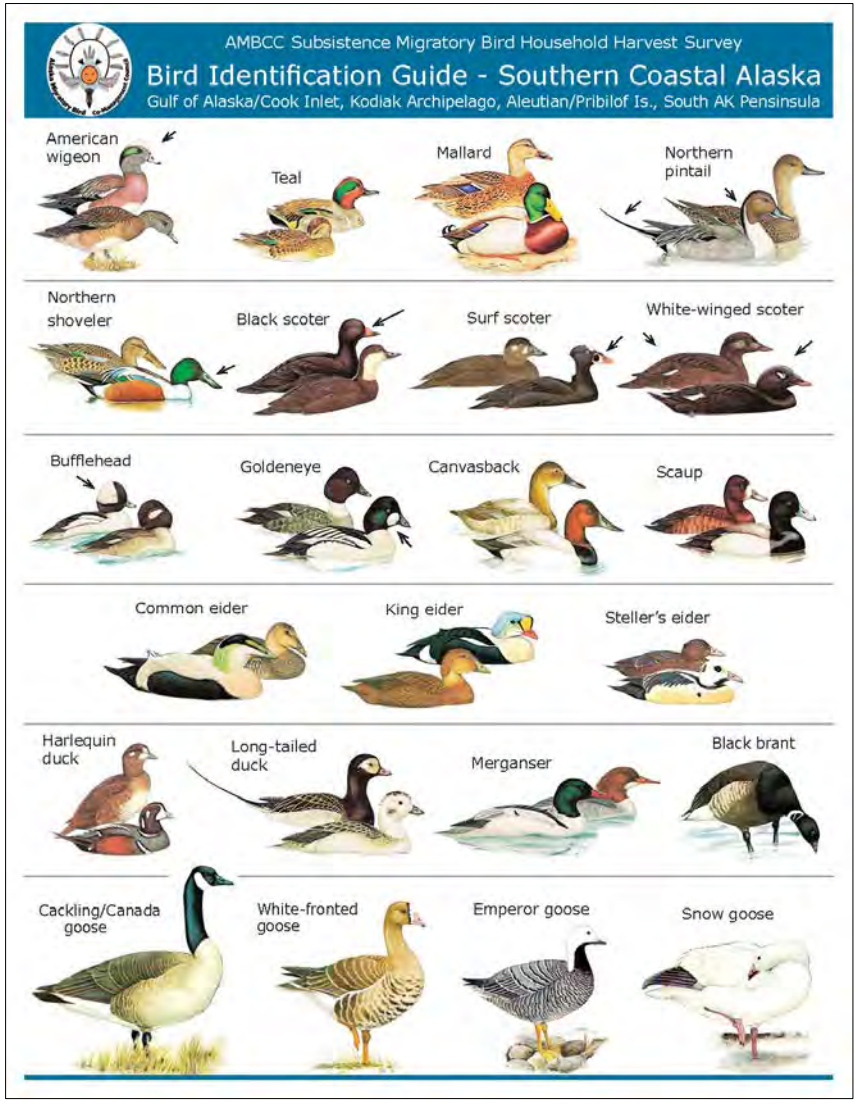
Other/unknown bird: _____ birds ____ eggs ____

