



Grizzly Bear Conservation in Alberta

**2010 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*. In response, Alberta Sustainable Resource Development funded research to gather more information on populations and habitat. In June 2010, the Government of Alberta officially declared grizzly bears as a threatened species. The management of grizzly bears is guided by the *Alberta Grizzly Bear Recovery Plan*, which recommends several strategies to ensure the long-term viability of grizzly bears in the province. This report summarizes grizzly bear conservation and management activities conducted in 2010 and describes the progress the Government of Alberta has made in implementing the recovery plan.

2010 Management Activities

Mortality

Twenty-one grizzly bear deaths were recorded by Sustainable Resource Development in 2010, including 19 human-caused mortalities (Table 1). Illegal killing (including cases where grizzly bears were mistaken for black bears) was the primary cause of death, accounting for 47 per cent of all human-caused mortalities. One bear was euthanized by Fish and Wildlife staff after it had been involved in three separate cases of livestock depredation. Importantly, only three adult female grizzly bears were known to have died in 2010.

Table 1
Sex, estimated age, bear management area (BMA) and cause of death for grizzly bears known to have died on provincial and private lands in Alberta in 2010.

Month of Mortality	B.M.A.	Sex	Age	Cause
Unknown	6	M	SubA	Unknown
May	6	F	Adult	Illegal
May	3	M	Adult	Illegal
May	6	M	Adult	Unknown
May	6	M	Adult	Aboriginal
May	N/A ¹	M	Adult	Mistaken for black bear
June	1	F	Adult	Mistaken for black bear
July	6	M	SubA	Accidental
July	5	M	SubA	Roadkill
July	2/3 ²	M	SubA	Roadkill
July	5	UNK	SubA	Roadkill
July	2	M	Adult	Problem Wildlife
September	3	M	SubA	Illegal
September	2	M	SubA	Aboriginal
September	Swan Hills	M	SubA	Mistaken for black bear
September	5	M	Adult	Illegal
October	5	M	SubA	Roadkill
October	3	F	Adult	Illegal
October	3	F	SubA	Illegal
October	2	M	Adult	Self Defence
November	2	F	SubA	Roadkill

¹ Killed in northeast Alberta, outside the boundaries of Grizzly Bear Management Areas (BMAs).

² Hit by a vehicle on Highway 16, which forms the boundary between BMAs 2 and 3.

Relocation

Fish and Wildlife Division staff captured and relocated 13 different grizzly bears in 2010 (Table 2). Two bears were moved twice each. Eight bears were moved within their home range to remove them from specific conflict situations. Seven bears were moved outside of the BMA because they either 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, seven were in response to public safety concerns, five were in response to depredations on livestock and three were in response to bears repeatedly causing property damage to access livestock feed.

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. Satellite radio collar technology allows department staff to monitor movements and fates of these bears through time. Bears that are fitted with ear-tag transmitters are monitored opportunistically. Since 2004, a total of 23 translocated grizzly bears have been fitted with satellite collars and monitored for one or more years. Preliminary data indicate females may be more likely than males to survive and settle near their release sites and are less likely to continue conflict behaviour after translocation. It also appears that bears released into certain BMAs may be more successful than those bears released in other areas. This monitoring will result in new information on the success of relocations and help department staff choose release sites more effectively.

