



A CONSERVATION PLAN FOR

# GRIZZLY BEARS

(*URSUS*  
*ARCTOS*)

# IN YUKON

YUKON FISH AND WILDLIFE  
MANAGEMENT BOARD



**Yukon**

This conservation plan shall not create any commitments or obligations that are legally binding on the planning participants. Without limiting the generality of the foregoing, this management plan shall not create, affect, define, interpret, or apply any roles, responsibilities, or interests under Indigenous Final or Self Government Agreements, or Indigenous rights affirmed under the *Constitution Act 1982* (Section C5). The goals and action items herein are subject to governmental and management partner priorities and budgetary constraints, as well as modifications necessary to accommodate new objectives or findings.

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# A CONSERVATION PLAN FOR GRIZZLY BEAR (*URSUS ARCTOS*) IN YUKON

Prepared by the Yukon Grizzly Bear Conservation and  
Management Plan Working Group. As recommended by  
the Yukon Fish and Wildlife Management Board.

Approved by:



**Hon. Pauline Frost**

*Minister of Environment*  
Government of Yukon

September 16, 2019

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This conservation plan is a testament to the high regard that Yukoners and transboundary community members hold for grizzly bears and the value that they place on sharing a landscape with them.

This plan is the fruit of a 2.5-year endeavour by the Yukon Grizzly Bear Conservation and Management Plan (YGBCMP) Working Group (Appendix A). Working group members formulated the plan visions, principles, goals and recommended actions, with significant contributions from technical and support personnel. Authors of this plan were Thomas Jung, Tyler Kuhn, Nicole McCutchen, Jodie Pongracz, Julie Thomas, Tecla van Bussel, Frank Thomas, Graham Van Tighem, Jim King, Russel Osborne, Ron Chambers, and Darcy Doran-Myers.

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# SECTION A

## CONTEXT



Photo: Minnie Clark



## WHY DEVELOP A CONSERVATION PLAN FOR GRIZZLY BEARS?

*Grizzly bears (Ursus arctos; more widely known as brown bears) were widespread in much of North America, Europe, and Asia; however, they no longer occur across about half of their historical range, and populations at the southern edge of their current range are often small, isolated, and endangered.*

In contrast, grizzly bears appear to be expanding their range into areas of the Arctic where they have not previously been recorded. Apparent increases in grizzly bears in Arctic regions, however, are not occurring at a scale that would offset historical and recent losses to the south. The current conservation status of grizzly bears varies across their range, with some populations considered stable, while others are declining or long gone. This patchwork of conservation status is reflected not only range-wide, but also at regional scales. For instance, in the Rocky Mountains of western North America there are areas where local grizzly bear populations are doing well and other areas where local populations are greatly reduced or have disappeared.

Grizzly bears are inherently difficult and expensive to inventory—especially in an area as remote as Yukon—so there have been few field studies on their abundance in the territory. The number of grizzly bears in Yukon is estimated at 6,000–7,000 bears; however, the true value is unknown. This estimate was derived in the 1990s based on biologists' understanding of how many grizzly bears could be supported in various regions of Yukon, given regional habitat characteristics and not considering the effects of development. Outfitters' perspectives were in general agreement with those of biologists. Based on harvest data collected by wildlife managers (e.g., male:female ratios, age-at-harvest, etc.),

as well as local and traditional knowledge, the best available information suggests that grizzly bear populations in Yukon are likely stable (i.e., neither increasing or decreasing significantly), although in some local areas there is a concern that the population is declining.

This is the first comprehensive territory-wide conservation plan for grizzly bears in Yukon; however, it is important to note that this is a species that has long been a priority for wildlife management in the territory, and grizzly bear conservation programs are already well underway and ongoing in Yukon (see “Current Management of Grizzly Bears in Yukon” below). Importantly, a co-management plan already exists for grizzly bears on Yukon's North Slope. In addition, some regional plans such as the Southern Lakes Wildlife Coordinating Committee recommendations and fish and wildlife management plans for First Nation Traditional Territories have recommendations concerning grizzly bears. Guidelines for harvest are also in place. Yet, none of these other plans or programs provide a comprehensive vision or guidance for grizzly bear conservation in Yukon at the territorial level.

In 2015, the Government of Yukon and the Yukon Fish and Wildlife Management Board were charged with jointly developing a conservation plan for grizzly bears as a result of the public debate over proposed regulatory amendments to prohibit roadside hunting of grizzly bears. The grizzly bear plan was proposed to provide a foundational piece describing the overall direction for conservation of the species, and from which future proposals for regulatory change could be assessed.

In addition, grizzly bears in western Canada were listed in June 2018 under the federal *Species at Risk Act* (SARA) as a species of Special Concern. With this listing a national management plan for the species is now legally required. Because the conservation status of grizzly bears varies throughout western Canada, a national management plan will likely need to rely on a series of action plans that more precisely capture the regional ecological, socio-political and cultural context for grizzly bear conservation. A Yukon conservation plan for this species can serve as an important contribution to a national management plan for grizzly bears by clearly articulating how they should be managed in Yukon. A similar conservation plan for grizzly bears is already in place in Alberta, and another may be required if the species is listed in the Northwest Territories under their *Species at Risk Act*.

This conservation plan is intended to be proactive: most grizzly bear populations in Yukon appear to be stable and the issues are largely well-managed. However, evidence from elsewhere amply demonstrates that once local populations are depleted they can be difficult to recover. Grizzly bears are a relatively long-lived species that typically occur in low densities and have low reproductive rates. These life history characteristics can prevent local populations from recovering from a decline for many years, if ever. Thus, grizzly bears are a species that warrant a high duty of care if they are to continue to persist in Yukon and not experience the declines observed elsewhere. Fortunately, most Yukoners and transboundary community members place high value on ensuring grizzly bears continue to exist in Yukon while also acknowledging their intrinsic value and importance within the ecosystem. The value of a proactive conservation plan is two-fold:

- 1** The plan provides an overall vision for grizzly bear conservation in Yukon and can thus be used as a foundational piece to determine priorities and direction related to grizzly bear conservation, and as a baseline from which to measure regulation or permit proposals related to, or that may impact, the species or its habitat.
- 2** The plan articulates the aspirations, values, and commitment of Yukoners and transboundary community members toward grizzly bear conservation that can stand as our contribution to national and international conservation processes and plans for the species.



## Jurisdictional Context for Grizzly Bear Conservation in Yukon

Understanding the wildlife management context in which grizzly bear conservation in the territory occurs is key for charting a meaningful path forward. In addition to the territorial and federal governments, Yukon First Nations, Tetlit Gwich'in, Inuvialuit, and transboundary First Nations with asserted territories in Yukon all play a role in grizzly bear conservation.

More specifically, the Inuvialuit, the Tetlit Gwich'in, and Yukon First Nations with settled land claim agreements have roles in decision-making related to wildlife, including grizzly bears, defined in their agreements. Also, in accordance with these agreements, mandated boards and councils have authorities to make recommendations to the territorial or federal governments on wildlife management issues, including grizzly bear conservation, within their respective settlement areas. The rights of all Indigenous Peoples including those with settled land claims, and Yukon and transboundary First Nations without settled land claims—including rights to consultation on matters that could infringe on subsistence harvest for food purposes—are recognized and affirmed through the *Constitution Act 1982 (Section C5)*, and further described by established legal precedents and other government commitments (e.g., the Truth and Reconciliation Committee recommendations, and the United Nations Declaration on the Rights of Indigenous Peoples). Finally, while not wildlife management authorities themselves, municipal governments influence grizzly bear conservation actions through bylaws and policies.

Grizzly bear conservation actions, and more generally, wildlife management, that is done at the territorial level must acknowledge and seek to work within this jurisdictional context.

Importantly, this conservation plan is not meant to supersede the existing management plan for grizzly bears in the Inuvialuit Settlement Region (ISR) in northern Yukon; rather, the intent is that this plan is complimentary to that earlier plan and applies to the portion of the Yukon not covered by that earlier plan.

This plan does not apply to federally-managed lands in Yukon under the jurisdiction of the *Canada National Parks Act* and the *Canada Wildlife Act*. Here too, however, it is hoped that much of this plan is also complementary to policies and guidelines concerning grizzly bear conservation in those national parks and national wildlife areas, so that management across the species range in Yukon is harmonized to the best extent possible.

## “Conservation” under Yukon land claim agreements

The Umbrella Final Agreement and the Inuvialuit Final Agreement, the two modern Indigenous land claim agreements that cover the majority of First Nation traditional territories within Yukon, set out the context for the human relationship to Fish and Wildlife. The understanding and use of the word “conservation” within this plan is based on these two agreements.

From the Umbrella Final Agreement: “Conservation” means the management of Fish and Wildlife populations and habitats and the regulation of users to ensure the quality, diversity and Long Term Optimum Productivity of Fish and Wildlife populations, with the primary goal of ensuring

a sustainable harvest and its proper utilization. “Long Term Optimum Productivity” means the productivity required to ensure the long term continuation of a species or population while providing for the needs of Yukon Indigenous Peoples and other harvesters and non-consumptive users of Fish and Wildlife in the short term.

From the Inuvialuit Final Agreement: “Conservation” means the management of the wildlife populations and habitat to ensure the maintenance of the quality, including the long term optimum productivity, of these resources and to ensure the efficient utilization of the available harvest.

### Current Management of Grizzly Bears in Yukon

Grizzly bear management in Yukon is a collaborative and iterative process with inputs from governments, Indigenous people, boards and councils, user groups, and the public. Regulations and guidelines are in place to manage grizzly bear populations and potential sources of mortality, including harvest, human-grizzly bear conflict, and habitat loss through commercial and industrial development.

Grizzly bear harvest management in Yukon is guided by the objective of maintaining grizzly bear populations while providing sustainable harvest opportunities. With the exception of the Inuvialuit Settlement Region (ISR), harvest is managed within 29 Bear Management Units (BMUs). The total sustainable mortality rate is 4% of the grizzly bear population in a given BMU, which can include up to 2% of the female population, and 6% of the males; this encompasses all sources of recorded mortality, including harvest, road kills, and defence of life or property (DLP) kills. Harvest is

managed separately for resident and non-resident hunters. Residents are not subject to quotas but may harvest one grizzly bear every three years, while non-resident harvest is managed through quotas derived from total sustainable mortality rates. Once other sources of mortality have been accounted for (e.g., DLP kills and resident harvest), non-resident quotas are adjusted to ensure sustainable mortality rates are not exceeded. The ISR has a different management regime; all harvest is regulated through quotas based on a sustainable harvest rate of 3% of bears aged 2 and older, and no more than a third of the harvest can be females. Throughout most of the territory, quotas are based on bear population estimates informed by expert opinion and habitat information. Hunting near roads is allowed in most areas, although hunters must be away from the road and shoulder.

The *Yukon Wildlife Act* provides conservation officers with the authority to respond to human-grizzly bear conflicts, with the exception of on federal lands where Parks Canada holds responsibility under the *Canada National Parks*

*Act*. Conservation officers responding to conflicts will conduct a risk assessment to determine the appropriate response. Protection of human life and conflict prevention are the highest priorities, and a measured approach is taken to ameliorating human-grizzly bear conflicts, depending on an assessment of risk. Actions taken may include removal of attractants, education, area closures or restrictions, deterrents, aversive conditioning, hazing, or use of electric fences. Relocation, translocation, and in the most dangerous situations, euthanasia, may also occur. Conservation officers also enforce prohibitions against attracting, feeding, and harassing wildlife, as specified in the *Yukon Wildlife Act*. Similar conflict prevention measures are implemented by Parks Canada staff within national parks, and additional education- and outreach-based strategies may be employed in national and territorial parks, and campgrounds. Whitehorse and some communities have municipal bylaws to manage bear attractants; however, enforcement may be limited.

