GRIZZLY BEAR

Management Plan for Southwestern Montana
2013

FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

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December 2013

TABLE OF CONTENTS

Acknowledgements…… 5

Introduction…… 5
Process for Plan Development……..... 5
Montana Fish, Wildlife & Parks Goals for the Grizzly Bear…….. 6
Purpose and Need…… 8
Other Agencies that have Jurisdiction or Responsibility……. 10
Recent History of Bears in the Greater Yellowstone Area……..... 10
Recent Litigation History……..... 10
Policy and Statute……..... 12

Description of Grizzly Bear Management Area for Southwestern Montana… 14
General Description……..... 15
Geographic Size and Human Population……. 15
Land Ownership…….. 16
Special Management Areas…… 16
Agricultural Interests…… 17
Recreational Opportunities…….. 18

Summary of Grizzly Bear Biology……. 19
Habitat……... 19
Population Dynamics…… 22

Alternatives Identified and Considered……... 27

Issues Identified and Considered…….. 28
Population Monitoring…… ……. 28
Habitat/Habitat Monitoring/Human Use of Bear Habitat……..... 35
Future Distribution……... 41
Human Safety…… 49
Livestock Conflicts…… 51
Property Damage……... 53
Nuisance Grizzly Bear Management……. 53
Hunting of Grizzly Bears…….. 59
Enforcement…….. 63
Education and Public Outreach……. 65
Future Research……. 68
Costs and Funding……. 70

Irreversible/Irretrievable Resource Commitment……. 71

Secondary and Cumulative Impacts…….. 72

Preparers, Agencies, or Individuals Who Were Consulted or Contributed…….. 74

Glossary…… 75

Literature Cited……. 76

Appendix…… 81

LIST OF TABLES

Table 1. Selected size, population, and agricultural attributes of the seven counties in the grizzly bear conservation area.

Table 2. Percent of private versus public land, by county, for each of the seven counties covered by this plan.

Table 3. Minimum convex polygon range estimates (km^2) for grizzly bears radio-tracked in the Greater Yellowstone Area during 1989-2012. Range estimates were only included for bears that had at least one location during June or earlier in the calendar year, ≥ 10 locations for the active season, and at least one location during September. Individuals that had been transported due to conflicts were excluded after their initial transport.

Table 4. Population estimates and annual evaluations of mortality limits for independent aged (≥ 2 years-old) female and male grizzly bears identified in the Greater Yellowstone Ecosystem during 2007-2012

Table 5. Bear Management Units in the Greater Yellowstone Ecosystem occupied by females with young (cubs-of-the-year, yearlings, 2-year-olds, or young of unknown age), as determined by verified reports, 2007-2012.

Table 6. Minimum counts of unique female grizzly bears with cubs of the year (FCOY) identified in the Greater Yellowstone Area with mean litter size during initial observations of families during 2002-2012. Also provided are effort corrected (Chaco2) estimates for FCOY and model averages estimates (using linear and quadratic regressions of 1n(Chao2) with year for 1983-2012; See IGBST 2006, Harris et al. 2007, Haroldson 2008).

Table 7. Grizzly bear mortalities in southwest Montana, 1992-2001.

Table 8. Grizzly bear mortalities in southwest Montana, 2002-2012.

Table 9. Conflict types by percent of total and by 10 year periods, 1993-2012.

Table 10. FWP Southwest Montana Grizzly Bear Management Plan minimum expenses.

LIST OF FIGURES

Figure 1. Greater Yellowstone Area depicting the original Recovery Zone for the Yellowstone grizzly bear, the Conservation Management Area (no longer being used for management per publication of this draft but shown as reference) and the Demographic Monitoring Area where the grizzly population is intensely monitored. The Primary Conservation Area is the Recovery Zone plus a 10 mile buffer.

Figure 2. The seven counties of the Greater Yellowstone Area that fall under management of the Southwest Montana grizzly plan and the 17 counties of the Northern Continental Divide Ecosystem area that fall under management of the Western Montana grizzly plan. Grizzly bear recovery areas are shown for both ecosystems.

Figure 3. Southwest Montana with public lands (shaded), the Greater Yellowstone Area, Recovery Zone boundary, and the Demographic Monitoring Area boundary.

Figure 4. Flow chart of the protocols in place since 2007 for estimating the number of grizzly bears in the Greater Yellowstone Area and assessing sustainable mortality limits.

Figure 5. Distribution of grizzly bear mortalities by two time periods, 1987-1999 and 2000-2012. Mortalities recorded outside of the Demographic Monitoring Area line will not count against sustainable mortality limits.

Figure 6. Distribution of grizzlies from 1990-2010 showing a large area of occupancy outside the original Recovery Zone.

Figure 7. Southwest Montana showing proximity of the Greater Yellowstone Area Demographic Monitoring Area to the NCDE Demographic Monitoring Area. The demographic monitoring areas within each ecosystem represent the areas where grizzly population demographics, i.e. population size, trend, and mortalities, will be monitored. The delisting lines shown for both ecosystems represent the proposed boundaries the US Fish and Wildlife Service would use to delist grizzly bears within each ecosystem.

Figure 8. Distribution of females with cubs of the year by two time periods, 1987-1999 and 2000-2012, showing the increase in distribution of grizzlies over time. Black triangles on the edges of the Recovery Zone represent the increase in distribution of grizzly bears within the past decade.

Figure 9. Map to be used in the 2014 black bear regulations indicating where hunters may encounter black bears *and* grizzly bears (dark gray shading) versus areas where hunters will likely encounter only black bears (light gray shading).

Figure 10. Total grizzly/human conflicts to include all types by year, from 1992-2012.

Figure 11. Annual grizzly/human conflicts by type and year (1992-2012). 'Confrontations' include grizzlies injuring, approaching or threatening people or otherwise coming into close proximity to people. 'Food' conflicts include grizzly consumption of garbage, bird seed, livestock feed, orchard fruit, garden produce, etc. 'Depredations' include confirmed losses of livestock such as sheep, cattle or chickens and 'other' conflicts include bears near residences, damaging structures or other property.

ACKNOWLEDGEMENTS

Many people participated in development of this plan but Montana Fish, Wildlife and Parks would specifically like to thank Mark Haroldson of the Interagency Grizzly Bear Study Team for his time and assistance in document preparation and review.

INTRODUCTION

Process for Plan Development

Montana Fish, Wildlife & Parks (FWP) developed the original grizzly bear management plan and programmatic environmental impact statement (EIS) for grizzly bear management in southwest Montana in 2002. The management plan and EIS was effective for a ten year period (2002-2012). At that time, the process involved a series of meetings with affected agencies, governments, and interested persons. FWP initiated the scoping process with discussion of potential issues and alternatives with biologists, wardens, and representatives from Idaho and Wyoming during the summer of 2000. Following those preliminary efforts, FWP held a series of 13 public scoping meetings in southwestern Montana. A draft plan was released for public comment in April, 2002. Formal public hearings were conducted and public comment was also accepted in writing for 90 days. All comments were used to assist in preparing the final plan. Development of the plan was further guided by recommendations of a group of citizens referred to as the Governors' Roundtable. The Roundtable was able to reach unanimous agreement on 26 recommendations that guide grizzly management to this day. FWP's southwest Montana grizzly bear management EIS was finalized and published in 2002.

Since development of that EIS the *Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area (CS)* has been published (2007) and numerous policies and Montana Codes have been adopted, altered, or removed relative to grizzly management. Public involvement was inherent in development of these guiding documents and policies, and as such, public comment and input has been a part of grizzly bear management since the first EIS. FWP did not deem it necessary to conduct formal scoping for development of this revision of the 2002 EIS. Public scoping in essence is a continual part of grizzly bear management as managers must address new and ever changing environments, biological states, and social tolerance in routine decision making.

The purpose of the CS is to "describe and summarize the coordinated efforts to manage the grizzly bear population and its habitat to ensure continued conservation in the Greater Yellowstone Area (GYA); specify the population, habitat, and nuisance bear standards to maintain a recovered grizzly bear population for the foreseeable future; document the regulatory mechanisms and legal authorities, policies, management, and monitoring programs that exist to maintain the recovered grizzly bear population; and document the commitment of the participating agencies" (CS 2007). This EIS document works from the standards and commitments within the strategy providing state specific information or guidance where appropriate. Guidance within this state plan does not differ from the standards and guidance provided within the CS.

Montana Fish, Wildlife and Parks Goals for the Grizzly Bear

FWP has statewide goals for most wildlife resources. This plan specifically deals with the goals for managing grizzly bear resources in southwestern Montana. These goals are:

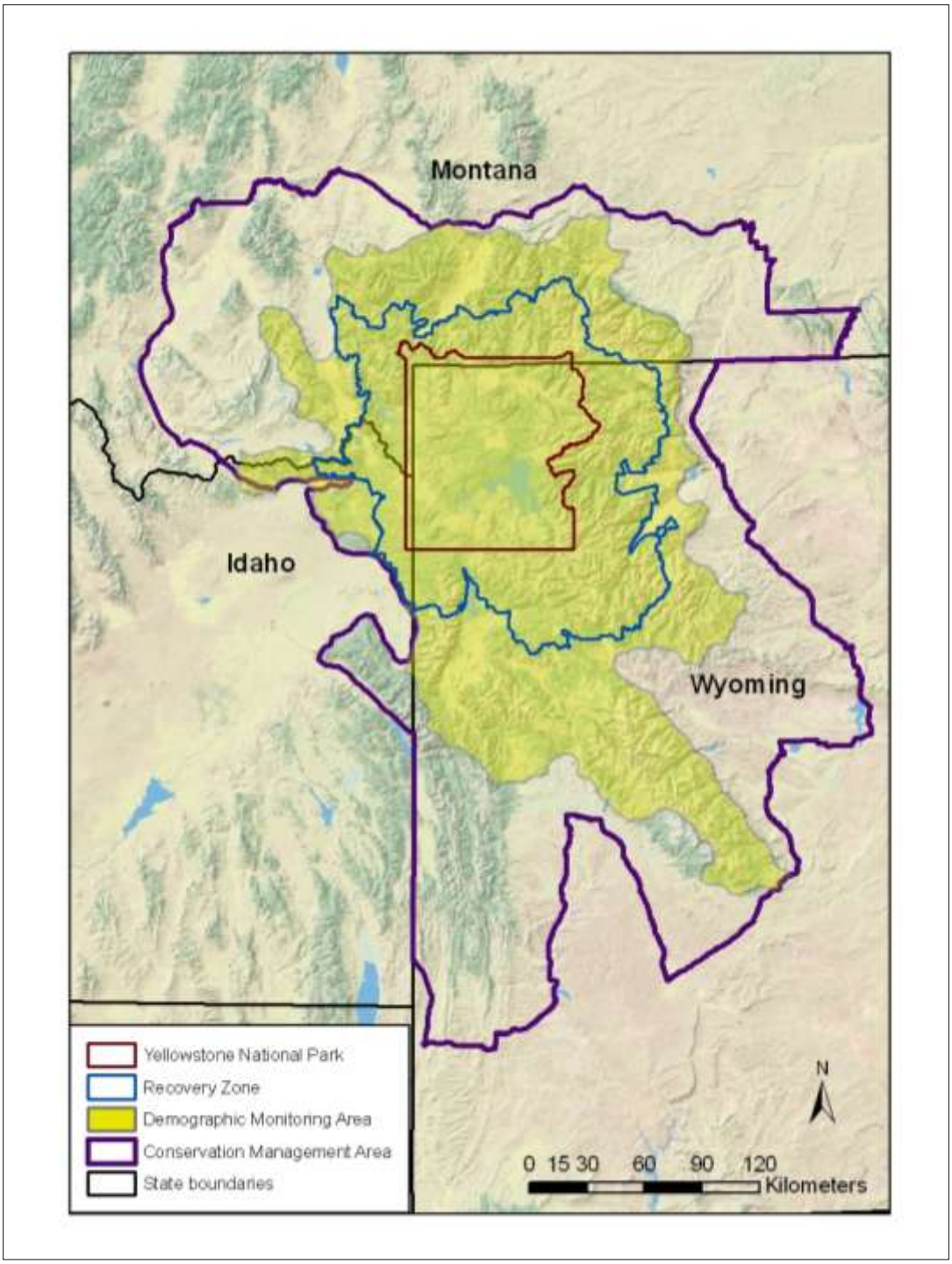
1. To protect, perpetuate, enhance, and regulate the wise use of wildlife resources for public benefit now and in the future.
2. To manage for a recovered grizzly bear population in southwestern Montana and to allow for grizzly populations in areas that are biologically suitable and socially acceptable. This should allow FWP to achieve and maintain population levels that support managing the bear as a game animal along with other species of native wildlife. These efforts will provide some regulated hunting when and where appropriate while maintaining a recovered population under the required demographic criteria for grizzly bears in the Greater Yellowstone Ecosystem.
3. To provide the people of Montana and visitors with optimum outdoor recreational opportunities emphasizing the tangible and intangible values of wildlife, and the natural and cultural resources in a manner that:
    a. Is consistent with the capabilities and requirements of the resources,
    b. Recognizes present and future human needs and desires, and,
    c. Ensures maintenance and enhancement of the quality of the environment.

These goals will be achieved by addressing the following: population management, future distribution, habitat and restrictions on human use of bear habitat, human safety, nuisance bear management, livestock conflicts, property damage, hunting of grizzlies, enforcement, education and outreach, and funding. The success of grizzly bear management in Montana will be contingent upon FWP's ability to address these issues in a way that builds and maintains tolerance for grizzlies.

The recommendations originally developed by the Governor’s Roundtable are still pertinent today and support continued management of the proposed Primary Conservation Area (PCA), or Recovery Zone plus a 10 mile buffer area, as a secure "core" area for grizzly bears within the Yellowstone Ecosystem (Figure 1). The group also recommended that the states of Wyoming, Idaho and Montana develop management plans for the areas outside the PCA to:

1. Ensure the long-term viability of bears and avoid the need to relist the species under the Endangered Species Act (ESA),
2. Support expansion of grizzly bears beyond the PCA in areas that are biologically suitable and socially acceptable,
3. Manage the grizzly bear as a game animal including allowing regulated hunting when and where appropriate.

Figure 1. Greater Yellowstone Area depicting the original Recovery Zone for the Yellowstone grizzly bear, the Conservation Management Area (no longer being used for management per publication of this draft but shown as reference) and the Demographic Monitoring Area where the grizzly population is intensely monitored. The Primary Conservation Area is the Recovery Zone plus a 10 mile buffer.



Purpose and Need

The need for an update to the 2002 grizzly bear management plan was precipitated by changes in bear management in the Yellowstone Ecosystem during the 1980-90's, that resulted in increasing numbers and an expanding distribution of grizzly bears. In 2007, after the initial delisting of the Yellowstone grizzly bear, the United States Fish and Wildlife Service (USFWS) amended the recovery plan and CS to monitor grizzly bear population dynamics and mortalities in the area known as the Conservation Management Area (CMA) Figure 1). The CMA includes the areas beyond the original recovery line and the USFWS suitable habitat line. In the last decade, an increase in grizzly bear population and distribution, along with land management, wildlife management, and recreation management within the CMA have led to established populations of bears outside the core area and throughout what is currently the CMA.

Since publication of the first draft of this document, the USFWS has revised the demographic criteria within the Recovery Plan for the GYA. As part of this revision the area beyond the suitable habitat line and out to the CMA boundary has become irrelevant to management decisions. Therefore, this final plan, discusses management only along the Demographic Monitoring Area (DMA) line and the Recovery Zone line. (USFWS, Supplement to the Demographic Recovery Criteria of the Greater Yellowstone Grizzly Bear in *draft* to be published in 2014,)

It is FWP's objective to maintain existing renewable resource management and recreational use where possible and to develop a process where FWP, working with local publics, can respond to grizzly/human conflicts with appropriate and timely management actions. Maintaining existing uses while allowing people to continue their lifestyles, economies, and feelings of well being builds support and increases tolerance for grizzly bear populations.

In the 2002 EIS, the Governors' Roundtable produced a recommendation to allow grizzly bears to inhabit areas that are "biologically suitable and socially acceptable." This recommendation has been followed since implementation of that EIS and FWP will continue this approach with the current responsible management program. The level of social acceptance of grizzlies in historical habitat changes based on how the issues are approached, the density of the bear population and how much faith people have in wildlife managers. To maximize the area of Montana that is "socially acceptable" grizzly bear range, the state planning and management effort has used an adaptive learning process to develop innovative, on-the-ground management. By demonstrating that grizzly bear conservation can be integrated with broad social goals, public faith in management can be enhanced and human tolerance of grizzly bears is developed and maintained. This approach already has demonstrated success in the GYA as well as in northwestern Montana, where bear populations have also increased and bears have reoccupied habitats from which they had been absent for decades.

In 2000, the Interagency Grizzly Bear Study Team (IGBST) began a process to reevaluate and update methods to determine the status of the GYA grizzly bear population, estimate population size, and determine the sustainable level of mortality in the GYA. In 2007, the USFWS supplemented the 1993 federal Grizzly Bear Recovery Plan with revised demographic criteria for the GYA population (72 FR 11376, March 13, 2007) and in 2013, the USFWS proposed to designate a new 'demographic monitoring area'(DMA) within which population and mortality

data (i.e., demographic criteria) would be assessed. There is consensus among scientists and statisticians that the area within which mortality limits apply should be the same area used to estimate population size. The previous CMA within which grizzly bear mortalities were counted against annual sustainable limits, was substantially larger than the area within which female grizzly bears with cubs of the year were surveyed and used to estimate population size. This meant researchers were counting mortalities in areas where bears weren't being monitored for population size or trend. The revised DMA addresses this known bias so that mortalities and population health and size will be monitored within the same area. This proposed change, if finalized, would be appended to the Yellowstone chapter of the Grizzly Bear Recovery Plan (U.S. Fish and Wildlife Service 1993, p. 44) and the Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area.

Overtime grizzly bears from the Yellowstone area are expected to inhabit areas throughout the DMA however not all areas are biologically suitable or socially acceptable for grizzly bear occupancy. Mortalities outside of the DMA would continue to be recorded and reported but would not count against the sustainable mortality limits for that year. Grizzly bear occupancy would not be actively discouraged outside the DMA, rather management emphasis would be on conflict response. Grizzly bears would not be removed from the population just because they are outside the DMA but, as is the case anywhere within southwest Montana, they may be removed from the population or relocated if there are conflicts. Grizzly bears may also be preemptively relocated to avoid conflicts, but their potential contribution to connectivity with other grizzly bear populations would be considered in any such preemptive moves. Preemptive moves would not be counted against a bear as a management conflict capture would.

Significance of grizzly bear management to the people of Montana is highlighted by the fact that the state contains all or portions of four of the six distinct populations identified by the USFWS plan for grizzly recovery in the lower 48 states. The species is Montana's "State Animal," and there is specific policy directing management of the species. Grizzly bear populations have increased to USFWS recovery levels in the Yellowstone and the Northern Continental Divide area. The small population of grizzly bears in the Cabinet-Yaak area of Montana appears to be slowly increasing. Only one grizzly bear has been documented in the Bitterroot ecosystem since 2002.

This plan deals directly with that portion of Montana known as the GYA and adjacent lands in southwestern Montana and includes our management programs within the PCA. The GYA has been defined in many different ways by different people depending on their purposes. For the purpose of this plan, the GYA is defined very broadly for southwestern Montana to include lands that may be accessed by grizzly bears in the near future.

Before discussing the different issues and alternatives this plan addresses, it is important to keep the following perspectives in mind.

- Public support and tolerance for grizzlies is the key to their long-term recovery and re-occupancy of suitable habitats, and this support is contingent on local involvement and active local participation in plan development and implementation.
- All of the biological and social issues are interrelated, and no one part of the plan can function effectively without the others.

- This plan does not presuppose habitat problems exist with bear re-occupancy, but instead approaches the issues with the perspective of making sure local people are involved and given sufficient tools to respond to management changes as need arises.
- The key to a broader recovery lies in bears utilizing lands that are not managed solely for them but in which their needs are adequately considered along with other uses. The plan also recognizes the pivotal role private landowner support will play in a broader recovery.
- Preventative measures are much better than simply responding to problems; however, a great deal is unknown about how bears will utilize some of the available habitats.
- This plan and its implementation must respond as changes occur and be open to public scrutiny and input.

Other Agencies that have Jurisdiction or Responsibility

At present, the USFWS is responsible for grizzly bear recovery and management activities. Federal laws, rules and regulations provide guidance. When grizzlies are delisted and management authority is transferred to the State of Montana, state law becomes the primary regulatory and legal mechanism guiding management. Two titles within Montana statutes describe the legal status and management framework for grizzly bears. Title 87 pertains to all fish and wildlife species and oversight by FWP. Title 81 pertains to the Montana Department of Livestock (MDOL) and its responsibilities for predatory animal control. Montana statutes assign joint responsibility to FWP and MDOL for managing wildlife that cause property damage, i.e. injury or loss to livestock, through a cooperative agreement with MDOL. Wildlife Services (WS) conducts field investigations and management activities in cases of property damage caused by wildlife such as black bears, grizzly bears and wolves. Grizzly bear depredations to livestock are cooperatively investigated and managed by WS and FWP.

