Grizzly Bear Conservation in Alberta

2013 Management Activities and Recovery Implementation

Alberta Government

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 2013 and describes the progress the Government of Alberta has made in implementing the recovery plan.

ISBN: 978-1-4601-1672-2 (Online Version)
Posted April 2014

2013 Management Activities

Mortality

Thirty one grizzly bear deaths were recorded by Sustainable Resource Development in 2013, including 26 known human-caused mortalities (Table 1). This is the highest number of recorded mortalities since 2003. Illegal killing (including mistaken for black bear) was the primary cause of death, accounting for 58 per cent of all human-caused mortalities. Two problem bears was euthanized by government staff in 2013. One of these bears had initiated a potentially predatory attack on people inside a tent, and the other had bedded down inside a building and was suffering from a fatal intestinal blockage. A total of 10 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 2013.

Month of Mortality	B.M.A.	Sex	Age	Cause
March	2	M	Adult	Accidental
April	2	F	SubA	Illegal
April	2	F	Adult	Illegal
May	5	M	Adult	Illegal
May	6	UNK	SubA	Illegal
May	2	F	Adult	Unknown
May	4	UNK	UNK	Mistaken for black bear
May	3	M	SubA	Unknown
June	2	M	Adult	Illegal
June	2	M	Adult	Mistaken for black bear
June	2	F	SubA	Road Kill
July	5	F	SubA	Native
July	2	M	SubA	Road Kill
July	2	M	SubA	Problem Wildlife
July	5	F	Adult	Self Defense
July	5	M	SubA	Self Defense
August	2	F	SubA	Native
September	6	F	Adult	Illegal
September	1	M	Adult	Self Defense
October	5	F	Adult	Unknown
October	2	F	Adult	Unknown
October	2	F	Adult	Illegal
October	3	M	SubA	Illegal
October	6	M	Adult	Problem Wildlife
October	4	M	Adult	Accidental
October	5	F	Adult	Mistaken for black bear
October	6	F	Adult	Illegal
November	2	M	Adult	Illegal
November	6	M	Adult	Mistaken for black bear
November	5	F	Adult	Illegal
Unknown	5	UNK	Adult	Unknown

Relocation

Government staff captured and relocated 34 different grizzly bears in 2013 (Table 2). Sixteen bears were moved within their home range to remove them from specific conflict situations. Eighteen 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. Of all situations in which bears were moved, ten were in response to public safety concerns, seventeen were in response to depredations on livestock, and six were in response to bears repeatedly causing property damage to access livestock feed. One bears was captured incidentally while teams were targeting a different bear, and moved a short distance within its home range to remove it from the conflict area.

