



U.S. Fish & Wildlife Service

Guided Recreational Polar Bear Viewing 2011-2014 Summary Report

Arctic National Wildlife Refuge

Photo by K. Reitan



Dear Reader:

This report was prepared for the City and Tribal Councils of the Community of Kaktovik. It describes the visitor use activity of recreational polar bear viewing around Barter Island, Alaska. A summary of report highlights can be found on page two.

The U.S. Fish and Wildlife Service (FWS) shares management responsibilities for polar bear viewing visitors to the area with the Community of Kaktovik. The polar bear work that FWS staff conducts in Kaktovik is in response to concerns expressed by local residents related to safety for both humans and bears—especially in light of increasing tourism. Arctic National Wildlife (Arctic Refuge, Refuge) has a specific responsibility to manage commercial uses within the Refuge’s jurisdiction such as guided boat-based viewing of polar bears, and in collaboration with local residents.

Research activity by other agencies, such as the U. S. Geological Survey, is beyond the scope of this report. Additional information about other management activities the Refuge and other branches of the FWS conducts in cooperation with various partners in Kaktovik is beyond the scope of this report. Additional information about polar bear-related management activities conducted by the FWS can be found in annual reports submitted by the FWS Alaska Region Marine Mammals Management Office (MMM).

This report was co-authored with contributions from Kaktovik Youth Ambassador (KYA) Chelsea Brower, and includes information she and other KYAs collected for the benefit of community planners between 2012 and 2014. It is the hope of the authors 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!



Chelsea Brower



Jennifer Reed



Chelsea Brower is recognized for her community efforts.

Report Highlights: Recreational Polar Bear Viewing Summary

- Co-authored by Chelsea Brower (Kaktovik Youth Ambassador) and Jennifer Reed (Arctic Refuge Visitor Services Coordinator).
- Contains a summary of recreational guided polar bear viewing data from two sources: KYAs who recorded information about the visitors they met with; and the Refuge Special Use Permit reports submitted by commercial guides operating on the waters surrounding Kaktovik that documents the numbers of visitors their businesses served.
- KYAs recorded visitor information for the benefit of community planners with hope the information will be 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.
- KYA information represents a *minimum* number, origin, length of stay, etc. of visitors coming through Kaktovik.
- Since 2012, KYAs have met with 123 groups totaling 529 individuals from 21 countries.
- Ideas of the KYAs have directed Arctic Refuge efforts, and include providing visitors safety message translation into the languages of German and Japanese, and providing web-based orientation resources that convey community expectations for tourism businesses and visitors they serve.
- Very little is known about visitors to Kaktovik not using the services of authorized commercial boat-based polar bear viewing guides (visitors staying on land and viewing at the bone pile or other land areas).
- In 2010 Refuge managers met their responsibility to oversee commercial uses by implementing a permit system to regulate commercial boat-based polar bear viewing.
- The annual number of visitors seeking to view polar bears on the Refuge's waters surrounding Kaktovik may now be exceeding the annual sum of all other use types throughout the remainder of the Refuge.
- Visitor use from polar bear viewing tourism increased rapidly, but may be reaching a stable level based on availability of regularly-scheduled commercial flights, visitor housing and authorized boat guides.
- While the operating season has shortened slightly, commercial boat-based polar bear viewing activity has increased significantly, from 36 active days in 2011, to 62 active days in 2014.
- Reports indicate a steady increase in commercial boat-based polar bear viewing activity. Operators were active 38 percent of the days within the season in 2011, compared to almost 75% of days within the season in 2014.
- Reports indicate a dramatic increase in the number of viewing days (clients plus guides) taking part in commercial boat-based polar bear viewing.
- Commercial boat operators are increasingly running more days out of the season (as shown by first two graphs on page 13) and collectively are taking an increasing number of viewers onto waters each day.
- With this increase in viewers per day, the average number of hours spent daily on water by all guides combined has steadily increased; however, the average number of hours each boat trip takes remains fairly constant over the span of the past four years.

Part I

This portion of the report includes a summary of the information collected by the Kaktovik Youth Ambassadors (KYAs) for their community leaders 2012-2014. The information helps the community to document the number/origin of polar bear viewing visitors to Kaktovik. The information includes only information about the visitors *that KYAs met with*, not the total number of polar bear viewing visitors to Kaktovik.

Background about the Kaktovik Youth Ambassadors Program

In the early 2000s FWS staff began responding to requests from residents concerned about polar bear safety. By 2007 FWS staff was making frequent visits to the community to help support growing concerns. Residents formed the Kaktovik Polar Bear Committee and met regularly to discuss with FWS issues of concern and implement potential solutions.

One idea that emerged from that collaboration in 2010 was to see if a group of youth leaders might be interested in acting as ambassadors for their community. This youth service would increase visitor awareness about challenges the community faces due to increasing numbers of people and polar bears coming to Kaktovik. These emerging community leaders would address immediate needs to get cultural sensitivity information out to visitors and increase safe practices by visitors.

By 2011, Refuge staff obtained funding for the KYA program and with guidance from the Kaktovik Polar Bear Committee, elders, and locally-elected officials, launched the KYA program. Now in its fourth year, the KYA program is helping the next generation build their capacity for private, municipal, state, and federal jobs that require public relations and “people-management” skills, and the KYAs are providing real solutions to current visitor management issues.

