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Co-management of the Alaskan Harvest of the Alaska–Chukotka Polar Bear Subpopulation: How to Implement a Harvest Quota

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U.S. Fish and Wildlife Service photo by Scott Schliebe, 1984.

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Postscript – July 2016 – Status of Alaska Nanuuq Commission

ANC does not currently have a co-management agreement with the FWS, and the status of ANC and a co-management partner is uncertain at this date.

Cover Photo: Shishmaref, Alaska, 1984. U.S. Fish and Wildlife Service photo by Scott Schliebe.

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Abstract

We evaluated the U.S. Fish and Wildlife Service's (USFWS) Alaska–Chukotka polar bear subpopulation harvest database conducted through the Marking, Tagging, and Reporting Program in order to identify improvements needed for polar bear harvest reporting and to provide recommendations to enhance effective implementation of the U.S.–Russia Polar Bear Agreement and co-management between the USFWS and Alaska Nanuuq Commission.[1] Variable amounts of incomplete reporting occurred for numbers of bears harvested, sex of bears harvested, tagging of hides and skull, noting identifiers of sex during tagging of hides, acquisition of teeth for aging, and for tagging of bears within the 30-day regulatory required time frame. We determined that bears tagged soon after harvest had higher quality data for sex and age. The level of reporting (tagging compliance) varied among the major polar bear hunting communities. The majority of harvest from the Alaska–Chukotka subpopulation occurs during December through May.

We evaluated trends in compliance with reporting requirements during 1988–2014 and found no trend in the proportion of females in the harvest; a significant increasing trend in the proportion of unknown sex; a significant decreasing trend in the proportion of the harvest for which teeth (age) were acquired; a significant decrease in the proportion of the harvest that is tagged; no trend in the number of days to tagging within the 30-day regulatory time frame, and no trend in the mean number of days to tagging beyond 30 days.

We presented the results of these analysis and summary findings at a workshop of stakeholders. The workshop discussion, concepts, and recommendations to improve harvest reporting and more effectively implement polar bear harvest quotas in the future are included in this report.

Key words: Polar bears, Alaska–Chukotka subpopulation, sustainable harvest, Native subsistence harvest reporting, co-management, U.S.–Russia Bilateral Polar Bear Conservation Agreement

[1] Alaska Nanuuq Commission (ANC) does not currently have a co-management agreement with the USFWS, and the status of ANC and a co-management partner is uncertain at this date.

Introduction

Polar bears are an iconic Arctic species of great cultural and material significance to circumpolar indigenous peoples, including Alaska Natives along the northern and western coasts of Alaska (Voorhees et al. 2014). Polar bears represent a "cultural keystone species" for indigenous communities in this region, one that "informs [their] corpus of knowledge, orients symbolic practice, and provides material sustenance" (Sodikoff 2012). Native people have historically hunted polar bears for their meat, which is shared with the community and especially with elders, as well as for their fur and claws, which are used in traditional clothing and handicrafts (Voorhees et al. 2014). Native peoples have developed cultural belief systems, rituals, religious practices, and subsistence use patterns based on the availability of polar bears (Russell 2005).

Subsistence harvest for polar bears continues today in Alaska. The U.S. Marine Mammal Protection Act (MMPA) in 1972 recognized the subsistence needs of coastal dwelling Alaska Natives and allowed for their harvest of marine mammals, including polar bears, provided that harvest is not wasteful. The U.S. Fish and Wildlife Service (USFWS) is the federal agency responsible for conservation and management of polar bears under terms of the MMPA. In Alaska, this includes the Alaska–Chukotka and the Southern Beaufort Sea polar bear subpopulations. The USFWS is also responsible for co-management activities with Alaska Native organizations as identified in Section 119 of the MMPA. More recently, Title V of the MMPA was enacted to implement the *Agreement between the Government of the United States of America and the Government of the Russian Federation on the Conservation and Management of the Alaska–Chukotka Polar Bear Population* (U.S.–Russia Agreement). The U.S.–Russia Agreement requires that the harvest of polar bears taken from the Chukchi Sea (Alaska–Chukotka subpopulation) be regulated through a quota to ensure the total removal of bears does not exceed a sustainable harvest level and the corresponding annual taking limits (Appendix A). In 2008, polar bears were listed as threatened under the U.S. Endangered Species Act (USFWS 2008). Anthropogenic climate change (Maslanik et al. 2011), including seasonal reductions in sea-ice extent, thickness, and availability (Holland et al. 2006; Stroeve et al. 2012, Wang et al. 2012) is projected to continue beyond any global action taken to mitigate atmospheric greenhouse gas emissions. Loss of Arctic sea ice due to climate warming represents the primary long-term threat to polar bears and is expected to have negative effects on the species throughout much of its circumpolar range, although the timing and magnitude of such effects are expected to vary across different regions of the Arctic as a function of sea-ice dynamics, ecology, human activity, and other factors (Amstrup et al. 2008, 2010; Atwood et al. 2015). Currently, the status of the world's 19 polar bear subpopulations is variable. Multiple lines of evidence suggest that the Southern Beaufort Sea subpopulation (e.g., Hunter et al. 2010, Regehr et al. 2010, Bromaghin et al. 2015) and Western Hudson Bay subpopulation (Stirling et al. 1999, Regehr et al. 2007, Lunn et al. 2014) have exhibited negative ecological and demographic effects associated with climate change. Several subpopulations are either increasing (McClintock Channel) or stable (Davis Strait, Foxe Basin, Northern Beaufort Sea, Southern

Hudson Bay, and Western Hudson Bay) despite sea-ice loss (e.g., Stirling et al. 2011, Stapleton et al. 2012, Rode et al. 2014, Obbard et al. 2015) and others are declining (Southern Beaufort Sea, Baffin Bay, and Kane Basin) or data deficient (Viscount-Melville, Norwegian Bay, Laptev Sea, Lancaster Sound, Kara Sea, East Greenland, Chukchi Sea, Barents Sea, and Arctic Basin), thus their status is unknown (Obbard et al. 2010).

Timely and accurate harvest data, biological samples from the harvest, and other scientific data such as abundance, trend, and productivity, are fundamental to sound wildlife management and conservation. For polar bears in particular, such data are important to assess risks in light of the presence of climate-related stressors (e.g., Atwood et al. 2015). For long-lived species with low reproductive capacity, such as polar bears, relatively small changes in harvest numbers can affect population trend (Taylor et al. 1987, Regehr et al. 2015) because adult female survival is a primary determinant of population status (Eberhardt 2002). Taylor et al. (2008) recognized the importance of maintaining sustainable harvest rates for the adult female component of polar bear subpopulations due to their polygynous mating system, extended maternal care, and age-specific survival rates. For example, Regehr et al. (2015) found that the reproductive value of an adult female with dependent yearlings is approximately twice that of a two-year-old female. Studies suggest that the male component of polar bear subpopulations can be reduced significantly before fecundity is affected because few males are needed to mate with all reproductive females. Thresholds below which male numbers affect reproductive success, however, are not precisely known and likely depend on population density and ecology (Molnár et al. 2008). For these reasons, polar bear harvests are often managed for a 2:1 male-to-female sex ratio (Taylor et al. 2008). Empirical data suggest that this approach is successful in maintaining a viable subpopulation size as long as harvest data are accurate and the harvest rate is sustainable.

The State of Alaska, through its Department of Fish and Game (ADF&G), has a mission to conserve and enhance Alaska's wildlife and habitats and provide for a wide range of sustainable uses and benefits for Alaskans. Consistent with this mission, ADF&G committed to assist in ongoing polar bear conservation efforts and awarded a Section 6 Endangered Species Act (ESA) grant for the project entitled, "Co-management of the Alaskan Harvest of the Alaska–Chukotka Polar Bear Subpopulation: How to Implement a Harvest Quota."

This ESA Section 6 project's overall objective is to support the Alaska Nanuuq Commission (ANC) during their co-management efforts with the U.S. Fish and Wildlife Service (USFWS) to implement a harvest quota for the Alaskan subsistence harvest of the Alaska–Chukotka polar bear subpopulation. Elements of the Alaska–Chukotka polar bear harvest quota are scheduled to be implemented January 1, 2017. A draft five-year implementation plan has been developed by USFWS and ANC (Appendix B). Successful implementation of the harvest quota, and the resulting long-term conservation of the Alaska–Chukotka polar bear subpopulation, depends on fulfillment of the objectives described in the draft plan and reflected in a joint statement issued by ANC and USFWS, particularly capacity development within ANC, educational outreach

regarding harvest management, and community participation (2014 Joint Statement of USFWS and ANC, 6th Meeting of U.S.–Russia Polar Bear Bilateral Commission; Appendix C).

Together USFWS and ANC are responsible for the co-management of the Alaska–Chukotka polar bear subpopulation. The primary purposes of this technical report are: 1) assess the accuracy of polar bear harvest data contained within USFWS's Marking, Tagging, and Reporting Program (MTRP) data base; 2) identify areas requiring improvement; 3) present this information at a workshop with stakeholders; 4) recommend ways to improve the accuracy, completeness, and timeliness of harvest data, 5) determine how best to implement recommendations to fulfill the obligations of the Alaska–Chukotka polar bear harvest quota established by the U.S.–Russia Agreement; and 6) finalize a report of workshop proceedings representing the views of the parties for consideration by ANC and USFWS as they develop co-management structures. Together USFWS and ANC have developed an internal "draft" Shared Harvest Management Plan (SHMP) designed to serve as the implementation framework.

MARINE MAMMAL PROTECTION ACT AND THE MARKING, TAGGING, AND REPORTING PROGRAM

Enacted in 1972, MMPA placed a moratorium on the "taking" of marine mammals. "Take" is defined as harass, hunt, capture, collect, or kill. An exemption under Section 101(b) was included for any Indian, Aleut, or Eskimo who resides in Alaska and who dwells on the coast of the North Pacific Ocean or the Arctic Ocean. This exemption allows the non-wasteful "take" of marine mammals for subsistence purposes, or for creating and selling authentic Native articles of handicraft and clothing.

Congress amended MMPA in 1983, to include a new provision (i) under section 109 that specifically provides the authority to the Secretary to "prescribe regulations requiring the marking, tagging, and reporting of animals taken pursuant to section 101(b)." Based on this language, USFWS amended its implementing regulations within 50 CFR 18, to establish marking, tagging, and reporting regulations (Appendix D). This assists USFWS in: 1) monitoring the subsistence and handicraft harvest of polar bears, sea otters, and walrus; 2) obtaining essential biological data needed to manage these species or stocks; and 3) helping to prevent the illegal take, trade, and transport of specified raw marine mammal parts.

OVERVIEW OF THE MARKING, TAGGING AND REPORTING PROGRAM (POLAR BEAR)

The final rule establishing MTRP was published in the Federal Register on June 28, 1988 (53 FR 24283) and became effective on October 28, 1988. To ensure subsistence harvested animals could be tagged in compliance with these new regulations, USFWS established a network of local residents, primarily Alaska Natives, who could tag subsistence harvested animals at the locality where animals are harvested. USFWS provides training, a MTRP training manual (Cramer 2007) and "Tagging Kits" to taggers. The manual and training explains the information

to be collected from hunters, how the information is collected and recorded, and the process for tagging hides and skulls. The taggers affix a plastic tag to the hides and skulls of polar bears presented for tagging. The plastic tags are interlocking, uniquely numbered, and nonremovable. At the time of tagging, information pertaining to the take such as sex, location, date of kill, information on other bears observed, family groups with cubs, or body condition is collected and recorded on a tagging certificate. The MTRP training manual (Cramer 2007) includes a description of the database software (Microsoft Access®), file structure, computer network location, personnel with access to the database, input fields, error checking, maintenance, and generic report production/file locations. A copy of the polar bear harvest certificate (data inputs) is found in Appendix E and the MTRP training manual is available on request.

It is the responsibility of the person who harvested the polar bear or a person who participated in the harvest, if that person has been given the skull or the hide by the hunter, to have the required parts, skull and hide, tagged within 30 days of the harvest. Untagged polar bear, walrus, and sea otter parts may not be possessed, transferred, transported, or taken out of Alaska. The hunter has 30 days during which he may possess the hide or skull in order to obtain the required tags.

In order for any product from a harvested polar bear to be sold, traded or otherwise transferred to a non-Alaska Native, the item must be significantly altered and made into an authentic Alaska Native handicraft.

Failure to comply with this rule could result in seizure of the parts (skull and/or hide) and penalties of up to $10,000 for each infraction may be assessed. Information obtained from the program is publicly available and posted on USFWS's Marine Mammals Management Office website at "alaska.fws.gov/fisheries/mmm/index.htm"

In addition to polar bears, USFWS's MTRP also requires tagging of sea otter skulls and pelts, and Pacific walrus tusks. This harvest monitoring program has generated valuable harvest statistics on these three species over time. Each program requires a significant investment in staff time and dedication that directly affects the quality of data collected.

The USFWS recognizes that tagging compliance is less than 100% and continually works with subsistence hunters to improve the quality of harvest data. For example, an internal review of compliance with MTRP requirements for walruses found that "compliance with the tagging regulations by Alaska Native hunters appears to be uneven and needs improvement, in at least some mainland Alaska communities." Overall, MTRP walrus tagging compliance is believed to be high in Little Diomede, Savoonga, and Gambell, where USFWS has maintained a high profile presence during the spring harvest by operating a supplementary Harvest Monitoring Program in which additional data and samples are collected directly from the hunters as they return from the hunt. As with any extensive network of cooperators working in a cross-cultural environment, MTRP requires ongoing attention by USFWS staff to produce the most reliable and valid

estimates of annual marine mammal harvest possible. Changes made to MTRP in 2004 included improved payment procedures for taggers and better communication and these changes continue today.

In 2005, USFWS reviewed MTRP and its Walrus Harvest Monitoring Program. This internal review found that the programs were sound and, with minor exceptions, produce reliable information. Internal communication and coordination within USFWS, was found to need improvement. Also in 2005, the walrus MTRP held its own internal review and planning process and committed to maintain and improve MTRP as the primary harvest assessment mechanism for marine mammals under USFWS jurisdiction in Alaska.

This review of tagging compliance is specific to the polar bear MTRP database. It is similar to those previously conducted for walruses, except that it is not internal but has been expanded to include stakeholders (other individuals or organizations effected by, or with an interest in, this project). Furthermore, this review seeks to provide information and recommendations relevant to the new objective of effectively regulating harvest under the U.S.–Russia Agreement.

UNITED STATES–RUSSIA POLAR BEAR AGREEMENT

As noted above, USFWS and Alaska Native subsistence hunters are facing a new challenge in ensuring the harvest of polar bears from the Chukchi Sea does not exceed any annual taking limits established under the U.S.–Russia Agreement. Timely and complete reporting of harvest of bears is crucial to U.S. compliance with take limits established under the U.S.–Russia Agreement.

Signed in 2000, the U.S.–Russia Agreement is a culmination of discussions begun in the early 1990s between the U.S. and Russia to address a growing concern over illegal harvest of polar bears in Russia. Concurrently, the U.S.–Russia Agreement, established opportunities for a legal managed harvest for subsistence hunters in the Russian Far East who had been denied access to polar bears since the 1950s when Russia banned all polar bear hunting. Under the terms of the Agreement and as implemented in the U.S. through Title V of the MMPA (enacted as Section 902 of Public Law 109:479 in 2007), USFWS shares management authority for the taking of polar bears from the Chukchi Sea with ANC. In addition to establishing sustainable harvest levels and annual harvest quotas, the U.S.–Russia Agreement in Article 6 prohibits the taking of females with cubs, cubs less than one year of age, and bears in dens including bears preparing to enter dens or who have just left dens. Also prohibited is the use of aircraft, large motorized vessels, and large motorized vehicles; the use of poisons, traps or snares for the purpose of taking polar bears.

A four member U.S.–Russia Polar Bear Commission (Commission) was established under the U.S.–Russia Agreement. The two members for the U.S. include a Federal agency representative and a representative of Native subsistence user interests. The two U.S. Commissioners must

agree on a management action in order to put a recommendation before the Commission. Each Commissioner has an alternate Commissioner.

The Commission has been meeting annually since 2009; during the first meeting they established a Scientific Working Group (SWG) to provide advice on management actions being considered. The SWG has equal representation from the U.S. and Russia of polar bear scientists and experts on subsistence use. At its 2010 meeting, the Commissioners heard from the SWG that a sustainable harvest level was recommended for the subpopulation of polar bears (USFWS 2010). After much debate and discussion, the Commission approved an annual take of up to 58 polar bears per year, of which no more than 19 can be females. Under the terms of the Agreement, this annual take limit was split evenly between the U.S. and Russia. The Commissioners further agreed to defer implementation of this annual take limit until the necessary enforcement mechanisms were in place.

At their 2011 meeting, the Commissioners further agreed to a SWG recommendation for a multiyear quota system (MQS). This approach established upper limits on both the total number of bears and the number of female bears that could be taken in a given year. It also identified an advantage of including harvest credits and debits that could be applied in future years. This approach allowed unused hunting opportunities to be carried into subsequent years or reductions in subsequent years if the annual allocation were exceeded, reflecting annual variability in polar bear availability. Annual flexibility of 25% was advised and agreed upon provided the 5-year total (290), based on the 58 bears per year sustainable harvest level, was not exceeded. The 2012 Commission meeting (USFWS 2012) advised continued development and finalization of a shared harvest management plan (SHMP) by USFWS and ANC. The primary purposes of SHMP would be to describe the allocation of the harvest quota among communities, develop harvest regulations and prohibitions, determine the application of the MQS and annual adjustments to the quota, and implement the tagging and reporting requirement. The Commission determined that harvest reporting would be by calendar year, reaffirmed the sustainable harvest limit of 58 bears, adopted MQS and directed it be incorporated into SHMP. The criteria and formula for making annual adjustments to MQS for subsequent years, based on harvest debits or credits, was described in the 2012 Commissioner's report (USFWS 2012) and can also be found in the draft SHMP. At each of its annual meetings since 2011 the Commission, based on advice from SWG, has not changed the sustainable harvest limit (USFWS 2013, USFWS 2014).

