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

Compiled by Scott Schliebe, Stephanie Kuhns, Lori Quakenbush, and Mark Nelson

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

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

Held Anchorage, Alaska, 7-8 October, 2015

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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: Little Diomede, Alaska polar bear hunter. **U**.S. Fish and Wildlife Service photo by Scott Schliebe, 1984.

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Background and Support

The State of Alaska through the Alaska Department of Fish and Game (ADF&G) has identified a need to assist in ongoing polar bear conservation efforts. A Section 6 Endangered Species Act grant was awarded for the project entitled, "Co-management of the Alaskan Harvest of the Alaska-Chukotka Polar Bear Subpopulation: How to Implement a Quota?" The overall objective of this project is to support the Alaska Nanuuq Commission[1] (ANC) during their co-management efforts with the US Fish and Wildlife Service (USFWS) to implement a harvest quota for the Alaskan subsistence harvest of the Alaska-Chukotka polar bear subpopulation. A first step in accomplishing this objective is to evaluate the current reporting system for polar bear harvests in the U.S. This workshop, held 7-8 October, 2015 in Anchorage, Alaska, was a component in evaluating the effectiveness of this current reporting system, the USFWS Marking, Tagging and Reporting Program (MTRP), for polar bears of the Alaska-Chukotka subpopulation. Participants for the workshop were chosen based on their role, past involvement and continued interest in Alaska polar bear conservation and in this specific project. They included the following affiliations: ANC and ANC village representatives, ADF&G, North Slope Borough (NSB), and USFWS.

Please see the accompanying publication for this project that evaluates MTRP data from 1988 to 2014 to further identify improvements needed for polar bear harvest reporting and to provide additional recommendations to enhance effective implementation of the US-Russia Bilateral Agreement and co-management between the USFWS and ANC: Schliebe, S. L., B. Benter, E. V. Regehr, L. Quakenbush, J. Omelak, M. Nelson, and K. Nesvacil. 2016. Co-management of the Alaskan harvest of the Alaska-Chukotka polar bear subpopulation: How to implement a harvest quota. Wildlife Technical Bulletin ADF&G/DWC/WTB-2016-15. Alaska Department of Fish and Game, Juneau.

Workshop Summary, 7 October

WELCOME

Scott Schliebe thanked the participants for their attendance and input and reviewed the daily schedule and provided general information regarding the conference facility. Schliebe indicated that his role was to facilitate the workshop and provide information regarding his review of the MTRP. Others in attendance provided a short statement on their expectations for the workshop and affiliations with their introduction.

[1] The 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.

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INDIVIDUAL INTRODUCTIONS

Jack Omelak, ANC, described the shared efforts between USFWS and ANC to implement a management plan for the Alaska-Chukotka polar bear population and indicated that effective management depends on accurate and timely harvest reporting. In order to implement the agreement, last year ANC with the USFWS developed 5-year management plan. Jack indicated his hope that the MTRP workshop would result in suggestions for more complete reporting and effective management.

Charlie Brower, ANC, indicated that the MTRP went into effect in 1988 and efforts are still continuing to look for new ways to improve marking and tagging compliance. He voiced support for the workshop.

Kim Titus, ADF&G, indicated that ADF&G brings different perspectives to the table through their involvement in conservation programs for other marine mammals and terrestrial mammals. These include harvest reporting, data collection, and including local observations within their information base. They have a long history of working with rural Alaskans and Alaska Natives to share knowledge and can use this to enhance the reporting of polar bears. The State of Alaska and ADF&G are obligated under the constitution to manage wildlife for the benefit of all Alaskans.

Taqulik Hepa, NSB, commented that the MTRP is doing its job but has had problems in the past and needs improvement in reporting. NSB has access to local hunters and has developed trust and support in working closely with the hunters and offered to collaborate in improving harvest reporting for polar bears.

Hilary Cooley, USFWS, said that the implementation of the bilateral agreement is a priority for the USFWS and they are committed to its success. She mentioned that she is relatively new to her position, has a background in large mammals, and hoped to learn from the views of others at the workshop.

Introductions also included:
Brad Benter, USFWS
Forrest Hannan, USFWS
Jonathan Snyder, USFWS
Mike Hendrick, USFWS
Kelly Nesvacil ADF&G
Rory Stark, FWS/OLE
Ryan Noel, FWS
Andy Von Duyke, NSB
Mark Nelson, ADF&G

Mac Whisler, FWS
Lori Quakenbush, ADF&G
Phoebe Omelak (Jack's mom/guest)
Elizebeth Shea, ANC
Harry Brower, Jr., NSB
Clyde Oxerok, Village of Wales
Eddy Ungott, Village of Gambell
Ryan Wilson, USFWS
Craig Perham, USFWS
Stephanie Kuhns, USFWS (recorder)

Workshop Purpose

Scott Schliebe framed the purpose of the workshop by indicating in the next two days would provide a critical review/evaluation of the MTRP database including to:

- identify potential deficiencies; explore methods or approaches to improve harvest reporting compliance and completeness;
- develop recommendations for improvements for consideration by the USFWS and ANC;
- evaluate how participants felt about specific recommendations (recognizing that some individuals will have different views on various recommendations).

Schliebe recognized that regardless of the outcome of the evaluation, the MTRP has collected a wealth of essential harvest data over the years and the review is not intended to diminish that value but seeks to improve data collection in the future.

Hepa and Brower, Jr. indicated this isn't a true stakeholders meeting because those most affected, the individual hunters, are not fully a part of the workshop. Schliebe indicated that this is a first step and the ultimate way for the MTRP to be successful is through enlisting support by the hunters themselves.

This evaluation pertains only to Native subsistence harvesting of polar bears and does not include any other type of hunting/mortality or take.

The workshop has implications for federal policies/practices regarding polar bear harvest and reporting. Additional steps through education, outreach and consultation may be necessary to fully inform and enlist support from affected hunters. The importance of this workshop is significant and may relate to how and when the Alaska- Chukotka subpopulation harvest quota is implemented. Hopefully, any significant changes in reporting will have an outreach process that precedes policy changes. There was a recognition that some organizations and individuals may wish to institute the quota immediately; but most believed effectively instituting changes would require additional efforts through public education and outreach, including village visits,

community meetings, personal one-on-one discussions with hunters, and increased involvement of Alaska Natives in the process.

Omelak talked about a meeting “last Friday” with Cooley and USFWS and there were misunderstandings on both sides about how to proceed. The U.S. is ahead of Russia in implementing the quota because the U.S. is pushing harder for implementation, but if the Russians are nowhere near where we are in the process, do we need to hurry a “bilateral” agreement? Omelak questioned if the results of the workshop would help to guide USFWS policy going forward in implementation in areas with Native involvement and requested a response from Cooley. Cooley responded that USFWS remains committed to Native involvement and will fully consider the input and outcomes from this workshop.

Titus indicated a need to evaluate the “current lay of the land,” what is currently happening, particularly in light of “east coast beltway” policy decisions and what is feasible or not, and how decision making is taking place in order to guide us as we move forward.

Presentation Summary - Marking and Tagging Reporting Program (MTRP) 2015, Brad Benter, USFWS MTRP Coordinator

Please see Appendix A for a copy of this presentation.

The MTRP involves a network set up in 105 communities throughout Alaska including approximately 170 individuals hired as taggers. The MTRP is authorized under the Marine Mammal Protection Act (MMPA) and includes requirements for hunters to present polar bear hides and skulls to a USFWS representative within 30 days of harvest for tagging. The USFWS administers the program and only two individuals, Forrest Hannan and Brad Benter, share a statewide workload. There was discussion within the group regarding the 30 day tagging requirement and some thought 30 days was too long and others thought it should be even longer. The program requires Benter and Hannan to spend a great deal of time on the phone and using social media to coordinate with and keep in touch with the individuals in communities the USFWS uses as their representatives for the tagging work (i.e., taggers). It is not physically nor financially possible for Benter and Hannan to visit every community every year.

POWERPOINT SUMMARY

- Overview
    - MMPA authorization and authority
    - 1988 starting date
    - Administered by USFWS
- Purposes
    - Monitor harvest of polar bears

    - Obtain biological data and specimens
    - Prevent illegal take, trade or transportation
- Tagging Requirements
    - Polar bear skulls and hides must be tagged
    - Take must be for subsistence purpose or creating handicrafts, and be non-wasteful
    - Tagging must occur within 30 days
- Location/communities with taggers (map)
- Processing hides and skulls, evidence of sex must remain naturally attached to hide
    - Hides with sex identifiers
    - Baculum attached to hide for sex identification
    - Skulls extract tooth for age
    - Research collars and ear tags must be reported and provided to taggers
- Tagger selection process
- Tagger payments
    - $100 minimum 1 bear tagged
    - $30/skull tagged tooth acquired
    - $15/hide tagged
    - Extra payment for house calls
    - Frequent communication with MTRP personnel
- Data use and report publications

GROUP DISCUSSION

Comment: Identification of sex of the harvested polar bear is required by MMPA. One conservative approach for polar bears reported unknown sex is to classify them as females. Some believed this action penalized hunters and that a different approach would be better.

Comment: A general recommendation was the MTRP needed an expanded and improved outreach campaign. Some felt that the ANC was the appropriate organization to implement this effort. The effort would emphasize educating hunters of the MTRP requirements and the important reasons to report harvest and get bears tagged.

Comment: Can outreach be done in the schools to educate the youth and young hunters? Recommendation implication was that this would be useful to the future success of the MTRP.

Response: The MTRP has about $60,000/year of operation funding and most is spent on tagger payments. Travel funding for village visits is limited. Although contact with Little Diomede hunters is important and the village is isolated, visits do have an unintended impact on the community. A village helicopter contract allows 90 trips per year, so when others make trips to the village, i.e. MTRP, their visit count against their limited number of helicopter trips. To more effectively implement the MTRP or any outreach program additional funding, time, increased effort and emphasis would be required.

Comment: What is the process and time frame if a tagger reports an illegal take?

Response: Benter, we respond immediately; but request that the informant call Office of Law Enforcement (OLE) directly.

Comment: Does ADF&G require hunters to provide proof of sex identification for other species?

Response: Yes, evidence of sex is required to remain attached to hide for brown bears, for example.

Comment: How is flexibility in harvest reporting or non-compliance in harvest reporting viewed by the Marine Mammal Commission (MMC)?

Response: Polar bear harvests in the Chukchi Sea under the U.S.-Russia Bilateral Agreement and elsewhere are going to come under more scrutiny, particularly now that they are listed under the ESA and upgraded on the International Union for Conservation of Nature (IUCN) Red List. The primary purpose of this workshop is to provide a series of approaches, discussion details, and recommendations to the ANC and USFWS for their use in developing co-management and shared enforcement implementation strategies/agreements for polar bear harvest to increase reporting compliance to 100%. Hunters will be more accountable for tagging harvested bears. The implementation agreements should be developed in the near future. Input may be sought from other organizations as needed. The MMC oversees Federal marine mammal actions and serves as advisory experts.

Comment: Concern was expressed that the MMC and other organizations exert a significant influence on management decisions. Some felt that it was disrespectful to the hunters to provide greater influence to the MMC above them. The USFWS and ANC should seek input and assistance from hunters. In order for this effort to be successful, the focus should be on two-way communications/outreach with the hunters to form ground-based support for the program. Educating the MMC and other conservation organizations of local views were thought to be useful in promoting two-way communications.

Discussion: The Alaska Eskimo Whaling Commission (AEWC) is an example of a successful grassroots conservation program that relied upon the input of hunters and the captains. The ANC currently doesn't have the same implementations structure/capacity in place, but the AEWC bowhead whale model is a good example to use. A group discussion followed on communications, collaboration and education. A successful example of how communities and hunters were involved in phasing out lead shot for migratory bird hunting was discussed. This current effort may benefit from similar approaches taken regarding lead shot. All interested groups, USFWS, ANC, ADF&G, and NSB should be involved in this effort.

Comment: In Wales it will be critical to know when quotas go into effect.
Comment: The hunters know that it is important to conserve polar bears, but they don't want to give up their traditional practices.

Comment: Has anyone from the MMC ever gone to the communities to learn what it's like on the ground?

Response: No one was aware of MMC participation at the village level.

Comment: The MMC has influence in Washington D.C. in shaping policy, regulations, and MMPA amendments. It would be beneficial to increase understanding by MMC of on-the-ground community conditions and concerns. It was suggested that public meetings on regulatory actions be held in the Alaska communities rather than in Washington D.C. Some considered the MMC to be very disconnected from village or local concerns in Alaska.
Comment: Are struck and lost animals reported through the MTRP?

Response: Yes, for the most part, and these data are entered into the database. However, there is no way of knowing if all struck and lost are reported, therefore struck and loss numbers should be considered a minimum.

In many communities the harvest of a polar bear is a major event, although the harvest might not be reported directly by the hunter to the tagger. However, MTRP personnel, through an informal communications network, can learn of the harvest through reports from village residents.

Comment: Is it common for some communities to have very high harvests?

Response: It depends largely on sea-ice conditions during that year. For example, Pt. Hope has taken numerous bears in a short period in the past under favorable sea-ice conditions. The USFWS/MTRP explains to communities that it is important to report polar bear harvests so that others recognize that their community uses them.

