



U.S. Fish & Wildlife Service

Guided Recreational Polar Bear Viewing 2015-2016 Summary Report

Arctic National Wildlife Refuge



Photo by USFWS/Charlie Hamilton

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Dear Reader:

This report for 2015-2016 was prepared as an update to the April 2015 publication entitled *Guided Recreational Polar Bear Viewing 2011-2014 Summary Report* (available at <https://go.usa.gov/xXn9b>). These reports have been developed to present what is known about current visitation to Arctic National Wildlife Refuge (Arctic Refuge, Refuge) for the specific activity of guided recreational polar bear viewing. A list of highlights from this 2015-2016 update can be found on page four.

At Barter Island, polar bear viewing occurs predominantly on the lands and waters adjacent to the community of Kaktovik. Arctic Refuge has management authority over the waters surrounding Kaktovik. The Refuge has an interest in supporting local efforts to manage polar bear viewing visitors on land, but has no direct management responsibility for the land areas of the community. Because of the interrelated effects of land- and water-based polar bear viewing on bears and on the community, Refuge staff continues to seek collaboration from local residents to address management holistically. It is our hope that these reports are useful to Tribal and City Councils of Kaktovik, the Kaktovik Inupiat Corporation, and the North Slope Borough for managing the activities of recreational polar bear viewing on community lands.

To fulfill its management obligations to protect polar bears within Refuge boundaries, Arctic Refuge staff oversees a Special Use Permit (SUP) program, which provides permits to guides for various commercially operated water-based polar bear viewing activities. Both the original report and this update focus only on data collected from these commercial guides concerning their water-based activities within this SUP program.

Additional information about Refuge-specific polar bear viewing management activities is available at <https://www.fws.gov/refuge/arctic/pbvmanagement.html>. Other research by the U. S. Fish and Wildlife Service (USFWS) and other agencies, such as the U. S. Geological Survey, conducted in cooperation with various partners in Kaktovik is beyond the scope of this report. Information describing polar bear management activities by the USFWS's Alaska-wide Polar Bear Program is available at <https://www.fws.gov/alaska/fisheries/mmm/polarbear/pbmain.htm>.

It is our hope that this report provides information useful to decision-making about how best to work together toward resolving human-polar bear issues, to improve the lives of people and of bears.



Thank you for your interest.

Jennifer Reed, Public Use Manager, Arctic National Wildlife Refuge
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Report Highlights: Guided Recreational Polar Bear Viewing 2015-2016

- It is estimated that in 2015 and 2016, the polar bears around Kaktovik experienced approximately 2500 views by clients and guides taking part in commercially-operated water-based polar bear viewing.
- The annual number of visitors viewing polar bears on Refuge waters surrounding Barter Island in 2015 and 2016 is estimated to exceed the total annual number of visitors for all other activities throughout the remainder of the Refuge.
- Visitor use from polar bear viewing tourism increased rapidly between 2011 and 2015, but may be reaching a stable level since 2015 because of the somewhat static availability of regularly-scheduled commercial flights, visitor housing and authorized boat guides.
- With a fixed group size not to exceed 10 clients at one time, the total numbers of permittees increased every year through 2015 to accommodate an increasing demand for the activity.
- Stable numbers in 2015 and 2016 imply that, though demand may still not be met (judged by the fact that tours are booked out over a year in advance in some cases), the physical maximum number of visitors that can be accommodated may have been met (considering possible viewing days due to weather, viewing hours per day, and the number of boat-authorized guides providing access to water).
- The polar bear viewing season length decreased in 2016 but the number of bear views per day has been increasing, indicating that operators are clustering their services around a core viewing season and taking an increasing number of trips each day.
- The average trip length in hours, as reported by boat operators, has remained fairly constant over the span of the past six years.
- The increasing numbers of viewers (clients and guides) per day each season, with the average trip length remaining fairly constant, indicates the average number of hours spent daily on water by all guides combined has steadily increased.
- Between 2012 and 2016, the Kaktovik Youth Ambassadors (KYAs) met with over 203 groups totaling 721 visitors from 21 countries. During the 2015 & 2016 viewing seasons, Refuge staff met with an additional 763 visitors from 23 countries.

2015-2016 Visitor Use Patterns	2015	2016
Viewing season length in days	108	61
Total number of viewing days	80	54
Percentage of days within a season viewing occurred	74.1	88.5
Total number of viewers (visitors/guides)	2557	2314
Avg number of viewers per day	31.96	42.85
Avg number of hours spend daily on water by all guides combined	23.75	30.3
Avg number of hours spent viewing bears per trip	4.4	4.32

Data Description:

This report provides Refuge Polar Bear Viewing Program information for 2015 and 2016; incorporates this data from 2015-2016 into the 2011-2014 data from the original report; summarizes use by visitors who were guided on Refuge waters; and explores issues related to management of polar bear viewing at Kaktovik, Alaska. Visitor use data analyzed in this report uses the same methods as the 2011-2014 report, allowing comparison across years for trends in visitor use patterns.