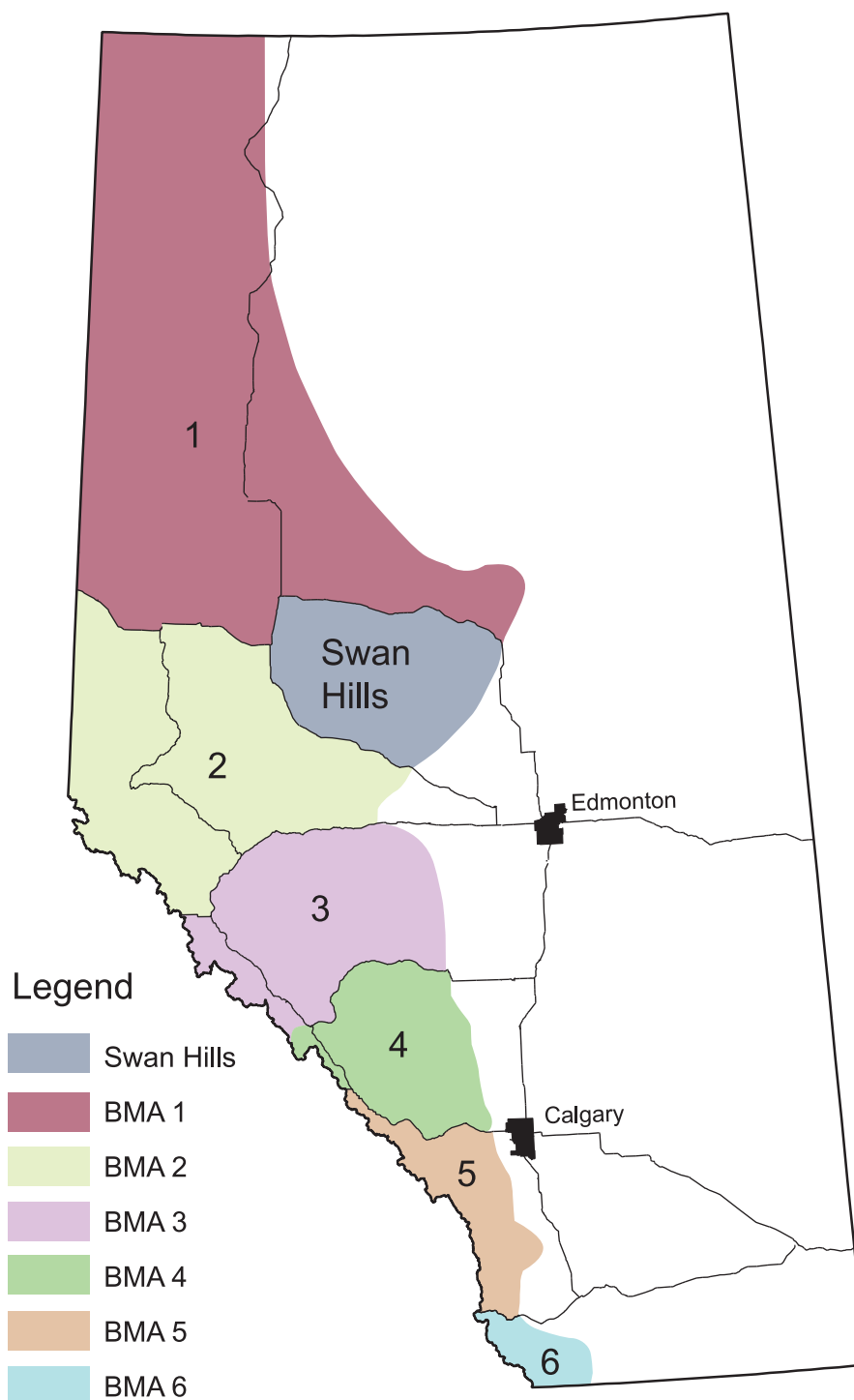


Figure 1
Bear Management Areas (BMAs) in Alberta.

Table 2

Capture month, bear management area (BMA), age, reason for capture and type of relocation for grizzly bears relocated in Alberta in 2010.

Bear ID	Capture Month	BMA	Sex	Age	Reason for Capture	Relocation Type
403278	May	6	M	Adult	Livestock attack	Outside homerange
378414	May	3	F	SubA	Public safety	Within homerange
403274	May	6	M	SubA	Public safety	Within homerange
403275	May	6	F	SubA	Public safety	Within homerange
403276	May	6	M	SubA	Public safety	Within homerange
403271	May	4	M	SubA	Livestock attack	Within homerange
403272	May	4	M	SubA	Livestock attack	Within homerange
403279	June	6	M	Adult	Livestock feed	Within homerange
378414	June	4	F	SubA	Public safety	Outside homerange
403276	June	5	M	SubA	Public safety	Outside homerange
403282	July	5	M	Adult	Livestock attack	Outside homerange
403273	September	4	M	Adult	Livestock feed	Outside homerange
380182	September	5	F	Adult	Livestock feed	Outside homerange
403970	October	2	M	Adult	Livestock attack	Outside homerange
406843	October	2	M	Adult	Public safety	Within homerange

Sightings and human-bear conflicts

Staff from the Fish and Wildlife Division and Tourism, Parks, and Recreation recorded 567 grizzly bear occurrences in 2010 and spent more than 4,500 hours responding to these situations (Table 3). The total number of occurrences and number of hours spent responding were slightly less in 2010 than in 2009, during which 605 occurrences were recorded and 5,272 hours were spent responding. In 2010, most occurrences (66 per cent) were sightings reported by the public. In 94 per cent of these circumstances, actions by officers were limited to monitoring the situation or providing information to the public.

