



Photo Credit: C. Watson

Grizzly Bear Conservation in Alberta

**2009 Management Activities and
Recovery Implementation**

**Government
of Alberta ■**

Introduction

In 2002, the Alberta Endangered Species Conservation Committee (ESCC) recommended the grizzly bear be listed as threatened under Alberta's *Wildlife Act*. This recommendation was based on the grizzly bear's low rates of reproduction, potential for habitat loss and estimated populations at the time, which weren't very accurate. In response, Alberta Sustainable Resource Development funded research to gather more information on populations and habitat and initiated the development of a Recovery Plan. Published in 2008, the Alberta Grizzly Bear Recovery Plan recommends several strategies to ensure the long-term viability of grizzly bears in the province. This report summarizes the grizzly bear conservation and management activities conducted in 2009

and describes the progress the Government of Alberta has made in implementing the recovery plan.

2009 Management Activities

Mortality

Twenty-one grizzly bear deaths were reported or recorded by Sustainable Resource Development in 2009, including 17 known human-caused mortalities (Table 1). Illegal kills and accidents (road and railway) were the primary cause of death, accounting for 65 per cent of all human-caused mortalities. No bears were killed by Fish and Wildlife staff as a result of conflict situations. Of six adult female bears that died in 2009, three were from Bear Management Area (BMA) 2 (Figure 1), which has the largest population of any BMA in the province.

Table 1
Sex, estimated age, Bear Management Area (BMA) and cause of death for grizzly bears known to have died in Alberta in 2009.

Month of Mortality	B.M.A.	Sex	Age	Cause
April	Swan Hills	F	Adult	Illegal
May	2	M	SubA	Illegal
May	2	M	SubA	Illegal
May	2	F	SubA	Illegal
May	2	F	Adult	Roadkill
June	4	F	Adult	Train
June	4	M	SubA	Train
June	5	M	SubA	Predation
June	2	F	Adult	Predation
August	2	F	Adult	Aboriginal
September	1	M	Adult	Mistaken for black bear
September	1	M	Adult	Illegal
October	3	UNK	Unknown	Unknown
October	5	M	SubA	Roadkill
October	5	M	SubA	Roadkill
October	Swan Hills	M	Adult	Illegal
October	6	F	Adult	Aboriginal
October	2	M	Adult	Mistaken for black bear
November	2	M	Adult	Mistaken for black bear
November	Swan Hills	M	Unknown	Aboriginal
December	Swan Hills	UNK	SubA	Predation

Relocation

Fish and Wildlife Division staff captured and relocated 16 different grizzly bears in 2009 (Table 2). Two bears were moved twice each. Five bears were moved within their home range to remove them from specific conflict situations. Thirteen bears were moved outside of their BMA because they had a history of involvement in conflict situations or they were unlikely to avoid conflicts in their original home range. Of all situations in which bears were moved, one was to prevent a bear from being struck on a roadway, seven were in response to public safety concerns and 10 were in response to conflicts with livestock.

All relocated grizzly bears are fitted with a numbered ear tag and either an ear tag transmitter or a satellite radio collar prior to release. This allows department staff to monitor movements and fates of these bears through time. Bears that are fitted with ear tag transmitters are monitored opportunistically. Ultimately, this effort will result in new information on the success of relocations and help department staff choose release sites more effectively.