Implementation of this harvest limit poses challenges that must be met by USFWS, ANC, and subsistence hunters to ensure harvest, in combination with other human-caused mortality, does not exceed the limit established by the Commission. Critical to this effort is the need for timely harvest monitoring and reporting, and implementation approaches for Alaska are found in the Recommendations section.

OTHER DOMESTIC AND INTERNATIONAL FRAMEWORKS

In 1973, the five nations forming the Polar Bear Range States (i.e., Canada, Denmark (on behalf of Greenland), Norway, Russia, and the United States) signed the 1973 Agreement on the Conservation of Polar Bears (1973 Agreement), a multilateral treaty that generally prohibits commercial hunting of polar bears. However, under Article III(d) of the 1973 Agreement, the take of polar bears by local people under certain circumstances is allowed, as is the take for scientific and conservation purposes, and to prevent disturbance of the management of other living resources, such as in defense of life. Because of the importance polar bears have in the cultural, nutritional, and subsistence life of Northern people (including Alaska Natives), the U.S. has implemented the 1973 Agreement through domestic legislation within the MMPA, which provides an exception to the prohibitions on hunting of polar bears, for Alaska Natives who are taking bears for the purposes of subsistence or handcrafts. The number of polar bears that may be taken is not restricted under MMPA as long as the take is not considered wasteful. There are examples, however, of self-imposed limits that are more restrictive than those in MMPA. The Inupiat of Alaska and Inuvialuit of Canada have established a voluntary quota for harvesting polar bears from the shared Southern Beaufort Sea subpopulation to ensure the harvest remains sustainable.

In 2007, the MMPA was amended by adding Title V—Polar Bears establishing the ability to regulate the harvest of the "Alaska–Chukotka Polar Bear Population" as necessary for conservation. Title V implements the U.S.–Russia Agreement so that the adopted harvest limit can be enforced. Enforcement in the U.S. may occur by local ordinances, by the Federal government, or by both. The SWG recommended the 58 polar bear annual harvest quota, including no more than 19 females, with the quota administered through a MQS as described in SHMP. This quota has been reaffirmed by the U.S. and Russia every year since 2010.

Even without the addition of Title V, the MMPA allows the Federal government to regulate harvest of all Alaskan polar bear subpopulations if it is deemed necessary to recover or conserve the species because of their listing status as "threatened" under the ESA. The MMPA, by definition, finds that species that are listed as either "threatened" or "endangered" under the ESA are then also considered to be "depleted" under the MMPA. A depleted designation allows for the promulgation of harvest regulations by USFWS if necessary to recover or conserve the species. Therefore, since 2008 when polar bears were listed as a threatened species under the ESA, protections, including prohibitions on take, could have been promulgated. However, like the MMPA, the ESA allows for the subsistence harvest of polar bears, and also like the MMPA, subsistence hunting may be regulated if the taking is found to materially and negatively affect the threatened or endangered species. Under MMPA and ESA, the regulation of harvest of polar bears requires a process for public notice and comment prior to promulgating regulations.

In 2013, the Secretary of the Interior issued a special rule under section 4(d) of the ESA, to resolve any differences between the MMPA and ESA requirements. The rule adopted the existing conservation regulatory requirements under the MMPA and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES; 27 U.S.T. 1087) as the primary regulatory provisions for the polar bear, including subsistence harvest by Native Alaskans. The USFWS found that the MMPA provided for the conservation of the polar bear by fostering cooperative relationships with Alaska Natives who participate with in conservation programs for the benefit of the species (US–Russia Bilateral Agreement, Alaska Nanuuq Commission, and the Inuvialuit and Inupiat Agreement for Conservation of Polar Bears in the Southern Beaufort Sea, North Slope Borough).

Study Area

Article 3 of the U.S.–Russia Agreement describes the boundaries to which the Agreement applies as the waters and adjacent coastal areas subject to national jurisdiction in the area of the Chukchi, East Siberian and Bering Seas, bounded on the west by a line extending north from the mouth of the Kolyma River, on the east by a line extending north from Point Barrow, and on the south by a line describing the southernmost annual formation of drift ice (Figure 1). The Parties (countries) may, by mutual agreement, modify the area to which the Agreement applies. In Alaska, the draft SHMP indicates that the eastern boundary should extend from Icy Cape and offshore. Furthermore, the Alaska–Chukotka subpopulation is known to overlap with the Southern Beaufort Sea subpopulation. The major Alaska villages within this area that traditionally harvest polar bears include: Point Lay, Point Hope, Kivalina, Kotzebue, Shishmaref, Wales, Brevig Mission, Little Diomede, Nome, Savoonga, and Gambell.

Although this analysis of the harvest database focused on Chukchi and Bering seas villages, Beaufort Sea villages have similar harvest data issues, therefore we, in our initial scoping, included information regarding incomplete harvest reporting statewide.

Approach

We used two approaches to evaluate the accuracy of the MTRP database as it relates to the objectives identified in the Introduction. First, we conducted a literature review of reports and publications that presented polar bear harvest data over the study period with an emphasis on the more recent publications to determine whether incomplete reporting was an issue. Second, we used the results of the literature review to guide an examination of the MTRP database.

In accord with their management responsibility for polar bears, USFWS participates in public and technical forums designed to share information collected through the MTRP and other management and research projects that produce reports relevant to this review. For example, USFWS participates with the Canadian Federal–Provincial Polar Bear Technical Committee

(PBTC), for the shared responsibility of the Southern Beaufort Sea polar bear subpopulation, at their annual meetings. The USFWS also provides annual reports to the U.S. Marine Mammal

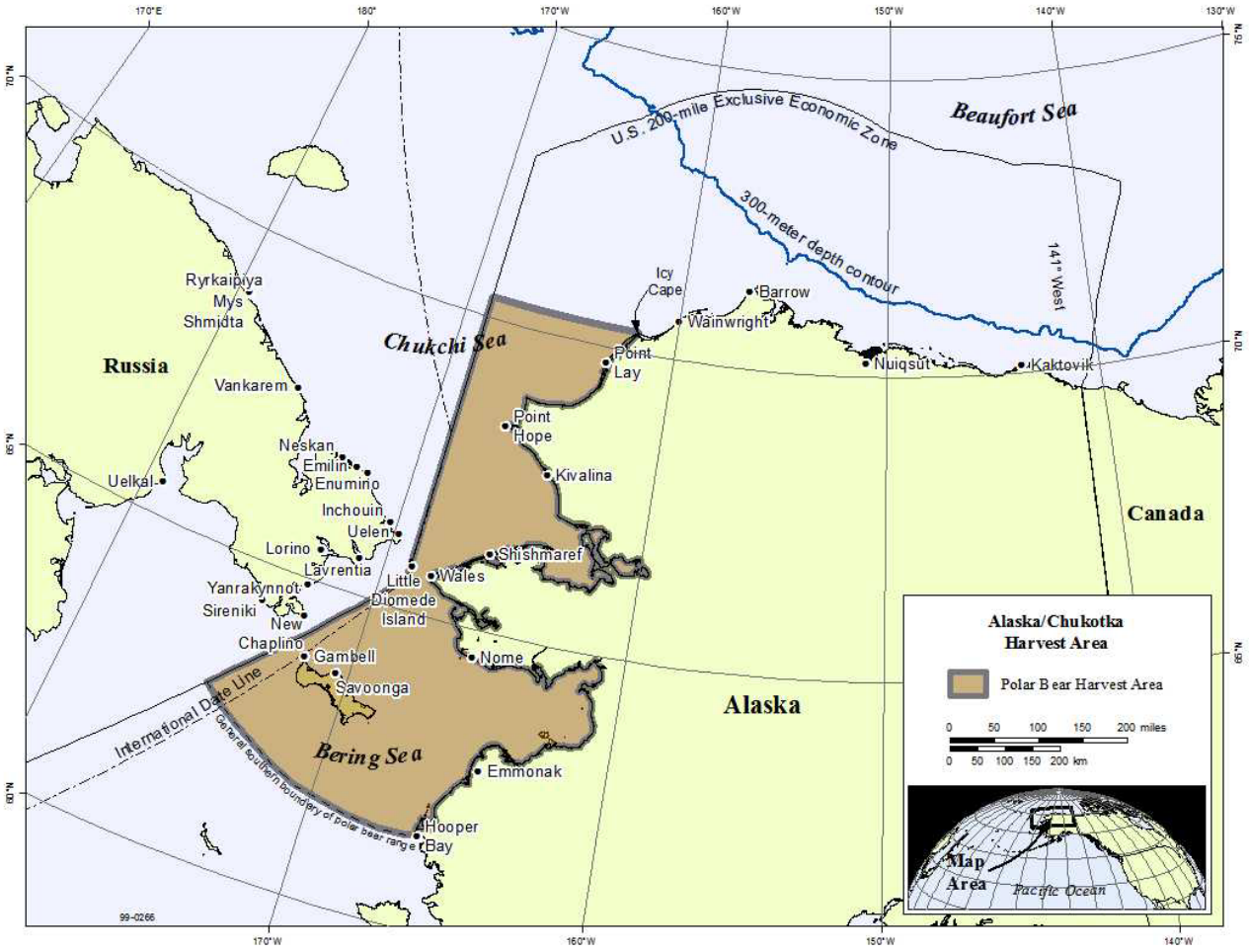

Figure 1. Map of the range of the Alaska–Chukotka polar bear subpopulation in U.S. waters used for management purposes.

Commission for their preparation of the Commission's annual report to Congress on implementation of the MMPA. The USFWS, as a technical advisor to the North Slope Borough, reports on harvest data and management projects that support of the Inuvialuit and Inupiat user group agreement for conservation of Southern Beaufort Sea polar bears, and its voluntary quota for the subsistence harvest of polar bears from this subpopulation. Internationally, the U.S. is a party to the 1973 Agreement on the Conservation of Polar Bears. In order to provide advice and information to the 5-nation parties, USFWS employs biologists who participate as members to the International Union for Conservation of Nature and Natural Resources (IUCN) Polar Bear Specialist Group (PBSG) that meets on a three to five-year cycle, or as determined to be necessary. Proceedings of the PBSG are published and include updated information on each country's management, including harvest data, and research programs (see: http://pbsg.npolar.no/en/).

Methods

LITERATURE REVIEW

Harvest summaries were not available solely for the Alaska–Chukotka subpopulation within existing reports and publications, therefore we reviewed the combined reports of harvest data for the Alaska–Chukotka and Beaufort Sea subpopulations combined to determine the level at which incomplete reporting of sex and age occurred. This included harvest data analysis reported for the Inuvialuit–Inupiat Agreement for Management of Polar Bears in the Southern Beaufort Sea reported by Brower et al. 2002.

ANALYSIS OF MTRP DATA, 1988 TO 2014

The MTRP database was queried to determine the number of polar bears harvested by year, by month of year, the number tagged (hide or skull), the date of tagging, and the number for which sex was reported. The harvest data is presented here are by calendar year from January 1 to December 31, which is also the reporting period for the U.S.–Russia Agreement and the draft SHMP.

Within the MTRP database, data quality is ranked 1 to 5, with 1 the highest indicating that the day of harvest was known and recorded. Data quality 2 is when the month of harvest was known but the day is approximate and may be within three or four days of the true harvest day. Data qualities 3 to5 were for harvests dates that were more uncertain (i.e., general season or year) and were not included in the analysis, except for the analysis of the chronology of the harvest where harvest date quality 3 was included when the season of kill was known and the date within the season could be approximated. Data for 1988, the year of inception for MTRP, was not included because this was a transition year between pre-regulatory and the regulatory start of MTRP and methods were not consistent.

Included in this analysis are polar bears taken by Alaskan Native hunters for subsistence and defense of life and public safety, polar bears struck and lost during hunting, and polar bears known to have been harvested but not tagged. Not included in this analysis were orphaned cubs-of-the-year (COYs) sent to a public display facility after the mother was harvested (n = 6), polar bears that died of natural causes, research related mortalities (n = 0), non-Native defense of life and public safety cases including lethal takes by industry (n = 5), bears euthanized for humane reasons, untagged hides found at village drying racks or the dump (n = 2), and law enforcement illegal take cases (n = 3).

Results

LITERATURE REVIEW

Using a sample of eight years between 1998 and 2013 from available reports, the annual percentage of the combined harvest where sex was known ranged from 75% to 94%. In a sample of eight years between 1998 and 2011, and the annual percentage of teeth collected for aging ranged from 29% to 90% (Table 1).

Table 1. Summary of the percentage of sex and age data reported by year(s) and authors of the Alaska polar bear harvest from published reports. Symbol (--) indicates no data.

Year	Known sex (%)	Teeth (%)	Source
1998/99	94	90	Evans et al. 2000
2000/01	68	34	Evans et al. 2002, Schliebe et al. 2002
2001/02	--	67	Schliebe et al. 2004
2002/03	--	41	Schliebe et al. 2004
2005/06	86	44	Schliebe et al. 2007
2008/09	75	36	DeBruyn et al. 2010
2009/10	82	29	DeBruyn et al. 2010
2010/11	84	46	DeBruyn et al. 2012
2012	81	--	Hamilton et al. 2014
2013	87	--	Hamilton et al. 2014

ANALYSIS OF MTRP DATA

Harvest Trend

During the MTRP period, 1988 to 2014, there has been a general decline in harvest. A total of 1,167 polar bears from the Alaska–Chukotka subpopulation have been harvested (Table 2, Figure 2) and although the average annual take is 43 bears (SD $\pm$ 22.5) per year, the number of bears harvested (and reported) has declined each decade. The average annual reported take was 92 in the 1980s, 50 in the 1990s, and 33 in the past 10 years. The reasons for the decline in harvest are not known but may be related to: 1) changing climatic conditions (i.e., less ice and worse weather) resulting in shorter hunting season and reduced access to bears near communities, 2) fewer bears available due to a higher than reported Russian harvest; and 3) fewer active Alaskan Native hunters.

Sex of Harvested Bears

Sex was reported for 1,044 of the 1,167 bears (89.5%) but could not be determined for the remaining 123 bears (10.5%). Of the 1,044 known sex bears, 697 (66.7%) were males and 347 (33.3%) were females resulting in a 2:1 male to female harvest ratio overall, however, annual sex ratios of the harvest were highly variable with up to 100% males in some years (44% to 100%; SD ± 10.8%). No more than 56% females, however, were harvested in any year (0% to 56%; SD ± 10.3%, Table 2, Figure 2).

Annual rates of unreported sex ranged from 0% to 24% (SD ± 7.5%, Table 2). Incomplete reporting of sex is a concern, but we have no reason to think that the incomplete reporting is biased. That is, we have no reason to believe that hunters are purposefully not reporting females.

To evaluate trends in female harvest, we used linear regression weighted by annual harvest totals. The slope of the linear regression was close to but not significant at $\alpha = 0.05$. The data did not fit the linear model well ($R^2 = 0.115$, $p = 0.045$, Figure 3). The harvest rate of female polar bears appears to have been relatively stable over time, although it may be declining currently.

Table 2. Annual harvest of the Alaska–Chukotka polar bear subpopulation by sex, 1988 to 2014.