There were 110 situations where monitoring or education did not resolve the occurrence. Officers conducted preventative measures in 77 (70 per cent) of the cases and made attempts to capture bears in 33 (30 per cent) of these situations. Of those 33 attempts to capture the bear, 11 attempts were to resolve public safety concerns and 21 were made to prevent further property damage.

Fifty-five occurrences were situations where public safety was considered a concern, either by the complainant or by the responding officer. Most (80 per cent) of these cases were resolved without an attempt to capture and relocate the bear. One mauling by a grizzly bear occurred in Alberta in 2010, but the incident was very minor and resulted in no injuries. This was a defensive attack by a female with cubs and required no direct response.

Most grizzly bear occurrences took place from April to October, with May 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) were relatively constant from May to October.

Table 3
Grizzly bear occurrence types, responses by Fish and Wildlife and Conservation officers, and manpower expenditures during 2010.

Occurrence Type	Response										Hours
	Monitor ¹	Education	Remove Attractant	Close Area	Fence Area	Aversive Conditioning	Compensation Claim	Enforcement	Capture Attempt	Total	
Sighting	314	37		11		10				372	587
Road Kill	4	1								5	21
Bee Yard	1				2				2	3	161
Livestock Feed	2		1		5				4	12	206
Livestock Carcasses	7	6	2	1		1			1	18	257
Livestock / Harassment/Attack ²	24	10			1		5		15	55	1798
Illegal Activity								27		27	399
Public Safety	12	20	5	5		2			11	55	1127
Mauling	1									1	3
Other	10	8	1							19	40
Total	375	82	9	17	6	13	5	27	33	567	4599

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.