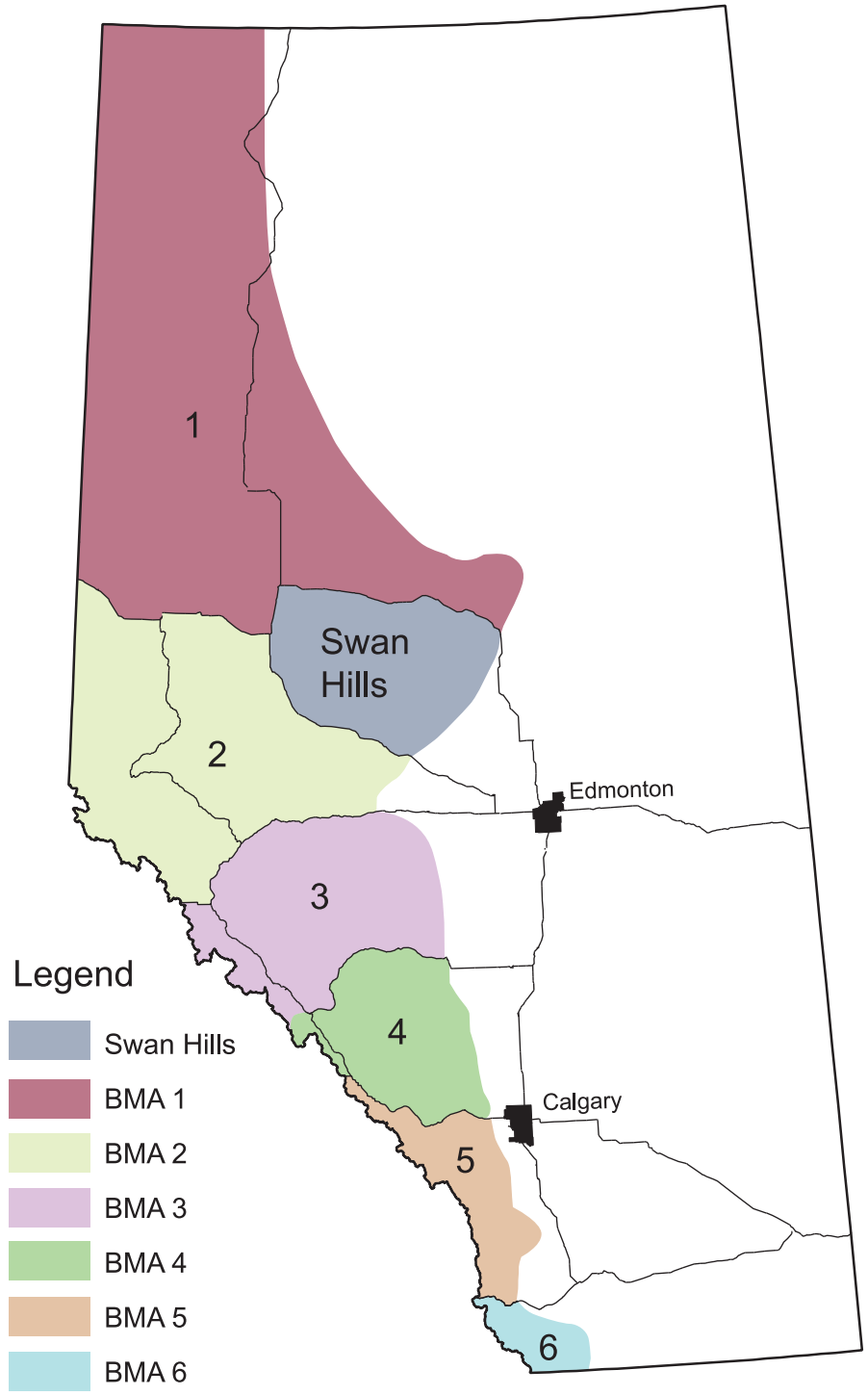

Figure 1
Bear Management Areas (BMAs) in Alberta.

Table 2
Capture month, bear management area (BMA), age, reason for capture and type of relocation for grizzly bears relocated in Alberta in 2013.

Bear ID	Capture Month	BMA	Sex	Age	Reason for Capture	Relocation Type
N/A	April	6	UNK	UNK	Livestock attack	Within homerange
595070	April	2	F	SubA	Public safety	Within homerange
595071	April	2	F	SubA	Public safety	Within homerange
595072	April	6	M	Adult	Livestock attack	Outside homerange
595073	April	6	M	Adult	Property damage	Outside Homerange
597174	April	6	M	Adult	Livestock attack	Within homerange
N/A	May	6	UNK	UNK	Accidental capture	Within homerange
597172	May	6	F	Adult	Livestock attack	Within homerange
597173	May	6	F	SubA	Livestock attack	Within homerange
597180	May	6	M	SubA	Public safety	Within homerange
597179	May	4	M	Adult	Public safety	Outside homerange
597822	June	2	M	SubA	Livestock attack	Within homerange
597821	June	2	M	SubA	Livestock attack	Within homerange
N/A	July	5	M	Adult	Livestock attack	Outside homerange
611159	July	4	M	Adult	Livestock attack	Outside homerange
611160	July	5	M	SubA	Property damage	Outside homerange
611163	July	6	M	Adult	Livestock attack	Within homerange
N/A	August	5	UNK	SubA	Public safety	Within homerange
611181	August	5	F	Adult	Livestock attack	Outside homerange
N/A	September	4	M	UNK	Public safety	Outside homerange
N/A	September	5	UNK	SubA	Public safety	Within homerange
N/A	September	5	UNK	SubA	Public safety	Within homerange
611203	September	5	M	Adult	Public safety	Within homerange
N/A	October	2	UNK	UNK	Property damage	Within homerange
N/A	October	6	UNK	UNK	Property damage	Outside homerange
N/A	October	6	UNK	UNK	Property damage	Outside homerange
611282	October	5	F	SubA	Livestock attack	Outside homerange
611283	October	5	F	SubA	Livestock attack	Outside homerange
611284	October	5	F	Adult	Livestock attack	Outside homerange
611308	October	6	M	Adult	Livestock attack	Outside homerange
380176	October	4	UNK	Adult	Public safety	Outside homerange
619022	October	5	M	Adult	Livestock attack	Outside homerange
619022	October	5	M	Adult	Livestock attack	Outside homerange
557318	October	6	M	Adult	Property damage	Outside homerange

