

EXECUTIVE SUMMARY

U.S.-RUSSIA BILATERAL POLAR BEAR AGREEMENT
7th Annual Meeting of the Scientific Working Group Meeting
Anchorage, USA
14-15 November 2016

1. The seventh annual meeting of the Scientific Working Group (SWG) designated to support the U.S.-Russia Polar Bear Commission (the “Commission”) took place on 14-15 November in Anchorage, Alaska USA. The SWG meeting was attended by 11 members and alternate members of the SWG, including meeting chair Eric Regehr and cochair Stanislav Belikov (Attachment 1), as well as invited specialists and observers. The Commission is responsible for implementation of the *Agreement between the Government of the United States of America and the Government of the Russian Federation on the Conservation and Management of the Alaska-Chukotka Polar Bear Population*. The main objectives of the meeting were as follows: (1) Review new scientific information and Traditional Ecological Knowledge (TEK) on the Alaska-Chukotka (AC) polar bear population. (2) Review annual removals from the AC population and provide recommendation(s) on a sustainable harvest level to the Commission. (3) Discuss the methods, schedule, and feasibility of estimating population parameters (e.g., abundance and survival) for the AC population. (4) Finalize standards for how the Scientific Working Group (SWG) will consider new information and use it to make recommendations to the Commission. At the commencement of the 7th annual meeting, the group honored the memory of SWG member Vladilen Kavry, who passed away in the preceding year.

2. The SWG received the following presentations from members and invited specialists:
 - (a) Summary of 2016 genetic sampling (Kim Titus and Andy Von Duyke): Presented an update on their pilot study to obtain polar bear hair samples for genetic identification in northwestern Alaska. They discussed the promise of these methods to provide noninvasive samples while involving local communities, discussed the limitations and difficulties of the study, and provided an update on how many samples were obtained in 2016, their distribution, and plans for the 2017 field season. Initial genetic results from 2016 samples should be available next year.

 - (b) TEK and local ecological observations (Mike Pederson): Presented information on the North Slope Borough’s online database of polar bear observations made by community members. Also discussed that the Inupiat Heritage Center in Barrow, Alaska has an online database of polar bear photos, oral histories, artifacts, and many other polar bear items that might be of interest to members of the SWG.

Mike discussed ongoing efforts by the Borough on the health assessment of subsistence-harvested polar bears.

(c) TEK and local ecological observations (Clyde Oxereok): Provided information on the polar bear patrol program in Wales, Alaska. Clyde also relayed observations that there were only two polar bears observed in Wales last winter and that bears that come to the community are typically younger bears. He stated that climate change has changed the timing of polar bear hunting in Wales as well as the timing of polar bear migration.

(d) TEK and local ecological observations (Billy Adams): Billy Adams presented general observations of his experiences with polar bears having grown up in Barrow, Alaska. Inupiat have lived with polar bears throughout millennia and know how to manage their animals.

(e) Historic and current habitat use (Ryan Wilson): Ryan presented results from his recently published paper on the lack of change in polar bear habitat selection patterns in the Chukchi Sea from the mid-1980s to mid-1990s and from 2008-2014. Although the results showed no changes in what bears are selecting for on the sea ice, his results found that there has been a 75% reduction in highly-selected summer sea ice habitat between the two periods.

(f) Nutritional ecology, activity, denning, and satellite imagery studies (Karyn Rode): Karyn presented results of collaborative studies examining spring fasting behavior, summer habitat use and activity patterns, and denning behavior of polar bears in the Alaska-Chukotka (AC) population. While AC bears appear to be maintaining spring predation rates, bears demonstrated changes in summer habitat use and denning location related to changes in sea ice conditions.

(g) Possible impacts of climate warming in the Arctic on polar bear breeding success (presented by Stanislav Belikov on behalf of P.V. Pestina, and S.E. Belikov): Stanislav presented data on polar bear den morphology and thermal conditions on Wrangel Island from the late 1970s. He found that dens were 14-17°C warmer than ambient temperatures and that an optimal snow depth of a den's ceiling is 60cm. He warned that with climate change, dens might be more prone to collapse or that ceilings might be too thin to provide the same energetic savings as they did in the past. It's possible for increased cub mortality due to these changes. The presentation was based on data from Belikov 1976, 1981.