The visitor use data in this report come from Refuge Special Use Permit (SUP) client use reports submitted by commercial guides operating on the waters surrounding Kaktovik, while information about visitor origin comes from visitor contacts with USFWS staff and with the Kaktovik Youth Ambassadors (KYAs). Data derived from the SUP client use reports represent the minimum number of visitors coming to Kaktovik for polar bear viewing. Authorized guides are required, by condition of their SUPs, to report their client use. Due to missing information from some client use reports, and inconsistent client use reporting, the data in this report reflect minimum numbers, are preliminary, and are subject to change. In addition, client use reports may not have included the number of passengers who were tour-operating guides also guiding passengers (in other words, those guides who were subcontracting). This is an additional reason the reported total of clients and guides (“views”) is a minimum estimate.

To accurately assess the impacts of human activities on polar bears at Kaktovik, visitor use calculations *count all individuals---guides as well as clients---as separate viewers for each trip they undertake*, even if they take multiple trips per day. This value is referred to as “views.”

Water-based polar bear viewing occurs when polar bears are in the area during open water periods (no ice) in late summer and fall. For the purposes of these reports, the viewing season for each year is defined as the period from the first to the last date that commercial guides operate during that year.

In recent years, businesses based outside of Kaktovik have recognized an opportunity to bring tourists from Fairbanks for day-trips using chartered planes. This bypasses the need for visitors to travel to the community on regularly scheduled, commercial airline flights with limited seat availability, and bypasses the need for their visitors to reserve local lodging. At the same time, air carriers providing regularly-scheduled commercial airline flights have attempted to respond to the acute demand for seats during the polar bear viewing season by re-allocating planes in their fleet when possible to add flights to their schedule. This has the potential to alleviate some local resident concerns about seat availability—but it may also increase access to the community beyond the capability to accommodate overnight visitors.

Subsistence life ways occurring on the Refuge are not considered “visitor use,” and are not quantified in this report. Public use of the Arctic Refuge is divided into 1) “visitor use”—those uses by visitors (recreational uses and general hunting uses), and 2) use by rural residents who rely upon the Refuge for subsistence life ways, including observing polar bears and subsistence hunting of polar bears. Only the visitor use aspects of public use are the focus of these recreational polar bear viewing reports.

Adaptations Made by the Arctic Refuge Polar Bear Viewing Program Since 2014

This portion of the report summarizes briefly how the Refuge's polar bear viewing program has adapted since 2014 (including general changes in the number and composition of authorized guides); its collaboration with the KYAs in visitor outreach; and its current efforts for management of polar bear viewing. A more complete presentation and discussion of polar bear viewing data is presented below, beginning on page 8. A more detailed summary of the 2016 Refuge polar bear viewing program can be found at <https://go.usa.gov/xXn92>.

The USFWS is required to monitor commercial uses of National Wildlife Refuge System lands and waters to ensure the activities are compatible with the purposes of each Refuge. This oversight, formalized through Special Use Permits (SUPs), seeks to meet the missions of the USFWS and the Refuge System, and comply with other applicable laws, while allowing for responsible commercial uses. Additionally, the National Wildlife Refuge System Improvement Act of 1997 identifies wildlife observation as one of the six priority public uses of Refuges.

When residents began offering commercial services for polar bear viewing, the Refuge provided guides with training to become authorized Refuge special use permittees. Residents and guides provided input to Refuge staff as a commercial guided polar bear viewing program was developed to meet public demand for this activity, within the protections required by the Marine Mammal Protection Act and the Endangered Species Act. In years previous to 2014, the majority of businesses authorized to operate polar bear viewing guide services with boat operations were locally owned. By 2014, the number of businesses conducting polar bear viewing guide services authorized to operate on Refuge waters had doubled from eight to 16, and the majority of authorized guides were coming to Kaktovik to work during the bear viewing season from areas outside Kaktovik. The majority of these businesses that are authorized to conduct boat operations, however, continue to be locally owned and operated.

The amount of guided recreational polar bear viewing activity on Refuge waters has increased dramatically since 2011 but occurs primarily in the same area, in and around the barrier islands immediately north and east of Barter Island. In 2014, five local boat-operating guides, 11 subcontracting-tour guides, and their visitors viewed polar bears during 62 viewing days of the 84-day viewing season. During that season, polar bears in Kaktovik encountered just under 1200 views (see page 4 for a definition of "views"). In 2015, six local boat-operating guides, 13 subcontracting-tour guides, and their visitors viewed polar bears during 80 viewing days in the 108-day season. During the 2015 season, polar bears present in Kaktovik encountered 2557 views. In 2016, six local boat-operating guides, 11 subcontracting-tour guides, and their visitors viewed polar bears during 54 viewing days during a 61-day season. During this shorter viewing season, polar bears present in Kaktovik encountered a minimum of 2314 views. (During the 2016 viewing season, a total of eight guides were permitted for boat operations on Refuge waters, but only six operated, all six of whom were local.) A description of definitions, data collection, and data limitations is presented on page 5 above.