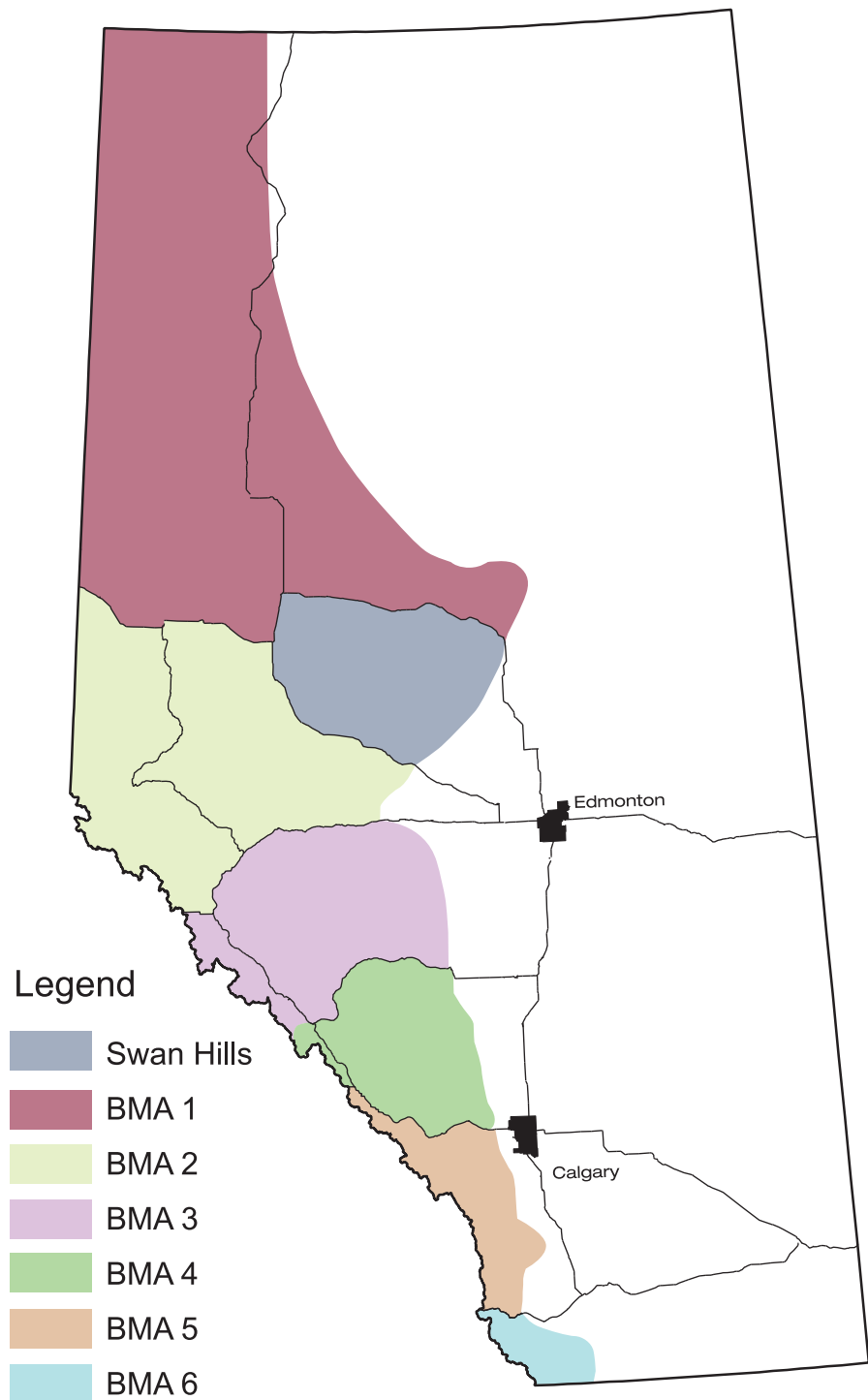


Figure 1
Bear Management Areas (BMAs) in Alberta.

Table 2

Capture month, Bear Management Area (BMA), age, reason for capture and type of relocation for grizzly bears relocated in Alberta in 2009.

Bear ID	Capture Month	BMA	Sex	Age	Reason for Capture	Relocation Type
0246	April	6	M	Adult	Livestock attack	Outside home range
4432	May	1	M	SubA	Public Safety	Within home range
0247	May	2	M	Adult	Livestock attack	Outside home range
0247	May	5	M	Adult	Public Safety	Outside home range
5188	May	2	F	Adult	Public Safety	Outside home range
107	June	5	F	SubA	Bear Safety	Within home range
4432	June	1	M	SubA	Public Safety	Within home range
5186	June	6	M	SubA	Public Safety	Outside home range
0230	July	5	M	SubA	Public Safety	Outside home range
4170	July	2	F	Adult	Livestock attack	Outside home range
0227	July	5	M	Adult	Livestock attack	Outside home range
4434	August	4	M	Adult	Livestock attack	Outside home range
0957	August	4	M	Adult	Livestock attack	Outside home range
0218	September	6	F	Adult	Livestock feed	Within home range
6367	September	6	F	Adult	Livestock attack	Outside home range
0148	September	6	M	Adult	Livestock attack	Outside home range
0266	October	6	M	Adult	Livestock feed	Within home range
4394	October	Swan Hills	F	Adult	Public Safety	Outside home range

Sightings and Human-Bear Conflicts

Staff from Sustainable Resource Development and Tourism, Parks, and Recreation recorded 605 grizzly bear occurrences in 2009 and spent more than 5,200 hours responding to these situations (Table 3). Most occurrences (69 per cent) were sightings reported by the public. In 85 per cent of these circumstances, actions by officers were limited to monitoring the situation or providing information to the public.