2012

In the program’s first year the Kaktovik Youth Ambassadors met with 42 visitor groups between September 6 and October 11, 2012. Coordinators quickly realized the need to adapt the schedule by allowing part-time positions, so youth who are active in whaling crews can still participate in the KYA program. The program was implemented by one part-time and three full-time KYAs (Archie Brower, Chelsea Brower, Madeline Gordon and Tori Inglangasak). They reported meeting with 194 people representing 15 different countries. Here are the 15 countries that the visitors who partook in the KYA program represented:

Australia
Brazil
Canada
England

France
Germany
Greece
India
Japan
Mexico
Netherland
Russia
Scotland
Switzerland
United States

The KYAs were very enthusiastically received by visitors, who were eager for guidance about how to experience their visit to Kaktovik in a way that was not negative for residents or bears. The primary feedback the KYAs conveyed to the Kaktovik Polar Bear Committee was: “Holy cow! A lot of people from all over the world are coming here. We thought they would be mostly Americans...but this kind of traffic through our town will really affect our community.” Since the largest number of visitors in 2012 seemed to be from Germany and Japan, the KYAs also recommended the Refuge and the community get safety messages translated into those languages. Arctic Refuge completed this task at the recommendation of the KYAs and translated safety materials into German and Japanese languages. These materials were made available to the public in 2013.

2013

In the program’s second year, KYAs met with 42 visitor groups between September 3 and October 4, 2013, with the program implemented by two part-time and three full-time ambassadors (Archie Brower and Jonas Mackenzie; and Chelsea Brower, Madeline Gordon, and Tori Inglangasak). The KYAs met with 172 visitors in 2013. Visitors this year represented 10 countries, including the additional nations of Columbia, Japan, Korea, Malaysia, New Zealand, and Spain—bringing the tally of countries represented in 2012 and 2013 to 21 different nations. Each group stayed in Kaktovik an average of 2.8 nights with 10 days being the longest stay reported to KYAs, and six groups reporting one-day visits. The primary feedback the KYAs conveyed to the Kaktovik Polar Bear Committee was: “There are many visitors to Kaktovik making day-trips the KYAs cannot reach due to schedule conflicts, but KYAs are interested in sharing ideas with community leaders about how they could reach more community visitors with their safety and orientation messages.”

2014

Last year, KYAs met with 39 groups of visitors between August 27 and October 6, 2014, with the program implemented by one part-time and four full-time KYAs (Kimberley Burns, Chelsea Brower, Tori Inglangasak, Jonas Mackenzie, and Melanie Tikluk). The KYAs met with 177

visitors in 2014. Visitors represented 14 different countries. Each group stayed in Kaktovik an average of 2.7 nights, with 24 days being the longest stay reported to KYAs, and six groups reporting one-day visits. In 2014, they observed an even greater number of visitors to Kaktovik making day-trips that the KYAs could not reach, due to schedule conflicts. The KYAs continue to want to help orient the increasing numbers of community visitors who are day-visitors accessing Kaktovik by chartered flights. A potential solution they brainstormed was making a robust KYA web page that day- and overnight-visitors alike could access prior to arriving in Kaktovik. This idea was incorporated into a grant proposal, developed in part to support the KYA program, by the Arctic Refuge.

KYAs into the Future

The KYAs recognize that village infrastructure (such as airports, roads, and housing) brings visitors to rural communities. They see the trend in increasing numbers of viewing visitors continuing. In rural communities, services that accommodate visitors may be scarce, which can lead to local management issues of concern (safety, unwanted impacts, or resource conflicts). Some KYAs are hopeful that working to serve and/or manage these visitors might provide local employment options that could help them find careers near home. Others have credited the program with helping them be less shy and realize that their ideas are of interest to the world.

The KYAs are learning first-hand that rural residents can either be strained by the burden of visitors to their communities, or they can strategically direct the ways visitors can experience hosting villages to benefit communities. The inspiring work of the KYAs has made a profound influence on Arctic Refuge managers, and the ideas and optimism of these young leaders influenced the ambitious goals laid out in the grant proposal mentioned above.

The proposal noted above was selected to fund the Arctic Refuge. Its title is “Community-based Polar Bear Tourism Management Capacity-building.” Funds donated by the National Fish and Wildlife Foundation insure that the KYA program can continue into 2017. It also will expand ways the KYAs can help maintain the values of their local community, while accommodating the international focus on Kaktovik.

Part II

This portion of the report includes a description of how the Arctic National Wildlife Refuge commercial guided polar bear viewing program originated (the Refuge's role, and viewing activity up to 2011); contains a summary of recreational polar bear viewing visitor use* information compiled for waters within the Refuge boundary; and depicts a general index of recent recreational polar bear viewing visitor use patterns (2011-2014). This portion also summarizes emerging issues related to management of polar bear viewing.

