



Grizzly Bear Conservation in Alberta

**2012 Management Activities and
Recovery Implementation**

Introduction

In June 2010, the Government of Alberta officially declared grizzly bears a threatened species under Alberta's *Wildlife Act*. The management of grizzly bears is currently 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 the grizzly bear conservation and management activities conducted in 2012 and describes the progress the Government of Alberta has made in implementing the recovery plan.

2012 Management Activities

Mortality

Fifteen grizzly bear deaths were recorded by Sustainable Resource Development in 2012, including 14 human-caused mortalities (Table 1). Self defense was the primary cause of death, accounting for 36 per cent of all human-caused mortalities. One bear was euthanized by Fish and Wildlife staff after it had caused extensive property damage and public safety concerns, including entering buildings. A total of 7 mortalities were of adult female bears, which is higher than the recent average.

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 2012.

Month of Mortality	B.M.A.	Sex	Age	Cause
March	5	M	Adult	Self Defense
May	6	M	SubA	Accidental
May	5	M	SubA	Road Kill
May	3	M	SubA	Illegal
May	3	M	Adult	Illegal
June	2	M	SubA	Mistaken for black bear
June	5	UNK	SubA	Road Kill
August	5	F	Adult	Road Kill
September	6	F	Adult	Self Defense
September	2	F	Adult	Self Defense
September	Swan Hills	F	Adult	Self Defense
September	2	F	Adult	Self Defense
October	6	M	Adult	Problem Wildlife
October	2	F	Adult	Unknown
October	2	F	Adult	Illegal

Relocation

Fish and Wildlife Division staff captured and relocated 29 different grizzly bears in 2012 (Table 2). Ten bears were moved within their home range to remove them from specific conflict situations. Nineteen bears were moved outside of their respective BMA because they had a history of involvement in conflict situations, or they were unlikely to avoid conflicts in their original home range. One bear was moved on 2 separate occasions. Of all situations in which bears were moved, four were in response to public safety concerns, twelve were in response to depredations on livestock, and five were in response to bears repeatedly causing property damage to access livestock feed. Six subadult bears were moved in conjunction with their mothers. Two bears were captured incidentally while teams were targeting a different bear; these bears were moved a short distance within their home range to remove them from the conflict area.