Sightings and human-bear conflicts

Government staff recorded 481 grizzly bear occurrences in 2013 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 similar to 2012, however in 2013 a higher proportion were related to situations involving property damage and livestock attacks. The most common type of occurrence (35 per cent) were sightings reported by the public. In 93 per cent of these circumstances, actions by officers were limited to monitoring the situation or providing information to the public.

There were 200 situations where monitoring or education did not resolve the occurrence. Officers conducted preventative measures in 123 (61 per cent) of the cases and made attempts to capture bears in 77 (39 per cent) of these situations. Of those 77 attempts to capture the bear, 21 were to resolve public safety concerns and 56 were made to prevent further property damage.

Sixty-one occurrences were situations where public safety was a concern, either by the complainant or by the responding officer. Most (67 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 2013. One situation involved a bear that inflicted minor injuries to a person inside a tent; in this case the bear was euthanized due to escalating behaviour and a significant risk to public safety. The other mauling involved a defensive attack by a grizzly that had been wounded by a black bear hunter, 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 in 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 in the Chain Lakes area and the northern Porcupine Hills also led to several grizzly bear relocations in 2013. 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 2013.

Occurrence Type	Response										Hours
	Monitor[1]	Education	Remove Attractant	Close Area	Fence Area	Aversive Conditioning	Compensation Claim	Enforcement	Capture Attempt	Total	
Sightings	147	10	2	1		8				**168**	261
Road Kill	1									**1**	1
Bee Yard					1				3	**4**	63
Livestock Feed	19	2	4		11	4			13	**53**	445
Livestock Carcasses	5	3	2						2	**12**	102
Livestock / Harrassment/Attack[2]	50	1					44		37	**132**	2037
Illegal Activity	1							33		**34**	562
Public Safety	20	13	2	2		4			20	**61**	757
Mauling	1								1	**2**	64
Other	5	3		1				4	1	**14**	69
Total	**249**	**32**	**10**	**4**	**12**	**16**	**44**	**37**	**77**	**481**	**4361**