Large-scale developments that trigger environmental assessments under the *Yukon Environmental and Socioeconomic Assessment Act* may be required to develop conflict prevention measures for bears (e.g., electric fences). Other permit conditions for large projects can include baseline data collection, impact monitoring, or a cumulative effects assessment, although no standards are in place to ensure consistency between projects. Permits for land development are issued by the Government of Yukon. Permit conditions are enforceable, and projects may be regularly inspected by Environmental or Conservation Officers; however, enforcement is typically done through education rather than direct measures (e.g., fines). Guidelines also exist for industrial activity in grizzly bear habitat, but the emphasis is on attractants management and safety rather than habitat protection. The *Yukon*

*Forest Resources Act* includes protections and setback distances for grizzly bear dens, and dens are also protected under the *Yukon Wildlife Act*.

More detailed information on the management of grizzly bears in Yukon and adjacent jurisdictions may be found in Volume 2 of this plan.

## Scope of the Plan

This plan is intended to lay out a long-term vision for grizzly bear conservation that is consistent with the values and aspirations of Yukoners and transboundary community members, and to provide goals and recommended actions needed to achieve this vision. In this sense, the plan should be viewed as a “road map” for how to realize the 25-year vision that is articulated for grizzly bear conservation in this plan. The plan itself is meant to be guiding, rather than prescriptive. Achieving many of the key recommendations will require further work and public discussion, and in some cases regulatory or policy changes; some of which may be socially or politically challenging.

This plan is intended to provide guidance and direction at the territorial level. However, support for some management actions varies among communities or First Nations’ Traditional Territories. As such, this plan recognizes, respects, and supports that some decisions regarding the implementation of grizzly bear conservation actions are best informed by input from, and delivered at, local levels or within Traditional Territories.



This conservation plan is specific to grizzly bears and does not explicitly consider the conservation of either black bears (*Ursus americanus*) or polar bears (*Ursus maritimus*), which also occur in parts of Yukon. It is noted, however, that many of the actions recommended in this plan may have a positive impact on conserving these other bear species, along with their habitat, and reducing conflicts with people.

## **The Planning Process and Participants**

The Yukon Grizzly Bear Conservation and Management Plan (YGBCMP) working group was formed in late 2015 and charged with developing a draft conservation and management plan for grizzly bears in Yukon. The working group was comprised, in equal measure, of members selected by the Yukon Fish and Wildlife Management Board and the Government of Yukon (Appendix A). Broadly, the mandate of the working group was to consider all aspects of grizzly bear conservation and management, including their intrinsic value, to engage with Yukon people, and to act in the public interest in jointly creating a draft plan for grizzly bears.

The working group began by drafting its operating procedures, developing an inclusive engagement process, and by developing a broader understanding of grizzly bear biology, management regimes, conservation status, and issues in Yukon and adjacent jurisdictions. Much of the information compiled during this phase of work is presented in Volume 2 (see next section for details).

Beginning in February 2016, the working group conducted a series of regional workshops with First Nations and Renewable Resources Councils (see Appendix B) to explore and understand their interests and concerns regarding grizzly bears. Additional workshops were held in spring and summer 2016 and

2017 with First Nations, Renewable Resource Councils, Wildlife Management Advisory Council (North Slope), government departments and agencies with responsibilities touching on grizzly bear conservation, as well as relevant organizations and associations. Results of these workshops were collated and summarized by independent social scientists at the University of Saskatchewan. In addition, the working group developed a public survey to solicit the beliefs, perceptions, and support for potential management actions towards grizzly bears (see Government of Yukon report MR-18-01 - Results of a public survey about grizzly bears (*Ursus arctos*) and their management in Yukon, Canada). Close to 1,400 Yukoners and transboundary community members completed the public survey and the results were used in conjunction with information gained from the workshops above to help guide the working group's discussions on direction in this plan.

At key stages throughout the planning process, the working group provided updates to, and sought input from, First Nations and Inuvialuit representatives. The working group held a midpoint "what we have heard" workshop with First Nations, Inuvialuit, and relevant mandated boards and councils prior to beginning to draft the plan. Based on feedback received throughout the process, and in recognition the importance of grizzly bears to First Nations and Inuvialuit, a preliminary draft plan was circulated to First Nations and Inuvialuit for initial feedback prior to broader public consultation. The working group made best efforts to address comments throughout the process, while maintaining a balanced perspective informed by all information gained through the plan development process.

## Looking North to progressive wildlife management:

Under the Inuvialuit Final Agreement, grizzly bears in the Inuvialuit Settlement Region (ISR) are cooperatively managed to ensure that grizzly bears and their habitat are protected and the harvesting rights of Inuvialuit are preserved. The Co-management Plan for Grizzly Bears in the Inuvialuit Settlement Region, Yukon and Northwest Territories was created recognizing that the best way to manage a grizzly bear population is to make a plan so everyone can agree on what needs to be done and who is going to do it.

Grizzly bears in the ISR have been managed under a quota for more than 20 years. The quota is based on a sustainable harvest rate of 3% of bears age 2 years and older with

no more than 33% of harvest to be female. All human caused mortalities (harvests, defence kills, and illegal kills) are applied to the quota, with a conservative measure by which unknown sex and unverified males are considered females.

The Wildlife Management Advisory Council (North Slope), Wildlife Management Advisory Council (NWT), Inuvialuit Game Council and Hunters and Trappers Committees have responsibilities for grizzly bear management in the ISR. Each year at regular meetings these management bodies review information on mortality in consideration of quotas ensure that the grizzly bear harvest/kills is sustainable in the ISR and adjacent areas.

## Structure of the Plan

This plan comprises two volumes. The first volume is the plan itself (this document), and outlines the vision, principles, goals, and recommended actions to conserve grizzly bears in Yukon.

The second volume comprises supplemental information that may be used by governments, boards and councils, and all others interested in participating in implementing the goals and actions of the plan. The second volume includes both a compilation of the main information that the working group used to inform their deliberations and catalogue of existing best practices related to grizzly bears.



# SECTION B

THE PLAN  
(VISION, PRINCIPALS AND GOALS)

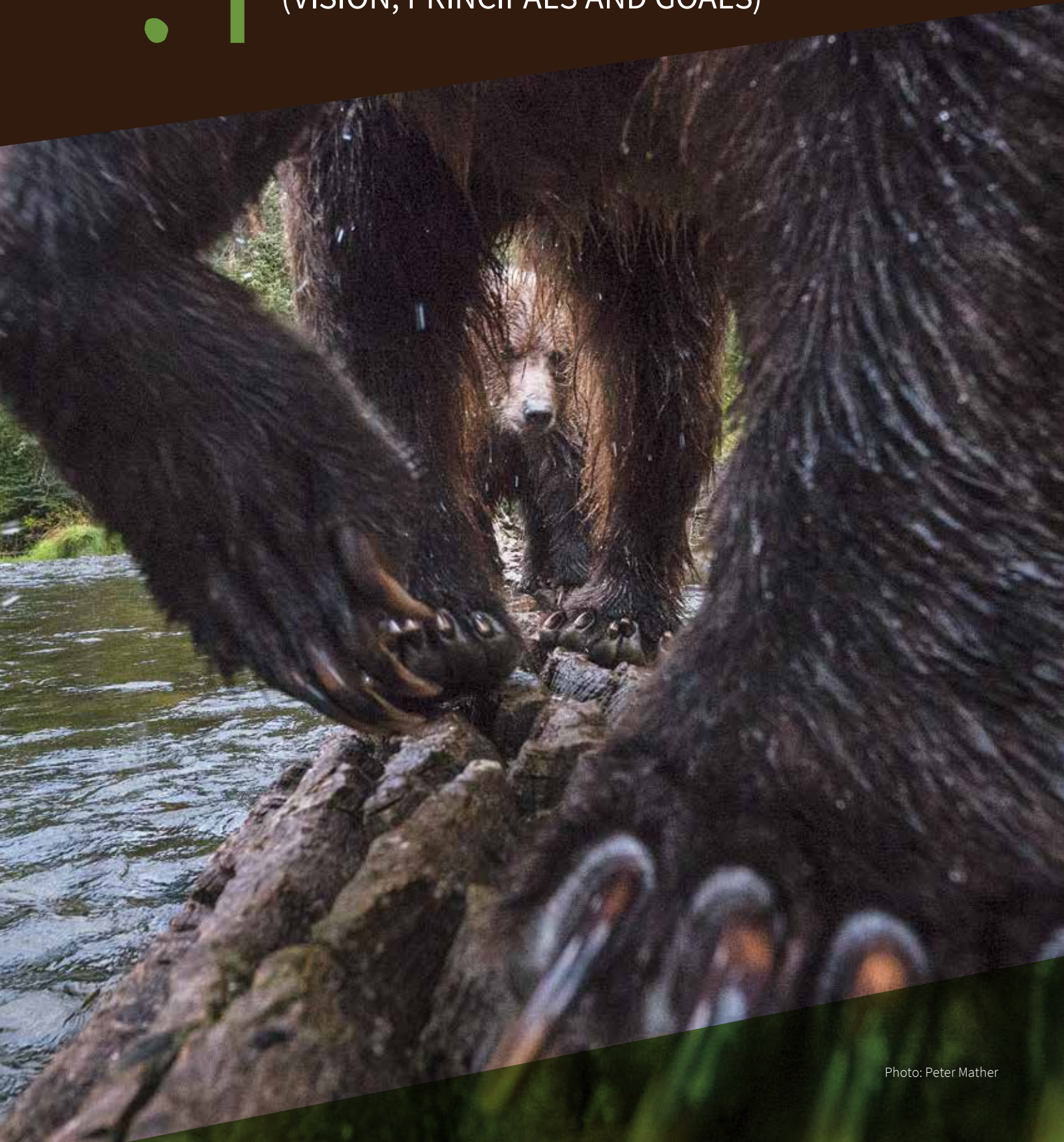


Photo: Peter Mather



## CULTURAL CONTEXT FOR GRIZZLY BEAR CONSERVATION IN YUKON

*Grizzly bears possess important cultural significance for both Indigenous and non-Indigenous people in Yukon and transboundary communities. The implementation of this plan must acknowledge and be informed by these diverse cultural connections to grizzly bears (see Recommended Action 1.2 below). Throughout plan development, many Indigenous people provided input. We are grateful to those people who shared their stories, cultural perspectives and traditional knowledge throughout the development of this plan.*

Indigenous cultures in Yukon and transboundary communities are diverse, and their relationships with grizzly bears mirror this diversity. While these relationships varied across the territory, Indigenous people consistently spoke of how people should behave in a respectful manner towards grizzly bears. Similarly, Yukon's non-Indigenous peoples maintain a variety of cultural perspectives towards grizzly bears, and some important consistencies. Broadly, Yukoners agreed that grizzly bears are important to them, and they placed high value on ensuring that grizzly bears persist in Yukon. Seeing grizzly bears in the wild is a significant experience for people in Yukon and transboundary communities. Both Indigenous and non-Indigenous peoples, shared a common perspective that much of the work involved in grizzly bear conservation relates to recognizing the impact of our actions on grizzly bears—grizzly bear conservation is largely people management.

These examples of cultural perspectives form the foundation for building a grizzly bear conservation plan that treats grizzly bears with respect, while maintaining the diversity of values, uses and relationships that exist with grizzly bears in Yukon.

### Names for Grizzly Bears

Grizzly bears (*Ursus arctos*) have many different names. Respecting and understanding Indigenous names is an important part of how we should all talk about wildlife. Below are some of the different names in Indigenous languages from around Yukon for what is known in English as a “grizzly bear” or “brown bear”.

- Shih shòh (Gwich'in)
- Shär cho (Hän)
- Dlēze (Kaska)
- Srà cho (Northern Tutchone)
- Akłaq (Inuvialuit)
- Ätsiá sho (big grandpa) (Southern Tutchone)
- Shash chō (Tagish)
- Shüh choh (Upper Tanana)
- Xóots or xûts (Tlingit)





## Vision

Throughout the working group's engagement with Yukoners and transboundary community members, respect for grizzly bears, and the importance of maintaining grizzly bears in the territory, was consistently and strongly expressed. Yukoners and transboundary community members also emphasized the importance of developing a plan informed by all forms of knowledge that is consistent with Indigenous rights and land claim agreements, while acknowledging the importance of local and regional involvement in grizzly bear conservation. The vision below is based on the aspirations expressed, and in consideration of the guiding principles listed below.