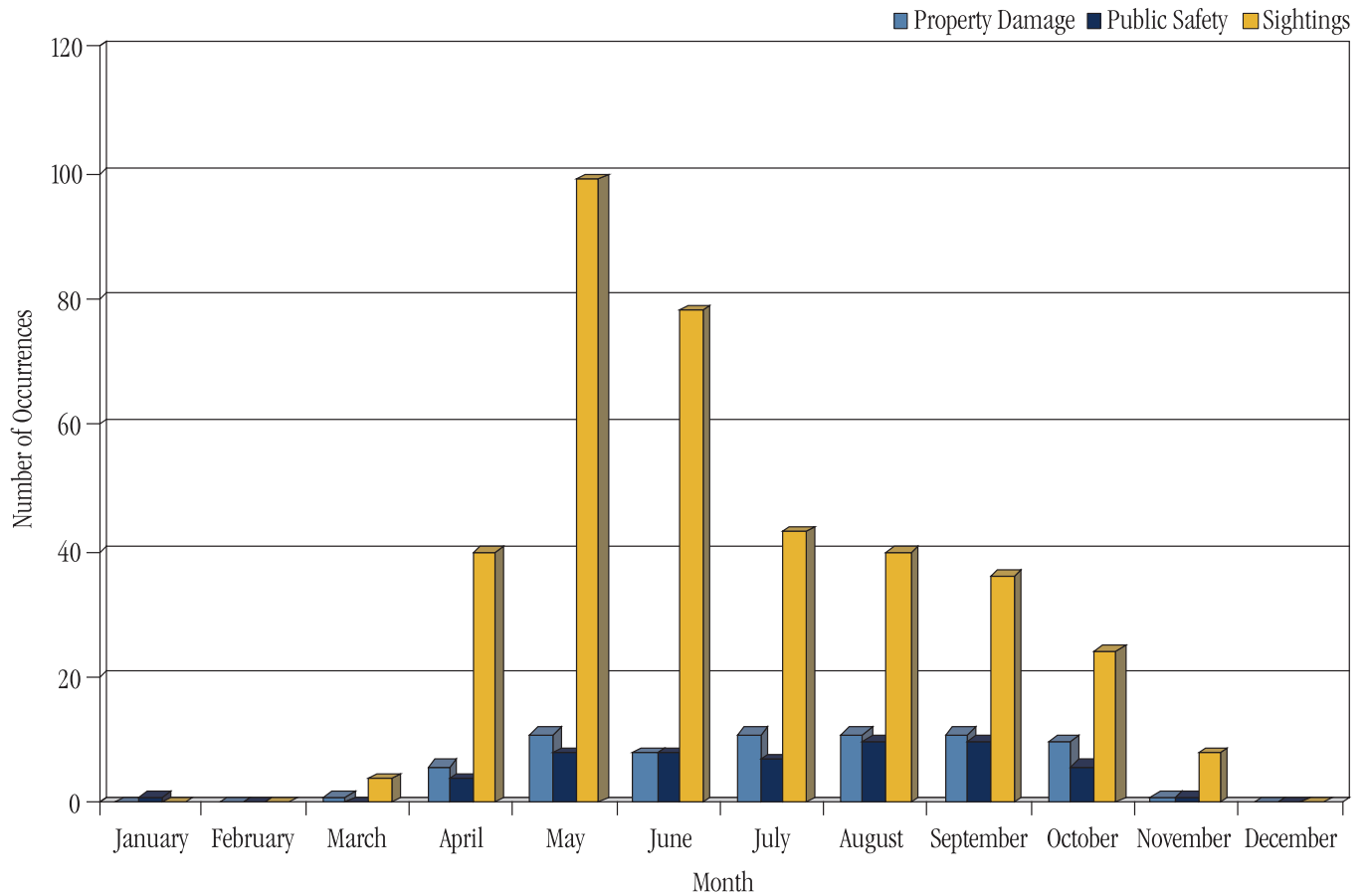


Figure 2
Month of grizzly bear occurrences related to property damage, public safety or sightings in Alberta during 2010.



Recovery Plan Implementation

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

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

Along with its partners, the department continued to make progress in implementing these strategies in 2010.

Reducing human-caused mortality

The suspension of grizzly bear hunting (established in 2006) continued through 2010 and 2011. While the department's current focus is on reducing human-bear conflicts and grizzly bear mortalities across the province, it may eventually consider re-establishing a hunting season in BMAs where recovery targets have been met and population sustainability and a harvestable surplus has been demonstrated.

The department continues to monitor, report and analyze grizzly bear mortality data. In 2010, the rates of human-caused grizzly bear mortality in BMAs 2-6 were 2.8 per cent for all bears and 0.7 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. Grizzly bear mortalities in National Parks are reported by Parks Canada.

The number of known, human-caused grizzly bear mortalities has averaged 15 per year since the hunting suspension was established in 2006 (Figure 3). In the past five years, self defence, illegal killing and mistaking grizzly bears for black bears has resulted in over half (56 per cent) of all known human-caused grizzly bear deaths (Figure 4). Accidental deaths (primarily road and railway kills) also comprised a substantial portion, at 21 per cent.

The department is continuing to review strategies for managing motorized access in core and secondary grizzly bear areas in order to reduce interactions between people and bears. Ultimately, it is expected that this approach will reduce human-caused grizzly bear mortalities. Motorized access is currently 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 2010.

BMA	Population Estimate	Number of Mortalities	Number of Female Mortalities	Mortality Rate	Female Mortality Rate
2	353	4	1	1.1%	0.3%
3	42	5 ¹	2	11.9%	4.8%
4	45	0	0	0.0%	0.0%
5	90	4	0	4.4%	0.0%
6	51	3	1	5.9%	2.0%
Total	581	16	4	2.8%	0.7%

¹ Assumes that the grizzly bear killed by a vehicle on Highway 16 was from BMA 3.