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

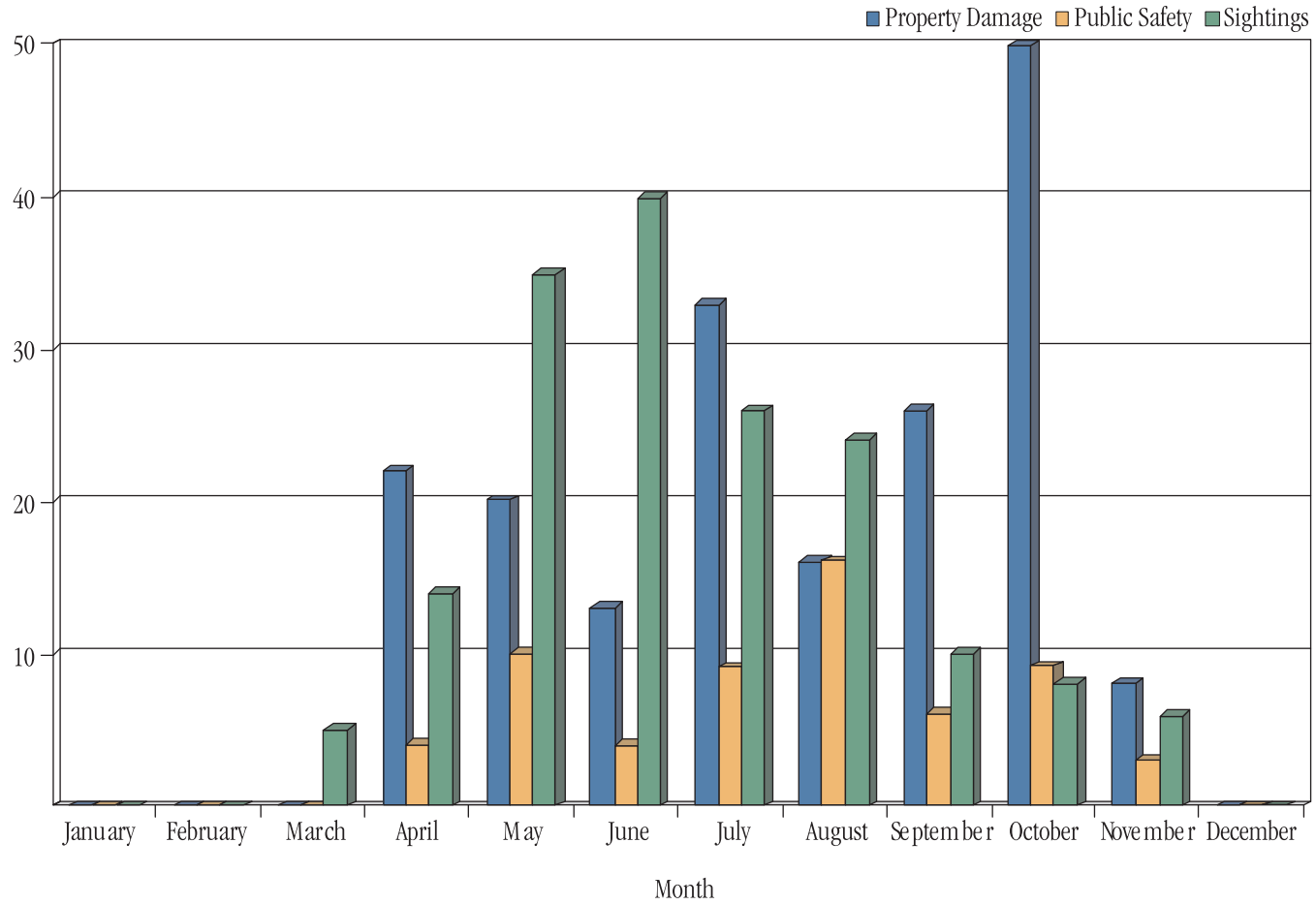

Figure 2
Month of grizzly bear occurrences related to property damage, public safety and sightings in Alberta during 2012.