This vision explicitly serves as a 25-year population and distribution objective of this conservation plan for grizzly bears in Yukon.

The vision of this conservation plan is to ensure that there remain healthy and viable grizzly bear populations throughout their natural range in Yukon, for future generations of people and bears.

## Guiding Principles

The following principles provide the social, cultural, legal, and ecological context that the plan is operating within, and which guide its content. These principles can be used as a benchmark to evaluate the success and direction of the plan's implementation, as well as proposed regulatory changes.

Work carried out to conserve grizzly bears in Yukon must recognize and respect that:

- grizzly bears have an intrinsic value;
- grizzly bears are an important part of Yukon ecosystems, and require large intact landscapes;
- grizzly bear conservation must be informed by the diverse Indigenous cultural values and relationships between people and grizzly bears, respect Indigenous rights and traditional laws, and be carried out in accordance with land claim agreements, where established;
- grizzly bear conservation should respect the varied uses of grizzly bears, including cultural uses, harvest, viewing, and ecological functions;
- grizzly bear conservation largely requires addressing or modifying human behaviours and actions towards bears and their habitat;
- grizzly bear conservation requires all governments, relevant boards and councils, industry, organizations, communities and individuals to work together;
- grizzly bear conservation needs to be informed by, and based on, multiple sources of knowledge;
- grizzly bear conservation needs to be adaptive to new information; and
- grizzly bear conservation needs to abide by the precautionary principle—proposing actions to avoid impacts on grizzly bears even in the absence of perfect knowledge (see Section C for further discussion).



Photo: Minnie Clark

## Management Goals and Recommended Actions

The vision of this plan can be achieved through meeting the following seven goals; the intent of each is provided below:

- 1 Foster a cultural connection to, and respect for, grizzly bears.
- 2 Take care of the land and other species that grizzly bears require.
- 3 Improve decision making by acquiring better knowledge about grizzly bears.
- 4 Minimize human-grizzly bear conflicts.
- 5 Ensure grizzly bear harvest is sustainable.
- 6 Foster safe grizzly bear viewing.
- 7 Better understand human dimensions of grizzly bear conservation.

**Goal 1:** Foster a cultural connection to, and respect for, grizzly bears**Intent**

As complex, intelligent, powerful, social animals, grizzly bears often evoke strong emotions. Ultimately, support for the other goals and the recommended actions in this plan relies on the willingness of people to ensure grizzly bears persist into the future. The intent of this goal is to promote further understanding of, and maintain or increase respect for, grizzly bears in Yukon so that grizzly bears continue to be valued and conservation efforts are supported.

An important aspect of this goal is fostering and promoting a cultural connection with grizzly bears in all people in Yukon, through arts and culture—be that visual arts, photography, literature, story-telling or some other media that raises awareness about the uniqueness of having grizzly bears in Yukon.

An equally important aspect of this goal is that knowledge about grizzly bear behaviour is needed to ensure human safety. Continued efforts should be sustained or enhanced to increase knowledge about how to stay safe in grizzly bear country, particularly for youth, those working or recreating in the wilderness, or people new to Yukon.

Grizzly bears are a strong cultural symbol for many Yukon Indigenous people. It is important for all Yukoners to be aware of and respect these cultural connections between Yukon Indigenous people and grizzly bears. Sharing cultural values and traditional knowledge—in culturally appropriate ways—is an important pathway to

increasing awareness of the importance of grizzly bears to Yukon Indigenous people while also fostering more informed decision-making. Many stories Yukon Indigenous people tell about grizzly bears have practical applications in terms of how to safely live, work and recreate in bear country. They also help maintain and promote continued respect and appreciation for grizzly bears, and aid in creating broader cultural connections to them.

Additionally, increased public knowledge about grizzly bear biology and behaviour can help people make informed decisions about their personal actions and proposed management actions. Furthermore, improved knowledge about bears can help people better contribute to implementing the other goals in this plan, particularly minimizing human-grizzly bear conflicts.

**Recommended Actions**

- 1.1** Promote a cultural connection to grizzly bears in all Yukoners
- 1.2** Promote grizzly bear awareness and human safety
- 1.3** Increase awareness of Indigenous cultural connections and values related to grizzly bears
- 1.4** Increase knowledge and awareness of grizzly bear behaviour and ecological needs

**Goal 2:** Take care of the land and other species that grizzly bears require**Intent**

Maintaining healthy and viable grizzly bear populations on the landscape is dependent on ensuring that the habitats, ecosystems, and landscapes that they require remain available to support them and their food sources. While much wilderness remains in Yukon, the territory has experienced a 19.4% increase in population in the past decade, and there has been an associated increase in land developments, which have expanded further into areas that were previously undeveloped. There are also more people recreating on the land. All of these activities alter the landscape that grizzly bears depend upon, while also increasing the potential for disturbance of grizzly bears.

The intent of this goal is to ensure that suitable habitat remains for grizzly bears and the species that they are inter-dependent upon, such as salmon (*Oncorhynchus* spp.), moose (*Alces americanus*), caribou (*Rangifer tarandus*), and berries.

Implicit in this goal is that grizzly bear conservation needs to take an ecosystem approach. Fundamental to this is acknowledging the interrelatedness of species with which grizzly bears share the landscape. Yukon largely maintains intact predator-prey communities that are subject to natural ecological and evolutionary processes. Conservation actions need to ensure that these ecological communities and processes persist. This goal also acknowledges the important role Indigenous people play in protecting the land.

Land use activities such as agriculture and development can have negative impacts on grizzly bears and their habitat. Some impacts may be direct (e.g., improper attractants management that leads to lethal removal of

bears) and others may be indirect (e.g., removal of access to key habitat or impacts to the connectivity of key travel corridors). As such, there is a need for land use planning processes to explicitly identify and consider the habitat needs of grizzly bears (such as travel corridors, important foraging areas, and denning habitats), and be informed by all sources of knowledge.

In addition, the consideration and treatment of grizzly bears in environmental assessment processes may vary considerably between projects and is often focused on minimizing potential for conflicts between people and grizzly bears. There is a need for a consistent and directed approach to mitigation of impacts to grizzly bears in environmental assessments, considering both the habitat impacts of projects as well as human-grizzly bear conflict. Land use applications (e.g., new campgrounds, community developments or agricultural applications) should consider how activities impact grizzly bear habitat use and travel corridors, and the permitting process should require mitigation measures that fully avoid or reduce impacts on both grizzly bears and their habitat.

Taking care of grizzly bear habitat requires viewing changes to the landscape not individually, but in combination with other changes to the landscape, and in consideration of climate change. The assessment process needs to explicitly consider cumulative effects; that is, the effects of multiple activities or developments on grizzly bear populations. Preventing or mitigating cumulative impacts on grizzly bears and their habitats is vitally important for ensuring habitat and ecosystems remain intact and human-grizzly bear conflicts are minimized and that grizzly bear populations persist. A mixture of mitigation,



stewardship, and regulatory measures are needed to provide a safeguard against the functional loss of important habitats and the creation of increased human-grizzly bear conflicts.

Road development, in particular, has been shown to have a negative impact on grizzly bear populations through a variety of mechanisms (e.g., accidents with vehicles, increased access by hunters, facilitating residential and industrial developments that led to conflicts, habituation to people, etc.). Increasing road development into wilderness poses a significant threat to the stability of local grizzly bear populations. As such, maintaining large roadless areas is key to maintaining grizzly bear populations in Yukon.

This goal also recognizes the role of grizzly bears in the population dynamics of other species in ecosystems; such as, the impact of grizzly bear predation on moose or caribou. Seasonally, grizzly bears may be significant consumers of ungulate calves, salmon, or berries. This should continue to be recognized and considered in local or territorial guidelines or harvest regulations for these interacting species. Further research on grizzly bear use of ungulates, salmon, or berries, may be necessary to better understand current consumption levels, particularly when abundance of these species may be changing locally due to climate change or other factors.

### **Recommended Actions**

- 2.1** Adopt an ecosystem-based approach to grizzly bear conservation, that considers interactions with other species and habitats, particularly food species such as moose, caribou, salmon, and berries
- 2.2** Recognize grizzly bears as a valued ecosystem component during environmental assessment
- 2.3** Identify important grizzly bear habitat
- 2.4** Consider grizzly bears in land allocations and land use planning, including the cumulative effects of land developments and furthering road networks
- 2.5** Develop land use guidelines for the conservation of grizzly bear habitat
- 2.6** Ensure grizzly bear-related permitting conditions for land use activities are implemented and enforced
- 2.7** Support the establishment and management of areas where grizzly bears are protected from land developments, such as road creation

**Goal 3:** Improve decision-making by acquiring better knowledge about grizzly bears**Intent**

Many decisions about grizzly bear conservation are societal in nature, and will, by necessity, be made without perfect knowledge. Such decisions should follow the precautionary principle (see Section C). However, the intent of this goal is to promote the acquisition of better knowledge of grizzly bears so that Yukon can make knowledge-based decisions where grizzly bears are concerned and, ultimately, increase the effectiveness of grizzly bear conservation efforts. Further, the recommended actions prioritize what knowledge is most needed to support the vision and goals of this plan.

It is recognized that collecting new biological information about grizzly bears in Yukon will be challenging, and in implementing the plan wildlife managers will be limited in what can be accomplished. However, there may be means to gather key biological information about grizzly bears that have not yet been fully explored in Yukon and may have merit. This goal recognizes that obtaining improved understanding of grizzly bears in the territory will consider the use of a range of tools from standard scientific approaches (e.g., radio-collaring to non-invasive camera traps and genetic sampling) to increased use of traditional and local knowledge. Combining these approaches can expand our knowledge about grizzly bears in the territory, when applied to the appropriate questions.

Grizzly bear monitoring should be guided by key knowledge gaps, as well as where current or future risks to population sustainability are perceived to be the greatest. Decisions about where, when and how to focus efforts should be made collaboratively with communities and Indigenous people, and recognize Indigenous values, practices, and approaches as they relate to grizzly bears.

Reliable information on how to best define a population, along with its size and trend, and causes and amount of mortality is needed to conserve grizzly bear populations in Yukon. This information is necessary for determining if mortality is sustainable and for predicting how factors like development, harvest, and climate change will impact populations.

More detailed information on the spatial and temporal distribution of grizzly bears will improve understanding of how they use different areas and why. Acquiring this information will help develop mitigations to minimize conflicts in more developed areas, and to lessen the impacts of human activities on grizzly bears and their habitat.

Defining a grizzly bear population is challenging. Bear Management Units (BMUs) are currently the scale at which grizzly bear mortality is tracked and managed. Hence, population size and density has been estimated for each BMU. However, BMUs are not biologically-based but rather are largely aligned with Outfitter Concession Areas. The appropriateness of BMUs as the spatial scale from which to manage grizzly bears should be evaluated.

Population size and density estimates for Yukon's BMUs were originally derived from an expert-based approach that considered how factors like habitat condition and food availability influenced the number of grizzly bears thought to be in a given area. This work is dated and current population sizes are needed. More recent population work using DNA-based approaches has been conducted in northern and south-western Yukon. Results from these studies, when compared to the expert-based estimates, suggest grizzly bear population size may be overestimated in areas where there is more human development and access.

Central to this goal is that biological information and other knowledge about grizzly bears relevant to their conservation should be shared widely to enable better conservation efforts.