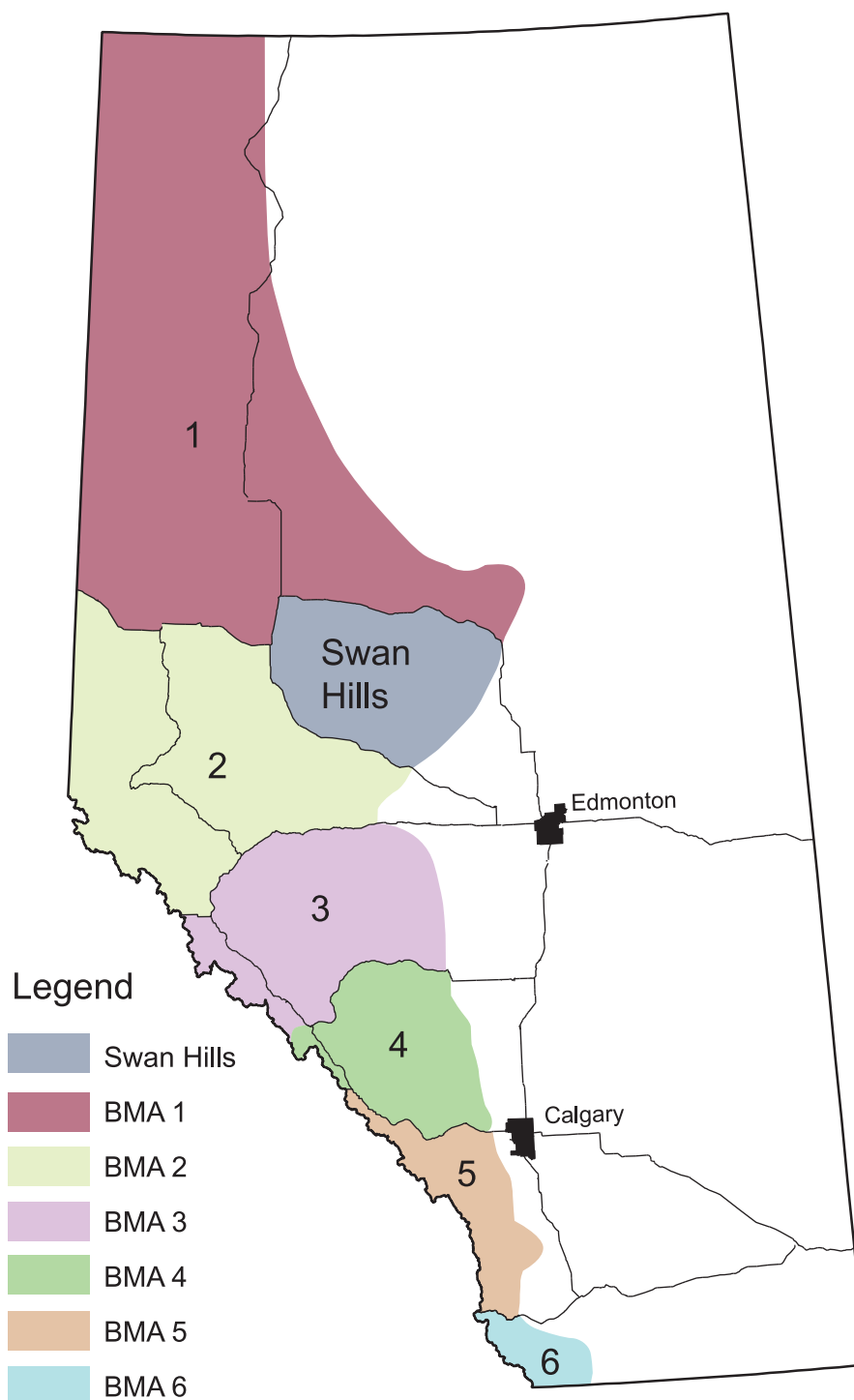


Figure 1
Bear Management Areas (BMAs) in Alberta.

Table 2

Capture month, bear management area (BMA), age, reason for capture and type of relocation for grizzly bears relocated in Alberta in 2012.

Bear ID	Capture Month	BMA	Sex	Age	Reason for Capture	Relocation Type
525490	April	5	M	Adult	Livestock attack	Outside homerange
512988	April	4	M	Adult	Livestock attack	Outside homerange
525491	April	4	M	Adult	Livestock attack	Outside homerange
525493	May	6	F	Adult	Livestock attack	Outside homerange
N/A	May	6	UNK	Juv	With mother	Outside homerange
N/A	May	6	UNK	Juv	With mother	Outside homerange
541666	May	6	F	Adult	Livestock attack	Outside homerange
541667	May	6	M	SubA	Livestock attack	Outside homerange
378414	June	2	F	Adult	Public safety	Outside homerange
542251	June	6	F	Adult	Livestock attack	Outside homerange
542252	June	6	F	SubA	With mother	Outside homerange
542253	June	6	F	SubA	With mother	Outside homerange
378407	June	5	F	Adult	Public safety	Outside homerange
492467	June	5	M	Adult	Livestock attack	Outside homerange
504372	June	5	F	SubA	With mother	Outside homerange
542254	June	5	F	SubA	With mother	Outside homerange
534541	June	6	M	Adult	Livestock attack	Outside homerange
534540	June	6	F	Adult	Accidental capture	Within homerange
557316	June	4	M	Adult	Livestock feed	Within homerange
541671	June	5	F	Adult	Livestock attack	Within homerange
542371	July	4	M	Adult	Livestock attack	Outside homerange
554525	July	1	F	Adult	Livestock feed	Within homerange
557219	September	2	M	Adult	Property damage	Within homerange
557313	October	6	M	Adult	Livestock attack	Outside homerange
555059	October	6	M	Adult	Livestock feed	Within homerange
555060	October	2	F	Adult	Livestock feed	Within homerange
557311	October	6	M	SubA	Livestock feed	Within homerange
557312	October	6	M	SubA	Public safety	Within homerange
557318	October	6	M	Adult	Accidental capture	Within homerange
555060	November	2	F	Adult	Public safety	Within homerange