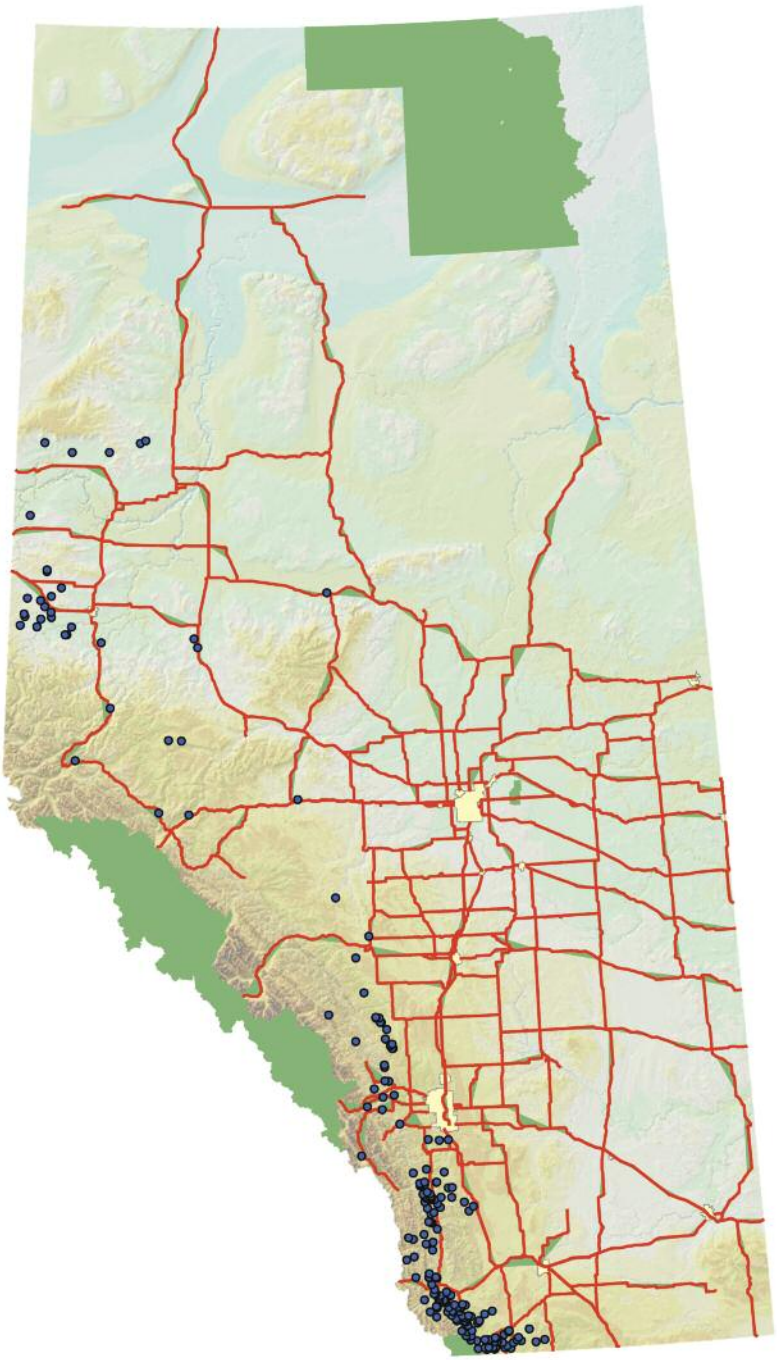

Figure 3
Location of grizzly bear occurrences related to public safety and property damage during 2013.

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
7) improving and applying legislation

The department and its partners continued to make progress in implementing these strategies in 2013. The Department is currently going through a process of updating the Recovery Plan, but is expected that these strategies will remain largely unchanged in the new plan.

Reducing human-caused mortality

The suspension of grizzly bear hunting (established in 2006) continued through 2013 and 2014.

The department continues to monitor, report and analyze grizzly bear mortality data. In 2013, the rates of human-caused grizzly bear mortality in BMAs 2-6 were 4.3 per cent for all bears and 1.9 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 16 per year since the hunting suspension was established in 2006, which is a 41 per cent reduction from the years 2000-2005 (Figure 4). In the past eight years, self defence, illegal killing and mistaking grizzly bears for black bears have resulted in over half (60 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 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 2013.

BMA	Population Estimate	Number of Mortalities	Number of Female Mortalities	Mortality Rate	Female Mortality Rate
2	353	11	5	3.1%	1.4%
3	42	1	0	2.4%	0.0%
4	45	2	0	4.4%	0.0%
5	90	7	5	7.8%	5.6%
6	51	4	1	7.8%	2.0%
Total	**581**	**25**	**11**	**4.3%**	**1.9%**