### **Recommended Actions**

- 3.1** Improve use of traditional knowledge and local knowledge when making conservation decisions related to grizzly bears
- 3.2** Update grizzly bear population status information at management unit levels
- 3.3** Evaluate the appropriate scale of management units for grizzly bears
- 3.4** Develop and implement a monitoring plan for grizzly bears
- 3.5** Innovate and look for new ways to monitor grizzly bears in Yukon

## **Goal 4: Minimize human-grizzly bear conflicts**

### **Intent**

Where grizzly bears and people coexist, interactions between people and bears can be positive and respectful; however, the potential for conflict exists. Human-grizzly bear conflict can be defined as any interaction between grizzly bears and people that causes harm to people, grizzly bears or property. Conflicts often occur because grizzly bears are attracted to improperly managed attractants created by human activities or found near settlements. Attractants may include harvested fish or game in wilderness camps or meat wastage, domestic and municipal garbage or compost, or commercial or backyard agriculture. Raising chickens and beekeeping is increasingly popular, for example, but these activities can attract grizzly bears if they are not properly secured.

Human-grizzly bear conflicts may pose a risk to human life or property and may result in the unnecessary mortality of grizzly bears. Minimizing human-grizzly bear conflicts is central if grizzly bears are going to persist on an increasingly human-dominated landscape. Realizing this goal will require modification of human behaviour more so than that of grizzly bears.

This conservation plan explicitly recognizes that climate change may potentially result in increased human-grizzly bear conflicts. For instance, changes in the timing or abundance of berry crops or other food sources due to climate-induced ecosystem changes may create shifts in the nutritional condition or distribution of grizzly bears. As well, warming temperatures may create the conditions for a longer active period—and shorter denning season—for grizzly bears, resulting in bears going into their dens later than previously, or being more active during winter. It is important to anticipate how climate change may influence human-grizzly bear conflicts and consider means to address or mitigate these changes in seasonal activity patterns or distribution of grizzly bears to ensure human safety and reduce defence of life or property (DLP) kills of bears.

The intent of this goal is to increase people's understanding of their contributions to creating potential human-grizzly bear conflicts, and addressing these through various means so that people and grizzly bears can better coexist. Key to addressing the potential for conflicts will be improving the management of bear attractants and ensuring that grizzly bears do not become food-conditioned. Ideally, human-grizzly bear conflicts are prevented before they occur. Prevention is in part achieved through education, which should speak to what people can do to reduce the chance of coming into conflict with a grizzly bear as well as what to do if a conflict occurs.

Central to achieving this goal will be the Yukon-wide adoption of a "Bear Smart" initiative for each community. At their root, Bear Smart programs are community-based initiatives aimed at reducing human-bear conflicts to simultaneously increase both human safety and bear conservation.

## Bear Smart

Bear Smart is a community-based and community driven program developed in British Columbia from lessons learned in the realm of human-bear conflict management in Canada and the United States. In the program, actions are taken to reduce the rate and intensity of human-bear conflicts, which in turn increases public safety and reduces the number of bears that are killed as problem bears. It involves local, provincial and First Nation governments, the waste management sector, local RCMP, community stakeholders (e.g., agriculturists, bee keepers), community interest groups, and tourism representatives.

In Stage 1 a primary hazard assessment is developed. This document/process: identifies areas that have historic, or existing potential for human-bear conflict; highlights gaps in knowledge of bear use and human-bear conflict; and produces management recommendations to reduce human-bear conflict.

In Stage 2 a human bear conflict management plan is developed. This highlights what the community will do to address problems identified in the hazard assessment. Stage 2 involves:

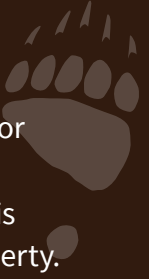
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| <ol style="list-style-type: none"> <li><b>1 Implementing an education program;</b></li> <li><b>2 Implementing a bear-proof waste management system;</b></li> <li><b>3 Controlling attractants within the community;</b></li> <li><b>4 Implementing and enforcing Bear Smart bylaws;</b></li> <li><b>5 Implementing a green space</b></li> </ol> | <ol style="list-style-type: none"> <li><b>management program;</b></li> <li><b>6 Revising community planning documents as required to be consistent with the human wildlife conflict plan, and lastly;</b></li> <li><b>7 Implementing a human bear conflict monitoring system that can be used to track change over time, evaluate effectiveness, and be an instrument for adaptive management.</b></li> </ol> |
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Habitats that bears exist within are also desirable places for people to live. Poor management of attractants results in bears being killed. The 'Bear Smart' program was developed as a way to move from a reactive approach to human-bear conflict, which is ineffective and focused on managing the bears, to a proactive approach that targets the problem. There are basically two stages to the process of becoming 'Bear Smart'. The first stage is the information gathering which identifies the source of potential human-bear conflict in communities. The second stage is the development and implementation of a human-bear conflict management.

A number of educational tools already exist. Bear Hazard Assessments, like those completed for the City of Whitehorse and the Village of Haines Junction, help communities better understand how to reduce grizzly bear attractants. There are some existing mechanisms in place in Yukon to promote voluntary compliance with managing grizzly bear attractants (e.g., electric fencing programs); however, there are limited tools in place in Yukon to ensure successful attractant management. In some instances, enforcement actions may be necessary to prevent individuals or organizations from causing grizzly bears to become a nuisance, and there is a need for improved mechanisms to facilitate proactive attractant management (e.g., increased education and outreach, bear-proof waste management containers, etc.) that can be enforced where required.

## What is DLP?



DLP stands for Defending Life or Property. A DLP kill refers to a situation where a grizzly bear is killed in defence of life or property. In Yukon, a person can kill a grizzly bear in defence of his/her or another person's life if there is an imminent or immediate threat of harm, and they have made an effort to avoid the threat using all practical means. A person can also kill a bear if there is a significant immediate threat to property damage, also under the condition that all practical means of avoiding the threat have been attempted. However, it should be noted that a person cannot kill a grizzly bear that has been attracted to a kill site or the meat of a harvested animal unless it is necessary for self-defence. A grizzly bear killed in defence of life or property must be immediately reported to a Conservation Officer for assistance and direction on how to proceed. Generally, there is an assessment of the incident before the grizzly bear is removed. In rare circumstances the Conservation Officer may ask an individual to document the event and prepare the head and hide so it doesn't spoil.

In certain cases, conflicts result in grizzly bears being killed in defence of life or property. Existing legislation allows for killing a grizzly bear in defence of life or property only after there has been an effort to avoid the threat using all practical means. In some situations, grizzly bears are shot as a DLP kill because they are perceived as a threat before all practical means of avoiding the threat have been explored. This leads to the unnecessary killing of grizzly bears and can contribute to conservation concerns in some areas of Yukon. Taking action to prevent conflicts is one way to help ensure grizzly bear populations remain viable.

In other cases, human-grizzly bear conflicts may result in a bear being captured and translocated to another area. Translocating grizzly bears presents ecological and social challenges, and policy-makers, communities, and the public would benefit from research that informs discussions and decisions such as when or where to move a grizzly bear, as well alternative mitigations to translocation (e.g., hard release in situ).

Key to this goal is the dissemination of clear and coordinated messages about grizzly bears, among all those involved in delivering communication pieces for this species. Misinformation or contradictory messages about grizzly bears can be detrimental to their conservation, and lead to low levels of respect for the species or willingness to support some conservation actions.

### Recommended Actions

- 4.1** Develop community-based approaches to minimize and address human-grizzly bear conflict that are proactive, adaptive, and respect conservation principles
- 4.2** Maintain and coordinate efforts to reduce grizzly bear attractants
- 4.3** Promote the reduction of preventable Defense of Life or Property (DLP) kills
- 4.4** Implement the use of hazard assessments to minimize human-grizzly bear conflict
- 4.5** Support collaborative and accessible information-gathering about human-grizzly bear conflict



Photo: Government of Yukon

**Goal 5:** Ensure grizzly bear harvest is sustainable**Intent**

Grizzly bear hunting is no longer possible in some parts of North America, because either numbers have dwindled too low to sustain a harvest, or the practice is not broadly supported by the public. Moreover, how grizzly bears are hunted can be a polarizing issue, as some people have strong opinions and feelings about the regulations defining the conditions under which grizzly bears may be harvested. The intent of this goal is two-fold.

The first is to ensure that, where grizzly bear harvest occurs in Yukon, it is sustainable in light of all sources of mortality. A sustainable harvest is one that does not cause negative impacts on, or a decline in, the population and follows the principles of Conservation and, as defined in the Umbrella Final Agreement. A major recommendation stemming from this goal is that an annual allowable harvest (AAH) be established and implemented for each Bear Management Unit (BMU) that includes all sources of mortality (e.g., resident and non-resident harvest, DLP kills, etc.). Achieving this will require a thorough review of how grizzly bear harvest is managed, including providing better and timelier information on the number of mortalities from all sources. Knowing when mortality in a local population approaches or exceeds sustainability and being able to quickly respond to these instances is key to maintaining healthy grizzly bear populations that can sustain a harvest. Implementation of an AAH for each BMU will need to address the key issues of uncertainty in grizzly bear population sizes and dynamics, all sources of mortality, as well as allocation among hunters.

Where grizzly bear harvest occurs it must be sustainable. Additionally, there is public sensitivity about some grizzly bear hunting practices.

This goal intends to address this by promoting grizzly bear hunting practices that are respectful, including respecting grizzly bears, other peoples' views on grizzly bear hunting, and diverse Indigenous values. While wildlife management principles can provide some guidance on what constitutes respectful harvest practices, these are largely societal decisions that will need to be made at local and territorial levels, as appropriate, and must be informed by Indigenous cultural values and knowledge. Actions to achieve this part of the goal include using the existing Yukon Wildlife Act regulation change proposal process to address local values related to harvest of grizzly bears, developing hunting education and ethics training materials for grizzly bear hunters that reflect the continuation of respectful hunting practices in Yukon, and ensuring that the public is provided information on how grizzly bear harvest is monitored and managed in Yukon.

Considering both aspects discussed above, this goal reflects a desire to ensure that a total allowable harvest rate is established to ensure harvest—combined with all other sources of mortality—does not negatively impact the population. While primarily a biological concept, determining an annual allowable harvest may also include regional variation (for example at a Traditional Territory level) in the harvest regime to accommodate social acceptability of harvesting grizzly bear by local Indigenous people and communities.

Yukon's current grizzly bear population estimates and sustainable mortality rates were derived in the 1980s and may be outdated. Current harvest management approaches should be updated using historical mortality data, updated population information, modern modelling

techniques, and in consideration of the precautionary principle. The annual allowable harvest of Yukon's grizzly bears should account for all mortality, as well as wounding loss and unreported harvest. It should also recognize that grizzly bears are less resilient to human harvest than other predators, such as wolves (*Canis lupus*). Grizzly bear populations are particularly sensitive to changes in adult female survival. Much of Yukon's current mortality management system focuses on minimizing the loss of female grizzly bears—the majority of grizzly bears harvested in Yukon today are male—and this should be continued.

There is also a need to have a clear understanding of what a legitimate Defence of Life or Property (DLP) kill is (see Goal 3). It is important to report grizzly bears killed as a DLP as such, and separately from those that are harvested. Without this understanding and accurate reporting, mortality information can be biased. This can result in trying to address the wrong conservation issue (e.g., implementing harvest management actions when attractants management is more appropriate).

Most respondents to the public survey about grizzly bear conservation and management conducted in 2017 (75%) did not support roadside hunting of grizzly bears. Yet roadside hunting of grizzly bears in Yukon is a divisive issue because views on whether it is appropriate vary across the territory. Given regional differences regarding whether local communities support or oppose roadside grizzly bear hunting, this issue is not easily resolved at the territorial level. Rather, the issue may be best addressed at a local level through the *Yukon Wildlife Act* regulation change proposal process, where supported by local communities. Ultimately, a deeper understanding of the cultural values and human attitudes Yukoners and transboundary community members have towards roadside hunting of

grizzly bears may be worth pursuing as a means to provide further insight into the issue (see Goal 7). Additionally, an assessment of whether roadside hunting of grizzly bears in local areas constitutes a conservation issue may be required, where local harvest levels suggest a concern.

