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GRIZZLY BEAR MANAGEMENT PLAN FOR THE GWICH'IN SETTLEMENT AREA, NORTHWEST TERRITORIES, 2000-2005

19 December, 2000

Approved by the:

Gwich'in Renewable Resource Board

Gwichya Renewable Resource Council

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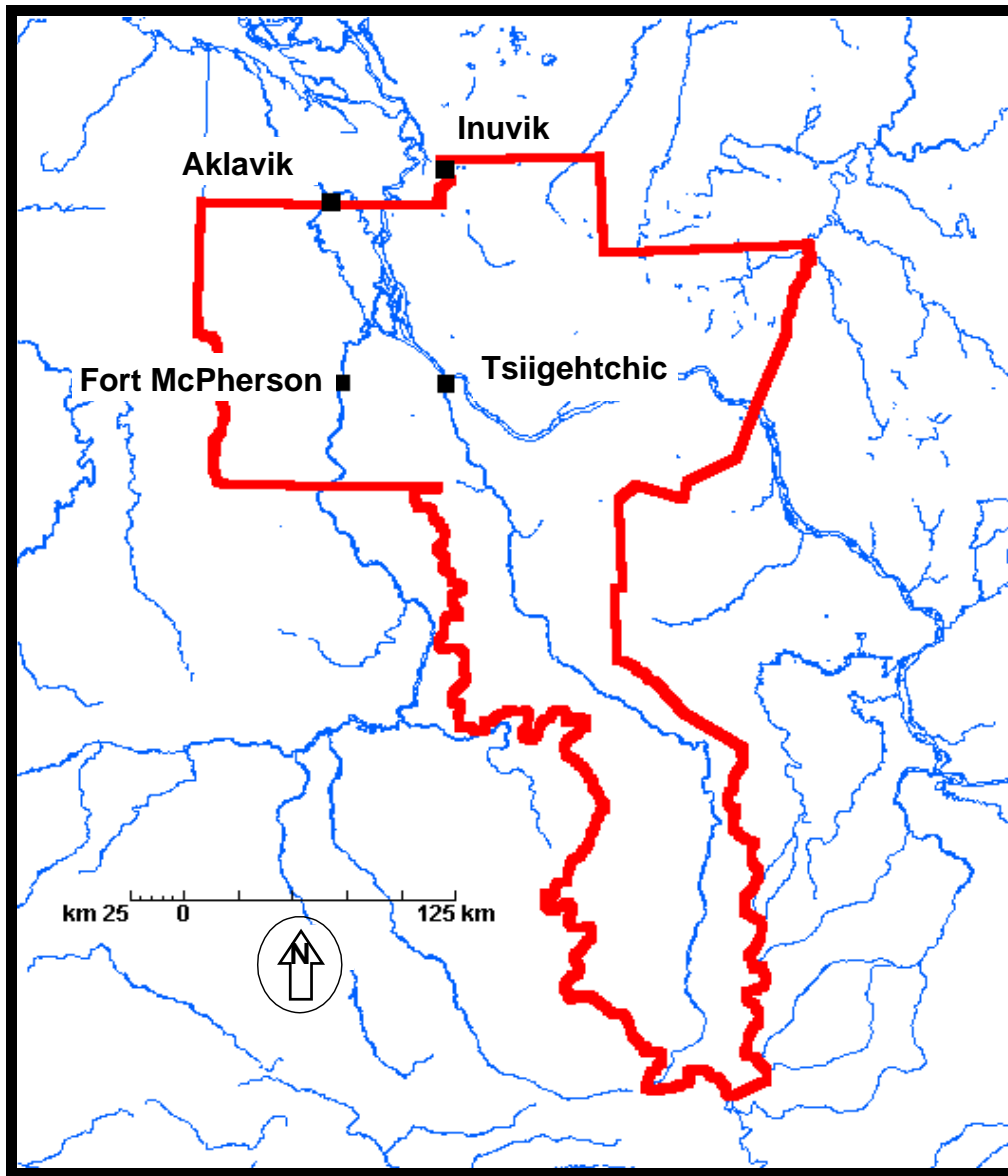
Nihtat Gwich'in Renewable Resource Council

To be proposed to the Minister of Resources, Wildlife and Economic Development

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Gwich'in Settlement Area Map



THE PLAN

The best way to manage grizzly bears is to make a plan so that everyone can agree on what needs to be done and who is doing it. The Gwich'in Renewable Resource Board (GRRB), the Renewable Resource Councils (RRCs), and the Department of Resources, Wildlife and Economic Development (DRWED) worked together to produce this plan for the Gwich'in Settlement Area (GSA). It is a framework for the management of grizzly bears, the protection of their habitats, and the protection of Gwich'in harvesting rights.