Year	Number of Males (%)	Number of Females (%)	Number of Unknown (%)	Annual total
1988	28 (52)	23 (43)	3 (6)	54
1989	29 (66)	15 (34)	0	44
1990	48 (59)	21 (26)	12 (15)	81
1991	38 (76)	12 (24)	0	50
1992	30 (71)	10 (24)	2 (5)	42
1993	22 (50)	15 (34)	7 (16)	44
1994	41 (50)	37 (45)	4 (5)	82
1995	42 (69)	15 (25)	4 (7)	61
1996	8 (73)	3 (27)	0	11
1997	24 (60)	11 (28)	5 (13)	40
1998	16 (52)	14 (45)	1 (3)	31
1999	57 (64)	26 (29)	6 (7)	89
2000	19 (63)	6 (20)	5 (17)	30
2001	35 (54)	19 (29)	11 (17)	65
2002	41 (62)	19 (29)	6 (9)	66
2003	16 (55)	8 (28)	5 (17)	29
2004	6 (40)	7 (47)	2 (13)	15
2005	19 (46)	12 (29)	10 (24)	41
2006	36 (62)	17 (29)	5 (9)	58
2007	29 (57)	17 (33)	5 (10)	51
2008	7 (33)	9 (43)	5 (24)	21
2009	8 (62)	4 (31)	1 (8)	13
2010	7 (58)	3 (25)	2 (17)	12
2011	32 (74)	9 (21)	2 (5)	43
2012	34 (59)	12 (21)	12 (21)	58
2013	17 (65)	3(12)	6 (23)	26
2014	8 (80)	0	2 (20)	10
Total	**697 (60)**	**347 (30)**	**123 (11)**	**1,167**

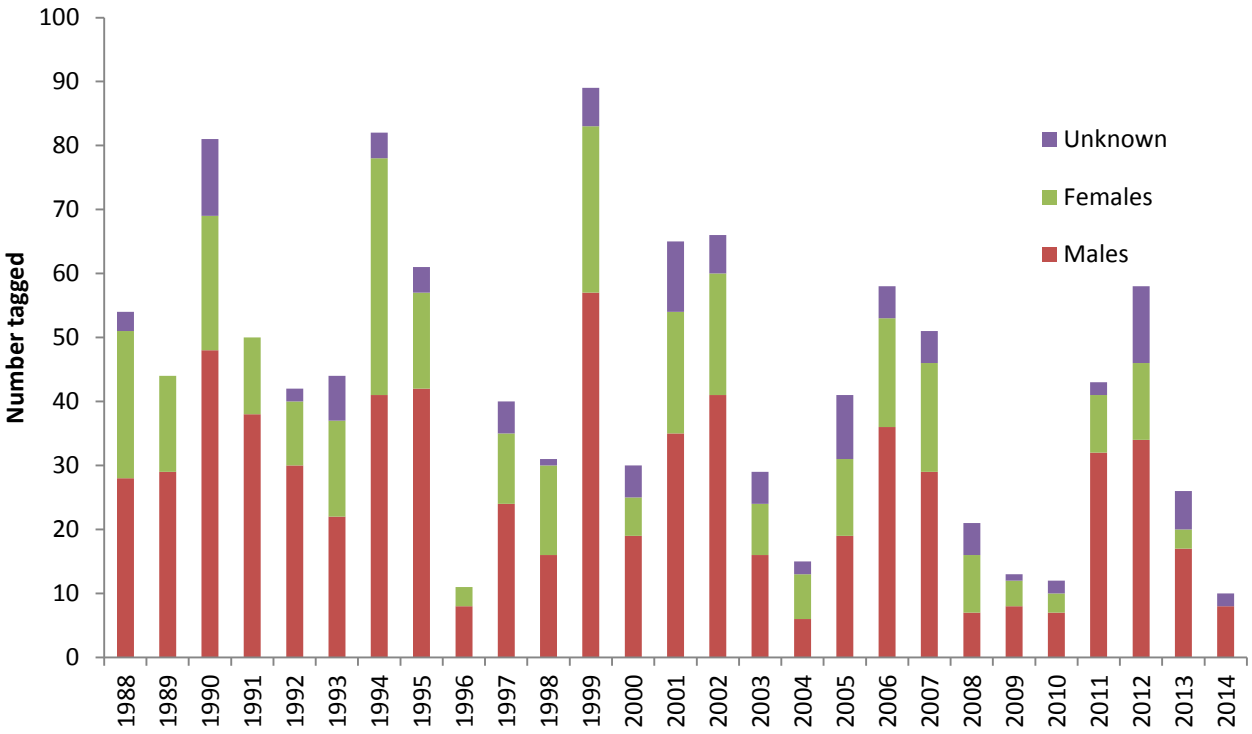

Figure 2. Annual Alaska–Chukotka polar bear harvest by sex, 1988 to 2014.

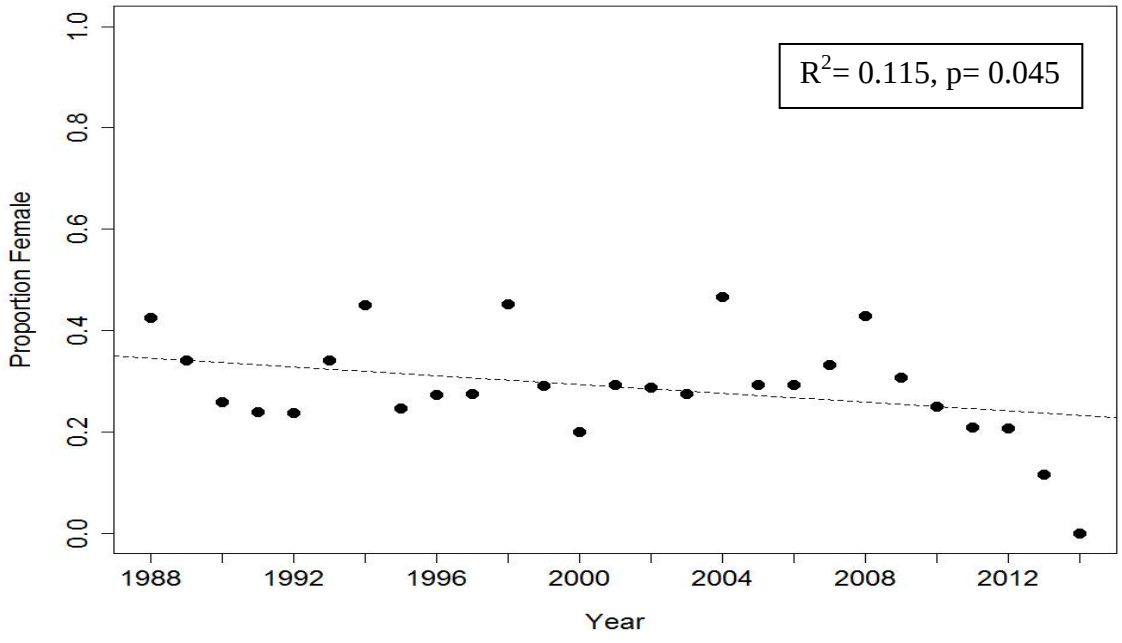

Figure 3. Annual proportion of females of all harvested polar bears in the Alaska–Chukotka subpopulation, 1988 to 2014.

To determine if there was a trend in the reporting of sex, we used a weighted linear regression model. We found a significant increasing trend in the number of unknown sex bears during the study period ($R^2 = 0.233$, $p = 0.006$, Figure 4).

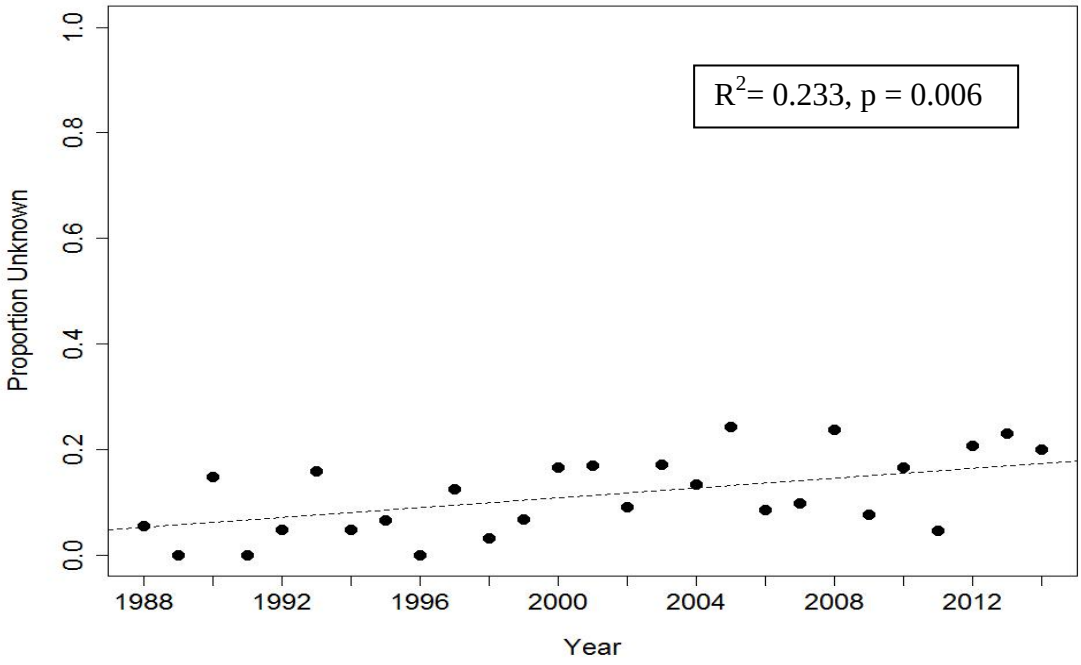

Figure 4. Trend in the proportion of unknown sex of polar bears harvested from the Alaska–Chukotka subpopulation, 1988 to 2014.

Presence of Sex Identifiers

Sex and identifiers of sex (i.e., baculum, penis sheath, penal hairs for males; teats, vaginal tissue for females) are recorded on harvest certificates at the time of tagging. For 1,044 bears with sex data of any kind, 481 (41%) included identifiers of sex. Of the 347 reported females 161 (46%) included identifiers of sex. Of the 697 males, 320 (46%) included identifiers of sex (Table 3). Interannual variation of sex identifiers ranged from 13% to 100% (SD ± 29.2%) in females, 18% to 92% (SD ± 26.6%) in males, and 14% to 87% (SD ± 22.8%) for both sexes.

Tagging Compliance

Of the 1,167 bears harvested, tags were affixed to the hide, the skull, or both of 1,022 (88%; SD ± 7.5%) of them (Table 4). For 883 (86%; SD ± 13.3%) of the bears tagged, both hides and skulls were tagged. For 123 (12%; SD ± 7.6%) of the bears tagged, only hides tagged; and for 14 (1%; SD ± 2.4%), only skulls were tagged. Finally, for 145 (12.4%) harvested bears neither the skulls nor hides were tagged (Table 4). Of these 145 untagged bears 82 (56.6%), including bears

struck and lost, were identified based upon personal communication from sources other than the hunter.

Table 3. Annual harvest of Alaska–Chukotka polar bears that reported sex and had sex identifiers present, 1988 to 2014.

Year	Total harvest	Number of males and females w/ sex identifiers (%)	Females reported total	Number of females w/sex identifiers (%)	Males reported total	Number of males w/sex identifiers (%)	Number of unknown sex
1988	54	11 (20)	23	3 (13)	28	8 (29)	3
1989	44	12 (27)	15	4 (27)	29	8 (28)	0
1990	81	24 (30)	21	5 (24)	48	19 (40)	12
1991	50	18 (36)	12	3 (25)	38	15 (39)	0
1992	42	11 (26)	10	3 (30)	30	8 (27)	2
1993	44	6 (14)	15	2 (13)	22	4 (18)	7
1994	82	19 (23)	37	5 (14)	41	14 (34)	4
1995	61	17 (28)	15	8 (53)	42	9 (21)	4
1996	11	8 (73)	3	2 (67)	8	6 (75)	0
1997	40	23 (58)	11	10 (91)	24	13 (54)	5
1998	31	19 (61)	14	9 (64)	16	10 (63)	1
1999	89	41 (46)	26	15 (58)	57	26 (46)	6
2000	30	7 (23)	6	3 (50)	19	4 (21)	5
2001	65	26 (40)	19	8 (42)	35	18 (51)	11
2002	66	33 (50)	19	9 (47)	41	24 (59)	6
2003	29	20 (69)	8	8 (100)	16	12 (75)	5
2004	15	13 (87)	7	6 (86)	6	7 (100)	2
2005	41	26 (63)	12	10 (83)	19	16 (84)	10
2006	58	49 (84)	17	16 (94)	36	33 (92)	5
2007	51	40 (78)	17	16 (94)	29	24 (83)	5
2008	21	6 (29)	9	4 (44)	7	2 (29)	5
2009	13	5 (38)	4	1 (25)	8	4 (50)	1
2010	12	9 (75)	3	3 (100)	7	6 (86)	2
2011	43	20 (47)	9	4 (44)	32	16 (50)	2
2012	58	11 (19)	12	3 (25)	34	8 (24)	12
2013	26	5 (19	3	1 (33)	17	4 (24)	6
2014	10	2 (20)	0	0 (0)	8	2 (25)	2
Total	**1,167**	**481 (41)**	**347**	**161 (46)**	**697**	**320 (46)**	**123**

Table 4. Annual harvest of Alaska–Chukotka polar bears where hide, skull, both, or neither were tagged, 1988 to 2014.

Year	Total bears	Number of bears tagged (%)	Number of both hides and skulls (%)	Number of only hides (%)	Number of only skulls (%)	Number of neither hide nor skull (%)
1988	54	51 (94)	50 (93)	0 (0)	1 (2)	3 (6)
1989	44	43 (98)	39 (89)	4 (9)	0 (0)	1 (2)
1990	81	68 (84)	60 (74)	8 (10)	0 (0)	13 (16)
1991	50	49 (98)	42 (84)	7 (14)	0 (0)	1 (2)
1992	42	38 (90)	31 (74)	7 (17)	0 (0)	4 (10)
1993	44	37 (84)	32 (73)	4 (9)	1 (2)	7 (16)
1994	82	80 (98)	71 (87)	9 (11)	0 (0)	2 (7)
1995	61	57 (98)	49 (80)	6 (10)	2 (3)	4 (7)
1996	11	8 (73)	4 (36)	4 (36)	0 (0)	3 (27)
1997	40	34 (85)	29 (73)	3 (8)	2 (5)	6 (15)
1998	31	28 (90)	27 (87)	1 (8)	0 (0)	3 (10)
1999	89	84 (94)	72 (81)	12 (13)	0 (0)	5 (6)
2000	30	24 (80)	18 (60)	6 (20)	0 (0)	6 (20)
2001	65	45 (69	37 (57)	7 (11)	1 (2)	10 (21)
2002	66	60 (91)	56 (85)	4 (6)	0 (0)	6 (9)
2003	29	24 (83)	22 (76)	1 (3)	1 (3)	5 (17)
2004	15	15 (100)	11 (73)	3 (20)	1 (7)	0 (0)
2005	41	33 (80)	26 (63)	7 (17)	0 (0)	8 (10)
2006	58	53 (91)	50 (86)	3 (5)	0 (0)	5 (9)
2007	51	42 (82)	41 (80)	1 (2)	0 (0)	9 (18)
2008	21	15 (71)	12 (57)	3 (14)	0 (0)	6 (28)
2009	13	11 (85)	11 (85)	0 (0)	0 (0)	2 (15)
2010	12	9 (75)	8 (67)	1 (8)	0 (0)	3 (25)
2011	43	38 (88)	27 (63)	7 (16)	4 (9)	10 (12)
2012	58	48 (83)	38 (66)	10 (17)	0 (0)	10 (17)
2013	26	19 (73)	14 (54)	4 (15)	1 (4)	7 (27)
2014	10	9 (90)	6 (60)	1 (10)	0 (0)	1 (10)
Grand Total	**1,167**	**1022 (86)**	**883 (73)**	**123 (11)**	**14 (1)**	**145 (14)**

The annual percentage of untagged bears ranged between 0% to 29% (SD ± 8%). While most bears are tagged and their data included within the MTRP database, an average of 10% remain untagged, however, as much information as possible regarding that bear is obtained from personal communication with village taggers or hunters, USFWS representatives, other agency

personnel, or other reputable sources and documented on USFWS harvest certificates. Despite these efforts, not all harvested bears are recorded. The magnitude of killed but unknown bears is thought to be minimal, however the total harvest number should be considered as a minimum.

To evaluate for a trend in tagging over time, we used a weighted linear regression and found that although the rate of tagging compliance overall was high, there was a significant decreasing trend with time: $R^2 = 0.171$, $p = 0.0185$ (Figure 5).

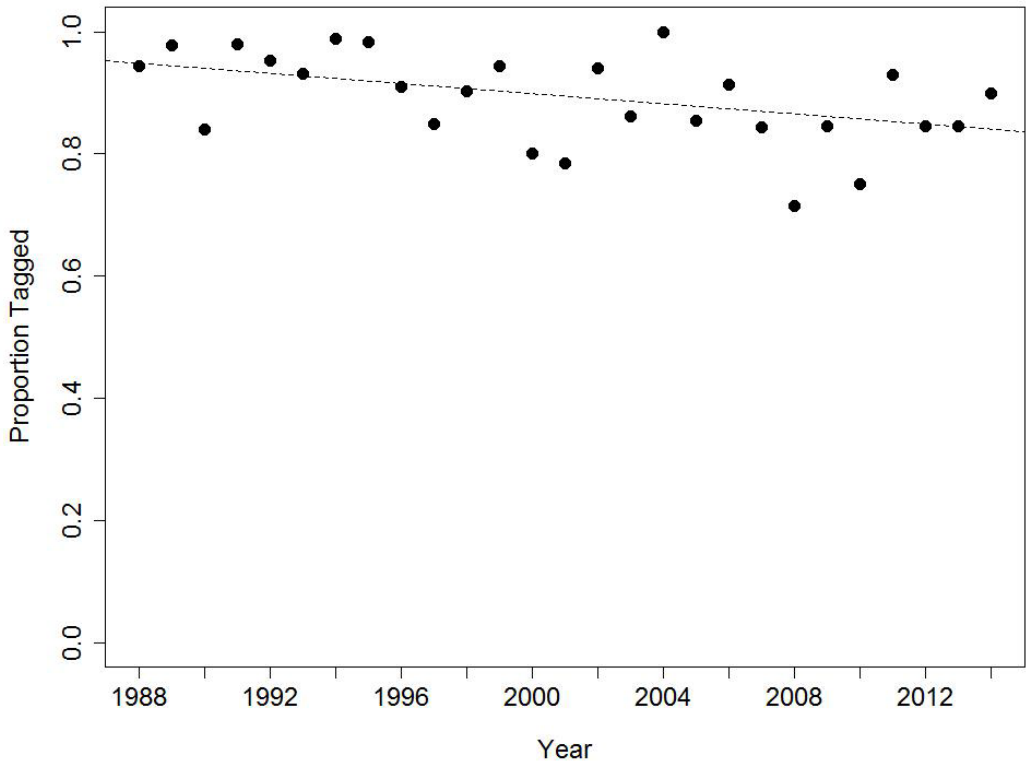

Figure 5. Trend in the proportion of harvested polar bears that were tagged in the Alaska–Chukotka subpopulation, 1988 to 2014.