The U.S. Forest Service (USFS), the National Park Service (NPS), the Bureau of Land Management (BLM), USFWS, or other federal jurisdictions administer federally owned lands. These agencies manage these lands according to their enabling legislation, agency mission, and relevant federal laws, rules, and regulations. FWP coordinates with federal agencies on wildlife and habitat issues of mutual interest but has no legal jurisdiction over how those lands are managed. NPS has jurisdiction for wildlife within national parks.

Montana's Native American tribes have jurisdictional authority for wildlife conservation and management programs within reservation boundaries. FWP coordinates with tribal authorities on issues of mutual interest.

Recent History of Bears in the Greater Yellowstone Area

Grizzlies were never eliminated from Montana, but their numbers probably reached their lowest levels in the 1920s. At that time, changes were made out of concern for the future of the species including designating grizzlies a "game animal" in 1923, the first such designation of the species in the lower 48 states. This change, along with the early prohibitions on the use of dogs to hunt bears, outlawing baiting (both in 1921), closing seasons, etc., had the effect of allowing grizzlies to survive in portions of western Montana.

The degree of protection and the sophistication of management practices have grown steadily. In the 1940s, the importance of protecting fish and wildlife habitat began to emerge as a key public

issue in wildlife management. Through all of the previous years, wildlife conservation was the goal, and was sought through the restriction and regulation of hunters and anglers. Although partially effective, the regulations and laws failed to address a more fundamental issue: the protection of fish and wildlife habitat.

Habitat protection under state authority began with winter game range acquisitions in the 1940s and stream preservation in the early 1960s. Generally, concern for and protection of habitat appeared in state laws dealing with controlling natural resource development. These laws usually addressed specific resource issues such as surface mining and siting of major industrial facilities. An exception to this specific approach was the Montana Environmental Policy Act (MEPA) adopted in 1971. Montana MEPA law mirrored in large part the National Environmental Policy Act (NEPA) adopted by Congress in 1969.

High mortality rates resulting from closure of the remaining open dumps in Yellowstone National Park (YNP), raised concerns over the status of the grizzly population in the greater Yellowstone area during the late 1960s and early 1970s. This population, along with other grizzly populations in the lower 48 states, was listed as threatened under the ESA in 1975. As a result of this listing, many management changes were made to benefit grizzlies. A federal recovery plan was prepared and approved in 1982 and revised in 1993. The success of recovery efforts is evident in the estimates of bear numbers in the area, increasing from approximately 230 in the late 1960s to a minimum of 600 bears today. This has set the stage for delisting of the population segment and a return of this population to state and national parks management.

Recent Litigation History

March 2007 – The USFWS announced that the GYA population of grizzly bears was recovered effectively removing the species from the Federal list of threatened and endangered species.

September 2009 – The Federal District Court in Missoula issued an order vacating the delisting of the GYA grizzly population. In compliance with this order, the Yellowstone grizzly population was once again designated a threatened population under the ESA. The District Court ruled that the USFWS was arbitrary and capricious in its evaluation of white bark pine and that the regulatory mechanisms identified in the final rule were not adequate because they were not legally enforceable.

November 2011 – The 9th Circuit Court of Appeals issued an opinion affirming in part and reversing in part the district court's decision vacating the final rule delisting GYA grizzly bears. The Appellate court affirmed the USFWS's determination that existing regulatory mechanisms are adequate to protect grizzlies in the Yellowstone area while ruling that the USFWS had failed to adequately explain its conclusion that the loss of whitebark pine was not a threat to the population. In compliance with this order, the GYA population of grizzly bears remains federally listed as "threatened" under the ESA while more recent scientific data is considered.

Policy and Statute

MEPA rules provide for the preparation and distribution of an environmental analysis evaluating state actions, programs or policies that affect the quality of the human environment (MCA 12.2.428). Grizzly bear management in Montana is being addressed within the framework of MEPA and its requirements.

The Montana Fish and Wildlife Commission (Commission) is the policy making body for FWP's fish and wildlife programs. Section 87-1-301(1), Montana Codes Annotated (MCA) requires the Commission to "set the policies for the protection, preservation, and propagation of the wildlife, fish, game, furbearers, waterfowl, nongame species, and endangered species of the state for the fulfillment of all other responsibilities of FWP as provided by law."

The legislature has given specific policy direction to the Commission on the issue of grizzly bears through the following rules:

87-2-101. Definitions. As used in Title 87, chapter 3, and this chapter, unless the context clearly indicates otherwise, the following definitions apply: (4) "Game animals" means deer, elk, moose, antelope, caribou, mountain sheep, mountain goat, mountain lion, bear, and wild buffalo.

87-5-301. Grizzly bear -- findings -- policy. (1) The legislature finds that:

(a) grizzly bears are a recovered population and thrive under responsive cooperative management;

(b) grizzly bear conservation is best served under state management and the local, state, tribal, and federal partnerships that fostered recovery; and

(c) successful conflict management is key to maintaining public support for conservation of the grizzly bear.

(2) It is the policy of the state to:

(a) manage the grizzly bear as a species in need of management to avoid conflicts with humans and livestock; and

(b) use proactive management to control grizzly bear distribution and prevent conflicts, including trapping and lethal measures.

87-5-302. Commission regulations on grizzly bears. (1) The commission may:

(a) pursuant to subsection (2), regulate the hunting of grizzly bears, including the establishment of tagging requirements for carcasses, skulls, and hides; and

(b) establish requirements for the transportation, exportation, and importation of grizzly bears.

(2) When special grizzly bear licenses are to be issued pursuant to 87-2-701, the commission shall establish hunting season quotas for grizzly bears that will prevent the population of grizzly bears from decreasing below sustainable levels and with the intent to meet population objectives for elk, deer, and antelope. The provisions of this subsection do not affect the restriction provided in 87-2-702(3) that limits a person to the taking of only one grizzly bear in Montana.

Within this legal framework, the Commission developed a grizzly bear policy in Section 12.9.103, Annotated Rules of Montana, "Whereas, the Montana fish and game commission has management authority for the grizzly bear, a resident wildlife species, and is dedicated to the

preservation of grizzly bear populations within the state of Montana;" That policy addresses the need to protect grizzly bear habitat, the need to pursue grizzly bear research, the role of regulated hunting in grizzly bear management, depredations and the appropriate FWP response to depredations, and requires compliance with federal regulations relating to grizzly bears. It is within this framework, and that described by the ESA (16 U.S.C. Sec. 1531, et seq.), that specific FWP goals for the grizzly bear were developed.

87-1-217. Policy for management of large predators -- legislative intent. (1) In managing large predators, the primary goals of the department, in the order of listed priority, are to:

(a) protect humans, livestock, and pets;

(b) preserve and enhance the safety of the public during outdoor recreational and livelihood activities; and

(c) preserve citizens' opportunities to hunt large game species.

(2) With regard to large predators, it is the intent of the legislature that the specific provisions of this section concerning the management of large predators will control the general supervisory authority of the department regarding the management of all wildlife.

(3) For the management of wolves in accordance with the priorities established in subsection (1), the department may use lethal action to take problem wolves that attack livestock if the state objective for breeding pairs has been met. For the purposes of this subsection, "problem wolves" means any individual wolf or pack of wolves with a history of livestock predation.

(4) The department shall work with the livestock loss board and the United States department of agriculture Wildlife Services to establish the conditions under which wolf carcasses or parts of wolf carcasses are retrieved during wolf management activities and when those carcasses or parts of carcasses are made available to the livestock loss board for sale or auction pursuant to 2-15-3113.

(5) The department shall ensure that county commissioners and tribal governments in areas that have identifiable populations of large predators have the opportunity for consultation and coordination with state and federal agencies prior to state and federal policy decisions involving large predators and large game species.

(6) As used in this section:

(a) "consultation" means to actively provide information to a county or tribal government regarding proposed policy decisions on matters that may have a harmful effect on agricultural production or livestock operations or that may pose a risk to human health or safety in that county or on those tribal lands and to seek information and advice from counties or tribal governments on these matters;

(b) "large game species" means deer, elk, mountain sheep, moose, antelope, and mountain goats; and

(c) "large predators" means bears, mountain lions, and wolves.

DESCRIPTION OF THE GRIZZLY BEAR MANAGEMENT AREA FOR SOUTHWESTERN MONTANA

Grizzly bears currently occupy or have been documented in suitable habitats in the seven southwestern and south-central Montana counties adjacent to or near YNP (Carbon, Stillwater, Sweet Grass, Park, Gallatin, Madison, and Beaverhead counties, Fig. 2). The proposed action of this document is to create and adapt a management plan for this area. The following section briefly describes the geographic and human environment of this seven-county area with respect to geography, size, human population, land ownership, special management areas, agricultural interests, and recreation. Not all portions of these counties are suitable grizzly bear habitat as the above attributes affect the distribution and survival of grizzly bears. Aided by management programs, grizzly bears have expanded distribution beyond the seven-county area recognized in 2002. Expansion is occurring in Montana from the Northern Continental Divide Ecosystem and the Yellowstone Ecosystem. For purposes of this plan, the counties adjacent to but outside of this seven county area fall under management programs described by the Grizzly Bear Management Plan for Western Montana (2006) (Figure 2). The success of these programs rests on coordinating and cooperating with all affected counties, surrounding states and federal agencies. FWP will continue to work with these entities so that the needs of the public and bear population as a whole are met.

Figure 2. The seven counties of the Greater Yellowstone Area that fall under management of the Southwest Montana grizzly plan and the 17 counties of the Northern Continental Divide Ecosystem area that fall under management of the Western Montana grizzly plan. Grizzly bear recovery areas are shown for both ecosystems.

General Description

Each of the seven counties named above is characterized by one or more major river valleys divided by rugged mountain ranges. Elevations range from 12,799 ft. at Granite Peak (Montana's highest point) to about 3,330 ft. on the Yellowstone River near Park City. Major river drainages include the Clark's Fork of the Yellowstone, Stillwater, Boulder, Shields, Yellowstone, Gallatin, Madison, Red Rock, Ruby, Bighole, Wise, Beaverhead, and Jefferson rivers. Several rivers in the western portion of this area flow together to form the Upper Missouri River, beginning at Three Forks. Lower elevation habitats (below 6,000 ft.) vary greatly, including large areas of short-grass/sagebrush prairie, mountain foothills, intensively cultivated areas (grain and hay field agriculture), natural wetlands/lakes, riparian plant communities ranging from narrow stream bank zones to extensive cottonwood river bottoms, man-made reservoirs, small communities, and sizeable cities.

The mountainous portion of this seven-county area (above 6,000 ft.) contains all or portions of 18 mountain ranges including the Beartooth, Absaroka, Crazy, Bridger, Gallatin, Spanish Peaks, Madison, Henry Lake, Centennial, Gravelly, Snowcrest, Ruby, Tobacco Root, Highland, East Pioneer, West Pioneer, Tendoy, Beaverhead, and Anaconda-Pintler. Mountainous habitats are dominated by coniferous forest (Douglas fir, lodgepole pine, Engleman spruce, whitebark pine, limber pine, ponderosa pine, juniper), and rocky subalpine/alpine communities found above timberline.

Geographic Size and Human Population

The seven-county area encompasses approximately 12,865,088 acres or 20,102 square miles of southwestern and south-central Montana (Table 1). Roughly 14.8% of Montana's human population lives within this area. County population size ranges from 3,600 (Sweet Grass) to 91,000 people (Gallatin). Population density ranges from 1.7 persons per square mile (Beaverhead County) to 34.4 persons per square mile (Gallatin). Major population centers include Bozeman, Livingston, Belgrade, Dillon, Red Lodge, Big Timber, Three Forks, West Yellowstone, and Big Sky.

The population in this seven county area grew by 25% between 2000 and 2011 while the overall population of Montana grew by only 11%. Gallatin County was the fastest growing county, increasing by 43% from 2000-2011 while Park County actually decreased in population by 3%.

Table 1. Selected size, population, and agricultural attributes of the seven counties in the grizzly bear conservation area.

County	Pop.[1]	Size (Sq. Mi.)	People/Sq. Mile	# Cattle[2]	# Sheep[3]	Acres Harvested[4]
Carbon	10,028	22,049	4.9	60,000	5,100	141,887
Stillwater	9,131	1,795	5.1	47,000	7,400	100,258
Sweet Grass	3,623	1,855	2.0	38,000	5,400	51,319
Park	15,469	2,803	5.6	41,000	1,800	60,300
Gallatin	91,377	2,603	34.4	51,000	2,700	155,842
Madison	7,660	3,587	2.1	74,000	3,200	86,550
Beaverhead	9,198	5,542	1.7	110,000	14,600	121,277
Totals	**146,486**	**20,234**	**8.0**	**421,000**	**40,200**	**717,433**
Change since 2002 EIS	**+25%**	**0%**	**38%**	**-16%**	**-37%**	**+3%**

[1]Based on 2011 population estimate (Montana Census Bureau, http://quickfacts.census.gov).
[2]Based on inventory estimates of all cattle and calves for 2012 (Montana Agricultural Statistics www.nass.usda.gov).
[3]Based on inventory estimates of all sheep and lambs for 2012 (Montana Agricultural Statistics).
[4]Based on estimates of irrigated and non-irrigated acres harvested in 2007, (Montana Agriculture Statistics).

Land Ownership

The majority of the mountainous habitat (above 6,000 ft.) is within publicly owned National forests. All or portions of the Custer, Gallatin, and Beaverhead-Deerlodge National Forests occur within this seven-county area. A small portion of mountainous habitat is in Montana Department of Natural Resources and Conservation (DNRC), FWP, BLM, and private ownership, including private subdivisions, ranches, ski resorts, and timber company lands.

Low-elevation river valleys (below 6,000 ft.) are largely privately owned with only a small percentage in state (DNRC, FWP) and federal (BLM, USFS, and U.S. National Wildlife Refuges) ownership (Figure 3). The largest amount of low-elevation land lies within privately owned ranches and farms. Small, medium and large-sized communities also occupy several thousand acres of low-elevation river-valley habitat.

Special Management Areas

Several federal and state special management areas are located in the seven-county area. In large part, these areas are protected from human development and provide long-term habitat for a variety of wildlife species, including grizzly bears. Portions of four National Wilderness Areas lie within mountain ranges in the seven-county area: the Absaroka-Beartooth Wilderness, Lee Metcalf Wilderness, Bear Trap Canyon Wilderness and Anaconda-Pintler Wilderness. National Forest Wilderness Areas have the greatest restrictions on human use and development resulting in the least disturbed habitats available and are important in ensuring long-term grizzly bear survival.

Other special management areas include Red Rock Lakes National Wildlife Refuge and eight FWP Wildlife Management Areas. Over half, 6.6 million acres, of the seven county area is in

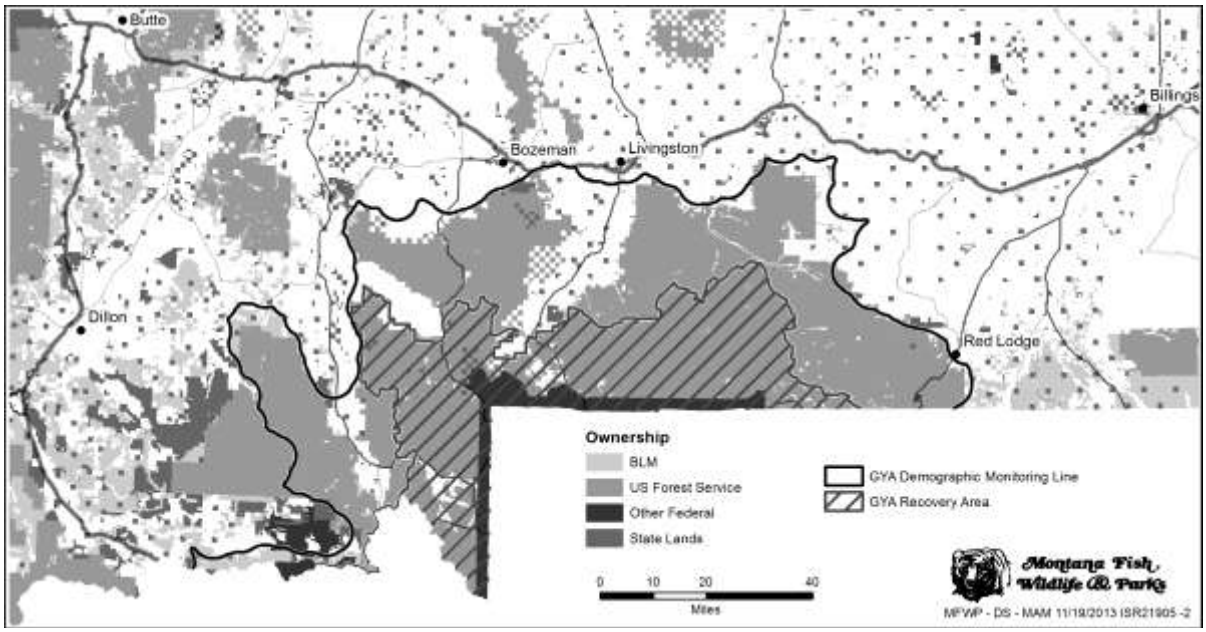
public ownership of some type (Table 2). FWP manages 63,000 of those acres and the USFS has management authority for the majority with 4.4 million acres.

Table 2. Percent of private versus public land, by county, for each of the seven counties covered by this plan.

County	Private property	Public property
Carbon	47%	53%
Stillwater	22%	78%
Sweet Grass	29%	71%
Park	55%	45%
Gallatin	47%	53%
Madison	53%	47%
Beaverhead	31%	69%

Based on land ownership statistics of the Montana State Library:
http://geoinfo.montanastatelibrary.org/geography/geography-facts/montana-county-land-ownership/

Figure 3. Southwest Montana with public lands (shaded), the GYA Recovery Zone boundary, and the Demographic Monitoring Area boundary.



Agricultural Interests

The seven-county area supports a large agricultural economy. The most common activity of these farms and ranches is raising beef cattle and growing forage (hay). In some areas, small grain crops such as wheat, oats, and barley are intensively grown. Horses, sheep, hogs and dairy cattle are also raised but in smaller numbers on ranches and farms in southwestern and south-central Montana. Beef cattle and sheep are grazed on privately owned grassland and on publicly owned (USFS, BLM, DNRC) grazing allotments. Some of these allotments occur in higher elevation habitats occupied by grizzly bears.

Based on Montana agricultural statistics for 2012, there were an estimated 421,000 head of cattle (all cattle and calves) in the seven-county area, a decrease of 16% since 2002 (Table 1). Beaverhead County had the most cattle (110,000) while Sweet Grass had the lowest number (38,000 head). Beaverhead County ranked #1 in the state for cattle production. In 2012, there were an estimated 40,200 sheep (adults and lambs) in the seven-county area, a decrease of 37% since 2002 (Table 1). Beaverhead County had the largest number of sheep (14,600) while Park County had the fewest (1,800). Beaverhead County ranked #3 in the state for sheep production. In 2007, an estimated 698,275 acres of irrigated and non-irrigated crops were harvested in the seven-county area (Table 1). Number of acres harvested ranged from 51,319 in Sweetgrass County to 155,842 in Gallatin County.

Recreational Opportunities

Outdoor recreation and tourism is a major component of the economy in this seven-county area. Southwestern and south-central Montana is nationally known for its high quality fishing, hunting, camping, hiking, river floating, skiing, snowmobiling, wildlife viewing and sightseeing opportunities. Nearby, YNP attracts large numbers of people to the area every year. Many of these outdoor activities are made possible by public ownership of large tracts of mountainous habitat and additional access provided by private landowners. Recreationists have largely unhampered access to millions of acres of undeveloped land. Much of this land is currently or will be occupied by grizzly bears based on documented trends of increasing distribution. As bear numbers and distribution increase along with increased public use of bear habitat, contact and interaction between bears and people will increase.

SUMMARY OF GRIZZLY BEAR BIOLOGY
(modified from the 2002 Programmatic Environmental Impact Statement (Mincher, B. J., 2000 and Schwartz et al. 2002), new information is cited)

Grizzly bears in this area come in many sizes and colors. The most prevalent color has medium to dark brown underfur, brown legs, hump, and underparts, light to medium grizzling on the head and part of the back, and a light-colored girth band or patch behind the forelegs, but many other variations exist. The size of male and female grizzly bears varies substantially with males about 1.2-2.2 times larger than females. Differences in body mass between males and females are influenced by age at sexual maturity, reproductive status, differential mortality, and season of sampling. During late summer and fall, grizzly bears gain weight rapidly, primarily as fat when they feed intensively prior to denning. Pre-denning weight gain is essential for reproduction and survival because bears rely solely on their stored energy reserves during hibernation. Peak body mass generally occurs in fall just prior to hibernation. Bears metabolize fat and muscle during the denning period.