GRIZZLY BEARS AND PEOPLE IN THE GSA

It is estimated that about 420 grizzly bears over 2 years old live in the GSA today. In the past, the Gwich'in occasionally hunted grizzly bears for hides, fat and meat. Today, residents who are not beneficiaries of the land claim can also hunt grizzly bears in the southern part of the GSA. As grizzly bears are of both national and international interest, the potential for viewing them attracts many tourists to the area every year.

Grizzly bears are vulnerable to population decline caused by over-harvest and loss of habitat. They exist at low densities, breed infrequently, produce few young each year, and exhibit high cub mortality. The number of bears killed can easily be greater than the number of bears born. In addition, grizzly bears need large areas of undisturbed land (up to 2,000 km² per bear) to maintain sustainable populations. Therefore, many people are concerned that the cumulative effects of harvesting, poaching, defense of life and property kills, and increased development will cause the grizzly bear population to decline.

Although bears generally avoid people, there is always the possibility for conflicts when people are in bear country. Grizzly bears can become problem bears when they are attracted to human food and garbage at camps or industrial sites. The result is that people often kill "problem" bears. There are programs to help prevent bears from becoming problems at camps. Development and tourism activities need to be managed so that impacts on grizzly bears and their habitats are minimized.

WHO MANAGES THE POPULATION

Grizzly bears are co-managed under the Gwich'in Comprehensive Land Claim Agreement. The following groups play a part in the management of the grizzly bears and their habitats in the GSA:

- Government of the Northwest Territories Department of Resources, Wildlife and Economic Development
- Ehdıitat, Gwichya , Nihtat , and Tetlit Renewable Resource Councils
- Gwich'in Renewable Resource Board
- Gwich'in Land and Water Board
- Gwich'in Land Use Planning Board
- Gwich'in Land Administration
- Gwich'in Tribal Council
- Mackenzie Valley Environmental Impact Review Board
- DIAND (Indian and Northern Affairs Canada)

INTRODUCTION

WHAT GUIDES MANAGEMENT

Effective co-management of grizzly bears requires the participation, cooperation, communication, and consensus among all stakeholders.

The principles for co-management of grizzly bears in the GSA include:

- recognizing and promoting the cultural, economic and ecological importance of grizzly bears to the Gwich'in and other Canadians,
- using traditional and scientific knowledge of grizzly bears to make informed management decisions, and
- involving communities in the research and management of grizzly bears in the GSA.

The principles of sustainable development regarding grizzly bears in the GSA include:

- ensuring healthy and viable grizzly bear populations,
- monitoring the status of the grizzly bear population,
- fairly allocating the harvest quota among user communities, and modifying the harvest as needed, and
- recognizing the value of grizzly bears and the importance of their habitats when evaluating land-use activities such as industrial development, tourism, and transportation.

GOALS OF THE MANAGEMENT PLAN

The goals of this management plan are:

- to maintain the current population size by ensuring that the total number of bears killed by people is sustainable,
- to allow for recovery if over-harvest occurs by reducing quotas or closing hunting areas,
- to protect grizzly bear habitats,
- to encourage wise hunting practices,
- to increase our knowledge of grizzly bears by promoting research and exchange of traditional and scientific knowledge,
- to ensure that management decisions and study results are provided to the communities in a timely and meaningful way,
- to reduce the potential for grizzly bear-people conflicts by promoting safe conduct in grizzly bear country,
- to manage human activities to prevent disturbance to grizzly bears and important habitats, and
- to promote a cooperative spirit among the GRRB, RRCs, government agencies, other land claim organizations, and neighboring settlement areas with respect to grizzly bear management.

HOW THE GRIZZLY BEAR MANAGEMENT PLAN WORKS

The plan, for 2000-2004, is divided into the following six sections under an **ACTION PLAN** and a **WORK PLAN**:

- **Population** - the number of bears, where they are found, how they change over time.
- **Habitat** - the land that grizzly bears live on and the food they eat.
- **Harvest management** - the hunting needs of the people and how it affects the grizzly bear population.
- **Co-management** - the responsibilities of the RRCs, GRRB, DRWED, and other organizations in managing grizzly bears.
- **Culture and Education** - teaching people in the communities about grizzly bears and management, and learning and teaching the traditional values and uses of grizzly bears.
- **Grizzly Bear-People Management** - learning about the conflicts that happen between grizzly bears and people, and how to reduce those conflicts.