(h) Studies of polar bears in Chukotka and Wrangel Island in 2015 (presented by Stanislav Belikov on behalf of A.N. Boltunov, V.S. Semenova, S.E. Belikov, and K.V. Kochi): Stanislav detailed the capture and survey efforts undertaken in 2015 on the Chukotkan coast and Wrangel Island. Four bears were captured, samples taken, and GPS transmitters attached. Non-invasive samples were also taken from polar bears and samples from food objects. A total of 55 camera traps were placed on Wrangel Island, and 3 on Herald Island.

- (i) Sea ice edge and polar bear habitat in the Chukchi Sea (Nikita Platonov): Nikita provided an update on his work looking at the importance of the sea ice edge as a metric for understanding polar bear space use patterns. He found that sea ice edge, distance to coast, and depth are important metrics to include in ecological studies of polar bears.
- (j) Observations on Wrangel Island during autumn 2016 (Craig Perham and Alexander Gruzdev): Craig provided an update of a joint U.S.-Russian research expedition that occurred on Wrangel Island this autumn. The main objectives of the expedition were to establish a working relationship between our two countries on Wrangel Island, teach inspectors on the island how to identify different bear sex/age classes, and determine where future hair snare stations, capture locations, and survey routes might be located. A total of 179 bears were observed along nearly 1000km of survey work done from all-terrain vehicles. The majority of bears observed had good body condition.
- (k) Den detection efforts on the Chukotkan coast (Sergey Kavry): Sergey provided an update on the Chukotka den survey in 2016. They found two areas with high concentrations of dens; Vatou Mountain and Vankarem Mountain. They found a total of 15 dens and saw one female with triplets.
- (l) Summary of 2016 fieldwork for instrument-based aerial surveys for ice seals and polar bears in the CS region: U.S. Presentation (Peter Boveng): Described the U.S. portion of an instrument-based aerial survey for ice seals and polar bears, flown with thermal and color cameras 300 m above the sea ice of the U.S. portion of the Chukchi Sea in April and May of 2016. Survey included 15,750 km of effort. Detection rates for polar bears appear to be approximately 75%. The coefficient of variation for an abundance estimate is being estimated. Surveys in the U.S. (l) and Russia (n) were a coordinated effort using standardized methods and equipment.
- (n) Summary of 2016 fieldwork for instrument-based aerial surveys for ice seals and polar bears in the CS region: Russian Presentation (Vladimir Chernook): Described the Russian portion of the instrument-based aerial survey for ice seals and polar bears, flown with thermal and color cameras in the Russian portion of the Chukchi Sea from 18 April to 18 May, 2016. The Russian survey also included 4-6 observers. Over 12,000 km of survey effort were flown. Over 2,000 locations were observed with polar bear tracks and there was good correlation between seal and polar bear sightings. The visual and instrument-based observation data were compared for the flight on 18 May. A higher detection rate for polar bears using instruments vs. visual observations was detected. Data from the survey are currently being analyzed.
- (o) Update on oil spill modeling and response (Ryan Wilson and Susanne Miller): Outlined a study underway to simulate oil spills from various locations in the Chukchi Sea. Results will include maps that show the probability of various levels of oiling. The US Fish and Wildlife Service has developed an

oil spill response plan that includes staging of equipment on the North Slope of Alaska, identifying methods for cleaning oil out of polar bear fur, and carrying out practice responses in the field.

(p) Review efforts to monitor harvest, and information on all forms of take from the AC population in the calendar year 2015: American Presentation (Hilary Cooley): Annual levels of human-caused mortality varied between 2011 and 2015 from 12 to 77 bears for the U.S. portion of the Chukchi Sea region including Barrow, Alaska. Harvest is highest January through May, with few bears harvested June through September.

(q) Review efforts to monitor harvest, and information on all forms of take from the AC population: Russian Presentation (Anatoly Kochnev on behalf of A. Kochnev and E. Zdor): Reviewed a book published in Russian in 2014 and published in English in 2016. The book presents information on the results of sociological studies of relations between the Native people of Chukotka and polar bears, including an assessment of polar bear use based on interviews with 429 community members during the period 1999-2012. The most recent information within this period suggested an average removal level of 32 bears (range 18-56) per year in Chukotka. The presenter suggested that annual level of removals has not increased since the end of the study.

(r) Assessment of the U.S. Fish and Wildlife Service's Marking, Tagging, and Reporting Program (MTRP) 1988-2014 (Scott Schliebe): This presentation reviewed harvest trends and reporting patterns in the Chukchi Sea region of the U.S. for the area including Icy Cape and south. Harvest levels in this region declined over this period. Harvest was not reported for a minimum of 7% of removals. This work is published as Alaska Department of Fish and Game Technical Reports available at http://www.adfg.alaska.gov/static/home/library/pdfs/wildlife/research_pdfs/wtb_2016_15_comanagement_alaska_chukotka_polar_bear_harvest_quota.pdf.