Habitat

As with any wildlife population, bear density in the Yellowstone area will eventually be limited by geographic area and food resources. Food resources and population density dependence controls wildlife population limits. Yet, grizzly bears are extremely adaptable and exploit a wide variety of habitats and foods throughout their range indicating relatively broad environmental limits. Individual bears may exhibit individual preferences and tolerances. Most key grizzly foods in the GYA occur seasonally and somewhat unreliably. However, grizzly adaptability often compensates for the lack of some forage thought to be critical. Such a generalized approach to survival necessitates a solitary and mobile lifestyle. Individual grizzlies forage over vast areas and have large spatial requirements. The active season for grizzlies is compressed to a 5-7 month period, during which they must gain sufficient weight to supply their energetic needs for the next denning cycle. Bears tend to concentrate their activity in the most productive habitats available because of these high energetic needs.

In general, GYA home ranges are larger than those of other grizzly bear populations. This larger range possibly indicates low environmental productivity in the GYA and increased foraging requirements to meet their nutritional needs or it may be caused more by the wide distribution of favorite foods at different times of the year. Individual ranges of both sexes overlap, but do not appear to be defended, even for adult males. Subadult bears, especially males, disperse from their natal ranges to establish new home ranges, and these spatial requirements probably limit ultimate population density.

As with other bear species and populations, male grizzly home ranges in the GYA are usually larger than female ranges. The Interagency Grizzly Bear Study Team (IGBST) reported mean range sizes from 1975-1987 of 874 km^2 for adult males and 281 km^2 for adult females. Females with new cubs used slightly less area, and those with yearlings used more. New estimates of home range have been calculated for radio-tracked grizzlies in the GYA and indicate some decrease in home range from these earlier estimates (Table 3, IGBST, unpublished data).

Table 3. Minimum convex polygon range estimates (km^2) for grizzly bears radio-tracked in the GYA during 1989-2012. Range estimates were only included for bears that had at least one location during June or earlier in the calendar year, ≥ 10 locations for the active season, and at least one location during September. Individuals that had been transported due to conflicts were excluded after their initial transport.

					95% Confidence Interval (km^2)	
Class	N	Mean (km^2)	Std. Deviation (km^2)	Std. Error (km^2)	Lower Bound	Upper Bound
Subadult F	31	139	132	24	91	188
Adult F with COY	57	154	151	20	114	194
Other adult F	122	127	98	9	109	144
Subadult M	45	545	613	91	361	729
Adult M	104	376	364	36	306	447

In the GYA, the pattern of seasonal elevation use is similar to that found for other populations occupying interior western mountains. Grizzlies utilized carrion and rodents prior to spring green-up, and foraged extensively on grasses, sedges and herbs in season, and berries, nuts and fish in the post-growing season. The most widely used foods were grasses and sedges, which constituted more than half of the diet.

Long-term studies of Yellowstone grizzly bear food habits have revealed large year-to-year variations in diet as grizzlies exploited foods that were only infrequently available. Examples of specialty foods included ants, pondweed and sweet cicely. The early season diet was dominated by ungulates, both scavenged and as neonate prey, notably elk calves, mid-season by grasses and sedges, and late-season by pine seeds, large mammal carcasses and roots. The annual percentage of energy obtained from the ungulate meat is considerably higher in the GYA than for other interior populations although herbaceous foods remain important because they are more predictable. Grizzly bears at high densities and in some circumstances can impact the ungulate prey base. However, in this area the ungulate prey base is also impacted by other factors such as mountain lions, wolves, hunting, and winter severity. Yellowstone grizzlies have 234 species of 179 genus of vegetative, insect and vertebrate food sources, including the high caloric cyclic crops of army cutworm moths, whitebark pines seeds, and large mammal meat (Gunther et al, 2012).

Yellowstone area grizzlies prefer open grasslands adjacent to cover for most of their feeding activities. While grizzlies depend on fertile grasslands for their predictable supply of forage, seasonally abundant foods are exploited as available. These foods include whitebark pine seeds and carrion.

Whitebark pine seeds are heavily utilized because they are available during the hyperphagic period prior to denning. Many bears feed on pine seeds almost exclusively at that time. Large

amounts of cones are obtained by raiding squirrel caches, which the bears exhume. After good production years, seeds that survive the winter are also used the following spring. Historically, there was a relationship between whitebark pine seed abundance and the number of bears in conflict management situations. During good years, bears move to high-elevation, whitebark pine habitats. But in poor years, grizzlies are found foraging throughout larger areas that may bring them near roads and developed sites more frequently where they encounter unsecured anthropogenic foods. Many whitebark pine stands in the northwest have been infected and killed by whitebark pine blister rust. Whitebark in the GYA has been infected by this disease and by pine beetle infestations during 2003-2009. The Interagency Whitebark Pine Monitoring Program annually surveys and reports the extent of whitebark pine tree loss.

The army cutworm moth is a second, high-fat food source for a segment of the Yellowstone grizzly population during the early hyperphagic period. Moths collect under rocks in alpine areas in late summer and fall. To date, there have been 37 confirmed and 17 possible moth sites observed with grizzly bear feeding activity in the Yellowstone Ecosystem. All of these sites are located in the eastern side of the ecosystem. No moth sites have been documented in Montana's portion of the ecosystem.

During the fall season, bears seek out meat sources associated with big game hunting seasons in the states surrounding YNP.

Anthropogenic foods (i.e. garbage, livestock feed, pet food, bird seed, human foods, garden crops, honey) are opportunistically used by grizzlies wherever humans and bears coexist, and most often in years when important natural foods fail. In the GYA, considerable effort has gone into eliminating the availability of anthropogenic foods and these efforts have been largely successful in reducing incidents of bear-human conflicts. In the past 15 years, there have been increases in county and state ordinances and laws regulating food storage and the feeding of wildlife. There has also been an expansion of food storage rules on USFS public lands to include the entire Gallatin National Forest, Beaverhead National Forest, and on FWP wildlife management areas (WMA). Community efforts have also resulted in a number of local programs to secure garbage sources from bears.

In summary, grizzlies are opportunistic omnivores that are able to take advantage of a wide variety of locally important foods. Home range size seems determined by food abundance and population density dependence. Many individuals are able to abandon, or overlap, their ranges to exploit concentrated food aggregations such as pine seeds, moths, fish, carrion, fruits or garbage. Much of this behavior seems influenced by experience and habit. This adaptability has obvious survival advantages, but also results in large spatial requirements that complicate grizzly management.

Habitat for Denning

Yellowstone grizzlies can spend four to seven months a year in dens. In general, bears den by mid-November, although pregnant females den somewhat earlier. Their emergence from wintering dens occurs from mid-February to late March for males, followed by single females, and lastly by females with new cubs, which can emerge as late as mid-April.

Dens typically are found on steep slopes at high elevation (≥6500 feet) and in all cover types in the GYA. Dens are usually excavated, although natural shelters such as caves and hollow trees are also used. The availability of denning habitat is not thought to be limiting for the GYA bears.

Security at den sites appears to be an important management consideration, especially if human disturbance occurs near the time of den entry. There has been some concern of the possible effects that snowmobiles may have on denning bears as snowmobiling does have the potential to disturb bears while in their dens and after emergence in the spring. Because grizzly bears are easily awakened in the den (Schwartz et al. 2003) and have been documented abandoning den sites after seismic disturbance (Reynolds et al., 1986), the potential impact from snowmobiling should be considered. There are no studies in the literature specifically addressing the effects of snowmobile use on any denning bear species and the information that is available is anecdotal in nature (USFWS 2002). Known den locations in areas of snowmobile use are monitored within the GYA when possible to determine if snowmobile activity is having any adverse effect on grizzly bears. At this time, there is no evidence of disturbance (K. Frey, pers. comm.).

Habitat for Security

All current grizzly bear habitat in the continental United States is characterized by extensive timber cover, and most day beds are found in timber. This implies that security cover is an important habitat component, possibly due to social pressure from other large carnivores, human avoidance or summer heat avoidance.

It has long been speculated that female grizzlies with cubs avoid other carnivores such as wolves and adult male bears due to their aggressive and occasionally cannibalistic nature.

In the GYA, the only indication of sexual segregation through habitat use is in years of poor pine seed production where females were found more often near roads and areas used by humans.

The Interagency Grizzly Bear Committee (IGBC) considers the presence of even lightly used roads to cause a loss in useful bear habitat. Roads are incorporated in cumulative effects models (CEM) of habitat quality as the presence of a road tends to increase human activity in an area. Some researchers have concluded that grizzly bears habituate to roads and human presence as required to meet their caloric energy needs. Human presence can lead to grizzly bear moralities, whether due to legal hunting, if allowed, to poaching, or to kills by humans in self-defense situations.

In summary, grizzly habitat requirements are determined by their omnivorous foraging behavior, their need for winter den sites and security cover, and their occasional aggressive social behavior. Large roadless areas are ideal as year round grizzly habitat. However, grizzly bears can and do survive in roaded areas if human tolerance for their presence is high and if a diversity of habitat types is present.

Population Dynamics

Grizzly bears are long-lived animals that range over large geographic areas making it difficult to census and assess population levels. Generally, researchers agree that grizzlies have low

reproductive rates and that grizzly populations are very susceptible to human impacts. Grizzly populations are also very sensitive to changes in female survival rates. Age at first reproduction for females is generally between 4-7 years old and male bears reach sexual maturity around 5 years of age. The average litter size for bears in the Yellowstone area is two cubs (range 1-4) and females typically produce cubs every third year. Breeding occurs in late spring with cubs born in the den the following winter.

As with all other bear populations in the world, it is not possible to determine definitively the actual numbers of bears in the GYA. Therefore, any figure is a result of some form of estimation. Using garbage dump census data collected by the Craighead team, and a census efficiency determined by ratios of collared to uncollared mortalities inside and outside YNP, the pre-dump closure bear population was estimated at 312 animals. The population declined to about 230 bears following the closures but began increasing in the late 1980s. After that time researchers calculated that the grizzly population grew 4-7% per year for an average growth rate of 4.6% per year, up until the late 1990's or early 2000's.

These rates of change are calculated as a function of the number of unduplicated females with cubs of the year (COY). Females with COY are readily visible and uniquely identifiable. However, these counts are influenced by counting effort, seasonal cover, and the total number of animals. A standardized and conservative counting approach has been adopted to avoid duplication of females counted. These records have been maintained by the IGBST since 1973. The female with COY count has been steadily increasing since the late 1980s. The population estimation protocol used until 2007 indicated rates of increase between 4% and 7% from 1983-2001.

New population estimation techniques were adopted in 2007 following considerable analyses (IGBST 2005, 2006). The new technique is still a function of delineating unique females with COY but results in a population *estimate* rather than the earlier conservative *index* of population size. First an estimate for the total number of females with COY present in the population is derived by applying the Chao2 estimator to the sighting frequencies of each unique female with COY (IGBST, 2012.) Then vital rates (for survival and reproduction) are used to estimate the stable age structure and the proportion of females with COY in the population. From these an estimate for the annual population size is produced.

Analysis of the 2002-2011 data during a 2012 IGBST demographic workshop indicates that since 2002, the overall rate of growth of the bear population in the GYA has stabilized or slowed.

The analysis looked at the overall population by zones, revealing that the increase in bear numbers is due primarily to growth and survivorship of bears outside YNP but within the Recovery Zone, as well as bears outside the Recovery Zone. Population growth within YNP had actually slowed or leveled off. The analysis revealed that mean annual adult male bear survivorship rates had increased from 0.87 during 1983-2001 to 0.95 during 2002-2011; thus accounting for more male bears in the population. Adult female bear vital rates remained nearly constant over the same time periods. The population estimate for 2012 was 610 grizzly bears using the 2007 estimation techniques. The new vital rates derived from 2002 to 2011 data, result

in a new estimate of 716 grizzlies for 2012 (IGBST, 2012), primarily because of the increase in male survivorship.

These new data sets and analyses came from the 2012 IGBST workshop to further refine protocols for estimating population size of the GYA grizzlies, evaluate mortality limits and discuss the possibility of zoning the ecosystem for mortality limits given the expanding population (IGBST 2012). Efforts like this will continue to ensure use of the best available science in grizzly bear management and to ensure demographic criteria are met. The USFWS 1993 Recovery Plan established demographic criteria for recovery, including females with COY, mortality limits, and occupancy requirements. Current information on these parameters and their relationship to recovery plan goals are shown in Tables 4 and 5. All of the regional demographic criteria are currently being met for this population.

Table 4. Population estimates and annual evaluations of mortality limits for independent aged (≥ 2 years-old) female and male grizzly bears identified in the Greater Yellowstone Ecosystem during 2007-2012 (See IGBST 2006 and Haroldson and Frey 2008).

				Evaluation of mortality limits									
Population estimates				Independent females (≥2 years old)					Independent males (≥2 years old)				
Year	Population point estimate	Lower 95% CI	Upper 95% CI	Population segment point estimate	Count of known and probable mortalities	Estimated total mortality (reported plus unreported)	Annual mortality limit	Year result	Population segment point estimate	Count of known and probable mortalities	Estimated total mortality (reported plus unreported)	Annual mortality limit	Year result
2007	571	513	629	240	11	20	22	OK	153	7	13	23	OK
2008	596	535	656	251	14	30	23	Exceeded	159	23	41	24	Exceeded
2009	582	523	641	245	9	20	22	OK	156	11	20	23	OK
2010	602	541	663	253	13	21	23	OK	161	26	47	24	Exceeded
2011	593	533	652	248	16	32	26	Exceeded	157	16	24	24	Exceeded
2012	610	549	672	257	11	15	23	OK	163	18	34	24	Exceeded

Table 5. Bear Management Units in the Greater Yellowstone Ecosystem occupied by females with young (cubs-of-the-year, yearlings, 2-year-olds, or young of unknown age), as determined by verified reports, 2007-2012.

Bear Management Unit	2007	2008	2009	2010	2011	2012	Years occupied
1) Hilgard	X	X	X	X	X	X	6
2) Gallatin	X	X	X	X	X	X	6
3) Hellroaring/Bear		X	X	X	X	X	5
4) Boulder/Slough	X	X	X	X	X	X	6
5) Lamar	X	X	X	X	X	X	6
6) Crandall/Sunlight	X	X	X	X	X	X	6
7) Shoshone	X	X	X	X	X	X	6
8) Pelican/Clear	X	X	X	X	X	X	6
9) Washburn	X	X	X	X		X	6
10) Firehole/Hayden	X	X	X	X	X	X	6
11) Madison	X	X	X	X	X		5
12) Henry's Lake	X	X	X	X	X	X	6
13) Plateau	X	X	X	X		X	5
14) Two Ocean/Lake	X	X	X	X	X	X	6
15) Thorofare	X	X	X	X	X	X	6
16) South Absaroka	X	X	X	X	X	X	6
17) Buffalo/Spread Creek	X	X	X	X	X	X	6
18) Bechler/Teton	X	X	X	X	X		5
Totals	17	18	18	18	16	16	

ALTERNATIVES IDENTIFIED AND CONSIDERED

Alternative I. *FWP's preferred alternative for managing grizzly bears in southern MT is to manage grizzlies in a manner that allows for a sustainable, adequately distributed population that is secure and stable enough to meet the provisions of the GYA CS (2007) and remain out of federal ESA protections. This approach is summarized in the approval of this proposed Grizzly Bear Management Plan for Southwest Montana.*

FWP's current approach of management and that implemented since publication of the 2002 EIS has been sufficient to maintain grizzly populations while also maintaining social tolerance for grizzlies. FWP recognizes the dynamic nature of wildlife populations, ecosystems and human populations and acknowledges the need for equally dynamic and adaptive management strategies that keep the original goals in mind.

FWP's preferred approach maintains proactive programs to minimize and prevent grizzly/human conflict and responsive programs that adequately address conflicts when they do arise. It is critical for the maintenance of social acceptance of bears on the landscape that management of grizzly/human conflicts remains a priority for FWP. It is also critical to monitor bear numbers and habitats to ensure CS criteria are being met and adequate suitable habitat is available.

Alternative II. *A "No Action" alternative is not a viable option as FWP is mandated to manage wildlife and failure to do so by FWP would likely result in the maintenance of a 'threatened' ESA classification for the species within the state. FWP wildlife management works most effectively under approved state plans. Failure to continue active management would contradict the following statute:*

87-5-301 (1b) Grizzly bear conservation is best served under state management and the local, state, tribal, and federal partnerships that fostered recovery; and (c) successful conflict management is key to maintaining public support for conservation of the grizzly bear.
(2) It is the policy of the state to: (a) manage the grizzly bear as a species in need of management to avoid conflicts with humans and livestock.

A 'no action' alternative would be deemed by the USFWS as a lack of adequate regulatory mechanisms to maintain grizzly bears in Montana. A failure to delist grizzlies because of this would remove local management authority ability, the ultimate goal of implementing the ESA and recovering species. ESA listing status removes options for regulated take, results in conservative action to resolve conflict situations, and gives broad authority to those who do not live, work and recreate in Montana.

The cost of a 'no action' alternative could prove burdensome and costly on those who *do* live and work in Montana. Recreation opportunity in grizzly habitat could be more limited under this alternative to ensure the public's safety and the conservative approach to conflict bear removal would likely result in more livestock or property loss. In addition, the 'no action' alternative would more often force FWP to act with more costly, responsive methods, rather than using proactive approaches to conflict management.

Over time it is believed that the 'no action' alternative would erode support for grizzlies in an increasingly larger geographic area limiting the ability of grizzlies to naturally disperse and potentially link to other ecosystems.

ISSUES IDENTIFIED AND CONSIDERED

The 2002 EIS identified and discussed eight critical issues surrounding grizzly bear management in Montana. These issues are still relevant and presented again in this document along with one new issue, climate change. Background information is presented along with FWP's preferred management approach relative to tracking issue impacts or minimizing negative impacts of the issue to humans or bears. Anticipated consequences of preferred management approaches are considered.

This section concludes with a brief discussion of anticipated secondary and cumulative impacts of the preferred management alternatives along with a discussion of irreversible/irretrievable commitments of resources.

Population Monitoring

Preferred methods to monitor grizzly populations:

- Estimate grizzly densities using the best available data from research, distribution changes, DNA samples, and more.
- Cooperatively monitor unduplicated females with cubs within the original PCA and outside.
- Monitor bear mortalities including timing, location and causes and gather survivorship data in cooperation with the IGBST.
- Use verified sightings, DNA samples, photographs and tracks to document changes in bear distribution.
- Conduct research in cooperation with the IGBST to obtain more detailed population information.
- Coordinate monitoring with other states, YNP and the IGBST. Present information collected within the demographic monitoring area as part of annual reporting for Montana population and within annual IGBST reports.
- Use population demographics, in combination with habitat conditions, location and frequency of grizzly/human conflicts, social tolerance, and research findings, to guide population management decisions.

The 18 bear management units (BMU's) established for the original PCA are used to focus intensive management. Additional units have been established outside the original PCA to delineate survey areas for the collection of demographic and occupancy data on grizzly bears by geographic area. Units can be modified when bear activity outside the PCA indicates a change is needed. Units were created and will be created as needed solely for the collection of demographic data and will not of themselves generate any new habitat restrictions.

In order to maintain consistency in data collection and compare grizzly bear population parameters in the BMUs outside of the original 18 units, monitoring protocols have been established. Monitoring of unduplicated females with young is used as an index to assess population trend or abundance over time. The data are currently used to estimate a known minimum and total population size within the demographic monitoring area. The number of

unique female bears is determined each year and using the revised demographic recovery criteria (see IGBST annual reports for methods) an adult female minimum population estimate is calculated from the unique female data. It should be noted that this is still a conservative approach to assessing this population parameter. This minimum adult female population estimate is the base for establishing yearly mortality thresholds of all sex/age groups of bears for all known causes of mortalities. These data, along with new methods that are currently under review, may be used to generate a more accurate total population estimate. The IGBST continually evaluates different statistical approaches and monitoring techniques that allow agencies increased confidence in the estimated total population size for this population of bears. FWP continues to review this information and use it and other data for ongoing management.