HOW THE GRIZZLY BEAR MANAGEMENT PLAN WORKS

The information in each section of the **Action Plan** is organized under the following headings:

Current Status – describes previous and current research and programs related to grizzly bears in the GSA. It provides a summary of what is known.

Concerns – describes any problems regarding current grizzly bear management, information and programs that are missing or should be improved, and concerns that people have.

Solutions – what needs to be done to address the concerns.

The **Work Plan** describes the tasks required to address the concerns, who is responsible for completing the tasks, and the timeline for completing the tasks.

In the Action Plan, concerns are listed with unique numbers. Each solution in the Action Plan and task in the Work Plan is numbered to correspond to the particular concern. Because a single concern might have more than one solution or work task, there can be several solutions and tasks with the same number.

For more information on the Grizzly Bear Management Plan contact :

ADDITIONAL INFORMATION

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POPULATION

CURRENT STATUS

Grizzly bear studies have only been conducted in a small portion of the GSA. Population studies were done in the Richardson Mountains in 1992-93 (DRWED-Inuvik Region in prep. a). The population density for the North and South Richardson Mountains habitat zones was estimated at 19 bears per 1000 km² based on this study. Females were first seen with cubs of the year at 6 years of age. However, this study took place after a year of unusually high mortality, and should be revisited. A study to understand reproduction and cub survival in the Richardson Mountains is currently underway.

Grizzly bear population estimates for habitat zones in the GSA east of the Richardson Mountains were calculated by extrapolating population densities from study areas in the adjacent Inuvialuit Settlement Region having similar habitat types (DRWED-Inuvik Region in prep. b, DRWED-Inuvik Region in prep. c) and multiplying them by the area of the habitat zone.

Reports from studies in the adjacent Inuvialuit Settlement Area and in the Mackenzie Mountains south of the GSA are listed in Appendix 1.

Concerns

1. The status of the grizzly bear population is unknown. Empirical population estimates are not available for all grizzly bear habitat zones.
2. The population estimate for the Richardson Mountains habitat zones was derived immediately after high human-caused mortality in 1992.
3. The effect of the 12 bear annual quota on the grizzly bear population is unknown.

Solutions

- 1,2. Determine if there is a need to conduct population studies in the various habitat zones.
3. Model the grizzly bear population for different harvest levels as data from reproduction and cub survival studies become available.

HABITAT AND RANGE USE

CURRENT STATUS

Grizzly bears eat a variety of foods during their active seasons. A generalized pattern of habitat use in the GSA is understood. In the spring and into summer, they eat hedysarum (Eskimo potato) roots, over-wintered berries on the first snow free areas, scavenge on winter-killed caribou and moose, and feed on grasses, sedges, horsetail, and herbaceous plants as they green up. During calving season, grizzlies will kill caribou, moose, and musk-ox young. Through summer and into fall, they eat mainly berries, ground squirrels and hedysarum roots.

Grizzly bears have large home ranges that are variable in size throughout the Western Arctic. Females with young may occupy annual ranges of 50 to several hundred km², while the home ranges of adult males have been recorded at over 1000 km².

Grizzly bears dig dens into soil, talus, or snow on southerly aspects and within their home ranges. Habitat for denning was not considered to be limiting in studies in the Western Arctic.

HABITAT AND RANGE USE continued

Information on the habitat (Mackenzie and MacHutchon 1996), diet and habitat use (MacHutchon 1996), den sites (Harding 1976, Nagy et al. 1983a, Nagy et al. 1983b), movement and home range (Nagy et al. 1983a, Nagy et al. 1983b, Nagy and Haroldson 1989) characteristics are available for areas around the GSA. However, data for these topics have not been collected in the GSA in particular.