There were 177 situations where monitoring or education did not resolve the occurrence. Officers conducted preventative measures in 136 (77 per cent) of the cases and made attempts to capture bears in 41 (23 per cent) of these situations. Of those 41 attempts to capture the bear, 40 attempts were to resolve public safety concerns or prevent further property damage and one was made to prevent a bear from being struck on a roadway. One mauling by a grizzly bear occurred in Alberta in 2009 resulting in injuries

to two people. This was a defensive attack by a female with cubs, and the area was temporarily closed.

Sixty-five occurrences were situations where public safety was a concern. Most (75 per cent) of these cases were resolved without an attempt to capture and relocate the bear.

Most grizzly bear occurrences occurred during May-October, with June the most active month for sightings (Figure 2). Situations where bears caused property damage (harassment or attack of livestock, destruction of bee yards or destruction of livestock feed) peaked in October, when bears are actively foraging just prior to denning.

Table 3
Grizzly bear occurrence types, responses by Fish and Wildlife and Conservation officers, and manpower expenditures during 2009.

Occurrence Type	Response										Hours
	Monitor ¹	Education	Remove Attractant	Close Area	Fence Area	Aversive Conditioning	Compensation Claim	Enforcement	Capture Attempt	Total	
Sighting	298	44	3	13	1	42		1		402	934
Road Kill	2								1	3	58
Landfill	1	2	1	2					1	7	129
Bee Yard		1			2				1	4	72
Livestock Feed	3	4	1	6	1				10	25	503
Livestock Carcasses	4	5	5	1	1					16	151
Livestock / Harrassment/Attack ²	18	3					5		12	38	1095
Illegal Activity								26		26	414
Public Safety	7	27	1	8	1	5			16	65	1497
Mauling				1						1	120
Other	4	5						9		18	299
Total	337	91	11	24	11	49	5	36	41	605	5272

¹Includes situations where no direct response was required or where officers visited the location and determined no further action was necessary.

²Refers to situations where members of the public were concerned that grizzly bears had killed or harassed livestock. Fish and Wildlife officers investigate these complaints to determine whether grizzly bears were actually involved. Owners of livestock killed by grizzly bears can apply for compensation.