Non-resident hunting is also a potentially contentious issue. For some, non-resident harvest conflicts with their beliefs and values, while others note the economic benefits of non-resident harvest to local communities. There are also gaps in understanding; many feel that trophy and non-resident hunting are the same or that non-resident hunting is poorly managed. Social science and other approaches (see Goal 7) may be helpful in defining the scope of the issue and future direction in Yukon.

### Recommended Actions

- 5.1** Develop and implement an annual allowable harvest of grizzly bears in each Yukon bear management unit
- 5.2** Ensure Indigenous cultural values are considered in harvest management decisions
- 5.3** Consider local road-side grizzly bear hunting closures where desired by local communities through the *Yukon Wildlife Act* regulation change process
- 5.4** Collaboratively develop grizzly bear harvest education and ethics training materials
- 5.5** Update the science-based guidelines for managing grizzly bear mortality
- 5.6** Increase public awareness of grizzly bear harvest management

Within each BMU, total grizzly bear mortality is calculated every three years. Once resident harvest and other sources of mortality are accounted for, non-resident (outfitter) harvest



quotas are established for the next 3-year cycle. Outfitter quotas are adjusted as needed, to ensure sustainable mortality rates are not exceeded (e.g. if a BMU experiences a high number of DLP kills, the outfitter quota will be reduced accordingly). All non-resident hunters must be guided by a registered outfitter.

Non-resident harvest is managed through a sex-ratio system; outfitters are assigned different female and male quotas, in keeping with sustainable mortality rates. This system was implemented in 2005, after concerns were raised about overharvest (particularly for females)

under the previous regime. With the current system, outfitters can continue harvesting any unused male quota, once their female quota has been filled. However, if total harvest exceeds the sustainable female rate, female quotas are reduced to zero until enough female bears are “paid back” during subsequent three-year cycles. Quotas are tracked through mandatory harvest reporting and biological submissions. Since its implementation, the sex-ratio system appears to have reduced female grizzly bear mortality.

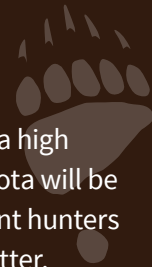
## Yukon’s outfitter quota system

In Yukon, grizzly bear mortality is regulated within Bear Management Units (BMU’s). BMU’s generally align with Outfitting Concession Areas (although some do not contain outfitting concessions), and some are split into sub-units to distribute harvest pressure. In a given BMU, sustainable grizzly bear mortality can include up to 2% of the female population and 6% of the male population (or 4% of the total population). Sustainable mortality rates are based on population models completed in the late 1980’s. These rates account for all reported sources of mortality, including defence of life or property (DLP) kills, vehicle kills, and non-resident and resident harvest.

Within each BMU, total grizzly bear mortality is calculated every three years. Once resident harvest and other sources of mortality are accounted for, non-resident (outfitter) harvest quotas are established for the next three-year cycle. Outfitter quotas are adjusted as needed, to ensure sustainable mortality rates are not

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**Goal 6:** Foster safe grizzly bear viewing**Intent**

Safely viewing grizzly bears in the wild is likely one of the most memorable wildlife experiences for people living in or visiting the territory—grizzly bears garner attention. Such experiences may be beneficial to grizzly bear conservation in that they can foster appreciation and respect for grizzly bears, which helps to achieve Goal 1 of this plan. Commercial viewing of grizzly bears may also create economic benefits to the territory through nature-based tourism. Clearly, some visitors to Yukon are drawn here by the opportunity to view iconic wildlife in remote landscapes, and tourist operators and communities derive benefits from wildlife viewing opportunities that include grizzly bears.

However, viewing of grizzly bears may have unintended negative consequences. Foremost among these is the concern that some less desirable wildlife viewing practices (such as feeding grizzly bears) can desensitize grizzly bears to humans and associate human interactions with positive rewards, such as food. Food-conditioning of grizzly bears has a high risk of directly leading to human-grizzly bear conflicts that may endanger the lives of people and grizzly bears. In addition, there is concern that less desirable wildlife viewing practices may disturb the grizzly bears being viewed, with potentially negative consequences to the survival of these individual grizzly bears; however, the potential impact of human disturbance caused by grizzly bear viewing is not well understood.



Photo: Peter Mather

The intent of this goal is to balance the public interest and the positive benefits of grizzly bear viewing in Yukon with the need to ensure that such activities do not contribute to the food-conditioning of grizzly bears, or cause undue stress or other negative impacts to the grizzly bears being viewed. There appears to be growing interest in grizzly bear viewing and concern about some viewing practices having negative consequences on bears or local communities.

Central to achieving this goal is the need to better understand—in a Yukon context—what constitutes safe and respectful viewing of grizzly bears for all people. This is key because guidelines and standards on how best to view grizzly bears will, in part, need to draw from what is considered a respectful way to view grizzly bears in Yukon. Traditional knowledge and human dimensions research (see Goal 7) can help define respectful practices for grizzly bear viewing in Yukon and the social acceptability of potential management directions, such as guidelines for individuals and industry standards.

The extent of commercial and non-commercial grizzly bear viewing in Yukon is not well known, however most of it is likely opportunistic and non-commercial. Commercial grizzly bear viewing occurs when people pay tourist operators to help guide them to view grizzly bears. Most commercial grizzly bear viewing in Yukon likely occurs as part of broader wildlife- or nature-based activities offered by tourist operators, aspects of which are largely unregulated.

Also key to implementing this goal is to better understand how much commercial grizzly bear viewing occurs in the territory and where and when these activities occur. This information will help determine the relative need for industry standards to guide operations, and research on the potential impacts that they have on grizzly bears and the Yukon economy. Industry standards for commercial bear viewing should be developed and implemented to ensure that tourist operators are following best practices. Industry standards should be developed in conjunction with relevant tourist operators, perhaps informed by similar standards developed elsewhere.

Finally, key messages regarding guidelines for safely and respectfully viewing grizzly bears need to be consistent among relevant agencies and organizations.

### **Recommended Actions**

- 6.1** Better understand the scope of grizzly bear viewing in Yukon and its impacts
- 6.2** Collaboratively develop industry standards for commercial wildlife viewing that includes grizzly bears
- 6.3** Develop guidelines for safely viewing grizzly bears
- 6.4** Reduce potential harassment of grizzly bears during wildlife viewing

**Goal 7:** Better understand human dimensions of grizzly bear conservation**Intent**

Understanding what drives or influences human perspectives towards actions needed to support grizzly bear conservation can help ensure that the proposed actions are socially acceptable or identify ways to increase social acceptance of these actions. Without social acceptability, management interventions aimed at improving grizzly bear conservation are not likely to be successful over the long-term.

The academic fields of conservation social science and human dimensions of wildlife strive to apply social science methodologies to help broaden our understanding of the cultural and societal aspects of wildlife management and conservation. Typically, such research seeks to explicitly understand variation in the knowledge, beliefs, values, perceptions, and attitudes surrounding a specific wildlife management issue, and the factors that may be responsible for that variation. Moreover, applied studies can

help better understand and predict the level of social acceptance various proposed management actions may have. These studies can then provide an important indicator to wildlife managers as to what approaches are likely to yield favourable results with public support and which may not.

New information obtained through applied social science studies should then be used to foster improved grizzly bear conservation in Yukon, following an adaptive management framework.

**Recommended Actions**

- 7.1** Improve understanding of human dimensions related to grizzly bears and their conservation
- 7.2** Incorporate understanding of human dimensions into grizzly bears conservation actions



## Human Dimensions of Wildlife Management

Traditionally, wildlife management has focused on wildlife and wildlife habitats, however this focus ignores the reality that management or conservation actions operate within and are influenced by people's social, cultural, and economic realities. This acknowledgement of the human influences on wildlife management is called "human dimensions of wildlife management". Increasingly wildlife management practitioners are recognizing that successful wildlife management requires addressing and incorporating both the wildlife and human dimensions.

This human dimension that influences wildlife management is a broad and complex topic. In general, the focus is on:

- How humans value wildlife?
- How humans want wildlife to be managed?
- How humans affect, or are affected by, wildlife and wildlife management decisions?



While this renewed focus on the human component of human-wildlife interactions does present a more human-centred perspective, it is not intended to diminish the importance or intrinsic value, of wildlife and their habitats. In fact, it represents a refocusing on acknowledging that management or conservation actions are inherently about managing, guiding or influencing human actions, and doing so requires an understanding of the social or cultural context for those actions.



# **SECTION C**

## PUTTING THE PLAN INTO ACTION



Photo: Peter Mather



## THE PRECAUTIONARY PRINCIPLE AND ADAPTIVE MANAGEMENT

*Grizzly bears are not resilient to population declines, and their management often occurs under uncertainty, where information on the animals and their response to various human actions is lacking. Given the risk inherent in undertaking conservation with incomplete information, and uncertainty in population-level responses to management interventions, implementation of this plan should be based on the precautionary principle and undertaken within an adaptive management framework.*

Briefly, the precautionary principle advocates for a risk management approach when applied to wildlife conservation. Most environmentally-focused definitions of the precautionary principle note that when the health of the environment is at risk, managers should not wait for scientific certainty to proactively minimize risk to the environment. Applied to grizzly bear conservation, this implies that we cannot wait for perfect knowledge of grizzly bear populations or behaviour before making decisions. Decisions will need to be made using the best available knowledge, acknowledging that as knowledge improves, decisions may need to be revised. For example, total allowable harvest rates for current Bear Management Units (BMUs) should be established, acknowledging that the BMU may not be the most appropriate population unit, and population estimates may be dated. As new information becomes available, the units and sustainable rates may need to be adjusted.

Adaptive management is often characterized as “learning by doing”. An adaptive approach to management entails closely monitoring

the impact of interventions and actions and modifying the management approach based on the desirability of the observed outcomes. Using new information as it becomes available is part of an adaptive approach. Adaptive management is a framework for managing when knowledge of the system is incomplete and outcomes are uncertain.

### Implementation Measures

For the most part, this plan supports a flexible approach to implementing these goals, rather than being overly prescriptive. Priorities, resource constraints, and local preferences, will all factor into how to most appropriately realize the goals in this plan, given social, cultural, and economic context and realities. A wide range of approaches and tools can be applied to implement the goals of this plan, and the choice of which one(s) to use will be dependent on management interest and the above considerations. This plan explicitly recognizes that a mixture of mitigation, stewardship, and regulatory measures are needed to conserve grizzly bears throughout the entire Yukon.

## Working Together

Implementing this plan and achieving its vision will require coordination and cooperation among governments, boards and councils, and municipalities, as well as industry and individuals.

Values, perceptions, and approaches related to grizzly bear conservation differ throughout the territory. Input and guidance from First Nations, Inuvialuit, and local communities plays a key role in the local and regional conservation of grizzly bears. As a result, some actions outlined within this conservation plan may have different levels of priority in different regions, communities or Traditional Territories.

In order to facilitate implementation of this plan at both a regional and territorial level, Indigenous governments, mandated boards and councils, and the Government of Yukon should work collaboratively to develop Traditional Territory-specific prioritizations for the actions outlined in this plan. These implementation tables at the Traditional Territorial level will provide guidance by Indigenous people and local communities on how best to prioritize implementation of this plan at the local level, given the diversity in ecological, social, and political contexts across Yukon.

In addition to working together to set priorities, the following recommendations address the value in improving communication among those charged with grizzly bear conservation and improving coordination between them. These recommendations are intended to encourage building capacity, sharing knowledge and resources, and working in a coordinated fashion toward the vision and goals articulated in this plan.

Specific recommendations include:

- Develop Traditional Territory-specific priorities for the implementation of this plan.
- Develop and implement complementary regulations, policies, guidelines, and standards, aimed at the conservation of grizzly bears and their habitats.
- Communicate on reviews of land use plans and key development proposals that may impact grizzly bear conservation, to the extent possible.
- Communicate better on the rationale and regulations for grizzly bear harvest.
- Coordinate cooperative and complementary education and outreach programs regarding grizzly bears.
- Develop and implement cooperative and complementary grizzly bear monitoring programs.
- Develop and implement coordinated public communication strategies and messages.
- Develop and implement programs to share expertise and build capacity aimed at improving grizzly bear conservation.