From 2012 to 2014, the KYAs conducted the bulk of outreach to visitors and were able to convey effective community-based safety and orientation messages to 123 groups totaling 529 individuals from 21 countries over the three years. In 2015 and 2016, with dramatically increasing numbers of visitors, it became clear that the need to address the community's safety and orientation concerns with visitors was much greater than youth volunteers could accommodate. At the same time, guide business schedules were becoming increasingly tight and were no longer adapting to the youths' school schedules for visits between KYAs and clients during non-school hours. The dramatic decreases in KYAs' access to visitors coincided with grant funds allowing increased Refuge staffing in 2015 and 2016, so staff helped to meet the need for on-site visitor orientation. Unfortunately, the shift represents a notable loss of benefits to the community and for visitors, who often identified their time with student residents as a highlight of their

trip to Kaktovik to see polar bears. It is clear the community voice explaining respectful practices is one that visitors want to hear. KYAs appreciated this, and redoubled their efforts to create a video for visitors, highlighting the main community safety and orientation messages. They hope to distribute their film in 2017. They also diversified their program by developing peer outreach for youths in the school, and met with 27 students in the fall of 2016.

Recognizing the need for focused attention on the rapidly increasing tourism affecting the Kaktovik area by 2014, Refuge staff, community partners, and other land managers brainstormed ways to address pressing needs. With initial support, Refuge staff applied in 2015 for a multi-year grant from the National Fish and Wildlife Foundation to bring staff and resources to the community to address polar bear tourism and safety. Major goals of the grant included: funds for the community to have a facilitated visioning process to address the rapidly emerging arctic tourism industry and increasing amount of local polar bear viewing; continued support for the community's KYA program; and funds to extend Refuge staff presence in Kaktovik to the full duration of the viewing season.

By late 2015, the National Fish and Wildlife Foundation awarded the grant, but interest by the community shifted away from using the Refuge's grant funds to conduct a community visioning effort specific to Kaktovik's management of emerging arctic tourism and polar bear viewing. While grant funds facilitated progress on the two other goals (KYAs and staffing) the Refuge has made use of resources such as the *Kaktovik Comprehensive Development Plan Final Draft*, dated December 2014, and produced by the North Slope Borough's Department of Planning and Community Services, as a surrogate while it continues to seek the community's direct involvement. The grant supporting funding for community-based polar bear conservation will end in 2017.

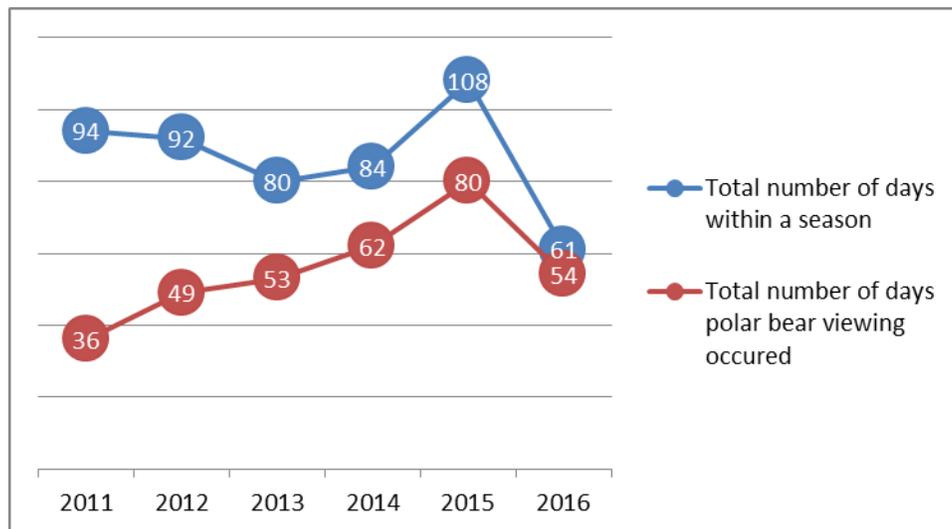
Before the 2016 viewing season, it became clear to Refuge staff that they would need to continue to build on their response to the significant increase in the number of polar bear viewing visitors, to ensure activities are compatible with the purposes of the Refuge. In addition to the dramatic increases in the number of visitors viewing polar bears on Refuge waters, bears and viewers gather around Kaktovik at the same time that critical subsistence activities occur in the community, so the potential for social conflict is also increasing. Because of these concerns, the Refuge is investing more effort in managing polar bear viewing on waters surrounding Kaktovik, and on other Refuge waters and lands. Refuge staff is dedicated to providing quality polar bear viewing opportunities that minimize threats to public safety, minimize potential disturbance to polar bears, and minimize conflicts with local residents. Refuge staff is directing immediate attention toward a narrowed planning effort focused on the management of polar bear viewing at the Refuge, now and into the next 15 years.