The following monitoring techniques are employed in southwestern Montana to track the grizzly bear population:

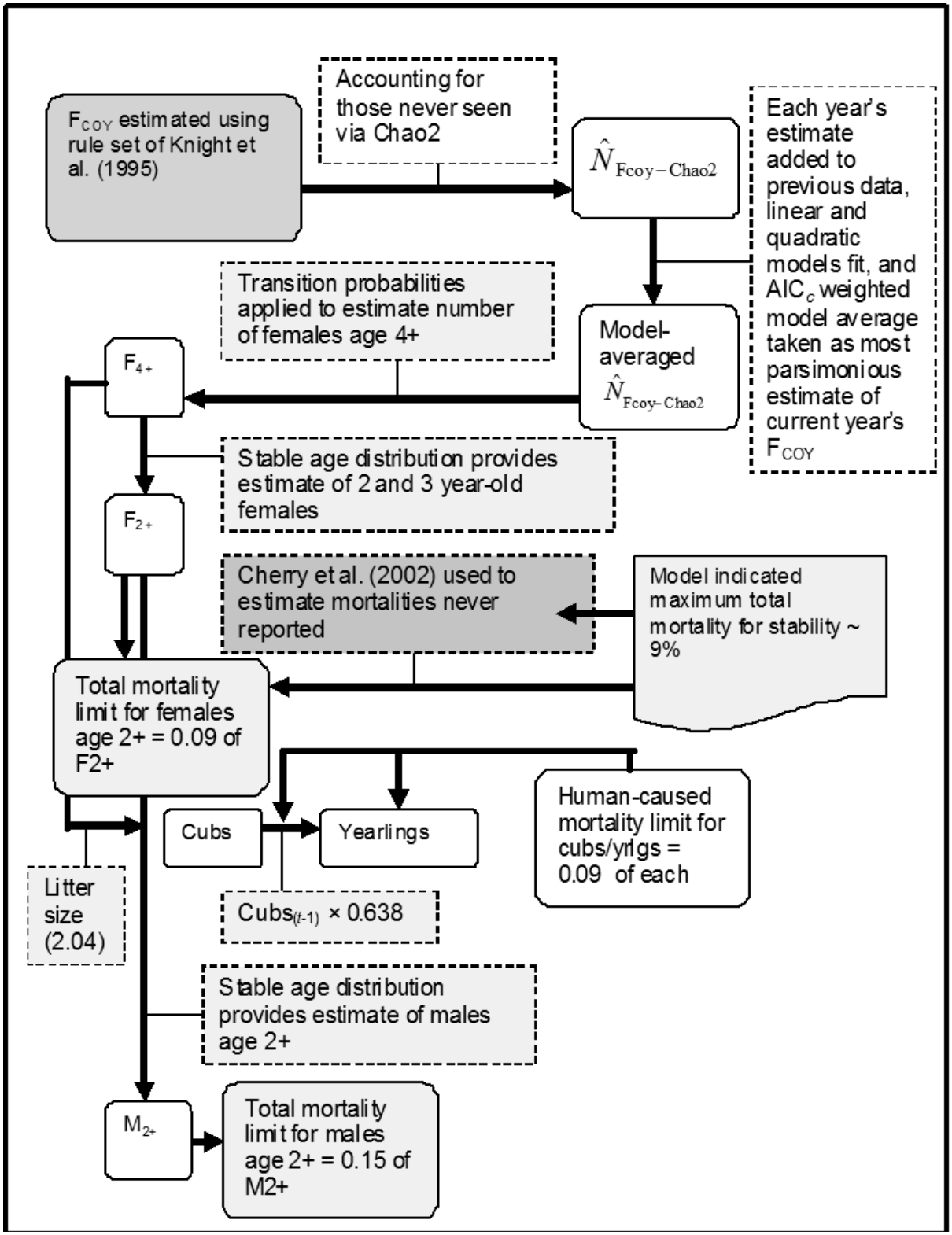
Monitoring of unduplicated females:

Monitoring of unduplicated females with COY will likely always be used as an index to assess population trend or abundance over time. The data are currently used to determine an annual point estimate of the total population size for the GYA (Table 6). Since 2007 the number of unique females with COY are calculated annually and the Chao2 estimator correction is applied along with linear and quadratic regressions of ln(Chao2) to derive the annual total population estimate and mortality limits of each population segment (Figure 4). It should be noted that this is a conservative approach to assessing this population parameter. The IGBST continually investigates different statistical approaches and monitoring techniques that allow agencies to estimate total population size for this population of bears. FWP will continue to review this information and use it and other data in the ongoing management programs.

Table 6. Minimum counts of unique female grizzly bears with cubs of the year (FCOY) identified in the GYA with mean litter size during initial observations of families during 2002-2012. Also provided are effort corrected (Chao2) estimates for FCOY and model averages estimates (using linear and quadratic regressions of 1n(Chao2) with year for 2002-2012; See IGBST 2006, Harris et al. 2007, Haroldson 2008).

Year	Minimum count FCOY	Mean Litter size	Effort Corrected FCOY (Chao2)	Model averaged Chao2
2002	52	2.0	58	43
2003	38	2.0	46	45
2004	49	2.0	58	47
2005	31	1.8	31	48
2006	47	2.0	45	50
2007	50	2.2	53	52
2008	44	1.9	56	53
2009	42	2.1	44	55
2010	51	2.0	56	57
2011	39	1.9	47	56
2012	49	1.9	59	58

Figure 4. Flow chart of the protocols in place since 2007 for estimating the number of grizzly bears in the Greater Yellowstone Ecosystem and assessing sustainable mortality limits.



Management/research trapping and radio collaring:
Management/research trapping and radio collaring provide necessary data on grizzly distribution, movements, home ranges and overall demographics. Data collected with this technique include estimation of seasonal, annual, and lifetime home ranges, identification of important seasonal habitats and foods, potential travel and linkage corridors, extent of occupation, mortality information, and location of denning sites. Distribution of bears can also be informed with other methods such as DNA sampling, observation flights, telemetry flights, nuisance bear activity, and verified sightings.

Estimates of survival:
Survivorship data has been obtained, via aerial and ground telemetry of radio-collared bears and mortality investigations. These data are used to determine average life expectancy by gender and age class, causes of mortality, etc., for bears that inhabit different portions of the ecosystem. All known reported and unreported mortalities (detected via radio-telemetry) are investigated by FWP personnel to determine cause of death. These mortalities are recorded and the information used, along with other mortality data, to manage the population. Survivorship information is fundamental to addressing the potential differences in survivorship of grizzly bears in the original PCA where there are extensive habitat protections, versus bears that live on multiple use areas outside the original PCA.

Non-invasive sampling:
Many researchers in Canada and the United States are focusing on "hair-snaring" techniques to estimate number and density of grizzly bears. With this procedure, bears are attracted to sampling stations with a scent lure. At each sampling station, barbed wire is strung between trees and when the bear passes under the wire, a small tuft of hair is snagged. The follicles from these hair samples contain DNA, which can be used to identify individual animals. This technique is conceptually similar to techniques developed to identify bears based on photos taken when bears trip cameras. Advantages of the DNA and camera techniques include reduced need to mark bears or see them from aircraft. However, these techniques are labor-intensive, expensive, and typically have problems identifying the area inhabited by the estimated population. The assumptions of a ‘closed’ population with these techniques creates difficulties in estimating density where ever the technique is used. Kendall et al. (2008) calculated grizzly density for an area in and around Glacier National Park using rub tree hair snares.

Current approach:
FWP recognizes that no one factor can provide the needed information to assess population size and trend. All assessment methods ultimately result in some level of estimation and extrapolation for management purposes. Estimation and extrapolation are used to successfully manage other species of wildlife but for grizzlies in particular FWP also considers the following when making management decisions.

1. Federal laws and regulations that may have major influence on the bear population.
2. Public opinions and perceptions.
3. Results of population and habitat research. Specifically, changes in age structure, reported and unreported mortality trends, population densities, habitat use, and habitat quality are considered.

4. Major changes in human use within management areas.
5. Population status within YNP and Grand Teton National Park as monitored annually through IGBST cooperative efforts.
6. Documentation of grizzly bear range expansions or contractions.
7. Changes in management areas or management unit boundaries.
8. The number of control actions as reported annually. The management program is evaluated annually and adjustments can be made to ensure the population is not being excessively impacted.
9. Grizzly bear management policies in Montana, Wyoming and Idaho as described in the GYA Conservation Strategy.
10. Mortality statistics as collected annually through IGBST cooperative efforts:
    a. Male/female sex ratio and median age.
    b. Total mortality: trends in total number of bear mortalities are annually evaluated in conjunction with population estimates and/or demographics to determine if changes in mortality quotas are needed.
    c. Annual estimates of cub litter sizes as reported throughout the ecosystem.
11. If a hunt was to occur, hunter effort, success, location of hunt, and other metrics would be monitored and considered to aid interpretation of population statistics.

Population data are collected in a manner that provides the most statistically accurate population estimates. Overall population fluctuations are monitored annually through IGSBT cooperative efforts. The most recent analysis indicates that the adult male bear segment of the population is increasing, the adult female bear segment is stable and the sub-adult bear segment is decreasing. (IGBST, 2012). These are indications of a population that is being regulated by density dependence and related food availability.

FWP has considered the collection of population data in a manner that would provide statistically precise population estimates. However, fine scale population fluctuations for a slow reproducing species such as the grizzly bear are difficult and expensive to detect, and more importantly, unnecessary. An overall population trend informed by diverse types of data is adequate to inform FWP's management decisions. The calculation of precise population estimates would be very costly and ultimately provide little additional information to support management decision making.

Trend of grizzly bear mortalities in Southwest Montana

Grizzly bear mortalities have remained nearly constant in Montana since the 2002-2012 EIS was written. There were 40 known documented grizzly bear mortalities (Table 7) during the ten year period prior to 2002. During the eleven year period (2002–2012) since, there have been 45* documented grizzly bear mortalities (Table 8) in Montana's portion of the GYA. Considering the expansion in overall distribution and increase in the overall grizzly bear population since 2001, Montana's management program has been relatively successful in keeping annual grizzly bear mortalities low.

Table 7. Grizzly bear mortalities in southwest Montana, 1992-2001.

CAUSE:	YEAR											% of Total
	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	Total	
Natural	1	0	0	0	0	1	0	1	0	0	3	8
Livestock Depredation	0	0	0	0	0	0	2	0	0	0	2	5
Unknown	0	1	0	0	1	0	0	0	1	0	3	8
Illegal	1	0	2	1	0	2	0	0	0	0	6	15
Self-Defense/Hunting	0	1	1	2	1	2	0	0	2	0	9	22
Roadkill	0	0	0	0	0	0	0	0	0	0	0	0
Unnatural Food	1	0	3	5	4	0	0	0	1	3	17	42
Total	3	2	6	8	6	5	2	1	4	3	40	

Unnatural food related mortalities have decreased from 42% of the total mortalities during the period of 1992–2001, to 29% of the total mortalities during the period of 2002-2012. This decrease is partially attributed to a significant effort to improve sanitation on private and public land. Defense of life and property (DLP) mortalities have risen slightly from 22% to 29% of the total from the first 10 year period to the most recent 11 years.

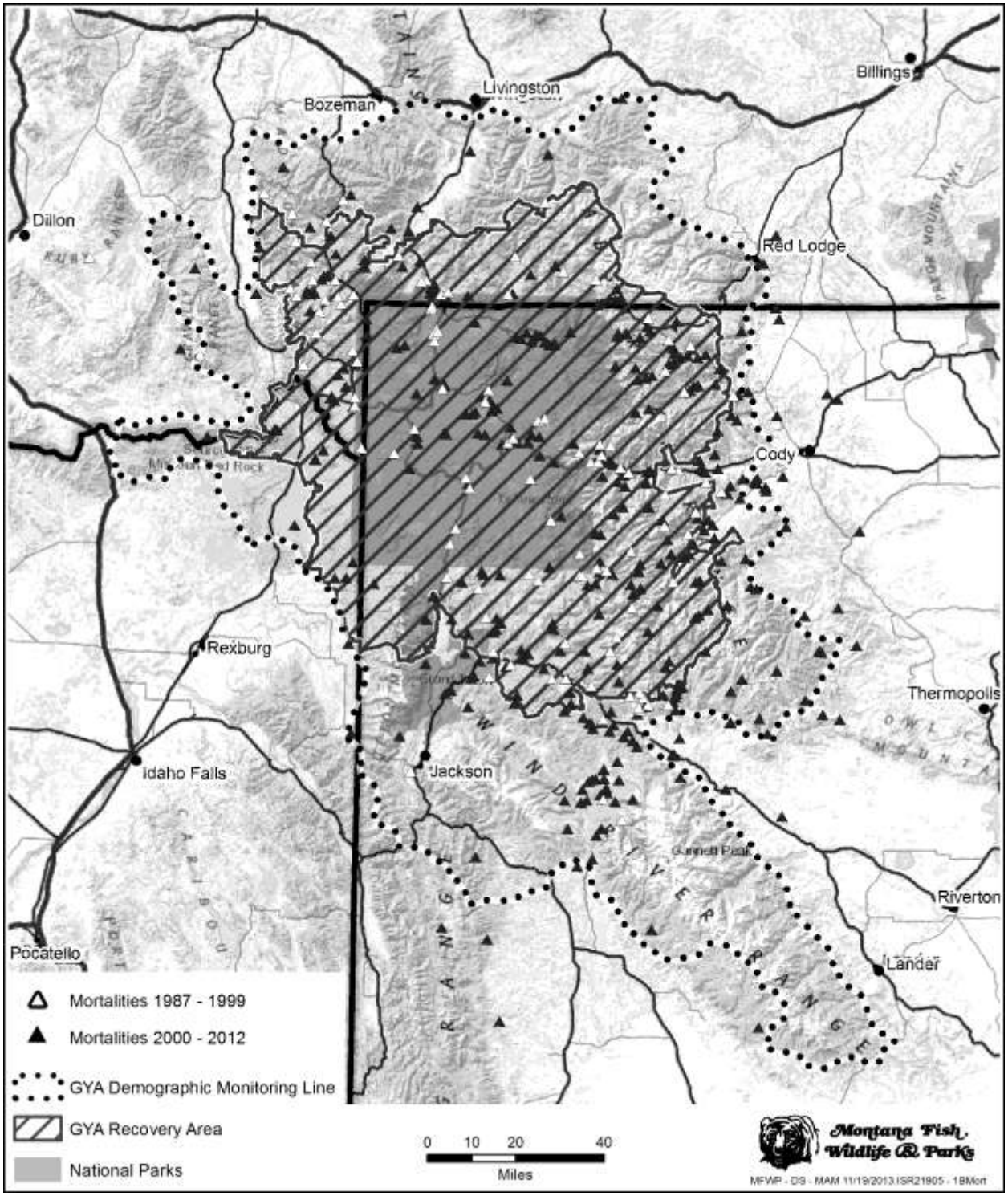
Table 8. Grizzly bear mortalities in southwest Montana, 2002-2012.

CAUSE:	YEAR												% of Total
	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	Total	
Natural	1	0	0	0	0	0	0	0	0	0	0	1	2
Livestock Depredation	0	0	0	0	0	0	0	0	1	2	2	5	12
Unknown	0	0	0	0	2	0	0	1	0	0	0	3	7
Illegal	0	0	0	1	0	0	1	0	1	1	1	5	12
Self-Defense/Hunting	0	1	0	0	0	2	3	2	2	1	1	12	29
Roadkill	0	0	0	1	0	0	1	1	0	0	0	3	7
Unnatural Food	4	0	1	0	1	0	3	0	2	1	0	12	29
Total	5	1	1	2	3	2	8	4	6*	5	4	41*	

* = There are four additional mortalities associated with the 2010 human maulings and one human fatality in the Soda Butte Campground near Cooke City. These four mortalities were not included in the two time period comparisons, due to the reason for removal of the bears. They are noted previously in the documented total mortalities (45) for 2002-2012.

Livestock depredation related mortalities and backcountry DLP mortalities have been slightly increasing in recent years. This should be expected as bear distribution increases, putting people, livestock and bears into more situations of potential conflict (Figure 5). Often there are human injuries associated with the DLP mortalities. Since 2007, 20 people have received minor to severe (1 fatal) injuries from encounters with grizzly bears in Montana's portion of the GYA. A large effort has been made by FWP and the USFS to post information, post news releases and make personal contacts to reduce human (mostly hunters) injuries and bear mortalities. However, due to the random nature of close encounter situations, they are nearly impossible to alleviate or predict.

Figure 5. Distribution of grizzly bear mortalities by two time periods, 1987-1999 and 2000-2012. Mortalities recorded outside of the Demographic Monitoring Area line will not count against sustainable mortality limits (IGBST data).



Habitat/Habitat Monitoring/Human Use of Bear Habitat

Preferred management approaches to provide suitable and adequate habitat:

- Cooperate with other members of the IGBST in a coordinated effort to collect and analyze habitat data.
- Work with land management agencies to monitor habitat changes in a manner consistent with the overall approach to habitat monitoring for other managed species.
- Identify and monitor whitebark pine, moth aggregation sites, and other key foods such as ungulate population levels.
- Continue to use statewide habitat programs to conserve key wildlife habitats in southwestern Montana.
- Recommend that land-management agencies manage for an open-road density of one mile or less per square mile of habitat consistent with FWP's statewide Elk Management Plan guidelines.
- Support the maintenance of existing inventoried roadless areas and work with local groups and land managers to identify areas where roads could be reclaimed.
- Work with the Department of Transportation (DOT) to address wildlife crossing needs on their projects.
- Monitor coal bed methane activities, and other oil and gas projects, and address grizzly bear needs in permitting processes as necessary and when appropriate.
- Monitor mining activities, timber harvest and public lands livestock grazing and address grizzly bear needs in permitting processes as necessary and when appropriate.
- Continue to work with local communities, counties, and developers to limit negative impacts of new development on grizzly bears.
- Work with local community groups to identify and promote habitat characteristics that benefit bears.
- Review all new trail proposals or adjustments to trails on FWP lands through the MEPA process. Negative impacts to grizzly bears will be avoided while designing new trails or trail use restrictions.
- Review and comment on federal trail projects when appropriate.
- Evaluate winter use programs to ensure they avoid impacting grizzly bears during denning periods, including den entrance and emergence when appropriate.
- Consider grant applications for the state trails program only after MEPA or NEPA process has been completed to include consideration of grizzly bear habitat needs as appropriate (this will be managed by Montana State Parks, a division of FWP).
- Increase resource stewardship within grizzly bear habitat through recreationists education and regulations compliance.
- Monitor changes to habitat or bear behavior suspected to be climate change related and mitigate when possible. For example, education campaigns could be implemented to warn hunters that later denning dates due to warmer autumns mean bears are active later than in the past.

FWP views fish and wildlife habitat on public land, as valuable property that preferably remains open to hunters, anglers, and other public users. Accessibility to public lands will be balanced with the year-round requirements of fish and wildlife, while maintaining a functioning road system. By implementing this program, FWP can maintain grizzly bears while still providing for other appropriate uses.

Reasons for the decline of grizzly bears in North America are excessive human-caused mortality and habitat loss. Habitat loss can result from conversion of native vegetation to agriculture, disturbance, displacement from human developments and activities (roads, mines, subdivisions), and fragmentation of habitat into blocks that are inadequate to maintain viable populations and connectivity.

This management plan recommends a coordinated approach to the monitoring of major grizzly bear food sources and to addressing land management issues related to grizzly bear habitat protection, disturbance, and mitigation. It is important to note that these efforts benefit many species in addition to bears.

Grizzly Bear Foods

Because grizzly bears are omnivorous and opportunistic they are able to survive in a variety of habitats and utilize a variety of foods. As grizzly bear expansion and population increase has occurred, food and habitat monitoring has occurred in an increasingly larger area. Three major food sources used by bears inhabiting the GYA are whitebark pine seeds, army cutworm moths (*Euxoa auxiliaris*) at insect aggregation site, and ungulates, including use of winter kill (primarily elk and bison), predation (mostly on neonates), and usurping wolf killed ungulate carcasses. These major foods are important and can either be monitored directly, or bear use of the resource can be monitored such as bear use of army cutworm moths aggregation sites. Although these are the major food sources in the GYA, grizzly bears are known to consume at least 234 species within 179 genera from 4 kingdoms. Of all foods consumed, 75 species were frequently used by bears and 153 species were used opportunistically (Gunther et al., 2012).

FWP works directly with the IGBST to monitor the major grizzly bear foods as part of ecosystem wide monitoring. Whitebark pine stands are monitored for seed production, tree health (evidence of blister rust, *Cornartium ribicola*), infestations of mountain pine beetle (*Dendroctonus ponderosea*) and evidence of bear use. Identified moth aggregation sites are monitored for use by bears, although no sites with documented grizzly bear use are currently known to occur within the Montana portion of the GYA. Ungulate populations are monitored during routine FWP big game population and trend surveys. The IGBST reports on the condition of food sources within the GYA each year in the annual report. Monitoring intensity can be increased if concerns arise about any food source due to a changing environment or decline in grizzly population numbers. FWP will implement more specific monitoring protocols as needed in coordination with the IGBST and land management agencies.

Habitat Availability and Security

Grizzly bear habitat can be impacted by a reduction of security cover as the direct or indirect result of recreational development, road use, road restrictions, motorized trails, human presence, oil and gas development, logging, forest fires and other natural events. FWP recognizes the need to minimize negative impacts from these factors whenever feasible. FWP considers impacts to grizzlies on FWP managed properties such as Wildlife Management Areas or State Parks and designs grazing, logging, and farming plans for these areas with grizzly use in mind. While FWP is not the decision maker on federal or State School Trust lands, FWP works closely with these land management agencies to minimize negative impacts on all fish and wildlife.

The intermountain valleys between major mountain ranges of southwestern Montana are primarily private land. These private lands are vital to the area's agricultural economy and provide important habitat for a variety of fish and wildlife. As agricultural land, they also provide a wide range of opportunities for wildlife to live and travel between mountain ranges.

While FWP has no jurisdiction over private land uses, it does have strong private land habitat initiatives. Most are funded through earmarked accounts including Montana's Migratory Bird Stamp (dollars directed toward wetland riparian areas), Upland Game Bird Habitat Enhancement Program (dollars go primarily towards enhancing shrub/grassland communities) and Habitat Montana. Habitat Montana specifically allows FWP to conserve habitat on private lands via lease, conservation easement or fee title acquisition. This program is not directed towards specific species but rather towards conserving Montana's most threatened habitats, i.e. wetlands/riparian areas, shrub/grasslands, and intermountain foothills. Since 2002 Habitat Montana funds have been used within the GYA to purchase lands adjacent to the Dome Mountain WMA to offer greater use of the area by wildlife, including grizzlies.