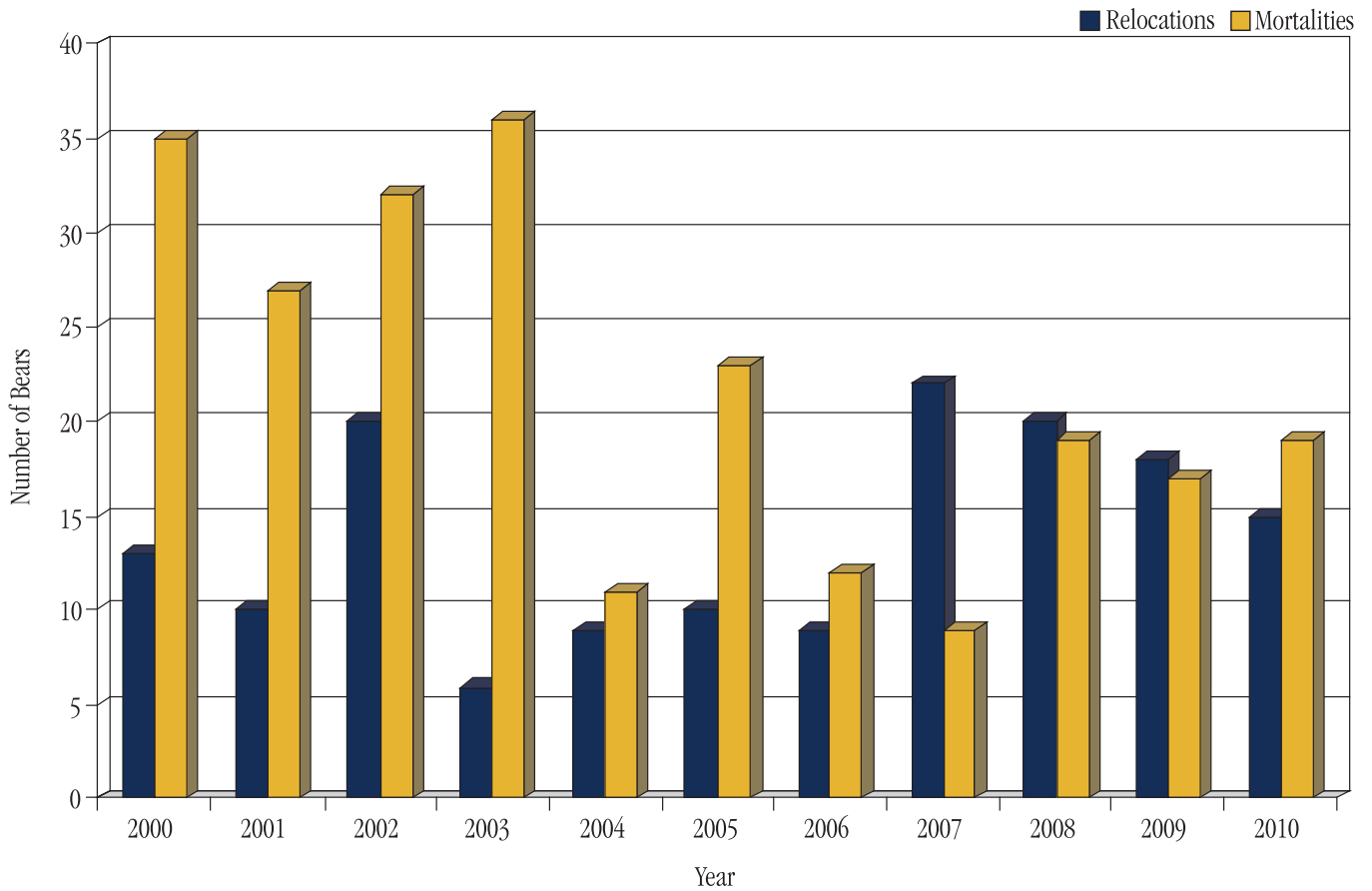
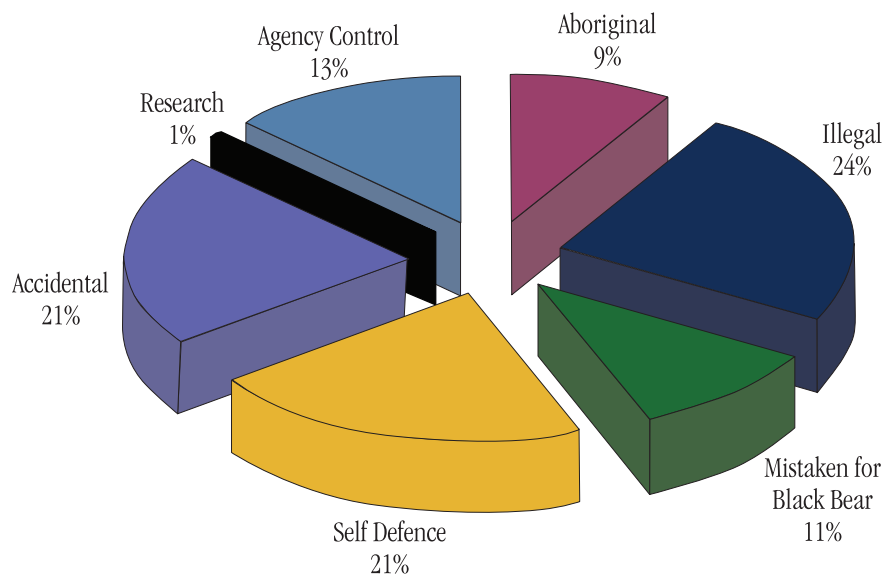


Figure 3
Number of known, human-caused grizzly bear mortalities and number of grizzly bears relocated from 2000-2010.