(s) Methods to estimate abundance from capture-recapture research in the U.S. portion of the CS region (Eric Regehr). Methods and initial results were presented from a study to estimate vital rates (e.g., breeding, survival) and abundance of the Alaska-Chukotka population based on data collected during live-capture research in the U.S. during the period 2008-2016. The study used multievent capture-recapture model based on the polar bear life cycle graph, including unobservable stages to model temporary emigration from the sampling area, implemented in a Bayesian framework. Final, peer-reviewed results from this study—including updated estimates of population size—are anticipated to be available prior to the 2017 Commission meeting.

3. Members of the SWG made the following recommendation to the Commission:
- A. The SWG recognized that new biological information considered at this meeting did not suggest the need to change the current estimate of sustainable harvest level for polar bears from the AC population. Therefore, the SWG recommends no change to the current sustainable harvest level of up to 58 bears per year, of which no more than 1/3 will be female, or to the multiyear quota system as adopted by the Commission.*
 - a. *Six of 10 voting SWG members supported this majority recommendation. Four members supported a more concise recommendation to maintain the current sustainable harvest level, which appears to pose a low level of risk to the biological population. One member abstained from voting due to an agency policy.
 - B. The SWG recognizes that significant new information will be available in the next year on the abundance and vital rates of the AC population. The SWG recommends that all available data, including new science on abundance, population delineation, and TEK should be considered prior to the 2017 Commission meeting. The SWG recommends that the Commission support a workshop or SWG meeting of sufficient length to allow SWG members to assess this new information and to derive updated recommendations on sustainable harvest level. The SWG expects that this assessment will result in a range of sustainable harvest options with associated risk levels, which the Commission can use to determine an appropriate balance between protecting the AC population and meeting subsistence needs in a manner that is consistent with the terms of the Agreement.
 - C. The SWG recognized the critical importance of Wrangel Island to the AC population, acknowledged the success of joint Russian-American field studies on Wrangel Island in 2016, and requested that the Commission continue to support joint research on Wrangel Island according to the joint study plan.
 - D. The SWG recognized that an updated analysis of data on the movements and delineation of the AC population is important to management and conservation, and requested that the Commission support such an analysis.
 - E. The SWG recognized that communities within the U.S. that rely upon polar bears as a subsistence resource, do not necessarily oppose harvest management of polar bears. However, communities and Native organizations are concerned that harvest limits, which may be conservative due to scientific uncertainty, can cause hardship for people. There are also concerns in the U.S. that overly conservative harvest limits could lead to criminalization of sustainable subsistence activities. As such, it is important for the Commission to recognize that such concerns can undermine community support for polar bear management, which is essential for successful conservation**.

- a. **9 of 10 voting SWG members supported this majority recommendation. One member indicated that making such a recommendation was beyond the scope of the SWG. One member abstained from voting due to agency policy.

F. The SWG proposed the following changes to the membership of the group:

- a. Bob Small (Alaska Department of Fish and Game) to replace Kimberly Titus (Alaska Department of Fish and Game)
- b. Billy Adams (North Slope Borough) to replace Mike Pederson (North Slope Borough)
- c. Clyde Oxereok (representing Native Alaskans) to replace Charles Brower (Alaska Nanuuq Commission)
- d. Stanislav Tayennom (National Park Beringia) to replace Vladilen Kavry (Russian Association of Indigenous Peoples of the North—deceased)
- e. Egor Vereschchagin (Chukotka Administration) to replace Vladimir Etylin (Chukotka Autonomous Region)
- f. Sergey Galyagirgin (Union of Marine Hunters of Chukotka) to replace Yury Tototto (Marine Hunters Union)

4. Members of the SWG engaged in the following discussion and reached the following decisions:

- a) The SWG reviewed draft standards for the development and review of information used in making recommendations to the Commission. The group supported the core content of the standards, and identified a subgroup to continue revisions with the goal of finalizing the document at the 2017 SWG meeting. Considerations for revisions to the draft standards include: ensuring practical guidelines on the timing of distribution of materials to SWG members, recognizing organizational constraints on the distribution of unpublished materials, ensuring that the document represents the Russian system of peer review, ensuring that TEK receives sufficient weighting, and the importance of distinguishing between different types of information (e.g., scientific research, technical information, TEK, and location observations).
- b) The SWG agreed to replace the following language in the group's 2014 Terms of Reference:
 - a. Previous language to be replaced: "Some parts of annual meetings of the group, including development of the Executive Summary, may be closed to observers and invited specialists"