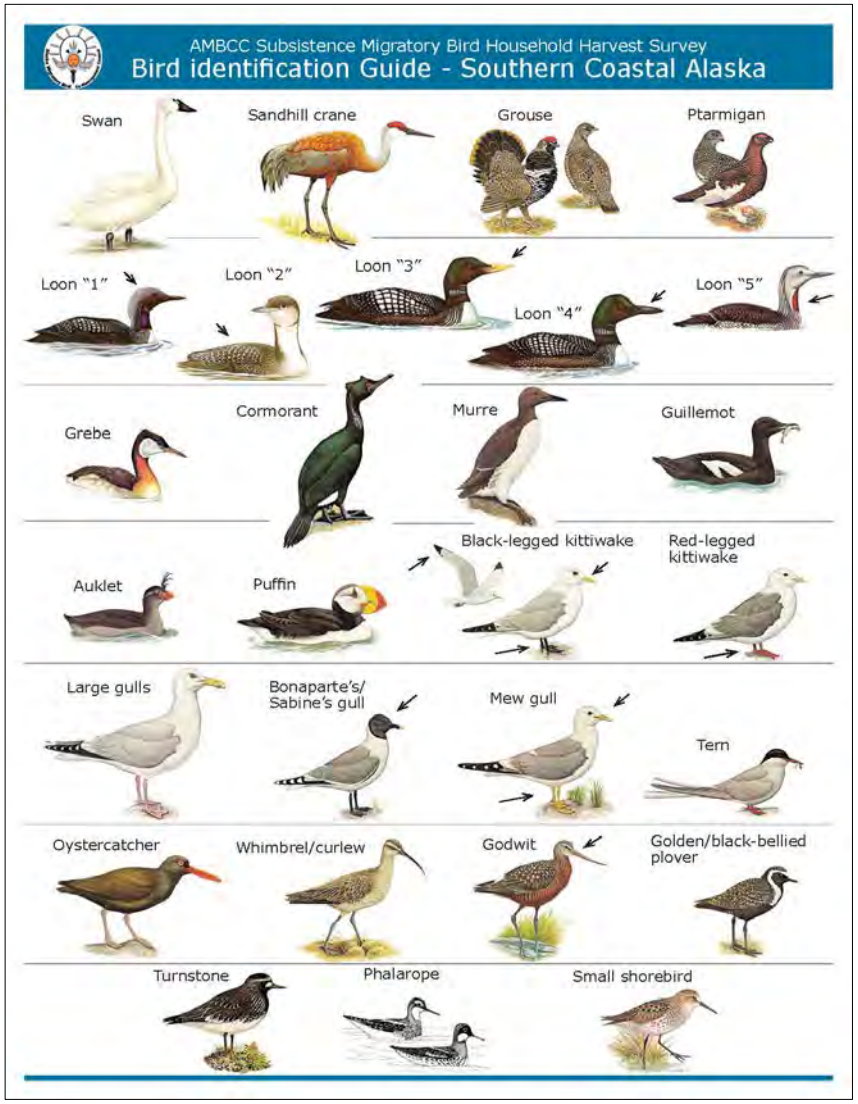
Comments:

**Appendix H.–Bird identification guide, Western Alaska (both sides, original size 8.5x11 inches).**



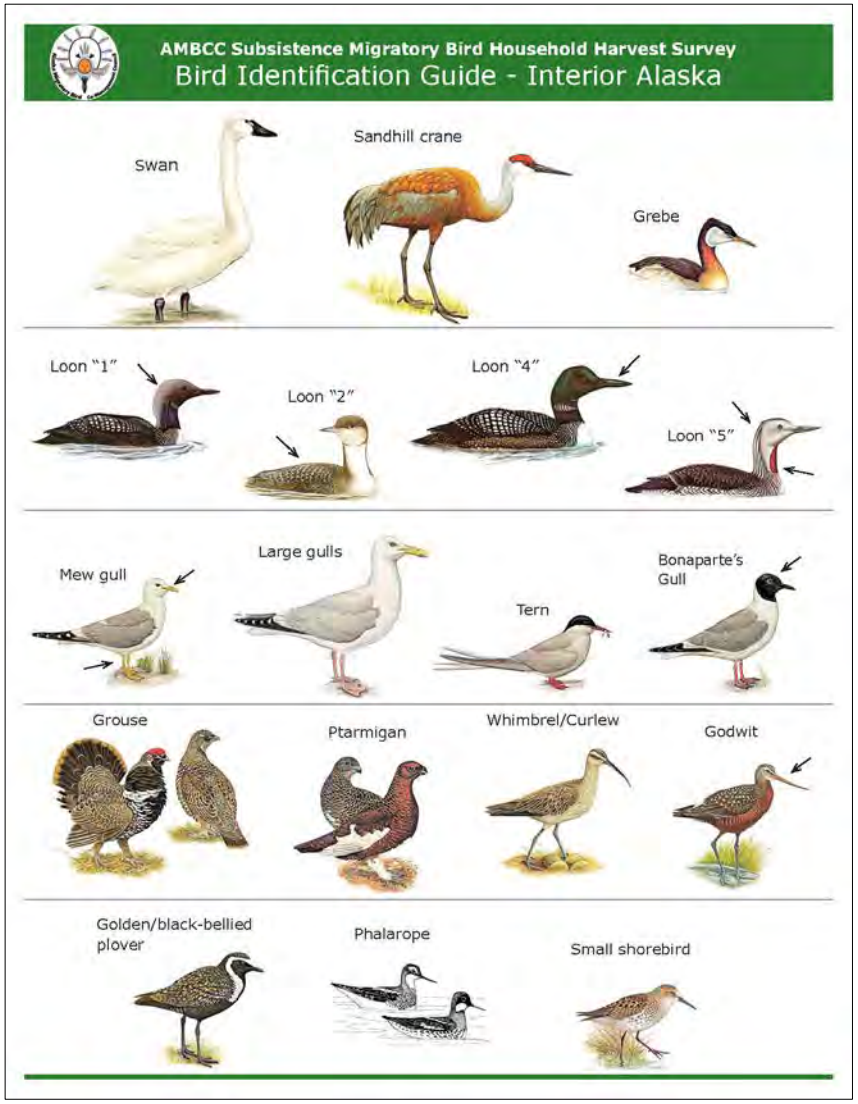
**Appendix I.–Bird identification guide, Southern Coastal Alaska (both sides, original size 8.5x11 inches).**