Timing of Tagging

We evaluated the timing of reporting and tagging within the mandatory 30-day period required of hunters to present polar bear hides and skulls for tagging. We used kill date data quality 1, 2, and 3. All three categories include a date of kill, although the category 3 date of kill is based on a known season of the year when the harvest occurred, but not a precise day within that season. Therefore, the month of kill for data quality 3 is approximated based on hunter provided information. We felt that data quality 1, 2, and 3 adequately represented data to determine the level of compliance within the 30-day regulatory timeframe. Data quality 4 and 5 have been excluded from the analysis, therefore, conclusions regarding the number of polar bears tagged

within the 30-day regulatory time frame presented here should be considered a minimum. In addition, we excluded bears where the kill date was known but the bears were not tagged.

Of the 1,032 bears where kill data was of quality 1 to 3, 65% (674) were tagged within 30 days of kill; 11% (116) within 30 to 60 days; 6% (63) within 60 to 90 days; 5% (47) within 90 to 120 days; and 13% (132) were tagged beyond 120 days (Figure 6).

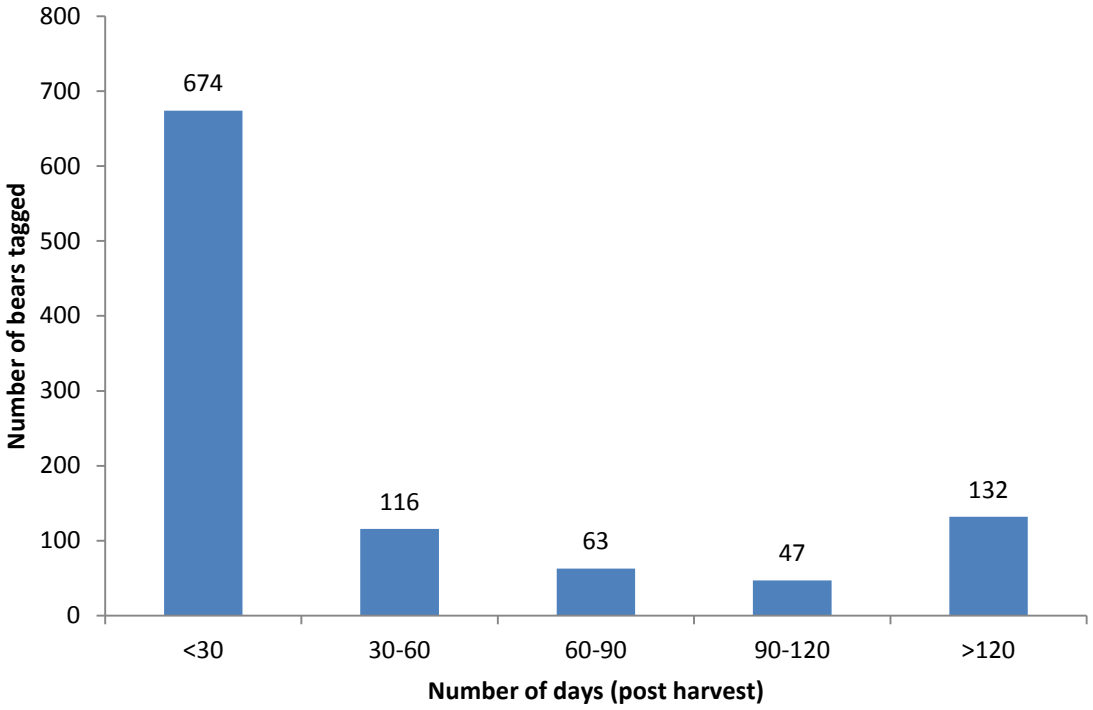

Figure 6. Number of days from harvest to tagging for Alaska–Chukotka polar bears, 1988 to 2014.

Of the 674 bears tagged within 30 days, 501 (74%) were tagged within the first 10 days. Of the remaining 173 (26%), 98 (15%) were tagged within 10 to 20 days; and 75 (11%) within 20 to 30 days of harvest (Figure 7).

To determine if there was a relationship between the timing of tagging and the completeness of data (sex and tooth collection), we used a regression analysis. Teeth, used for aging, were provided for 68% (SD ±15%) of tagged bears; and identifiers (penis sheath, vaginal orifice, or teats) of sex was provided for 43% (SD ± 5%) of tagged bears. The correlation between time of tagging and tooth collection was statistically significant ($R^2 = 0.91$, $p = 0.003$). The relationship between the time of tagging and the reporting of sex, however, was not ($R^2 = 0.433$, $p = 0.11$). Although the regression analysis for sex did not reveal a statistically significant relationship, the results indicated a slight decline in reporting sex over time. Overall, early tagging increased the likelihood that complete sex or age information would be obtained. Details regarding the time to tagging relative to the collection of sex and teeth are found in Table 5.

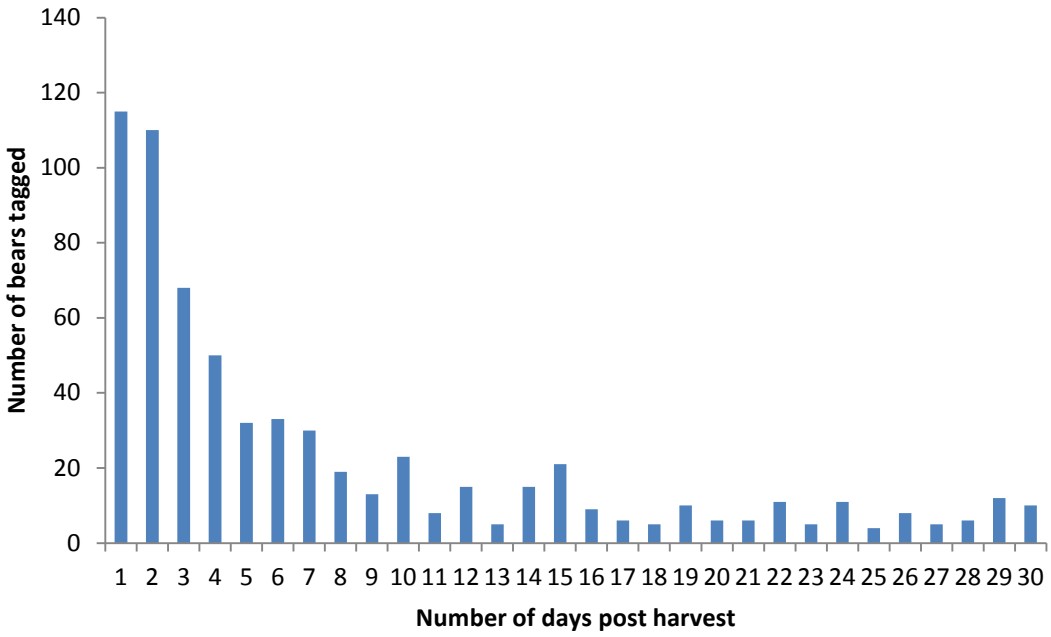

Figure 7. Frequency by day of Alaska–Chukotka polar bears tagged within 30 days of harvest, 1988 to 2014.

Table 5. Number of days from harvest to tagging of Alaska–Chukotka polar bears relative to completeness of data (sex and tooth collection), 1988 to 2014.

Days to tagging	Number tagged	Number with teeth (%)	Number with sex (%)
0-10	501	420 (84)	239 (48)
11-20	98	80 (82)	42 (43)
21-30	75	53 (71)	37 (49)
31-60	116	92 (79)	50 (43)
61-90	63	40 (63)	25 (40)
90-120	47	27 (57)	16 (34)
>121	132	56 (42)	56 (42)
Total	**1,032**	**768 (68)**	**465 (43)**

To determine if there was a trend in the proportion of harvested bears tagged within the 30-day required time frame, we used a weighted regression analysis. We found there was no significant trend over the study period (R^2 = -0.0399, p = 0.9666, Figure 8).

In addition, we evaluated the mean number of days between harvest and tagging over the study period and found no trend (R^2 = -0.039, p = 0.892, Figure 9). These findings indicate a relatively stable, although incomplete, level of tagging within the first 30 days.

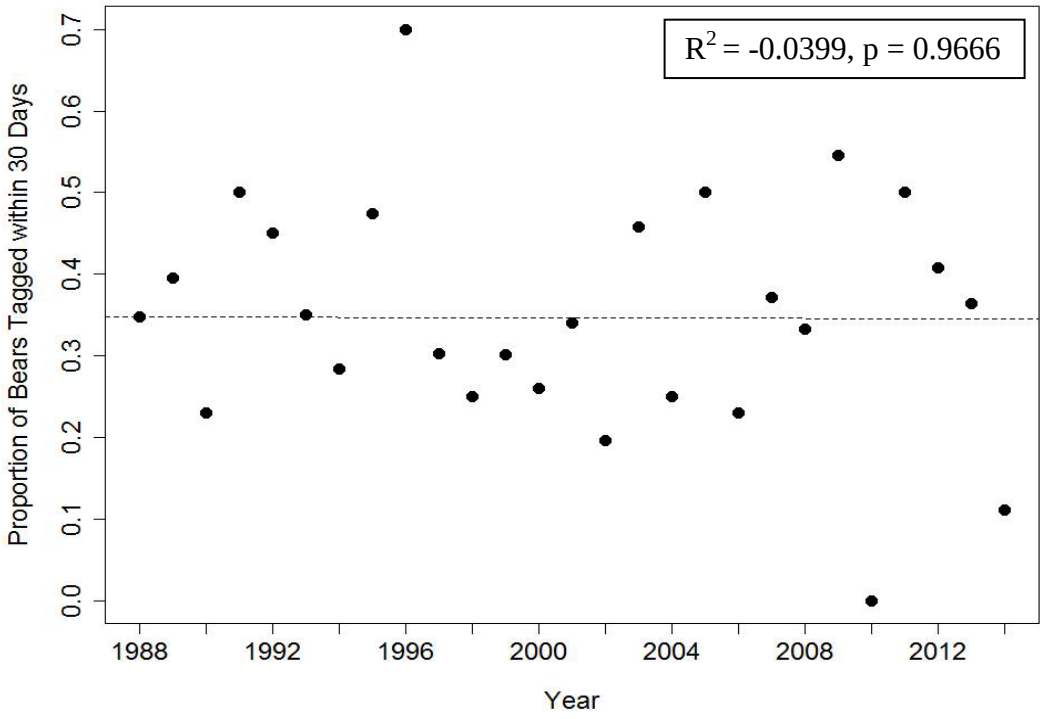

Figure 8. Trend in the proportion of the Alaska–Chukotka polar bear harvest tagged within 30 days, 1988 to 2014.

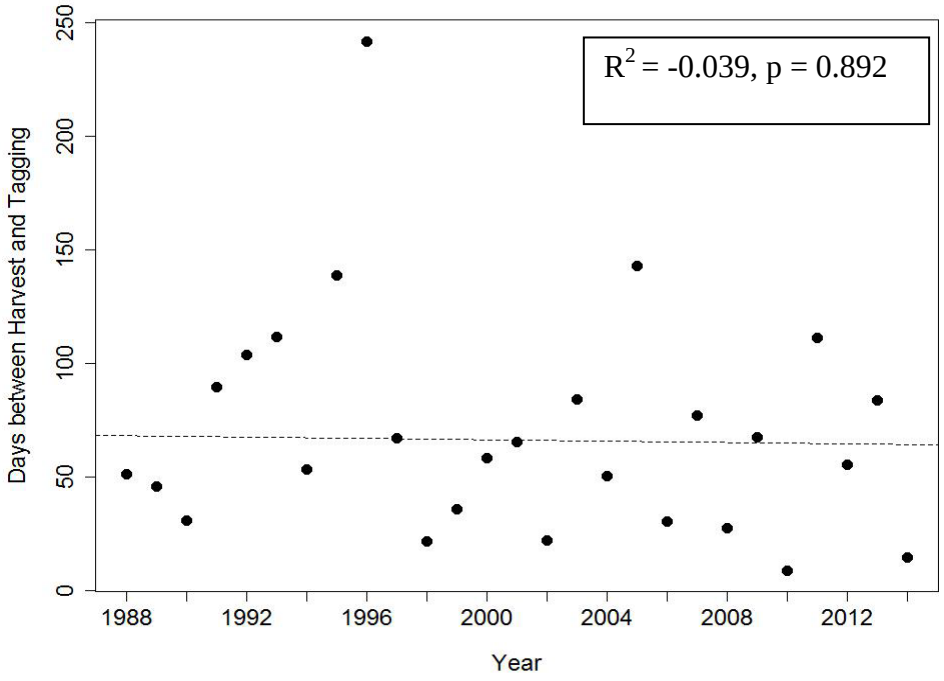

Figure 9. Trend in the mean number of days from harvest to tagging for the Alaska–Chukotka polar bear harvest, 1988 to 2014.

Data and Samples

The MTRP regulations require that skulls and hides be presented for tagging. Skull measurements are used for estimating age and sex. Premolar teeth are collected for aging. The MTRP regulations also require that research instruments (e.g., radio collars, ear tags, lip tattoo numbers) be turned in during the reporting and tagging process. Specific research projects may request tissue samples to evaluate contaminant levels, isotopic carbon levels, or genetic proof of sex. Other information regarding general body condition or behavior may also be recorded, however these samples and information are not required of the hunters by law.

Teeth

Teeth (one pre-molar per bear) were collected for aging from 779 (67%) of the 1,167 bears harvested during the 1988 to 2014 period (Table 6). Interannual variation in the percentage of harvested bears for which teeth were collected ranged from 27% to 83% (SD ± 15.3%). If untagged bears are excluded from the calculation, then teeth were collected from 74% of harvested bears with an inter-annual variation range from 30% to 96%.

Using ages from the 779 teeth and categorizing them into age classes showed that the harvest was comprised of 131 (16.9%) cubs age 0 to 2 years; 220 (28.2%) subadults age 2+ to 4 years; and 458 (54.9%) adults age 5+ years. Of the 131 in the cub category, 9 (7%) were cubs-of- the-year; 45 (34%) were yearlings; and 77 (59%) were 2-year-olds. The US–Russia Agreement prohibits the take of females with cubs and cubs less than 1 year of age.

To determine if there was a trend in providing skulls/teeth for tagging, we used a weighted linear regression model. We found there was a significant decreasing trend in the proportion of polar bears harvested for which tooth samples were collected over time ($R^2 = 0.310$, $p = 0.0015$, Figure 10).

Other Samples

During some years, samples to determine contaminant concentrations were solicited from hunters. A nominal payment was given to hunters providing samples for this purpose. Samples requested included: claw, adipose fat, heart, kidney, liver, muscle, reproductive tract, and skin or hair. This was a voluntary program and was not linked to any regulatory requirement of 50 CFR 18. A total of 843 specimens were collected (Table 7).

Sex can be determined genetically using muscle or other DNA-containing tissue (hair without the root and fat, however, do not contain DNA). Reliable and relatively inexpensive methods are available to determine sex of mammals, including polar bears (Evans et al. 2005) and could be used to improve the known sex ratio of the harvest if DNA is available.

Table 6. Number and percentage of harvested Alaska–Chukotka polar bears for which teeth were collected for aging, 1988 to 2014.

Year	Total bears	Tooth specimens (%)
1988	54	43 (80)
1989	44	36 (82)
1990	81	57 (70)
1991	50	37 (74)
1992	42	28 (67)
1993	44	32 (73)
1994	82	66 (80)
1995	61	46 (75)
1996	11	3 (27)
1997	40	23 (58)
1998	31	25 (81)
1999	89	69 (78)
2000	30	15 (50)
2001	65	30 (46)
2002	66	55 (83)
2003	29	24 (83)
2004	15	9 (60)
2005	41	21 (51)
2006	58	34 (59)
2007	51	31 (61)
2008	21	7 (33)
2009	13	7 (54)
2010	12	7 (58)
2011	43	22 (51)
2012	58	33 (57)
2013	26	14 (54)
2014	10	5 (50)
Total	**1,167**	**779 (68)**

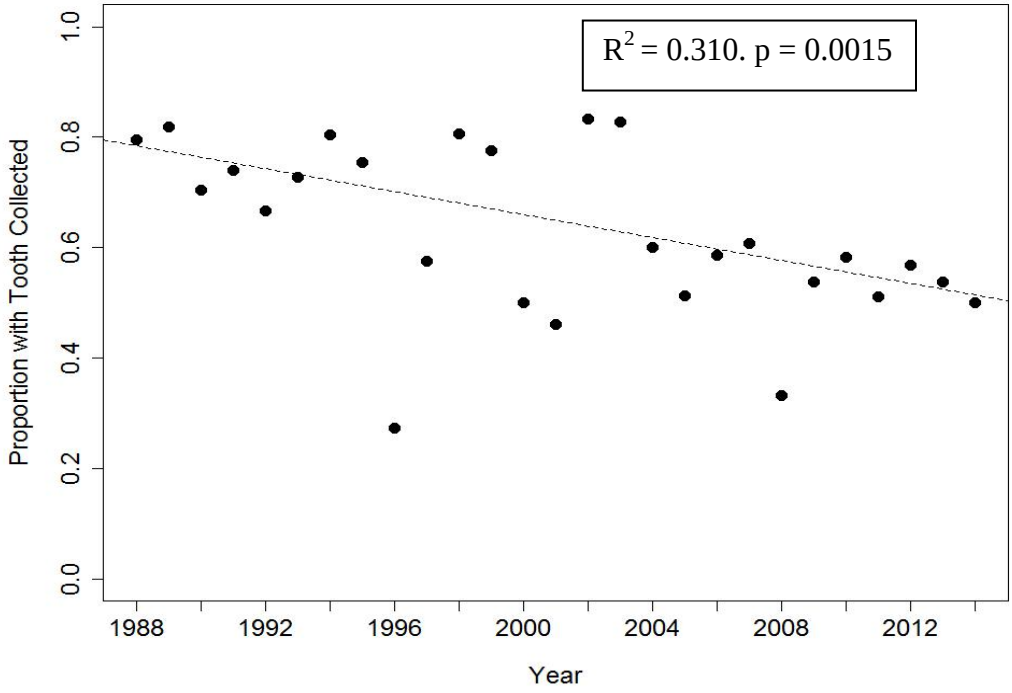

Figure 10. Trend in the proportion of teeth collected from polar bears harvested from the Alaska–Chukotka subpopulation, 1988 to 2014.