Comment: The U.S.-Russia Bilateral Agreement was a stimulus for increased take of polar bears because some feared limits were to follow. Others indicated that harvest of polar bears supports a continued subsistence need.

Comment: Regarding the U.S.-Russia Bilateral Agreement, do we know what the Russians are doing to improve reporting? The USFWS should better inform the ANC on the status of Russian harvest reporting initiatives and harvest information.

Response: Russia is trying to institute a management system, but they are behind the U.S.

Comment: US hunters are being regulated more than Russia hunters when the population is shared and the goal is to have a coordinated and unified management system.

Response: Differences exist between the jurisdictions and implementation of harvest programs will vary between countries and likely result in a progression of actions phased into effect over time.

Comment: A meeting on 2 October 2015 in Shepherdstown, West Virginia which included Alaska stakeholders, Canadian polar bear managers and users, USFWS, and major U.S. conservation organizations revealed a wide range of differences in expectations for U.S. approaches to harvest regulations. Concern was voiced that there is significant pressure on the U.S. side to begin implementation in the U.S. Chukchi Sea region soon and that Russia is not developing similar management. The treaty is a bilateral effort, but it seems that Russian progress in implementing the agreement is lagging.

Comment: Can hunter observations on conditions (i.e., harvest rate relative to sea-ice conditions) be used to create a more comprehensive view of the situation? The communication between MTRP and villages needs improvement. Past MTRP village coordination by Wells Stephenson was recognized. More village visits would be useful. There are examples where including hunter observations within a larger network of information have been useful to inform managers of local situations and conditions.

Presentation Summary- Canadian Model for Polar Bear Management, Kim Titus, Chief Wildlife Scientist, ADF&G

The Canadian system is a fairly complex management system. The Canadian land claims provided significant roles and authorities for Native people in land management and wildlife conservation. For the most part, Native Canadians are more empowered than in the U.S. regarding polar bear harvest management. They establish annual quotas through local game management authorities, establish allocation systems by community, and harvest tags can be traded/transferred to some extent. Some management systems in Canada provide “tagger kits” that are distributed to the hunters to collect data and specimens from harvested bears to inform harvest management. This local system “designates hunters” who are allowed to harvest polar bears. This approach results in a high compliance rate and complete harvest data. Local designated hunters work with other hunters to collect information, samples, and tag the bears. Hunters are paid for their samples.

GROUP DISCUSSION

Comment: Does "designated hunter" mean that only certain people can hunt polar bears?

Response: Yes. These are not opportunistic hunts, but instead they are targeted polar bear hunts. It is a local management system which decides management regulations, including quotas. The system provides a priority for subsistence harvest, but some hunts are for paid non-native hunters. Proof of sex is required. If it is not included in the returned tag kit the bear is considered a female; there can be penalties, fines, and quota reductions/adjustments in subsequent seasons.

Comment: How are these programs funded?

Response: For the most part through Federal funding. In Canada a tax balancing system is in effect so that the wealthier regions are required to dedicate a portion of their taxes to less prosperous Territories and Provinces. The goal is to provide comparable median quality of life for all residents across throughout Canada.

Presentation Summary - Why is Complete Harvest Data Important? Scott Schliebe, Consultant

Polar bears are an important cultural and subsistence resource to Native people. They have religious and societal values. Conservation of polar bears is important on an international, national, and local scale. Today climate warming is an increasing stress to many polar bear populations. These factors along with listing polar bears as "threatened" under the ESA have heightened the general public concern for the fate of polar bears and their populations.

Due to a low reproductive rate, polar bear populations are susceptible to harvest, particularly harvest of females, therefore a 2:1 male to female harvest ratio is recommended. Accurate harvest information is important to understand sustainable harvest rates and the status of populations. Incomplete harvest data places populations at risk of poor management decisions and overharvest. Changes in the sea-ice habitat are the greatest threat to polar bear populations long-term. Hunting was not originally considered a threat to the population because harvests were well managed. However, as populations decline over the long-term harvest rate becomes a greater issue for population sustainability. Eric Regehr will expand on this topic on 8 October.

GROUP DISCUSSION

Comment: Because this is a two-sided effort, we need to know what the other side [Russia] is doing (i.e., we need better international communications).

Response: In the U.S. (USFWS/ANC), we are attempting to comply with the agreement and to lead by example. The expectation is that Russia will follow suit. The USFWS and ANC are partners and allies in this effort. The ANC, as legislated, is expected to play a significant role in leading management efforts. In order to advance shared civil enforcement between the USFWS and ANC, workshops should be conducted to help build the framework for this relationship between the parties.

Presentation Summary - Co-management of the Alaskan Harvest of the Alaska-Chukotka Polar Bear Subpopulation: How to Implement a Harvest Quota? An evaluation of the USFWS Marking, Tagging, and Reporting Program (MTRP) polar bear harvest database; 1988 to 2014, Scott Schliebe, Consultant

Please see Appendix B for a copy of this presentation.

The study area for this presentation includes the Chukchi, East Siberian, and Bering seas bounded by the extent of sea ice in the north and south. The major Alaska villages within this area that traditionally harvest polar bears include Pt. Lay, Pt. Hope, Kivalina, Kotzebue, Shishmaref, Wales, Brevig Mission, Little Diomede, Nome, Savoonga, and Gambell.

We reviewed the literature to determine if harvest reporting issues have been noted in the past; if so, conduct an in-depth evaluation of the MTRP through a series of questions/queries of the database. The database analysis included polar bears taken for subsistence, struck and loss, and cubs orphaned and placed into zoos. Reporting data are qualified using a quality ranking from 1 to 3, with 1 being the highest quality and 3 the lowest. The analysis used data of quality 1 and 2 as recorded in the MTRP database from 1988 to 2014 with the exception of the analysis of time between harvest and tagging which also included data quality 3 bears.

A full technical report has been produced of this assessment and this report should be the source for citable references. This report is available online at ADF&G and should be cited as: Schliebe, S. L., B. Benter, E. V. Regehr, L. Quakenbush, J. Omelak, and M. Nelson. 2016. Co-management of the Alaska Harvest of the Alaska-Chukotka Polar Bear Subpopulation: How to implement a harvest quota. Wildlife Technical Bulletin ADF&G/DWC/WTB-2016-15. Alaska Department of Fish and Game, Juneau. Data presented within the technical report are identical to the presentation. In some instances, as a result of later detailed peer review, the data has been corrected with very minor modifications. These revisions did not result in any substantive changes in the conclusions.

POWERPOINT SUMMARY

Literature review of prior harvest reporting

The literature review detected persistent underreporting of sex and incomplete information on age (i.e., tooth collection) throughout the MTRP. A number of efforts have been made to improve reporting; however, they did not result in noticeable improvement. The in-depth analysis of the MTRP was warranted and revealed the following regarding unreported harvest, unknown sex, incomplete sex identifiers, lack of tagging within the 30-day tagging time frame, and differences in reporting compliance by certain villages.

Complete reporting on sex of harvested polar bears

Approximately 10.5% of bears are reported as unknown sex annually.
In summary:

- Of 1,167 bears reported harvested between 1988 and 2014
    - Sex was reported for 1,044 bears, or 89.5%
    - Sex was unknown for 123 bears, or 10.5%
    - Of the 123 unknown sex bears, 82 had no data other than confirmed kill
    - Unreported sex ranged from 0.0% to 24.4% annually

Group discussion

Comment: Regarding reporting, is there any correlation between high sex reporting and low sex reporting?

Response: When lots of bears are taken at one time, many seem to go untagged.

In general, the group supported efforts to improve harvest reporting and compliance that would result in complete, timely, and accurate data. However it was unclear how to achieve this.

Comment: How can the tagging process be improved to result in complete reporting of sex?

Response: This is a complex issue; much thought has gone into the various approaches and we will discuss the topic in more detail tomorrow.

An aspect, highlighted from earlier discussions, was to ensure hunter/village awareness and to support the MTRP through an expanded educational program. This outreach program would explain the values of the data to population management, how the data are used, and the value of the data to polar bear conservation including how the hunters and polar bears would benefit. Another suggestion to improve reporting would be to include incentives for reporting the sex (for both hunter and tagger). The communication system should be a two-way effort with annual reports of the harvest information provide to each village and hunter.

Comment: Civil enforcement authority shared between the USFWS and ANC should be developed. This is not intended to eliminate federal law enforcement, but instead to develop a local user's group-supported system to enforce harvest reporting and quota compliance. ANC could develop an allocation system under a multi-year quota system. Each region could develop harvest allocations for its communities. ANC could adjust harvest within and between regions and communities in subsequent years to remain within the quota and to provide for timely and accurate reporting. 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 its own set of regulations consistent with the bilateral agreement with details for fines and punishments. Village tribal organizations (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 support with some limitations.

Evaluation of recorded sex identifiers for the harvest

Tissues found on bears that provide proof of sex include the baculum, penal hairs on hide, vaginal tissue, and teats.

Although 89% of harvested bears included a reported sex, only 46% of those had sex identifiers on the hide that were noted on the harvest certificate. A summary of the analysis is noted below.

- Of 1,167 bears reported harvested between 1988 and 2014
  - Sex was reported for 1,044 bears out of 1,167 (89% , range 0% to 24% per year)
  - Sex identifiers were on the hide of 481 bears of 1,167(41%: range 14% to 87% per year)
  - 347 of the 1,044 were females
  - 161 of the 347 females (46%:, range 13% to 100% per year) had sex identifiers noted on the harvest certificate
  - 697 of the 1,044 were reported males reported
  - 320 of the 697 reported males (46%, range 18% to 92% per year) had sex identifiers noted on the harvest certificate

Group discussion

Comment: Would decreasing the amount of time for reporting or developing a reporting network help with real-time reporting? Tagging could occur later.

Response: There was some concern over placing additional reporting requirements on hunters. One respondent thought the multi-year quota system provided adequate flexibility regarding any potential annual over harvest. However, in order to increase hunter compliance through any

approach, it is important to educate and communicate to hunters what action is being instituted the reason for the action, and the benefits to polar bear conservation.

Response: This would require making a distinction between reporting and the actual tagging which would occur later, within the 30 day regulatory time frame.

Comment: What are the benefits to the hunters if they report quickly?

Response: Early reporting is more accurate and provides more timely indication of harvest numbers (including female take) and reduces the chance of hunters exceeding the quota and violating the terms of the management plan.

Comment: Genetic specimen material should be collected for unknown sex bears.

Comment: When ANC first began, an annual quota was agreed upon for the Alaska-Chukotka subpopulation, but some expectations were that it would be region-wide like Inuvialuit-Inupiat Polar Bear Agreement and that enforcement would be through the local management body (NSB). There was a concern by some that ANC's ability to influence Alaska-Chukotka subpopulation management has been diminished.

Comment: A possible approach would be to report/allocate harvest on a regional basis. However, what works best for NSB might not work best for another region (or for a different management approach-such as one with set quotas). The Alaska-Chukotka area could include different regions and allocate within these regions. The intent of U.S.-Russia Bilateral Agreement remains to be cooperative effort by the USFWS and ANC.

Comment: One recommendation was to simplify resource management by designating a single person (point of contact) in each region who would be responsible for coordinating harvest reports to the ANC.

Tagging compliance, 1988 to 2014

A summary of the analysis is noted below.

- Of 1,167 known harvested bears
  - 145 were untagged (82 of these only known through personal communication)
  - 1,022 tags were affixed to skull, hide, or both (87.6%)
  - 883 of 1,167 (75.6%) had hides and skulls
  - 145 of 1,167 (12.4%) had no hide or skull
  - 123 of 1,167 (10.5%) hide only
  - 14 of 1,167 (1%) skulls only

Group discussion

Comment: Do we need to incorporate unknown bears into annual quota? Unknowns should include untagged but known harvested bears as well as unknown sex reported harvested bears.

Response: Yes, the goal is 100% accurate harvest reporting, including sex of harvested bears, in a timely manner. *Omelak indicated post workshop that the draft Shared Harvest Management Plan classified all unknown sex or untagged bears as females.

Comment: There should be an effort to provide education for new hunters.

Comment: Is it clear how MTRP efforts are benefiting hunters?

Response: Agencies need to do a better job of explaining why they are doing what they are doing and the importance of the information to species conservation and hunters.

Response: The better the data are the more accurate the harvest projections are and the higher the allowed harvest can be. Lower quality harvest data results in more conservative (lower) harvest projections and allowances.

Age and tooth acquisition

A summary of the analysis is noted below.

- Of 1,167 known harvested bears (including 84 untagged bears)
    - 779 of 1,167 had teeth (67%, range 27% to 83% per year)

Time required for tagging of hides/skulls

For the summary below data quality 1 through 3 was used and bears not tagged were excluded:

- Of 1,032 bears in which hides or skulls were tagged
    - 674 out of 1,032 (65%) bears were tagged within 30 days
    - 674 of 1,032 (65%) tagged within 30 days
    - 115 of 1,032 (11%) tagged 31 to 60 days
    - 63 of 1,032 (6%) tagged 61 to 90 days
    - 47 of 1,032 (5%) tagged 91 to 120 days
    - 132 of 1,032 (13%) tagged > 120

Tagging within 30 day time frame

- Of 674 bears tagged within 30 days
    - 501 (74%) were tagged within the first 10 days
    - 98 (15%) within 11 to 20 days
    - 75 (11%) within 20 to 31 days of harvest

The earlier a harvest was reported the more complete the data were. A regression analysis indicted a statistically significant correlation for time of tagging and age/teeth acquisition (R^2 = 0.91; p = 0.003). Although the regression analysis for sex did not reveal a statistically significant relationship (R^2 = 0.433; p = 0.11) the results indicated a declining trend of reporting sex over time.