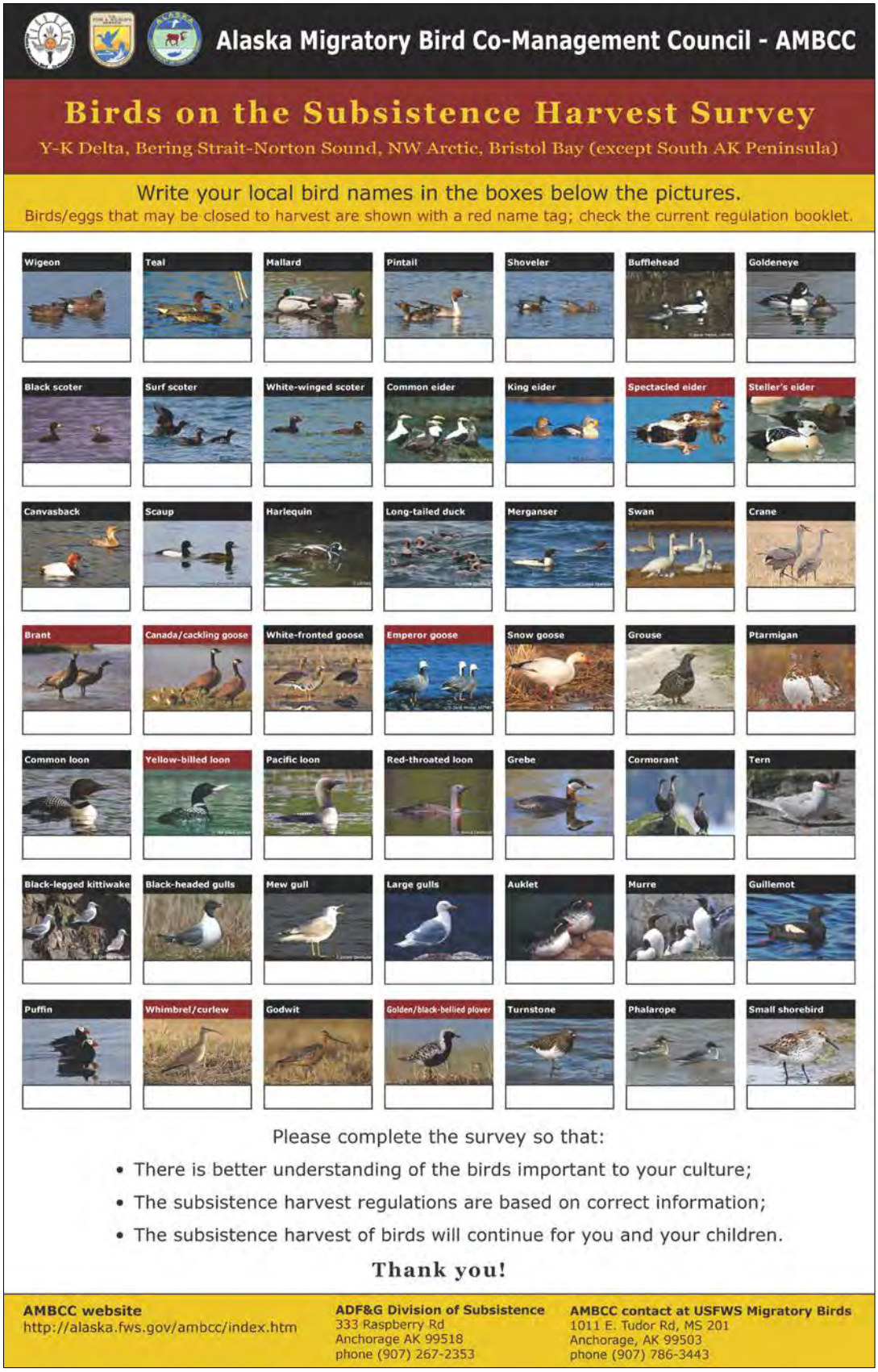



**Appendix J.–Bird identification guide, North Slope (both sides, original size 8.5x11 inches).