Table 7. Other samples, not required by regulation, collected by hunters from the Alaska–Chukotka subpopulation polar bear harvest, 1988–2014.

Specimen type	Number of specimens
Claw	124
Fat	98
Heart	11
Kidney	153
Liver	147
Muscle	220
Reproductive	2
Skin/hair	83
Total	**843**

Research-related Devices and Information

Under provisions of 50 CFR 18, Native hunters are required to return devices applied to captured bears for research. Polar bear research has been conducted in the Beaufort Sea since 1964 and in the Chukchi and Bering seas during 1988 to 1994 (297 captures, Garner et al. 1994) and again during 2008 to 2011, 2013, and 2015 (300 captures, (pers comm, Eric Regehr). During this study period, 20 polar bears ear-tagged or instrumented for research were harvested and reported through the MTRP on11 females and 9 males. Satellite-linked collars from 3 adult females were turned in as were ear tags from 19 bears. One ear tag appeared to be of Russian origin. One hunter reported the number painted on a harvested bear's back, but the ear tag it should have been carrying was not recovered. One ear tag transmitter was recovered. Four of the ear-tagged bears also had lip tattoos that were reported. The return of research tags or instruments can provide valuable life history information on individual bears and knowing a research bear is dead is also very important information when evaluating success of devices.

Reporting Performance by Village

Tagging compliance varied by village, but the data available is limited as described below. USFWS, MTRP personnel occasionally become aware of harvested bears from other community members and by personally seeing a hide or skull in a community. If the harvested bear is never officially tagged and reported it is reported as a known untagged polar bear in the MTRP database. Therefore, the number of untagged bears in this analysis is a minimum including only those bears that were known but not tagged and does not include bears that were unknown and untagged. Villages that infrequently harvest polar bears have less access to a polar bear tagger, therefore compliance for these villages was lower than for villages with better access to polar bear taggers. For the major villages that have harvested more than 10 polar bears during 1988 to 2014 (i.e., Pt. Lay, Pt. Hope, Kivalina, Kotzebue, Shishmaref, Wales, Little Diomede, Savoonga, and Gambell), we calculated percentage and the total number of untagged bears per village. For the major polar bear hunting villages tagging compliance ranged from 70.5% for Pt. Lay to 96% for Gambell (Table 8). Using the actual numbers of untagged polar bears by village we found that Pt. Hope (54 bears) and Little Diomede (21) had the greatest number of untagged polar bears (Table 8 and Figure 11).

Monthly Chronology of Annual Harvest

To better understand the annual cycle of harvest, we evaluated monthly harvest rates during the study period, 1988 to 2014 and found that 93% of the harvest occurred during late winter through spring, December through May (Figure 12). Therefore, on site tagging effort and coordination for MTRP personnel should focus on this time period.

Table 8. Tagging compliance, number of tagged and untagged bears, for communities that harvested the Alaska–Chukotka polar bear subpopulation during 1988 to 2014.

Village	Total bears	Tagged bears (%)	Untagged bears (%)
Pt. Lay	44	31 (70)	13 (30)
Cape Lisburne	1	1 (100)	0
Pt. Hope	345	291 (84)	54 (16)
Kivalina	30	26 (87)	4 (13)
Noatak	1	1 (100)	0
Noorvik	1	1 (100)	0
Kotzebue	12	10 (83)	2 (17)
Shishmaref	130	115 (88)	15 (12)
Wales	52	49 (94)	3 (6)
Little Diomede	155	134 (86)	21 (14)
Brevig Mission	3	1 (33)	2 (64)
Nome	8	4 (50)	4 (50)
Gambell	195	187 (96)	8 (4)
Savoonga	188	171 (91)	17 (9)
Stebbins	1	0 (0)	1 (100)
Ageklekak	1	0 (0)	1 (100)
Total	**1,167**	**1022 (88)**	**145 (12)**

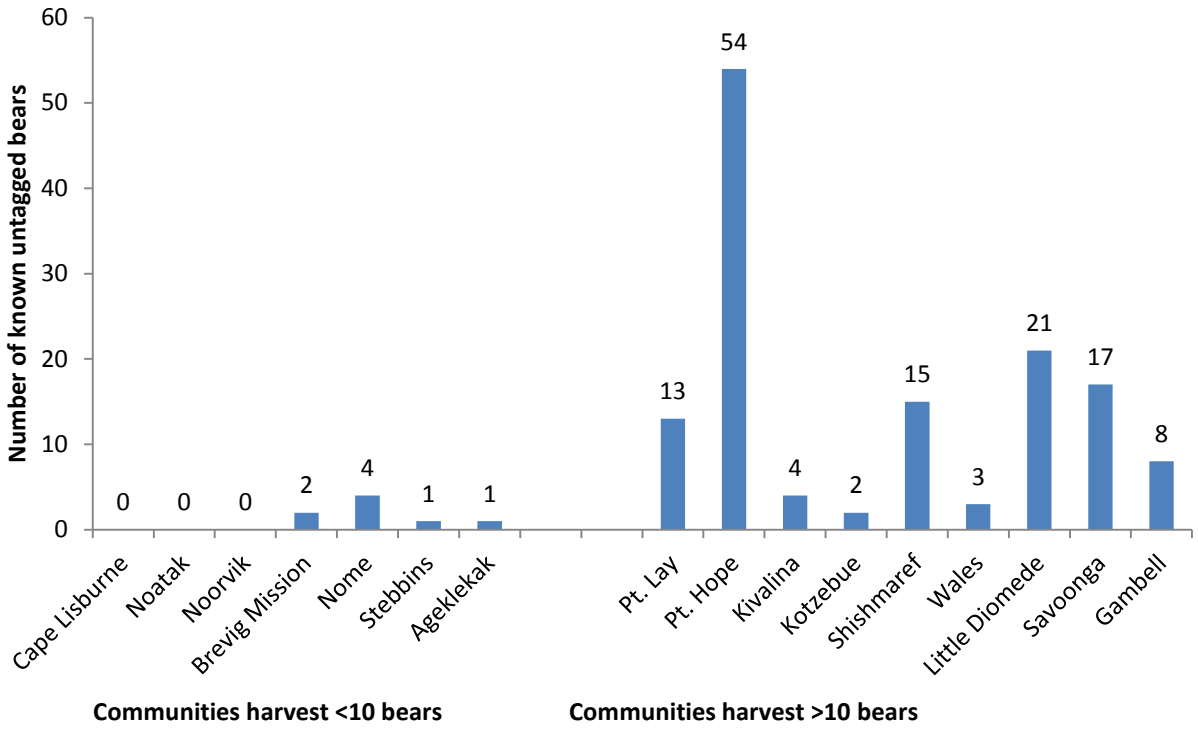

Figure 11. Number of known untagged polar bears by community in the Alaska–Chukotka polar bear subpopulation region, 1988 to 2014.

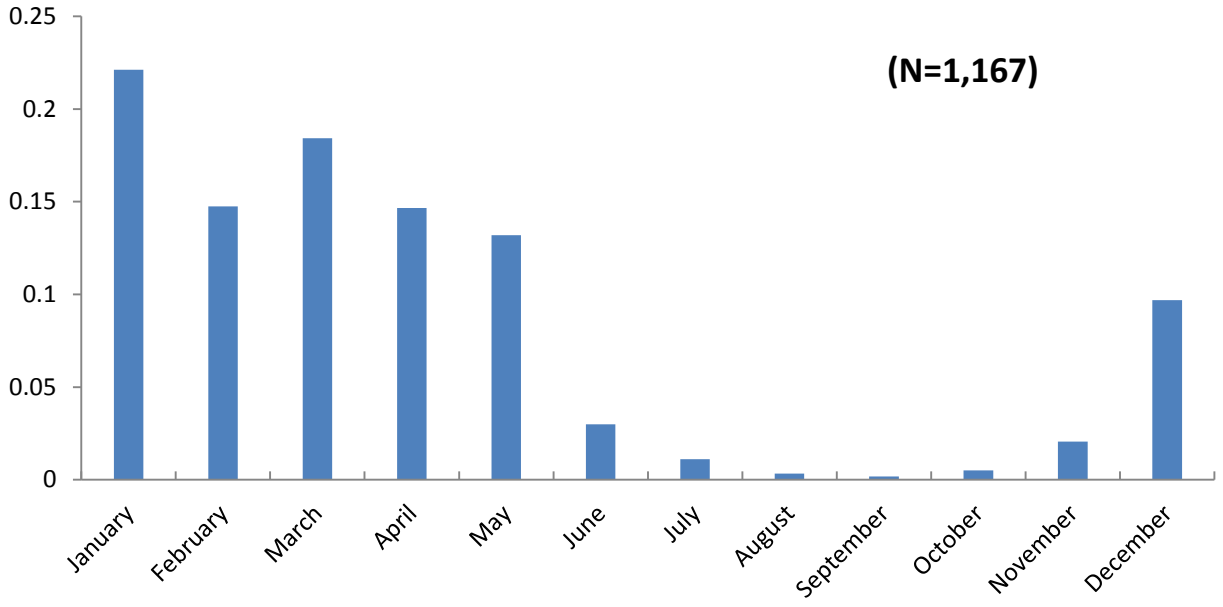

Figure 12. Proportion of annual Alaska–Chukotka polar bear harvest by month, 1988 to 2014.

Summary Findings

During the time period of this analysis, 1988 to 2014, the months with the highest harvests were December through May when 93% of the harvest occurred. Sex was unknown for 10.5% of harvest, either hides or skulls were not tagged for 27%, identifiers of sex was not included on 59% of the harvest certificates, teeth for age determination were not collected for 33% of the harvest. Only 65% of the harvested bears were tagged (either hides or skulls) within the required 30-day time frame, however, 86% to 88% were tagged within 120 days.

The more time between the harvest and tagging resulted in lower quality sex and age data, and this relationship was statistically significant for tooth collection, which age is derived from. Tagging compliance varied among the major villages that harvest polar bears. As a percentage of the total harvest, tagging compliance was highest for Gambell (96%), Wales (94%), and Savoonga (91%); followed by Shishmaref (88%), Kivalina (87%), Little Diomede (86%), Pt. Hope (84%), and Pt. Lay (70%). The villages with the most incomplete tagging data were Pt. Hope and Little Diomede.

We looked for trends in compliance with reporting requirements over the study period using weighted linear regression models and found the following:

- no trend in the proportion of females in the harvest;
- a significant increasing trend in the proportion of unknown sex in the harvest;
- a significant decrease in the proportion of the harvest that is tagged;
- no trend in the number of days for tagging within the 30-day regulatory time frame, and no trend in the mean number of days to tagging; and
- a significant decreasing trend in the proportion of the harvest for which teeth (age) specimens were acquired.

Inferences on the Effects of Error Rates in Complete and Accurate Reporting of Sex

Given the importance of adult female polar bears to population growth, the ability to monitor and control the proportion and net removal of adult females in the harvest is a critical component of management. Therefore, incomplete reporting of the sex of bears harvested as found in the MTRP review could be a problem. The model used by Regehr et al. (2015) calculates risk of a population decline as a function of the sex ratio of the harvest (Figure 13, Table 9). Specifically, the model projected hypothetical polar bear populations forward in time for 20 years using vital rates (i.e., survival and reproductive rates) that are designed to make a harvest of 6% per year sustainable (i.e., resulting in a low probability of population declines), conditioned upon removals occurring at the standard 2:1 male-to-female ratio.

For example, if the male-to-female ratio in the harvest (as shown on the x-axis) is at the desired value of 2:1, then the probability of a greater than 10% decline in the female segment of the population (as shown on the y-axis) is approximately 0. If the overall harvest rate remains the same but the male-to-female ratio changes to 1:1 (either through inaccurate reporting or an actual change in the sex ratio of the harvest), the probability of a greater than 10% decline in the female segment of the population is approximately 50%. Furthermore, the probability of declines would rapidly approach 100% as the number of females in the harvest exceeded the number of males.

These population projections are based on simplified assumptions and presented for illustration only. Importantly, these projections assume that the sustainable rate of human-caused removals (i.e., 6% per year, at a 2:1 male-to-female sex ratio) is accurately known. In reality, the sustainable rate of human-caused removals is not accurately known, because information on population status used to make management decisions is characterized by uncertainty and potential bias (Regehr et al. 2015). Thus, under more realistic conditions, it is possible that the negative consequences of exceeding the desired proportion of females in the harvest would be more severe, which reinforces the need for this evaluation and subsequent improvements in harvest reporting.

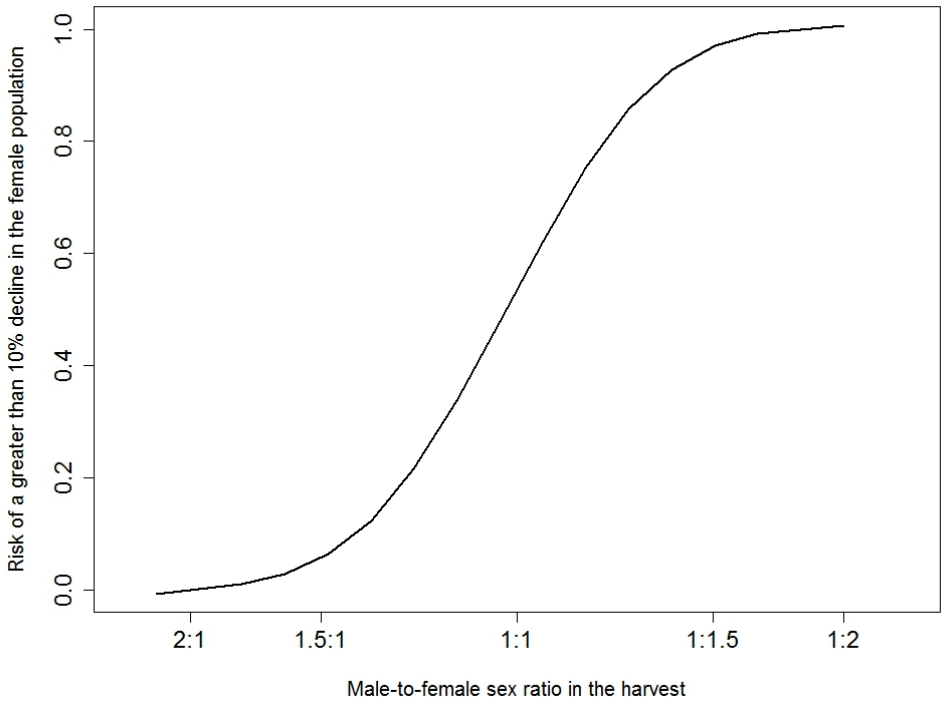

Figure 13. Example plot showing the risk of a greater than 10% decline in the female population, after 20 years, as a function of the male-to-female sex ratio in the harvest.

Table 9. Probability of a greater than 10% decline in a hypothetical polar bear population based upon varying proportion of adult females in the harvest.

Proportion of adult females in the harvest	Probability of a >10% decline in female population
0.27	0
0.29	0
0.32	0
0.34	0
0.36	0.004
0.38	0.004
0.4	0.02
0.43	0.036
0.45	0.1
0.47	0.276
0.49	0.476
0.51	0.644
0.54	0.856
0.56	0.976
0.58	0.996
0.6	1
0.62	1
0.64	1

Inferences of a Declining Trend in Harvest

We evaluated the trend in number of polar bears harvested over the study period in relationship to sea ice conditions. This simplified analysis was intentionally general and we recognize that other factors such as atmospheric winds, temperatures, etc. may have an influence on harvest numbers over time. We did not evaluate regional harvest trends or differences over time, although we believe that these trends persist. Southerly villages, such as Gambell and Savoonga, may have been more impacted by declining sea ice conditions than the northerly villages. The future projections regarding sea ice reductions are projected to continue to affect the seasonal and annual availability of polar bears to coastal hunting villages.

The level of polar bear subsistence harvest in western Alaska likely varies as a function of environmental, social, and economic conditions (e.g., Voorhees et al. 2014). Here, we illustrate broad relationships between harvest levels and sea-ice extent. Voorhees et al. (2014) report that hunters in western Alaska generally see a pulse of polar bears in spring as bears migrate north with the retreating sea ice, and again in autumn when polar bears return to an area as freeze-up

occurs. Thus we hypothesized that decreased temporal and spatial availability of sea ice may be related to decreased opportunities for hunting. To evaluate this relationship, we performed a simple linear regression with harvest levels of the Alaska–Chukotka subpopulation, including Point Lay and communities south of Point Lay, as a function of the number of ice-free days per year within polar bear subpopulation boundary as defined by the PBSG of the International Union for the Conservation of Nature (Obbard et al. 2010). The method used to calculate the number of ice-free days per year is described in the recent Red List assessment for polar bears (Wiig et al. 2015).