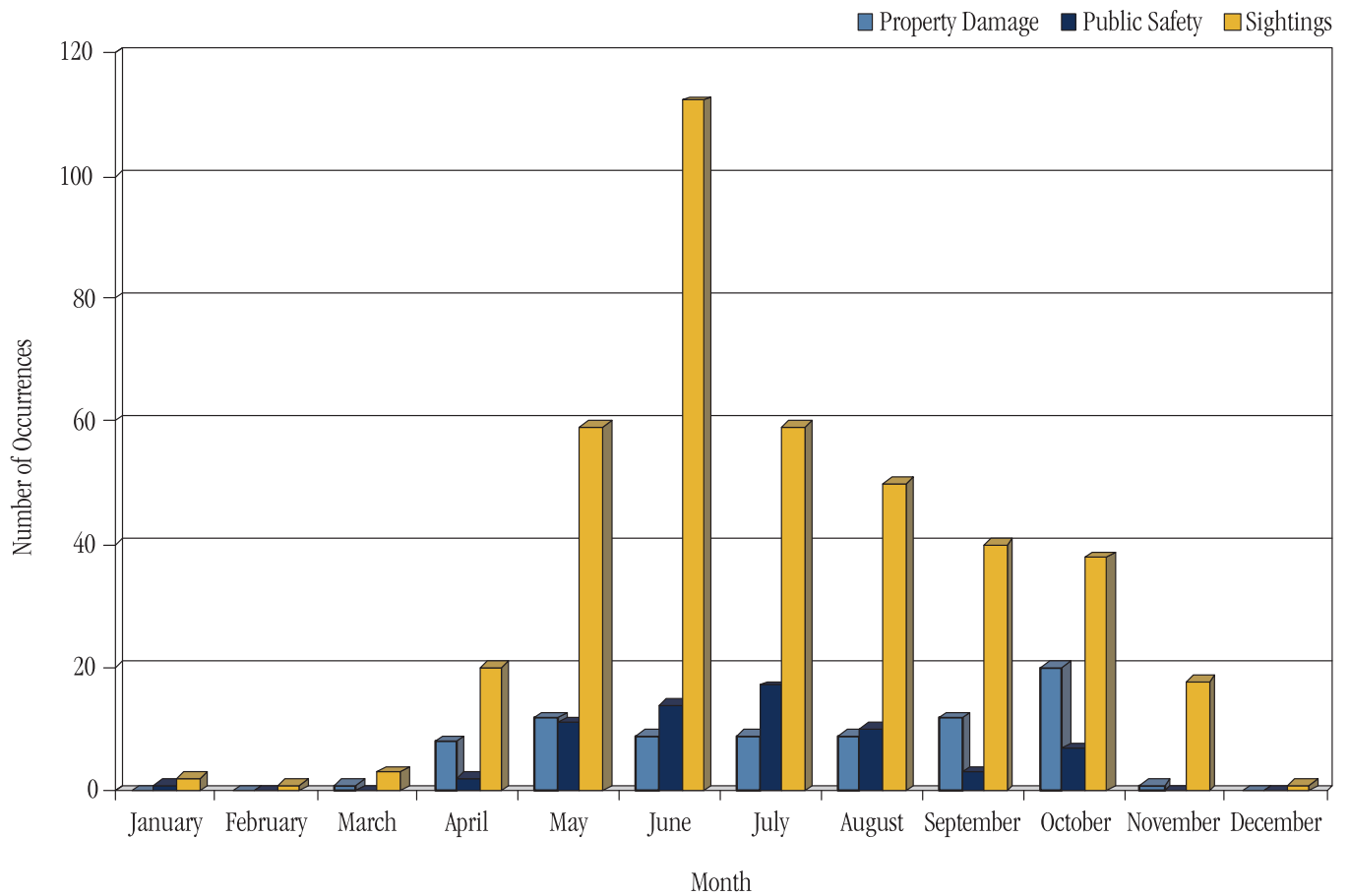


Figure 2
Month of grizzly bear occurrences related to property damage, public safety or sightings in Alberta during 2009.



Recovery Plan Implementation

The Alberta Grizzly Bear Recovery Plan recommends several strategies to promote grizzly bear conservation. These measures include:

- 1) reducing human-caused mortality
- 2) improving knowledge of grizzly bears
- 3) reducing human-bear conflicts
- 4) delivering an education program (BearSmart)
- 5) maintaining grizzly bear habitat
- 6) improving coordination with neighbouring jurisdictions

Along with its partners, the department made substantial progress in implementing these strategies in 2009.

Reducing human-caused mortality

The suspension of grizzly bear hunting (established in 2006) continued through 2009 and 2010.

The department continues to monitor, report and analyze grizzly bear mortality data. In 2009, the rates of human-caused grizzly bear mortality in BMAs 2-6 were 2.1 per cent for all bears and 0.9 per cent for female bears (Table 4). BMA 1 and the Swan Hills could not be included in these calculations because precise population estimates do not exist for these areas. No bears were killed as problem wildlife in 2009.

The number of known, human-caused grizzly bear mortalities has declined from an average of 27 per year in 2000 – 2005 to 14 per year since the hunting suspension was established in 2006 (Figure 3). In the past four years, self defense, illegal killing and mistaking grizzly bears for black bears has resulted in over half (55 per cent) of all known human-caused grizzly bear deaths (Figure 4). Euthanasia by department staff comprised 16 per cent of mortalities during this time period.