Sightings and human-bear conflicts

Government staff recorded 505 grizzly bear occurrences in 2012 and spent more than 4,300 hours responding to these situations (Table 3). The total number of occurrences and number of hours spent responding were slightly less than in 2010 or 2011, likely due to an abundance of natural bear foods across most of the province in 2012. The most common type of occurrence (47 per cent) were sightings reported by the public. In 95 per cent of these circumstances, actions by officers were limited to monitoring the situation or providing information to the public.

There were 151 situations where monitoring or education did not resolve the occurrence. Officers conducted preventative measures in 85 (56 per cent) of the cases and made attempts to capture bears in 66 (44 per cent) of these situations. Of those 66 attempts to capture the bear, 16 were to resolve public safety concerns and 48 were made to prevent further property damage.

Seventy-eight occurrences were situations where public safety was a concern, either by the complainant or by the responding officer. Most (79 per cent) of these cases were resolved without an attempt to capture and relocate the bear. Two maulings by grizzly bears occurred in Alberta in 2012. One situation involved a bear that

was disturbed in its den, inflicting only very minor injuries. The area surrounding the den was closed to public access. The other mauling involved a defensive attack by a female with cubs, resulting in significant human injuries. In this case, the bear was shot in self defence and died of its injuries.

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) were highest from September and October, when bears were preparing for denning.

The majority of more serious grizzly bear occurrences (public safety or property damage situations) were recorded in southwest Alberta, particularly in the agricultural landscapes surrounding Pincher Creek and Cardston (Figure 3). Numerous cases of livestock depredation and property damage south of Cardston led to several bear relocations in 2012, including two family groups. Evidence indicates that grizzly bear populations are expanding in this portion of Alberta, requiring significant efforts by the local agricultural community and government staff to prevent and respond to conflicts.



Table 3
Grizzly bear occurrence types, responses by Fish and Wildlife and Conservation officers, and manpower expenditures during 2011.

Occurrence Type	Response										Hours
	Monitor ¹	Education	Remove Attractant	Close Area	Fence Area	Aversive Conditioning	Compensation Claim	Enforcement	Capture Attempt	Total	
Sightings	195	31	1	5		6				238	282
Road Kill	2								1	3	34
Bee Yard	3				2				2	7	84
Livestock Feed	11		1		5				15	32	471
Livestock Carcasses	7	5	1							13	46
Livestock / Harrassment/Attack ²	30						23		31	84	2390
Illegal Activity								23		23	229
Public Safety	30	22	2	5	1	5			16	78	673
Mauling	1			1						2	30
Other	12	6	2	2	2	2			1	25	63
Total	291	64	7	13	10	8	23	23	66	505	4302

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.