A number of projects to classify and map grizzly bear habitats in specific areas of the ISR have been completed. The Yukon Territorial Government has classified habitats from the Yukon North Slope including portions of the Richardson Mountains in the NWT, and Canadian Wildlife Service has classified the coastal plain (Russell et al. 1992). The DRWED-GNWT Fire Center is developing a standardized vegetation classification system for the Northwest Territories. However, this system needs to be refined to be useful for grizzly bear habitat studies. DRWED- Norman Wells Region has developed a more refined vegetation classification (Zimmer et al. 2000) for this purpose. DRWED is creating habitat maps of several watersheds to the northeast of the GSA. An earlier project of the Mackenzie delta and Richards Island area was completed as part of the Northern Oil and Gas Assessment Program. Ducks Unlimited is proposing to conduct a landscape classification for one Landsat scene (8 million acres) straddling the GSA and the Inuvialuit Settlement Region.

Concerns

1. Grizzly bear habitats and habitat use patterns have not been described throughout the GSA.

Solutions

1. Determine the priority for classifying grizzly bear habitat and understanding habitat use.
1. Develop a new vegetation classification or refine the existing one to ensure that it is detailed enough for classifying grizzly bear habitat.
1. Design and conduct a habitat use study in the different habitat zones in the GSA.

HARVEST MANAGEMENT

CURRENT STATUS

The main objective of harvest management is to maintain a viable population of grizzly bears in the GSA. Currently, the harvest of grizzly bears in the GSA is managed under quota on a sustained yield basis. The quota for each habitat zone was calculated as 3% of the population estimate of bears 2 years of age and older for each zone. The female portion of the harvest must not exceed 33% of harvested bears. Thus, a quota of 12 grizzly bears per year was calculated for the GSA and agreed to by the Gwich'in Renewable Resource Councils in the Grizzly Bear Management Agreement of April 1, 1998. Each year, DRWED gives 2 grizzly bear tags to each RRC, who allocates the tags as they see appropriate. The additional 4 tags (1 for the Tsiigehtchic habitat zone and 3 for the Mackenzie Mountains habitat zone) are held by DRWED. These tags are allocated by the GRRB for subsistence, defense of life and property, sport hunting, or illegal kills following consultation with the RRCs when needed. All grizzly bears killed (subsistence, defense of life and property, sport hunting, and illegal kills) will be tagged and accounted for under the quota. The GRRB, DRWED and RRCs will review the grizzly bear kill data each year. If the kill exceeds the quota over a 3-year averaging, the next year's quota may be adjusted to keep the annual average kill within conservation objectives. The quota will be reviewed and adjusted when new population information is available.

HARVEST MANAGEMENT continued

In 1982, the Mackenzie Mountains were closed to all but resident and aboriginal hunters. Following a large grizzly bear harvest in the Richardson Mountains in 1992, the RRCs, GRRB, and DRWED supported a voluntary ban on grizzly bear hunting until a grizzly bear management plan was completed. This voluntary ban ended in 1997.

Under the Grizzly Bear Management Agreement, anyone can hunt grizzly bears in the GSA up to the 12 bear quota. Residents can only hunt grizzlies in Outfitter Zone G/OT/O1 (Mackenzie Mountains habitat zone). A process is being developed by DRWED and the GRRB to allow non-Gwich'in residents to hunt grizzly bears on crown land. The number of opportunities for resident hunters will be determined by the GRRB and RRCs depending on the availability of tags. Non-resident and non-resident aliens must use the services of an outfitter. The Gwich'in Tribal Council is developing a process whereby, if the communities consent, some Gwich'in will be able to outfit and guide sport hunters on grizzly bear hunts.

It is important that all human-caused grizzly bear mortality is reported. Any Gwich'in killing a grizzly bear must return the following information to DRWED: date, location of kill, the skull or premolar tooth, and evidence of sex. If the sex is not determined the bear is recorded as female. A tissue sample will be used to sex all bears of indeterminate sex. The hide, skull and claws of all defence-killed bears will initially be taken by DRWED. It will be returned to the affected RRC after an investigation is completed by an DRWED Officer. If resident hunters receive the right to hunt grizzlies on crown land, they will be responsible for reporting their kills and submitting the same samples as native hunters..

The Gwich'in Harvest Study collects information on grizzly bear harvesting in the GSA by beneficiaries, and DRWED documents all reported kills (see Figures 1 and 2). The GRRB has gathered traditional knowledge on grizzly bear hunting and published it in a book (Gwich'in Elders 1997).

Concerns

1. Grizzly bear populations have low reproductive rates and are susceptible to over-harvest. Population declines are difficult to detect immediately.
2. Grizzly bear mortality data has not been analysed and used in population models.
3. There is no process for authorizing non-Gwich'in residents to hunt grizzly bears on crown lands.
4. There is no process to allow Gwich'in to outfit and guide non-resident and non-resident alien hunters on grizzly bear hunts.
5. The current outfitter in zone G/OT/O1 may want to guide non-resident and non-resident alien hunters on grizzly bear hunts.