Recreational Polar Bear Viewing Use Patterns

This portion of the report is a detailed summary of recreational polar bear viewing visitor use information compiled for waters within the Refuge boundary. These data are combined with the previous report's 2011-2014 data to provide the most comprehensive information available about the amount of commercially-supported polar bear viewing within the Refuge boundary. This report does not quantify or evaluate land-based polar bear viewing or subsistence activities.

Data and graphs are compiled from visitor use data recorded in SUP client use reports provided by authorized polar bear viewing guides during the 2011 to 2016 polar bear viewing seasons. A detailed description of definitions, data collection, and data limitations is presented on page 5 above.

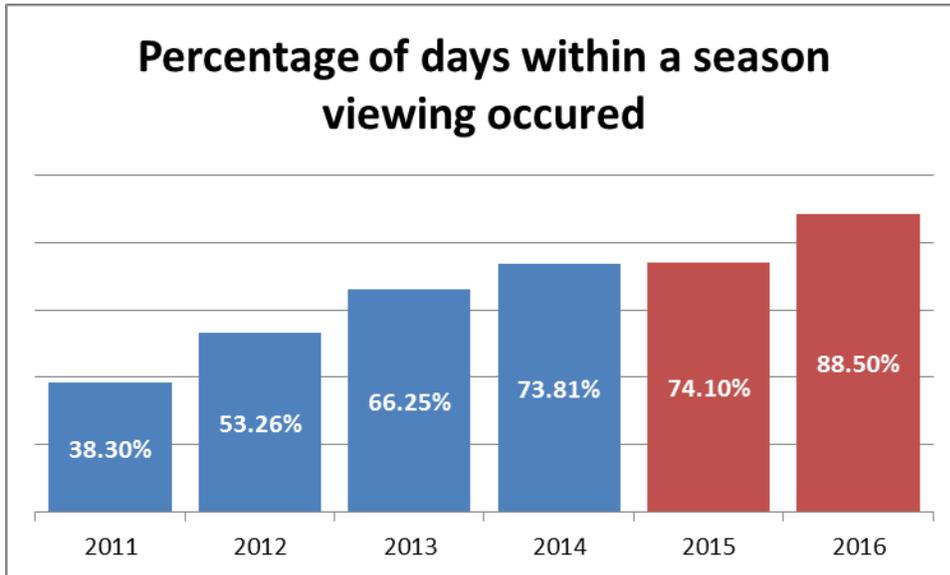
Figure 1: Season lengths and viewing days per season



The graph (Figure 1) above shows the 6-year trend in polar bear viewing season lengths and the number of active viewing days each season. The season length remained fairly consistent from 2011 to 2014 (a four-year average of 87 days within each season). The extended season in 2015 was a response to environmental conditions: The lagoon areas froze as expected, but then became ice-free again, allowing one permitted boat operator to continue viewing operations until mid-November. In 2016, however, the total number of days in the viewing season decreased markedly. We suspect this reduction resulted from scheduling preferences by the guides and/or their clients for dates clustering around the core viewing period.

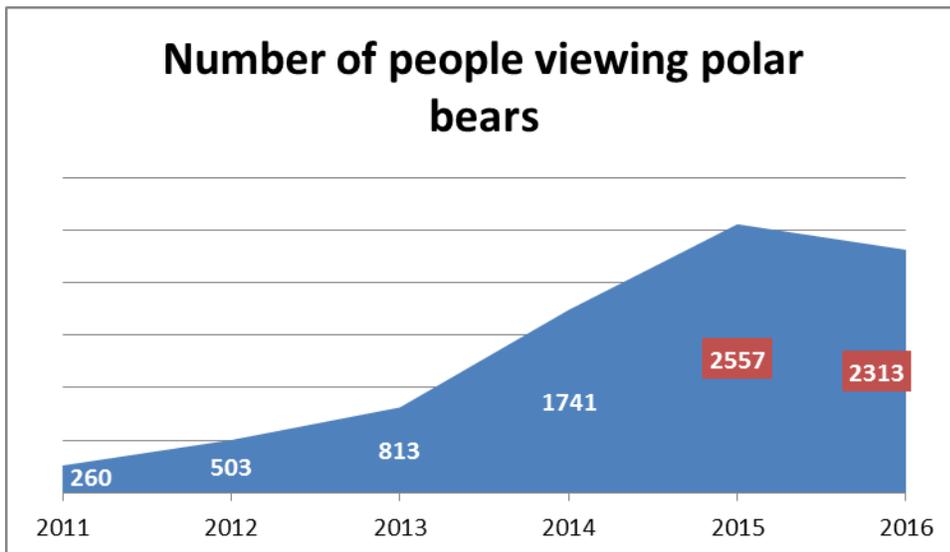
The total number of viewing days within each season also fluctuated across the 6 year period (Figure 1). The first year of polar bear viewing by commercial guides (2011) had the fewest days (36) that guides took their clients onto the water. During four of the following five years (2012, 2013, 2014 and 2016) there was a fairly consistent average of 54.5 viewing days within each season. The exception was 2015 when, within the longer total viewing season that year, guides took their clients onto the water a full 80 days.