## Prioritized Implementation Table and Timeline

| Goal   Actions                                                               |                                                                                                                                                                                                   | Suggested territorial priorities | Potential Performance Indicators                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal 1:</b> Foster increased understanding and respect for grizzly bears. |                                                                                                                                                                                                   |                                  |                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>1.1</b>                                                                   | Promote a cultural connection to grizzly bears in all Yukoners                                                                                                                                    | 1                                | <ul style="list-style-type: none"> <li>Stories with, knowledge about, and experiences with grizzly bears increasingly shared through diverse cultural media</li> </ul>                                                                                                                                                                                                                   |
| <b>1.2</b>                                                                   | Promote bear awareness and human safety                                                                                                                                                           | 1                                | <ul style="list-style-type: none"> <li>Consistent messaging about bear awareness and safety developed and made publicly available</li> </ul>                                                                                                                                                                                                                                             |
| <b>1.3</b>                                                                   | Increase awareness of Indigenous cultural connections to grizzly bears                                                                                                                            | 1                                | <ul style="list-style-type: none"> <li>Cultural knowledge incorporated into grizzly bear education materials</li> </ul>                                                                                                                                                                                                                                                                  |
| <b>1.4</b>                                                                   | Increase knowledge and awareness of grizzly bear behaviour and ecological requirements                                                                                                            | 3                                | <ul style="list-style-type: none"> <li>Increased collaboration between agencies on grizzly bear key messages for bear educational materials</li> <li>Messaging about grizzly bear way of life and ecological requirements developed and delivered</li> </ul>                                                                                                                             |
| <b>Goal 2:</b> Take care of the land that grizzly bears require              |                                                                                                                                                                                                   |                                  |                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>2.1</b>                                                                   | Adopt an ecosystem-based approach to grizzly bear conservation that considers interactions with other species and habitats, particularly food species such as moose, caribou, salmon, and berries | 1                                | <ul style="list-style-type: none"> <li>Whole ecosystem approaches specifically addressed in grizzly bear science-based species guidelines, and land use guidelines</li> <li>Grizzly bears considered in the management of their food sources, such as salmon, ungulates, and berries</li> <li>Climate change impacts on grizzly bears incorporated into conservation planning</li> </ul> |
| <b>2.2</b>                                                                   | Recognize grizzly bears as a valued ecosystem component during environmental assessment                                                                                                           | 1                                | <ul style="list-style-type: none"> <li>Grizzly bears identified as a Valued Ecosystem Component</li> <li>Development thresholds incorporating cumulative effects impacts on grizzly bear habitat established</li> <li>Access management considered as a part of grizzly bear conservation</li> </ul>                                                                                     |
| <b>2.3</b>                                                                   | Identify important grizzly bear habitat                                                                                                                                                           | 1                                | <ul style="list-style-type: none"> <li>All sources of knowledge used to map important grizzly bear habitat</li> <li>Maps of important grizzly bear habitat distributed and made widely available</li> </ul>                                                                                                                                                                              |

|            |                                                                                                                                                      |   |                                                                                                                                                                                                                                                                                                                                                         |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>2.4</b> | Consider grizzly bears in land allocations and land use planning, including the cumulative effects of land developments and furthering road networks | 1 | <ul style="list-style-type: none"> <li>• Land allocations not issued in important grizzly bear habitat</li> <li>• Grizzly bears considered in regional land use plans</li> <li>• Grizzly bear habitat connectivity included in standardized mitigation measures</li> <li>• Grizzly bears considered in recreational land use and development</li> </ul> |
| <b>2.5</b> | Develop land use guidelines for the conservation of grizzly bear habitat                                                                             | 2 | <ul style="list-style-type: none"> <li>• Standardized grizzly bear mitigation measures identified in land use guidelines</li> <li>• Best practices for pre- and post-disturbance monitoring of development activity impacts on grizzly bears completed, and used to inform adaptive management</li> </ul>                                               |
| <b>2.6</b> | Ensure grizzly bear-related permitting conditions for land use activities are implemented and enforced                                               | 2 | <ul style="list-style-type: none"> <li>• Compliance with permit conditions related to grizzly bear mitigations regularly assessed during development site inspections</li> <li>• Review of current legislative protections for grizzly bear dens completed, and changes proposed, if required</li> </ul>                                                |
| <b>2.7</b> | Support the establishment and management of areas where grizzly bears are protected from land development, such as road creation                     | 3 | <ul style="list-style-type: none"> <li>• Areas identified as potential grizzly bear refugia</li> <li>• Use of existing SMAs (habitat protection areas, parks, etc.) considered for grizzly bear conservation</li> </ul>                                                                                                                                 |

| <b>Goal 3: Improve future decision-making by acquiring better knowledge about grizzly bears</b> |                                                                                                                      |   |                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>3.1</b>                                                                                      | Improve use of traditional knowledge and local knowledge when making conservation decisions related to grizzly bears | 1 | <ul style="list-style-type: none"> <li>Increased availability of traditional and local knowledge for future management discussions</li> <li>Use and interpretation of traditional knowledge is done in respectful and appropriate manner</li> </ul> |
| <b>3.2</b>                                                                                      | Update grizzly bear population status information at management unit levels                                          | 1 | <ul style="list-style-type: none"> <li>Population status information for grizzly bears updated and improved</li> </ul>                                                                                                                              |
| <b>3.3</b>                                                                                      | Evaluate the appropriate scale of management units for grizzly bears                                                 | 1 | <ul style="list-style-type: none"> <li>Yukon grizzly bear management units reviewed and updated, as appropriate</li> </ul>                                                                                                                          |
| <b>3.4</b>                                                                                      | Develop and implement a monitoring plan for grizzly bears                                                            | 2 | <ul style="list-style-type: none"> <li>Yukon grizzly bear monitoring plan established, including considerations of methods and priorities</li> <li>Biological sample collection from hunted or killed grizzly bears expanded</li> </ul>             |
| <b>3.5</b>                                                                                      | Innovate and look for new ways to monitor grizzly bears                                                              | 3 | <ul style="list-style-type: none"> <li>New and innovative ways of monitoring grizzly bears explored, developed, and evaluated</li> </ul>                                                                                                            |

| <b>Goal 4: Minimize human-grizzly bear conflicts</b> |                                                                                                                                                          |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>4.1</b>                                           | Develop community-based approaches to minimize and address human-grizzly bear conflict that are proactive, adaptive, and respect conservation principles | 1 | <ul style="list-style-type: none"> <li>• Yukon communities are “Bear Smart”</li> <li>• Human-grizzly bear conflict messaging and education information updated with fresh, consistent message, and delivered</li> <li>• Conflict reduction activities reviewed and adapted (e.g., human-grizzly bear conflict response matrix reviewed and revised as needed, legislation revised as needed)</li> <li>• Community-based human-grizzly bear conflict management plans collaboratively developed</li> </ul> |
| <b>4.2</b>                                           | Maintain and coordinate efforts to reduce grizzly bear attractants                                                                                       | 1 | <ul style="list-style-type: none"> <li>• Effective waste management plans implemented</li> <li>• Less resources spent on dealing with conflict situations related to attractants</li> <li>• Less DLP kills related to poor attractants management</li> <li>• More tools available to manage attractants (education, increased availability of bear proof garbage cans in all communities, effective bylaws and legislative tools)</li> </ul>                                                              |
| <b>4.3</b>                                           | Promote the reduction of preventable Defence of Life or Property (DLP) kills                                                                             | 1 | <ul style="list-style-type: none"> <li>• Improved public understanding of the definition of defence of life or property and the investigation process</li> <li>• Accurate reporting of defence of life or property kills</li> <li>• Decreased rate of grizzly bears killed in defence of life or property</li> </ul>                                                                                                                                                                                      |
| <b>4.4</b>                                           | Implement the use of hazard assessments to minimize human-grizzly bear conflict                                                                          | 1 | <ul style="list-style-type: none"> <li>• Hazard assessments completed</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>4.5</b>                                           | Support collaborative and accessible information-gathering about human-grizzly bear conflict                                                             | 2 | <ul style="list-style-type: none"> <li>• Human-grizzly bear conflict incident tracking improved and maintained</li> <li>• Public release of information occurs regularly</li> </ul>                                                                                                                                                                                                                                                                                                                       |



| Goal 5: Ensure grizzly bear harvest is sustainable |                                                                                                                                                          |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.1                                                | Develop and implement an annual allowable harvest of grizzly bears in each Yukon bear management unit                                                    | 1 | <ul style="list-style-type: none"> <li>• Annual allowable grizzly bear harvest rate established for each bear management unit</li> <li>• Grizzly bear harvest defensible on national and international stage</li> <li>• Grizzly bear harvest is sustainable after consideration of all other sources of mortality</li> </ul>                                                                                                                                       |
| 5.2                                                | Ensure Indigenous cultural values are considered in harvest management decisions                                                                         | 1 | <ul style="list-style-type: none"> <li>• Indigenous cultural values considered when developing grizzly bear harvest management decisions</li> </ul>                                                                                                                                                                                                                                                                                                                |
| 5.3                                                | Consider local grizzly bear roadside hunting closures where desired by local communities through the <i>Yukon Wildlife Act</i> regulation change process | 1 | <ul style="list-style-type: none"> <li>• Yukon-wide definition of “road-side hunting” for grizzly bears determined and consistently applied</li> <li>• First Nations, mandated boards and councils, and other stakeholders engaged on considerations for road-side grizzly bear hunting regulation changes</li> <li>• Where locally supported, regulation changes proposed and reviewed through the <i>Yukon Wildlife Act</i> regulation change process</li> </ul> |
| 5.4                                                | Collaboratively develop grizzly bear harvest education and ethics training materials                                                                     | 2 | <ul style="list-style-type: none"> <li>• Grizzly bear harvest training materials developed collaboratively, and in consideration of local values</li> <li>• Respectful grizzly bear hunting promoted</li> </ul>                                                                                                                                                                                                                                                    |
| 5.5                                                | Update the science-based guidelines for managing grizzly bear mortality                                                                                  | 2 | <ul style="list-style-type: none"> <li>• Science-based guidelines for managing grizzly bears in Yukon updated</li> <li>• Science-based guidelines used in concert with all other sources of knowledge to inform management decisions</li> </ul>                                                                                                                                                                                                                    |
| 5.6                                                | Increase public awareness of grizzly bear harvest management                                                                                             | 3 | <ul style="list-style-type: none"> <li>• Educational materials explaining grizzly bear harvest management approach completed and distributed</li> </ul>                                                                                                                                                                                                                                                                                                            |

| <b>Goal 6: Foster grizzly bear viewing that does not endanger humans or bears</b> |                                                                                                        |   |                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>6.1</b>                                                                        | Better understand the scope of grizzly bear viewing in Yukon and its impacts                           | 1 | <ul style="list-style-type: none"> <li>Improved understanding of how much organized and opportunistic grizzly bear viewing is occurring in Yukon, and where it is happening</li> <li>Assessment of economic impacts of grizzly bear viewing completed</li> <li>Improved understanding of impacts of grizzly bear viewing on grizzly bears</li> </ul> |
| <b>6.2</b>                                                                        | Collaboratively develop industry standards for commercial wildlife viewing that includes grizzly bears | 2 | <ul style="list-style-type: none"> <li>Operator conditions and industry standards for commercial wildlife viewing developed and implemented, including viewing guide training</li> </ul>                                                                                                                                                             |
| <b>6.3</b>                                                                        | Develop guidelines for safely viewing grizzly bears                                                    | 2 | <ul style="list-style-type: none"> <li>Best practices for respectful grizzly bear viewing developed and revised, as needed</li> </ul>                                                                                                                                                                                                                |
| <b>6.4</b>                                                                        | Reduce potential harassment of grizzly bears during wildlife viewing                                   | 3 | <ul style="list-style-type: none"> <li>Definition of “wildlife harassment” within Yukon legislation and regulations improved</li> <li>Enforcement of Yukon legislation/ regulations related to wildlife harassment during grizzly bear viewing strengthened</li> </ul>                                                                               |
| <b>Goal 7: Better understand human dimensions of grizzly bear conservation</b>    |                                                                                                        |   |                                                                                                                                                                                                                                                                                                                                                      |
| <b>7.1</b>                                                                        | Improve understanding of human dimensions related to grizzly bears and their conservation              | 2 | <ul style="list-style-type: none"> <li>Social science research to improve understanding of human dimensions related to grizzly bears (e.g., human beliefs related to grizzly bears, social acceptability for management actions, effectiveness of educational programs) completed</li> </ul>                                                         |
| <b>7.2</b>                                                                        | Incorporate understanding of human dimensions into grizzly bears conservation actions                  | 2 | <ul style="list-style-type: none"> <li>Information related to human dimensions towards grizzly bears incorporated into actions and decisions</li> <li>Increased public support for conservation actions and decisions</li> </ul>                                                                                                                     |





# SECTION D

## PLAN REVIEW



Photo: Government of Yukon



# IMPLEMENTATION

*The evaluation of progress on the specific actions outlined in this plan will consist of two levels of review:*

- 1 Implementation action tracking and review.** Yearly tracking of progress on implementation actions will be maintained throughout the life of this plan. A full implementation report will be completed every five years. Assessment of progress on specific implementation actions will rely on the identified potential performance indicators. Following completion of the five-year implementation report, the plan action items and performance indicators table may be updated, as appropriate.
- 2 Plan Review.** A full review of the plan should be conducted within 10 years, unless otherwise agreed to by all management partners. This review will evaluate the progress towards achieving the vision, as well as provide an opportunity for ensuring the vision and long-term direction outlined in this plan are still relevant and consistent with overall wildlife management direction in the territory.