Group discussion

Comment: If the request to tag bears within 30 days were to come from the ANC rather than from the agency, more timely and higher rates of compliance would likely result.

Comment: Public radio broadcasts should be used to disseminate this information.

Reporting compliance by village

The percentage of untagged and total numbers of untagged bears per village was evaluated. Villages taking more than 10 polar bears (Pt. Lay, Pt. Hope, Kivalina, Kotzebue, Shishmaref, Wales, Little Diomede, Savoonga, and Gambell) were evaluated over the study period. We found that reporting compliance varied by village. Tagging compliance ranged from 70.5% for Pt. Lay to 96% for Gambell. When we evaluated the net effect or net numbers of untagged bears by village we found that the number of untagged bears was greatest for Pt. Hope (54 bears) and Little Diomede (21 bears). This analysis was intended to provide specific information on village compliance so that village specific recommendations could be included. For example, when polar bears are abundant and available to hunters in a specific village USFWS/ANC should increase their efforts on-site to ensure timely and complete harvest reporting.

Workshop Summary Continued, 8 October

Also in attendance today:
Jay Stearn, Attorney, ANC
Don Mike, USFWS
Chris Andrews, USFWS
Eric Regehr, USFWS
Jessica Lefevre, Attorney, AEWC

Update on Russian Harvest

Polar bear harvest is still illegal for Native Chukotkans, but harvest has been occurring. In 2010 and 2011, village based surveys occurred to learn about how polar bears are being used and their importance, harvest patterns, etc. Indications are that approximately 33 bears are taken each year, however, non-subsistence harvests are very low (1 to 2 per year).

The ANC and USFWS are working toward better relations with Russian counterparts with the intent to encourage Russian management organizations to implement a managed hunt for traditional subsistence users.

Presentation Summary – The Need for Timely and Accurate Reporting, Eric Regehr, USFWS, Wildlife Biologist

Regehr provided basic population dynamics information pertinent to harvest management. In summary, for polar bears and other long lived slowly reproducing mammals, females are the most important component to the population. A portion of the female population, those with dependent cubs, are unavailable for breeding each year. Therefore, a surplus of male bears are available for breeding. In recognition of the importance of females and a surplus of males, many countries manage a harvest to take twice as many males as females (i.e., a 2:1 harvest ratio of males to females). Harvest rates that take more females than the 2:1 ratio place additional risk on population sustainability. These countries also require complete harvest reporting.

Not all female polar bears have the same reproductive value to the population. For example, a 10-year-old adult female is 2.5 times more valuable to the population than 2-year-old immature female.

GROUP DISCUSSION

Comment: Hepa requested a summary of the information and importance of females for a NSB fall newsletter; Regehr will follow-up.

Comment: What effect does inaccurate reporting have? What is the substitute value used in the formula if sex is unknown? Why is there not a mandatory reporting requirement for determining if the bear is either a male or a female?

*Author Note: MMPA does require reporting of sex. Post workshop clarification indicated this comment should be expanded to address how reporting that is determined to be inaccurate or incomplete is dealt with in management decisions. Particularly, it would be useful to explain if these decisions would have restrictive consequences or penalties that affect future management actions (e.g., quotas).

Comment: How come the unknown sex category cannot be accounted for in population modeling?

Response: Unknowns can be included in the harvest modeling, although an assumption regarding the sex of the unknowns must be included in order to evaluate total female take relative to sustainable harvest levels.

Some hunter/trapper organizations in Canada allow “elder only” hunts when the number of females taken approaches the sustainable limit; some of the additional male tags are then distributed to elders or more experienced hunters since they have a greater ability to determine sex of bears and to select for males and avoid taking females.

Comment: More workshops should be held in the communities to help everyone understand why this information is important and how it is being collected. Additional educational information on identification of males and hunters selecting for males would be useful.

*Author Note: This was the most common recommendation of the workshop. There needs to be more education and outreach to the villages to increase the level of support and compliance for the MTRP. The USFWS and ANC need consistency and clarity in messages that go to all the communities, and need to increase frequency of outreach. A strategic outreach plan is needed, with details on how to begin implementation of the education/communication program.

Comment: An education/outreach working group will need to include the USFWS, ADF&G, ANC, NSB, and hunters/taggers/other village members. The USFWS committed to lead this effort and indicated the formation date, composition, and materials/audience/approaches would need to be part of this plan as determined at a later date. These efforts should be applied statewide within the entire polar bear MTRP.

USFWS/Kuhns agreed to develop and circulate a draft outreach outline to the interested parties and coordinate review and comments prior to conducting a communications meeting.

*Author Note: A draft strategic plan outline was developed, however S. Kuhns took a new position before an improved draft could be completed.

Some recommendations to improve compliance with the MTRP included:

- communication network for taggers, USFWS, ANC, and hunters;
- identify ways to improve tagging through an incentive program;
- shared enforcement authority between ANC and FWS; and
- concept of issuing one tag per hunter (i.e., only hunters with tags could hunt).

Presentation Summary – Federal-Local Co-management of the Bowhead Whale Subsistence Harvest, Harry Brower Jr., Chair, AEWC

Please see Appendix C for a copy of this presentation.

The AEWC has managed the bowhead whale subsistence harvest in cooperation with NOAA and the National Marine Fisheries Service since 1980. Locally, we operate under Tribal Authority delegated by our Village Tribal entities and the Inupiat Community of the Arctic Slope. From the federal side, we have delegated authority from NOAA through our NOAA-AEWC Cooperative Agreement. Under the Cooperative Agreement, the AEWC is responsible for monitoring the bowhead harvest and reporting all harvest results to NOAA. We do this through the Village Whaling Captains' Associations.

From a management and enforcement perspective, the most important thing about our Cooperative Agreement is how management and enforcement get handled. Without the Cooperative Agreement, our bowhead harvest would be managed by federal enforcement officials. And any regulatory violations would subject our whalers to possible arrest and criminal penalties under the MMPA. But, as long as the AEWC carries out our responsibilities and our whaling captains cooperate with our management and enforcement decisions, we have the ability to manage the harvest ourselves and to impose civil penalties rather than criminal enforcement measures. The ability to manage our own harvest, without fear of arrest or criminal penalties, gives our captains a strong motivation to cooperate with the AEWC's enforcement measures and other decisions.

The penalties for violations of the Cooperative Agreement and Management Plan can impose real hardship on a family and even an entire village. So it can be hard on our Commissioners when we have to find that someone has violated our regulations and punish one of our own. But, if we don't punish violations, we can lose our right to manage the hunt ourselves, so our whaling captains and our Commissioners take these things very seriously.

JESSICA LEFEVRE, ATTORNEY, AEWC

There are 11 whaling villages that each has a Commissioner on the AEWC. Each village has its own Whaling Captain's Association that sets its own rules. The AEWC has an annual mini convention that brings together the presidents of the whaling captain's associations and the commissioners of each village where operating policies are adopted. The AEWC manages bowheads in cooperation with the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS).

The co-management program is conducted at the local level and operates under tribal authority. NOAA has delegated its authority to the AEWC under a Cooperative Agreement and each whaling captain that strikes a whale is required to fill out a report form and collect biological samples. Management and enforcement at the local level is supported and civil fines can range from $1,000-$10,000 based on severity of the violation. Since 1980 there has only been one captain who refused to comply with rules, he was turned over to federal authorities for prosecution. Others have been fined for harvesting females over a certain size or for calves.

GROUP DISCUSSION

Comment: What is the process and what is the document that was developed between the AEWC and NOAA for shared management? Can we see this document?

Response: The AEWC's authority comes from the tribal delegation from the tribal entities, and first Section 112 of the MMPA (in 1980) and later Section 119. The document is available to the public. It established a relationship between the two organizations that vests AEWC with local authority for management under the delegated statutory authority of a federal agency. The AEWC must operate under the Cooperative Agreement and fulfill obligations to manage according to the regulations for the whale hunt. NOAA allows the AEWC to continue with local management so long as terms of the agreement are met. The AEWC provides reports to NOAA. The NOAA can step in to take over any situation or resume management and enforcement since this is a limited delegation and the federal authority does not give up its ultimate authority.

Comment: Who imposes fines?

Response: AEWC Board of Commissioners (BOC).

Comment: One of the criticisms we may hear from others, if we make suggestions that improve the MTRP to contain elements of reporting similar to AEWC, is that we will need to enforce them. If an infraction occurs, what is the turnaround time that AEWC has before federal agencies become involved?

Response: AEWC can always impose harsher penalties. Any time the BOC imposes a monetary penalty on a whaling captain, the captain is unable to register to participate in the hunt again until the fine is paid. The whaling captain surrenders the meat and parts of the bowhead harvested.

Response: The turnaround time on the bowhead hunt is relatively quick. The Commissioners hold one meeting annually to consider potential violations that occurred during the year. However, there are quarterly meetings during which violations can be reviewed. In addition, the BOC can call an emergency meeting or teleconference at any time to address immediate concerns during the whaling season.

Comment: There are two foundations for the functioning authority of the AEWC – tribal authority and federal government. Since AEWC was formed, have there been legal changes that would prevent something similar being established for ANC and polar bears? Are there any obstacles that would prevent something similar being developed for polar bears?

Response: No, but there have been other legal changes to the MMPA, such as Title 5, that includes provisions that would facilitate shared management and enforcement for polar bears.

Response: The success of the AEWC should serve as a model for polar bears. Perhaps the ANC Board could stand in place of the AEWC BOC. Remember that the delegation of authority is limited and the federal agency never relinquishes its right to step in. Hunters take the right to self-manage very seriously and do not want to lose it.

*Author Note: The MTRP is a regulatory program conducted by USFWS as mandated by the MMPA. Changing the operation of the MTRP would be a complex legal question, although shared management of the MTRP may be possible. This concept could be explored in future discussion regarding co-management.

Response: Local enforcement carries more power (effectiveness) through local shame, sanctions, and pressure than federal actions.

Comment: Across the whaling communities, does the number of captains and groups change annually, and how many are there on average? How could we do this for polar bears?

Response: The formation of an association is key to making it a success. Local support and buy-in, are critical to its success. There are 11 communities and 57 strikes allocated between the 11 and they are based on identified needs. For example: Barrow, as the largest population, is allocated 25 of the whales. There are 50 registered whaling captains in Barrow.

Comment: If we took a similar approach for polar bears, would hunters need to become registered?

Discussion followed regarding the basis for setting up a cooperative agreement and a need to continue to accommodate local traditions and customs. The polar bear situation would likely be different and is based on opportunistic individual effort versus the boat captain system. It seemed unlikely that registering polar bear hunters would be of value.

Comment: What do you mean when you say the federal government is obligated to discharge its authority?

Response: The MMPA and ESA have obligations for the federal management agencies. These agencies report to Congress on efforts to carry out obligations. In Alaska is there is an opportunity for the agencies to discharge those obligations to the hunter groups. The statutes allow for cooperation and delegation of authority. Congress has told the agencies to carry out the (broad) obligations of the MMPA, but agencies can choose to carry them out through cooperation and delegation. The agencies have multiple avenues to carry out their obligations. The federal agency under co-management always has the opportunity to step in if they don't feel that obligations are being carried out the way they were intended. Giving the hunters the opportunity to self-regulate is a great way to manage as we've learned through the bowhead whale example. Hearings that AEWC hold on internal matters are closed to the public, but agency representatives can attend. The hearings are very embarrassing for captains and stressful for all those involved.

Comment: Do we intend to take aspects of the whaling approach to use in the polar bear approach? What are we going to try to capture here? What are we going to take away from this information?

Response: There are many takeaways here. Within Title 5, MMPA, there is a section that addresses the sharing of authorities with the ANC. This is a complex issue and process and it will involve USFWS, ANC, and lawyers to ensure consistency and that document complies with federal law. The USFWS and others plan to explore this topic more after the U.S.-Russia Bilateral Commission meeting.

If the agency (USFWS) is committed to facilitating co-management, they with the parties can develop the criteria and requirements for shared management and enforcement authority, develop criteria to enforce, and determine the process to discharge or carry out this authority. They can then go to working groups (parties) to describe those obligations and requirements.

Comment: A suggestion that Omelak and C. Brower invite H. Brower, Jr. to participate in this process with USFWS based on his experience with the AEWC.

Improvement in Timely and Complete Reporting Through Village Taggers

The following is the result of a group discussion regarding methods to improve the timeliness and completeness of polar bear harvest data. This is not an exhaustive or detailed list of all possible options. Reviewers are encouraged to expand this list with additional ideas and concepts designed to improve the MTRP data. The goal for a future polar bear harvest monitoring program in the study area should be complete and timely tagging/data collection for 100% of the harvest. Some topics are repeated from earlier discussions.