Figure 2: Percentage of days viewing occurs within each season



An alternative way to assess viewing is to look at the percentage of days within each season that water-based polar bear viewing occurred (Figure 2). Because the total viewing season is defined each year as the first to last date that commercial water-based polar bear viewing occurs, the data in Figure 2 indicate that guides are making increased use of all the available days from the time they begin operations until they end. For a reference point, when a person works five out of seven days in a week, they are working 71% of the week.

Figure 3: Number of People Viewing Polar Bears on Refuge Waters



The graph in Figure 3 illustrates a dramatic increase in the polar bear viewing activity (“views” by clients and guides on Refuge waters) from 2011 to 2016. Because of the various possibilities for undercounting, it is estimated that, in 2015 and 2016, the polar bears around Kaktovik experienced at least 2500 views each season.

Figure 4: Average number of viewers per day within each season

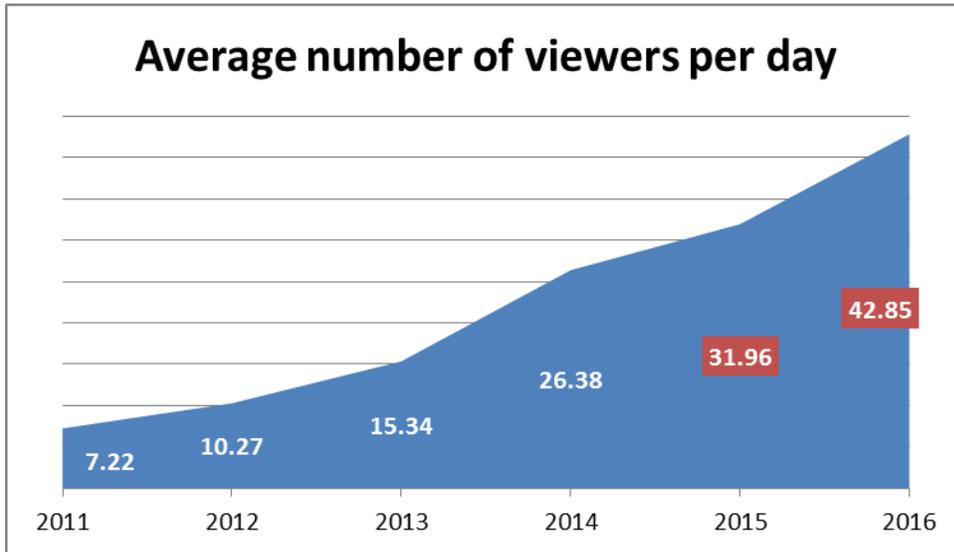
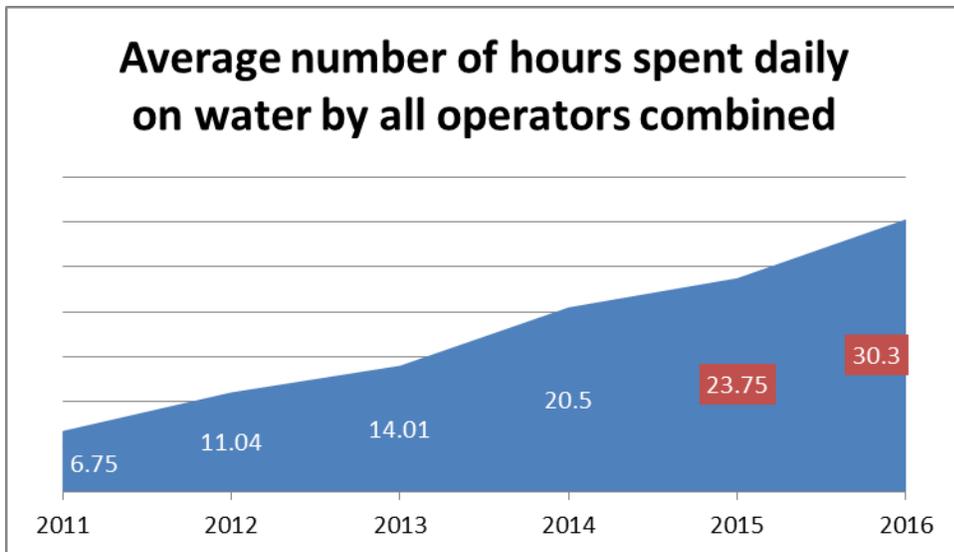


Figure 4 illustrates a dramatic increase in the number of water-based viewers per day (clients and guides) across the years. Operators are collectively taking an increasing number of viewers each day to view polar bears. This increasing trend in viewers per day indicates a dramatic intensification of the viewing seasons over time, meaning more people are on the water in the presence of polar bears each year.