Solutions

1. The harvest quota must be adhered to and include all human-caused grizzly bear mortality.
2. Compile and analyse mortality data.
3. Develop a process that allows non-Gwich'in residents the opportunity to apply for grizzly bear tags for crown land. This must include a method that ensures the reporting of hunter killed bears.
4. Develop a process to allow for outfitting by interested Gwich'in beneficiaries.
5. Determine whether the RRCs and GRRB would permit the current outfitter in zone G/OT/O1 to use the tags from that zone for guided grizzly bear hunts.

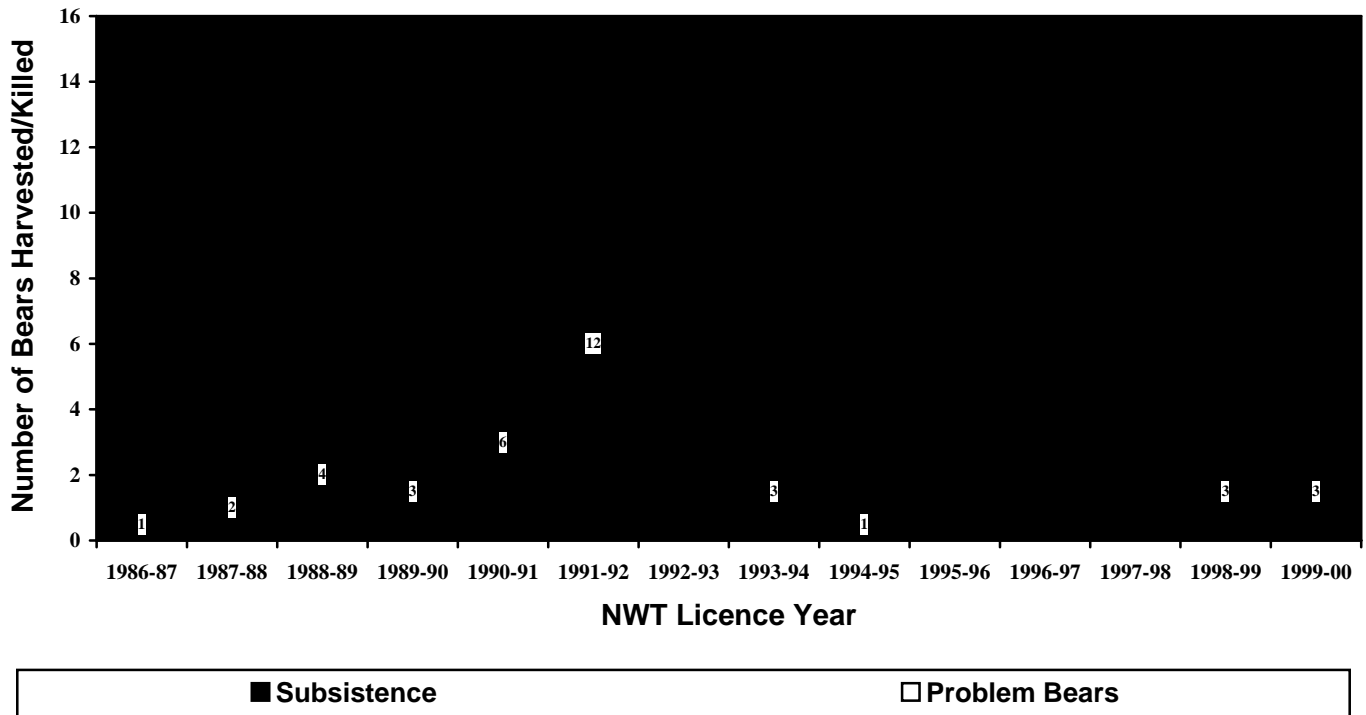


Figure 1. Known subsistence and problem bear kills in the Gwich'in Settlement Area, NWT license years 1986-87 to 1998-99.