This report contains a summary of recreational polar bear viewing visitor use information compiled for the area now designated within the Arctic National Wildlife Refuge boundary (up to 2011); depicts a general index of recent recreational polar bear viewing visitor use patterns (2011-2014); and

The Refuge's Role in Polar Bear Viewing around Kaktovik

Barter Island is located within the Arctic National Wildlife Refuge and has been subject to increasing use by polar bears due to climate change, particularly during the open water period which occurs in late summer and fall, when the Arctic marine ice cover recedes away from the coast. Another reason for the increasing presence of polar bears at Barter Island relates back to the Inupiaq subsistence lifestyle: polar bears feed on unused portions of whale carcasses that are deposited at a "bone pile" a few kilometers from the village during Kaktovik's whale harvest season. Interestingly, brown bears are also making use of the bone pile and interacting with polar bears. Not surprisingly, a small bear viewing industry has recently developed at Kaktovik since the late 2000s, raising concerns regarding potential human-bear conflicts.

The FWS is the federal agency with primary oversight for polar bears; management responsibility is shared through co-management agreements with Alaska Natives, as called for under the MMPA. In the U.S., polar bears are protected from disturbance and other forms of take under the Marine Mammal Protection Act of 1972 (MMPA). In terms of tourism, this means that polar bear (or other marine mammal) viewing is only permissible if no take (harassment) occurs. By law, exceptions can be made for commercial photographers who may apply for a special permit that allows a low level of non-injurious harassment.

Refuge staff identified its responsibility to learn more about commercial uses of the area to help protect subsistence opportunities in the mid-2000s. Staff has offered technical information for community leaders trying to manage increasing use by visitors as polar bear viewing began to

* 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 those uses by visitors (recreational uses and general hunting uses), and rural residents who rely upon the Refuge for subsistence life ways, including observing polar bears and subsistence hunting of polar bears.

increase since that time. As viewing continued to increase, guide training resources were provided locally in 2009 and 2010, and local residents participated in determining the special conditions for authorized water-based guide operations. In 2010, the Refuge initiated a commercial guided polar bear viewing program on the waters surrounding Kaktovik where the Refuge has jurisdictional authority. In 2010 and 2011 staff worked with residents to develop resources that describe best practices for viewing that avoid disturbance to bears and optimize human safety. Now, in 2015, local residents continue to provide authorized boat-based transport, and increasingly are serving clients from around the world as they subcontract their services to non-local guides who do not possess authority to take passengers onto the Refuge waters.

Very little is known about visitors to Kaktovik not using the services of Refuge-authorized guides. Refuge staff sees a need to learn more about land-based visitors not using the waters; day-trip visitors who may not meet with Kaktovik Youth Ambassadors (see Part I), and also boat-based visitors to the Refuge (their motivations and expectations; and what other bear viewing areas of Alaska they are visiting that may affect how they behave while in Kaktovik). As staff prepares to learn more about the visitors who come to the community of Kaktovik specifically to view polar bears on Arctic Refuge waters, this report's summary of what is known about levels of recreational polar bear viewing visitor use can help focus and prioritize needs.

Summary of Visitor Use of the Kaktovik Area up to 2011

When the original Arctic National Wildlife Range was established in 1960, there was still little recreational use. By the early to mid-1970s, Arctic Alaska and the Brooks Range were receiving considerable national and international attention due to public lands proposals and the 1968 discovery of oil at

Prudhoe Bay (Warren, 1980). Use of the area, although still relatively low (less than 1,000 use days annually) was increasing (U.S. Dept. of Interior, 1973). Several individuals were known to hike alone between Barter Island and Arctic Village or wander elsewhere on the Refuge for extended periods (Arctic National Wildlife Range, 1972).

The expansion of the Refuge in 1980 ushered in a new era of public use activity. The increase in both guided and private recreation evident during the 1970s continued, but at a faster pace, especially near the end of the decade. Several factors were involved, including the changes brought about by Alaska National Interest Lands Conservation Act, the State of Alaska's efforts to promote tourism, and public awareness of possible oil and gas development on the Refuge. Use statistics remained scarce in the early 1980's. The Dalton Highway was not yet open to the public, and permits for air taxi operators were not required until 1987.

Dramatic increases in use occurred in 1988 and 1989, especially along two main river systems. In the three-year period 1987-89, commercial river use increased by some 325% on the Kongakut River and over 500% on the Hulahula River. Commercial use continued to grow substantially as well. Permits were issued to seven recreation guides and outfitters in 1980. By 1989, the number had increased to 21 guides who ran a total of 48 float or river-based backpacking trips. In the early 1990s a competitively-awarded guided hunting program was established. Now, in 2015, we expect around 20 guided polar bear viewing permittees using

waters surrounding Kaktovik, as well as a variety of other business types, to seek authorization to operate on the Refuge (note: air operators landing at Barter Island are not required to seek authorization).