As recommended in the Recovery Plan, management of motorized access in grizzly bear range is expected to reduce bear mortalities by reducing the frequency of encounters between people and grizzly bears. The department has undertaken a series of initiatives to address access management in grizzly bear habitat. Core and secondary habitats have been delineated on public lands outside of protected areas in all occupied range, except for BMA 1 (see Figure 1), where there were insufficient data. Access routes capable of supporting vehicles 1.65 m or greater in width have been mapped within these areas to provide a benchmark for assessment and management. Workshops have been held with stakeholders to gather input on access management strategies. These recommendations have been developed and are currently under review by the department. Access continues to be managed in National and Provincial parks, Wilderness Areas, and Forest Land Use Zones. Outside of these areas, grizzly bear habitat is managed through land disposition processes, in which applications to carry out activities on public land are evaluated. Regional plans developed under the Land-use Framework will consider grizzly bear habitat requirements.

Table 4
Known human-caused mortality rates for grizzly bears in BMAs 2-6 during 2009.

BMA	Population Estimate	Number of Mortalities	Number of Female Mortalities	Mortality Rate	Female Mortality Rate
2	353	7	3	2.0%	0.8%
3	42	0	0	0.0%	0.0%
4	45	2	1	4.4%	2.2%
5	90	2	0	2.2%	0.0%
6	51	1	1	2.0%	2.0%
Total	581	12	5	2.1%	0.9%

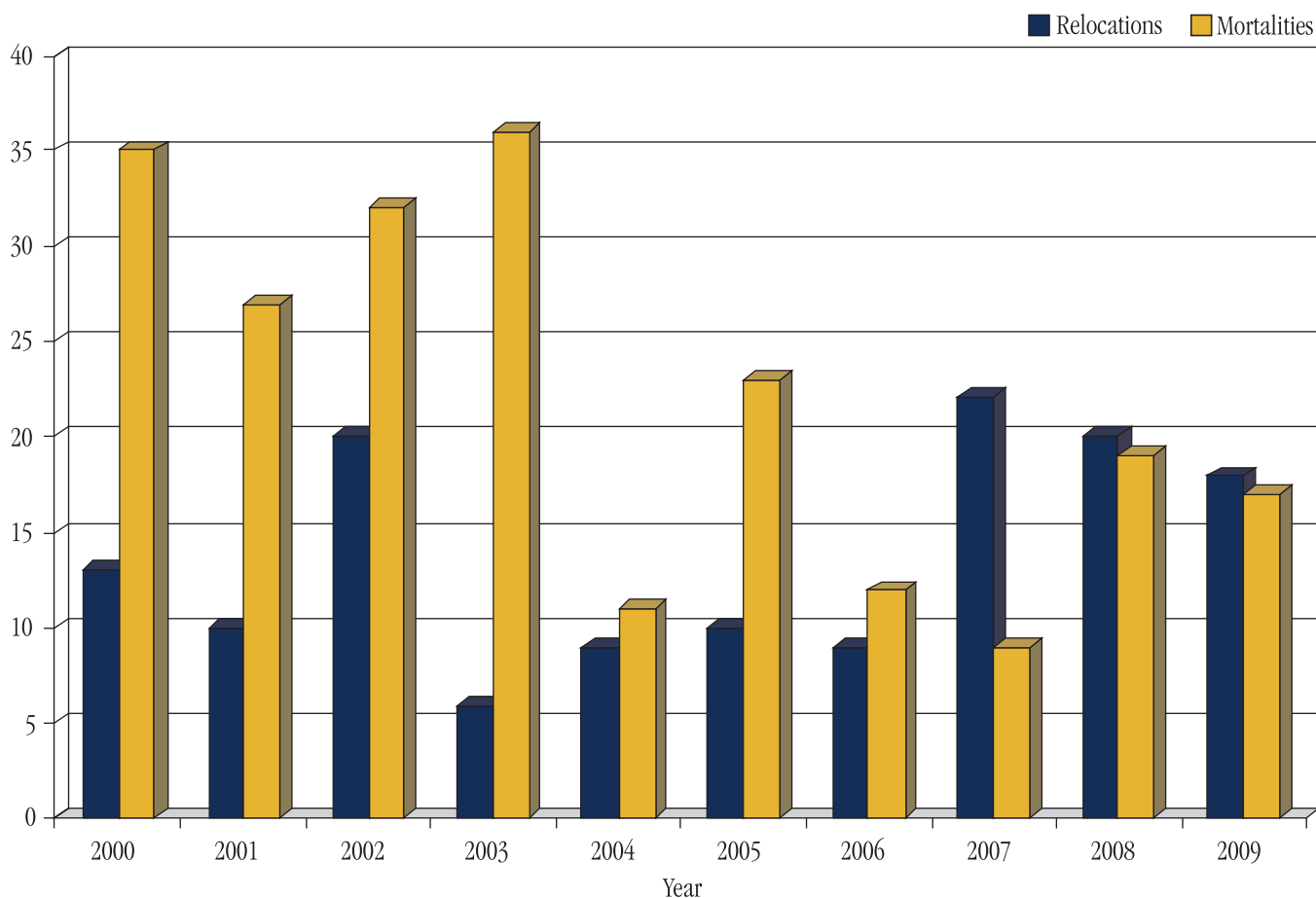
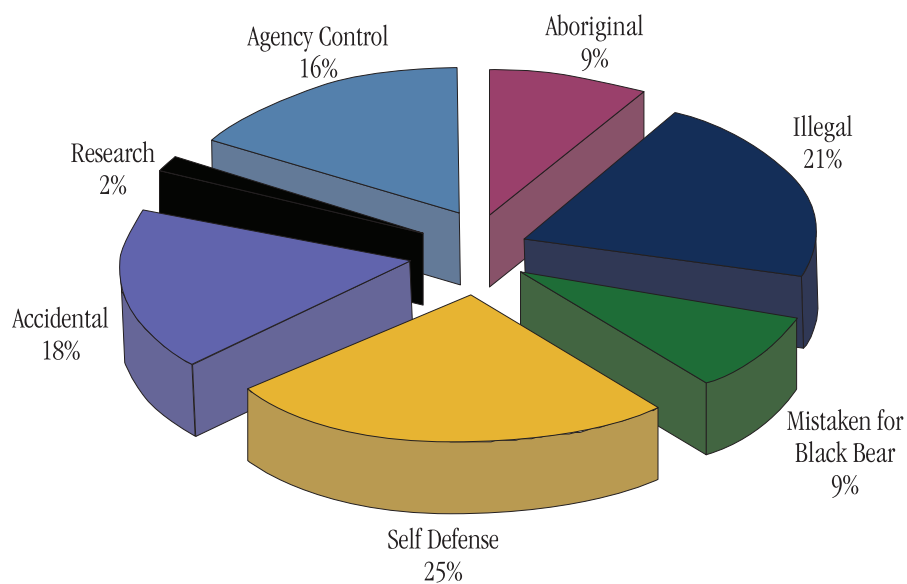