Figure 5: Average number of hours spent daily on the water within each season



With an increase in the daily numbers of viewers (Figure 4) year over year, and a fixed allowable group size due to permit conditions, Figure 5 shows that operators are accomplishing the increase in views each year by increasing the average number of hours they spent daily on the water. This increasing trend in hours spent daily on water for viewing compounds the dramatic intensification of increasing viewers per day, meaning that not only are more people on the water in the presence of polar bears each day, but the period of time each day when viewers are not present is decreasing.

Discussion:

Managing visitor use effectively in dynamic settings is particularly challenging. Polar bear viewing visitor opportunities on Arctic Refuge waters are currently influenced by many varying factors outside of the Refuge's management ability. For example, polar bear land use patterns and weather can be unpredictable in the Alaskan Arctic. Poor visibility, high winds and extreme weather conditions may prevent polar bears and viewers from arriving/departing Barter Island as expected.

Achieving viable business operations in dynamic settings is particularly challenging. Unsafe weather conditions could prevent guides from operating on Refuge waters as planned, therefore potentially reducing the number of clients they can serve during any given season.

Emerging entrepreneurial endeavors increase the variability of an already dynamic setting. For example, some guides have shared the opinion that the increasing number of chartered day-trips to Kaktovik has created pressure for the guides to provide shorter tours, which have resulted in lower quality experiences for visitors, with less ability for service providers to place emphasis on safety and orientation messages that benefit the community.

Also, community members have expressed concerns that polar bears may soon experience viewing pressures from visitors arriving in Kaktovik via new transportation options. Though a Crystal Cruises ship made its way past Kaktovik in 2016, completing its Anchorage to New York City voyage via the Northwest Passage without disembarking its passengers to view polar bears, it is possible that passengers may disembark from future cruise ships to view bears from the lands and waters around Kaktovik. The dynamic nature of the viewing setting is sure to challenge both the Refuge, in its efforts to manage the viewing opportunity, and businesses in their efforts to serve viewers.

Overall, it appears that the unique aspects of the polar bear viewing opportunity in Kaktovik that have drawn visitors from around the world are themselves threatened—if not endangered—when comparing them to the opportunity currently available. Managing the amounts and types of visitor use is clearly becoming the direct factor related to the Refuge's ability to achieve and maintain a setting and program goals consistent with Refuge special values and statutory requirements.

The data from client use reports provides Refuge staff with some basic understanding of visitor use trends. Information such as this—paired with local perspectives on what aspects of the community's characteristics residents want protected; what visitors feel makes the trip to Kaktovik a unique experience of a lifetime; what polar bear biologists determine to be a threat to polar bear disturbance; and what Refuge staff determine about the kinds of opportunities that will be consistent with Arctic Refuge's special values—will help provide answers to questions such as, how should Arctic Refuge manage visitor expectations and visitor behaviors, the timing and location of visits, and the appropriate number of visitor.

Management Direction for Polar Bear Viewing

This portion of the report explores some issues related to Arctic Refuge's general methods for visitor management and the effect of these methods on future management of polar bear viewing at Kaktovik.

Arctic Refuge's visitor management program uses no direct methods such as a visitor registration system. Visitors retain the freedom to come and go from the Refuge, unhindered by campsite assignments, designated entrance points, or registration requirements. This means no systems are in place to provide

visitors information about issues of management concern prior to their arrival. Special conditions—developed to uphold applicable laws, protect resources, and insure visitor safety and quality opportunities—set parameters for how commercial guides provide services, and allow indirect methods for influencing visitor behaviors. Historically, this strategy has preserved for Arctic Refuge’s visitors the opportunity for recreation that optimizes solitude and freedom, and it may be argued that this indirect approach fits with most other uses occurring across the Refuge.

However, one result of this style of “lightly-managing” visitor opportunity is that Refuge managers remain unable to consistently provide key messages about issues of concern to visitors in advance of their visits. A bounty of information exists on the Refuge website, but only a portion of visitors find those materials on their own before arriving, and an even fewer number of guides provide the Refuge’s information to the clients that are the Refuge’s visitors.

This indirect approach also means Arctic Refuge managers remain unable to conclusively document total Refuge visitation. Exact numbers of recreationists who come from around the state, the nation and the world, remain unknown (see the Appendix below for anecdotal information about visitor origin). Estimates of recreational visitation within the Refuge are based on a variety of factors. Data is obtained primarily from reports submitted by guides as a condition of their commercial special use permits. There is still much visitation that is unrecorded, and characteristics of visitor patterns are only generally documented.