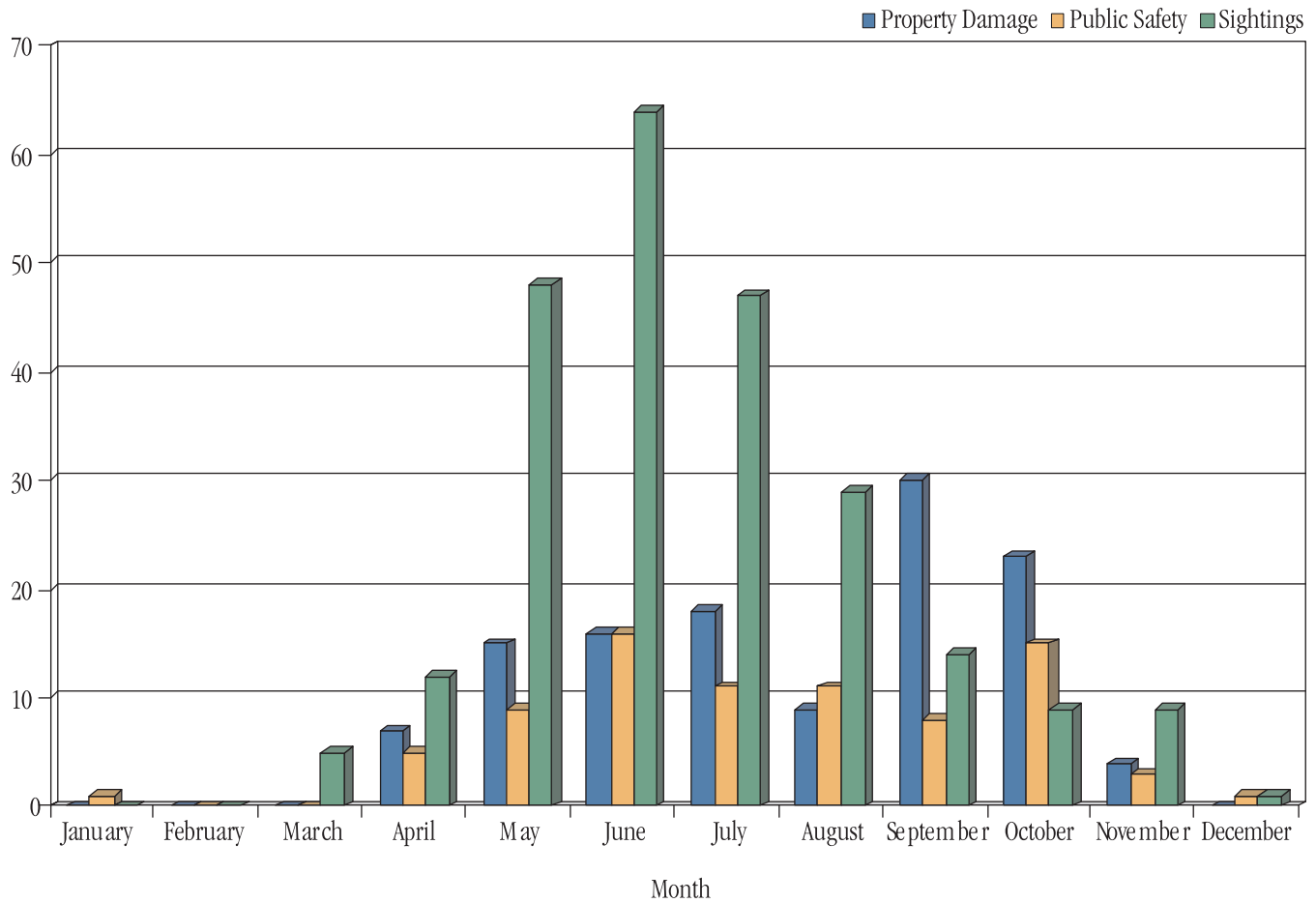


Figure 2
Month of grizzly bear occurrences related to property damage, public safety and sightings in Alberta during 2012.