Efforts to conserve habitat in Montana will continue to be a FWP priority. FWP completed 'Recommendations for Subdivision Development: A Working Document' in 2012 (MFWP, 2012). This document is intended to guide FWP biologists in responding to developer and local government request for comment on subdivision applications. It also provides local planners, local government officials, developers and development project teams with planning tools, approaches, and design recommendations.

Roads, Trails, and Developed Site Management

Radio telemetry studies have identified roads as significant factors in habitat deterioration and increased mortality of grizzly bears. Excessive clearing widths, increased speeds, increased traffic volume, and widened roads are known to cause increased road mortality and/or reduce habitat connectivity (Proctor 2003, Clevenger et al. 2002). The distance at which bears appear to be displaced by roads varies in different areas and seasons, but generally, bears living near roads have higher probability of human-caused mortality as a consequence of illegal shooting, control actions resultant from attraction to unnatural food sources, or by being mistakenly identified as a black bear by hunters. As major highways bisect most of the intermountain valleys, FWP works with the Montana DOT and land management agencies on mitigating barriers to wildlife crossing roads and maintaining secure habitat for grizzlies in addition to other species.

Many examples of collaborative approaches to safe road crossings exist along US Highway 93 in western Montana and monitoring by the Montana DOT has shown an increase in grizzly bear use of underpass structures since construction (P. Basting, pers comm.). Long-term monitoring will provide useful information to southwestern Montana biologists and transportation planners when opportunities arise to construct underpasses with the hopes of aiding wildlife movement. Some specific multi-species work has been completed or is underway already to include highway fencing projects and road kill surveys along Bozeman Pass and in the Madison Valley. These projects have involved cooperative efforts of DOT, FWP, and the Craighead Institute (www.mdt.mt.gov). FWP will continue to engage in exploratory studies to identify areas of conflict and work to develop mitigations to reduce grizzly bear highway mortalities.

The 2002 EIS stated that FWP would pursue an MOU or other agreement with DOT to provide guidelines that would enhance the ability of bears and other wildlife to cross roads. In the 10 years since publication of that document, FWP and the DOT have worked closely to seek ways to minimize wildlife mortalities on highways. This partnership will continue as FWP reviews DOT proposals and offers guidance on habitat use and movement patterns of animals. The increased tracking of grizzlies has allowed FWP to share real movement data with DOT that they can use to improve their highway designs.

FWP supports the maintenance of road densities of one mile or less per square mile of habitat as the preferred approach. This is the goal of the FWP statewide elk plan and it seeks to meet the needs of a variety of wildlife while maintaining reasonable public access. Within the 2007 GYA Conservation Strategy, all roads fall under the rule set for motorized access routes. Additional restrictions could be designed as needed through coordinated decision making by FWP, land management agencies, transportation planners and local input.

Restricted roads and motorized trails are important factors in evaluating habitat potential for and mortality risk to grizzly bears (Mace et al. 1996). Grizzly bear researchers and managers generally agree that secure habitat, defined as those areas more than 500 meters from a motorized access route during the non-denning period, are especially important to the survival and reproductive success of grizzly bear, especially adult females (IGBC 1998).

Since publication of the first EIS (2002) major changes to trail management have been implemented with the importance of secure habitat for grizzlies in mind. The biggest change was the prohibition of motorized, wheeled cross-country travel on National Forest lands. The purpose of this restriction is to protect riparian areas, wetlands, crucial wildlife habitat, threatened or endangered species, soils and vegetation, aquatic resources, and/or to reduce user conflicts. The policy affects any motorized, wheeled vehicle, but not snowmobiles. Motorcycles may use a single-track trail or road if it is open to motorized vehicles, but ATVs and other four-wheeled vehicles cannot use single-track roads or trails. Cross-country travel will continue to be allowed for military needs, fire suppression, search and rescue, or emergency response. Forest users can also drive cross-country to campsites within 300 feet (90 m) of most existing roads or trails, after locating their campsite in a non-motorized fashion.

All motorized trails fall under the rule set for Motorized Access Routes Database in the 2007 CS. Non-motorized trails are not counted against area calculations of secure habitat but fall under the rules set for secure habitat. This rule set ensures the percent of secure habitat within each bear management subunit within the PCA is maintained at or above levels that existed in 1998. Temporary and permanent changes are allowed under specific conditions identified in the CS (2007). Permanent changes in secure habitat are only allowed if any loss of secure habitat is replaced by secure habitat of equal amount and equivalent quality within the same BMU.

Within the 2007 CS a trailhead is considered a developed site and as such falls under the developed site standards. Developed sites are known to displace grizzly bears and this has some direct effect on habitat effectiveness. The primary concern related to developed sites is mortality connected to food conditioning and bear habituation. Impacts to bears as a result of new or expanding developed sites could result from increases in human capacity at the site, temporary or

permanent loss of habitat, increased length of time of use, increased access to surrounding areas or backcountry trails, and increases in unsecured attractants. Within the PCA, the number of sites will remain at or below the 1998 levels with some exception (CS 2007).

Other developed sites include, but are not limited to, campgrounds, lodges, administrative sites, and permitted resource development sites such as oil and gas exploratory well or production wells within the PCA to include on FWP lands. These developed sites are capped at 1998 levels.

National forests will continue to identify areas where more detailed local travel plans should be developed. FWP staff will continue to comment on changes to federal trails policy while continuing to evaluate state policies. Montana State Parks currently administers three trail grant programs: the federally funded Recreational Trails Program, the state funded Off-Highway Vehicle Program and the Snowmobile Grant Programs. Regardless of whether an FWP funded trails project is on federal, state, or private lands, it must comply with the Montana Environmental Policy Act (MEPA). On federal lands, trail projects must also comply with USFS Travel Plans, BLM Unit Plans, and the National Environmental Policy Act (NEPA). The FWP trails grant program requires documentation of NEPA or MEPA compliance as part of any grant application. In this way FWP has assurances that wildlife have been considered in project planning and public input has been a part of the process. More information on the Montana trails program can be found in the Montana State Trails Plan (Montana FWP, 2011).

It is FWP's opinion that expanding the current level of habitat restriction and programs to bear-occupied areas outside the PCA would not generate social acceptance for the bear nor is expansion of habitat restrictions necessary for population recovery. Incorporating the grizzly as another component of FWP's ongoing programs for all wildlife is a more productive approach. In addition, the approach outlined in this plan does allow FWP to modify the program, if necessary, and adapt the program in the future as more is learned. FWP recognizes that habitat changes in the PCA (e.g., loss of whitebark pine) could result in increased importance of habitats outside the PCA and will respond to those changes if they occur.

General Guidelines for Habitat Management

The following guidelines are considered when evaluating the effects of existing and proposed human activities in identified seasonally important habitats for a variety of wildlife species including grizzlies on federal and State lands.

1. Identify and evaluate, for each project proposal, the cumulative effects of all activities, including existing uses and other planned projects. Potential site-specific effects of the project being analyzed are a part of the cumulative effects evaluation which will apply to all lands within a designated "biological unit". A biological unit is an area of land which is ecologically similar and includes all of the year-long habitat requirements for a sub-population of one or more selected wildlife species.
2. Evaluate activities or combinations of activities, on seasonally important wildlife habitats that may result in an adverse impact on the species or reduce long-term habitat effectiveness.
3. Base road construction proposals on a completed transportation plan which considers important wildlife habitat components and seasonal-use areas in relation to road location,

construction period, road standards, seasons of heavy vehicle use, road management requirements, and more.

4. Use minimum road- and site-construction specifications based on projected transportation needs. Schedule construction times to avoid seasonal-use periods for wildlife as designated in species-specific guidelines.
5. Locate roads, drill sites, landing zones, etc., to avoid important wildlife habitat components based on a site-specific evaluation.
6. Close or reclaim roads that are not compatible with area management objectives, and are no longer needed for the purpose for which they were built. Native plant species will be used whenever possible to provide proper watershed protection on disturbed areas. Wildlife forage and/or cover species will be used in rehabilitation projects where appropriate.
7. Impose seasonal closures and/or vehicle restrictions based on wildlife, or other resource needs, on roads that remain open and enforce and prosecute illegal use of off-road vehicles.
8. Direct efforts towards improving the quality of habitat in site specific areas of habitually high human-caused bear mortality. Increase or implement sanitation measures, seasonal road closures, trail closures, etc., as appropriate.
9. Evaluate impacts of road, trail, and development projects through the NEPA and MEPA processes.

Climate Change

Climate change may result in a number of changes to grizzly bear habitat in the foreseeable future, including a reduction in snowpack levels, shifts in denning times, shifts in the abundance and distribution of some natural food sources, and changes in fire regimes. Yet, most grizzly bear biologists in the U.S. and Canada do not expect habitat changes predicted under climate change scenarios to directly threaten grizzly bears (Servheen and Cross 2010). These changes may even make habitat more suitable and food sources more abundant. However, these ecological changes may also affect the timing and frequency of grizzly/human interactions and conflicts (Servheen and Cross 2010).

The western U.S. is predicted to experience milder, wetter winters with warmer, drier summers and an overall decrease in snowpack (Leung et al. 2004). While some climate models do not demonstrate significant changes in total annual precipitation for the western U.S. (Duffy et al. 2006), an increase in “rain on snow” events is predicted by others (Leung et al. 2004; McWethy et al. 2010). The amount of snowpack and the timing of snowmelt may also change, with an earlier peak stream flow each spring (Cayan et al. 2001; Leung et al. 2004; Stewart et al. 2004). Although there is some disagreement about changes in the water content of snow under varying climate scenarios (Duffy et al. 2006), reduced runoff from decreased snowpack could translate into decreased soil moisture in the summer (Leung et al. 2004). However, Pederson et al. (2011) found that increased spring precipitation in the northern Rocky Mountains is buffering total annual stream flow thus far from these expected declines in snowpack.

The timing of den entry and emergence is at least partially influenced by food availability and weather (Craighead and Craighead 1972; Van Daele et al. 1990). Less snowpack would likely shorten the denning season as foods remain available later in the fall and become available earlier in the spring. In the GYA, Haroldson et al. (2002) reported later den entry times for male grizzlies corresponding with increasing November temperatures from 1975 to 1999. This

increased time outside of the den could increase the potential for conflicts with humans (Servheen and Cross 2010).

Climate change could create temporal and spatial shifts in grizzly bear food sources (Rodriguez et al. 2007). Changes in plant community distributions have already been documented, with species' ranges shifting further north and higher in elevation due to environmental constraints (Walther et al. 2002; Walther 2003; Walther et al. 2005), outbreaks of insects, or disease (Bentz et al. 2010). Decreased snowpack could lead to fewer avalanches thereby reducing avalanche chutes, an important habitat component to grizzlies, across the landscape. On the other hand, increases in "rain on snow" events may decrease the stability of snowpack resulting in increases in avalanches. Changes in vegetative food distributions also may influence other mammal distributions, including potential prey species like ungulates. While the extent and rate to which individual plant species may be impacted is difficult to foresee with any level of confidence (Walther et al. 2002; Fagre et al. 2003), there is general consensus that grizzly bears are flexible enough in their dietary needs that they will not be impacted directly by ecological constraints such as shifts in food distributions and abundance (Servheen and Cross 2010).

Fire regimes can impact the abundance and distribution of some vegetative bear foods (e.g., grasses, berry producing shrubs). Fire frequency and severity may increase with late summer droughts predicted under climate change scenarios (Nitschke and Innes 2008; McWethy et al. 2010). Grizzly bears in the lower 48 States evolved with frequent fires but effective fire suppression policies over most of the 20th century negatively affected grizzly bear foods by reducing early successional stages (LeFranc et al. 1987). Increased fire frequency actually has the potential to improve grizzly bear habitat, but these fires must be low or moderate in severity to be advantageous. High intensity fires may reduce grizzly bear habitat quality in the short term by decreasing hiding cover and delaying regrowth of vegetation. However, even wide-spread, high intensity fires like the 1988 wildfires in Yellowstone may not have detectable impacts to grizzly bear foraging strategies (Blanchard and Mattson 1990). Federal and state agencies are currently under direction to reduce wildfire management costs, including restoring natural fire regimes to reduce the risk of high intensity wildfires. Overall, we do not anticipate altered fire regimes will have significant negative impacts on grizzly bear survival and reproduction.

The best way to mitigate potential negative impacts from climate change is through well-connected populations of grizzly bears. Connectivity among grizzly populations also mitigates genetic erosion and increases resiliency to demographic and environmental variation.

Future Distribution

Preferred management approaches to manage future grizzly distribution:

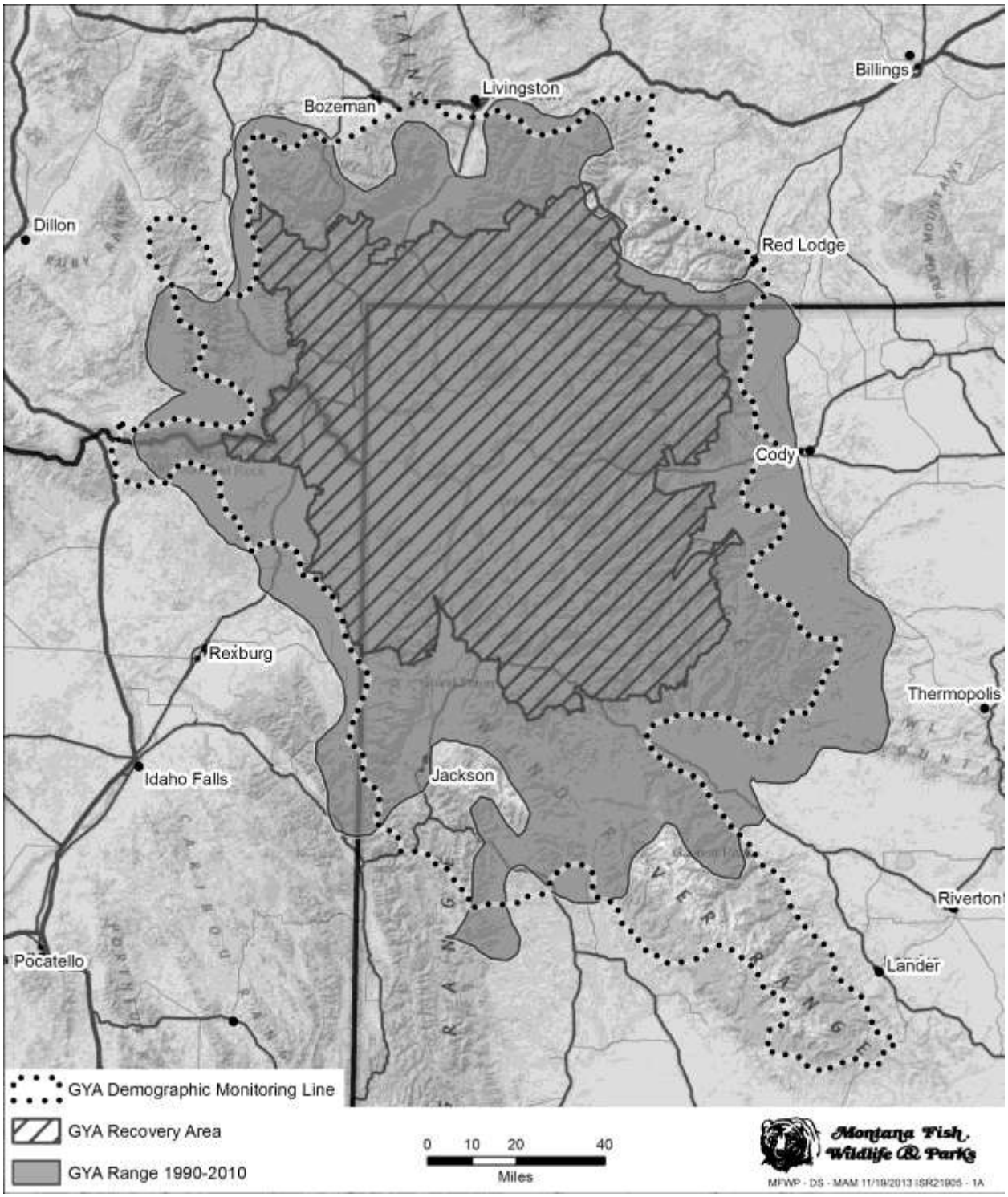
- Continue to monitor grizzly bear expansion from historically occupied areas along with changes in population numbers.
- Continue to address grizzly/human conflicts in areas outside the core recovery area in a manner that considers overall grizzly conservation as well as human safety and social tolerance.
- Continue to work with Idaho, Wyoming, and the Interagency Grizzly Bear Committee to address the issue of linkage between grizzly recovery areas and follow the goal set forth in the IGBC work plan to promote linkage between the GYA and the NCDE grizzly populations.

- Implement habitat programs that provide for wildlife needs to include working with the DOT to address issues of wildlife movement across roads (especially Interstates 90 and 15; and Highways 287, 191, 89, and 20).

FWP will work with landowners and private interests to promote programs that provide for wildlife access to private lands. The IGBST documented an increase of the GYA grizzly bear population, growing from approximately 200-350 bears in the mid-1980s (Eberhardt and Knight 1996) to at least 600 in 2012. Results from a 2011 IGBST Workshop (IGBST, 2012) however indicate the GYA grizzly bear population trajectory has changed and the population growth rate for the recent period is now stable to slightly increasing. This corroborates results indicated by previous regression analyses, and is in contrast to estimated growth rates of 4-7% per year during the decades of the 1980s and 1990s (Schwartz et al. 2006). These changes in population growth are hypothesized to be attributed to 1) density-dependent effects, 2) declines in key food resource such as whitebark pine seeds, or 3) a combination of density-dependent effects and resource decline (IGBST, 2012).

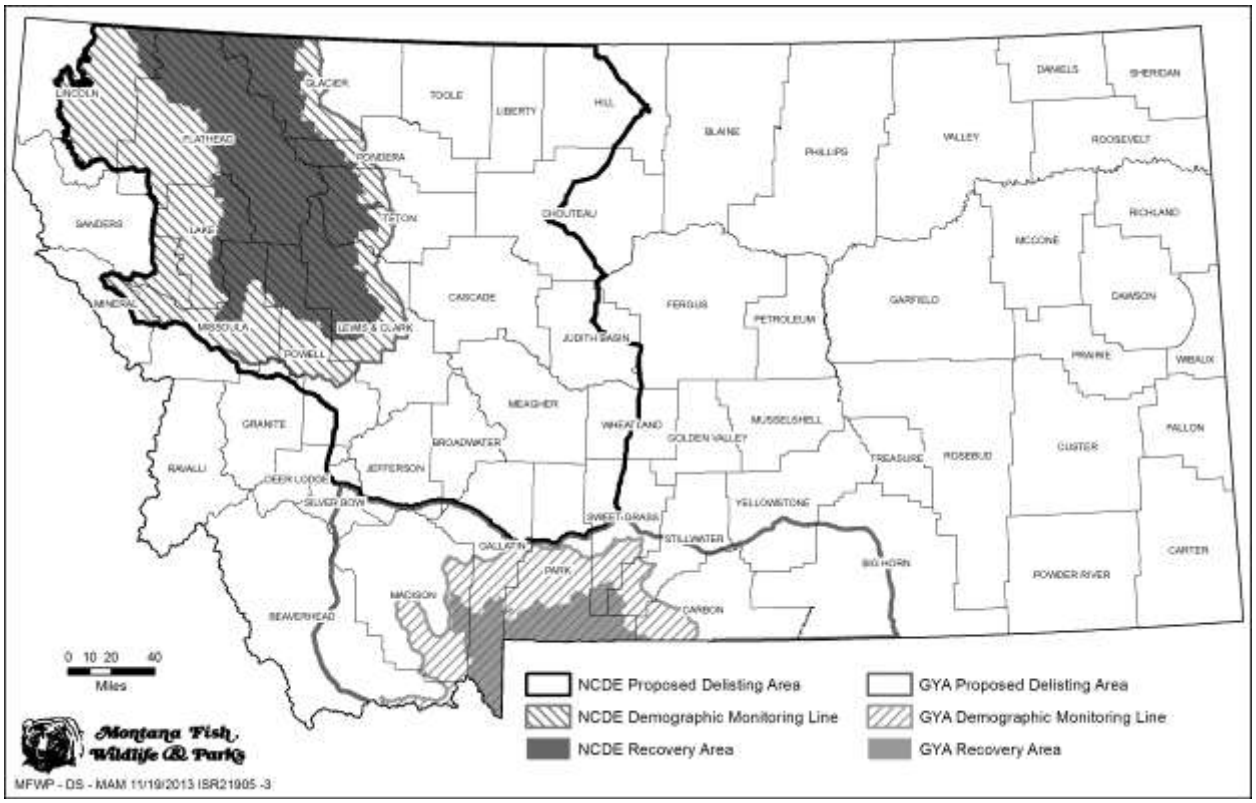
FWP suspects grizzly bears within or close to the original Recovery Zone in Montana's portion of the GYA are experiencing this same leveling of population growth. Moreover, FWP continues to find bears well outside the original Recovery Zone in areas previously unoccupied since initiation of recovery. In the grizzly bear recovery plan, the Recovery Zone is defined as the area "within which the population and habitat criteria for achievement of recovery will be measured" (U.S. Fish and Wildlife Service 1993:17). Whereas this may be true, maintenance of an increased bear population in numbers and distribution outside the Recovery Zone helps ensure long-term viability of this population. There is valuable habitat outside the Recovery Zone on public land and grizzly bears currently occur in many of these areas (Figure 6).