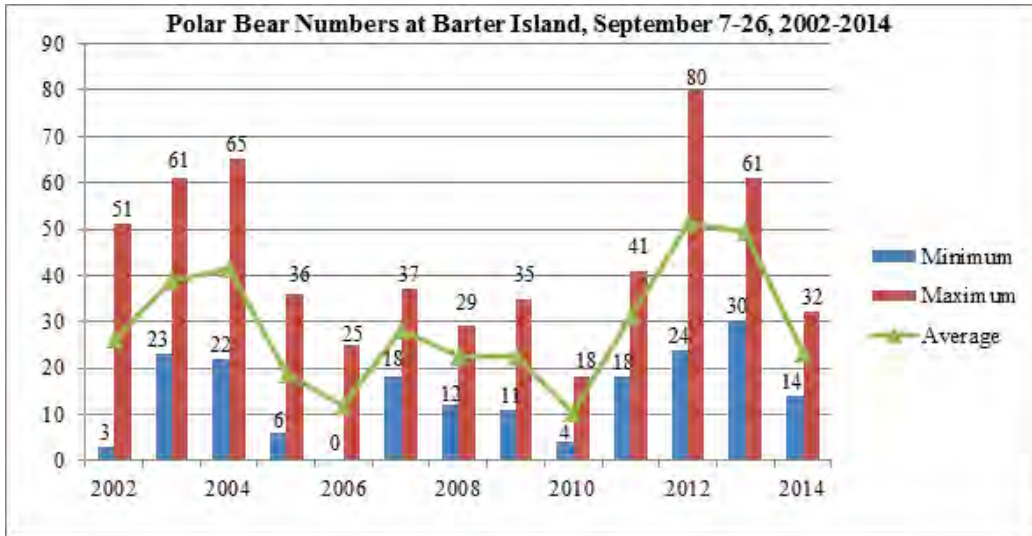
People from around the state, the nation, and the world seek out the experience of visiting Arctic Refuge. In stark contrast to other Refuge visitors, who may experience the illusion of exploring areas where no people have previously been, and who may have the potential of traveling for days or weeks at a time without seeing another person, polar bear viewing visitors coming to Barter Island will not find exceptionally remote and undeveloped conditions, as they would elsewhere on the Refuge.

Instead, visitors to the community of Kaktovik on Barter Island will find themselves in a tiny but bustling community. The interests of these visitors differ from those seeking remote, undeveloped conditions, in that they have a more focused intent for their trip: to see polar bears. Most of the village's approximately 300 residents' lifestyle is seasonal and tied to harvest of the earth's resources, such as fish, birds, berries, caribou, Dall sheep, and marine mammals.

The increase in numbers of visitors seeking recreational polar bear viewing opportunities is a recent phenomenon. During 1989-2009 overall Refuge visitor use was generally stable and recreational polar bear viewing was occasional. The Refuge's 2010 summary report about visitor use identified that almost all commercially-supported visitation focused around observing wildlife while traveling on foot backpacking and while in boats either river floating or float-hunting. Since 2010, an increasingly significant portion (now nearing half) of the Refuge's visitation is based around polar bear viewing.

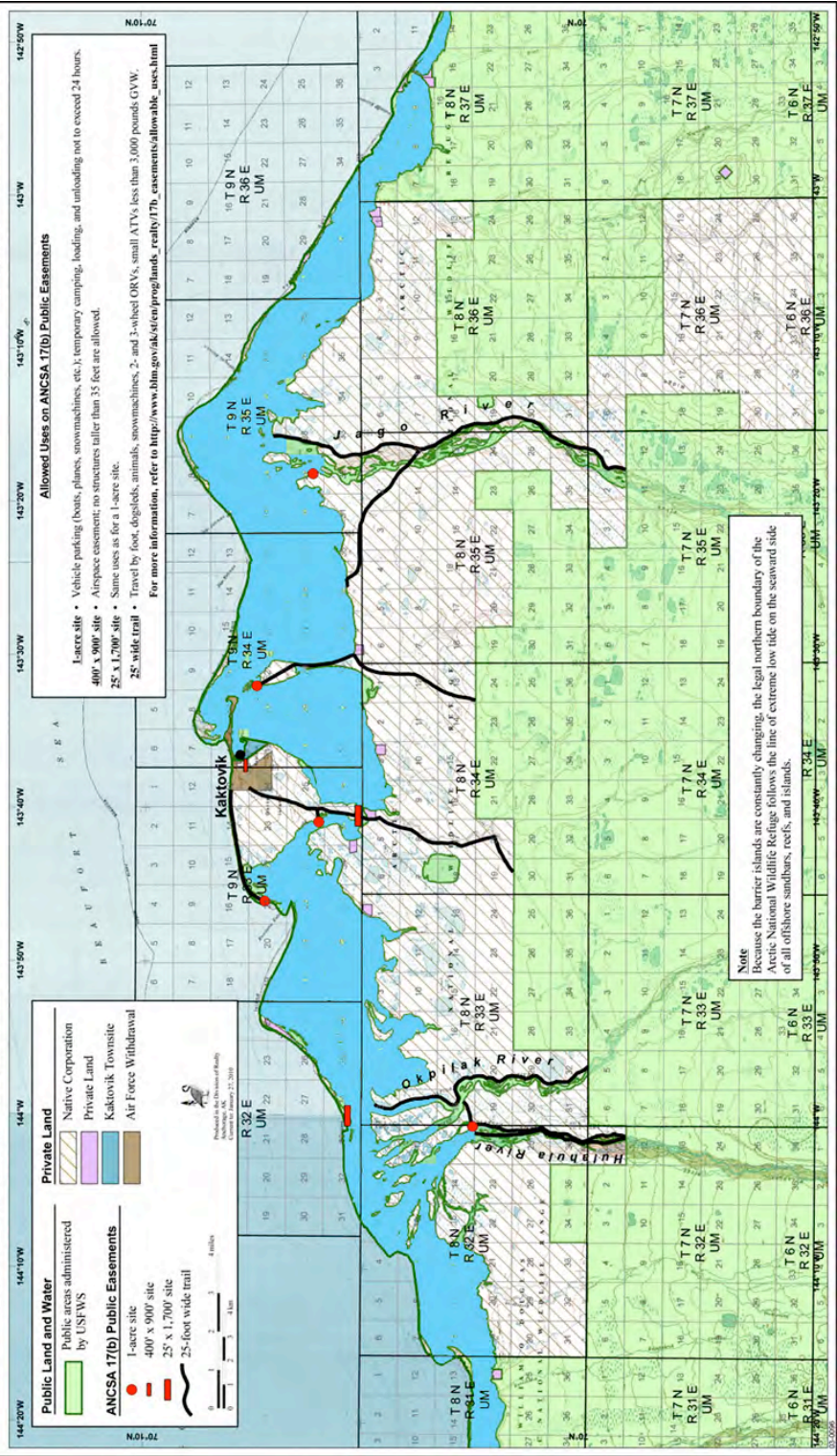
Collaborative Efforts to Manage Visitors in Kaktovik