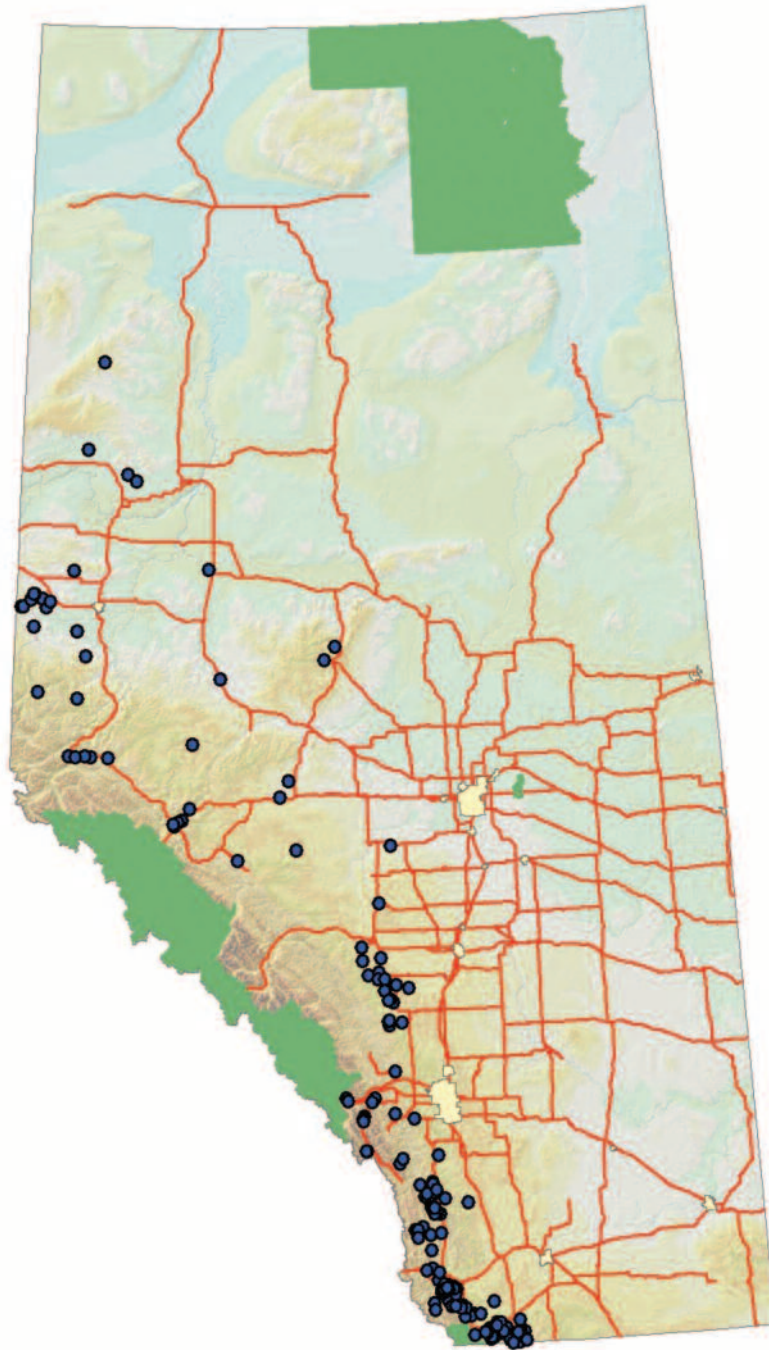


Figure 3
Location of grizzly bear occurrences related to public safety and property damage during 2012.

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 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

The department and its partners continued to make progress in implementing these strategies in 2012.

Reducing human-caused mortality

The suspension of grizzly bear hunting (established in 2006) continued through 2012 and 2013.

The department continues to monitor, report and analyze grizzly bear mortality data. In 2012, the rates of human-caused grizzly bear mortality in BMAs 2-6 were 2.2 per cent for all bears and 0.9 per cent for female bears (Table 4). Importantly, mortality rates were calculated using population estimates from DNA surveys conducted in 2004-2008, which may no longer be reflective of the current number of bears in each area. In addition, BMA 1 and the

Swan Hills could not be included in these calculations because only approximate population estimates 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, which is a 45 per cent reduction from the years 2000-2005 (Figure 4). In the past seven years, self defence, illegal killing and mistaking grizzly bears for black bears have resulted in over half (57 per cent) of all known human-caused grizzly bear deaths (Figure 5). Accidental deaths (primarily road and railway kills) also comprised a substantial portion, at 23 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 2012.

BMA	Population Estimate	Number of Mortalities	Number of Female Mortalities	Mortality Rate	Female Mortality Rate
2	353	4	3	1.1%	0.8%
3	42	2	0	4.8%	0.0%
4	45	0	0	0.0%	0.0%
5	90	4	1	4.4%	1.1%
6	51	3	1	5.9%	2.0%
Total	581	13	5	2.2%	0.9%