- b. Replacement language: “Most parts of the annual meetings of the group, including deliberative and decisional sessions, will be open to observers and invited specialists. Some administrative sessions (e.g., development of the meeting report) may be closed provided the session is clearly identified on the agenda and documented in the meeting report. The cochairs may call for impromptu closed sessions during meetings, at the request of members or as necessary to conduct the business of the group.”
- c) The SWG reviewed the methods, schedule, and feasibility of estimating population parameters (e.g., abundance and survival) for the AC population. Much of the discussion focused on the strengths and weaknesses of aerial survey and capture-recapture approaches for obtaining population information. There was also discussion on the importance of making the aerial survey study design specific to polar bears (e.g., timing and location of surveys) if they are to be used to estimate the AC population in the future. The group agreed that instrument-based aerial surveys showed promise and that members should continue to work with experts to improve these methods for polar bears. The perspective was expressed that, in the future, a combination of aerial survey methods to estimate abundance, and other studies to monitor population status and ecological change, including development of non-invasive methods, may be appropriate. The group highlighted the importance of having presentation(s) at the 2017 to compare different study designs, and provide the basis for developing guidelines for how population parameters are estimated for the AC population.
- d) The SWG approved final, translated versions of the two documents entitled *Information Needs and Joint Research Studies for the Alaska-Chukotka Polar Bear Population (2016-2018)* and *Information Needs and Joint Research Studies on Wrangel Island (2016-2018)*. Members noted that although these documents apply to the period 2016-2018, there has been progress on research and some changes in perspectives on research since the content of the documents was decided upon in 2015, which should be considered in future plans.
- e) The SWG discussed the issue of sustainable harvest levels from the AC population. Members noted the importance of providing the Commission with a range of harvest levels and associated risk levels. The perspective was expressed that new biological information is consistent with the information used to develop recommendations to the Commission in 2010, and with the sustainable harvest level adopted by the Commission in 2010 and confirmed annually since that time. The group discussed risk tolerance, noting that minimizing risks to the biological population, can increase risks of not meeting subsistence needs. The perspective was expressed that, given information on the productivity and apparent stability of the AC population and its importance for subsistence, there is justification for increasing the management factor (F_0) in the Prescribed Take Level formula used in 2010, in a manner consistent with guideline in the Guidelines for Assessing Marine Mammal Stocks II Workshop. The group recognized that information on abundance is important to accurate assessment of sustainable harvest level, and that—when finalized—the initial information presented

at the 2016 meeting should be used in a reassessment of sustainable harvest level. The group recognized that there are harvest assessment methods that directly consider the precision and collection schedule of population data.

- f) The SWG discussed the need to clarify their role in informing management and other decisions for the Commission. There are apparent inconsistencies in the 2009 structure document that lead to a lack of clarity in the process for incorporating critical information that is not directly related to the biological status of the population] in management recommendations. The SWG acknowledged the need to discuss this further at the next meeting.
- g) The SWG has created a web page <<https://www.fws.gov/alaska/fisheries/mmm/polarbear/swg.htm>> that will be maintained such that the Executive Summaries from meetings of the group, and some other materials from the meetings and workings of the group, as well as relevant background information, are made available to the public in a timely manner.

5. The meeting was attended by observers that made the following comments:

(a) The Center of Biological Diversity expressed concern over variation in the area in which harvest has been reported in the United States. They indicated that the U.S. is not in compliance with the treaty relative to high harvest levels in a few recent years and emphasized the importance of implementing the quota.

(b) Kawerak, Inc., supported continuation of collaborative research and indicated that quotas should be based on scientific data, traditional knowledge and observations and should be vetted by the Alaska Native community. They indicated that the Alaska Native community was not sufficiently consulted on the harvest quota and that Alaska Native representation on the SWG is important. They emphasized that additional research is needed and that they hope additional funding is available to focus on estimation of cub recruitment, survival rates, and population abundance.