Figure 6. Distribution of grizzlies from 1990-2010 showing a large area of grizzly bear occupancy (gray shaded polygon) outside the original Recovery Zone (IGBST data).



Management of non-conflict grizzly bears in areas between the NCDE management area and the DMA of the GYA (Figure 7) will be compatible with maintaining some grizzly occupancy. Maintaining presence of non-conflict grizzly bears in areas between the NCDE management area and the demographic monitoring area of the GYA, such as the Tobacco Root and Highland Mountains, would likely facilitate periodic grizzly movements between the NCDE and GYA. Conflict management and removal of problem grizzly bears will remain a priority within these areas like the rest of Montana. Human safety will always be prioritized over facilitation of grizzly movement for genetic connection between the ecosystems.

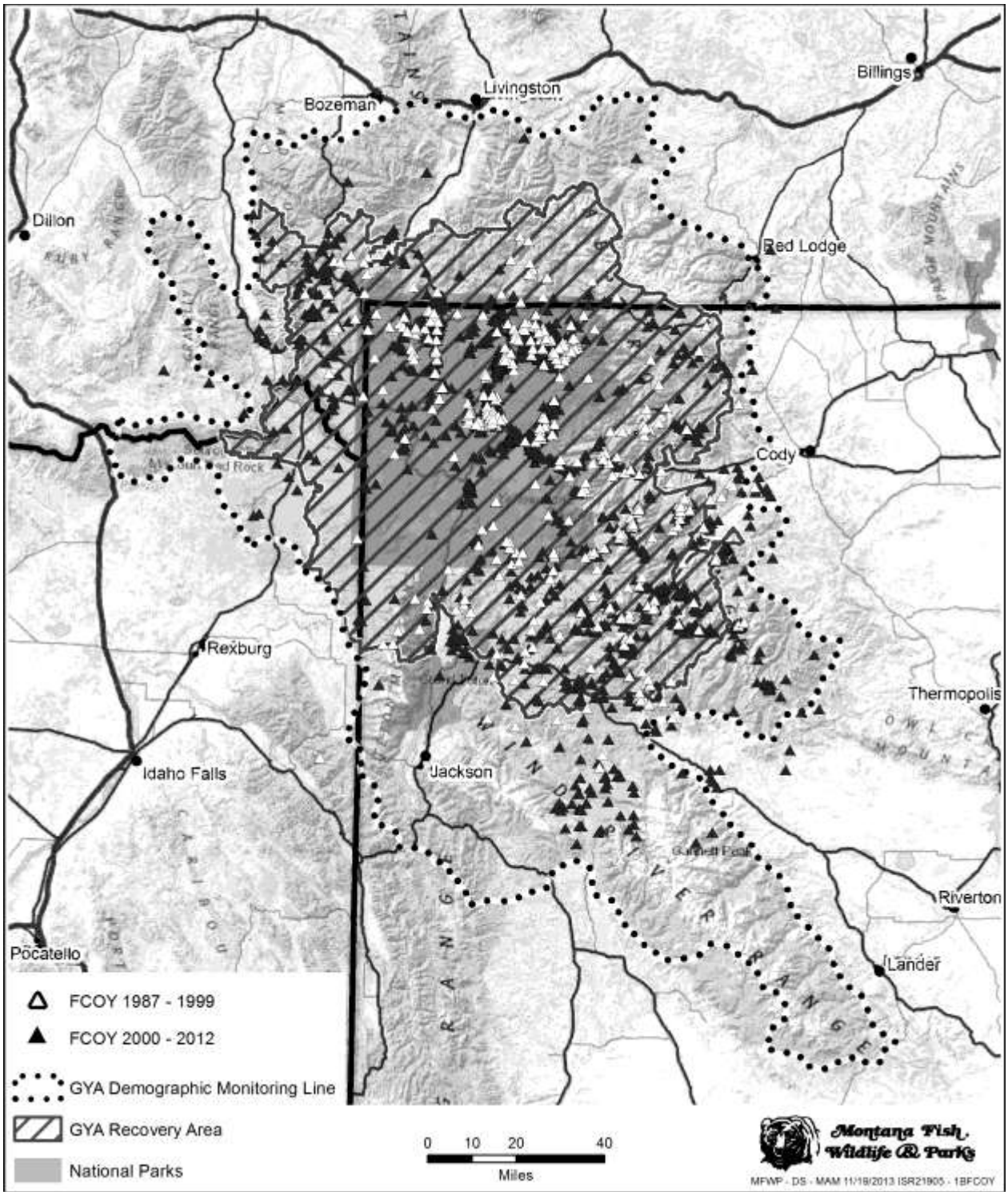
Figure 7. Southwest Montana showing proximity of the GYA Demographic Monitoring Area to the NCDE Demographic Monitoring Area. The demographic monitoring areas within each ecosystem represent the areas where grizzly population demographics, i.e. population size, trend, and mortalities, will be monitored. The delisting lines shown for both ecosystems represent the proposed boundaries the US Fish and Wildlife Service would use to delist grizzly bears within each ecosystem.



Grizzly bear distribution in southwest Montana has dramatically changed over time (Figure 8). A comparison of the current distribution to previously published distribution maps shows an approximate increase in occupied habitat of 36% between 2002 and 2012 (Bjornlie et al., 2013). This is compared to the increase in distribution of 34% from 1980 to 1990. It should be noted that the boundaries used for these calculations are approximations. Additional supportive evidence is considered when making judgments about occupied habitat near the edge. Management decisions always take into account the habitat suitability and social tolerance in any area where a grizzly may appear. Bears found far outside of the original recovery area often receive less consideration for capture and relocation after killing livestock, becoming habituated to humans or becoming food habituated. At the same time, a grizzly found far outside the original recovery area is left alone by managers when exhibiting natural, socially acceptable behaviors.

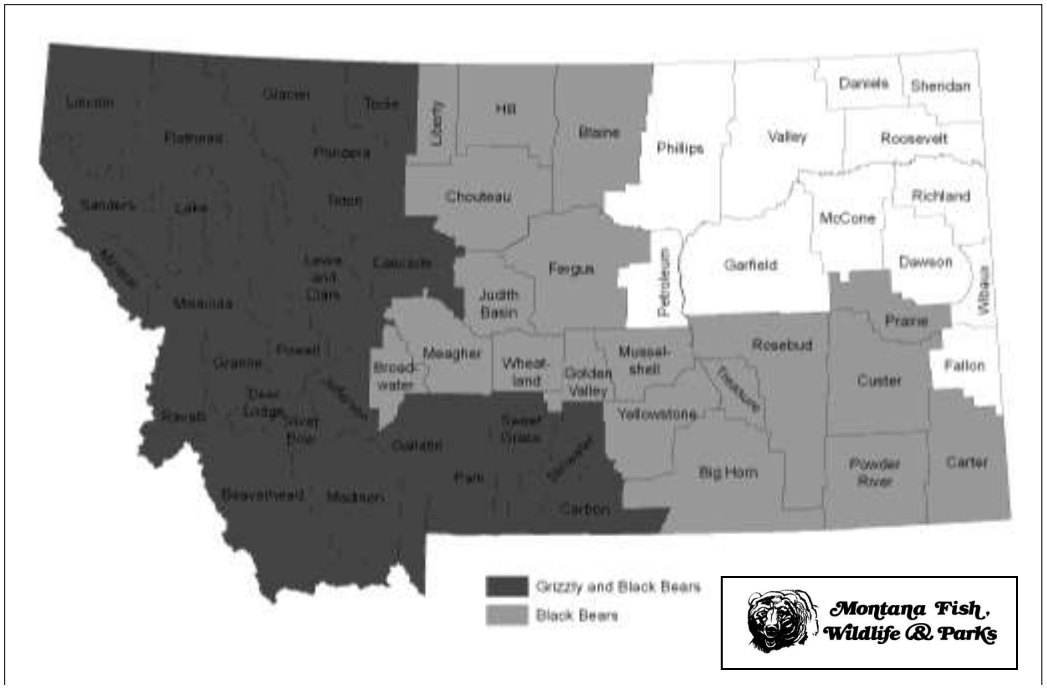
Based on current programs, both within and outside of the recovery area, it is expected that expansion will continue. It is FWP's intent to implement this management plan in a way that allows future expansion consistent with the approach used for most other species that FWP manages.

Figure 8. Distribution of females with cubs of the year by two time periods, 1987-1999 and 2000-2012, showing the increase in distribution of grizzlies over time. Black triangles on the edges of the Recovery Zone represent the increase in distribution of grizzly bears within the past decade (IGBST data).



Finally, there has been and continues to be debate on the potential for linking the different grizzly bear populations in Montana. The potential for this to occur is demonstrated by various assessments of habitat, which are ongoing and, evidenced by the information our agency provides the public on areas, where today there is the possibility of encountering a grizzly bear (Figure 9).

Figure 9. Map to be used in the 2014 black bear regulations indicating where hunters may encounter black bears *and* grizzly bears (dark gray shading) versus areas where hunters will likely encounter only black bears (light gray shading).



There have been a number of papers and models developed on this linkage concept and the impacts of fragmentation and rural development on grizzly bear connectivity. In 2004, the IGBC Public Lands Wildlife Linkage Taskforce presented findings of the 2003 Linkage report (Servheen, 2003) to the IGBC. The report was intended to be used as a tool by public land managers for developing and revising land and resource management plans. By using this tool, land managers can ensure that their plans will maintain wildlife linkage so far as public lands are concerned. The report specifically presented the results of wildlife linkage assessments in three high priority areas in northern Idaho and western Montana. Some of these results would be generally applicable to the GYA.

The 5- year work plan of the IGBC includes the following vision: Identify and achieve biologically effective linkage between all the large blocks of important habitat within and among the grizzly recovery areas. Maintain and enhance linkage with Canadian populations and between Canadian populations adjacent to the US/Canada border. Implement linkage as a transboundary interagency response mechanism to climate change in addition to the genetic and demographic benefits. IGBC partners will seek to enhance the habitat security of public lands in key landscape-scale linkage through: 1) appropriate motorized access management; 2) maintenance of visual cover; 3) limitations on new site developments such as campgrounds; 4) avoidance of road paving on public lands; 5) no increases in motorized access route density in linkage areas; and 6) sanitation enhancement. IGBC will also work to expand cooperative approaches that produce secure movement areas for grizzly bears and other wildlife through easement opportunities and acquisition where possible. Finally, IBGC partners will work closely with transportation departments to assist in identifying areas where wildlife would benefit through application of crossing structure placement or enhancement of existing structures in combination with appropriate fencing to direct wildlife to these locations. Specific subcommittee goals for the GYA and the NCDE include: 1) Promote assessment of linkage opportunities on public lands in land management planning, 2) Promote outreach with private land owners, local governments, and land conservation groups to enhance awareness and opportunities for providing linkage, and 3) Promote cooperative efforts with transportation agencies to enhance linkage across transportation corridors.

In 2008, FWP initiated a project to identify crucial wildlife areas and corridors. The intent of this effort was to provide information to developers and planners on the most critical habitats for wildlife to allow them to make smarter development choices with wildlife in mind. Results of this effort include a web based mapping program, i.e., Crucial Areas Planning System 'CAPS', that identifies crucial habitats for use in project planning and web based maps depicting connectivity layers for different species. FWP also developed a set of recommendations for subdivision development in 2012 intended to help local planners, local government officials and developers make informed decisions related to wildlife. The recommendations are currently being used by FWP biologists when providing comments on new subdivisions. These efforts by FWP are intended to limit the impacts of development on grizzlies in their current habitats while also considering the potential impacts of development to grizzlies in areas that they may someday occupy.

Schwartz et al. (2012) found that even extremely low densities of residential development created sink habitats and suggest that conserving grizzly bear source habitat will likely require a

landscape-scale approach. Securing important linkage habitats through purchase or easement offers significant protection for linkage areas and implementation of 'bear smart' community programs can reduce the impacts of development on grizzlies and other wildlife. Proctor et al. (2012) similarly suggest that regional inter-jurisdictional efforts to manage broad landscapes that allow grizzly movement are necessary to maintain healthy populations. Genetic linkage is the movement of genetic material as males move between ecosystems and breed successfully. Populations eventually connect demographically with continuous low densities of female occupancy between them.

As documented from sightings, captures, and mortalities in the past decade, grizzly bears from the GYA and the NCDE are expanding their distribution and there is considerable potential for these populations to connect. It is a long-term goal of FWP to allow the grizzly bear populations in southwest and western Montana to reconnect through the maintenance of non-conflict grizzly bears in areas between the ecosystems. FWP anticipates that successful implementation of this plan, along with adequate local involvement, can allow this to occur. FWP will continue to address land-use patterns that promote or hinder bear movement.

Management of non-conflict grizzly bears in areas between the NCDE management area and the DMA of the GYA (Figure 7) will be compatible with maintaining some grizzly occupancy. Maintaining presence of non-conflict grizzly bears in areas between the NCDE management area and the demographic monitoring area of the GYA, such as the Tobacco Root and Highland Mountains, would likely facilitate periodic grizzly movements between the NCDE and GYA. Conflict management and removal of problem grizzly bears will remain a priority within these areas like the rest of Montana. Human safety will always be prioritized over facilitation of grizzly movement for genetic connection between the ecosystems.

FWP did not consider an alternative to limit grizzly bear distribution to just the recovery area. In FWP's opinion, this approach is logistically impossible and biologically undesirable. In order to maintain resiliency in the population bears need to be allowed to occupy a broader landscape. Also, bears cannot be confined to the Recovery Zone because there are no barriers to contain them, and it is impossible to know the location of every animal all the time. As previously stated in this document, grizzly bear issues or conflicts occurring in new habitat areas will be addressed under current program methods.

Human Safety

Preferred management approaches to manage grizzlies in the interest of human safety:

- Lethally remove bears displaying predatory behavior that kill/injure/attack people.
- Consider lethal removal for bears that kill/injure/attack people in a surprise encounter situation on a case by case basis.
- Consider lethal removal for bears displaying bold, aggressive behavior resulting in a threat to human safety on a case by case basis.
- Consider preemptively relocating a grizzly bear to avoid conflicts when there is a demonstrated threat to human safety.

- Focus efforts on programs to educate people about safety measures to prevent conflicts with grizzlies. FWP will provide annual information in poor natural food years alerting the public of the increased potential for conflicts.
- Continue to provide information on safety in bear country in the big game hunting regulations, during hunter education courses, through mailings to license holders, and on trailhead informational signs.
- Continue to be actively involved with expansion and enforcement of food-storage ordinances including food storage orders on FWP Wildlife Management Areas.
- Continue to work with city and county governments on requirements of bear-resistant garbage containers for homeowners in bear country. (More information about nuisance bear management and education/outreach efforts are included in later sections.)

Grizzly bears are large, powerful animals and, on rare occasions, can threaten human safety and human lives. FWP grizzly bear management programs work to minimize threats to human safety, however, threats to human safety cannot be totally eliminated. Unfortunately, serious encounters between grizzly bears and people occur, sometimes resulting in human injuries/death and bear mortalities. Actively responding to these situations and determining causes for the situation are crucial steps to a successful management program and for meeting the needs of the public and bears. Grizzly bears in the GYA are expanding into new habitats outside the historical suitable habitat line. As many of these habitats are already occupied by people living, working, and recreating it is expected that the number of grizzly/human conflicts will increase.

Under Montana Statute 87-6-106 , a citizen may legally kill a grizzly bear while acting in self-defense if the bear "…is attacking, killing, or threatening to kill a person…" In Montana during the period 1992-2002 and 2003-2012, respectively 9 and 12 grizzly bears were killed by individuals acting in self-defense. With the potential for increasing grizzly/human encounters, safety for both humans and bears is a critical issue.

One of the goals of this management plan is to create an environment that minimizes the potential for grizzly/human conflicts that could lead to injury or loss of human life, or human-caused grizzly mortality while maintaining traditional residential, recreational and commercial uses of the areas into which the grizzly is expanding. It is possible that certain types of human use may require modification to protect people, protect bears, reduce conflicts, and/or manage habitat. This is the same program FWP uses for other large carnivore species such as mountain lions or black bears.

Although there are a variety of situations that can result in a grizzly/human conflict, the primary categories are: 1) Food related -- improper food storage or sanitation in either a backcountry (e.g., hunter camp, hiker or other recreationist), rural (e.g., farm/ranch, cabin, church camp) or urban/suburban setting (e.g., subdivision, town); 2) Surprise encounters -- females defending cubs, bears defending a kill/carcass, bears surprised in close quarters; 3) Human encroaching on a bear's space -- photographer, tourist, etc., approaching a bear close enough to elicit a defensive reaction; 4) Bears responding to a noise attractant -- bears attracted to a hunter attempting to bugle or cow-call an elk or call in predators, or bears associating gunshots with a food source (carcass or gut pile), etc.

This plan recommends that any bears that have killed a human be removed from the population if they can be reasonably identified. FWP will use all available evidence from the incident to identify the bear(s) involved before removal. However, there are times where it may not be possible to determine this absolutely before management actions occur. One alternative considered was to not lethally remove bears that have killed people in response to some natural situation, such as a female defending her cubs. In FWP's judgment, allowing bears that have been known to purposely kill a human to remain in the population will jeopardize overall support for existence of grizzly bears. Education programs for hunters, recreationists, and homeowners will hopefully limit the number of these incidents and the need to remove bears.

Strategies to minimize or resolve grizzly/human conflicts include:

1. Inform and educate the public
2. Facilitate securing attractants
3. Enforce food storage rules/regulation
4. Use of deterrents and/or aversive conditioning methods
5. Appropriate, and when necessary, aggressive management actions to address conflict situations

Hunting To Address Human Safety Concerns

Hunting of large carnivores may play a role in addressing human safety issues and hunting should be considered as a tool in wildlife management programs. Properly conducted hunting programs can impact the behavior of the hunted population, selecting against those animals less wary of humans and/or animals that are comfortable in the vicinity of human activities. This can result in a more wary population over time. Responsible management hunting can help promote tolerance and acceptance of potentially dangerous animals by those directly impacted by the presence of grizzly bears. While the avoidance behaviors of hunted animals may be unfamiliar to some people, the long history of hunting has shown these behaviors are real. These avoidance behaviors include fleeing, hiding, using more secluded habitats or being more active when people are less active, all of which can promote better acceptance and tolerance of grizzly bears. However, the restrictive allowable mortality limits would allow for only a very limited amount of hunting to occur within the GYA. Hunting should not be expected to have a considerable or immediately noticeable impact on grizzly bear behavior.

Livestock Conflicts

Preferred management approaches to manage livestock conflicts:

- APHIS's Wildlife Services (WS) will continue to be the lead agency dealing with livestock depredation through a Memorandum of Understanding (MOU) with FWP (Appendix A). However, depredations will be jointly investigated and grizzly bear captures and removals will be jointly conducted.
- Focus on preventive programs to minimize livestock conflicts with priority toward those areas with a history of conflict or those areas currently occupied by bears.
- Work with beekeepers to assist with electric fences for all apiaries accessible to bears. Re-evaluate and modify as necessary the guidelines for bear depredation to beehives (Appendix B).
- Cooperatively respond to conflicts within 48 hours with at least initial contact by telephone or in person if possible. Response is typically within 12 hours of reported conflict. FWP and WS cooperatively respond to conflicts.

Livestock depredations have historically accounted for a small percentage of the annual grizzly/human conflicts and grizzly bear mortalities. In Montana's portion of the GYA, 4.8% of all conflicts and 8% of all grizzly mortalities are related to livestock depredations (1992-2012). However, with continued increases in grizzly bear distribution, it should be expected that more livestock related conflicts will occur as bears range farther into private and public agriculture lands.

Livestock operators provide many benefits to the long-term conservation of grizzly bears, not the least of which is the maintenance of open space and habitats. At the same time, livestock operations can bring bears into close proximity to human activities and losses by bears can be significant. These losses tend to be directed at sheep and young cattle but also honey bees and chickens, all of which are classified as livestock in Montana. With the recent increasing trend of backyard chicken flocks in suburban and rural areas, the number of both black and grizzly bear conflicts with livestock is increasing. Being adequately responsive to livestock depredations is a critical aspect of the overall success of grizzly management efforts. At this time livestock depredation issues are primarily handled by WS (Appendix A). FWP anticipates this will continue while FWP programs will focus on the prevention of conflicts where possible. FWP anticipates continued partnership with outside groups offering technical assistance and materials to private landowners in order to prevent livestock loss.