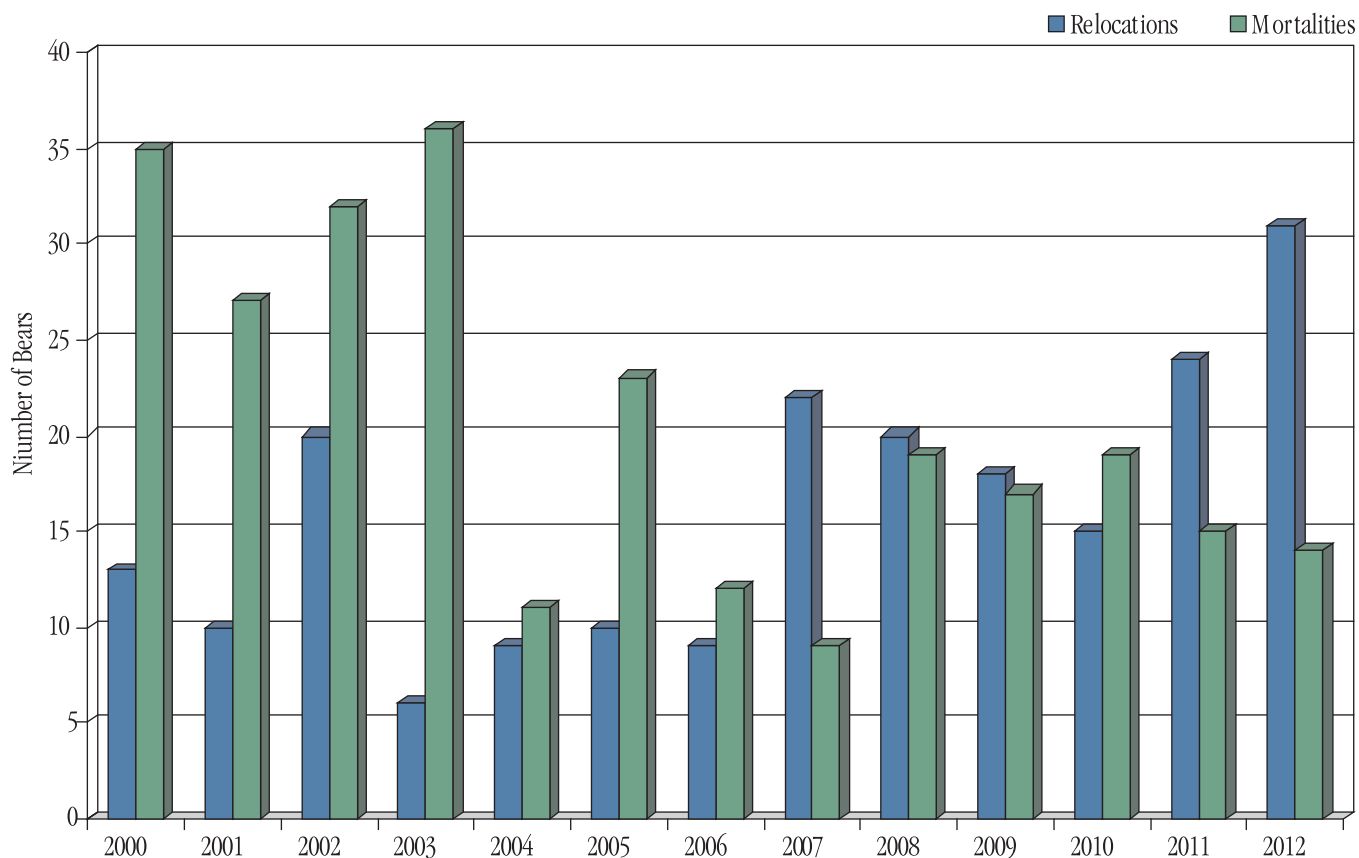


Figure 4
Number of known, human-caused grizzly bear mortalities and number of grizzly bears relocated from 2000-2011.