Refuge staff initially began working in Kaktovik in 2004 during the fall "bear season" to support monitoring of the bears using Barter Island, specifically those feeding on whale remains. Over subsequent years, the focus switched to working more closely with community residents to reduce human-bear interactions and help to manage the effects of visitors on the community. The first step was to create and distribute polar bear safety posters, brochures, and signs targeted at both residents and visitors in response to increasing numbers of polar bears using the area (see table depicting *Polar Bear Numbers at Barter Island*).



In 2008, significant progress was made when the local tribal government, the Native Village of Kaktovik (NVK), received a grant to develop a human-bear safety plan that focused on: 1) reducing attractants; 2) implementing a deterrence program (polar bear “patrols); and 3) increasing education and outreach to community residents and visitors. Subsequently, a local committee, the Kaktovik Polar Bear Committee, was formed and began meeting regularly with FWS staff to develop specific measures to minimize human-bear conflicts. The Kaktovik Polar Bear Committee and Refuge staff collaborated to build the Kaktovik Youth Ambassadors program. The Refuge wishes to support community leaders as they direct how tourism occurs in their community during the polar bear viewing season.

Since 2010, the primary focus of Refuge staff work has been on reducing conflicts related to polar bear viewing, and ensuring that polar bear viewing is conducted in a safe and legal manner. One important step was working with community residents to develop Polar Bear Viewing Guidelines that describe safe and legal conduct while viewing polar bears on Arctic Refuge lands and waters (see diagram: *Refuge Areas Administered by USFWS*, depicting the area surrounding Barter Island).



In 2010, Refuge managers determined polar bear viewing is a “compatible use” of the Refuge, and acknowledged that the frequency of commercial services on the waters surrounding Kaktovik was increasing beyond incidental use and becoming a common practice. Managers met their responsibility to oversee commercial uses and fulfil Endangered Species Act responsibilities by working with the Fairbanks Fish and Wildlife Field office endangered species biologists and the MMM polar bear biologists to implement a permit system to regulate commercial polar bear guiding. This marked the transition from un-structured, un-regulated viewing activities to implementation of a permit system that requires polar bear viewing guides to follow special use conditions while conducting commercial activities on Arctic Refuge lands and waters.

To prepare interested residents/guides for the new permit system, two workshops were held in Kaktovik in partnership by the Service, State of Alaska Office of Economic Development, the U.S. Coast Guard, and Ilisagvik College. The workshops included sessions on polar bear viewing guidelines (safe and legal conduct), permit requirements for commercial polar bear guiding, first aid training, boat operator licensing, and a session on “how to run a guide business”. By 2011, four guide businesses had been established that could provide visitors with a safe and legal polar bear viewing experience on Refuge lands and waters surrounding Kaktovik.

Also in 2010, the locally formed Kaktovik Polar Bear Committee took several significant actions as well: 1) they developed local viewing guidelines for visitors to the community itself (for non-refuge lands), and 2) they erected a wooden barrier near the “bone pile” – which helps define a designated viewing area and discourages viewers from getting too close to feeding bears.

Despite these advances, the polar bear viewing experience at Kaktovik and on the Arctic NWR is still relatively primitive, in comparison to other bear viewing areas such as Churchill, in Canada. Access to and from Kaktovik is by aircraft only with approximately one flight per day; weather delays are common. Accommodations are limited to two small camp-style “hotels”; shopping, dining, walking, driving or other entertainment opportunities are limited. Visitors’ experience can be enhanced by hiring a local guide or traveling with one of the tour companies that service Kaktovik. More information can be found at the Arctic NWR web site: <http://arctic.fws.gov>.

The working relationship between FWS staff and community residents has resulted in development of a good partnership to address polar bear-related issues. This partnership will be increasingly important in the future as community safety issues for residents and conservation issues for polar bears are addressed. One important issue that faces Kaktovik is how best to prepare for increasing numbers of polar bears using coastal land areas such as Barter Island in ice-lean years.