Figure 4
Causes of death for grizzly bears known to have died due to human causes in Alberta, 2006-2010 (n=76).



Improve knowledge of grizzly bears

In 2010, the department collaborated with the Alberta Conservation Association to produce an updated report describing the current status of grizzly bears in Alberta. The *Status of the Grizzly Bear in Alberta (2010)* summarizes over a decade of extensive research and five years of DNA-based population surveys to provide the most detailed compendium of information on Alberta's grizzly bears ever produced. This report formed the basis of the Grizzly Bear Status Assessment and the decision to list grizzly bears as a threatened species in June 2010.

The department created a Grizzly Bear "Science Advisory Committee" in 2008. This committee has developed a list of priority research topics to help inform grizzly bear recovery actions. The committee continues to meet once per year to share research results and review research priorities. Currently, priority research areas include the following:

- 1) Developing cost-effective techniques to inventory and monitor grizzly bear populations.
- 2) Researching the effectiveness of different access management strategies in reducing human/grizzly bear conflicts.
- 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 self-sustaining grizzly bear populations 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/grizzly bear conflicts.
- 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.



Several research projects were initiated or completed in 2010 that address the Science Advisory Committee's research priorities. Joe Northrup, a Master of Science Student under the direction of Dr. Mark Boyce at the University of Alberta, recently completed a thesis entitled *Grizzly Bears, roads, and human-bear conflicts in southwestern Alberta*. Joe's work provides guidance on access management strategies and identifies the causes of human-bear conflicts in BMA 6. Several of the recommendations resulting from this research, such as the management of agricultural attractants on private land, are currently being implemented.

The department has also contracted a team of researchers to investigate cost-effective techniques to monitor grizzly bear population trends. Plans are currently being developed to initiate a trend-monitoring pilot study in two areas of the province (BMAs 3 and 6) starting in summer 2011. 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.

In 2010, the department completed the development of a provincial database for grizzly bear information, housed in the *Fish and Wildlife Management Information System (FWMIS)*. This system allows around-the-clock remote access to grizzly bear data by field staff and includes spatial mapping and search capabilities. The database houses all types of grizzly bear data, including mortalities, human-bear conflicts, telemetry locations, capture histories and relocations. The number of grizzly bear records in this database has increased from 2,784 to over 300,000 since work began in 2009. As part of this initiative, the department has also begun to improve and streamline the input of grizzly bear conflict information reported by the public or collected by field staff. Historic data continues to be loaded into the new database, with completion expected in 2011.

Reduce human-bear conflicts

In 2010, department staff from across the province continued to work 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. New for 2010, BearSmart practices were integrated at upstream oil and gas camps in bear country as part of the Enhanced Approval Process. The department plans to officially launch the industrial portion of the BearSmart program in spring 2011.

Landowners in Cardston County and the Municipal District of Pincher Creek continued their efforts of removing dead livestock to reduce conflicts with grizzly bears as part of their ranch protection goals and attractant management objectives. Use of dead livestock temporary storage bins to prevent scavenging by bears is increasing, with some bins receiving very high use. Additional efforts, led by two producer-driven community groups, continued efforts to protect livestock feed stored in granaries by using permanent and temporary electrical fencing, installing bear-proof grain bin doors and floors and installing hopper bottoms on existing bins. The department plans to continue to support these community-based efforts to reduce human-bear conflicts in the upcoming year.



In southwest Alberta, approximately 145 road-killed ungulates were transported to 14 high elevation sites in March and April 2010 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. Carcass-drop locations were monitored with trail cameras to assess use by grizzly bears and other carnivore species. All sites were used by grizzly bears, some more extensively than others. Some sites also showed use by other carnivores, including cougars, black bears, wolves, coyotes and wolverines.