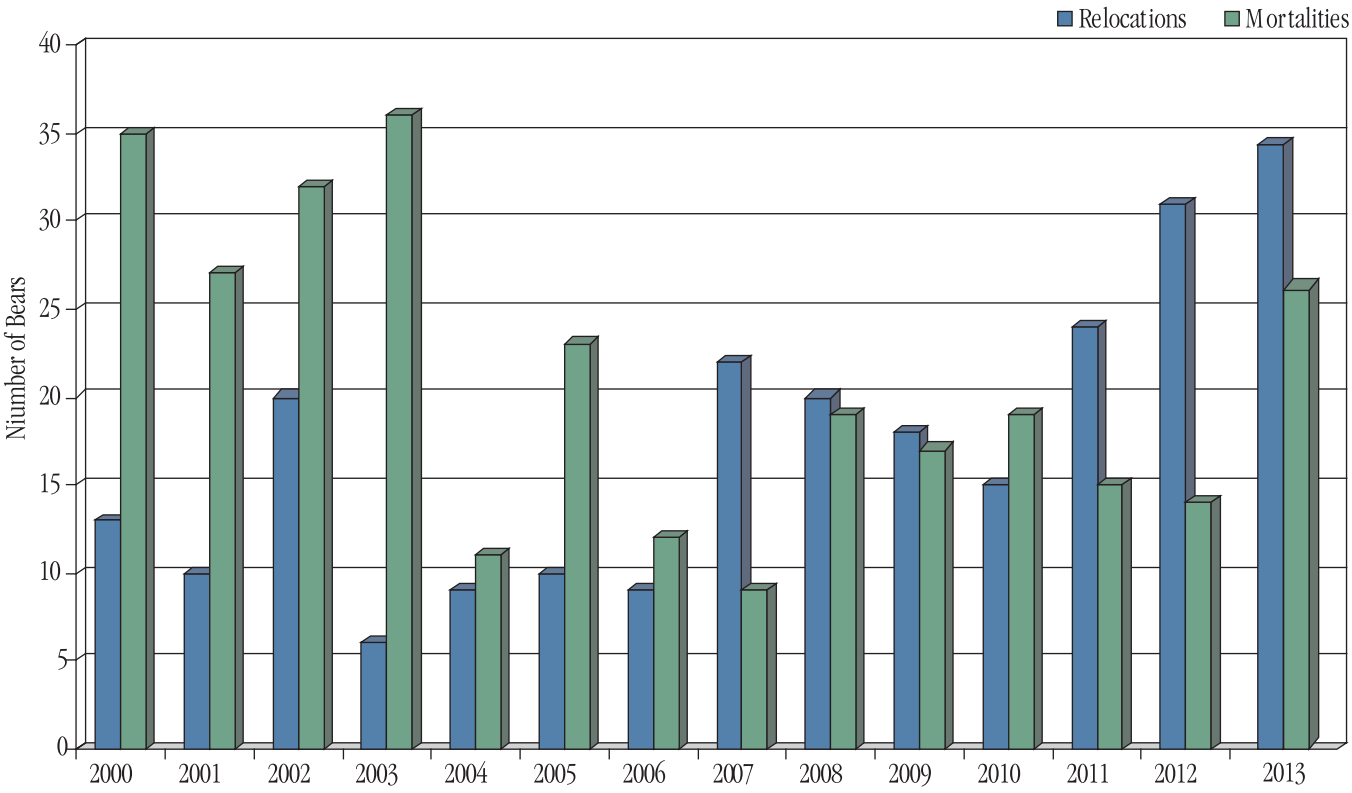

Figure 4
Number of known, human-caused grizzly bear mortalities and number of grizzly bears relocated from 2000-2013.

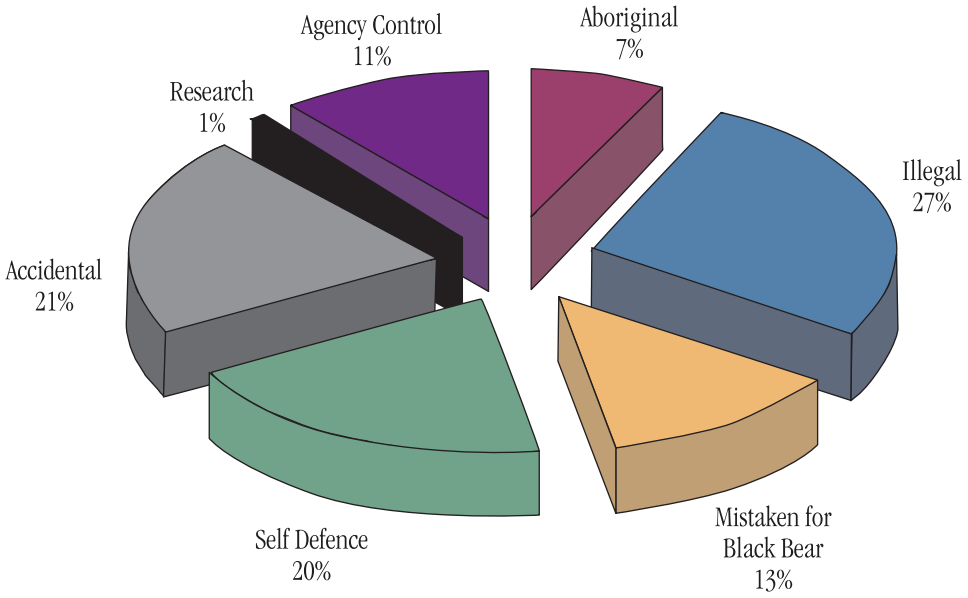

Figure 5
Causes of death for grizzly bears known to have died due to human causes in Alberta, 2006-2013 (n=131).