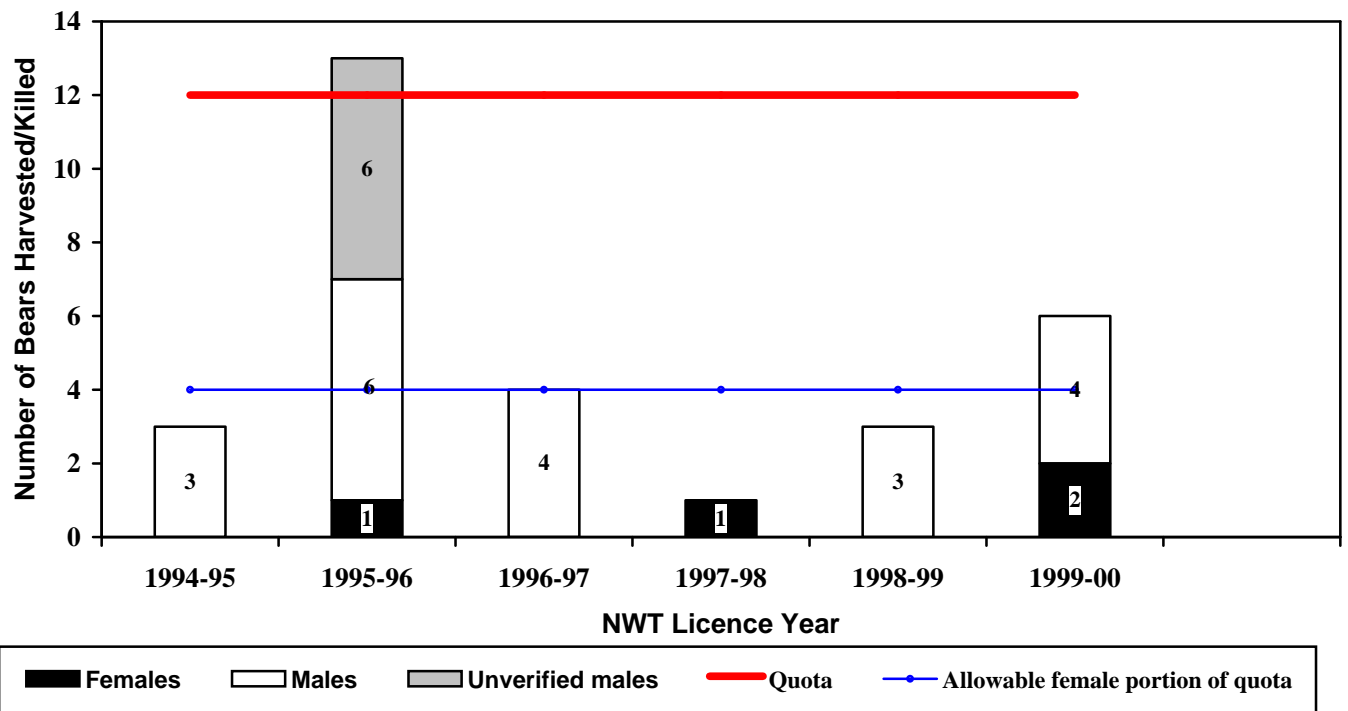


Figure 2. Number of female and male grizzly bears harvested/killed, NWT license years 1994-95 to 1998-99.

CO-MANAGEMENT

CURRENT STATUS

This grizzly bear management plan was developed due to concerns raised in the communities, and with the support of the RRCs. Gwich'in and non-Gwich'in have the right to harvest grizzly bears in the GSA. Grizzlies are wide-ranging animals and are not confined by jurisdictional boundaries. The grizzly bear population is shared with people from neighboring land claims. The GRRB is responsible for managing wildlife in the GSA as mandated by the Gwich'in Comprehensive Land Claim Agreement. It consults with the RRCs on wildlife issues and coordinates research and management with DRWED. Gwich'in people recommended by the RRCs are hired to work on research projects. The GRRB has collected traditional knowledge about grizzly bears in the GSA (Gwich'in Elders 1997).

Concerns

1. Not everyone in the communities, land claim organizations, and government agencies understand the need for grizzly bear research and management.
2. Traditional knowledge needs to be used more when planning grizzly bear research.
3. The grizzly bear management plan is not integrated with other wildlife and land use plans.

Solutions

1. Provide information about grizzly bear ecology, research, and management to the land claim organizations and government agencies.
2. Collect and use traditional knowledge when planning research projects.
3. Integrate the grizzly bear management plan with other wildlife and land use management plans.

CULTURE AND EDUCATION

CURRENT STATUS

Programs in the GSA gather traditional knowledge from Gwich'in elders and teach the youth about wildlife and traditional land use. Although there is a body of traditional and scientific information available, there are no formal cultural or educational programs that teach the people about grizzly bear ecology or bear safety.