Figure 3
Number of known human-caused grizzly bear mortalities and number of grizzly bears relocated from 2000-2009.

Figure 4
Causes of death for grizzly bears known to have died due to human causes in Alberta, 2006-2009 (n=57).



Improve knowledge of grizzly bears

In 2008, a DNA-based population survey was completed for a large portion of BMA 2 (the Grande Cache Unit), resulting in a population estimate of 353 bears. In total, DNA surveys estimated 582 grizzly bears in Alberta. Additionally, a habitat-based estimate of grizzly bear numbers was completed for the Swan Hills, resulting in an estimate of 23 bears (range: 5-71 bears). In *Status of the Grizzly Bear in Alberta* (2010), an additional 15 grizzly bears are estimated to occur east of the DNA sampling grids and 71 bears are estimated in northern Alberta. This resulted in a population estimate of 691 grizzly bears in Alberta, not including the portions of the National Parks that were not included in the DNA surveys. Because they rely on habitat extrapolations and expert opinion, the population estimates for the Swan Hills, east of the DNA grids, and northern Alberta are considered to be less robust than the DNA surveys. The Fish and Wildlife Division, the Grizzly Bear Science Advisory Committee, and Foothills Research Institute are currently exploring approaches to surveying grizzly bears in these areas, where terrain and lower density of grizzly bears are expected to reduce the accuracy and cost-effectiveness of DNA surveys.