Although specific numbers are unknown, Refuge staff recognizes general visitation numbers. Based on these estimates, it is clear that the annual number of visitors seeking to view polar bears on the Refuge’s waters surrounding Kaktovik now exceeds the annual total of all other visitor use types throughout the remainder of the Refuge (estimated at approximately 1,500 individual visitors per year). The motivations of visitors seeking to view polar bears (who may be less concerned with solitude; and may want guidance for safety, not freedom to explore) may not fit with our existing management style, which generally seeks to support a pristine wilderness experience optimizing solitude and freedom. The Refuge may need to adapt its management style at Kaktovik to meet the demands of this new use type that has rapidly emerged. How can it adapt its management methods to meet the demand, respond to the dynamic setting, and also retain the unique qualities that cause people to return home, altered forever by the amazing, once-in-a-lifetime experiences the host community of Kaktovik made possible?

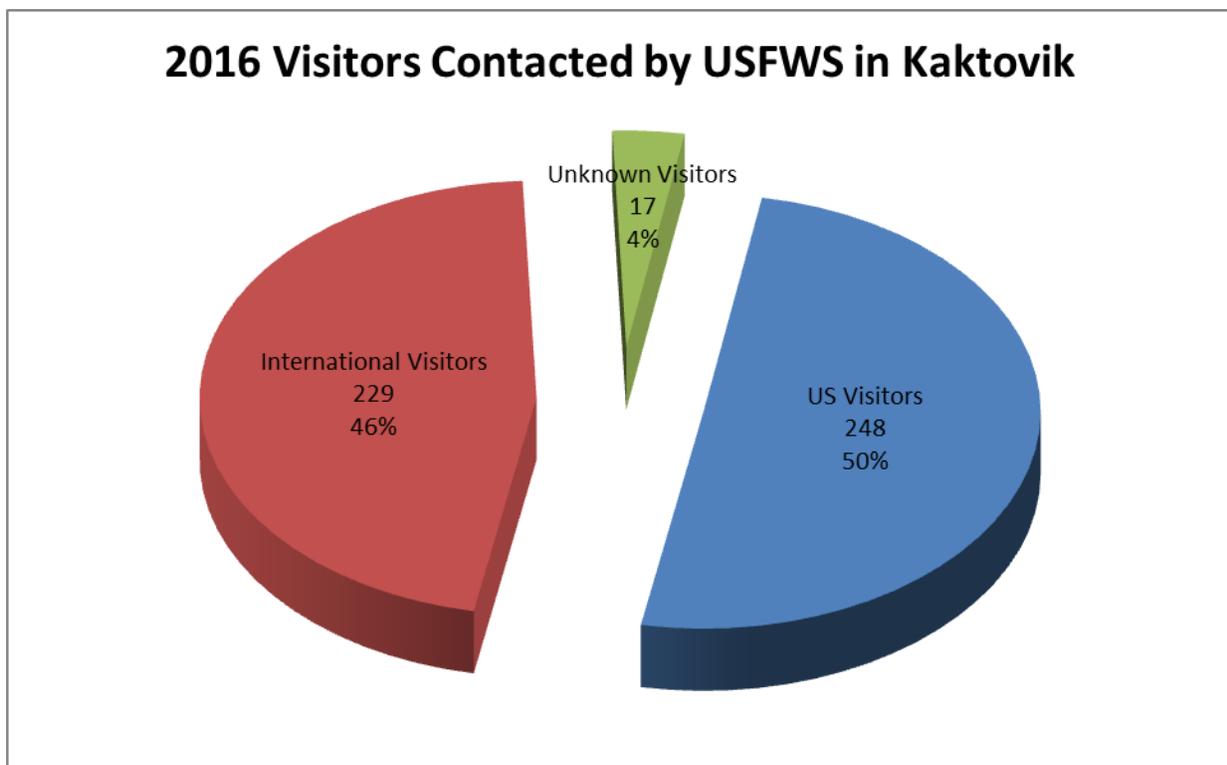
Refuge staff is currently addressing this situation, teaming up with social scientists from Clemson University and Central Michigan University to address visitor management issues in a way that meets the needs for the complex Barter Island setting comprised of multiple land-owners, varied cultural perspectives, legal requirements to both offer wildlife watching and protect Threatened species and subsistence opportunities, and in ways that lead the Refuge toward managing for a compatible and responsive recreational viewing program into the future.

Refuge staff will consider the extensive input we’ve received over the past years about issues related to polar bear viewing. We will focus our efforts on those issues within our influence, related to visitor activities on waters surrounding Kaktovik. We are especially interested in developing desired conditions, consistent with Arctic Refuge’s special values, to guide answers to questions such as, how should Arctic Refuge manage visitor expectations, visitor behaviors, timing of visits, and location of visits; set visitor numbers; and identify strategies and tools to achieve our goals? If you are interested in this planning effort, please find more information at <https://go.usa.gov/xXn9E>.