Using data from 1988 to 2014 (Table 10), we found that the number of ice-free days in the Chukchi Sea region was negatively correlated with subsistence harvest levels in western Alaska (Figure 14); simple linear regression, $p = 0.02$ vs. the null hypothesis of no relationship between harvest and ice-free days). In other words, the higher number of ice-free days in recent years has been associated with lower levels of subsistence harvest. We suggest that this may provide evidence for a general dependence of polar bear hunters on sea-ice availability to access polar bears. We recommend future research to evaluate such relationships in more detail through spatially-explicit linear models with harvest level (by community or region) as a response variable, using multiple predictor variables that may include regional metrics for sea-ice extent and timing, other environmental variables (e.g., ice thickness or prevailing winds), elements of human demography or attitudes toward polar bears, factors that may influence the economics of polar bear hunting (e.g., fuel prices), and aspects of polar bear subpopulation status (e.g., age composition, given that subadult bears are most vulnerable to harvest).

Table 10. Annual number of polar bears harvested from the Alaska–Chukotka subpopulation and the number of ice-free days in the Chukchi–Bering Sea region.

Year	Number of ice-free days	Bears harvested
1989	176	44
1990	182	81
1991	183	50
1992	167	42
1993	186	44
1994	154	82
1995	185	61
1996	195	11
1997	198	40
1998	169	31
1999	161	89
2000	170	30
2001	166	65
2002	201	66
2003	193	29
2004	192	15
2005	181	41
2006	194	58
2007	206	51
2008	175	21
2009	181	13
2010	194	12
2011	191	43
2012	167	58
2013	192	26
2014	211	10

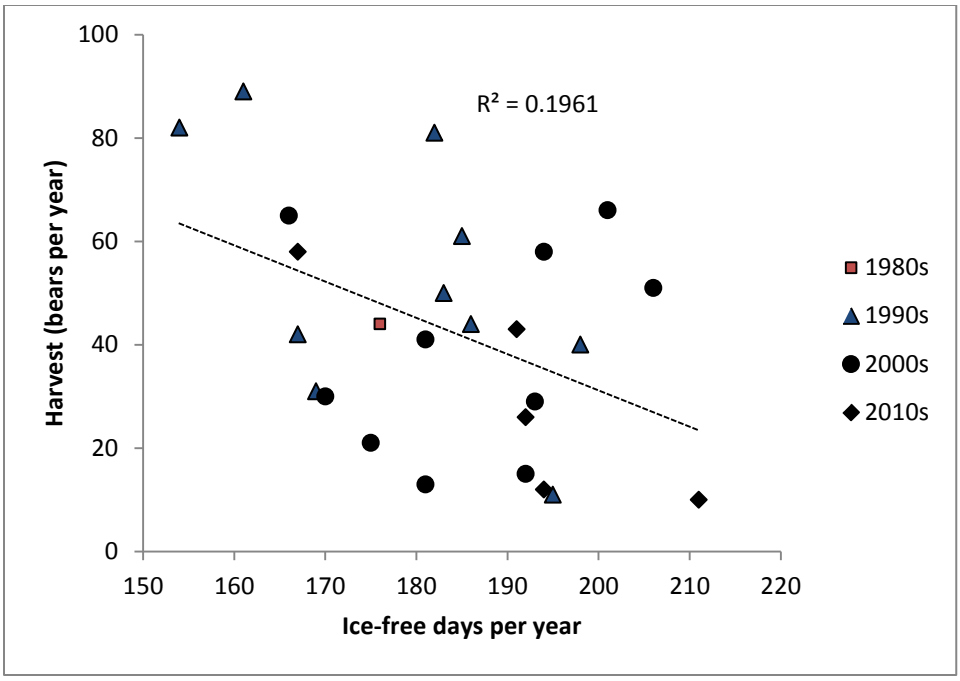

Figure 14. Relationship between subsistence harvest of polar bears from the Alaska–Chukotka subpopulation and the number of ice-free days per year in the Chukchi–Bering seas region.

Workshop to Evaluate MTRP to Improve Polar Bear Harvest Reporting and Compliance with Recommendations for Implementing U.S.–Russia Bilateral Agreement

OVERVIEW

On 7 and 8 October 2015, the ANC hosted a workshop to evaluate the effectiveness of the USFWS MTRP for polar bears of the Alaska–Chukotka subpopulation and to provide recommendations or options for future improvement of polar bear harvest reporting compliance. A primary objective was to support the ANC and the USFWS in implementing a harvest quota for the Alaskan subsistence harvest of the Alaska–Chukotka polar bear subpopulation. To meet this objective, the group evaluated methods to enhance timely, complete and accurate polar bear harvest data with a goal of 100% complete reporting. Participants for the workshop were chosen based on their role as well as past involvement and continued interest in Alaska polar bear conservation and in this project. They included the following affiliations: ANC and ANC village representatives, ADF&G, North Slope Borough (NSB), and USFWS. The following is a summary of the results of the workshop.

This summary is separated into two sections: 1) improving MTRP compliance, a list of concepts or recommendations; and 2) how to implement an effective co-management approach. The full workshop proceedings can be found online at ADF&G's website and is referenced as: Schliebe,

S. L., S. Kuhns, L. Quakenbush, and M. Nelson. 2016. Proceedings of a workshop: Co-management of the Alaskan harvest of the Alaska–Chukotka polar bear population: How to implement a quota. Wildlife Special Publication ADF&G/DWC/WSP-2016-1. Alaska Department of Fish and Game, Juneau.

The following list comprises comments, concepts, and recommendations discussed by the group. The list is not an endorsement by any or all of the participants; but instead, it identifies possible elements for consideration by USFWS and ANC in future co-management efforts.

Some participants indicated that efforts to improve MTRP harvest reporting and future outreach and education programs should apply to polar bear harvest statewide, including the Southern Beaufort Sea subpopulation as well as the Alaska–Chukotka subpopulation. Participants acknowledge that the USFWS has the responsibility and authority for polar bear conservation and management of polar bears. For the Alaska–Chukotka polar bear subpopulation the USFWS shares this responsibility with the ANC. For the Southern Beaufort Sea subpopulation, the USFWS retains management authority, but acknowledges the benefits of local initiative through the "Inuvialuit–Inupiat Agreement for Conservation of Polar Bears in the Southern Beaufort Sea" and provides support and technical assistance to the parties of this agreement.

Some participants did not support a top down regulatory approach with new rules and penalties being published in the Federal Register and administered independently by the USFWS. The concept was expanded in discussion to include greater efforts to have agency administrators and other organizations present at the local level in order to enhance cross-communications.

In general, the group supported the need and future efforts to remedy deficiencies in compliance with harvest data reporting across management boundaries. Many believed that the management approach with the greatest likelihood to increase harvest reporting and compliance in the long term must start at the local level and begin with an outreach effort to educate and explain why complete harvest data is important scientifically and beneficial to the hunters themselves. Similarly, many believed that this effort should also include enhanced efforts to train/educate the local taggers of the MTRP requirements.

Participants believed that the USFWS and the ANC, in collaboration with the NSB and ADF&G, should develop a comprehensive strategic information outreach and education plan for Native hunters and for village polar bear taggers in order to achieve polar bear harvest tagging compliance goals. USFWS indicated they would begin, and have begun, this process to develop a draft outline plan to be circulated for review and comment.

LIST OF CONCEPTS OR OPTIONS TO IMPROVE HARVEST REPORTING AND MTRP COMPLIANCE

- Develop and implement a communication network with USFWS, ANC, village ANC representatives, and village tagging representatives for real time reporting of polar bear harvests
- Identify and maintain a database for points of contact to report harvests: local taggers, ANC, USFWS
- Use social media such as cell phone apps or the Internet to support rapid reporting
- Coordinate through the communications network on the status of harvest level relative to quotas in real time: communication or access to the status necessary for communities and hunters
- Develop a strategic education and outreach plan emphasizing the importance of complete harvest data, tagging requirements, the value of accurate data to scientists and to subsistence hunters
- Include information regarding the US–Russia Bilateral Agreement and future harvest quotas and implementation details
- Disseminate informational and educational materials on harvest monitoring requirements
    - Posters
    - Newspapers (Arctic Sounder and Nome Nugget)
    - Radio interviews and talk programs
    - Television messages
    - Community meetings with hunters
    - Village meetings/workshops
    - Increased tagger training/education
    - One-to-one hunter discussions
    - Web sites
    - Postal box holder mailings
- Phased enforcement of tagging regulations, following ground level implementation of the strategic education outreach program, cooperatively by the USFWS and ANC
- Issue harvest tags to subsistence hunters prior to the start of each year
- Increased USFWS/ANC presence in villages during peak harvest times (December to May); develop and institute a communications network to provide information on polar bear sightings/presence/date/location; mobilize rapid response efforts when polar bears are present/available for harvest; assist in tagging, data collection, and enhanced education and outreach to encourage more accurate, timely collection of harvest information and samples
- Potential use of tribal/community ordinances to implement harvest monitoring
    - An example is the Gambell Tribal Ordinance for walruses
- Provide additional training and educational materials to taggers

    - How to identify sex from hides, body condition indices, completion of harvest certificates, etc.
- Provide tagger incentives for timely and complete harvest reporting
    - Incremental increased payment to taggers for getting the bear tagged as soon after it was harvested. This could be on a graduated scale with higher payments for bears tagged within 10, 20, or 30 days
    - Provide an annual tagger stipend
    - Incremental payments to taggers based on the completeness of harvest data
    - Increase tagger payment for house visits (hunters are responsible under the MMPA to tag the hides and skulls of harvested bears within 30 days)
    - Hire more taggers such as polar bear patrollers, Student Conservation Associations, etc
    - Incentives for each polar bear tagged
- Collect tissue samples for genetic proof of sex (all bears vs. unknown sex bears)
- Provide hunter incentives for timely and complete harvest reporting
    - Annual prize raffle for hunters
        - Knives
        - Yearly raffle for qualifying and participating hunters
- Disincentives for villages not providing complete harvest data, such as future reductions in their village quota/allocation with harvest quota increases for villages providing complete data on harvested bears

Most of the workshop focused on improving the MTRP with little direct focus on "how" to implement the US–Russia Bilateral Agreement harvest quota. However, presentations by Harry Brower Jr. and Jessica Lefevre, Esq. on the Alaska Eskimo Whaling Commission's (AEWC) agreement with the National Oceanic and Atmospheric Administration (NOAA) for bowhead whale co-management and quota enforcement prompted discussion regarding the polar bear quota. A summary of key elements in the AEWC/NOAA Cooperative Agreement follow:

- Signed in 1980
- Establishes a co-management and shared enforcement relationship
- Federal authorities for the Cooperative Agreement are from Section 112 and more recently 119 of the MMPA
- This is a limited delegation of authority, the Federal government retains ultimate authority and can assert this authority if terms of the Cooperative Agreement are not being met
- Local authorities for the AEWC/NOAA agreement are from Tribal Authorities provided by the Indian Rights Act
- AEWC established its own structure and operating procedures
    - Village boat captain's association

    - Village boat captain's association elected Commissioners
    - AEWC annual and emergency meetings
    - AEWC representation
    - AEWC Board of Commissioners and responsibilities
- AEWC established bowhead whale hunting requirements include:
    - Reporting requirements
    - Permissible methods and means of harvest, seasons, village harvest allocation (quotas), conditions for sharing quotas between villages in and between season
    - Penalties and fine
        - $1,000 to $10,000 fine
        - Captain is unable to register to hunt until the fine(s) is paid
        - Forfeiture of meat and parts of the harvested bowhead
        - Potential ban from hunting in the future
        - Deterrents for repeat offenders

HOW TO IMPROVE MTRP COMPLIANCE AND IMPLEMENT THE U.S.–RUSSIA BILATERAL AGREEMENT (QUOTAS)

Many participants believed that the highly successful and locally supported bowhead whale co-management model provides similar opportunities for polar bear co-management and implementation of the U.S.–Russia Agreement. Although the circumstances, institutional capacity, and the mechanisms for co-management may differ between polar bears and bowhead whales, the group encouraged the parties to explore approaches to promote co-management and shared civil enforcement authority similar to that for bowhead whales. Additional details of these discussions are found in the workshop proceedings and appendices.

Participants believed that the MMPA (Sections 112 and 119) provide authorities to the USFWS to delegate limited management and enforcement to the ANC (legal interpretation confirmation necessary) similar to the bowhead whale example. In addition, the sharing of management and enforcement authority between the USFWS and ANC is identified in Title V of the MMPA and provides additional guidance for a limited delegation of authority. While details of the shared co-management and enforcement authority for polar bears in the Alaska–Chukotka subpopulation have not been fully developed to date, the USFWS and ANC have initiated a number of projects that could complement this conceptual approach. These include an internal draft SHMP; a 5-Year Implementation Plan for Co-Management of the Alaska–Chukotka Subpopulation of Polar Bears (Appendix 2); and annual cooperative agreements between USFWS and ANC for Section 119 funds.

The following recommendations are based on direct support and input from the workshop participants, a history of prior polar bear conservation initiatives by the USFWS and ANC (inferential inputs), precedent from the NOAA/AEWC Cooperative Agreement, and existing authorities under the MMPA Title V.

- Develop a Cooperative Agreement between the USFWS and ANC to share management and enforcement authority
- Renew efforts to complete a multiyear implementation plan for co-management; previously the 5-year plan
- Renew efforts to complete the SHMP
- Obtain petitions from village tribal organizations (IRA's) delegating ANC the authority to manage polar bears and enforce regulation of tribal members on their behalf
- Develop specific civil enforcement structures or subagreements for delegated limited authorities to the ANC
- Develop a strategic communication, outreach, and education plan (possible statewide application)
- Develop an approach to improve hunter reporting compliance under the MTRP (consider comments and concepts identified in the previous section) (possible statewide application)

During the workshop the USFWS indicated that efforts would be undertaken to develop an outline for a strategic communication, outreach, and education program with further development from stakeholders. This initiative has begun. The USFWS also indicated that a task force would be formed to explore the feasibility of sharing co-management authority. This effort would involve the ANC, USFWS, and legal counsel as well as people familiar with the bowhead whale cooperative agreement. This initiative has begun.

The Cooperative Agreement would serve as the primary source for sharing co-management and enforcement authority between the USFWS and ANC. The subagreements identified above provide details and structure necessary for the shared authorities and on the ground implementation. As noted for the bowhead whale example, these delegated authorities would be limited and subject to review. The U.S. government (USFWS) retains the ultimate authority for conservation and management of polar bears and seeks to develop a local user's group-supported system to manage and enforce harvest reporting and quota compliance.

A hypothetical example of how the delegated authorities could be implemented by the ANC in the future follows:

- ANC could develop an allocation system within the management area under a multiyear quota system.
- Each region or the ANC in consultation could develop harvest allocations for its communities.
- ANC could take on management and enforcement authority through the system agreed upon by federal partners similar to the model of the AEWC for bowhead whales.
- ANC would develop regulations (consistent with the bilateral agreement) with details for fines and punishments.

- Village IRAs must provide resolutions to allow ANC to enforce management and enforcement.

To date, four of nine IRAs have provided authorization to ANC to carry out civil enforcement actions. Two others provided qualified support with some limitations.

Integration

This report is intended to inform and assist USFWS and ANC in their efforts to co-manage the Alaska–Chukotka polar bear subpopulation and to implement a harvest quota under the US–Russia Bilateral Agreement. Integration or implementation of concepts or recommendations from the workshop and prior initiatives complementary to this effort is the responsibility of the USFWS. That USFWS is encouraged to develop a cooperative agreement with the ANC for co-management of the Alaska–Chukotka polar bear subpopulation. USFWS should also take steps to improve the quality and timeliness of polar bear harvest reporting data. The USFWS has discretion in determining the best approaches designed to optimize polar bear conservation through the MTRP and through implementation of the US–Russia Bilateral Agreement. Any efforts however to implement changes in the harvest management and reporting system should be consistent with a potential future cooperative agreement and include consultation between the partners, the ANC and USFWS. Similarly, any changes in reporting or implementing a quota system for the Alaska–Chukotka polar bear subpopulation should be preceded by a comprehensive outreach and education program designed cooperatively with ANC and its affected stakeholders. It would be useful to renew joint efforts by the USFWS and ANC in developing an implementation plan and a shared harvest management plan.

The workshop summary is a synthesis of views and inputs from participants as well as prior initiatives for conservation of the Alaska–Chukotka polar bear subpopulation between the USFWS and ANC. The summary should not be construed to imply endorsement by any participant or agency to any portion of the report or workshop proceedings.

Future Analysis

During the course of this investigation other questions or lines of investigation regarding the MTRP database were encountered. Although these questions were not directly related to the objectives of this project they would enhance the scientific knowledge base regarding Native subsistence harvest of polar bears and have been listed below for future reference.

- Expanded descriptive analysis of harvest metrics over time including sex and age composition, age class, total harvest
- Expanded analysis of the MTRP with a greater emphasis on harvest patterns temporally and spatially to evaluate whether the sex/age composition changed over time and location
- Evaluation of environmental covariates, such as sea ice, wind, atmospheric and sea water temperature, and their potential influence on harvest number or availability of polar bears for harvest from a spatial and temporal perspective
- Develop protocols to evaluate the effectiveness of changes in management prescriptions including resultant MTRP or quota compliance

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The USFWS provided complete access to the MTRP database and data extractions. The extensive and valued data set was the product of previous MTRP coordinators: Wells Stephensen, Dean Cramer, and Thomas Evans.

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Appendices

Appendix A. Agreement between the Government of the United States of America and the Government of the Russian Federation on the Conservation and Management of the Alaska–Chukotka Polar Bear Population.