Research to investigate overall grizzly bear health and impacts of mining, mountain pine beetle management, and road access on grizzly bears is ongoing by the Foothills Research Institute and the University of Alberta. The department supports these projects through direct funding, provision of staff time and sharing of spatial information. The department created a Grizzly Bear Science Advisory Committee in 2008. This committee consists of science professionals mostly drawn from the recovery team. Its purpose is to identify research priorities related to grizzly bear conservation and communicate them to the research community. To date, the committee has met at least once per year and has developed a list of priority research topics that include:

1. developing cost-effective techniques to inventory and monitor grizzly bear populations
2. researching the effectiveness of different access management strategies in reducing grizzly bear mortality
3. determining management strategies and practices that are the most effective in reducing human use in core grizzly bear habitat and promoting grizzly bear survival and reproduction
4. determining how grizzly bear population goals should be established
5. determining what population size is required to achieve the Recovery Plan goal of a self-sustaining grizzly bear population over the long term
6. determining public education and/or outreach strategies and practices that are the most effective in changing public attitudes, beliefs and behaviours to reduce human-caused grizzly bear mortality
- 7) determining which habitat attributes contribute the most to grizzly bear population health, as indicated by grizzly bear reproduction and survival and determining how static (e.g., industrial development) and dynamic (e.g., human presence) human activities impact the quality of the most important of these habitat attributes



In 2009, the department began developing a streamlined database for grizzly bear information, to be housed in the provincial Fish and Wildlife Management Information System (FWMIS). This system allows remote access to grizzly bear data by field staff, including spatial mapping and search capabilities. The database will house all types of grizzly bear data, including mortalities, human-bear conflicts, telemetry locations, capture histories and relocations. Historic data are currently being loaded into this new system, with completion expected in 2011.

Reduce human-bear conflicts

In 2009, department staff from across the province worked with landowners, industrial users, agricultural producers, rural residents and recreationalists to prevent and reduce human-bear conflicts. In addition to providing educational information (described below), the Alberta BearSmart program provided and coordinated electric fencing, livestock carcass collection bins, bear-resistant garbage bins, diversionary feeding, removal of bear attractants, such as fruit and vegetation, and aversive conditioning of bears. A bear-resistant garbage bin loaner program is ongoing in Crowsnest Pass, Bragg Creek, Rocky

Mountain House, Edson, Hinton and Grande Cache. In many cases, these bins are ultimately purchased by the user. Staff from both Sustainable Resource Development and Tourism, Parks, and Recreation conducted pro-active measures to prevent conflicts through education, direct removal of attractants, fencing attractants, closing areas from public use and enforcement of regulations (Table 3). The BearSmart program also hired three temporary staff to develop bear hazard assessments in key communities, which identify the causes of human-bear conflicts and recommend solutions.

In southwest Alberta, approximately 140 road-killed ungulates were transported to 14 high-elevation sites as part of the annual Spring Intercept Feeding Program. This program works to reduce conflicts with agricultural producers by encouraging bears to stay in remote areas during the livestock calving and lambing season. Remote cameras were deployed at these sites in 2009, and 12 of 14 sites showed extensive use by grizzly bears. The other sites were used by cougars, black bears and wolves.



Fish and Wildlife officers continued to use Karelian Bear Dogs (KBDs) to prevent and respond to human-bear conflicts. KBDs are used to search for wildlife carcasses, to improve officer safety in conflict situations and to haze bears away from conflict sites. Use of KBDs help prevent bears from being relocated or destroyed. KBDs make excellent ambassadors for public education and were used at trade shows and other events to enhance the profile of the BearSmart educational program. From April 2001 to March 2009, KBDs and their handlers attended 253 public presentations with more than 47,000 people. In the field, they completed 676 grizzly bear-related tasks. Currently, four KBDs are paired with officers, and additional KBD teams are used for aversive conditioning as part of the work conducted by the Wind River Bear Institute (WRBI) in the Bow Valley and Kananaskis Country.

The WRBI has assisted Alberta Sustainable Resource Development and Alberta Tourism, Parks, and Recreation for nine years in proactively managing grizzly bear conflicts in the Bow/Kananaskis area. This includes monitoring and aversive conditioning of grizzly bears when required. Ten radio-collared grizzly bears were monitored in 2009; nine of them female and five of those with cubs of varying ages. There were more than 300 conditioning actions carried out on bears, 88 per cent of which were directed toward radio-collared grizzly bears. Individual bear profiles were completed at the end of the season to assess the effectiveness of conditioning on individual bears. Most bears demonstrated signs of improvement by moving into cover when exposed to people.