## Roles and Responsibilities

The Government of Yukon will be responsible for yearly tracking of progress on action items. Information will be requested from other management partners, as required.

The Government of Yukon will be responsible for reviewing and developing the five-year implementation report.

The full plan review will be completed in collaboration with all management partners, including First Nations, Inuvialuit, renewable resource councils, and other management partners.





# **SECTION E**

## BACKGROUND INFORMATION



Photo: Government of Yukon

## POPULATION, CONSERVATION, AND LEGAL STATUS OF GRIZZLY BEARS

*An estimated 200,000 grizzly bears exist, with about half of those in Russia, and 33,000, 26,000, and 15,000 estimated in Alaska, Canada, and Europe, respectively. Grizzly bears are widely distributed and currently occur in 45 countries, with an area of occupancy of about 24,000,000 km<sup>2</sup>—roughly equivalent to the size of North America. The global range was formerly much larger, and has declined by approximately 50% since 1800.*

Viable, connected populations of grizzly bears largely occur in rugged areas along the North Pacific coast, interior cordilleras, or in the expansive north, where human presence on the landscape is comparatively minimal. The number of grizzly bears in Alaska, Yukon, Northwest Territories, British Columbia, and much of Russia, is likely stable over recent times, and this is the stronghold for the species globally, harbouring over 85% of the global population.

Areas where human presence is greater have experienced local extirpation of grizzly bears, or, in some instances, small remnant populations remain through intensive conservation efforts. For instance, the last known grizzly bear from the Canadian prairies was observed in 1900, and that from California, and Mexico 1922 and 1964, respectively. Very small, isolated populations of grizzly bears persist in the mountains of Spain, France, Italy, Poland, Iran, Iraq, Mongolia, North Korea, and the contiguous United States, for example, and are undoubtedly fragments of former populations that were much larger and less isolated. Currently, the International Union for the Conservation of Nature (IUCN) recognizes 44 isolated, extant subpopulations of grizzly bears, and their future is likely reliant on intensive conservation efforts. Several other putative subpopulations are extinct. None of these extinct or extant subpopulations occur in Yukon.

Concomitant with the fact that, at the range-wide scale, a large number of grizzly bears remain genetically connected across an enormous distributional range with relatively few imminent threats, the 2017 global conservation status rank provided by the IUCN is LEAST CONCERN. Species assessed as LEAST CONCERN are categorized at the lowest risk of extinction, and not threatened or endangered. NatureServe ranks grizzly bears globally as G4G5, meaning that they are APPARENTLY SECURE to SECURE at the range-wide level.

The conservation status of grizzly bears in Canada mirrors that at the range-wide (global) scale, with populations apparently secure in parts of the country, and endangered or extinct in others. An estimated 25,000—27,000 grizzly bears occur in Canada; about 85% of them are found in British Columbia and Yukon, with smaller populations occurring east toward Hudson Bay. Specifically, grizzly bears are ENDANGERED in Alberta and EXTINCT east of Hudson's Bay and across the prairies. They are increasing in Nunavut and Manitoba (see Appendix C).

COSEWIC (Committee on the Status of Endangered Wildlife in Canada) has consistently assessed grizzly bears in north-western Canada as a species of SPECIAL CONCERN, with assessments occurring in 2012, 2002, 2000, and 1991. SPECIAL CONCERN species do not meet formal criteria

for THREATENED or ENDANGERED, however they are also not considered NOT AT RISK. SPECIAL CONCERN signals that these species are close to meeting the criteria for THREATENED, and due to their biological characteristics and threats they should be carefully managed to ensure they do not become so.

Reasons for designation as SPECIAL CONCERN by COSEWIC in 2012 are as follows:

*“The global distribution of this large-bodied carnivore has declined by over 50% since the 1800s, with western Canada representing a significant core of the current North American range. A habitat generalist, its distribution and relative abundance in the absence of humans is largely driven by habitat productivity and seasonality. It is highly sensitive to human disturbance and is subject to high mortality risk in areas of human activity and where roads create access. Population estimates in much of the range are highly uncertain; the Canadian population is estimated at 26,000, but the number of mature individuals is uncertain and could be close to 10,000. While there is no evidence of a decline in the overall population during the past 20 years and increasing numbers of records indicating some range expansion in the north, a number of populations in the southern extent of its range in Alberta and southern BC are known to be declining and there are concerns about unsustainable mortality rates there and in parts of Yukon. There is strong evidence of genetic fragmentation in the southern parts of its range where some populations are increasingly isolated and subject to demographic stochasticity. Their poor condition in some parts of the range, combined with their naturally low reproductive rates and increasing pressures of resource extraction and cumulative impacts in currently intact parts of the range, heighten concern for this species if such pressures are not successfully reversed.”*

The NatureServe national rank for grizzly bears in Canada is N3N4 (vulnerable—apparently secure), which largely reflects the national status assessment of SPECIAL CONCERN by COSEWIC.

It is estimated that 6,000—7,000 grizzly bears live in Yukon; however, this is an estimate with much uncertainty. Estimating grizzly bear populations through direct censuses or using indirect measures to estimate the densities in specific habitats or ecological regions is exceedingly difficult and complexities in technical methodologies or environmental variability often reduce confidence in estimates. With two exceptions, measures of grizzly bear abundance in Yukon are based on indirect measures, which may now be outdated. Specifically, expert knowledge was used in the late 1980s to assign an estimated density of grizzly bears to each of 31 Bear Management Units in Yukon (including two in the Inuvialuit Settlement Region). More recently, modern field studies using DNA mark-recapture techniques have been employed to estimate the number of bears on Yukon’s North Slope and in a portion of the Southern Lakes region.

Given the difficulty in obtaining a series of territorial-wide estimates of grizzly bear population size that can be used to measure population trend and harvest sustainability, other information on the status of bear population is used. Wildlife managers in Yukon often use the number and percentage of adult females harvested over time as an indicator of the sustainability of the harvest. The best available information suggests that grizzly bears in most Bear Management Units in Yukon are relatively stable; however, similar to at the global or national scale, there are areas of the territory where total grizzly bear mortality may be unsustainable, or closely approach such. Some Bear Management Units in the Kluane and Southern Lakes regions, for example, are areas of conservation concern because

total female mortality may be unsustainable. Elsewhere in Yukon, however, available data suggest that grizzly bear populations are stable.

Threats to grizzly bear populations are varied; however, as a habitat and diet generalist, grizzly bears can persist at a variety of environmentally-determined densities in the absence of additive mortality by humans. While seasonal food availability and intraspecific competition may be important natural limiting factors to population growth for regional grizzly bear populations, the main anthropogenic threat to grizzly bear populations is human presence on the landscape. Human incursion into grizzly bear habitat, such as residential and industrial developments and roads, greatly increases the likelihood of human-grizzly bear conflicts, and when combined with greater access by hunters, this increases the total mortality of grizzly bears in a region.

Many grizzly bears seasonally rely on migratory salmon and/or caribou populations as critical food items, so their productivity and survival may be influenced by the annual variability or long-term trends in the abundance of these food sources. Abundance of food may become a threat to grizzly bears when food abundance is negatively impacted by humans, such as by climate change. Human impacts to migratory salmon and caribou populations, or seasonal berry abundance, may have long-term detrimental impacts on regional grizzly bear populations.

Because grizzly bears have low productivity, populations grow slowly and they have low resilience to population reductions, which if not reversed, can lead to long-term declines, and, in some cases, local extirpations. Quite simply, when mortality continually exceeds reproduction grizzly bear populations will decline.

Trade in wildlife or their parts is globally regulated by the Convention on the International Trade in

Endangered Species (CITES). All bears, including grizzly bears, are listed on APPENDIX II of CITES, meaning that trade is allowed, but regulated and monitored. Permits are legally required by both exporting and importing countries for specimens that cross international borders. Permits are intended to confirm the origin of the specimen(s) and also indicate that trade is not detrimental to the source population. Concern over the international trade of all bear species is largely in response to the illegal sale of bear gall bladders. Other than CITES, there is no other international law that directly affects grizzly bears or their management at a global scale.

*The Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act* (WAPRIITA) is federal legislation that implements CITES in Canada. Grizzly bears or their parts exported from, or imported to, Canada require CITES permits as per WAPRIITA.

On June 13, 2018, grizzly bears were listed under the federal *Species at Risk Act* (SARA) as SPECIAL CONCERN, affording the species the conservation actions legally required under SARA. With grizzly bears now listed under the SARA, the main legal action required will be that the federal Minister will need to produce a national management plan within three years of legal listing describing how the threats to grizzly bears will be addressed to ensure that they do not become further endangered.

Grizzly bears in Yukon are classified as a BIG GAME species under the *Yukon Wildlife Act*, and managed accordingly with respect to legal and regulatory requirements for big game species in the territory. The *Yukon Wildlife Act* provides provisions for listing species or populations as SPECIALLY PROTECTED, which can protect them from harvest by licensed hunters, if warranted. No populations of grizzly bears in Yukon are currently listed as SPECIALLY PROTECTED.