The current FWP program encourages landowners to contact grizzly bear management specialists for assessments of bear conflict risk and for ideas on preventative approaches to minimize those risks. FWP advises livestock owners on conflict reduction techniques in attempts to reduce losses, thereby reducing conflicts and resultant grizzly bear mortalities. FWP may provide devices to protect apiaries, corralled livestock, chicken and turkey coops, and stored feeds. Protective supplies include electric fencing, audible and visual deterrent devices, and aversive conditioning devices. FWP also promotes livestock management techniques that reduce bear depredations. In some situations, FWP can simply assist by enclosing bee yards with electric fencing. Electric fencing is very effective at deterring both black and grizzly bears, and use of this technique can significantly reduce problems and the need to remove bears. In other situations, livestock that have died due to the consumption of poisonous plants, lightning, or other causes may be used to provide food for bears in areas away from potential conflict sites. By simply removing carcasses from areas around buildings or calving/lambing areas, potential conflicts with bears can be minimized. FWP has a program to redistribute livestock carcasses on the Rocky Mountain Front for this purpose. In some situations the transfer of grazing leases from areas of high conflict to other areas is a way to reduce conflicts when landowners/operators are willing. Conflict management will always emphasize long-term, non-lethal solutions, but relocating or removing offending animals will be necessary to resolve some problems. FWP will continue to explore new techniques and approaches that can be used to protect agricultural products from bear damage.

Providing unfettered flexibility to livestock operators and property owners to deal with conflict situations will fail to provide the necessary assurances for long-term conservation and/or the legal requirements for delisting. No other FWP program for managed species allows for flexibility without constraints yet expecting livestock operators to absorb losses that occurred on

public lands no matter what the cost fails to recognize the significant contribution of private lands and landowners in grizzly bear conservation. Fortunately, Defenders of Wildlife has been providing financial reimbursements to owners for grizzly bear depredation losses through their Grizzly Compensation Trust. This has been beneficial during the recovery process. In addition, the 2013 Montana Legislature passed House Bill 323 which amended MCA 81-1-110 making Montana Livestock Loss Board compensation available for grizzly caused depredation losses. The compensation program will be administered by the Livestock Loss Board and became effective on 1 October, 2013 (http://liv.mt.gov/llb).

Property Damage

Preferred management approaches to manage property damage by grizzlies:

- Focus on preventive measures, including securing attractants, and improving overall sanitation; the agency's bear management specialist works on these issues on public and private lands.
- Seek secure, long-term funding to continue the grizzly bear management specialist position currently stationed in Region 3 and seek additional funding to add a management specialist position in R5
- Respond to conflicts as soon as feasible by phone or in person if possible.

Bears can and do damage personal property as bears are highly attracted to almost any food source. Processed human food, gardens, garbage, livestock and pet feeds, and birdseed are particularly attractive to bears near camps and residential areas. These attractants are often the cause of human-bear conflicts. FWP works to identify potential sources of attractants and works with private property owners, recreationists, and government agencies to reduce and secure the source of these attractants. When the attractant cannot be eliminated, FWP provides technical assistance to protect the property and to reduce the potential for human-bear conflicts. Techniques to prevent damage may include aversive conditioning, electric fencing, deterrent devices, and relocating or removing offending animals. FWP continually explores and uses effective non-lethal damage management techniques and equipment. FWP cooperates with city, county, state, and federal governments to develop systems of managing attractants and pursues penalties for non-compliance with food storage or intentional feeding of wildlife regulations (MCA 87-6-216).

FWP knows that prevention is more effective than response and continually works to keep bears from obtaining unnatural foods or becoming habituated to humans. Keeping bears and people apart is an unreasonable approach as bear distribution and densities would have to be so low that it would preclude the objective of maintaining a healthy bear population and violate recovery and conservation strategy requirements.

Nuisance Grizzly Bear Management

Preferred management approaches to manage nuisance grizzly bears:

- Promote cost-sharing programs that focus on preventative work. Encourage interest groups to work together with FWP to minimize problems and increase tolerance for bears.
- Quickly respond to and resolve grizzly/human conflict situations when possible.
- Minimize the number of bears removed from the population.

- Consider the potential impacts of any nuisance bear response action to the overall health of the GYA grizzly population.
- Respond to nuisance grizzlies in similar fashion to the protocols described within the CS nuisance bear guidelines.

Considering how many people live, work, and recreate in southwestern Montana, it is important to note that conflicts have been minimal, yet conflicts are increasing as the bear population continues to increase in number and distribution (Figures 10 and 11). Annual variation in natural food supplies results in notable variation in nuisance complaints. The primary goal of nuisance bear management is to maximize human safety and minimize all types of conflicts while maintaining viable populations of grizzly bears. Not managing nuisance or 'problem' bears threatens public safety, the satisfaction with grizzly management programs and overall tolerance of the grizzly bear population.

Figure 10. Total grizzly/human conflicts to include all types by year, from 1992-2012.

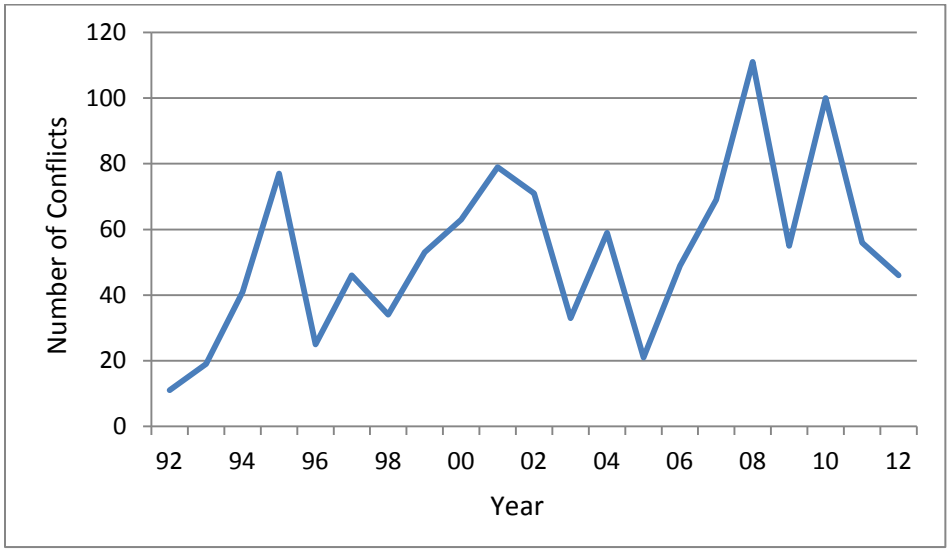
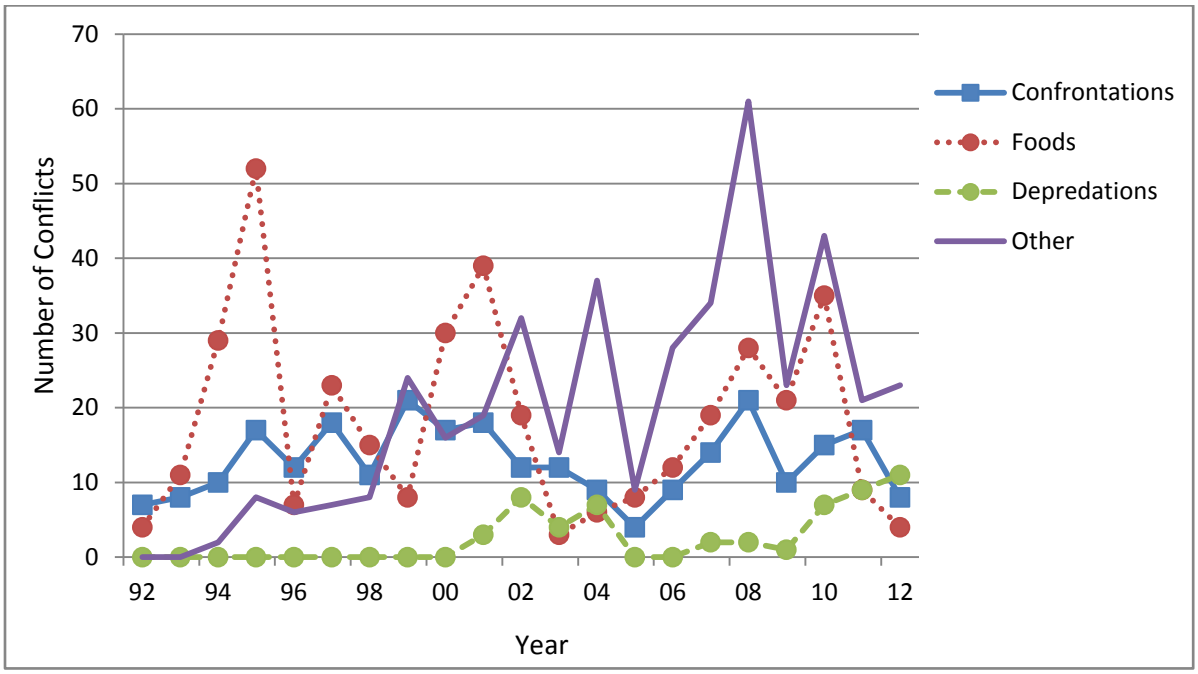


Figure 11. Annual grizzly/human conflicts by type and year (1992-2012). 'Confrontations' include grizzlies injuring, approaching or threatening people or otherwise coming into close proximity to people. 'Food' conflicts include grizzly consumption of garbage, bird seed, livestock feed, orchard fruit, garden produce, etc. 'Depredations' include confirmed losses of livestock such as sheep, cattle or chickens and 'other' conflicts include bears near residences, damaging structures or other property.



From 1993-2002, there was an average of 48 conflicts per year. During 2003-2012, the average number of conflicts was 60 for an increase of 24% since the previous 10 year period. In reality, conflicts have been occurring at a relatively constant rate when considering the increase in human population (25%) over the last 10 years, the increase in the GYA grizzly population (32%), and the 36% increase in grizzly distribution. FWP believes that conflict reduction efforts have been successful in keeping the level of conflicts stable.

Most notable since 2001 are the changes that have occurred in the number and types of conflicts (Table 9). Unnatural food related conflicts have decreased due to government and public efforts to improve sanitation and public awareness. The percentage of confrontation conflicts (close proximity encounters, DLPs, human injuries) that often result in human injuries / bear mortalities decreased slightly, but the geographic area of the occurrences increased. Livestock depredations and "other" types of conflicts, mostly bears near residences or developed sites, have increased as the bear population and bear distribution has increased.

Since completion of the 2002 plan there have been 22 human injuries and one human death from grizzly-human interactions in the Montana portion of the GYA. Three additional incidents involved a bear making physical contact with a person, but no injuries were received. This is an average of two human injuries per year in MT's portion of the GYA, from 2002 thru 2012.

During the previous 11 year period (1991–2001), an average of one person per year was injured. During 1993, 1998, 1999, 2005 and 2006 no human injuries were reported or investigated. Of the people actually injured during a grizzly bear(s) encounter from 2002 thru 2012, 5 were recreationally hiking, 3 were recreationally camping/sleeping during evening hours, 1 was mountain biking, 6 were archery hunting, 6 were rifle hunting and 1 was severely injured from being shot by his hunting partner. Nearly all human injury incidents (19) involved surprise encounters with female bears and cubs. A wide array of situations precipitated these events and this is why it is so difficult to predict or eliminate these chance encounters. Some individuals had been unwisely tracking the bear(s), some encountered bears at a food source, some were either rapidly or quietly moving and some were scent/visually camouflaged while hunting. To FWP's knowledge all grizzly bear caused human injuries have been reported and investigated. This information is annually reported through the IGBST yearly reports and covered by local and sometimes national media.

Table 9: Conflict types by percent of total and by 10 year periods, 1993-2012.

	Conflict Type			
Years	Confrontations	Depredations	Foods	Other
1993-2002	28%	2%	46%	24%
2003-2012	20%	7%	42%	49%
Average	24%	5%	44%	37%

Confrontation conflicts (encounters, DLPs, human injuries) are nearly impossible to alleviate due to the randomness of the location and timing of the occurrences. Confrontation conflicts generally occur during fall big game hunting seasons, but they also occur with people engaged in summer recreational activities. In the GYA, all grizzly bear caused human fatalities have occurred with people involved in non-hunting related activities. As bear populations increase in number and distribution, the geographic area and the number of potential public involved increases.

In recent years, most of the livestock depredations are occurring on private land beyond the monitoring area or the USFWS suitable habitat line in areas of little or no recent history of grizzly bear activity. Many of these areas are marginal for bear habitat leaving immigrant bears with few high quality, natural food sources. There is little that can be done to minimize depredation conflicts on open range land and therefore, management actions most often involve capture, relocation or lethal removal of the depredating bears. Developed sites and the associated attractants of natural or unnatural grizzly foods are the cause of many of the other conflicts, e.g., property damage, human habituation, food conditioned, and vehicle collisions. These types of conflicts are usually resolved through aversive conditioning techniques and/or securing attractants.

Upon initial delisting and implementation of the CS in 2007, federal funds were allocated to management agencies for grizzly management. FWP had initiated an improved sanitation program in 2006 that was boosted with these federal funds in 2007 to place 214 bear-resistant garbage containers on the landscape in the Gardiner, Cooke City/Silver Gate, West Yellowstone and upper Boulder areas. Several conservation groups joined this effort after it was established and have collectively provided an additional 81 bear-resistant garbage containers for the

Gardiner and Cooke City/Silver Gate areas. This sanitation effort has helped reduce the grizzly/human conflicts that result in food conditioned grizzlies, property damage and unsafe conditions, ultimately reducing management actions on grizzly and black bears.

The cause, severity, and appropriate response to human-bear conflicts often varies considerably from one incident to another, making a broad range of management applications desirable to wildlife managers. Outside of the PCA, greater consideration will be given to humans when bears and people come into conflict, provided problems are not the result of intentional human actions. Active management aimed at individual nuisance bears regardless of location is often required as part of nuisance bear management. Nuisance grizzly bears will be controlled in a practical, timely, and effective manner. Location, cause of incident, severity of incident, history of bear, health/age/sex of bear, and demographic characteristics of animals involved will all be considered in any management decision.

Definitions employed in nuisance grizzly management (*taken from the GYA Conservation Strategy):

Grizzly/Human Conflicts*: incidents in which bears injure people, damage property, kill or injure livestock, damage beehives, obtain anthropogenic foods, damage or obtain garden and orchard fruits and vegetables.

Nuisance bear: Any grizzly bear involved in a grizzly/human conflict that results in agency management activity.

Unnatural Aggression*: Behavior that includes active predation on humans, approaching humans or human use areas, such as camps, in an aggressive way, *or* aggressive behavior when the bear is unprovoked by self-defense, defense of cubs, defense of foods, or in a surprise encounter.

Natural Aggression*: Behavior that includes defense of young or food, during a surprise encounter, or self-defense.

Food-Conditioned Bear*: A bear that has received significant food reward of human foods such as garbage, camp food, pet food, or processed livestock food, and persistently seeks these foods.

Habituated Bear*: A bear that does not display avoidance behavior around humans or in human use areas such as camps or town sites or within 100 meters of open roads.

Relocation*: The capture and movement by management authorities of a bear involved in a conflict with humans or human-related foods, to remote areas away from the conflict site, usually after fitting the bear with a radio collar.

Repeat Offense*: The involvement of a bear that has been previously relocated in a nuisance situation, or if not relocated, continues to repeat a behavior that constitutes a grizzly/human conflict.

Removal*: The capture and placement of a bear in an authorized public zoological or research facility or destruction (euthanization) of that bear. Removal can also involve killing the bear through active measures in the wild when it is not otherwise possible to capture the bear.

Depredation: An action generally associated with the killing of domestic livestock animals.

Range of techniques to be used in dealing with nuisance grizzly bears:

No Action: FWP may take no action when the circumstances of the conflict do not warrant control or the opportunity for control is low.

Aversive Conditioning, Deterrence, or Protection: FWP may employ various options that deter or preclude the bear from additional depredation or nuisance activities (i.e., electric fencing, bear proofing buildings or containers, etc.).

Translocation: FWP will initiate capture operations when deemed appropriate and necessary or when human safety is a concern. Capture efforts will be initiated when they are practical, and when they can be conducted in a timely and safe manner. Management agencies may rely on translocation of some problem bears as this approach provides time to deal with the cause of conflict and provides the bear an opportunity to remain in the population. However, relocation is often a short-term solution to an immediate crisis because many bears return to the general area of conflict or may simply repeat the problem behavior in the new area. Survival of translocated bears is largely affected by whether the bear returns to the capture site. Return rates are most affected by distance transported, and age and sex of the bear. Return rates decrease with translocation distances of $\geq$75 km. Subadult female bears return the least. Translocation of female bears who later contribute back to the population through reproduction is considered particularly successful. In general however, translocation is often the final action for conflict bears as low survival and high rates of return to the conflict site ultimately end in natural or human-caused death of the bear.

Removal: FWP will employ live or lethal control techniques when other options are not practical and a reasonable opportunity for removal exists. Captured grizzly bears identified for removal may be permanently loaned to public research institutions or accredited public zoological parks for educational or scientific purposes as per state laws and regulations. Grizzly bears not suitable for these purposes will be euthanized.

On the Ground Approaches to Nuisance Grizzly Bear Conflict Prevention and Management:

1. Provide conflict-avoidance information and education to people living, working, and recreating in grizzly bear habitat. Technical assistance, including information on preventative and aversive techniques is available to property owners, outfitters, and land managers. Specific information and education recommendations are addressed in the Education/Outreach Section.
2. Provide timely information to the public and land management agencies about current bear distribution, including relocations, natural food conditions, known bear activity, potential and current conflicts (news releases, etc.).

3. Encourage land management agencies to inform permittees about practices to avoid and minimize conflicts.
4. Monitor situations where the activities or behaviors of bears inhabiting the area increases the likelihood of conflicts.
5. Work with livestock operators and land managers to implement strategies that minimize the potential for bear damage.
6. Work with property owners, recreationists, and land managers to identify and resolve potential conflicts. Provide property owners deterrent or aversive conditioning supplies when appropriate for management of specific conflicts.
7. Investigate all grizzly/human bear conflicts as soon as practical. Property owners will be advised of the process to secure compensation if warranted. Information regarding ongoing conflicts is shared with potentially affected neighbors, livestock producers, permittees, or others when possible in order to reduce risk of further conflict.
8. Attempt to remove any grizzly bear displaying unnatural aggression or considered a threat to human safety, as quickly as possible.
9. Attempt to remove any grizzly bear displaying natural defensive behavior when, in the judgment of FWP, circumstances warrant removal and non-lethal methods are not feasible or practical.
10. Aversively condition, relocate, or remove any grizzly bear displaying food-conditioned, or habituated behaviors, or damaging property based on the individual bear and specific details of the incident. Management authorities will make these decisions after considering the cause, location, and severity of the incident or incidents.
11. Preemptively move a grizzly bear when it is in an area where it is likely to come into conflict with humans or their property. Conversely, temporarily exclude people from an area if the situation has a high risk to the public, e.g. a carcass on a trail being fed on by grizzlies.
12. Grizzly bears may be relocated several times if FWP determines it is appropriate.
13. Grizzly bears involved in chronic or significant depredations or bears with a high probability to cause significant or chronic depredations, will be removed when practical.
14. Grizzly bears relocated due to conflict situations will be released in a location where the probability of future conflicts is lowest. Land managing authorities will continue to provide adequate and available sites for relocations.
15. Any grizzly bear to be relocated is uniquely marked (ear-tags, tattoo, microchips, etc.) and radio collared (if appropriate) to follow movements as necessary.
16. Grizzly bears not suitable for relocation will be removed.
17. Train and equip appropriate state and federal agency personnel to manage conflicts.
18. Respond to all grizzly/human conflicts within 48 hours of reporting and base management actions on the circumstances of each individual situation.

Hunting of Grizzly Bears

Preferred management approaches relative to sport harvest of grizzly bears:

- Incorporate regulated harvest after delisting as part of Montana's long-term conservation program.
- Design a hunting program that is justified and open to public review, similar to the processes used for all other managed species in Montana, and coordinated with surrounding states to ensure mortalities from all causes are within the sustainable population mortality limits.

- Give additional consideration to the female segment of the population in any proposed hunting program. For example, the killing of females accompanied by young will be prohibited.
- Utilize any hunt as part of overall species management and as a way to garner additional public support and ownership for long-term persistence of the grizzly population in Montana.
- Encourage all hunters and recreationists to carry bear spray in bear habitat.

Managing grizzly bears as a game animal (MCA 87-2-101) confers additional recognition to them as a valuable wildlife species: A species that is protected from illegal harvest and prioritized for population monitoring and research. Regulated harvest of game animals is one of the major tools that assures the maintenance of predator and prey populations in Montana and elsewhere. The Interagency Grizzly Bear Committee (IGBC) supports the use of regulated hunting in recovered and delisted populations as one approach to help manage numbers and distribution of bears to promote coexistence and help minimize conflict. Although specifics regarding the hunting of a recovered grizzly bear population will be unique to the ecosystem and legal jurisdictions involved, IGBC supports hunting regulations that reflect the best available science, are adaptable to changing factors, are established in a public process, and are consistent with standards in the ecosystem specific Conservation Strategies. It is therefore intended that the eventual regulated harvest of grizzly bears will be a part of Montana's program and commitment to grizzlies, when and where appropriate.