- Develop and implement a communication network with USFWS, ANC, village ANC representatives, and village tagging representatives for real time reporting of polar bear harvests within 2 days of take. A later time frame for early report has also been proposed, i.e. 7 to 10 days.
- Issue harvest tags to subsistence hunters prior to the start of each year.
- Coordinate through the communications network on the status of harvest relative to the quota.
- Increased USFWS/ANC presence in villages during peak harvest times to assist in tagging, data collection, and to encourage more accurate, timely collection of harvest information and samples.
    - Discussion of bio-monitoring and which specimens
- Disseminate informational and educational materials on harvest monitoring requirements.
    - Posters
    - Newspapers (Arctic Sounder and Nome Nugget)
    - Radio interviews and talk programs
    - Community meetings with hunters
- Phased enforcement of tagging regulations (following education intensive), cooperative effort between the USFWS and ANC.
- Use of tribal/community ordinances to implement harvest monitoring
    - A potential example is the Gambell Tribal Ordinance for walruses.
- Incentives for timely reporting through payment to the taggers.
- Incentives (incremental payment to hunter) 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 to 20 days.
    - Incentives for each polar bear tagged includes knives, and a yearly raffle for qualifying and participating hunters.
- Pay extra fee to taggers when they make house calls residence.
- Disincentives for villages not providing complete harvest data, e.g. future reductions in their village quota/allocation with harvest quota increase for villages providing complete data on harvested bears.

GROUP DISCUSSION

Comment: It would be helpful for USFWS to develop a presentation for students in the local schools. Not only will future or current young hunters learn from this effort but some will also take the information home to their parents. This could be a component in the overall education and outreach strategy.

Comment: Is there a way to offer payments to taggers to tag more timely? Some discussion of a graduated scale for MTRP reporting payments with earlier tagging rewarded with a higher payment.

Response: USFWS often pays an extra $50 if the taggers bring the information in quickly.

Comment: Provide incentives for the tagger to go to the hunter rather than waiting for the hunter to come to them (recognizing that it is the hunter's responsibility for having his bear tagged).

Comment: Develop and place informational posters with tagging information, contacts, etc. at public gathering locations such as stores, community center, gas stations.

Comment: Develop and broadcast Public Service Announcements on public radio stations.

Comment: Enlist bear patrollers to become taggers also, although some thought more taggers may not be the best solution.

Comment: In some communities, there is not enough work for the taggers because polar bears are not being harvested as frequently, and financial returns to taggers are nominal.

Comment: Increase tagging payments. USFWS has instituted a minimum payment in order to help to reward taggers and to make their support worthwhile.

Comment: Another idea was to provide a monthly stipend to the tagger.

Hunter incentives as motivation received favorable comments in the group discussion.

Comment: Incentives work for walrus sampling, take suggestions from hunters as to what types of rewards/prizes are most useful.

Comment: Incentives should not result in hunters taking bears for the reward. A way to avoid this is through a raffle system, where hunters providing timely/accurate information qualify through a random drawing for a year end prize(s). This could be based on a graduated scale bases with hunters receiving more entry certificates for earlier tagging

Comment: Potential rewards/incentives could be credit at the store, credit for gasoline, mustang floatation coats, marine safety/survival equipment such as GPS transmitters, fish nets, knives, etc.

How to Obtain Reporting Compliance and How to Deal with Non-compliance

GROUP DISCUSSION

Comment: Outreach to hunters depends on why the hunters are not reporting. If there were a better understanding of why bears are not being tagged it may allow better solutions to the problem.

Comment: Increased USFWS/ANC presence in villages during peak harvest times to assist in tagging, data collection, and to encourage more accurate, timely collection of harvest information and samples. Increase direct and one-on-one communication with hunters.

Comment: ANC should become the middleman for receiving, storing, transmitting harvest information. Some believe or have heard that villages often do not trust the federal government.

Comment: Discussion of similar potential conservation benefits and opportunities between AEWC/NOAA and MTRP, ANC/USFWS. Hunter tagging of polar bears within 30 days of take is required by MMPA. Collecting biological samples is an added need but not mandated by the MMPA. "Real-time" reporting would be useful in monitoring the harvest and quota. The network for "reporting" could be coordinated through existing individuals, or in some cases, it might be beneficial to have an additional structure. Social media such as Facebook, Twitter, etc. may have promise. Another idea was to develop a cell phone app for reporting polar bear harvest in a rapid fashion. This may require creating a website, or redesigning the MTRP to accept information from electronic sources through a database portal or other techniques. The use of student conservation associates and local hire should be explored.

Comment: Any plan to change or institute a new compliance strategy for the MTRP should be statewide and not just for the Alaskan-Chukotka subpopulation. Some participants believed that the U.S.-Russia Bilateral Agreement harvest quotas should be decoupled from this effort.

Comment: Phased enforcement of tagging regulations through a cooperative effort between USFWS and ANC was advocated. This effort would follow an intensive outreach and education program.

Comment: Discussion of disincentives for villages not providing complete harvest data. For example, reductions in the allocation of a village's quota could be implemented for poor data. An increase in the allocation of a village's quota could be implemented for providing complete data on harvested bears. Some areas in Canada do this.

Comment: Recommended that tags be attached by the tagger and not handed or mailed to a hunter because they often don't get attached to the bear (*Author Note: this idea was generally

supported). Issuing tags to specific hunters, such as in Canada (*Author Note: this idea was generally not supported).

Comment: The education and outreach platform should include feedback on what works or does not work. Additional modifications and improvements may be needed.

Comment: Community meetings should involve USFWS, ANC, local hunters, and local taggers.

Comment: Could Student Conservation Association internships be offered in each community as a communications and educational tool?

Comment: Reiterated the need for radio and television Public Service Announcements on the reasons for the action, why local support is essential, and the value of complete harvest data to both hunters and managers.

Comment: The ANC noted that a previous media campaign resulted in five times the national average for responses. They believed that the high response was related to a creative photo of polar bear and catchy logo which attracted the viewers.

Comment: The USFWS committed to develop a draft outline for the outreach strategy (Kuhns lead).

Comment: The USFWS is also committed to forming a task group to explore developing a shared enforcement authority with the ANC following the U.S.-Russia Bilateral Commission meeting in 2015 in Sochi, Russia.

Adjournment: Schliebe concluded the meeting by thanking all in attendance who contributed their thoughts and recommendation to improve the MTRP harvest database.

Workshop Recommendations

In general, the group supported the need to remedy deficiencies in compliance with harvest data reporting to address the areas identified in the analysis. However, there were differences on how best to achieve the goal of 100% reporting compliance.

Many believed that the approach with the greatest likelihood of support and long term success by Native hunters must start with an approach to educate and explain why complete harvest data is important 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.

The USFWS and ANC in collaboration with the NSB and ADF&G should develop a comprehensive strategic outreach plan for Native hunters and for village polar bear taggers. This effort will be led by USFWS. The implementation of the strategic plan at the village/hunter level was advocated to precede a phased enforcement program.

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 non-governmental organization present at the local level in order to enhance cross-communications.

Some participants believed that Alaska Natives were being required to comply with the U.S.-Russia Bilateral Agreement while their counter-parts in Russia were not being given the opportunity to participate in a legal and monitored hunt.

A general theme discussed was to make the recommendations or changes in implementing the MTRP applicable statewide and not just to the area of the U.S.-Russia Bilateral Agreement. The implementation of harvest quotas for the U.S.-Russia Bilateral Agreement should be a separate topic.

Sharing enforcement authority between the USFWS and ANC as identified in Title V of the MMPA was discussed and supported. An example of how enforcement/management authority is shared was presented for bowhead whales in Alaska. However, details of the shared enforcement authority for polar bears in the Alaska-Chukotka subpopulation have not been developed to date. A group will be formed by the USFWS and tasked with evaluating if this authority can be developed for polar bears management for the Alaska-Chukotka subpopulation and implementing mechanisms.

Specific comments, approaches or techniques to enhance polar bear harvest reporting are discussed previously throughout the document in various sections. The stakeholders group was aware that implementation of advice or recommendations from the workshop are the responsibility of ANC and USFWS. The NSB and ADFG offered assistance in developing an outreach and education approach for implementation. The workshop discussions will hopefully serve as the basis for future co-management and shared enforcement and result in timely and accurate polar bear harvest data collection.

WORKSHOP RECOMMENDATIONS: LIST OF 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 including 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 scientifically and also to subsistence hunter
- Include information regarding the U.S.-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
    - Community meetings with hunters
    - Village meetings/workshops
    - Increased tagger training/education
    - One to one hunter discussions
    - Websites
    - Postal box holder mailings
- Enforcement of tagging regulations, following ground level implementation of the strategic education outreach program, cooperatively by USFWS and ANC
- Potential use of tribal/community ordinances to implement harvest monitoring
    - An example is the Gambell Tribal Ordinance for walruses
- Issue harvest tags to subsistence hunters prior to the start of each year
- Increased USFWS/ANC presence in villages during peak harvest times to assist in tagging, data collection, and to encourage more accurate, timely collection of harvest information and samples
- Provide additional training and educational materials to taggers
    - Sex identification 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 Association interns, 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

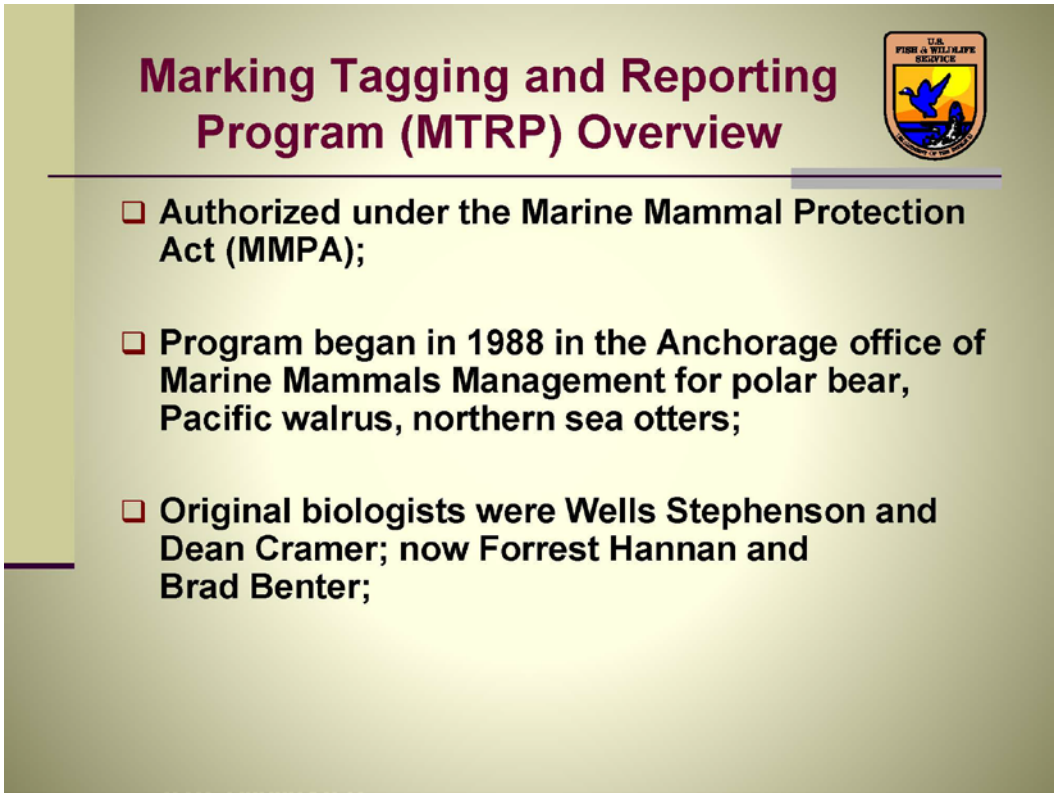
WORKSHOP RECOMMENDATIONS: HOW TO IMPROVE MTRP COMPLIANCE AND IMPLEMENTATION OF THE U.S.-RUSSIA BILATERAL AGREEMENT (I.E., QUOTAS)

- Develop a Cooperative Agreement between USFWS and ANC to share management authority
- USFWS should delegate specific civil enforcement authorities to ANC
- ANC obtains authorizations from village tribal organizations (IRA's) to enforce regulations
- USFWS/ANC renew efforts to complete a multi-year implementation plan for co-management; previously the 5-year plan
- USFWS/ANC renew efforts to complete the Shared Harvest Management Plan
- Develop a strategic communication, outreach, and education plan (possible statewide application)
- Develop an agreed upon approach to improve hunter reporting compliance under the MTRP (consider comments and concepts identified in the previous section) (possible statewide application)

Appendices

APPENDIX A.