AGREEMENT BETWEEN THE GOVERNMENT OF

THE UNITED STATES OF AMERICA

AND THE GOVERNMENT OF THE RUSSIAN FEDERATION

ON THE CONSERVATION AND MANAGEMENT

OF THE ALASKA–CHUKOTKA POLAR BEAR POPULATION

October 16, 2000

The Government of the United States of America and the Government of the Russian Federation, (hereinafter referred to as the "Contracting Parties");

DESIRING to further the goals of the 1973 Agreement on the Conservation of Polar Bears (hereinafter referred to as the "1973 Agreement");

AFFIRMING that the United States and the Russian Federation have a mutual interest in and responsibility for the conservation of the Alaska–Chukotka polar bear population;

ACKNOWLEDGING the vital interest of the Autonomous Region of Chukotka and the State of Alaska in the conservation and management of the Alaska–Chukotka population of polar bears;

RECOGNIZING that reliable biological information, including scientific data and traditional knowledge of native people, serves as the basis for development of an effective strategy for the conservation and management of this population;

RECOGNIZING that polar bears represent a valuable subsistence harvest species for the native people of Alaska and Chukotka;

AFFIRMING the authorization of the native people of Alaska and Chukotka, in accordance with each Contracting Party's domestic laws, to hunt polar bears to satisfy their traditional subsistence needs, and to manufacture and sell handicrafts and clothing;

DESIRING to meet the subsistence needs of native people while affording further protection to polar bears;

RECOGNIZING that illegal taking, habitat loss or degradation, pollution, and other human-caused threats could compromise the continued viability of the Alaska–Chukotka polar bear population;

RECOGNIZING the important ecological role and aesthetic value of the polar bear and the need to maintain broad public support for the conservation of polar bears;

AFFIRMING the essential role of the native people of Alaska and Chukotka in the conservation of the Alaska–Chukotka population of polar bears, welcoming the steps taken by those people with the goal of cooperation in the conservation and management of this population, and desiring to ensure their full involvement in the implementation and enforcement of this Agreement.

HAVE AGREED AS FOLLOWS:

ARTICLE 1

In this Agreement the following definitions shall apply:

(a) "sustainable harvest level" means a harvest level which does not exceed net annual recruitment to the population and maintains the population at or near its current level, taking into account all forms of removal, and considers the status and trend of the population, based on reliable scientific information.

(b) "taking" means hunting, killing or capturing.

(c) "native people" means the native residents of Alaska and Chukotka as represented by the Alaska Nanuuq Commission and the corresponding Union of Marine Mammal Hunters, or their successor organizations recognized as such by the Contracting Parties.

ARTICLE 2

The Contracting Parties shall cooperate with the goal of ensuring the conservation of the Alaska–Chukotka polar bear population, the conservation of its habitat, and the regulation of its use for subsistence purposes by native people.

ARTICLE 3

This Agreement applies to the waters and adjacent coastal areas subject to the national jurisdiction of the Contracting Parties in that area of the Chukchi, East Siberian and Bering Seas bounded on the west by a line extending north from the mouth of the Kolyma River; on the east by a line extending north from Point Barrow; and on the south by a line describing the southernmost annual formation of drift ice. The Contracting Parties may, by mutual agreement, modify the area to which the Agreement applies.

ARTICLE 4

The Contracting Parties shall undertake all efforts necessary to conserve polar bear habitats, with particular attention to denning areas and areas of concentration of polar bears

during feeding and migration. To this end, they shall take steps necessary to prevent loss or degradation of such habitats that results in, or is likely to result in, mortality to polar bears or reduced productivity or long-term decline in the Alaska–Chukotka polar bear population.

ARTICLE 5

Any taking of polar bears from the Alaska–Chukotka population inconsistent with the terms of this Agreement or the 1973 Agreement is prohibited.

ARTICLE 6

1. Native people may take polar bears of the Alaska–Chukotka population for subsistence purposes, provided that:

(a) the take is consistent with Article III(1)(d) of the 1973 Agreement;

(b) the taking of females with cubs, cubs less than one year of age, and bears in dens, including bears preparing to enter dens or who have just left dens, is prohibited;

(c) the use of aircraft, large motorized vessels and large motorized vehicles for the purpose of taking polar bears is prohibited; and

(d) the use of poisons, traps or snares for the purpose of taking polar bears is prohibited.

2. Consistent with the 1973 Agreement, polar bears from the Alaska–Chukotka population may be taken for the conduct of scientific research, for the purpose of rescuing or rehabilitating orphaned, sick, or injured animals, or when human life is threatened. Animals being maintained in captivity for purposes of rehabilitation or which are determined by either Contracting Party not to be releasable to the wild may be placed on public display.

ARTICLE 7

1. Nothing in this Agreement is intended to authorize the taking of polar bears for commercial purposes, or to limit the ability of native people, consistent with the domestic law of the Contracting Parties, to create, sell, and use traditional articles associated with native harvest of polar bears.

2. The Contracting Parties shall undertake, in accordance with domestic law, measures necessary for the prevention of illegal trade in polar bears, including their parts and derivatives.

ARTICLE 8

1. To coordinate measures for the conservation and study of the Alaska–Chukotka population of polar bears, the Contracting Parties hereby establish the U.S.–Russia Polar Bear Commission,

hereinafter referred to as "the Commission," to be composed of two national sections, a United States Section and a Russian Section.

2. Each national section shall consist of two members appointed by the respective Contracting Party in order to provide for inclusion in each section of a representative of its native people, in addition to a representative of the Contracting Party.

3. Each section shall have one vote in the Commission. A decision or recommendation of the Commission shall be made only with the approval of both sections.

4. The Contracting Parties shall be responsible for organizing and supporting the activities of their respective national sections as well as the joint activities of the Commission.

5. The Commission, at its first meeting, shall adopt rules of procedure, including provisions for accreditation of observers who can attend Commission meetings as representatives of interested organizations who can contribute to the Commission's work.

6. The Commission shall hold an annual meeting and may hold other meetings at the request of either Contracting Party, or on such a schedule as the Commission may determine. Annual meetings shall alternate between the United States and Russia.

7. The Commission shall carry out the following tasks:

(a) promoting cooperation between the Contracting Parties, between the native people, and between the Contracting Parties and the native people;

(b) determining on the basis of reliable scientific data, including traditional knowledge of the native people, the polar bear population's annual sustainable harvest level;

(c) determining the annual taking limits not to exceed the sustainable harvest level;

(d) adopting measures to restrict the take of polar bears for subsistence purposes by the native people within the framework of the established annual taking limits, including seasons and restrictions on sex and age additional to those in Article VI (1) of this Agreement;

(e) working to identify polar bear habitats and developing recommendations for habitat conservation measures;

(f) considering scientific research programs, including jointly conducted programs, for the study, conservation, and monitoring of polar bears, and preparing recommendations for implementing such programs, and determining criteria for reporting on and verification of polar bears taken;

(g) participating in the examination of disagreements between the native people of Alaska

and Chukotka on questions regarding subsistence use of polar bears and their conservation and facilitating their resolution;

(h) issuing recommendations concerning the maintenance in captivity of orphaned and rehabilitated polar bears;

(i) examining information and scientific data about polar bears, including information on harvested polar bears and those taken in cases where human life is threatened;

(j) preparing and distributing conservation materials and reports of each Commission meeting; and

(k) performing such functions as are necessary and appropriate for the implementation of this Agreement.

8. The Commission shall establish a scientific working group and other working groups as it deems necessary to assist in carrying out its tasks.

9. The Commission shall bring to the attention of the competent authorities of the Contracting Parties and of native people its determinations with respect to the matters covered in this Article.

ARTICLE 9

Each Contracting Party shall have the right to harvest one-half of the annual taking limit of polar bears determined by the Commission. If a Contracting Party does not intend to harvest one-half of the annual taking limit it may, subject to the agreement of the Commission, transfer to the other Contracting Party part of its remaining share of the annual taking limit and shall so notify the other Contracting Party through diplomatic channels.

ARTICLE 10

1. Each Contracting Party shall take such steps as are necessary to ensure implementation of this Agreement.

2. Each Contracting Party shall monitor the harvest of polar bears in those areas subject to its national jurisdiction.

3. Each Contracting Party shall report to the Commission annually on:

(a) steps taken in accordance with Paragraphs 1 and 2 above, including the adoption of laws and regulations, and measures to enforce them;

(b) steps taken to involve native people in the implementation and enforcement of this Agreement; and

(c) scientific data and information on the Alaska–Chukotka polar bear population, including harvest information provided by native people.

ARTICLE 11

Nothing in this Agreement shall be interpreted as limiting the right of each Contracting Party to take additional measures, including designation of specially protected natural areas, to protect polar bears in areas under its national jurisdiction.

ARTICLE 12

In the event of any disagreement with regard to the interpretation or application of the provisions of this Agreement, the Contracting Parties shall consult with a view to resolving the disagreement through negotiation. At the request of either Contracting Party, the Commission shall examine any point of disagreement. The recommendations of the Commission in such matters shall be presented to the Contracting Parties.

ARTICLE 13

1. This Agreement shall enter into force 30 days after the date on which the Contracting Parties have exchanged written notification through diplomatic channels that they have completed their respective domestic legal procedures necessary to bring the Agreement into force, and shall remain in force unless terminated in accordance with paragraph 2 of this Article.

2. Either Contracting Party may terminate this Agreement upon written notification to the other through diplomatic channels. Any such notification shall be made not later than June 30 of any calendar year for termination to become effective on January 1 of the following year. Notifications made later than June 30 shall become effective on January 1 of the year after the following year.

DONE AT WASHINGTON, D.C. on October 16, 2000, in duplicate in the English and Russian languages, both texts being equally authentic.

FOR THE GOVERNMENT OF THE UNITED STATES OF AMERICA:

David Sandalow

FOR THE GOVERNMENT OF THE RUSSIAN FEDERATION:

Yuriy Ushakov

Appendix B. Alaska Nanuuq Commission and U.S. Fish and Wildlife Service 5-year Implementation Plan of Co-management Agreement, Alaska–Chukotka Subpopulation of Polar Bears

Alaska Nanuuq Commission
5-Year Implementation Plan of Co-Management Agreement
Alaska–Chukotka (AC) Population of Polar Bears
DRAFT

GOAL
Implement regulated harvest in the U.S. through the USFW-ANC Co-Management Agreement for the Alaska–Chukotka (AC) population of polar bears.

Project management and multi-year resource needs:

- Dedicated staff within MMM and ANC
- Travel
- Meetings
- Educational Outreach (Community / Regulatory Agencies)
- Scientific Research
- Sufficient funding for ANC

OBJECTIVES
Objective 1: *Capacity Development* | Develop capacity to implement the USFW-ANC Co-Management Agreement.

- Task 1: Develop a ANC Co-Management Working Group | The working group will consist of the ANC Executive Director, the ANC Commissioners, ANC Legal Counsel, and North Slope Borough Department of Wildlife Management (NSB DWM) Scientists. The group will develop a cooperative agreement based on a needs study, subsistence hunter input and scientific data on the polar bear population. The agreement will include a quota determined by the scientific information, harvest reporting guidelines, and a civil process for enforcing the quota.
- Task 2: Identify and Secure Funding | ANC will research, identify and secure sufficient funding necessary to complete the implementation of the Co-Management Agreement.
- Task 3: Develop a ANC/Agency Working Group | Develop a working group that includes staff from Marine Mammals Management (Polar Bear Program and Marking,

Tagging and Reporting Program) (MMM), Department of the Interior Solicitor's office (SOL), and ANC that coordinates with the U.S. Joint Commissioners.

- Task 4: Establish Compliance Officer | ANC will establish either a paid compliance officer (if funding is available) or task the ANC Commissioners with this duty. ANC will utilize this position/positions to assist with ANC implementation efforts.
- Task 5: Establish MMM Lead | Identify a dedicated lead person in MMM whose priority is managing the Bilateral Agreement

Objective 2: *Community Participation* | Include ANC communities in the Co-Management process.

- Task 1: Community Visits | Hold ANC village meetings to engage the community in the Co-Management process. ANC will educate the community about the importance of Co-Management, the expectations, what they can expect.

Objective 3: Scientific *Research on Polar Bear Population* | Incorporate research into the Co-Management strategy to accurately determine the polar bear population and utilize this information to establish realistic quotas that meet subsistence needs while focusing on conservation.

- Task 1: Population Research | Establish a research program and guidelines to accurately identify the polar bear population for Alaska and Chukotka.
- Task 2: Needs Study | Conduct a Needs Study to determine the subsistence needs of each ANC community.

Task 3: Establish Quota | Utilize the population research and Needs Study to determine a fair quota.

Objective 4: *Educational Outreach* | Develop educational material to elevate awareness regarding the protection and conservation of polar bears as well as the importance of the aboriginal subsistence hunt to the survival of Inupiat and Yupik Eskimos.

- Task 1: Radio | Enhance current radio spots to focus on conservation and the cultural and nutritional need for the subsistence hunt. Focus media placement in communities along the Arctic coast of Alaska as well as placement on YouTube and the ANC website.
- Task 2: Website | Enhance the current ANC website to include research, harvest reports, and community data. Highlight conservation and the cultural and nutritional need for the subsistence hunt.
- Task 3: Social Media | Develop social media sites for further outreach.
- Task 4: Video | Develop an ANC video with subsistence hunting footage and interviews that can be utilized to build awareness and as an educational tool for both internal and external audiences.
- Task 5: Brochure | Develop an ANC brochure mirroring the message in the video that can be utilized to build awareness and as an educational tool for both internal and external audiences.

- Task 6: Village Outreach | Visit key ANC villages to educate communities and hunters about the purpose of the organization, the importance of co-management, hunting quotas, harvest reports, tagging and quota enforcement.
- Task 7: Public Relations | Build awareness throughout the state and internationally regarding the protection and conservation of polar bears, ANC's co-management efforts, and the importance of the aboriginal subsistence hunt to the survival of Inupiat and Yupik Eskimos.

Objective 5: ***Implement Co-Management Plan*** | Develop and implement a Cooperative Agreement with USFWS to include an enforcement strategy for the subsistence hunt.

- Task 1: Develop a Cooperative Agreement | ANC will develop a cooperative agreement utilizing funding from USFWS.
- Task 2: Develop Enforcement Strategy | Review draft Shared Harvest Management Plan from 2012 and MMM/ANC to hold a meeting with ANC Commissioners and USFWS to identify enforcement strategy for phased implementation approach
- Task 3: Phased Civil Enforcement | Violations of the existing prohibitions incorporated into Title V of the MMPA, i.e., Provisions of the Bilateral Agreement at Article 6 such as taking of females with cubs and denning bears, use of aircraft or large motorized vessels/vehicles to hunt bears, will be subject to immediate civil enforcement action. ANC will work with Tribal Governments to ensure conveyance of legal authority is transferred to the ANC to address potential over harvest issues should they arise are addressed and reported to the USFWS.

Task 4: Update SHMP | ANC will update SHMP (including reporting system and enforcement structure) and prepare outreach strategy for presenting SHMP to villages that are included in the Bilateral Agreement.

Objective 6: ***Monitoring Effectiveness of Reporting System*** | Monitor the effectiveness of the Co-Management reporting system to ensure accurate and timely reporting.

- Task 1: Identify Taggers | Ensure that MTRP taggers are identified in each village.
- Task 2: Tagger Training | Conduct training workshop for taggers.
- Task 3: Harvest Reporting in Real Time | Begin to report harvest levels back to communities in real time to ensure that overages don't occur
- Task 4: AC Harvest Management Meeting | First annual AC harvest management meeting with reps from IRAs, ANC, NSB scientists, and FWS to discuss annual quota
- Task 5: Bio-sampling Protocol and Procedures | Finalize bio-sampling protocol and procedures; purchase necessary equipment
- Task 6: Federal Register Publication | Identify and if necessary publish in the *Federal Register* a full law enforcement regime, including a range of civil authorities that will be instituted by ANC and USFWS
- Task 7: Village Outreach | Conduct outreach (village visits) to communicate enforcement strategy

Objective 7: ***Quota & Enforcement System in Use*** | Initiate the full five-year multi-year quota system including full enforcement.

- Task 1: AC Harvest Management Meeting | Second annual AC harvest management meeting with reps from IRAs, ANC, NSB scientists, and FWS to discuss annual quota
- Task 2: Village Outreach | Continued outreach and village visits
- Task 3: Harvest Reporting in Real Time | Begin to report harvest levels back to communities in real time to ensure that overages don't occur
- Task 4: Notifications of Violations | Issue notification of violations for exceeding quotas, if necessary.

Task 5: Bio-sampling | Begin bio-sampling program.

Appendix C. Joint Statement of Geoffrey L. Haskett and Jack Omelak before the U.S.–Russia Polar Bear Commission on harvest management in the United States.

Joint Statement of Geoffrey L. Haskett and Jack Omelak before the U.S.–Russia Polar Bear Commission on harvest management in the United States

Thank you my fellow Commissioners, members of our two delegations as well as observers to this meeting. As we all acknowledged in 2010, a legal harvest will improve conservation of the Alaska–Chukotka polar bear population, reduce illegal take in Russia and provide valuable harvest information. As you will recall, we have thoughtfully delieberated and debated what a legal subsistence harvest would look like, and ultimately our discussions recognized the need that any harvest level be based on recommendations from the Scientific Working Group (SWG). In 2010, after discussions, the SWG recommended that we establish a harvest level of 58 bears to be split between our shared jurisdictions; this quota has been reaffirmed by the SWG as well as the Commission in 2011, 2012, 2013, and now again in 2014.

Recognizing the need to implement this quota for long-term polar bear conservation purposes, the U.S. Fish and Wildlife Service (Service) has been working with the Alaska Nanuuq Commission (ANC) to establish a process in the U.S. that ensures our Alaska Native subsistence hunters are fully informed of the need for this quota and that mechanisms are in place that minimize the potential for over-harvest of polar bears. We recognize that the polar bear is an important subsistence resource and that implementation of the quota will be best achieved through capacity development and community participation.