**

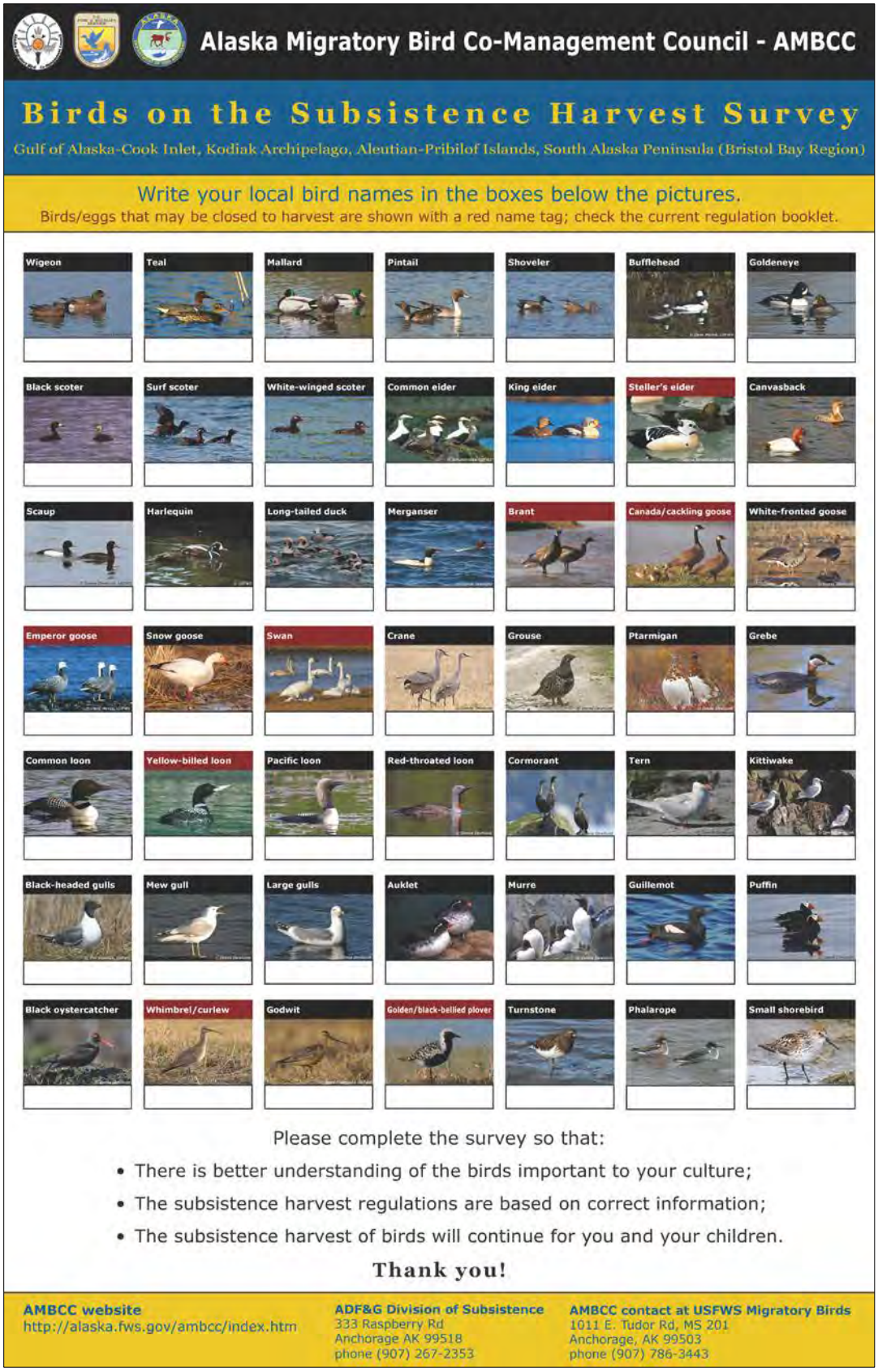
**Appendix K.–Bird identification guide, Interior Alaska (both sides, original size 8.5x11 inches).**