Appendix

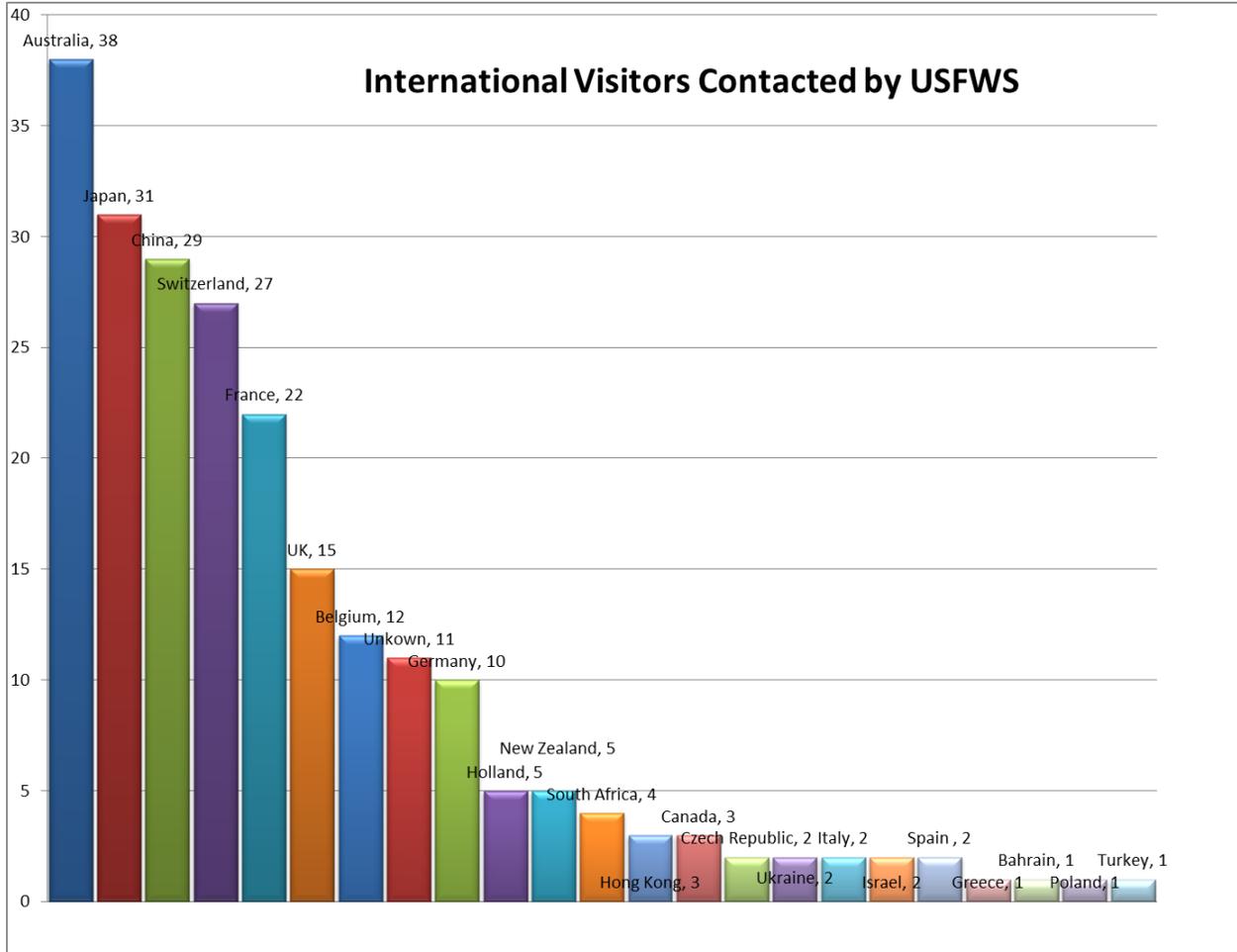
Anecdotal Information from Visitors Contacted by USFWS during the 2016 Viewing Season

Visitors come to Kaktovik from all over the world and arrive with unique and diverse expectations of their polar bear viewing experiences prior to arriving on Barter Island. With a more dedicated and robust USFWS team in Kaktovik during the 2016 viewing season, USFWS staff was able to meet face-to-face with more visitors than ever before. The following visitor contact data is derived from staff reports during the 2016 viewing season. Four percent of visitors were classified “unknown” because the country or state of origin was not shared voluntarily with staff during casual conversation.



International Visitors

It is important to note the diversity among polar bear viewers in Kaktovik. International polar bear viewers made up 46 percent of total viewers during the 2016 viewing season. The bar graph below illustrates the number of international polar bear viewers by country of origin:



Visitors from the United States

Like international visitors, it is also important to note how many polar bear viewers travel from throughout the United States to Kaktovik. In 2016, domestic U.S. polar bear viewers made up 50 percent of total visitors. The bar graph below illustrates the number of U.S. visitors by state:

