

Commercial Grizzly Bear Viewing in the Fishing Branch (Ni'iinlii Njik) Protected Area, Yukon, Canada

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Introduction

OVER THE LAST TWO DECADES, THE SETTLEMENT OF FIRST NATIONS LAND CLAIMS in Canada's northern territories has led to the creation of national and territorial parks and protected areas. Located in the Yukon Territory, Fishing Branch (Ni'iinlii Njik) Protected Area is conserved through the 1995 Vuntut Gwitchin Final Claim Agreement. The 6,500-km² area protects cultural and natural resources, most notably unusually high concentrations of salmon and grizzly bear. The protected area consists of both public and First Nation lands, a first in Canada, if not North America. The area is cooperatively managed in partnership as an ecological unit by the Yukon and Vuntut Gwitchin governments.

In 2000, a jointly developed and approved management plan identified objectives and guidelines to protect the area's natural and cultural resources. The plan further identified the essential conditions to allow for commercial grizzly bear viewing in the protected area. After fulfilling these conditions, a controlled pilot bear-viewing trial started in Fishing Branch Protected Area in fall 2006.

This paper will document the steps taken over the last ten years to prepare for commercial bear viewing at Fishing Branch Protected Area. Comparisons will be made to other bear-viewing operations in Alaska and northern British Columbia. The paper will conclude with a summary of lessons learned related to cooperatively preparing for and managing such activities in remote wilderness areas.

This case study demonstrates the positive role land claims can have in promoting

conservation and the effectiveness of partnerships in protected areas management, especially related to the development of a new, highly specialized activity within the wilderness-tourism industry.

Geographic, historic, and political context

The Yukon is one of Canada's three northern territories and spans an area from the Northern Rockies in British Columbia to the Beaufort Sea. While large in area (450,000 km²), the territory is sparsely populated (30,000). First Nations (a term which denotes most of Canada's indigenous peoples) make up about a fifth of the population. The city of Whitehorse is the service center and seat of government for the Yukon. Fifteen small, predominately First Nation villages are scattered across the territory. The small Vuntut Gwitchin First Nation community of Old Crow is located

in the northern Yukon on the Porcupine River. Fishing Branch Protected Area is located 100 km south of Old Crow and crosses the Arctic Circle (Figures 1 and 2).

Over the last two decades, comprehensive negotiations have been conducted across northern Canada to settle First Nation and Inuit land claims. Similar to the effect that the 1971 Alaska Native Claims Settlement Act had in creating over 100 million acres of protected areas through the 1980 Alaska National Interest Lands Conservation Act, settled land claims in the Yukon also have created large tracts of protected areas. Land claims have established

new or confirmed existing national and territorial parks, park reserves, heritage rivers, national wildlife areas, and territorial habitat protection areas. These areas total about 61,500 km², or some 13% of the territory. Settled claims also define the management objectives for these protected areas, cooperative management regimes for government and First Nations, and how First Nations can benefit economically from protected area establishment and operations.

In 1995, the Vuntut Gwitchin First Nation of Old Crow settled its land claims. The settlement included the creation of a 170-km² territorial ecological reserve on the

Figure 1. Location of Fishing Branch Protected Area in northern Yukon. The small box indicates the area of Yukon Parks' ranger camp and the commercial bear-viewing site.

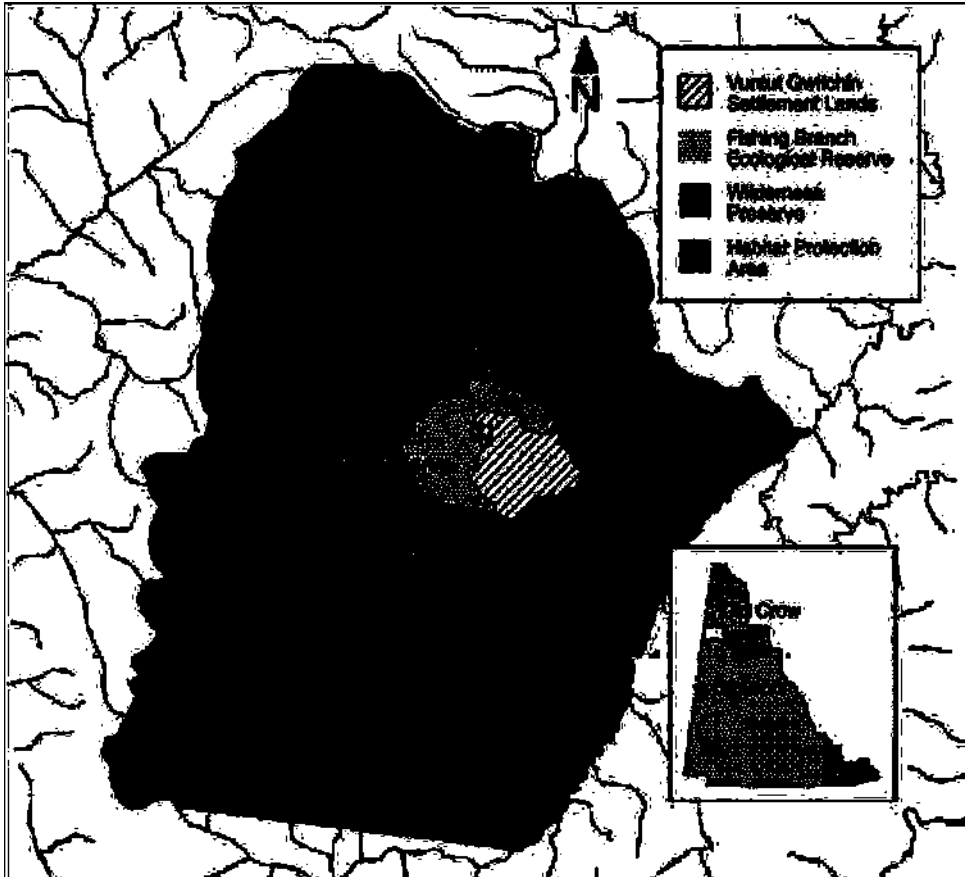




Figure 2. The Yukon Parks' ranger station and bear-viewing facility located along the Fishing Branch River at the base of Bear Cave Mountain (extreme left of photo). © 2008 Fritz Mueller, all rights reserved. Used by permission of the photographer.

Fishing Branch River pursuant to the Yukon Parks and Land Certainty Act. Also through the claim, an additional 140 km² of First Nation settlement land was added to this protected area. This addition is a significant contribution to conservation and is a groundbreaking first in Canada, if not North America.

Together, these protected areas are cooperatively managed by the Yukon and Vuntut Gwitchin governments under a jointly developed management plan, which was approved in 2000. The primary objective of the plan is to manage the area as an ecological unit to protect the full diversity of wildlife (particularly salmon and grizzly bears) in a Beringian karst landscape. While wildlife protection is the priority, the plan also recognizes the possibility of introducing commercial grizzly bear viewing as a means to provide visitor opportunities, pro-

mote ecological awareness and wilderness tourism, and provide economic benefits for the First Nation.

In 2004, an additional 6,200-km² territorial wilderness preserve and habitat protection area was added to the ecological reserve and the settlement lands (see Figure 1). The two governments also collaboratively developed a management plan for these two protected areas.

The ecological and cultural significance of Fishing Branch Protected Area

The Fishing Branch River is located in the Ogilvie Mountains of northern Yukon, and is of exceptional ecological significance. It is the seasonal gathering place for grizzly bears that come to feed on salmon (Figure 3). Spawning salmon depend on the constant water temperatures of the river, which wells up through the karst substrate.



Figure 3. One of the annually returning grizzly bears fishing for chum salmon in front of the viewing facilities along the Fishing Branch River. © 2008 Fritz Mueller, all rights reserved. Used by permission of the photographer.

Karst landscapes develop over millennia as limestone is eroded by water. This dissolution process results in towers, fissures, sinkholes, complex underground drainage systems, and caves, all of which help to maintain the constant annual water temperatures (Figure 4). This provides unusually late but ideal salmon spawning conditions, which start in mid-September and continue until late October or early November (Figure 5). The constant water temperature also creates a micro-climate that affects the river valley's vegetation and wildlife habitats, thereby increasing the biodiversity of the area.

The Fishing Branch area is also of cultural significance. The area was not covered in the last Ice Age and the cold, dry environment in the ancient karst caves in the surrounding mountains are optimal for preserving organic matter. The caves contain evidence of human occupation that date to

the last Ice Age. Altered caribou and mammoth bones located in an area northwest of the Fishing Branch have been dated to about 25,000 years ago and may be the oldest known traces of human occupation in North America.

For thousands of years, the Vuntut Gwitchin, who now live in the community of Old Crow, have depended on the land for all aspects of life. The elders call the Fishing Branch River *Ni'inlii Njik*, "where the fish spawn," and have considered the area as the source of life and food. The continuation of the Gwitchin culture is based on traditional subsistence harvesting, which in turn depends on a healthy, stable ecosystem, such as is found at the Fishing Branch.

Preparations for commercial grizzly bear viewing

The Vuntut Gwitchin Land Claim

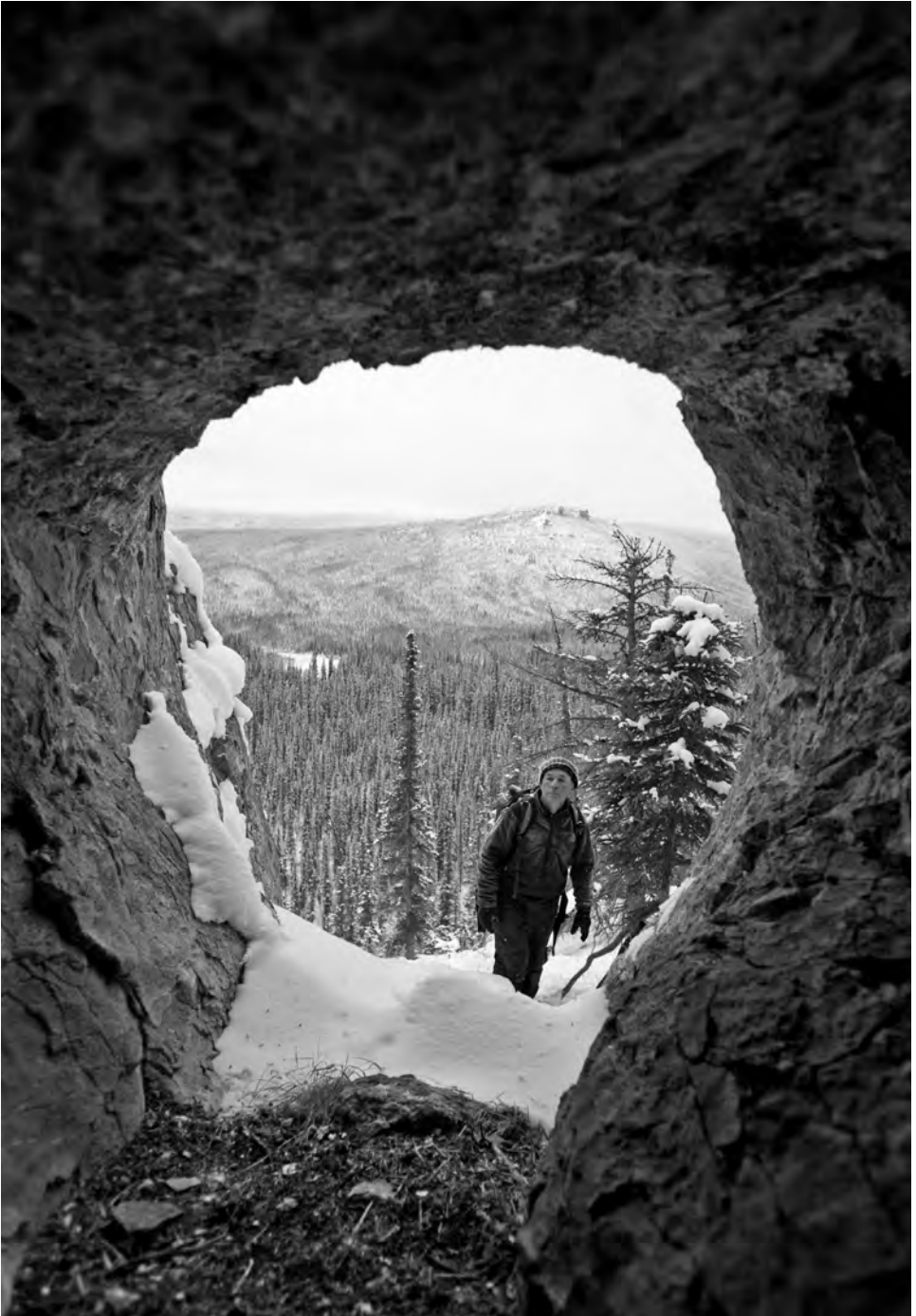


Figure 4. One of many caves located on Bear Cave Mountain used by bears as dens in the fall after the salmon run on the Fishing Branch River. © 2008 Fritz Mueller, all rights reserved. Used by permission of the photographer.



Figure 5. The “ice bear”: Unique to the Fishing Branch River, the fall salmon run provides late-season feeding opportunities for grizzly bears that become encrusted in ice and jingle as they move. © 2008 Fritz Mueller, all rights reserved. Used by permission of the photographer.

Agreement defines the management objectives for Fishing Branch Protected Area, which includes the protection of the full diversity of wildlife, particularly salmon and grizzly bears. The claim also identified the need for visitor services, learning opportunities, public education, and economic opportunities for the First Nation.

Based on these broad objectives, the protected area management plan states that while bear viewing is secondary to protection of wildlife and its habitat, effectively managed viewing has the potential to (1) increase public understanding and appreciation of bears and bear ecology, (2) increase public understanding of appropriate human behavior in bear habitat, and (3) under controlled circumstances, increase tourism and provide economic benefits.

To ensure effective management of the protected area, a Committee of Managing Agencies (CMA) has been established, representing the Yukon and Vuntut Gwitchin governments and includes Yukon Parks, the territorial Fish and Wildlife Branch, the local Renewable Resources Council, and the federal Department of Fisheries and Oceans (which operates a fish-counting weir downstream from the viewing site). When required, the Archaeological Survey of Canada and the territorial Heritage Branch participate on the CMA.

The management plan defined the conditions and operational guidelines related to preparing for commercial bear-viewing operations. The CMA oversaw these preparations to ensure that the management plan's conditions and guidelines were followed. These conditions and guidelines include:

Visitor access and use. Visitor access to the settlement lands and ecological reserve during the bear-viewing season

(September 1 to November 1) is by permit only and limited to a maximum of five persons per day (four visitors and one guide) with a maximum stay of seven days (Figure 6). This approach maintains the wilderness character of the area; avoids disturbance to fish, bears, and other wildlife; and limits the need for facility development.

Qualified bear-viewing guide.

During the viewing season, visitors are required to use the services of a qualified bear-viewing guide who is permitted to provide such services. This approach provides a safe and high-quality wilderness experience.

Bear-human risk management plan.

Before bear-viewing operations could start,

Figure 6. Bear-viewing activities at the Fishing Branch River are limited to five individuals, including the guide, for up to one week at a time in September and October. © 2008 Fritz Mueller, all rights reserved. Used by permission of the photographer.



a detailed bear-human risk management plan was required, as was a controlled pilot trial. The operational and emergency procedures defined in the plan are designed primarily to (1) minimize the adverse effect of human activities on bears and salmon, (2) minimize the probability of conflict between bears and humans, and (3) provide information on how to respond appropriately if a conflict between humans and bears occurs.

Bear behavior research and monitoring. Research and monitoring is an essential part of assessing and evaluating whether management principles and operational procedures are being effectively implemented. Three years of research were undertaken by a graduate student from Simon Fraser University before viewing operations start-

ed. This research documented bear and salmon populations and baseline patterns of bear behavior in the viewing area, and developed a bear behavior data-collection protocol. These data will be used in the future to assess the impact, if any, of viewing operations on bear behavior, primarily on spatial and temporal patterns of feeding.

Limited facility development. Consistent with the management principles and in keeping with the wilderness character of the area, facility development was kept to a minimum, consisting of a main cabin/wash house, two sleeping cabins, an outhouse, and high-storage cache (Figure 7). Built and owned by the Yukon government, these facilities support several activities, including (1) year-round management operations, (2) commercial bear viewing in the

Figure 7. The Yukon Parks' ranger station is leased for two months annually under a park use permit to a private sector-First Nation joint venture to provide grizzly bear-viewing activities according to a human-bear risk management plan. © 2008 Fritz Mueller, all rights reserved. Used by permission of the photographer.



fall under lease to an operator, and (3) non-commercial activity at other times of the year that supports research, monitoring, and public education.

Bear-hunting prohibition. In order to protect the bear population in the ecological reserve and settlement lands, no resident or non-resident non-aboriginal harvesting is permitted. While having the right to hunt, the First Nation has voluntarily closed the area to bear and moose hunting by its people.

In addition to the required steps identified in the management plan, a number of other initiatives were undertaken prior to viewing operations starting, as follows:

Commercial joint venture. To effectively and safely provide bear-viewing opportunities, a First Nation–private sector joint venture, Bear Cave Mountain Eco-Adventures, was created. This joint venture is managed by a bear-viewing guide with over 20 years of experience and who is familiar with area. He has partnered with the Vuntut Gwitchin Development Corporation, the business arm of the First Nation.

Bear-viewing plan. A commercial bear-viewing plan was developed by the joint venture to demonstrate how the business would start the trial operation and then continue into full operations in the future. This plan is closely linked to the operational and emergency procedures described in the bear–human risk management plan.

Use permit. Under the Parks and Certainty Act, Yukon Parks regulates activities and development in territorial parks through the issuance of permits. To prepare for this, the Yukon Department of Justice undertook a thorough review of the bear–human risk management plan. As a matter of due diligence, the review ensured that all requirements of the plan were

recorded as legal terms and conditions of the activity permit. The permit was issued to the joint venture to allow trial operations to start in September 2006.

Partnerships leading to commercial bear viewing

Table 1 summarizes the key steps and partnerships leading to the creation of bear-viewing operations at Fishing Branch Protected Area. This process started in 1995 with the settlement of the Vuntut Gwitchin Land Claim Agreement and continued to September 2006 when trial operations started. Throughout the process, the partners, including the First Nation and Yukon governments, Simon Fraser University, and the professional bear consultant and experienced bear-viewing guide mentioned above, were able to learn about the initiative in depth and share the experience of working together towards a common goal.

Critical factors in the development of this activity hinged around the nature of bear behavior, the careful planning and construction of facilities, and controlling human activity. The protected area and risk management plans provided the steps to prepare for the operation. Outside expertise to complete these steps was critical in the process. Analyzing the experience of similar activities elsewhere was valuable. Facility development demanded careful planning and sensitive construction practices and scheduling. Similarly, the comprehensive bear–human risk management plan was essential to achieving a level of confidence in the bear-viewing plan and to providing definite guidelines for visitor operations. Monitoring the activity will be equally critical in addressing operational concerns and issues at all stages to ensure visitor safety and protection of the bears.

Key Activities	Result	Key Partners & Contributions				Private Sector**
		First Nation (VG)	Government (YG)	University (SFU)		
Settle Land Claim 1995	<ul style="list-style-type: none"> - established objectives & boundaries - outlined management plan - recognized bear viewing 	settlement land (143 km ²)	designation (PLCA) public lands (170km ²)	not applicable	not applicable	not applicable
Prepare Management Plan 2000	<ul style="list-style-type: none"> - identified co-management structure (CMA) & operational conditions: - viewing only with qualified guide - viewing limited to 5 including guide - bear-human risk management plan - baseline bear behavior research - bear behavior monitoring protocol - limited facility development - bear-harvesting prohibition - start operations on trial basis 	co-developed & approved with YG	co-developed & approved with VGFN	not applicable	not applicable	not applicable
Prepare risk management plan 2004-05	<ul style="list-style-type: none"> - identified detailed operational requirements & safety procedures to minimize risk to bears & viewers 	CMA member/reviewer	CMA member/reviewer technical oversight coordinated & funded	not applicable	consultant prepared guide reviewed	
Complete research & monitoring 2004-06	<ul style="list-style-type: none"> - established pre-viewing patterns - developed monitoring protocol 	CMA member/reviewer	CMA member/reviewer technical oversight coordinated & funded	researched & prepared monitoring protocol	consultant & guide reviewed	
Develop facilities 2004-06	<ul style="list-style-type: none"> - constructed basic facilities: - 1 cook cabin, 2 sleep cabins, 1 outhouse, 1 wash cabin & 1 food cache 	contracted community labor	built & funded	not applicable	consultant & guide reviewed	
Establish First Nation/private sector joint venture 2005	<ul style="list-style-type: none"> - provided viewing opportunities - ensured experience & expertise - provided First Nation benefits - prepared bear-viewing plan 	First Nation participated by Development Corporation & provided resources	not applicable	not applicable	guide provided experience & expertise	
Prepare & issue use permit/commence operations 2006	<ul style="list-style-type: none"> - issued 3 year permit to joint venture for trial operation - permit conditions-based risk management plan 	issued use permit to joint venture for settlement lands	issued use permit for ecological reserve; YG Justice involved to ensure due diligence	not applicable	as joint venture partner, guide	
Vuntut Gwitchin (VG) Yukon Government (YG) Simon Fraser University (SFU) *Private Sector (bear consultant & viewing guide) Committee of Managing Agencies (CMA)						

Table 1. Activities and partnerships leading to commercial bear viewing at Fishing Branch Protected Area.

Comparative analysis of viewing sites in Alaska, British Columbia, and Yukon

In order to compare the management controls and safeguards developed for the Fishing Branch operations, 13 other bear-viewing sites in Alaska and British Columbia were assessed. The work was prepared as part of the bear-monitoring benchmark and protocol development research undertaken by Simon Fraser University. Only sites where the primary activity is bear viewing related to spawning salmon were considered. Both viewing site conditions and management regimes were compared.

The results showed the following similarities and differences between Fishing Branch and the other sites, using 14 different characteristics:

Accessibility. Along with one other site in British Columbia, Fishing Branch is the most difficult and expensive to access, as visitors can only arrive by expensive charter helicopter. Most of the other sites are accessible by float plane or boat. Only two can be reached by road.

Infrastructure. Viewing and lodging infrastructure, as well as physical barriers to reduce bear-human interactions, were compared. About half the sites have all three forms of infrastructure. The other half operate on a day-use basis without lodgings. At Fishing Branch, viewing is conducted primarily from riverbanks without physical barriers, with modest visitor infrastructure.

Agency staff/qualified guides. Only two of the 14 sites have no agency staff to orient or guide visitors and have no requirement for visitors to use viewing guides. Fishing Branch has no agency staff on site, but is one of five sites that requires the use of a qualified bear viewing guide.

Bear viewing as primary use. Fishing

Branch is one of only three sites where bear viewing was the primary and original designed use of the site when established. Bear viewing evolved over time in about half of the other sites.

Managing agencies. All sites are either managed by federal, provincial, state, or territorial agencies. Fishing Branch is one of four that also includes a First Nation in cooperatively managing the site, and is one of two sites where First Nations' lands are used in the viewing operation. As noted above, the commercial viewing operation is jointly owned by a First Nation development corporation and a qualified bear-viewing guide.

Access rules. Almost all 14 sites, including Fishing Branch, have rules and regulations controlling visitor movements when on site. Fishing Branch is one of only four sites that strictly controls visitor access and requires viewers to be accompanied by a guide at all times.

Viewing regulations. Daily visitor limits vary among the 14 sites, from a minimum of four to a maximum of 64, with Fishing Branch along with one other British Columbia site having the lowest. Six sites have no daily limits at all. Four provide only day-viewing opportunities, with others being multi-day, including Fishing Branch. Three have a permit reservation system to control visitor numbers, while five self-manage, including Fishing Branch, which is permitted under strict operating conditions, including those governing visitor numbers. Half the sites have daily viewing schedules, while the others, including Fishing Branch, allow viewing only during daylight hours.

User fees. The six sites that have a daily user fee charge between CDN\$10.00 and \$87.50. Fishing Branch is among the eight sites that do not charge a daily user fee

per se. However, the all-inclusive commercial guiding fee for Fishing Branch is high, at about \$1,500 per day per client. A \$1,500 lease fee is paid by the commercial operator for the eight-week use of park facilities.

Education/safety/interpretive programs. Only one of the 14 sites provides no prior or onsite education, safety, or interpretive information programming. The other sites, including Fishing Branch, provide safety information that generally encompasses viewer movement and behavior, including encounter response and food storage and disposal. Information provided at Fishing Branch by the guide also includes how to respond to emergencies, viewer obligations and camp duties, and, as an ecotourism operation, extensive natural history of the bears, salmon, and other species, as well as cultural history of the area and First Nations.

Viewing distances. Five sites have stipulated minimum viewing distances, which vary from 3 to 100 m, with the average being 30–50 m. Five sites, including Fishing Branch, have variable distances established by the guide dependent on the tolerance of individual bears—which, among other factors, is determined by viewer numbers.

Habituation. The Fishing Branch is one of seven sites that uses bear habituation (i.e., getting bears used to people, not food conditioning) as a means to improve viewing quality and bear–human safety. Five of those seven sites, including Fishing Branch, use qualified viewing guides to undertake habituation. Seven sites do not have an active habituation program.

Monitoring program. Only five of the fourteen sites, including Fishing Branch, have ongoing monitoring programs to

measure the impact of viewing on bear behavior. The Fishing Branch program is based on three years of bear behavior research that led to the development of a data collection protocol, which the guide uses during viewing operations.

Emergency procedures. Eight of the 14 sites have established procedures to respond to a bear mauling, including victim assistance procedures, information recording, communications/notification protocols, and post-incident reporting. Being isolated with only one guide, Fishing Branch viewers are made aware of emergency procedures and have quick access to a detailed onsite response manual and satellite phone/ HF radio.

Other permitted activities. Only five sites, including Fishing Branch, prohibit other uses, such as angling and sport and subsistence bear hunting. Three sites allow only angling. Four allow both sport and subsistence bear hunting. The size of bear hunting closure areas vary from 4 to 14,000 km². For Fishing Branch, the mandatory closure area is 300 km² around the immediate viewing site, and is voluntary in an additional surrounding 6,000 km².

Overall comparative summary

Compared with 13 other sites, Fishing Branch is one of the two smallest, with remote operations that provide highly controlled viewing conditions through the mandatory use of a qualified bear-viewing guide at a relatively high (4:1) viewer-to-guide ratio. This allows variable viewing distances without physical barriers, as the guide can identify individual bears and is familiar with their tolerance to viewers. As a relatively new, government–First Nation co-managed protected area, comprehensive pre-operational planning was possible, and

focused on preparing exclusively for bear-viewing activities. These preparations included (1) developing a bear-human risk management plan, (2) undertaking bear behavior research and creating a monitoring program, and (3) approving a detailed commercial bear-viewing plan.

Conclusion: Lessons learned related to planning for commercial bear viewing

The 10-year process leading up to commercial bear viewing at Fishing Branch demonstrated a number of important lessons learned:

Establish protected areas through land claims. Settled land claims provided the legislative means to establish the protected area, which included the contribution of First Nation-owned lands, a first in conservation in Canada, if not North America. This provided an equal partnership between the territorial and First Nation governments.

Develop management plans with First Nations. The joint development of the management plan ensured First Nations' participation in determining the objectives for the protected area, which included commercial viewing as a means to both protect the bear and provide visitors safe viewing opportunities.

Cooperate and partner early. Taking a cooperative, shared approach to planning and management was fundamental to success. Working with other key players (i.e., the Vuntut Gwitchin Development Corporation, the bear-viewing guide, Simon Fraser University, and the consulting bear expert) early on, and continuously throughout all stages of planning and operating, was crucial.

Apply the precautionary principle. A measured, conservative approach to an

activity such as bear viewing was essential and used throughout the preparation of both management plans. In the absence of fully knowing all implications, the precautionary principle was used by initially setting restrictive use limits and conditions.

Be comprehensive and patient. All that needed to be done was completed prior to starting operations, even as pressure mounted to start earlier when wilderness tour operators and photographers wanted to view bears before the planning was complete. The viewing operations will be phased in slowly. This will allow operating and marketing programs to be tested and adjusted if necessary.

Build capacity through joint ventures. The commercial joint venture with the viewing guide and the First Nation development corporation was encouraged and provided the expertise needed for safe operations. The joint venture also will provide the training and experience necessary for the First Nation to eventually assume control of the operation.

Integrate planning and operations. Activities leading up to viewing operations were interrelated and nested together. This approach ensured that human-bear risk management plan reflected the objectives of the overall management plan; that the bear-viewing plan reflected the operating conditions of the risk management plan; and that the terms and conditions of the activity permit reflected the requirements of the risk management plan.

Involve legal counsel. Legal counsel was involved in preparing the activity permit to ensure a degree of due diligence by demonstrating that all reasonable steps were taken to minimize the risk related to the operation. The exact operating procedures and protocols contained in the risk

management plan were used as the terms and conditions of the activity permit to ensure consistency and clarity.

Government-owned facilities. The facilities were built and are owned by the Yukon government. They were kept to a minimum and are leased for bear viewing to

the joint venture in the fall and are used for ranger operations and research for the rest of the year. Government ownership ensures control over the facilities and, if required, makes it simpler for Yukon Parks to cancel or not renew the activity permit for non-compliance.

Acknowledgments

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Editor's note: The name "Gwitchin" is rendered several ways in English: Gwichin, Gwich'in, and Gwitch'in, among others. We have adopted the spelling used on the Vuntut Gwitchin First Nation government website, www.vgfn.ca.

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