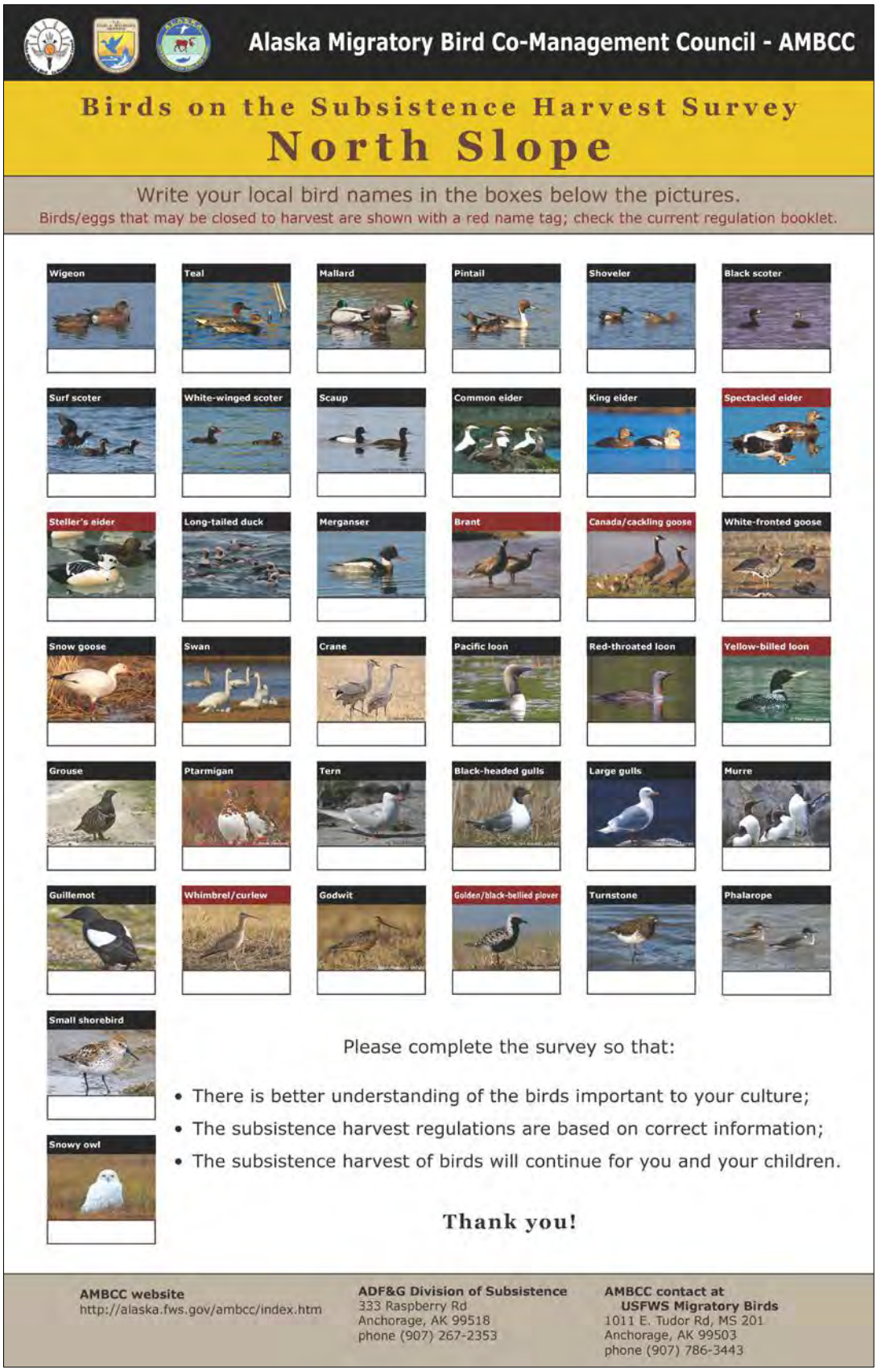
**Appendix L.–Bird poster, Western Alaska (original size 23x36 inches).**