The GRRB and DRWED staff supply educational materials and give presentations about grizzly bears at workshops and in the schools. The GRRB provides opportunities for Gwich'in people interested in pursuing careers in renewable resource management including training programs, summer employment, and scholarships.

Concerns

1. There are no formal educational programs in the schools that teach ecological or traditional knowledge about grizzly bears and other wildlife.
2. Plain language reports on grizzly bear research and management are not readily available.

Solutions

1. Encourage educators and education planners to include traditional and scientific information on grizzly bear ecology in the schools.
2. Prepare plain language information on grizzly bear research and traditional knowledge for the public.
2. Provide updates on research and management of grizzly bears through the local media.

GRIZZLY BEAR – PEOPLE MANAGEMENT

CURRENT STATUS

The relationship between the Gwich'in and grizzly bears has changed in recent times. More people are living in communities and participating in the cash economy either on a full-time or part-time basis. As many people still spend some time on the land hunting, trapping, fishing and recreating, encounters between people and grizzlies are common. Food odors at camps often attract bears, but many camps are only used part-time. If people are not present to deter bears from entering camps, they will sometimes cause damage. As a result, these grizzly bears are often killed as problem bears.

Development proposals for oil and gas exploration, transportation, forestry, and tourism are reviewed to determine their effect on the grizzly bear population and habitat. Portable garbage incinerators and electric fences have been used at some camps. If used properly, these techniques are effective for reducing food attractants and deterring bears. DRWED has produced educational materials on bear safety and awareness for people living and traveling on the land, and for industries operating in bear country.

Concerns

1. Some people have problems with grizzly bears at their camps.
2. Some grizzly bears are killed unnecessarily by people who do not understand bear behavior and consider bears a threat.
3. Many people who travel on the land cannot identify good grizzly bear habitat.
4. Human activities inside and outside the GSA may affect grizzly bears in the GSA.

Solutions

1. Educate people regarding how to camp in bear country without attracting bears and allowing bears to get food rewards.
- 1, 2, 3. Offer bear safety and awareness courses.
4. Plan human activities and developments to minimize impacts on the grizzly bear population.

WORK PLAN

POPULATION	<u>Lead Organization</u>	<u>Support</u>
<p>Annual</p> <ol style="list-style-type: none"> 1,2. Determine if there is a need for grizzly bear population estimates in any of the habitat zones. 1,2. Determine the method (radio-collar, DNA) to use in collecting grizzly bear population data. 3. Model the grizzly bear population with updated information as it becomes available. 	<p>DRWED, GRRB</p> <p>DRWED, GRRB</p> <p>DRWED</p>	<p>RRCs</p> <p>RRCs</p> <p>GRRB</p>
<p>2001-2002</p> <ol style="list-style-type: none"> 1,2. Determine if there is a need for grizzly bear population estimates in any of the habitat zones. 1,2. Determine the method (radio-collar, DNA) to use in collecting grizzly bear population data. 1,2. Design the study if it is to be conducted. 3. Model the grizzly bear population with updated information as it becomes available. 	<p>DRWED, GRRB</p> <p>DRWED, GRRB</p> <p>DRWED, GRRB</p> <p>DRWED</p>	<p>RRCs</p> <p>RRCs</p> <p>RRCs</p> <p>GRRB</p>
<p>2002-2003</p> <ol style="list-style-type: none"> 1,2. Begin the population study if it is to be conducted. 3. Model the grizzly bear population with updated information as it becomes available. 	<p>DRWED, GRRB</p> <p>DRWED</p>	<p>RRCs</p> <p>GRRB</p>
<p>2003-2005</p> <ol style="list-style-type: none"> 1,2. Continue the population study. 3. Model the grizzly bear population with updated information as it becomes available. 	<p>DRWED, GRRB</p> <p>DRWED</p>	<p>RRCs</p> <p>GRRB</p>