(c) World Wildlife Fund expressed the need to ensure that members of the SWG are able to attend all of the SWG meetings. They recommended that the harvest quota be based on the most up to date and scientifically sound analysis and that geographic boundaries used to determine harvest level be clearly communicated to the Commissioners. They support the SWG's efforts to improve transparency and documentation and emphasized the need to support management through peer-reviewed scientific literature and TEK. They suggested that the SWG work closely with holders of TEK and social science, including establishing a workshop, to differentiate TEK studies versus anecdotal evidence.

(d) Sergey Kavry provided comments on behalf of the Native people of Chukotka. He indicated that visa issues prevented the attendance of Chukotkan SWG members. He emphasized the importance of incorporating TEK and that data standards should ensure that TEK does not receive a low weight in

management decisions. He recommended that Native community members be involved directly in research efforts to promote communication and more rapid feedback of research findings to local communities that could inform self-regulation. He expressed concern that use of peer-reviewed studies to support management will result in a time lag for using the most up to date information. He stated that the quota of 58 bears is too restrictive and could be detrimental to maintaining community support.

(e) The Ministry of Natural Resources and the Environment of Russia commended the SWG on developing new information that will be a breakthrough for supporting management decisions. They expressed support for adhering to the boundaries of the Agreement and for continuing to incorporate the weight of TEK in all documents and recommendations. They suggested that any change in quota be verified with scientific information.

(f) Defenders of Wildlife commended the SWG on making their activities more transparent. They look forward to learning more about new co-management with Alaska Native partners.

(g) The North Slope Borough expressed that polar bears are important to the people that live in Arctic coastal communities and that hunters are really important to collaborative work. They acknowledged that having an open meeting is an improvement and that the SWG's discussion about data standards and quality is very important because their decisions influence people's lives. They invited the SWG cochairs to attend the International Whaling Commission to learn about their data standards. They provided several recommendations, including the following. 1. Hold a genetics workshop on best practices. 2. Add one new SWG member from each country with TEK experience. 3. Retain current harvest levels until new information informs a new quota. 4. Dedicate a portion of future meetings to discussing the Agreement boundary due to recent inconsistencies, and that Commissioners of the Inuvialuit–Inupiat Agreement between U.S. and Canada and their technical advisors be invited to participate in that discussion.

ATTACHMENT 1

List of Attendees at the 7th Annual Meeting of the Scientific Working Group of the U.S.-Russia Polar Bear Commission

Scientific Working Group members that attended the meeting

American members

Eric Regehr (American cochair) <eric_regehr@fws.gov> (U.S. Fish and Wildlife Service)

Andrew Von Duyke <andrew.vonduyke@north-slope.org> (North Slope Borough)— attending

Clyde Oxereok (alternate member and proposed replacement for Charles Brower) <email> (representing Alaskan Natives)

Hilary Cooley <hilary_cooley@fws.gov> (U.S. Fish and Wildlife Service)

Karyn Rode <krode@usgs.gov> (U.S. Geological Survey)—attending

Kimberly Titus <kim.titus@alaska.gov> (Alaska Department of Fish and Game)

Mike Pederson <mike.pederson@north-slope.org> (North Slope Borough)

Ryan Wilson <ryan_r_wilson@fws.gov> (U.S. Fish and Wildlife Service)

Russian members

Stanislav Belikov (Russian cochair) <sbelik35@gmail.com> (All-Russian Research Institute of Nature Protection)

Anatoly Kochnev <anatoly-kochnev@yandex.ru> (Chukotka Federal Fisheries Research Institute)

Nikita Platanov (alternate member for Ilia MordvinsteV) <nikita.platonov@gmail.com> (Russian Academy of Sciences)

Scientific Working Group members that were not able to attend the meeting

Russian members

Andrei Boltunov <3438083@mail.ru> (Marine Mammal Council of Russia)

Nikita Ovsyanikov <nikita_ov@mail.ru> (independent biologist)

Vladilen Kavry <vancarem@list.ru> (Russian Association of Indigenous Peoples of the North)

Vladimir Etylin <etylin.vladimir@gmail.com> (Chukotka Autonomous Region)

Yury Tototto <utototto@mail.ru> (Marine Hunters Union)

Invited specialists that attended the meeting

Aleksander Gruzdev (Wrangel Island Federal State Nature Reserve)

Billy Adams (North Slope Borough)

Bob Small (Alaska Department of Fish and Game)

Craig Perham (U.S. Fish and Wildlife Service)

Peter Boveng (National Marine Fisheries Service)

Scott Schliebe (independent consultant)

Susanne Miller (U.S. Fish and Wildlife Service)

Vladimir Chernook (Giprorybflot)