Marking and Tagging Reporting Program (MTRP) 2015
US Fish and Wildlife Service
Marine Mammals Management


Marking Tagging and Reporting Program (MTRP) Overview
Authorized under the Marine Mammal Protection Act (MMPA);
Program began in 1988 in the Anchorage office of Marine Mammals Management for polar bear, Pacific walrus, northern sea otters;
Original biologists were Wells Stephenson and Dean Cramer; now Forrest Hannan and Brad Benter;

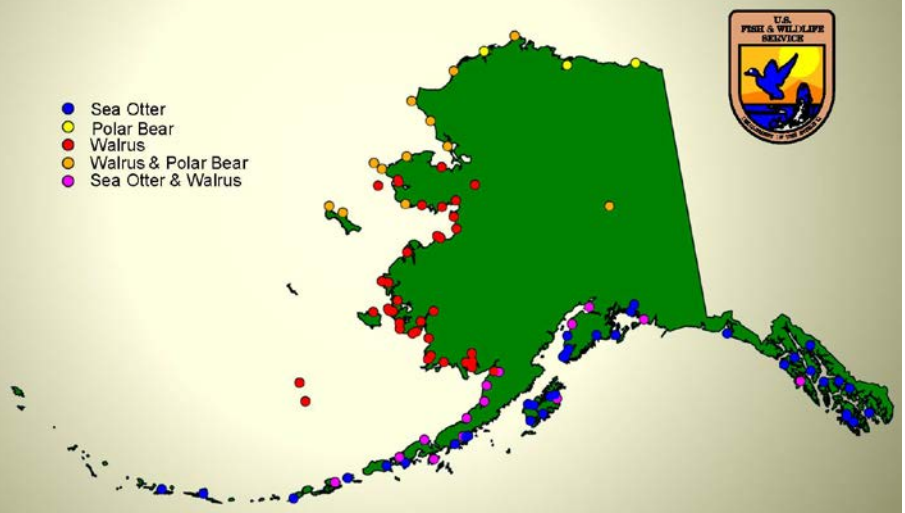
Purpose of the MTRP (50 CFR 18)

- Monitor subsistence and handicraft harvest of polar bears, sea otters and walrus;
- Obtain essential biological data to manage these species or stocks;
- Help prevent illegal take, trade and transport of raw marine mammal parts.

Subsistence Tagging Requirements

- Sea otter skulls, hides; polar bear skulls, hides; walrus tusks;
- Taken for subsistence or for creating & selling authentic Native articles of handicraft or clothing by Alaska Natives (defined);
- Taken in a non-wasteful manner:
- Must be reported for tagging within 30 days of taking to any MTRP tagger.

USFWS Marking, Tagging and Reporting Program (MTRP)



160 cooperators in 105 communities for polar bears, sea otters and Pacific walruses

How Does MTRP Work?

- Hides and skulls of should be tagged within 30 days.
- All hunting villages in Alaska have taggers; call 1-800-362-5148 to find out who your local tagger is.
- The tagger will:
- 1. affix a plastic tag to the hide and skull of a polar bear.
- 2. the tagger will extract a small, pre-molar tooth for aging the bear
- 3. take measurements of the skull
- He/she will record information on a certificate which also serves as the hunter's proof of MTRP compliance.

Extracting a small, premolar tooth (left) and harvest certificate (right); USFWS file photos

Polar Bear Tagging and Data Collection
The hide and skull should be thawed to:
Allow an unbroken pre-molar tooth to be extracted for aging.
Allow accurate skull measurements to be made.
Allow hide to be examined for determination of sex.
Skull length measurement
Annuli
Growth rings
USFWS file photos
Tooth cross-section

Polar Bear Tagging
The baculum should remain attached to the hides of male bears
Ear tags and radio collars must be given to the tagger
Ear Tags and Radio Collar
Tagging Kit and Supplies

OMB Control No. 1018-0066
Expiration Date: XXXX/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) _____

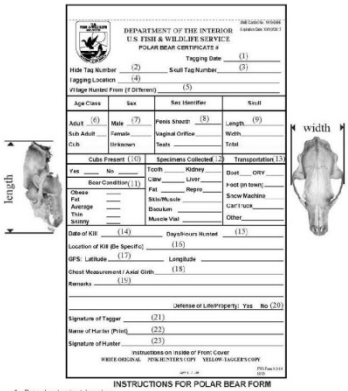
Signature of Hunter _____

Instructions on Inside of Front Cover

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

ATP 3 - 7 - 09

FWS Form 3-2414
10/13



INSTRUCTIONS FOR POLAR BEAR FORM

1. Date when tagging takes place.
2. Number from tag attached to the hide.
3. Number from tag attached to the skull.
4. Village where hide and skull are tagged.
5. Village where bear was harvested if different than tagging village.
6. Estimated age class of polar bear: Adult; Sub Adult; Cub.
7. Sex of animal.
8. How sex of bear was determined.
9. Measure skull with calipers and record length (distance between base of skull and upper front teeth); width (distance between zygomatic arch bones), and total to the nearest 1/10th of an inch (see example above).
12. Record if cubs were present when tagged bear was killed.
11. Record the body condition of the harvested bear.
12. Record biological specimens collected, preserved and presented to tagger.
13. Record type of transportation used when hunting bear.
14. Record the date when this polar bear was killed; month, day, and year.
15. Enter length of time spent on the hunt.
15. Identify specifically where this polar bear was killed. Record the distance from nearest village, river, bay, etc.
17. Enter the GPS coordinates of kill location.
18. Chest measurement / Axial Girth - Bear has to be on stomach - Place string under front legs snugly but not enough to compress hair and bring around the back. Note where the string comes together. Measure length using tape measure.
19. Enter any other information that may be important, for example, any unusual condition or behavior of the polar bear.
20. Was this bear killed in defense of life and property?
21. The tagger signs here.
22. Print the name of the hunter.
23. The hunter or owner signs here.

After completing certificate, give pink copy to hunter, return white copy to our office,
U.S. Fish and Wildlife Service / Marine Mammals Management
Marking, Tagging, and Reporting
1011 East Tudor Road MS341
Anchorage, AK 99503
and retain the yellow copy in book for your records.

Polar Bear Certificate and Tooth Envelope

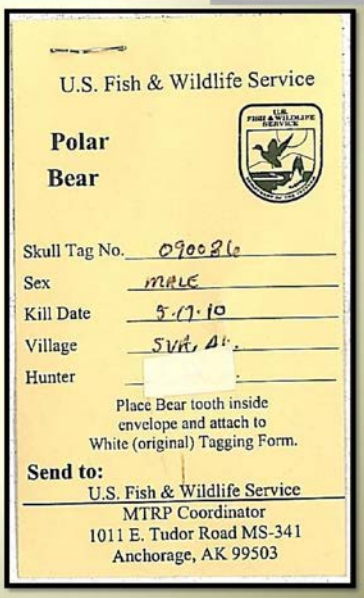
DEPARTMENT OF INTERIOR
U.S. FISH & WILDLIFE SERVICE
POLAR BEAR CERTIFICATE # 25803

Tagging Date 5-17-10
Hide Tag Number 090025 Skull Tag Number 090076
Tagging Location SVA, AK
Village Hunted From (If Different)

Age Class	Sex	Sex Identifier	Skull
Adult ___	Male ✓	Penis Sheath ✓	Length 15 3/4"
Sub Adult ✓	Female ___	Vaginal Orifice ___	Width 8 1/4"
Cub ___	Unknown ___	Teats ___	Total 24"

Cubs Present	Specimens Collected	Transportation
Yes ___ No ___	Tooth ✓ Kidney ___	Boat ✓ ORV ___
Bear Condition	Claw ___ Liver ___	Foot (in town) ___
Very Fat ___	Fat ___ Repro ___	Snow Machine ___
Normal ___	Skin/Muscle ___	Car/Truck ___
Skinny ___	Baculum ___	Other ___
	Muscle Vial ___	

Date of Kill 5-17-10 Days/Hours Hunted 1½ hrs
Location of Kill (Be Specific) 27 miles NE
GPS: Latitude ___ Longitude ___
Remarks ___
Defense of Life/Property: Yes No
Signature of Tagger ___
Name of Hunter (Print) ___
Signature of Hunter ___
Instructions on back or Front Cover
WHITE-ORIGINAL PINK-HUNTER'S COPY YELLOW-TAGGER'S COPY



U.S. Fish & Wildlife Service

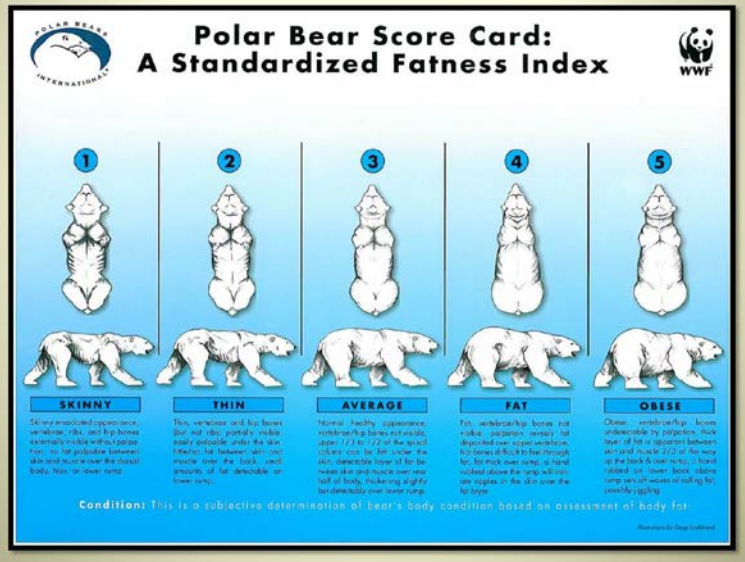
Polar Bear

Skull Tag No. 090076
Sex MALE
Kill Date 5-17-10
Village SVA, AK.
Hunter ___

Place Bear tooth inside envelope and attach to White (original) Tagging Form.

Send to:
U.S. Fish & Wildlife Service
MTRP Coordinator
1011 E. Tudor Road MS-341
Anchorage, AK 99503

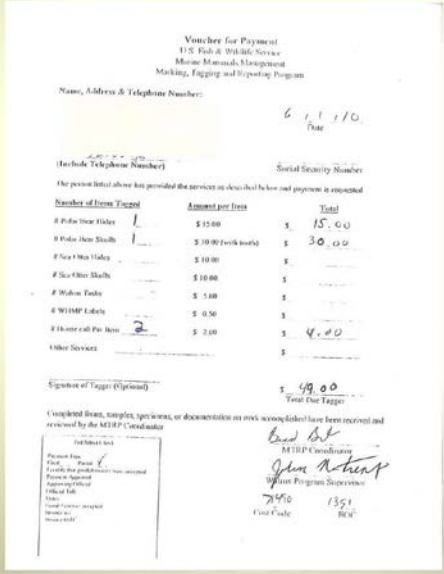
Polar Bear Fatness Index



Polar Bear Tagger Selection and Payment Process

- Taggers are hired for communities that harvest polar bears
- Village Council input is sought before we contact potential taggers
- Village taggers are local individuals that offer a service to hunters
- Taggers need to be available during the harvest season
- Larger villages usually require multiple taggers
- Interested individuals are hired on an annual basis
- Payment to tagger is $30 for a skull with tooth, $15 for the hide and $2 per item for a house call
- Taggers are guaranteed $50 for having a tagging kit available and a minimum of $100 if they tag at least one bear
- Taggers get paid when they submit the certification and payment voucher to Marine Mammals Management
- Taggers that keep in contact and do a good job are rehired and given new tags each year.

Payment Voucher



Voucher for Payment
U.S. Fish & Wildlife Service
Marine Mammals Management
Marking, Tagging and Reporting Program

Name, Address & Telephone Number:

6 / 1 / 10
Date

(Include Telephone Number)

Social Security Number

The person listed above has provided the services as described below and payment is requested

Number of Items Tagged	Amount per Item	Total
# Polar Bear Hides 1	$ 15.00	$ 15.00
# Polar Bear Skulls 1	$ 30.00 (with tooth)	$ 30.00
# Sea Otter Hides	$ 10.00	$
# Sea Otter Skulls	$ 10.00	$
# Walrus Tusks	$ 5.00	$
# WHMP Labels	$ 0.50	$
# House call Per Item 2	$ 2.00	$ 4.00
Other Services		$

Signature of Tagger (Optional)

$ 49.00
Total Due Tagger

Completed hides, samples, specimens, or documentation on work accomplished have been received and reviewed by the MMRP Coordinator

MMRP Coordinator

Marine Program Supervisor

71410
Cost Code

1351
BCC

Certificate Book & Tag Control Tagger Maintenance

- **Certificate Books and tags are assigned to individual taggers**
- **Tags are replaced on an annual basis**
- **Certificates and tags are recorded when sent to Marine Mammals Management**
- **New books and tags are sent out when old ones are returned or used**
- **Tagging kit supplies, return postage and payment vouchers are sent to the taggers on a regular basis**
- **Attempt to contact the taggers at least once every 90 days**
- **Village meetings are set up on a rotating basis with certain villages having higher priorities**

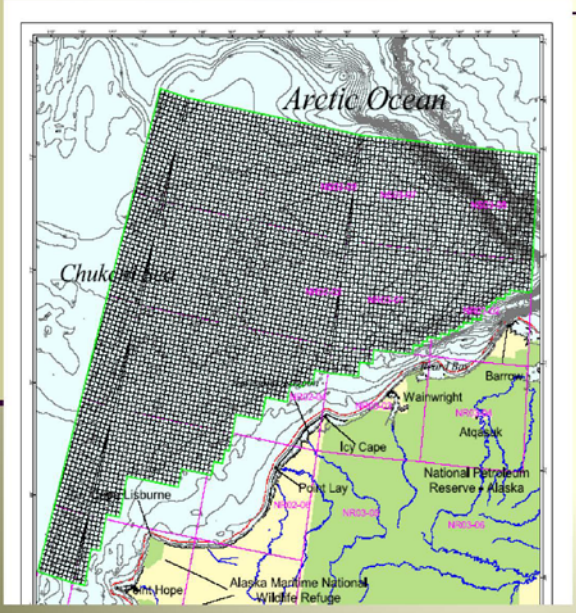
How Harvest Data is Used

- Annual Summary of Polar Bear Management in Alaska to the Alaska Nanuuq Commission and North Slope Borough (Inupiat-Inuvialuit Agreement)
- Polar Bear Stock Assessments
- Annual Summary Report for the Polar Bear Technical Committee
- Annual Report to Congress.