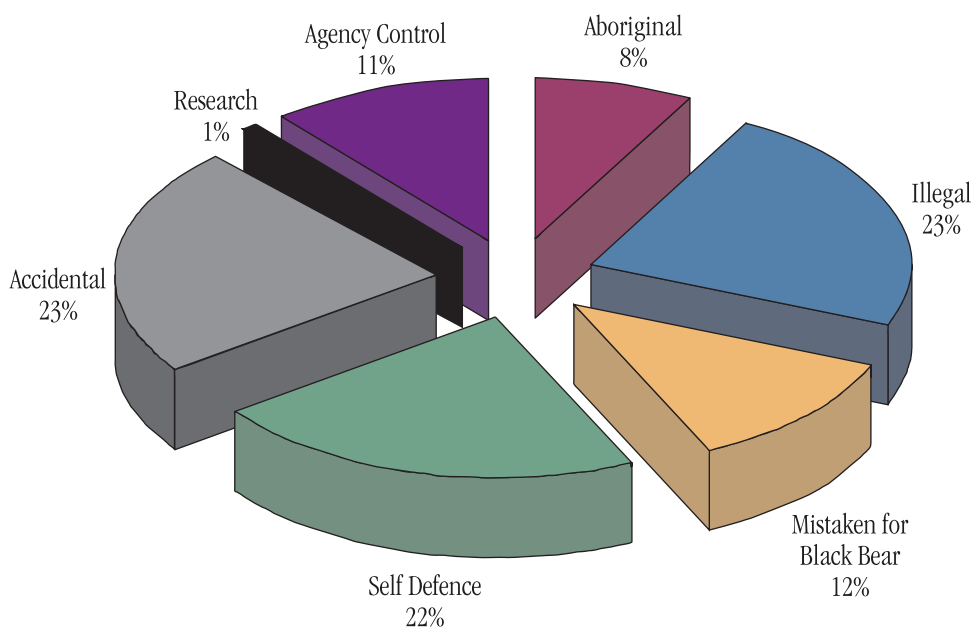


Figure 5
Causes of death for grizzly bears known to have died due to human causes in Alberta, 2006-2012 (n=105).

Improve knowledge of grizzly bears

In 2008, the department created a grizzly bear "Science Advisory Committee" to advise the government on research priorities that will inform grizzly bear recovery. This committee has developed a list of priority research topics to help inform grizzly bear recovery actions. The committee continues to meet once a year to share research results and review research priorities. A list of research priorities, as well as links to major external grizzly bear research programs, are posted on the department's website at www.esrd.alberta.ca/grizzlybears.

Summer 2012 marked the second field season of a pilot project aimed at finding a long-term solution to monitor grizzly bears in southwest Alberta.

The genetic analysis of the hair samples collected during the 2011 field season resulted in the detection of 51 unique individual grizzly bears - 33 males and 18 females. This number represents a minimum number of grizzly bears in the study area, and is not meant as a population estimate. In 2012, in addition to monitoring the previously established rub objects in the forest reserve, survey efforts were expanded onto private and lease lands in the eastern portion of BMA 6. A total of 831 grizzly bear rub objects were monitored in 2012, yielding approximately 4,200 hair samples.

The department is continuing to work collaboratively with the University of Alberta to evaluate the effectiveness of the Spring Intercept Feeding program. In 2012, DNA collection stations and remote trail cameras were set up at 12 of the spring intercept feeding locations in order to determine the number of individual bears utilizing these sites. Grizzly bear hair was collected on two separate occasions from all 12 sites yielding approximately 400 hair samples. These hair samples have been sent to Wildlife Genetics International along with the hair samples from the Grizzly Bear Monitoring Project.

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.

Reduce human-bear conflicts

In 2012, government 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.



Landowners in Cardston County and 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. In 2012, this program expanded to include the Municipal Districts of Ranchlands and Willow Creek. Use of dead livestock temporary storage bins to prevent scavenging by bears is increasing, with some bins receiving very high use. Additional efforts, now led by the Waterton Biosphere Reserve Association, continued 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 or, in some cases, replacement with new storage systems. Cardston County, with the assistance of a grant from the Department, completed construction on the province's first livestock compost facility during winter 2012.

In southwest Alberta, approximately 145 road-killed ungulates were transported to 14 high-elevation sites in March and April 2012 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.