	<u>Lead Organization</u> DRWED, GRRB DRWED DRWED, GRRB DRWED, GRRB DRWED DRWED, GRRB DRWED DRWED, GRRB	<u>Support</u> RRCs GRRB, RRCs RRCs RRCs GRRB, RRCs RRCs GRRB, RRCs RRCs
<p>HABITAT AND RANGE USE</p> <p>Annual</p> <ol style="list-style-type: none"> Determine the priority for classifying grizzly bear habitat and habitat use in the GSA. Support DRWED and Ducks Unlimited in their respective landscape classification initiatives. <p>2001-2002</p> <ol style="list-style-type: none"> Determine the priority for classifying grizzly bear habitat and habitat use in the GSA. Begin design of habitat and habitat use studies if they are to be conducted. Support DRWED and Ducks Unlimited in their respective landscape classification initiatives. <p>2002-2003</p> <ol style="list-style-type: none"> Begin habitat and habitat use studies if they are to be conducted. Support DRWED and Ducks Unlimited in their respective landscape classification initiatives. <p>2003-2005</p> <ol style="list-style-type: none"> Continue habitat and habitat use studies if they are to be conducted. 		

HARVEST MANAGEMENT			WORK PLAN
	<u>Lead Organization</u>	<u>Support</u>	
<p>Annual</p> <ol style="list-style-type: none"> 1. Ensure that the grizzly bear quota is adhered to. 2. Continue collecting grizzly bear harvest, problem and illegal kill data. 2. Review the annual grizzly bear harvest, problem and illegal kill data. Adjust the quota accordingly. 	<p>DRWED</p> <p>DRWED, GRRB, RRCs</p> <p>DRWED, GRRB, RRCs</p>	<p>GRRB, RRCs</p>	
<p>2000-2001</p> <ol style="list-style-type: none"> 1. Ensure that the grizzly bear quota is adhered to. 2. Continue collecting grizzly bear harvest, problem and illegal kill data. 2. Review the annual grizzly bear harvest, problem and illegal kill data. Adjust the quota accordingly. 3. Develop a process to allow non-Gwich'in residents the opportunity to apply for grizzly bear tags for crown land. This method must include a method that ensures the reporting of hunter killed bears. 4. Develop a process to allow for outfitting by interested Gwich'in beneficiaries. 	<p>DRWED</p> <p>DRWED, GRRB, RRCs</p> <p>DRWED, GRRB, RRCs</p> <p>DRWED</p> <p>GTC</p>	<p>GRRB, RRCs</p> <p>GRRB, RRCs</p> <p>DRWED, GRRB, RRCs</p>	
<p>2001-2005</p> <ol style="list-style-type: none"> 1. Ensure that the grizzly bear quota is adhered to. 2. Continue collecting grizzly bear harvest, problem and illegal kill data. 2. Review the annual grizzly bear harvest, problem and illegal kill data. Adjust the quota accordingly. 	<p>DRWED</p> <p>DRWED, GRRB, RRCs</p> <p>DRWED, GRRB, RRCs</p>	<p>GRRB, RRCs</p>	

	<u>Lead Organization</u>	<u>Support</u>
<p>CO-MANAGEMENT</p> <p>Annual</p> <ol style="list-style-type: none"> 1. Provide information on grizzly bear ecology, research and management to government agencies and land claim organizations. 2. Collect and use traditional knowledge when planning grizzly bear research projects. <p>2001-2002</p> <ol style="list-style-type: none"> 3. Integrate the grizzly bear management plan with other wildlife and land use plans. 	<p>GRRB</p> <p>DRWED, GRRB</p> <p>GRRB, DRWED</p>	<p>DRWED, RRCs</p> <p>RRCs</p> <p>RRCs</p>
<p>CULTURE AND EDUCATION</p> <p>Annual</p> <ol style="list-style-type: none"> 1. Encourage and help educators and education planners to prepare ecology classes using scientific and traditional information. 2. Prepare and disseminate to the public, plain language scientific information and traditional knowledge about grizzly bears. 2. Provide updates on grizzly bear research and management projects to the public. 	<p>GRRB, DRWED</p> <p>GRRB, DRWED</p> <p>GRRB, DRWED</p>	<p>RRCs</p> <p>RRCs</p> <p>RRCs</p>

GRIZZLY BEAR – PEOPLE MANAGEMENT

Annual

1. Educate people with bush camps about how to reduce food attractants and how to effectively deter bears from their camps. Put on workshops and visit people at their camps.
- 1,2,3. Offer bear safety and awareness courses/workshops to the public and in the schools.
4. Review development proposals and management plans to ensure that important grizzly bear habitats are not seriously affected or lost to bears.

Lead Organization

DRWED, GRRB

DRWED, GRRB

DRWED, GRRB

Support

RRCs

RRCs

RRCs

Relevant Literature

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GWICH'IN SETTLEMENT AREA**