# **SECTION F**

## SUPPLEMENTAL INFORMATION



Photo: Government of Yukon

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## APPENDIX A

### Composition of the Yukon Grizzly Bear Conservation and Management Plan Working Group

#### Working Group Members

|                                |                                          |
|--------------------------------|------------------------------------------|
| <b>Ron Chambers</b>            | Yukon Fish and Wildlife Management Board |
| <b>Thomas Jung (Co-Chair)</b>  | Yukon Department of Environment          |
| <b>Jim King</b>                | Yukon Fish and Wildlife Management Board |
| <b>Nicole McCutchen</b>        | Yukon Department of Environment          |
| <b>Russel Osborne</b>          | Yukon Department of Environment          |
| <b>Frank Thomas (Co-Chair)</b> | Yukon Fish and Wildlife Management Board |

#### Technical, Planning, and Administrative Support

|                           |                                          |
|---------------------------|------------------------------------------|
| <b>Saleem Dar</b>         | Environment and Climate Change Canada    |
| <b>Darcy Doran-Myers</b>  | Yukon Department of Environment          |
| <b>Tyler Kuhn</b>         | Yukon Department of Environment          |
| <b>Ramona Maraj</b>       | Yukon Department of Environment          |
| <b>Jodie Pongracz</b>     | Yukon Department of Environment          |
| <b>Michelle Sicotte</b>   | Yukon Department of Environment          |
| <b>Julie Thomas</b>       | Yukon Department of Environment          |
| <b>Tecla Van Bussel</b>   | Yukon Fish and Wildlife Management Board |
| <b>Ryan van der Marel</b> | Yukon Department of Environment          |
| <b>Graham Van Tighem</b>  | Yukon Fish and Wildlife Management Board |

#### Social Science Advisors

|                      |                            |
|----------------------|----------------------------|
| <b>Douglas Clark</b> | University of Saskatchewan |
| <b>Aimee Schmidt</b> | University of Saskatchewan |

## APPENDIX B

Chronology of the meetings and workshops of the YGBCMP Working Group. All regular working group (WG) meetings were held in Whitehorse at the offices of the YFWMB.

| Date                     | Event / Location                          | Notes                                                                                                                                                                                                                                                                                                              |
|--------------------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>October 1, 2015</b>   | Regular WG meeting                        | Inaugural WG Meeting                                                                                                                                                                                                                                                                                               |
| <b>October 8, 2015</b>   | Regular WG meeting                        | Presentation to WG on: <ul style="list-style-type: none"> <li>• grizzly bear population information (presenter: R. Maraj);</li> <li>• national/international status of grizzly bears (presenter: T. Jung); and</li> <li>• human carnivore conflicts (presenters: R. Maraj, R. Osborne &amp; K. Knutson)</li> </ul> |
| <b>November 9, 2015</b>  | Regular WG meeting                        | Presentation to WG on: <ul style="list-style-type: none"> <li>• grizzly bear population information and distribution in Yukon (presenter: R. Maraj)</li> </ul>                                                                                                                                                     |
| <b>November 19, 2015</b> | Regular WG meeting                        | Presentation to WG on: <ul style="list-style-type: none"> <li>• roadside bear hunting (presenter: G. Van Tighem)</li> </ul>                                                                                                                                                                                        |
| <b>December 11, 2015</b> | Special presentation to WG                | Presentation to WG on: <ul style="list-style-type: none"> <li>• local and regional scale societal dynamics in grizzly bear conservation (presenter: D. Clark)</li> <li>• assessing the effects of food availability in bear control kills in Yukon (presenter: A. Suarez-Esteban)</li> </ul>                       |
| <b>December 18, 2015</b> | Special presentation to WG                | Presentation to WG on: <ul style="list-style-type: none"> <li>• how grizzly bears are considered in environmental assessment and land use planning (presenters: J. Ryder &amp; R. Cherepak)</li> </ul>                                                                                                             |
| <b>January 11, 2016</b>  | Regular WG meeting                        | Presentation to WG on: <ul style="list-style-type: none"> <li>• how Conservation Officer Services Branch deals with bear occurrences in Yukon (presenter: R. Osborne)</li> </ul>                                                                                                                                   |
| <b>January 26, 2016</b>  | Regular WG meeting                        | Presentation to WG on: <ul style="list-style-type: none"> <li>• Whitehorse bear working group (presenters: H. Ashthorn, M. Humes)</li> </ul>                                                                                                                                                                       |
| <b>February 5, 2016</b>  | Regular WG meeting                        |                                                                                                                                                                                                                                                                                                                    |
| <b>March 1, 2016</b>     | Regional workshop<br>(Pelly Crossing, YT) | Discussion with participants from Selkirk First Nation, Selkirk RRC, Carmacks RRC, Mayo District RRC                                                                                                                                                                                                               |
| <b>March 22, 2016</b>    | Regional workshop<br>(Old Crow, YT)       | Discussion with participants from Vuntut Gwitchin Government, North Yukon RRC                                                                                                                                                                                                                                      |
|                          |                                           |                                                                                                                                                                                                                                                                                                                    |



| Date                         | Event / Location                                                           | Notes                                                                                                                                                                                                                                                                                 |
|------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>March 31, 2016</b>        | Regional workshop<br>(Haines Junction, YT)                                 | Discussion with participants from Champagne and Aishihik First Nations, Kluane First Nation, Alsek RRC, Dän Keyi RRC                                                                                                                                                                  |
| <b>May 3, 2016</b>           | Regional workshop<br>(Dawson City, YT)                                     | Discussion with participants from Tr'ondëk Hwëch'in, Dawson District RRC                                                                                                                                                                                                              |
| <b>May 12, 2016</b>          | RRC Annual General Meeting<br>(Silver City, YT)                            | Provided a review and update to the RRCs on the planning process and timeline.                                                                                                                                                                                                        |
| <b>May 17, 2016</b>          | Regional workshop<br>(Whitehorse, YT)                                      | Discussion with participants from Acho Dene Koe First Nation                                                                                                                                                                                                                          |
| <b>May 30, 2016</b>          | Associations workshop<br>(Whitehorse, YT)                                  | Discussion with participants from Yukon Outfitters Association                                                                                                                                                                                                                        |
| <b>May 31 – June 2, 2016</b> | Yukon grizzly bear conservation plan scenario workshop<br>(Marsh Lake, YT) | Applying scenario planning to the issue of grizzly bear conservation in Yukon.                                                                                                                                                                                                        |
| <b>June 6, 2016</b>          | Regional workshop<br>(Whitehorse, YT)                                      | Discussion with participants from Tahltan Central Government                                                                                                                                                                                                                          |
| <b>June 13, 2016</b>         | Regular WG meeting                                                         |                                                                                                                                                                                                                                                                                       |
| <b>July 27, 2016</b>         | Associations workshop<br>(Whitehorse, YT)                                  | Discussion with participants from relevant associations                                                                                                                                                                                                                               |
| <b>September 1 2016</b>      | Regular WG meeting                                                         |                                                                                                                                                                                                                                                                                       |
| <b>October 26, 2016</b>      | Regional workshop<br>(Fort McPherson, NWT)                                 | Discussion with participants from Tetlit Gwich'in Council, Tetlit Gwich'in RRC, Gwich'in Renewable Resources Board, Government of Northwest Territories                                                                                                                               |
| <b>November 25, 2016</b>     | Regular WG meeting                                                         |                                                                                                                                                                                                                                                                                       |
| <b>December 5, 2016</b>      | Regular WG meeting                                                         |                                                                                                                                                                                                                                                                                       |
| <b>January 26-27, 2017</b>   | 2-day WG meeting                                                           | Discussion with WG on regional workshop What We Heard results and considerations from Parks Canada.<br><br>Presentation to WG on: <ul style="list-style-type: none"> <li>grizzly bear management on the Yukon North Slope (presenters: K. Milner &amp; T. Powell, WMAC-NS)</li> </ul> |
| <b>March 20, 2017</b>        | Regular WG meeting                                                         |                                                                                                                                                                                                                                                                                       |
| <b>May 10, 2017</b>          | Regular WG meeting                                                         |                                                                                                                                                                                                                                                                                       |
| <b>June 5, 2017</b>          | Regular WG meeting                                                         |                                                                                                                                                                                                                                                                                       |

| Date                      | Event / Location                                            | Notes                                                                                                                                                |
|---------------------------|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>June 19, 2017</b>      | Regular WG meeting                                          |                                                                                                                                                      |
| <b>July 11-12, 2017</b>   | Workshop with FNs, RRCs, and WMAC(NS)<br>(Whitehorse, YT)   | A workshop to share comments from regional workshops and get input from FNs, RRCs, and WMAC (NS) on plan vision and goals. Workshop report produced. |
| <b>August 16, 2017</b>    | Regular WG meeting                                          |                                                                                                                                                      |
| <b>August 29, 2017</b>    | Regular WG meeting                                          |                                                                                                                                                      |
| <b>September 13, 2017</b> | Regular WG meeting                                          | Discussion about human-wildlife conflict prevention                                                                                                  |
| <b>September 28, 2017</b> | Regular WG meeting                                          |                                                                                                                                                      |
| <b>October 10, 2017</b>   | Regular WG meeting                                          |                                                                                                                                                      |
| <b>October 19, 2017</b>   | Regular WG meeting                                          | Discussion about livestock, crop and agricultural perspectives on grizzly bear management                                                            |
| <b>November 2, 2017</b>   | Regular WG meeting                                          | Discussion about grizzly bear harvest management                                                                                                     |
| <b>November 9, 2017</b>   | Regular WG meeting                                          | Discussion about grizzly bear conservation in parks (Yukon and national)                                                                             |
| <b>November 17, 2017</b>  | Regular WG meeting                                          |                                                                                                                                                      |
| <b>November 20, 2017</b>  | Meeting with Tr'ondëk Hwëch'in<br>(Dawson City, YT)         | Discuss draft plan vision, principles, and goals with Tr'ondëk Hwëch'in                                                                              |
| <b>November 22, 2017</b>  | Meeting with Taku River Tlingit First Nation<br>(Atlin, BC) | Discuss draft plan vision, principles, and goals with Taku River Tlingit First Nation                                                                |
| <b>November 23, 2017</b>  | Regular WG meeting                                          |                                                                                                                                                      |
| <b>December 1, 2017</b>   | Regular WG Meeting                                          |                                                                                                                                                      |
| <b>December 4, 2017</b>   | YFWMB Meeting<br>(Whitehorse, YT)                           | Update provided to the Yukon Fish and Wildlife Management Board at their December board meeting                                                      |
| <b>January 3-4, 2018</b>  | 2-day WG meeting<br>(Teslin, YT)                            | Working group review of draft plan text and recommendations                                                                                          |
| <b>January 12, 2018</b>   | Regular WG meeting                                          |                                                                                                                                                      |
| <b>January 28, 2018</b>   | Regular WG meeting                                          |                                                                                                                                                      |
| <b>February 2, 2018</b>   | Regular WG meeting                                          |                                                                                                                                                      |
| <b>February 14, 2018</b>  | Regular WG meeting                                          |                                                                                                                                                      |
| <b>February 20, 2018</b>  | YFWMB Meeting<br>(Whitehorse, YT)                           | Presented draft plan to the Yukon Fish and Wildlife Management Board for review                                                                      |

## APPENDIX C

Conservation status, estimated population size, and population trends of grizzly bears globally, nationally, and sub-nationally. Data are largely from the COSEWIC status report.

| Ranking Scheme                         | Rank                                | Population Size | Population Trend   |
|----------------------------------------|-------------------------------------|-----------------|--------------------|
| Global Status Ranks                    |                                     |                 |                    |
| IUCN Red List                          | Least Concern                       | ~200,000        | Apparently Stable  |
| NatureServe – G Rank                   | G4G5 (apparently secure–secure)     |                 |                    |
| CITES                                  | Appendix II (trade monitored)       |                 |                    |
| National Status Ranks (Canada)         |                                     |                 |                    |
| COSEWIC                                | Special Concern                     | 25,000—27,000   | Apparently Stable  |
| NatureServe – N Rank                   | N3N4 (vulnerable—apparently secure) |                 |                    |
| Sub-National Ranks (Canada and Alaska) |                                     |                 |                    |
| Alaska – S Rank                        | S4 (apparently secure)              | 30,000—35,000   | Apparently Stable  |
| Alberta – S Rank                       | S2 (imperilled)                     | 691             | Declining          |
| British Columbia – S Rank              | S3 (vulnerable)                     | 15,000          | Possibly Declining |
| Manitoba – S Rank                      | SX (presumed extirpated)            | few             | Increasing         |
| NWT – S Rank                           | S3 (vulnerable)                     | 3,500—4,000     | Apparently Stable  |
| Nunavut – S Rank                       | S3S4 (vulnerable—apparently secure) | 1,530—2,000     | Increasing         |
| Labrador                               | SX (presumed extirpated)            | 0               | Extirpated         |
| Quebec                                 | SX (presumed extirpated)            | 0               | Extirpated         |
| Saskatchewan                           | SX (presumed extirpated)            | 0               | Extirpated         |
| Yukon – S Rank                         | S3 (vulnerable)                     | 6,000—7,000     | Apparently Stable  |