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 reduces the need to relocate or destroy bears. KBDs make 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 ten years in proactively managing grizzly bear conflicts in the Bow/Kananaskis area. This includes monitoring and aversive conditioning of grizzly bears when required. Eighteen radio-collared grizzly bears were monitored in 2012, of which 14 (78 per cent) were female, including five (36 per cent) females with cubs of varying ages. There were more than 870 conditioning actions carried out on bears, 91 per cent of which were directed toward seven radio-collared grizzly bears. The remainder of conditioning was delivered toward two uncollared



grizzly bears and multiple uncollared black 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. A family group consisting of one adult female, two yearlings and one two-year old were translocated out of the Bow Valley after unsuccessful conditioning attempts over a four year period. Three radio-collared female grizzly bears, all with cubs in 2012, and an additional radio-collared female that will likely have cubs in 2013, will require additional conditioning work in 2013 to ensure they respond appropriately when near developed sites.

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. Since 2009, the department has produced and distributed over 250,000 educational brochures and checklists. Government staff, community members and volunteers have also given hundreds of presentations to community groups, schools, and industrial workers, visited individually with several thousand landowners, and attended dozens of tradeshow. BearSmart messaging is regularly featured in local media throughout 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 May 2012 for Fish and Wildlife staff and community group volunteers to help facilitate information exchange among different areas of the province. Currently, community BearSmart programs are underway or in development in Cadomin, Canmore, Bragg Creek, Crowsnest Pass, Edson, Fox Creek, Grande Cache, Hinton, Mountain View County and Nordegg. Staff are working in many other locations across the province to initiate or support BearSmart initiatives. Community programs typically include an educational component as well as initiatives designed to help manage bear attractants.

The Grande Cache BearSmart Committee has made significant progress in implementing recommendations from the Foothills Area Bear Hazard Assessment over the past two years. With financial support from Encana, the Committee has undertaken several educational initiatives, including presentations to industry and the general public, distribution of brochures and information packages, placing signage at several locations. Bear resistant garbage containers have also been provided to Grande Cache residents at reduced cost, and 12 bear proof garbage receptacles have been placed throughout the town.

Government of Alberta staff have also been collaborating with the County of Grande Prairie to implement recommendations from the Smoky Area Bear Hazard Assessment, which identified an area west of the City of Grande Prairie with significant agricultural grizzly bear conflicts. Two information and planning meetings



have been held with county residents, and several educational initiatives are currently underway. Over the coming year, the Department hopes to work with community members on initiatives to begin securing attractants such as garbage, stored grain and dead livestock from bears.

Identify, track, and maintain grizzly bear habitat

Grizzly bear range has been mapped in all BMAs in the province, including northern Alberta and the Swan Hills. Core and secondary areas have been delineated in BMAs 2-6 and in the Swan Hills, and these will serve as priority areas for access management. The Foothills Research Institute produces annual updates of grizzly bear resource selection function and mortality risk maps, which are used in forest management planning.

In 2012, the Department collaborated with the University of Alberta and the Waterton Biosphere Reserve Association to analyze 13 years of grizzly bear sighting and conflict records in southwest Alberta. These data indicate a gradual eastward expansion of grizzly bears over time, particularly in areas near Pincher Creek and Cardston. While the reasons for this expansion are not fully

understood, bears in this region are part of a much larger population shared with Montana and British Columbia, which is known to be increasing. Regardless of the causes, range expansion of grizzly bears in this area of the province, which consists almost exclusively of private land, will require significant efforts to manage and reduce conflict.

Improve interjurisdictional communication

Department staff continue to participate on the Interagency Grizzly Bear Committee and consult frequently with biologists and managers from neighbouring provinces, states 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 continuing to collaborate with Parks Canada, Alberta Tourism, Recreation and Parks, and the United States Geological Survey on grizzly bear trend monitoring in BMA 6, which is part of the Northern Continental Divide Ecosystem shared with British Columbia and Montana.

Improve and apply regulations or legislation

Over the past several years, the Department has made several regulation changes related to the management of grizzly bears and bear attractants. These have included increases in the maximum penalties for grizzly bear poaching, adjustments to baiting regulations for wolves and coyotes, and partially closing three WMUs to black bear baiting. The Department continues to work with municipal governments to improve bylaws, particularly in relation to garbage, birdfeeders, and other significant bear attractants.