Fish and Wildlife officers continued to use Karelian Bear Dogs to prevent and respond to human-bear conflicts. These dogs are used to search for wildlife carcasses, to improve officer safety in conflict situations and to haze bears away from conflict sites. Use of Karelian Bear Dogs helps prevent bears from being relocated or destroyed. These dogs are excellent ambassadors for public education and were used at public events to enhance the profile of the BearSmart educational program.

The Wind River Bear Institute (WRBI) has assisted Alberta Sustainable Resource Development and Alberta Tourism, Parks, and Recreation for 10 years in proactively managing grizzly bear conflicts in the Bow/Kananaskis area. This includes monitoring and aversive conditioning of grizzly bears when required. Eight grizzly bears, three of them female with cubs, were captured, radio collared and added to the aversion program in 2010.

Fourteen radio-collared grizzly bears were monitored in 2010, of which nine were lone females and five were females with cubs of varying ages. There were more than 600 conditioning actions carried out on bears, 77 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 or approaching vehicles. Sustainable Resource Development, in conjunction with WRBI and Bow Valley WildSmart, also disseminated a weekly bear-activity report to Bow Valley residents and recreationists that identified varying levels of bear activity throughout the valley. Natural attractants (primarily buffaloberry shrubs) were mechanically removed from many developed areas, including campgrounds and residential areas, as part of an ongoing effort to discourage bears from using developed areas.

In 2010, the department finalized updates to 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.

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 2010, the department continued to develop the provincial BearSmart website, (www.bearsmart.alberta.ca), completed a Provincial BearSmart Manual, placed BearSmart ads in several outdoor publications, produced new educational



products for industrial workers, developed a YouTube video on setting up campsites in bear country and produced and installed educational signage throughout the province. Since 2009, the department has produced and distributed over 70,000 educational brochures and checklists. In 2010, department staff, community members, and volunteers gave 83 BearSmart presentations to community groups, 91 presentations to school groups, 76 presentations to industrial workers, attended 45 tradeshow and visited individually with 1,250 landowners. BearSmart messaging was featured in 167 newspaper articles and radio ads and 68 additional BearSmart signs were installed across the Province.

In addition to provincial efforts, the BearSmart program works with communities to deliver educational messaging and reduce bear attractants at a local level. The department hosted a BearSmart workshop in March 2010 for Fish and Wildlife staff and community group volunteers to help facilitate information exchange among different areas of the province. Currently, Canmore, Bragg Creek, Crowsnest Pass, Grande Cache and Mountain View County have active BearSmart committees that are comprised of community members and representatives from local and provincial government. Staff are working in many other locations across the province to initiate or help facilitate BearSmart initiatives. Community programs typically include an educational component, as well as initiatives designed to help

manage bear attractants. In 2010, bear hazard assessments were completed in Bragg Creek, Mountain View County and the Foothills Management Area (Edson, Hinton, Cadomin, and Grande Cache), and department staff are working with these communities to reduce human-bear conflicts. The department has also contracted the Miistakis Institute to develop a bear hazard assessment for the Smoky Management Area, which surrounds Grande Prairie. Hazard assessments help identify the primary causes of bear-human conflicts and recommend measures to prevent them.

Identify, track, and maintain grizzly bear habitat

Grizzly bear range has been mapped in all BMAs in the province, including northern Alberta and Swan Hills. Core and secondary areas have been delineated in BMAs 2-6 and in Swan Hills and will serve as priority areas for access management. The department plans to continue collecting public sighting information across the province to document potential range expansion or retraction.

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. Grizzly bear mortality data are regularly shared with Parks Canada in order to help facilitate management of bears which use both provincial lands and National Parks. Finally, the department is collaborating with Parks Canada, Alberta Tourism, Parks and Recreation and the United States Geological Survey to initiate grizzly bear trend monitoring in BMA 6, which is part of the Northern Continental Divide Ecosystem shared with B.C. and Montana.



Improve and apply regulations or legislation

In 2010, the department completed a review of baiting regulations for black bears, wolves, and coyotes. These baits can create public safety concerns if placed within grizzly bear range during the active bear season. Several potential regulation changes have been discussed with stakeholders, including the closure of black bear baiting in core and secondary grizzly bear areas, timing restrictions for the placement of wolf and coyote baits and improved consistency in requirements for signage at bait locations. These changes are undergoing the department's regulatory review process, with final decisions expected by May 2011.