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 2013 marked the third 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 2012 field season resulted in the detection of 122 unique individual grizzly bears. This number is not a population estimate, as it does not include bears that may have been missed by the DNA sampling, nor does it account for the fact that a portion of the bears also spend time in Montana and British Columbia. We will be conducting further analysis of the 2012 and 2013 survey data to develop an updated population estimate for BMA 6. Because the number of bears detected in the 2012 survey is not a population estimate, it cannot be directly compared to the population estimate of 51 bears from the 2007 survey. However, it is apparent that the total number of bears that used the study area in 2012 is greater than the number that was estimated to be using the area during the 2007 survey. We believe that the weight of evidence, which includes estimates of population trend in the larger ecosystem as well as recent eastward range expansion, suggests that the number of grizzly bears in BMA 6 is increasing. We hope to continue grizzly bear monitoring in southwest Alberta to confirm whether this is the case.

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 2013, 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.

In 2013, Waterton Biosphere Reserve Association (WBRA) continued to lead community-based initiatives in southwestern Alberta involving rural communities and agricultural producers. Nine new ranch protection projects were implemented 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. New for southwestern Alberta was a large pasture perimeter electrical fencing project to protect sheep from bears and a newly proposed one for goats, after recent loss of sheep and goats from bears. Removal and collection of dead livestock in historical conflict zones continued with all four local municipal governments now participating including the MD's of Pincher Creek, Willow Creek, Ranchlands and Cardston County. A combination of deadstock collection bins, direct on-farm deadstock collection and a new municipal-based deadstock composting facility were utilized and implemented as part of attractant management efforts. A pilot on-farm composting project for larger more intensive agricultural operations is currently in the planning stages and is expected to be implemented in 2014. Monitoring and evaluation of the effectiveness of community efforts to reduce human-bear conflicts continue. A successful community tour was hosted in June and numerous public meetings and communication mediums were utilized in increasing the awareness of grizzly bear conservation and ways people and communities are striving to find a balance living with large carnivores – links can also be found at the WBRA website. Residential bear-proof garbage bins were also placed on several rural properties.

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. Ten radio-collared grizzly bears were monitored in 2013, of which 8 (80 per cent) were female, including three (38 per cent) females with cubs of varying ages. There were almost 330 conditioning actions carried out on bears, 57 per cent of which were directed toward seven radio-collared grizzly bears. The remainder of conditioning was delivered towards multiple uncollared grizzly and 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. Attractant management, primarily in the form of removing natural attractants within developed areas, is ongoing within the Bow Valley and Kananaskis Country.

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 300,000 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 tradeshows. 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 2013 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.

In the Red Deer – North Saskatchewan Region, Department staff have been working closely with Clearwater County to develop a land-use bylaw that would address garbage and attractants in the new Nordegg development. The bylaw was successfully accepted by Clearwater Council in late spring 2013. The bylaw identifies the responsibility of residents to secure attractants and to properly dispose of garbage. This is an exciting shift in perspective, and the Department will be continuing to work with the county to promote similar bylaws in other areas.

In Crowsnest Pass, 11 volunteers logged over 1000 volunteer hours implementing a variety of BearSmart intitiatives. Program efforts included a door to door awareness campaign on urban attractants, fruit tree (apple/crab-apple) replacement and removal, bird feeding, bear proof garbage bins and bear aversion and monitoring efforts. Additional awareness efforts were provided to over 2,500 people at various events including trade shows, bear awareness events and public presentations. Successful implementation of animal attractant and garbage bylaws in the MD of Crowsnest Pass continues with numerous warnings and a few citations being given.

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. The Foothills Research Institute and University of Alberta have also been collaborating to develop spatial maps of grizzly bear food resources, which may eventually be useful in establishing grizzly bear population targets in different BMAs.

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. In 2013, a person convicted of poaching two grizzly bears was sentenced to jail time, in addition to fines and a mandatory hunting suspension. We hope that the significant penalties that are now being laid for illegally killing grizzly bears serve as a deterrent to poachers. The Department continues to work with municipal governments to improve bylaws, particularly in relation to garbage, birdfeeders, and other significant bear attractants.