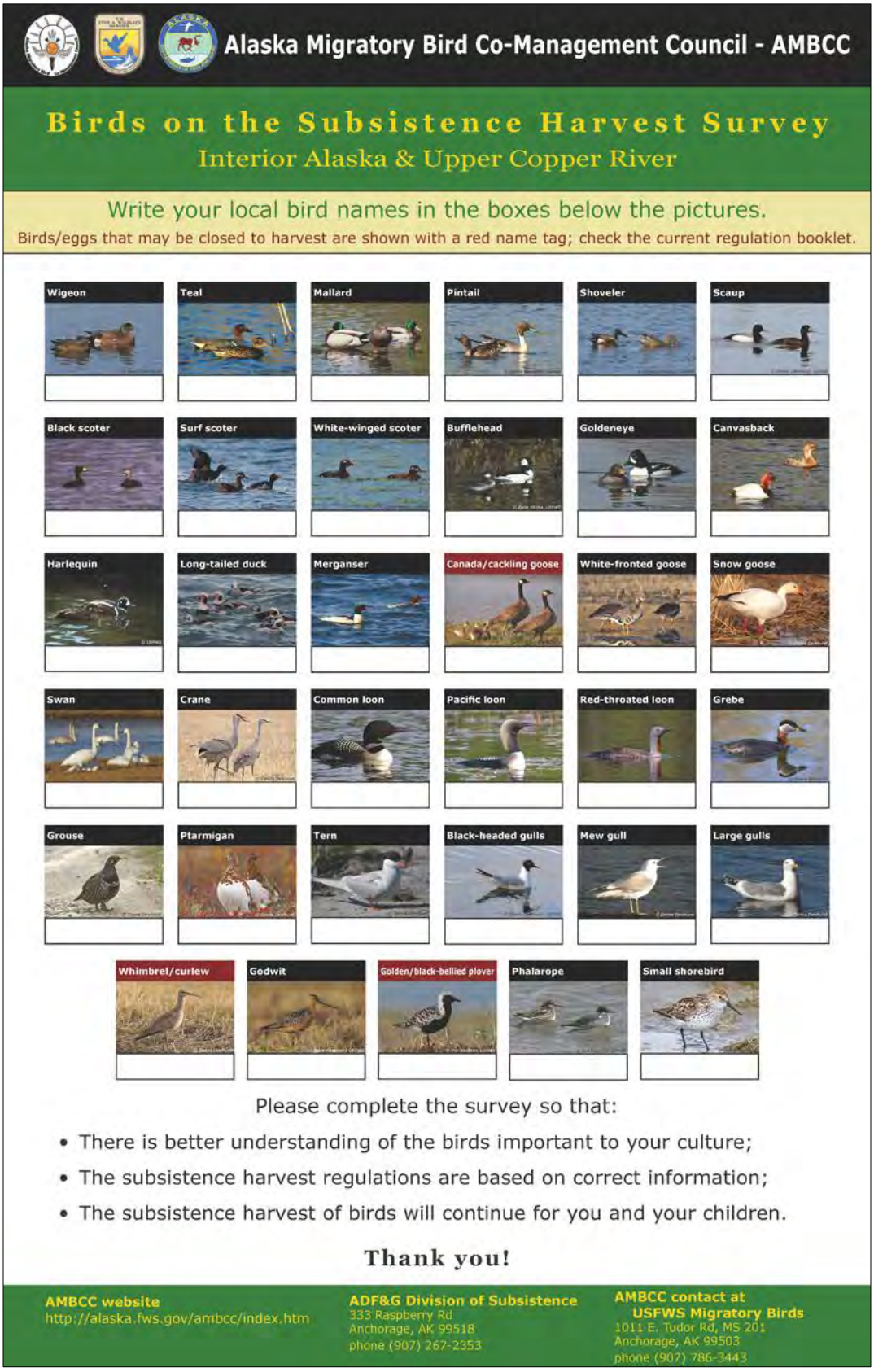
**Appendix M.–Bird poster, Southern Coastal Alaska (original size 23x36 inches).**