FWS staff is currently working with the community to address management options for the bone pile, such as potentially re-locating it further away from town. All actions must be carefully considered since they have the potential to increase human-bear conflicts within the town itself, especially if nutritionally-stressed bears are involved. Because increasing use of Barter Island by both polar bears and human visitors is expected to continue in future years, this area will require a strong commitment by both managers and community residents to help conserve polar bears in Alaska. Refuge staff will continue to work in concert with the MMM office polar bear biologists,

as well as the Fairbanks Fish and Wildlife Field office endangered species biologists, and wide array of Kaktovik community partners, to manage how its commercial guided boat-based polar bear viewing program can complement community planning goals.

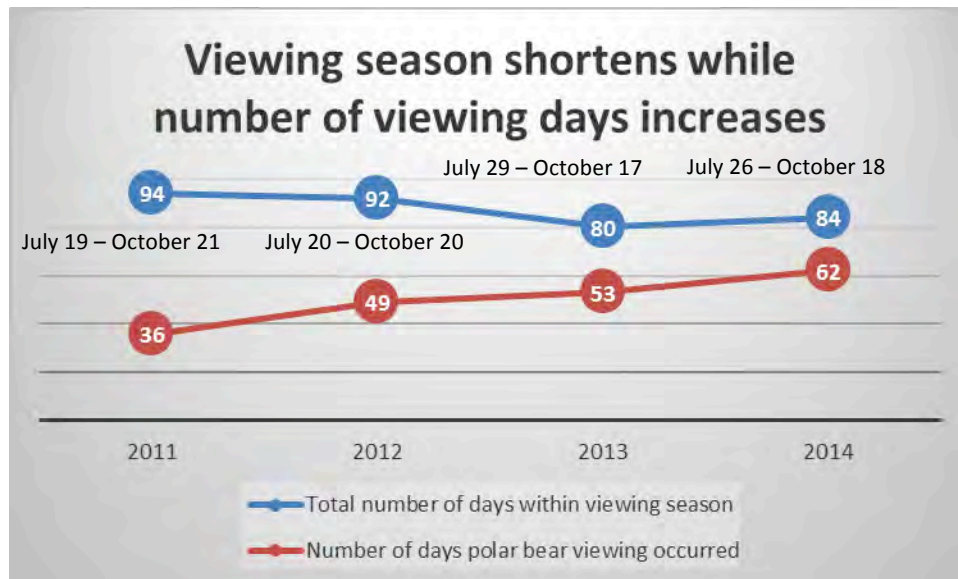
Recent Recreational polar bear viewing visitor use patterns (2011-2014)

The remainder of this section of the report, which summarizes current visitation trends and patterns, is limited to data for commercially-supported visitation. The information obtained from the commercial permit holder reports helps the Refuge to document the number/origin of polar bear viewing visitors to Kaktovik for the benefit of the community and to improve long-term management of the viewing program.

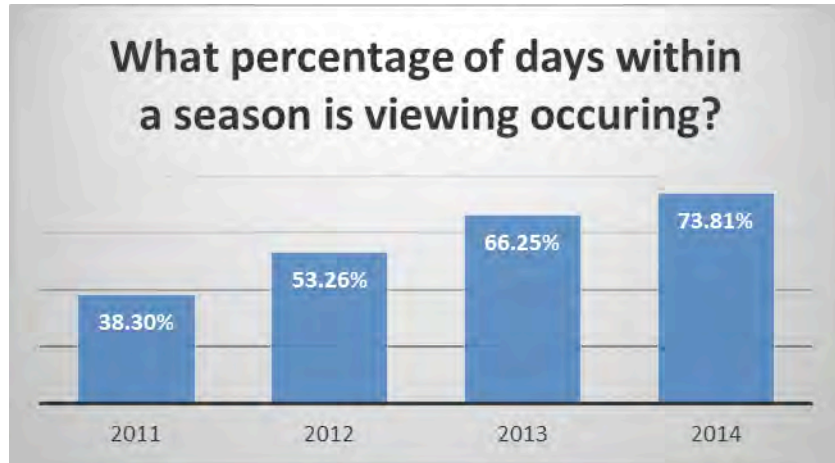
Graphs contained within this section of the report, unless clearly labeled as other, reflect only that recreational visitation to the Refuge waters surrounding Kaktovik which is commercially-supported and reported by permitted guides.

Please note for the following two graphs:

- “Viewing” implies boat-operated polar bear viewing.
- “Season” is defined by earliest and latest operating date as reported by operators.
- “Number of viewing days” is reported by operators.
- All data is preliminary and may be adjusted slightly.