How Harvest Data is Used

Harvest data is also used for research (e.g. population modeling, contaminants analysis) and management purposes (e.g. assessing harvest compliance with Inupiat-Inuvialuit Agreement).

Why is this information important?



- **Accurate information on the timing and location of harvests is critical to protecting subsistence activities**
- **Assuring the long-term health of populations is dependent on appropriate population management – including harvest**

Thank You for Your Attention!

APPENDIX B.

Purpose

- Evaluate the USFWS polar bear Marking, Tagging and Reporting Program (MTRP) database
- Identify area of incomplete reporting
- Identify potential solutions
- Make recommendations to enhance timely and complete reporting
- Develop a report with recommendations for consideration by the USFWS and ANC for implementing harvest quotas: Alaska-Chukotka polar bear population

Goal of this evaluation is to develop a series of recommendations/options on how harvest data is collected that will result in timely acquisition of complete and accurate harvest data for 100% of the harvest

MTRP Requirements and Operation

- Brad Benter, USFWS, MTRP coordinator

The Canadian Polar Bear Harvest Mgmt System

- Kim Titus, ADF&G

Why complete harvest data is important

- Polar bears are an important cultural and subsistence resource for Native subsistence users
- Conservation of polar bears is important on an international, national and local scale (ESA listing, Red List designation)
- Changing climate is stressing many polar bear populations
- Polar bear populations are susceptible to harvest, particularly harvest of females (2:1 male to female harvest is recommended)
- Accurate harvest information is important for understanding sustainability of harvests and the status of populations
- The population risk of incomplete harvest data (Eric Regehr tomorrow)

USFWS MTRP Evaluation

- Scott Schliebe, Consultant
- Evaluate the MTRP and determine if there were area requiring improvement in reporting
- Background information on the MMPA, MTRP, and Bilateral Agreement has been provided
- Other interesting MTRP data beyond the scope of the project was not evaluated (eg. harvest timing, sex ratio, age structure etc.)
- ADF&G provided financial support for the project
- Joint effort with USFWS, ADF&G, and the ANC

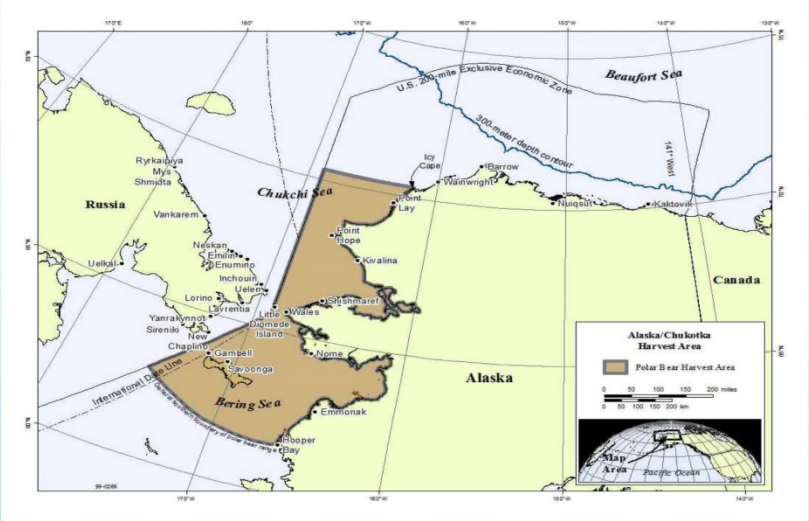
Methods

- Review existing literature that presented polar bear harvest data over the study period
- Determine if there are areas where incomplete reporting exist
- Determine if additional analysis of the MTRP data base would be necessary (Brad Benter)

Study area

The Agreement applies to the waters and adjacent coastal areas subject to the 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

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.



Evaluation of historical literature sources

Year	% unknown sex	% teeth	Source USFWS PBTC Report
1998/99	6%	90%	Evans et al. 2000
2000/01	32%		Evans et al. 2002
2000/01		34%	Schliebe et al. 2002
2001/02		67%	Schliebe et al. 2003
2002/03		41%	Schliebe et al. 2004
2005/06	14%	44%	Schliebe et al. 2007
2008/09	25%	36%	DeBruyn et al. 2010
2009/10	18%	29%	DeBruyn et al. 2010
1988/08		68%	DeBruyn et al. 2010
2010/11	16%	46%	DeBruyn et al. 2012
2012	19%		Hamilton et al. 2014
2013	13%		Hamilton et al. 2014
2006/13	16%		Hamilton et al. 2014

Literature review conclusions

- Indicated a pattern of incomplete reporting over time for the Alaska harvest
- Main areas where reporting was incomplete
  - Sex ….. Unknown sex animals reported every year
  - Age …. Incomplete tooth samples for age
- We determined that further analysis of the MTRP database was warranted

MTRP queries/questions

- Evaluate reported sex and verification of sex
- Evaluate sex unknown category
- Evaluate tagging compliance (hides/skulls)
- Evaluate tagging compliance (teeth)
- Evaluate timing of tagging w/I 30 day regulatory required period
- Evaluate reporting performance by major villages

* Subsistence, defense of life, struck and loss, orphaned cubs sent to zoos included: only data quality 1 and 2 included in most analysis

Reported Sex

- N = 1,167 bears
- Sex reported for 89.5%
- Sex unknown for 10.5%
- 123 unknown sex bears (82 data deficient other than confirmed kill)
- Unreported sex ranged from 0-24.4% annually

Annual Chukchi-Bering Seas Polar Bear Harvest by Sex

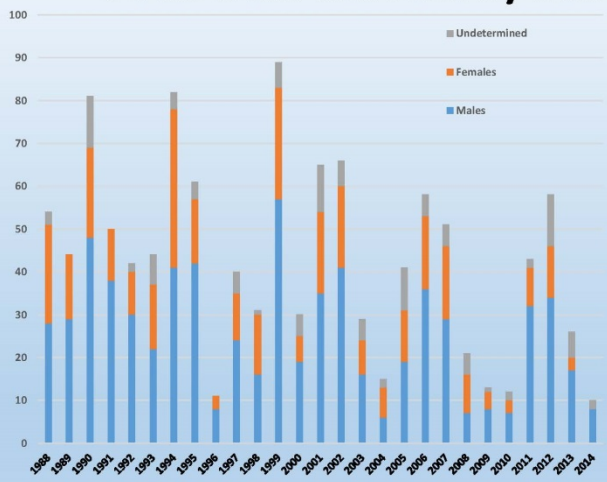


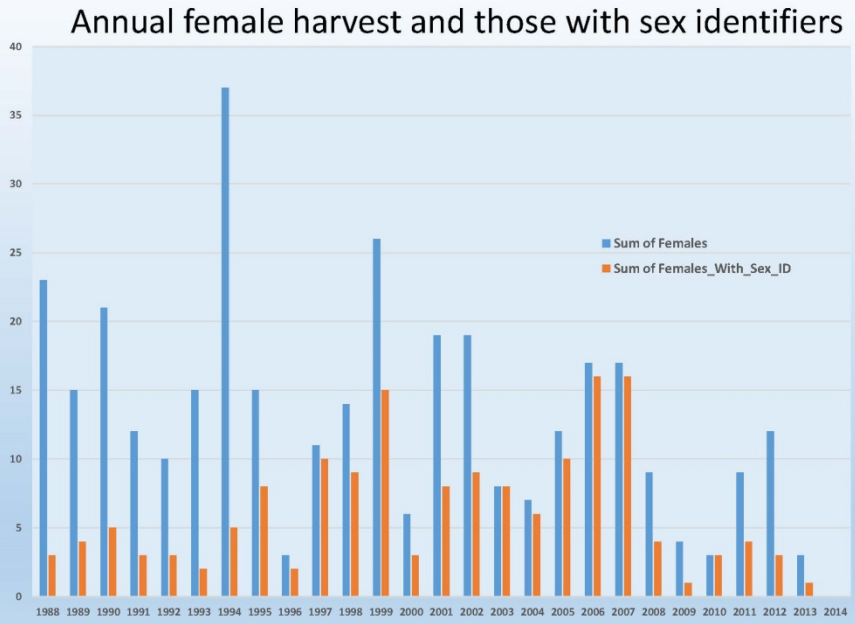
Figure 1. Annual number and sex of Chukchi-Bering seas polar bear harvest 1988-2014

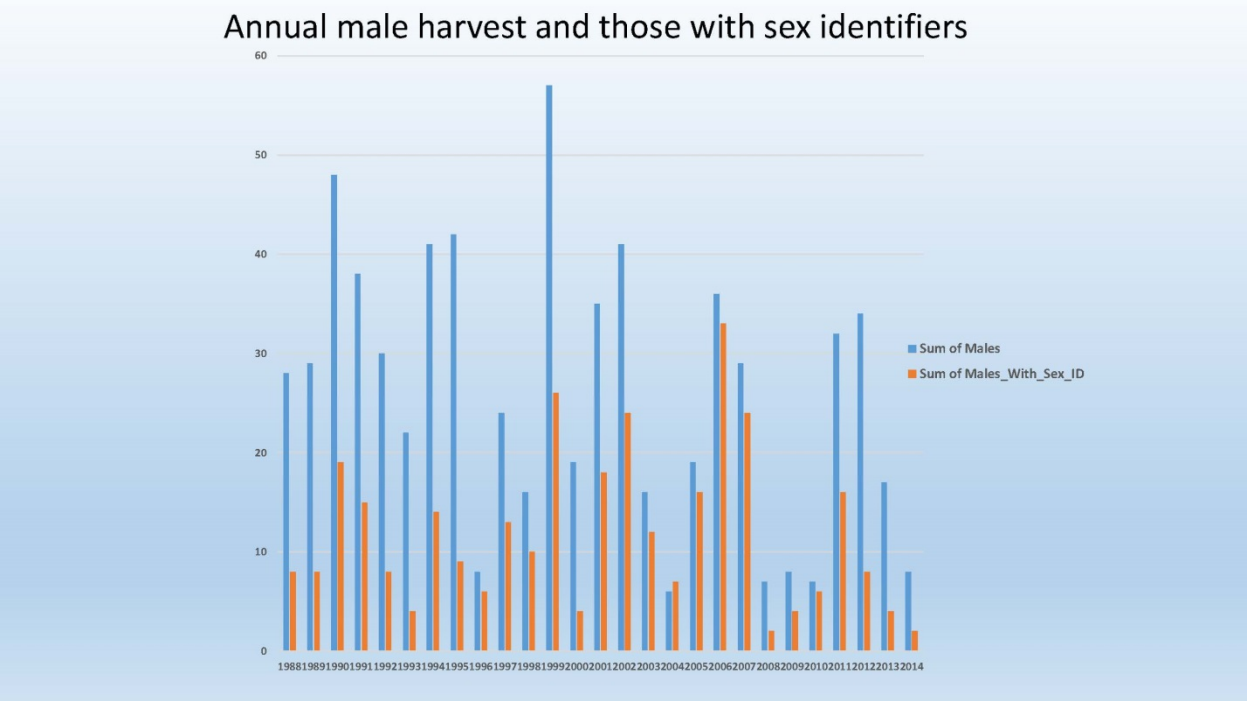
Evaluation of recorded sex identifiers for the harvest

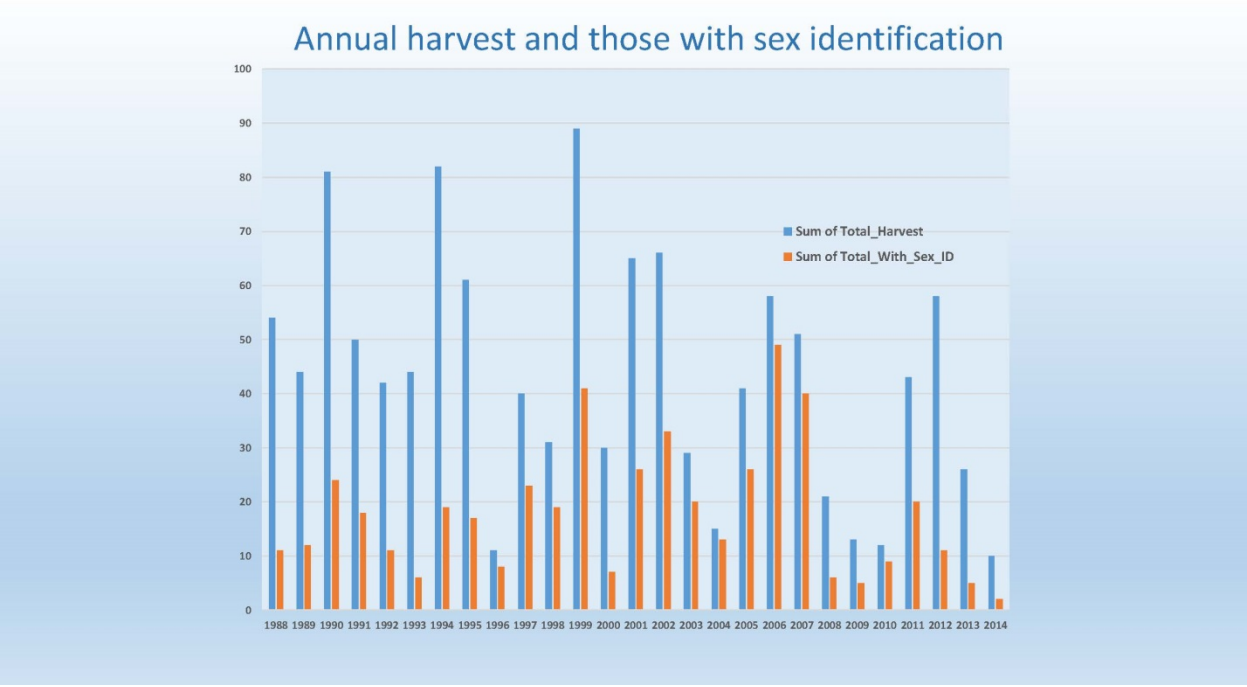
- Baculum
- Penal hairs on hide
- Teats
- Vaginal tissue
- Female with cubs

Sex and identifiers

- N = 1,044 bears out of 1,167 or 89%
- Bears with reported sex 481 or 41% had evidence of sex identifiers reported
- N = 347 females reported sex
- 161 females (46%) had evidence of sex identifiers noted on reporting forms
- N = 697 males reported sex
- 320 males (46%) had evidence of sex identifiers noted on reporting forms
- Intra-annual variation for including sex identifiers ranged from 14-87%, combined male and female sex classes
- Female variation ranged from 13-100%
- Male variation ranged from 18-92%



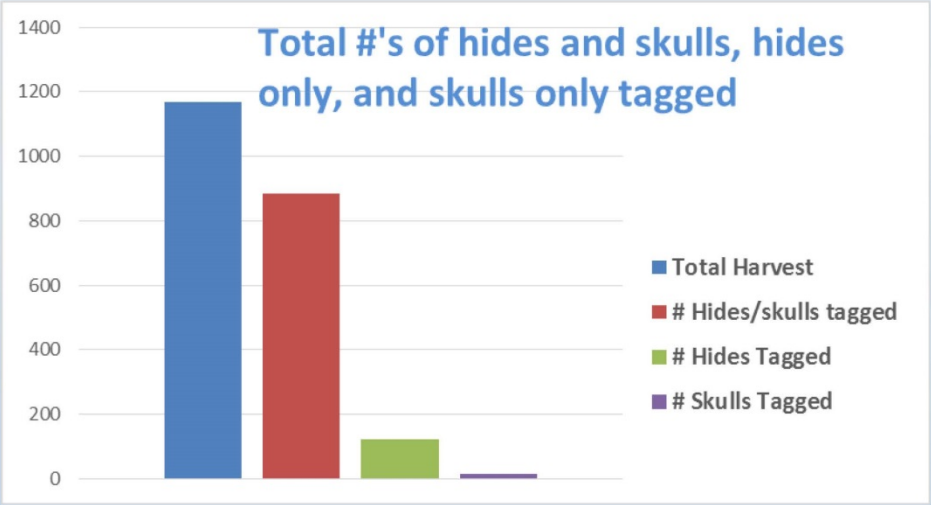

Annual male harvest and those with sex identifiers
Sum of Males
Sum of Males_With_Sex_ID

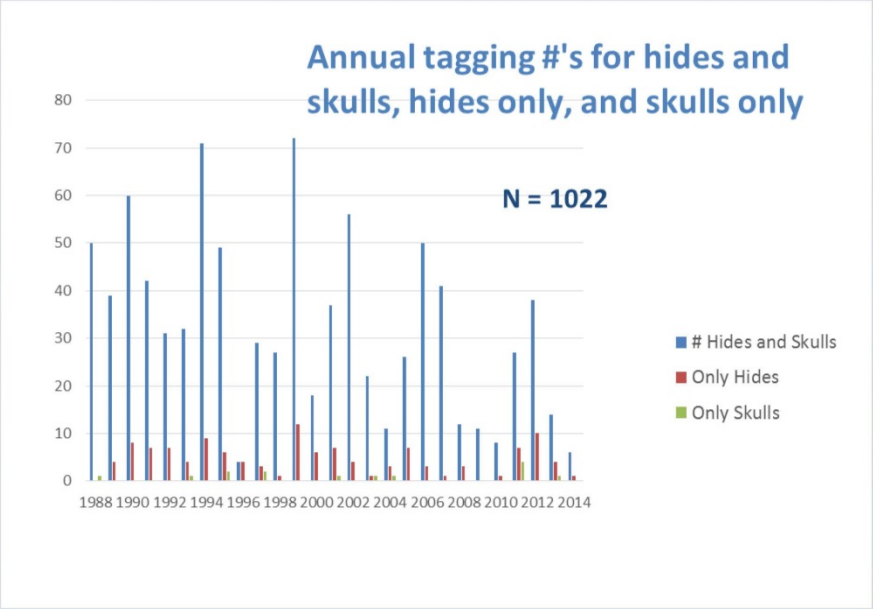

Annual harvest and those with sex identification
Sum of Total_Harvest
Sum of Total_With_Sex_ID

Tagging Compliance

- N = 1,167
- 883 hides and skulls (75.6%)
- 145 (12.4%) neither hide or skull
- 123 hides only (10.5%)
- 14 skulls only (1%)

* This evaluation did not consider the date of tagging only if tagging occurred





Age data/teeth

- N = 1,167
- Teeth acquired from 779 bears (67%)
- Inter-annual variation from 27-83%
- Includes untagged known killed bears (84)

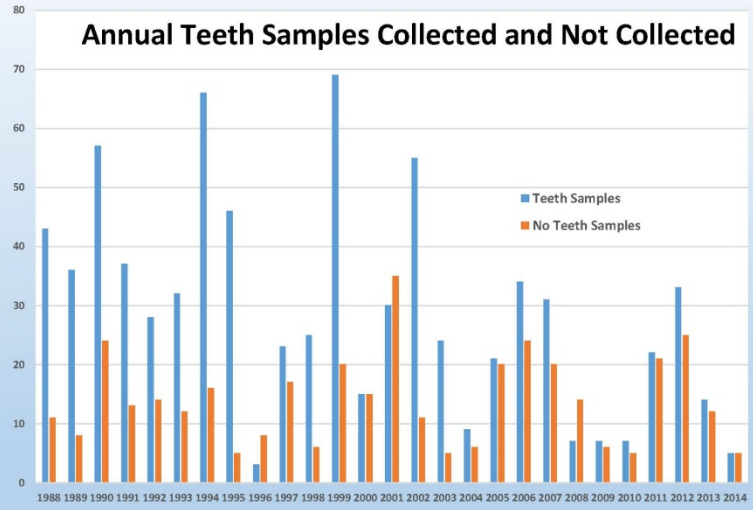


Figure 4. Annual teeth specimens collected or not collected, 1988-2014

Amount of time prior to tagging

- N =1,032 bears
- Date quality 1-3 used
- Known killed untagged bears excluded
- 674 (65%) tagged within 30 days
- 115 (11%) tagged 31-60 days
- 63 (6%) tagged 61-90 days
- 47 (5%) tagged 91-120 days
- 132 (13%) tagged > 120

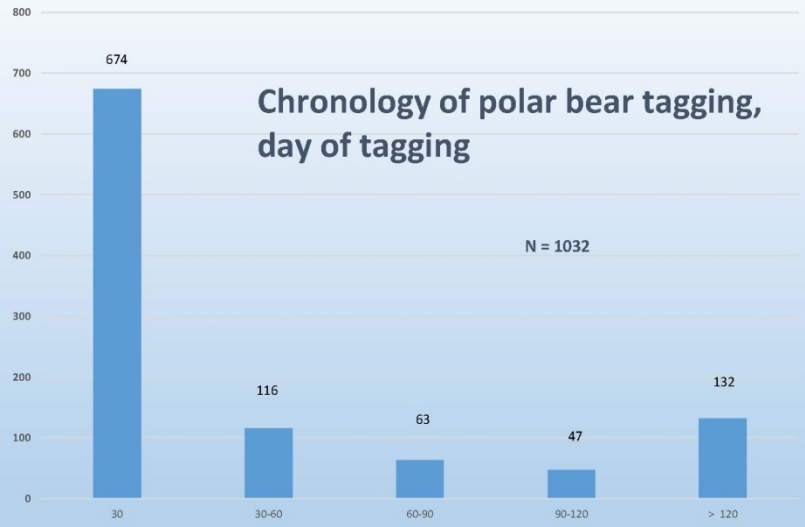


Figure 5. Chronology of polar bears tagged in MRTP data base

Closer look at polar bears tagged within 30 days

- N =674
- 501 (74%) were tagged within the first 10 days;
- 98 (15%) within 11-20 days; and
- 75 (11%) within 20-31 days of harvest

Figure 6. Number of polar bears tagged by day within 30 days of harvest

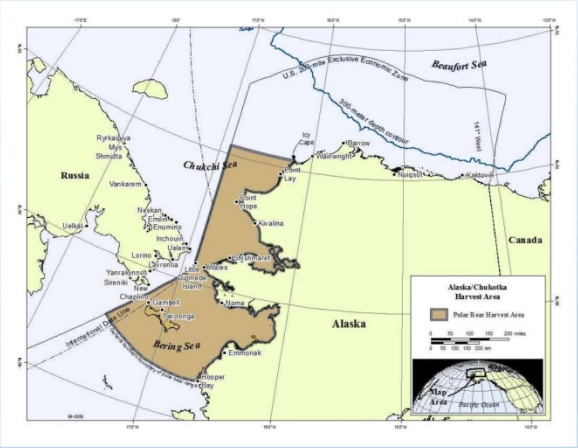
Tagging Days	Number Total	Number with Teeth	Percent with Teeth	Number with sex noted	Percent with sex id noted
0-10	501	420	0.84	239	0.48
11-20	98	80	0.82	42	0.43
21-30	75	53	0.71	37	0.49
31-60	116	92	0.79	50	0.43
61-90	63	40	0.63	25	0.40
90-120	47	27	0.57	16	0.34
>121	132	56	0.42	56	0.42
Grand Total	1032	768	0.68	465	0.43

Table 5. Date of tagging relative to complete sex and age data reported

Date of tagging relative to complete sex and age reporting

- There was a positive correlation between an early date of tagging and completeness of sex and age reporting data outward in time
- A regression analysis indicted a statistically significant correlation for time of tagging and age/teeth acquisition (R^2 = 0.91; p=0.003)
- Although the regression analysis for sex did not reveal a statistically significant relationship (R^2 =0.433; p = 0.11) the results indicated a declining trend of reporting sex over time

A closer look at compliance rates by village



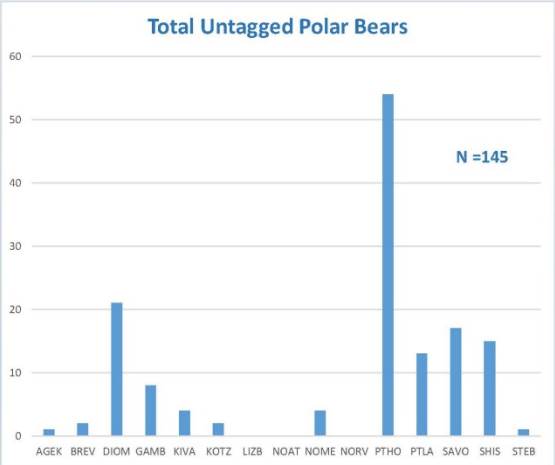
Reporting performance of villages in the study area

- Percentage of untagged and total numbers of untagged bears per village were evaluated
- Villages taking more than 10 polar bears (Pt. Lay, Pt. Hope, Kivalina, Kotzebue, Shishmaref, Wales, Little Diomede, Savoonga, and Gambell) were evaluated
- Reporting compliance varied by village
- Tagging compliance ranged from 70.5% for Pt. Lay to 96% for Gambell
- Total number of untagged polar bears (net effect) were greatest for Pt. Hope (54 bears) and Little Diomede (21)

Evaluation of tagging compliance, percent tagged, for communities in the Chukchi-Bering seas region, 1988-2014

Village	Tagged	Untagged	Total	Percent tagged
AGEKIAG	0	1	1	0.00
BREVIG	1	2	3	0.33
L. DIOMEDE	134	21	155	0.86
GAMBELL	187	8	195	0.96
KIVALINA	26	4	30	0.87
KOTZEBUE	10	2	12	0.83
LIZBURNE	1	0	1	1.00
NOATAK	1	0	1	1.00
NOME	4	4	8	0.50
NORVIK	1	0	1	1.00
PT HOPE	291	54	345	0.84
PT LAY	31	13	44	0.70
SAVOONGA	171	17	188	0.91
SHISHMAREF	115	15	130	0.88
STEBBINS	0	1	1	0.00
WALES	49	3	52	0.94
Total	1022	145	1167	0.73

Number of untagged polar bears for communities in the Chukchi-Bering seas region, 1988-2014



Conclusions

- Sex was unknown for 10.5% of harvest
- Sex identifiers were recorded for 41% of harvest (14-89%)
- Hide and skull tags were not affixed for 27% of the harvest
- Teeth were not collected for 33% of the harvest
- The 30-day time frame was not met for 35% of the harvest
- Pt. Hope and Little Diomede had the greatest number of bears with incomplete tagging data
- Tagging compliance highest for Gambell (96%), Wales (94%), and Savoonga (91%)

Other villages compliance rates were Shishmaref (88%), Kivalina (87%), Little Diomede (86%), Pt. Hope (84%), and Pt. Lay (70%).