**Appendix N.–Bird poster, North Slope (original size 23x36 inches).**



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



**Appendix P.–Formulas used to calculate estimated harvest, variance, and confidence interval percentage.**

Community estimated harvest

(Equation 1) $$\hat{Y}_i = \frac{M_i}{m_i} \times \sum_{j=1}^{m_i} y_{ij}$$

Region estimated harvest

(Equation 2) $$\hat{Y}_{reg} = \frac{N}{n} \sum_{i=1}^{n} \hat{Y}_i$$

Region variance

(Equation 3.a) $$v(\hat{Y}_{reg}) = \frac{N^2(1-f_1)}{n} s_u^2 + \frac{N}{n} \sum_{i=1}^{n} \frac{M_i^2(1-f_{2i})s_i^2}{m_i}$$

(Equation 3.b) $$s_u^2 = \frac{1}{n-1} \sum_{i=1}^{n} \left(\hat{Y}_i - \hat{\bar{Y}}\right)^2$$

(Equation 3.c) $$s_i^2 = \frac{1}{m_i - 1} \sum_{j=1}^{m_i} \left(y_{ij} - \bar{y}_i\right)^2$$

(Equation 3.d) $$\bar{y}_i = \frac{\sum_{j=1}^{m_i} y_{ij}}{m_i}$$

(Equation 3.e) $$\hat{\bar{Y}}_{reg} = \frac{\sum_{i=1}^{n} \hat{Y}_i}{n}$$

Alaska-wide estimated harvest

(Equation 4) $$\hat{Y}_{AK} = \sum_{R=1}^{reg} \hat{Y}_{reg}$$

Alaska-wide variance

(Equation 5) $$v(\hat{Y}_{AK}) = \sum_{R=1}^{reg} v(\hat{Y}_{reg})$$

Confidence interval at regiona and Alaska-wide levels

(Equation 6.a) $$CIP(\hat{Y}) = 2 \times CV$$

(Equation 6.b) $$CV(\hat{Y}) = \frac{\sqrt{v(\hat{Y})}}{\hat{Y}}$$

$i$ = communities in a region (primary sampling units)

$j$ = households in a community (secondary sampling units)

$reg$ = region

$AK$ = Alaska-wide

$\hat{Y}$ = estimated harvest

$y_{ij}$ = harvest reported by $j^{th}$ surveyed household in the $i^{th}$ community

$\hat{\bar{Y}}_{reg}$ = average community harvest in a region

$\bar{y}_i$ = mean household harvest in sampled community $i$

m = sampled households

M = total households

n = sampled communities in region

N = total communities in region

R = number of regions

$v(\hat{Y})$ = variance of harvest estimate

$f_1$ = sampling fraction in regions (n/N)

$f_{2i}$ = sampling fraction in communities ($m_i/M_i$)

$s_i^2$ = variance among households in a community

$s_u^2$ = variance among communities in a region

$CIP(\hat{Y})$ = confidence interval as a percentage of the harvest estimate

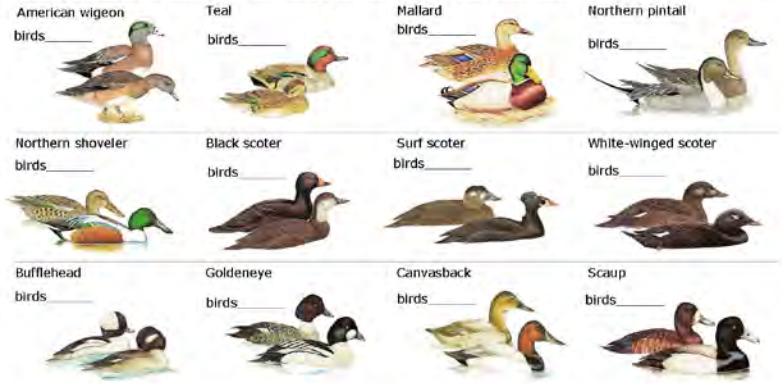
$CV(\hat{Y})$ = coefficient of variation