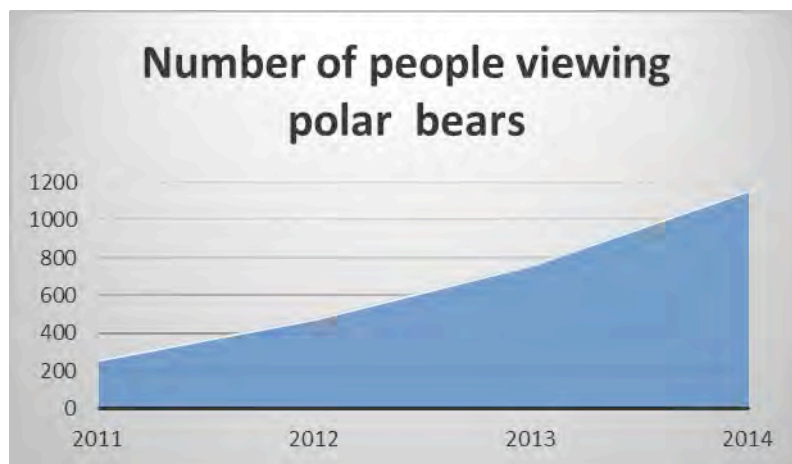
In 2011, operators started earlier in the summer and ended later in the fall than in 2014. While the operating season has shortened slightly, viewing activity has increased significantly, from 36 active days in 2011, to 62 active days in 2014. Refuge staff wants to know if residents are experiencing crowded conditions on the waters near Barnard Harbor due to this trend.



The graph above illustrates the steady increase in boat-operated activity. Operators were active 38 percent of the days within the season in 2011, compared to almost 75% of days within the season in 2014. Refuge staff wants to know if residents are noticing the increased frequency of use on the waters near Barnard Harbor due to this trend.

Please note for the following graph:

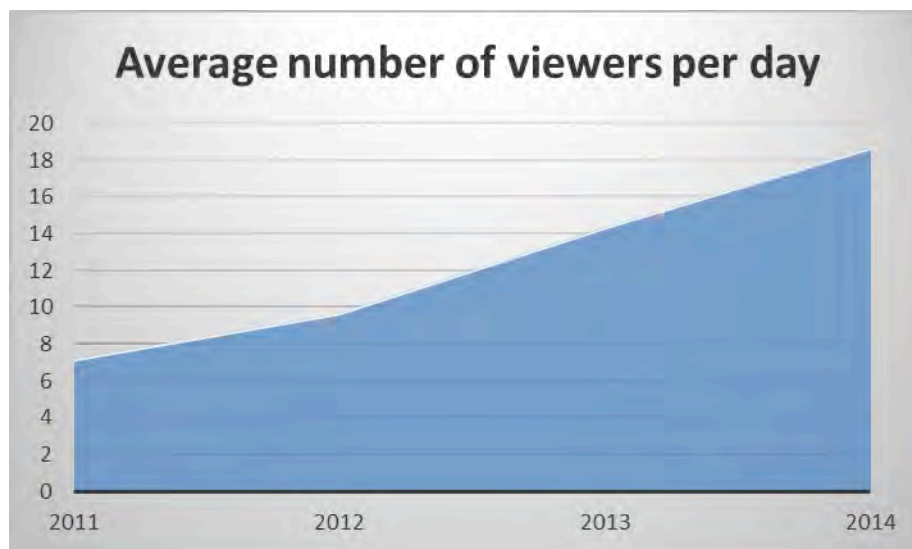
- “Number of people viewing polar bears” is a sum of the number of “viewing days” (clients, guides and operators) taking part in commercially operated polar bear viewing and counts *guides as separate viewers each trip they take with new clients*.
- Repeat clients are counted as additional viewers. Each trip taken by a guide is counted as an additional viewer.
- Boat operator reports may not have reported the number of other guides when other guides were passengers.
- These are the minimum viewing numbers as reported by boat operators.
- Data is preliminary and is subject to slight adjustment.



The graph above illustrates a dramatic increase in the number of people (clients plus guides) taking part in boat-operated polar bear viewing.

Please note for the following graph:

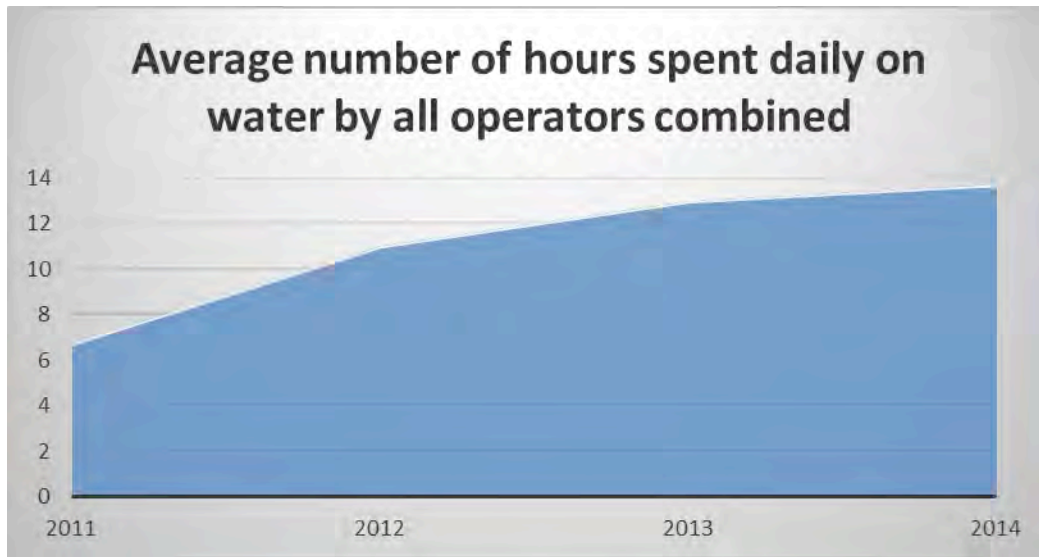
- The “number of viewers” is a sum of the number of people (operators, guides and clients) taking part in polar bear viewing trips on commercially operated boats.
- Repeat clients are counted as additional viewers.
- Each trip taken by a guide is counted as an additional viewer.
- Boat operator reports may not have reported the number of other guides when other guides were passengers.
- These are the minimum viewing numbers as reported by boat operators.
- Data is preliminary and is subject to slight adjustment.