Therefore, the Service and the ANC agree to implementation of the harvest quota adopted by the U.S.-Russia Polar Bear Commission with phased implementation of enforcement through a cooperative agreement establishing local management authority beginning January 1, 2016, including ANC's intent to undertake civil oversight and enforcement for the long term conservation of the polar bear:

Over the next 18 months our goals are:

Objective 1: *Capacity Development* – The Service and the ANC to develop capacity to implement the Shared Harvest Management Plan, including:

- Establishing a Co-Management/Shared Harvest Management Plan (SHMP) Working Group that will bring expertise from the Service, the ANC, the North Slope Borough and other partners to finalize our SHMP.
- Continued discussion to explore future enforcement and joing enforcement responsibilities

- Establishing a reporting process and Compliance Officers for the Alaska Native villages, so that communities will have knowledgeable representatives to turn to for information about the quota and reporting harvest

Objective 2: *community Participation* – The Service will work with the ANC to ensure Communities are:

- Informed about the importance of Co-Management, what they can expect and how they are a part of the process.

Objective 3: *Delegation of Tribal Authority* – The Service will work with the ANC to ensure:

- The transfers of required legal authorities needed by the ANC from the Tribal Governments are achieved, what they can expect, and how they are part of the process.

Objective 4: *Scientific Research on Polar Bear Population and Development of Needs Study To Inform Decisions on Quota Updates* – The Service will work with the ANC to ensure research directed under the bilateral agreement includes:

- Polar bear population assessment for Alaska and Chukotka
- Needs study to determine the subsistence requirements of each ANC community

Objective 5: *Education Outreach* – The Service will work with the ANC to develop educational materials to elevate awareness regarding the protection and conservation of polar bears as well as the importance of the aboriginal subsistence to the survival of Inupiat and Yupik Eskimos.

- Build awareness throughout the state and internationally regarding the protection and conservation of polar bears, ANC's co-management efforts and the importance of the aboriginal subsistence hunt to the survival of the Inupiat and Yupik Eskimos.

Objective 6: *Monitoring Effectiveness of Reporting System* – The Service will work with the ANC to confirm the effectiveness of the reporting system to ensure accurate and timely reporting.

Objective 7: *Quota System in Use* – As noted, the Service will work with the ANC for implementation of the harvest quota beginning on January 1, 2016.

- Begin development of ANC's internal harvest monitoring and internal reporting system in 2015
- Annual AC harvest management meetings with reps from stakeholder entities including, ANC, NSB, and State of Alaska scientists, and FWS to discuss annual quota occurring.
- Continued outreach and village visits occurring
- Harvest reporting in real time to be occurring
- Bio-sampling program to be underway

It will take a concerted effort from the Service, the ANC and the Alaska Native tribes and hunters to meet these commitments, but the Service and the ANC are resolved to move forward with implementation under the Agreement and are committed to a process that embodies the co-management concepts under which the Agreement was first negotiated.

When we met in St. Petersburg last year we learned from our Russian counterparts of their intention to transfer authority regarding the ability to conserve mammals to the people of the Chukotka Autonomous Region in 2014. Also during the 2013 meeting of the Commissions, Comissioners Kavry and Omelak put forth a joint statement supporting the U.S.'s continued development of its version of the Shared Harvest Management Plan, and encouraging the Russian Federation to make significant measurable progress toward development of a similar Shared Harvest Management Plan, including development of a management system for the utilization and monitoring of the Alaska–Chukotka population of polar bears.

The United States fully supports these statements, and we believe these commitments towards actions domestically, as stated above, will serve to achieve our mutual desire for strong polar bear conservation into the future while providing for the continued subsistence use of this important species. We therefore encourage our counterparts in the Russian Federation to similarly move forward with actions that will likewise conserve the polar bear and provide for local subsistence needs.

Appendix D. 50 CFR Part 18: Marking, Tagging, and Reporting of harvested polar bear and their parts.

Title 50: Wildlife and Fisheries
PART 18—MARINE MAMMALS
Subpart C—General Exceptions

§18.23 Native exemptions.

(a) *Taking.* Except as otherwise provided in part 403 of this title, any Indian, Aleut, or Eskimo who resides in Alaska and who dwells on the coast of the North Pacific Ocean or the Arctic Ocean may take any marine mammal without a permit, subject to the restrictions contained in this section, if such taking is:

(1) For subsistence purposes, or

(2) For purposes of creating and selling authentic native articles of handicraft and clothing, and

(3) In each case, not accomplished in a wasteful manner.

(b) *Restrictions.* (1) "Except for a transfer to a duly authorized representative of the Regional Director of the U.S. Fish and Wildlife Service for scientific research purposes, no marine mammal taken for subsistence may be sold or otherwise transferred to any person other than an Alaskan Native or delivered, carried, transported, or shipped in interstate or foreign commerce, unless:

(i) It is being sent by an Alaskan Native directly or through a registered agent to a tannery registered under paragraph (c) of this section for the purpose of processing, and will be returned directly or through a registered agent to the Alaskan Native; or

(ii) It is sold or transferred to a registered agent in Alaska for resale or transfer to an Alaskan Native; or

(iii) It is an edible portion and it is sold in an Alaskan Native village or town.

(2) "Except for a transfer to a duly authorized representative of the Regional Director of the U.S. Fish and Wildlife Service for scientific research purposes, no marine mammal taken for purposes of creating and selling authentic Native articles of handicraft and clothing may be sold or otherwise transferred to any person other than an Indian, Aleut or Eskimo, or delivered, carried, transported or shipped in interstate or foreign commerce, unless:

(i) It is being sent by an Indian, Aleut or Eskimo directly or through a registered agent to a tannery registered under paragraph (c) of this section for the purpose of processing, and will be returned directly or through a registered agent to the Indian, Aleut or Eskimo; or

(ii) It is sold or transferred to a registered agent for resale or transfer to an Indian, Aleut, or Eskimo; or

(iii) It has been first transformed into an authentic Native article of handicraft or clothing; or

(iv) It is an edible portion and it is sold (A) in an Alaskan Native village or town or (B) to an Alaskan Native for his consumption.

(c) The restriction in paragraph (b) shall not apply to parts or products of the Pacific walrus (*Odobenis rosmarus*) to the extent that the waiver of the moratorium and the approved State/Federal regulations relating to the taking and importation of walrus permits the delivery, sale, transportation or shipment of parts or products of the Pacific walrus in interstate or foreign commerce.

(d) Any tannery, or person who wishes to act as an agent, within the jurisdiction of the United States may apply to the Director for registration as a tannery or an agent which may possess and process marine mammal products for Indians, Aleuts, or Eskimos. The application shall include the following information:

(1) The name and address of the applicant;

(2) A description of the applicant's procedures for receiving, storing, processing, and shipping materials;

(3) A proposal for a system of bookkeeping and/or inventory segregation by which the applicant could maintain accurate records of marine mammals received from Indians, Aleuts, or Eskimos, pursuant to this section;

(4) Such other information as the Director may request;

(5) A certification in the following language:

I hereby certify that the foregoing information is complete, true, and correct to the best of my knowledge and belief. I understand that this information is submitted for the purpose of obtaining the benefit of an exception under the Marine Mammal Protection Act of 1972 (16 U.S.C. 1361-1407) and regulations promulgated thereunder, and that any false statement may subject me to the criminal penalties of 18 U.S.C. 1001.

(6) The signature of the applicant.

The sufficiency of the application shall be determined by the Director, and in that connection, he may waive any requirement for information, or require any elaboration or further information deemed necessary. The registration of a tannery or other agent shall be subject to the conditions as the Director prescribes, which may include, but are not limited to provisions regarding records, inventory segregation, reports, and inspection. The Director may charge a reasonable fee for such applications, including an appropriate apportionment of overhead and administrative expenses of the Department of Interior.

(e) Notwithstanding the preceding provisions of this section, whenever, under the Act, the Secretary determines any species or stock of marine mammals to be depleted, he may prescribe regulations pursuant to section 103 of the Act upon the taking of such marine mammals by any Indian, Aleut, or Eskimo and, after promulgation of such regulations, all takings of such marine mammals by such person shall conform to such regulations.

(f) *Marking, tagging, and reporting.* (1) In addition to definitions contained in the Act, 50 CFR 18.3, and 50 CFR 18.27, in this paragraph (f):

(i) The term “marking and tagging” of marine mammals as specified in section 109(i) of the Act refers to the actual physical attachment of an approved band or other such marking device or technique to the raw or unhandicrafted (including unmarked tanned skins) skin and skull of polar bears, the tusks of walruses, and the skin and skull of sea otters; and

(ii) The term “reporting” means the collection by Service personnel or the Service's authorized local representatives of biological data, harvest data, and other information regarding the effect of taking of marine mammals on populations, the collection of which the Service determines to be necessary for management purposes. Reporting will be done on forms provided by the Service upon presentation for marking, tagging, and reporting purposes of the marine mammal(s) or specified raw or unhandicrafted parts thereof.

(2) Notwithstanding the preceding provisions of this section, but subject to the provisions and conditions contained in this paragraph, no polar bear, walrus, or sea otter, or any parts thereof, taken or collected by an Alaskan Native for subsistence purposes or for purposes of creating and selling authentic Native articles of handicrafts and clothing may be possessed, transported within, or exported from Alaska unless the animal(s), or specified parts thereof, have been reported to, and properly marked and tagged by, Service personnel or the Service's authorized local representative; except:

(i) An Alaskan Native that harvested or participated in the harvest of a polar bear, sea otter, or walrus and who possesses the animal, or any parts thereof, may possess the unmarked, untagged, and unreported animal(s), or parts thereof, for a period of time not to exceed 30 days from the time of taking for the purpose of transporting the specified parts to Service personnel or the Service's local authorized representative for marking, tagging, and reporting;

(ii) Alaskan Natives and registered agents/tanneries may possess the specified unmarked or untagged raw, unhandicrafted, or tanned parts thereof for a period of time not to exceed 180 days from the effective date of this rulemaking for the purpose of transporting to Service personnel or the Service's local authorized representative for marking and tagging if the specified parts thereof were taken or possessed between December 21, 1972, and the effective date of this regulation. There is no reporting requirement for marine mammals, or specified parts thereof, covered by this paragraph.

(3) Those unmarked, untagged, and unreported specified parts of polar bear, walrus, and sea otter, that must be presented to Service personnel or an authorized Service representative for marking, tagging, and reporting are as follows:

(i) Polar bear—skin and skull.

(ii) Walrus—tusks.

(iii) Sea otter—skin and skull.

(4) The locations where Service personnel or the Service's authorized local representative will be available for marking, tagging, and reporting purposes will be announced annually by the Alaska Regional Director. Local persons authorized to act as representatives for marking, tagging, and reporting purposes in the absence of Service personnel will also be announced annually by the Alaska Regional Director.

(5) Marks and tags will be attached or applied to the skins, skulls, and tusks of the marine mammal(s) in such a manner as to maximize their longevity and minimize their adverse effects to the appearance of the specified parts that might result due to hindering the tanning or handicrafting of skins, or the handicrafting of tusks or skulls. If the tag or mark comes off of the specified part the person in possession of the part shall have 30 days to present the part and broken tag or other marking device to the Service or the Service's authorized local representative for remarking or retagging purposes.

(6) Marks and tags for skins, skulls, and tusks will be provided by the Service. They will be numbered for accountability and of such design, construction, and material so as to maximize their durability and longevity on the specified parts.

(7) Data collected pursuant to this paragraph will be reported on forms provided by the Service and maintained in the Service's Regional Office, Anchorage, Alaska. The Service will summarize the data annually and make it publicly available. The data will also be included in the Service's annual report to Congress as set forth in section 103(f) of the Act.

(8) All items of research (e.g., radio collars, satellite transmitters, tags, etc.) that were attached to animals taken by Alaskan Natives must be returned to Service personnel or an authorized Service

representative at the time the animal, or specified unhandicrafted parts thereof, are presented for marking, tagging, and reporting. No penalty will be imposed under the Act for a violation of this paragraph. However, penalties may be sought by the Service under other applicable Federal laws governing the possession and use of Federal property.

(9) Pursuant to this paragraph (f), the following specific conditions and provisions apply:

(i) Marking, tagging, and reporting of polar bears or specified parts thereof.

(A) The skin and skull of an animal must accompany each other when presented for marking, tagging, and reporting except that the skin and skull of an animal need not be presented together for marking and tagging purposes if taken between December 21, 1972, and the effective date of this regulation.

(B) Except as provided in paragraph (f)(2)(ii) of this section, the following information must be reported by Alaskan Natives when presenting polar bears, or specified parts thereof, for marking and tagging: sex of animal, date of kill, and location of kill.

(C) Both the skin and the skull will be marked and tagged and a rudimentary pre-molar tooth may be removed from the skull and retained by the Service. The skin must have the sex identifiers, such as vaginal orifice, teats, or penal sheath or baculum, either attached to, or accompanying the skin.

(D) The skull must be skinned out and the skin may be frozen or unfrozen when presented for marking, tagging, and reporting. If the skin is frozen, the sex identifiers, such as vaginal orifice, teats, penal sheath or baculum, must be visible.

(E) Marks and tags must remain affixed to the skin through the tanning process and until the skin has been severed into parts for crafting into handicrafts or for as long as is practical during the handicrafting process.

(ii) Marking, tagging, and reporting of walrus or specified parts thereof.

(A) The paired tusks of the animal(s) must, to the maximum extent practical, accompany each other when presented for marking, tagging, and reporting purposes, except that paired tusks need not be presented together for marking and tagging purposes if taken between December 21, 1972, and the effective date of this regulation.

(B) Except as provided in paragraph (f)(2)(ii) of this section, the following information must be reported by Alaskan Natives when presenting walrus, or specified parts thereof, for marking and tagging: date of take, sex of animal, whether live-killed, floating-dead, or beach-found, and location of the take or location of animal if found floating and dead or beach-found.

(C) Marks and/or tags must remain affixed to the tusks until they have been crafted into a handicraft or for as long as is practical during the handicrafting process.

(iii) Marking, tagging, and reporting of sea otter or specified parts thereof.

(A) The skin and skull of an animal must accompany each other when presented for marking, tagging, and reporting, except that the skin and skull of an animal need not be presented together if taken between December 21, 1972, and the effective date of this regulation.

(B) Except as provided in paragraph (f)(2)(ii) of this section, the following information must be reported by Alaskan Natives when presenting sea otters, or specified parts thereof, for marking and tagging: date of kill, sex of animal, and location of kill.

(C) Both the skin and skull will be marked and tagged and a rudimentary pre-molar tooth may be removed from the skull and retained by the Service. The skin must have the sex identifiers, such as vaginal orifice, teats, or penal sheath or baculum, either attached to, or accompanying the skin.

(D) The skull must be skinned out and the skin may be frozen or unfrozen when presented for marking, tagging, and reporting. If the skin is frozen, the sex identifiers, such as vaginal orifice, teats, or penal sheath or baculum, must be visible.

(E) Marks and tags must remain affixed to the skin through the tanning process and until the skin has been severed into parts for crafting into handicrafts or for as long as is practical during the handicrafting process.

(10) No person may falsify any information required to be set forth on the reporting form when the marine mammal(s), or specified parts thereof, are presented as required by these regulations.

(11) Possession by any person of marine mammal(s), or any parts thereof, in violation of the provisions and conditions of this §18.23(f) is subject to punishment under the penalties provided for in section 105(a)(1) of the Act.

(12) The information collection requirements contained in this §18.23(f) have been approved by the Office of Management and Budget under 44 U.S.C. 3501 *et seq.* and assigned clearance number 1018-0066. The information is mandatory in order to have the marine mammal parts “marked and tagged,” and thereby made eligible for continued lawful possession. Non-response may result in the Service determining the wildlife to be illegally possessed and subject the individual to penalties under this title.

[39 FR 7262, Feb. 25, 1974, as amended at 40 FR 59444, Dec. 24, 1975; 45 FR 54057, Aug. 14, 1980; 51 FR 17981, May 16, 1986; 53 FR 24283, June 28, 1988]

Appendix E. MTRP polar bear harvest certificate.

OMB Control No. 1018-0066
Expiration Date: XX/XX/2017

DEPARTMENT OF THE INTERIOR
U.S. FISH & WILDLIFE SERVICE
POLAR BEAR CERTIFICATE #

Tagging Date _____

Hide Tag Number_____Skull Tag Number_____

Tagging Location _____

Village Hunted From (If Different) _____

Age Class	Sex	Sex Identifier	Skull
Adult _____	Male _____	Penis Sheath _____	Length_____
Sub Adult	Female _____	Vaginal Orifice _____	Width_____
Cub _____	Unknown ____	Teats _____	Total _____

Cubs Present	Specimens Collected	Transportation
Yes_____ No _____	Tooth_____Kidney____	Boat ORV
Bear Condition	Claw_____Liver _____	Foot (in town) ____
Obese ____	Fat_____Repro_____	Snow Machine _____
Fat ____	Skin/Muscle _____	Car/Truck_____
Average ____	Baculum _____	Other _____
Thin ____	Muscle Vial _____	
Skinny ____		

Date of Kill_____Days/Hours Hunted _____

Location of Kill (Be Specific) ___

_____ GPS: Latitude

_____Longitude _____

Chest Measurement / Axial Girth _____

Remarks _____

_____

_____ Defense of Life/Property: Yes No

Signature of Tagger _____

Name of Hunter (Print)

Signature of Hunter ___

Instructions on Inside of Front Cover

WHITE-ORIGINAL PINK-HUNTER'S COPY YELLOW-TAGGER'S COPY


ALASKA
DEPARTMENT OF FISH AND GAME