Further questions or discussion?

Goal of Workshop

Develop recommendations to ensure timely acquisition of complete and accurate harvest data for 100% of harvest

Why complete harvest data is important

- Eric Regehr presentation

Focus of recommendations

- Improve the tagging process
- Improve hunter awareness and compliance
- Improve timeliness of reporting
- Improve the accuracy and completeness of data
- Achieve the 100% compliance goal in a timely manner

List of Recommendations

- Develop and implement a communication network with USFWS, ANC, village ANC representatives, and village tagging representatives for real time reporting of polar bear harvests within 2 days of take. A later time frame for early report has also been proposed, ie. 7-10 days
- Issue harvest tags to subsistence hunters prior to the start of each year
- Coordinate through the communications network on the status of harvest relative to the quota
- Increased USFWS/ANC presence in villages (all villages or select villages) during peak harvest times to assist in tagging, data collection, and to encourage more accurate, timely collection of harvest information and samples
  - Discussion of bio-monitoring

Recommendations (cont.)

- Disseminate informational and educational materials on harvest monitoring requirements
  - Posters
  - Newspapers (Arctic Sounder and Nome Nugget)
  - Radio interviews and talk programs
  - Community meetings with hunters

List of Recommendations (cont.)

- Incentives for timely reporting through payment to the taggers
- Incentives (incremental payment to hunter) 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 or 20 days
  - Incentives for each polar bear tagged
    - Knives
    - Yearly raffle for qualifying and participating hunters
- Pay extra fee to taggers when they make house calls residence

Recommendations: joint-enforcement

- Phased enforcement of tagging regulations (following education intensive) cooperative effort between USFWS and ANC
- Use of tribal/community ordinances to implement harvest monitoring
  - AEWC bowhead whale example (Harry Brower and Jessica LeFeaver)
  - A potential example is the Gambell Tribal Ordinance for walruses

Implementation

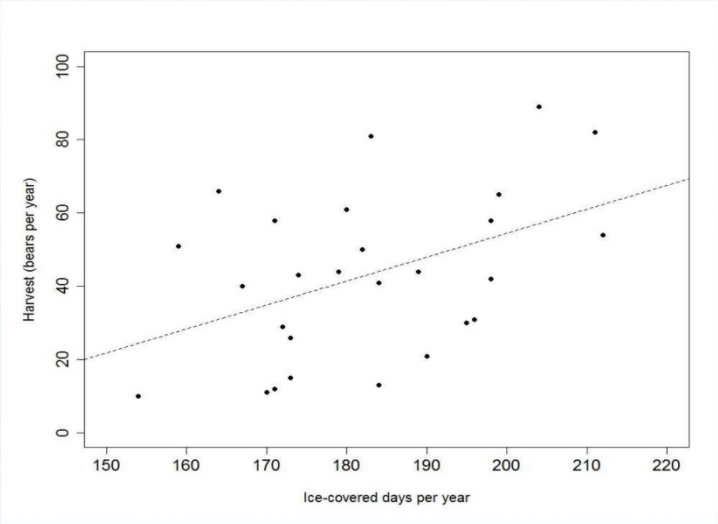
- Integrate and implement the recommendations into a draft Shared Harvest Management Plan (SHMP) or any subsequent document that supersedes the SHMP
- USFWS and ANC responsibility

Completed data on Sex

Year	Males	Females	Undetermined
1988	28	23	3
1989	29	15	0
1990	48	21	12
1991	38	12	0
1992	30	10	2
1993	22	15	7
1994	41	37	4
1995	42	15	4
1996	8	3	0
1997	24	11	5
1998	16	14	1
1999	57	26	6
2000	19	6	5
2001	35	19	11
2002	41	19	6
2003	16	8	5
2004	6	7	2
2005	19	12	10
2006	36	17	5
2007	29	17	5
2008	7	9	5
2009	8	4	1
2010	7	3	2
2011	32	9	2
2012	34	12	12
2013	17	3	6
2014	8	0	2
Total	697	347	123

Year	Total Harvest	Sex identifiers reported	Females total	Females w/sex identifiers	Males total	Males w/sex identifiers	Unknown Sex
1988	54	11	23	3	28	8	3
1989	44	12	15	4	29	8	0
1990	81	24	21	5	48	19	12
1991	50	18	12	3	38	15	0
1992	42	11	10	3	30	8	2
1993	44	6	15	2	22	4	7
1994	82	19	37	5	41	14	4
1995	61	17	15	8	42	9	4
1996	11	8	3	2	8	6	0
1997	40	23	11	10	24	13	5
1998	31	19	14	9	16	10	1
1999	89	41	26	15	57	26	6
2000	30	7	6	3	19	4	5
2001	65	26	19	8	35	18	11
2002	66	33	19	9	41	24	6
2003	29	20	8	8	16	12	5
2004	15	13	7	6	6	7	2
2005	41	26	12	10	19	16	10
2006	58	49	17	16	36	33	5
2007	51	40	17	16	29	24	5
2008	21	6	9	4	7	2	5
2009	13	5	4	1	8	4	1
2010	12	9	3	3	7	6	2
2011	43	20	9	4	32	16	2
2012	58	11	12	3	34	8	12
2013	26	5	3	1	17	4	6
2014	10	2	0	0	8	2	2
Total	1167	481	347	161	697	320	123

Projected Harvest Trend



Risk of incomplete reporting of sex

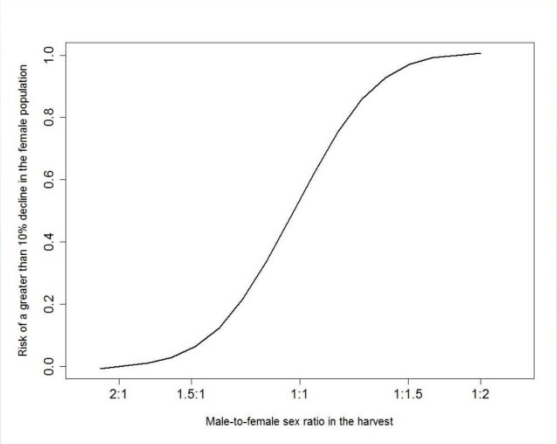


Figure 9. Example plot showing the risk of a greater than 10% decline in the female population, after 20 years, as a function of the male-to-female sex ratio in the harvest

APPENDIX C.

FEDERAL — LOCAL CO-MANAGEMENT OF THE BOWHEAD WHALE SUBSISTENCE HARVEST

Harry Brower
Chairman
Alaska Eskimo Whaling Commission
at the
POLAR BEAR MARKING, TAGGING, AND REPORTING PROGRAM WORKSHOP
Anchorage, Alaska
October 7-8, 2015

Good afternoon, my name is Harry Brower. I'm a subsistence hunter and the Chairman of the Alaska Eskimo Whaling Commission.

The AEWC consists of the registered whaling captains from all of our 11 AEWC villages. Each village has a Whaling Captains' Association that sets its own local rules for timing of the harvest, dates for open fire, when to suspend hunting, and other matters that tend to vary with the conditions in each village.

Each Village Whaling Captains' Association elects a Commissioner and Deputy Commissioner to represent that village on the AEWC Board of Commissioners. Each Village Association also has its own set of officers.

The AEWC Board of Commissioners handles the affairs of the AEWC, under the guidance of our whaling captains. We have an annual Mini-Convention, held each February in Barrow, that brings together the Presidents, Commissioners, and Deputy Commissioners of each Village Whaling Captains' Association. This is where our AEWC policies are adopted and the AEWC Board of Commissioners gets its directives for the year.

Every time our quota is renewed at the IWC, we bring all of the whaling captains together for a full convention and reallocation of the quota among the villages.

The AEWC has managed the bowhead whale subsistence harvest in cooperation with NOAA and the National Marine Fisheries Service since 1980.

Our authority for management comes from two directions. Locally, we operate under Tribal Authority delegated by our Village Tribal entities and the Inupiat Community of the Arctic Slope.

From the federal side, we have delegated authority from NOAA through our NOAA-AEWC Cooperative Agreement.

Under the Cooperative Agreement, the AEWC is responsible for monitoring the bowhead harvest and reporting all harvest results to NOAA. We do this through the Village Whaling Captains' Associations.

And we also require each whaling captain who strikes a whale to fill out a Harvest Reporting Form. We use these forms to collect some of the biological information on the landed whales. For struck and lost whales, we use the forms to record information on the conditions that led to the struck and loss.

This is the reporting side of what we do and a lot of this work is handled by our office staff.

The Cooperative Agreement also sets out the AEWC's responsibilities for management and enforcement of violations.

From a management and enforcement perspective, the most important thing about our Cooperative Agreement is how management and enforcement get handled. Without the Cooperative Agreement, our bowhead harvest would be managed by federal enforcement officials. And any regulatory violations would subject our whalers to possible arrest and criminal penalties under the Marine Mammal Protection Act.

But, as long as the AEWC carries out our responsibilities and our whaling captains cooperate with our management and enforcement decisions, we have the ability to manage the harvest ourselves and to impose civil penalties rather than criminal enforcement measures.

The ability to manage our own harvest, without fear of arrest or criminal penalties, gives our captains a strong motivation to cooperate with the AEWC's enforcement measures and other decisions.

These management and enforcement responsibilities are carried out by the AEWC Board of Commissioners.

Our annual level of harvest is set out in the Cooperative Agreement, which is updated each year to reflect the annual harvest level.

The regulations that apply to how our bowhead whale harvest is conducted are set out in our AEWC Management Plan, developed and updated by the AEWC with approval by NOAA. These regulations designate:

- the registration and reporting requirements for our whaling captains;
- our permissible harvesting methods;
- the prohibition on taking calves or cows accompanied by a calf;
- the prohibition on wasteful takes;
- how we make our traditional proprietary claim to a whale;
- regulations to protect bowhead whale habitat; and

- limitations on how our bowhead whale products may be used, and specification that they may not be sold, except for handicrafts.

The Management Plan also sets out the penalties that apply to violations of the quota levels and the other regulations. Our civil fines range from $1,000 to $10,000, depending on the severity of the violation. Violations also result in a denial of participation in the harvest for up to five whaling seasons. Finally, when a whaling captain is found to have violated the quota or other regulations, he loses the right to the ordi and baleen from the whale.

All violations are reported to NOAA and to the International Whaling Commission, along with the results of the AEWC's investigation of the incident and the Board's decision regarding penalties. If NOAA disagrees with our actions, the Cooperative Agreement says they can step in to handle the situation themselves.

The penalties for violations of the Cooperative Agreement and Management Plan can impose real hardship on a family and even an entire village. So it can be hard on our Commissioners when we have to find that someone has violated our regulations and punish one of our own. But, if we don't punish violations, we can lose our right to manage the hunt ourselves, so our whaling captains and our Commissioners take these things very seriously.

We also don't want to deal with repeated violations, so our Board of Commissioners is very tough on any captain who doesn't follow the regulations. We don't like being put in the position of having to impose the penalties, but we want to make sure that the message gets sent loud and clear that violations won't be tolerated.

In the history of the AEWC we've only had one whaling captain refuse to abide by the decisions of the Board of Commissioners. He was turned over to the federal government for punishment and was denied the right to participate in the harvest for an extended period of time. That was many years ago and we've never had another problem with compliance.

We recently had a series of incidents with a young captain from one of our villages. The Board imposed a very harsh penalty on him and then let him know that if we see more violations he could be banned for life from registering with the AEWC.

Again, this is not fun, but these things have to be done and we have to make it clear to our hunters that we won't tolerate violations of our regulations.

On a more positive note, our relationship with NOAA also gives us the ability to work with that agency and other federal agencies on measures to protect our bowhead whale resource and habitat. This is important to us as we see things changing so much in the Arctic.

I hope this information is helpful to you. Thank you.