In 2009, the department reviewed and sought public input on its Grizzly Bear Response Guide. The Grizzly Bear Response Guide provides direction to department staff on appropriate responses to human-bear conflict situations. Most conflicts are resolved through preventative measures; however, the guide also outlines specific situations where capture and relocation or euthanasia of bears may be necessary. In 2009, the Grizzly Bear Response Guide was used during 605 grizzly bear occurrences across Alberta and resulted in the relocation of 16 different bears. No grizzly bears were euthanized.

Deliver a comprehensive education and outreach plan

The Alberta BearSmart program is the province's education and outreach program for people living, working or recreating in bear country. The program is a province-wide, multi-stakeholder initiative and uses public education and management of bear attractants to promote public safety, reduce human-caused bear mortality, and reduce property damage. The program provides information such as educational messaging on bear natural history, proper management of bear attractants, methods to avoid bear encounters and appropriate responses to close encounters with bears. Education and conflict prevention efforts are focused on communities, outdoor recreationalists, agricultural producers, and industry.

In 2009, the department overhauled the provincial BearSmart website (www.srd.alberta.ca/RecreationPublicUse/AlbertaBearSmart/Default.aspx), placed BearSmart ads in several outdoor publications, produced new educational products for hunters and rural residents, developed a YouTube video demonstrating the proper use of bear spray and produced and installed educational signage throughout the province. Department staff, community members, and volunteers gave 78 BearSmart presentations to community groups, 109 presentations to school groups, 63 presentations to industrial workers, attended 80 tradeshow and visited individually with 411 landowners. Over 15,700 educational brochures and checklists were distributed and BearSmart messaging was featured in 209 newspaper articles and radio ads across the province. A total of 61 BearSmart display signs are currently in place across the province. In addition, the department hired a Carnivore Specialist; a major focus of his work is the coordination and delivery of the BearSmart program.

In addition to provincial efforts, the BearSmart program works with communities to deliver educational messaging and reduce bear attractants at a local level. Currently, Canmore, Bragg Creek, Crowsnest Pass, and Mountain View County are BearSmart communities. Staff are working in Grande Cache, Cadomin, Hinton, Edson, Fox Creek, Slave Lake, Nordegg and in the agricultural landscapes around Cardston and Pincher Creek (Southwest Agricultural Initiative) to help develop programs in these areas. In 2009, bear hazard assessments were initiated in



Mountain View and Clearwater Counties, as well as Edson, Hinton, Cadomin, and Grande Cache. Hazard assessments help identify the primary causes of bear-human conflicts and recommend measures to prevent them. The department has also developed an information package for municipalities that recommends bylaws to reduce human-bear conflicts.

In 2009, in collaboration with Alberta Environment, department staff developed a suite of Best Management Practices for preventing bear conflicts at landfills and waste transfer sites. Alberta Environment is currently incorporating these guidelines into the management of these facilities across Alberta.

Finally, department staff initiated discussions with the Alberta Hunter Education Instructors' Association and the Alberta Professional Outfitters Society (APOS) to incorporate BearSmart messaging into the province's conservation education programs. Enhanced information in bear identification and safety will be incorporated into Hunter Education courses and the APOS newsletter in 2010.

Identify, track, and maintain grizzly bear habitat

In 2009, the department mapped important grizzly bear habitat in the Chinchaga area (BMA 1) for ongoing management planning. Core and secondary areas have been delineated for the remaining BMAs in the province. In 2010, the department plans to confirm grizzly bear range mapping for the Marten Hills.

Improve interjurisdictional communication

Department staff continue to participate on the Interagency Grizzly Bear Committee and consult frequently with biologists and managers from neighbouring states and provinces and the National Parks. Sixteen staff attended the Bear-

Human Conflict Workshop in November, sharing ideas on how to reduce human-bear conflicts with biologists and officers from across North America. Finally, a data sharing agreement has been developed to facilitate information exchange between Alberta and its neighbours.

Improve and apply regulations or legislation

Municipal bylaws have been modified in some areas to reduce bear attractants, and ongoing hazard assessments in several communities will help to identify additional bylaw changes that will reduce human-bear conflicts. Communications with other departments (Environment; Tourism, Parks and Recreation) have resulted in improved guidelines and application of existing regulations.