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

Alaska Migratory Bird Co-Management Council (AMBCC)
Subsistence Household Harvest Survey, Cordova Harvest Report – **SPRING 2016**

1. Household registration #: _____ 2. Date survey was completed: _____ / _____ /2016
(2 letters followed by 3 numbers)
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, 2016? (checkmark) YES ☐ NO ☐

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



Other/unknown bird: _____

birds:_____ eggs:_____

Comments:

FWS Form 3-2381-2 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 bird drawings, report numbers of 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)

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. 701 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 R.–Summary of Cordova bird and egg harvest estimates produced for community communication.**

## Alaska Migratory Bird Co-Management Council (AMBCC)
## Cordova Bird and Egg Subsistence Harvest Estimates
## April–May 2014–2016

The Cordova migratory bird subsistence harvest 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. Participants were required to obtain a registration issued at the Cordova offices of the U.S. Forest Service and Native Village of Eyak. The Division of Subsistence of the Alaska Department of Fish and Game (ADF&G) coordinated the registration process and the mail-out harvest survey in collaboration with the local partners. For more information on subsistence harvest of birds and eggs see https://www.fws.gov/alaska/ambcc/.

| Participation | 2014 | 2015 | 2016 |
|---|---|---|---|
| Registered households | 36 | 20 | 26 |
| Surveys completed | 28 | 15 | 22 |
| Survey participation | 78% | 75% | 85% |

| *Harvest estimates, number of birds and eggs* | 2014 | | 2015 | | 2016 | |
|---|---|---|---|---|---|---|
| | Reported | Estimated | Reported | Estimated | Reported | Estimated |
| **Birds** | | | | | | |
| American wigeon | 1 | 1 | 0 | 0 | 1 | 1 |
| Teal | 1 | 1 | 0 | 0 | 0 | 0 |
| Mallard | 11 | 14 | 0 | 0 | 16 | 19 |
| Northern pintail | 12 | 15 | 0 | 0 | 56 | 66 |
| Northern shoveler | 0 | 0 | 0 | 0 | 2 | 2 |
| Black scoter | 0 | 0 | 0 | 0 | 0 | 0 |
| Surf scoter | 0 | 0 | 0 | 0 | 0 | 0 |
| White-winged scoter | 0 | 0 | 0 | 0 | 0 | 0 |
| Bufflehead | 0 | 0 | 0 | 0 | 0 | 0 |
| Goldeneye | 0 | 0 | 0 | 0 | 0 | 0 |
| Canvasback | 0 | 0 | 0 | 0 | 0 | 0 |
| Scaup | 0 | 0 | 0 | 0 | 0 | 0 |
| Common eider | 0 | 0 | 0 | 0 | 0 | 0 |
| King eider | 0 | 0 | 0 | 0 | 0 | 0 |
| Harlequin duck | 0 | 0 | 0 | 0 | 0 | 0 |
| Long-tailed duck | 0 | 0 | 0 | 0 | 0 | 0 |
| Merganser | 0 | 0 | 0 | 0 | 0 | 0 |
| Greater white-fronted goose | 4 | 5 | 0 | 0 | 0 | 0 |
| Snow goose | 4 | 5 | 0 | 0 | 5 | 6 |
| Sandhill crane | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total birds** | **33** | **42** | **0** | **0** | **80** | **95** |
| **Eggs** | | | | | | |
| Gull (unidentified) | 102 | 131 | 197 | 263 | 105 | 124 |
| **Total eggs** | 102 | 131 | 197 | 263 | 105 | 124 |

Many thanks to all households that participated in the survey! John Whissel (Native Village of Eyak), Milo Burcham (U.S. Forest Service), Patty Brown-Schwalenberg (Chugach Regional Resources Commission), and Charlote Westing (ADF&G Wildlife Conservation) assisted in household registration and community communication.

Prepared by Liliana Naves, ADF&G Division of Subsistence, Anchorage. liliana.naves@alaska.gov. Last updated 24 August, 2017.
For a copy of the Alaska Department of Fish and Game OEO statement, see http://www.adfg.alaska.gov/index.cfm?adfg=home.oeostatement

# 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 a plentiful harvest 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.