The graph above illustrates a dramatic increase in the number of viewers (clients, guides and operators) per day. Operators are increasingly running more days out of the season (as shown by first two graphs) and collectively are taking an increasing amount of viewers each day.

Please note for the following graph:

- Numbers are as reported by boat operators.
- Data is preliminary and is subject to slight adjustment.



With an increase in operators and in viewing activity, the average number of hours spent daily on water by all guides combined has steadily increased, as illustrated above.

The average number of hours each boat trip takes remains fairly constant over the span of the past four years (4.34 hours in 2011; 5.30 hours in 2012; 4.81 hours in 2013; 4.95 hours in 2014).

In recent years, the businesses based outside of Kaktovik have attempted to bring more visitors that are less dependent upon seat availability for regularly-scheduled flights and local housing resources by bringing tourists on day-trips using chartered planes.

Information about the average number of hours each boat trip takes runs counter to what Refuge staff have heard from guides: that the effect of increasing chartered day-trips has been pressure from charter operators for to boat guides to provide a shorter tour, which some boat guides feel results in lower quality experiences for visitors, with less emphasis on safety in the community. Refuge staff wants to know what influences residents perceive these trends to be having on visitor experiences and on the community.

Overall, it appears that visitor use from polar bear viewing tourism initially increased rapidly, but may be approaching a stable level. The factors affecting tourism levels include the availability of three key resources: regularly-scheduled commercial flights, visitor housing and authorized boat guides.

Emerging Issues Related to Management of Polar Bear Viewing

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 or registration requirements. This means no systems are in place to provide visitors information about issues of management concern prior to their arrival. Strict management of how commercial guides provide services allows indirect methods for influencing

visitor behaviors. This strategy preserves opportunities for recreation that optimizes solitude and freedom, and it may be argued that this fits with most uses occurring across the Refuge.

However, one result of this unique visitor opportunity is that Refuge managers remain unable to directly contact visitors with key messages about issues of concern. A bounty of information exists on the Refuge website, but only a portion of visitors review those materials before arriving; and an even fewer number of guides provide the Refuge's information to the clients that are the Refuge's visitors.

Refuge managers also 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. Estimates of recreational visitation upon 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.

The annual number of visitors seeking to view polar bears on the Refuge's waters surrounding Kaktovik may now be exceeding the annual sum of all other use types throughout the remainder of the Refuge. The motivations of visitors seeking to view polar bears (who may be unconcerned with solitude; and want guidance for safety, not freedom); may not fit with our management style (that seeks to support a pure wilderness experience optimizing solitude and freedom), and this management style may need to adapt to meet the demands of this new use type that has rapidly emerged.

In addition, Refuge staff continues to hear concerns from residents, including:

- Must keep bears out of the village for safety and to stop humans habituating to bears and bears habituating to humans.
- RAVN flights backed-up because seats filled by tourists.
- Day-users are increasing in number, are unregulated, and are not reached by KYAs.
- Is this good or bad for the community: as number of day-users increases:
 - number of visitors not getting key messages from community/FWS increase risk to community and local opportunities for profit from tourism decreases; and
 - number of day-users on water is limited by number of legal boat operators.
- When visitors are unable to view from boats they seek to view from land—these areas lack coordinated management.
- Local businesses rent vehicles without requiring renters to use best practices and/or without local driver to enforce best practices (some renters depart vehicles and walk around bone pile; let bears contact cars; don't realize this is a problem for community).

- Non-local or temporary employees have access to vehicles without being required to use best practices and/or without a driver provided to enforce best practices (KIC, School teachers, and contract employees).
- Visiting relatives/past residents/regular visitors have access to vehicles; think poor practices are fine—even when spoken to by family—not realizing “things have changed.”
- Local businesses may get more vehicles in the future; some people talking about bringing their own vehicles to the village = increased potential for poor practices on land.
- Accommodations limit the number of overnight visitors now, but if accommodations expand then visitor numbers could increase.
- Accommodations help manage the safety of visitors now, but if accommodations are limited in the future overnight visitors could become less easy to manage.
- Middlemen making more money than local resident service providers.
- Who can form a tourism board to guide the process?
- Can/will guides form a cooperative? They want local control but need to assert their capacity for that. For example, boat guides might determine prices together and don't undercut each other; develop a "pledge for the polar bears"-- a set of practices that bond operators together in a consistent, respectable, format--rather than each operator striving to out-compete the other for the next "sensational gimmick.”