Regulated hunting as a management tool for grizzly bears has a long successful history in Montana and was conducted until 1991. Regulated hunting can result in the removal of unwary bears or bears that associate with and habituate to people. Two of the three bears taken in the last legal Montana hunt were known problem bears. Regulated hunting can also reinforce human avoidance behaviors different than those exhibited by unhunted populations. Ultimately, these avoidance behaviors and the removal of unwary bears promotes the long-term survival and social tolerance of the grizzly population.

Wildlife populations sometimes produce surplus animals that can be removed without dampening growth of the population. Population estimates and trend data for the GYA indicate this has been the case, however, much of the ‘removal’ has been from unregulated mortalities. Any regulated public hunt must be evaluated in the context of these unregulated mortalities, overall population goal, and the overall bear management program and its efforts to promote management and ongoing recovery of this species. Regulated hunting programs or recommendations will be conservatively applied and while hunting may alter the timing and nature of grizzly use of some habitats, any negative impacts to the population should be negligible based on the anticipated low level of harvest opportunity.

From the 2012 IGBST population demographic review, the adult male portion of the population has been increasing throughout the ecosystem. The removal of adult males in relatively remote areas through hunting will not negatively impact the overall population. Removal of adult males may in fact enhance adult female, cub and sub-adult survival in areas with less human presence, thereby allowing survival in areas where fewer conflicts occur.

Regulations that direct harvest toward males and away from adult females may allow for higher hunter quotas. Hunters would primarily remove males during early spring seasons due to their earlier emergence from dens. Similarly, hunters would primarily remove males during late fall seasons as they are last to enter dens. Females accompanied by newborn cubs are the last to emerge and move away from den sites and the first to enter dens in the fall. Using season timing and protective regulations for females with young, FWP was successful in focusing harvest on males during previous regulated grizzly hunting. Similar season setting techniques would be used to focus harvest on males in future hunts.

FWP would likely not institute hunting seasons in areas where bear density is low and harvest mortality is not sustainable. In addition, FWP would likely not institute hunting seasons in areas where bear density is low and removal of bears would negatively impact the potential for movement of grizzlies between ecosystems when desired and acceptable.

In summary, FWP recommends a regulated hunting season be a part of the overall grizzly bear management program for the following reasons:

1. Legal harvest can be managed so as to have minimal impact on the population as a whole.
2. Hunters have legally harvested problem bears in the past and would be expected to do so in the future, potentially reducing grizzly/human conflicts in some areas.
3. Hunter harvest may be partially compensatory in that it may remove some nuisance animals.
4. Hunters may remove unwary or bold bears and hunter activity may cause other bears to be wary of humans, thereby decreasing the need for FWP control of problem bears.
5. Hunting promotes acceptance and tolerance of this large and potentially life threatening animal by some of the local public who are asked to live with grizzlies. This acceptance and tolerance is key to long-term survival of the bear.
6. Removal of adult males can increase cub survival and recruitment, which in turn, can promote a more stable population.
7. Hunters have been and continue to be one of the strongest supporters of long-term conservation efforts. Hunter dollars have purchased more habitat than any other group in the GYA ultimately providing for a variety of species including grizzlies. This strong connection between hunters and habitat is critical to continued successes in restoring wildlife including grizzly bears. Hunting gives direct ownership for the welfare of this species by some of the most ardent supporters of wildlife in Montana.
8. Hunting activity provides revenue from license sales and excise taxes on equipment to support wildlife management and the enforcement of wildlife management regulations.
9. The presence of licensed hunters can reduce illegal activities. Every year ethical hunters in Montana report people who have violated laws protecting wildlife.

Regulated hunting has been used as only one tool among many to provide for the long-term recovery and survival of grizzly bears. A regulated public hunt must therefore be evaluated in the context of an overall bear management program. There are also many statutes, regulations, and considerations that will affect any proposed hunt to include:

1. Upon delisting, hunting will be proposed only after all components of the grizzly bear management program and CS are being adequately implemented.

2. The justification for any proposed hunt will be available for public scrutiny and comment prior to any decision or possible implementation.
3. MCA 87-5-302 regulates the hunting of grizzly bears, including the establishment of tagging requirements for carcasses, skulls, and hides; and establishing requirements for the transportation, exportation, and importation of grizzly bears. The Commission shall establish hunting season quotas for grizzly bears that will prevent the population of grizzly bears from decreasing below sustainable levels and with the intent to meet population objectives for elk, deer, and antelope.
4. Commission rules make it illegal to harvest/take black bear cubs or females with young and it is expected the Commission would enact a similar rule for a grizzly hunt.
5. MCA 87-2-702 states a person may take only one grizzly bear in Montana with a license authorized by 87-1-701.
6. The Commission has the authority to close seasons at any time if mortalities from any cause have been excessive, i.e. if the yearly total ecosystem-wide mortality limits are near to or have been exceeded.
7. Damage hunts, targeting individual problem bears, have proven to be of limited value.
8. MCA 87-6-401 makes it illegal to hunt any game animal with the use of bait.
9. MCA 87-6-404 makes it unlawful to chase any game animal with a dog.
10. Bear hides and carcasses must be presented for inspection. Hunters are prohibited from wasting bear meat unless the meat is determined to contain trichinella. Evidence of species and sex of animal must remain attached to carcass or parts to be legally possessed or transported.
11. MCA 87-6-202 makes it unlawful to possess, ship or transport grizzly bear parts that have been unlawfully obtained.
12. MCA 87-6-206 makes it illegal to buy or sell grizzly bear parts unless they have been registered with FWP.

Montana's hunting season setting process is an open and dynamic process, with ample opportunity for public comment. Season structure for most big game species is adopted on a biannual basis, while quotas are set annually.

FWP considered eliminating hunting as a part of its grizzly bear management program. However, in FWP's judgment, this approach would eliminate a key local and national constituent group with demonstrated commitment to the species and its habitat.

FWP targets all types of recreationists and workers in grizzly country for education on the benefits of carrying and knowing how to use bear spray. FWP has considered requiring all hunters to carry bear spray while in the field, yet believes that there are significant liability and enforcement issues around a "mandatory" approach. In addition, carrying spray can give people a false sense of security and replace common sense and thoughtful backcountry practices. Bear spray can be ineffective in windy areas and in certain weather conditions, and individual bears can respond differently to the spray. Also, there are only a few manufacturers who produce bear spray that meets EPA ingredient requirements and the required propellant duration. Approved bear spray is a valuable tool, but it cannot replace knowledge of bear behavior and appropriate human behavior in bear encounter situations. FWP makes bear spray available to field personnel operating in bear country and encourages employees to carry and know how to use it.

Enforcement

Preferred approaches for grizzly conservation through enforcement authority:

- Enforce statute that criminalizes intentional feeding of both black and grizzly bears (MCA 87-6-216).
- Investigate and prosecute violations of Montana law relative to the protection of grizzly bears (MCA 87-5-301, 87-5-302).
- Assist federal agencies as requested to enforce federal regulations (i.e., CFRs).

FWP enforcement efforts concerning grizzly bears are focused in three areas: patrols of both wilderness and non-wilderness areas, grizzly/human conflict control to include instances of property damage and human injury or death, and illegal take investigations.

Wilderness and non-wilderness areas are patrolled during the general hunting season and at other times throughout the year. Hunter camps are checked for harvested animals, food storage compliance, and compliance with outfitter regulations. Although FWP enforcement has no authority to enforce federal food storage orders they do communicate rules and regulations to those they contact and they do record information for use by federal enforcement personnel.

Response to nuisance bear complaints can involve many FWP personnel, although Enforcement Division personnel are frequently the first on the scene. Response to grizzly/human conflicts that result in human injury or death is managed by the Enforcement Division and handled under a formal response/investigation protocol (Wildlife/Human Attack Response Team). This system integrates other state, local and federal personnel in the response and provides a structured approach to dealing with these types of major incidents.

FWP enforcement personnel investigate and prosecute all violations involving illegal grizzly bear mortality. Cases are processed through the county attorney's office or turned over to the USFWS when they appear to involve interstate movement of grizzly bear parts. FWP also coordinates with federal officials in undercover operations. Current state law sets restitution for illegal take of grizzlies at an amount of $8,000 in addition to the fines and imprisonment tied to the misdemeanor or felony charge. Anyone found guilty of illegal grizzly take will also forfeit any current hunting, fishing, recreational use, or trapping license issued by this state and the privilege to hunt, fish, or trap in this state for 30 months from the date of conviction or forfeiture unless the court imposes a longer period. Fines for the interstate movement of illegally killed or possessed animals can also be imposed.

The USFS manages food storage restrictions on their own lands. The county sheriff's office enforces county ordinances on food storage. FWP personnel enforce food storage rules on all WMAs that fall under an annual rule adopted by the FWP Commission in 2013.

A statute (MCA 87-6-216) first passed in 2001 makes it illegal to provide food attractants to bears or improperly store food attractants, including garbage. Individuals who intentionally feed or attract bears to their residence create problems that impact their neighbors, jeopardize human safety, and result in problem situations. FWP personnel have no enforcement authority to enforce food storage regulations on Forest Service lands, yet FWP personnel spend a great deal of time in backcountry areas checking people on national forest lands. When violations are

encountered, they attempt to ensure compliance and refer the infraction to USFS or BLM law enforcement. Added presence and patrol by federal resource officers will become even more critical in reducing grizzly/human conflicts. This will be increasingly important as the grizzly bear population expands and, food storage regulations are required on additional national forest lands.

The 2002 EIS stated that FWP would seek authority to enforce food storage regulations on federal lands. However, in the 10 years since publication of that document the cooperative efforts between FWP and Federal land managers have been successful in enforcing food storage without a formal MOU. FWP officers work closely with Federal law enforcement in monitoring food storage compliance and talking to recreationists about the importance and legal requirements of food storage as stated. The cooperative efforts of all agencies have no doubt contributed to the ability of bears to persist in close contact to humans. Anecdotally, the number of non-compliance cases have decreased as recreationists recognize the importance of clean camps for both the good of the bear and their own personal safety. Education and outreach efforts by all agencies have no doubt contributed to compliance. These efforts to work cooperatively and educate the public will continue.

By Commission rule, FWP personnel enforce federal travel restrictions during Commission-designated hunting seasons. At other times, personnel refer violations to USFS or BLM law enforcement. They also regularly work with USFS and BLM law enforcement in saturation patrols, both aerial and ground-based, to ensure compliance with travel management plans.

The 2002 EIS stated that FWP would seek authority to enforce travel management plans. FWP is no longer pursuing this authority as FWP believes its current ability to enforce travel management plans during hunting seasons has been adequate to protect grizzlies. In non-hunting seasons FWP works closely with the Federal land management agencies to monitor and report violations of plans as stated above.

There is currently a Memorandum of Agreement between the USFWS and FWP that outlines joint responsibilities for violations of federal and state law (Appendix C). The agreement also addresses responsibilities and guidelines for joint investigations by Montana game wardens and USFWS special agents. The MOU between FWP and WS outlines responsibilities and guidelines for joint investigations by WS and FWP in grizzly bear depredation situations (Appendix B).

A visible enforcement presence is critical to program success and additional resources would help implement new responsibilities. These would include sufficient funds for equipment and necessary overtime required to operate in remote areas and, ultimately, additional staffing. FWP will work cooperatively with the USFS and BLM to identify additional opportunities to support FWP in these efforts.

Education and Outreach

Preferred Approaches for Continuing Education and Public Outreach:

- Include hunter education class lessons that cover safety while hunting in bear county.
- Continue to expand efforts to assist hunters with identification of black versus grizzly bears through publications and mandatory training and testing for individuals interested in hunting black bears.
- Implement ways to target education efforts towards "new" and current Montana residents regarding grizzly/human conflicts and human safety while in bear country.
- Continue to work with the Board of Outfitters to ensure outfitters have adequate knowledge of appropriate practices for operating in bear country and encourage outfitters to provide training to clients, and to provide clients with bear spray and the knowledge of how to use it.
- Work with private organizations, wildlife advocacy groups and other interested parties to promote 'living in bear country' messages including safety tips for recreating in bear habitat and the utility and proper use of bear spray.
- Integrate education and public outreach with enforcement of food and garbage storage rules.
- Use education and outreach to minimize human activities that can lead to grizzly/human conflicts.
- Work with local planning entities to address the needs of grizzly bears in new developments and new residential areas, and provide continued support to existing communities to prevent and reduce bear conflicts.

Management strategies are unlikely to succeed without useable, state-of-the-art public information and education outreach programs. A partnership based information and education approach involving FWP, other agencies, local communities, and private interests, can result in minimal grizzly/human conflicts and a strong sense of agreement among Montana residents about the state's bear goals and management programs. Expanded and continued education and outreach efforts are essential to the objective to allow for expanded bear distribution and long-term survival of the species.

Human safety is of utmost concern when hunting in grizzly bear country. In order to teach young, old, and first-time hunters the proper techniques for hunting in grizzly country, FWP incorporates safety lessons for hunting in bear habitat in each hunter education class including general hunter education, archery hunter education, and the online hunter education courses. Topics covered include bear identification, bear awareness, the proper use of bear spray, and meat retrieval. There is a special focus on the proper use of bear spray during the field day portion of the courses in order to allow hunters to gain confidence in using bear spray as a deterrent. In Montana, no individual born after January 1, 1985 may apply for and receive any hunting license unless the person possesses a hunter safety certificate. Current records show that approximately 7,000 students are certified each year through FWP's hunter education program.

In 2001, the Commission approved mandatory bear identification testing for black bear hunters in Montana prior to their purchase of a black bear license. This requirement aims to reduce misidentification by black bear hunters as grizzly bear encounters are on the rise. Black bear hunters must be aware that they may encounter grizzly bears where they have not in previous years. Black bear hunters must sharpen their ability to tell the difference between black bears and grizzly bears to prevent and avoid mistaken identity killings of grizzly bears. The bear

identification training program is available to all citizens and can help non-hunters also learn to distinguish between the two species. The test is available on line at www.fwp.mt.gov, by mail, or at FWP offices or license providers. A hunter must pass the test with a minimum score of 80% before they can purchase a bear hunting license. A hunter can retake the test until a passing grade is obtained. Annual recertification is not required. FWP believes the test for black bear hunters, as currently delivered, is effective in reducing mistaken identity mortalities. Due to hunter awareness there have been relatively few hunter caused mistaken identification mortalities (4 mortalities in the last 11 years).

The Commission is concerned about the impact that mistaken identity killings of grizzlies could have on maintaining a recovered grizzly bear population or on recovery in areas that remain below objective. While the Commission believes mistaken identity killings can be reduced through education, some consider a better solution to be elimination of the black bear hunting season in Montana. That action would minimize FWP's ability to manage black bears and create a myriad of other problems essentially lessening the support for management and expanded distribution of grizzlies.

In order to provide education resources to 'new' and long-term residents, FWP maintains a website dedicated to 'living with bears' type education (fwp.mt.gov/FishAndWildlife/LivingWithWildlife/). This online site includes information on living and recreating in bear country, hunting in bear country, bear safety, and bear education. The website is an online tool that citizens and educators can use to learn more about bear safety and reduce bear conflicts. The site has a special section with tools for teachers to use in their classroom. It also provides contact information for the individuals involved in bear management in each region.

FWP encourages federal land management and wildlife agencies to continue playing a role in public education in order to protect bears and people while assuring wilderness values. FWP coordinates with these agencies to provide bear safety literature at their respective trailheads and at offices in occupied grizzly habitat. FWP will continue to work with the USFS to maintain an appropriate number and location of bear resistant food storage containers, meat poles, and bear resistant garbage containers (at all campsites) in occupied or potentially occupied areas.

FWP promotes the grizzly bear as a valuable state resource through school and community presentations, community-based workshops, news releases, magazine articles, social media outlets, and radio and television spots. FWP emphasizes the value of educating children about bear safety and identification. FWP has a 'head and hides' check out program that is available to educators and non-profit organization. FWP and partners have developed a "Getting Along with Bears" coloring and activity book.

The 2002 EIS stated that FWP would encourage the Board of Outfitters to require all outfitters and guides operating in bear country to be certified in grizzly/human safety. However, in the 10 years since publication of that EIS the documented number of conflicts between outfitters and grizzlies have been minimal and the number of outfitter caused bear deaths has decreased (K. Frey, pers. comm.). FWP has worked diligently through outreach efforts and trainings to ensure outfitters have adequate knowledge of appropriate practices for operating in bear country. FWP encourages outfitters to provide trainings to clients and to provide clients with bear spray and the

knowledge of how to use it. It is obviously in the best interest of the outfitters to keep their clients safe. This, combined with their current record of limited conflicts has minimized the need for any formal outfitter and guide certification. Outfitters in Montana are under the jurisdiction of the Montana Board of Outfitters and the Montana Department of Labor and Industry, which is responsible for issuing outfitting licenses and the enforcement of laws regulating the outfitting industry. Outfitters using federal lands are also overseen by the respective federal land management agencies. Education and outreach efforts by all agencies have no doubt contributed to outfitter and guide success of operating in bear country and efforts to educate outfitters, guides and other hunters will continue.

FWP has developed a set of fish and wildlife recommendations for subdivision development in Montana. The goal of this document is to help Montana communities and counties mesh subdivisions for people with healthy habitats for fish and wildlife. The document may be viewed online on the Living with Wildlife page at www.fwp.mt.gov. The document contains a section about the recommended subdivision design standards for addressing grizzly/human conflicts. FWP and cooperating partners strive to work with homeowner groups in areas with bear activity to improve sanitation, increase the use of bear-resistant containers, and increase property owner knowledge of living in bear country. FWP recognizes that there are a large number of citizens moving into bear country for the first time. FWP continues to work to educate new residents of steps that can be taken to reduce bear conflicts.

Examples of current FWP education and outreach programs on living with grizzlies;

- Presentations to schools, colleges, private businesses, civic groups, sportsmen's groups, and local watershed groups.
- Presentation of public and private land bear conflict reduction & safety programs.
- Presentations to rifle and archery hunter education classes.
- Presentations to outfitters and guides in areas of high bear use and/or past grizzly/human conflict.
- Bear safety presentations to field crews and educational classes.
- Timely interviews with newspaper, radio, and TV reporters following conflicts or during times of grizzly activity.
- Production of media clips regarding use of bear spray, safety during spring antler hunting, safety during big game hunting seasons.
- Use of social media to reach younger audiences with the 'Living in Bear Country' messages.
- Maintenance of an FWP website devoted to bear identification and bear awareness (www.fwp.mt.gov/fishand wildlife/livingwithwildlife/bebearaware/).
- Maintenance of a public information plan designed by the FWP Conservation and Education Division.
- Support for publication and distribution of education and outreach material including:
  - "Bears of Yellowstone" brochure
  - "Hiking in Bear Country" brochure
  - "Visiting Bear Country: How to Avoid Bears" brochure
  - "Living with Grizzlies" brochure
  - "Living in Bear Country" brochure
  - "Bear Spray" brochure

    - “Who’s Who? Know your Bear” brochure
    - “Be Bear Aware” children’s handout.
    - “Attention Hunters”: bear safety license holders
    - “Attention Hunters”: bear safety postcards
- Production and distribution of the “Staying Safe and Working in Bear Country” video.
- Maintenance of trail head signs with safety in bear country recommendations and food storage regulations.
- Posting trail heads with information regarding recent, potentially dangerous grizzly activity in the area.
- Cooperate with USFS on food storage regulations & bear safety issues.
- Dissemination of information regarding FWP and land management agency food storage regulations.
- Dissemination of information regarding the state law that makes it illegal to intentionally feed bears.
- Provide cities and counties information for improving refuse collection sites.
- Assist community groups such as the Gardiner Bear Aware Group in their efforts to promote ‘bear awareness’ and responsible behavior in bear country.
- Assist communities in addressing sanitation issues through education and outreach, e.g., South Gallatin County Ordinance to address sanitation in upper Gallatin Canyon and Big Sky.
- Frequent contact with the public regarding ‘bear awareness’, appropriate ‘living in bear country’ practices, and current conflict situation information.
- Mailing of ‘bear awareness’ and safety information to all FWP special permit holders, e.g., moose, goat, sheep tag holders.
- Assist bee-keepers and poultry producers in reducing conflicts through education and outreach.
- Work with others such as Defenders of Wildlife, to increase education and outreach to target audiences.
- Use outreach efforts to encourage the use of electric fence where appropriate to reduce bear conflicts and subsequent management actions.
- Provide internal (FWP) education and training.

Future Research

FWP has and will continue to conduct research into population monitoring methods in collaboration with the IGBST. Adult females and females with COY are considered the most important segment of the grizzly population and consequently are a major focus of the IGBST monitoring program. Efforts to document the distribution and abundance of females with cubs within the GYA began in 1973 and have continued to date. During the past 10 years (2003-2012), IGBST has estimated an average of 50 unique females with cubs of the year in the GYA annually. When combined with other data, these counts serve as the basis for estimating total population size and determining whether annual mortality is sustainable. Sustainable mortality establishes the upper limit on the number of grizzly deaths that can occur within a healthy population. Previous research has shown that population size is underestimated (Schwartz et al. 2008), likely resulting in conservative mortality limits. Recent research efforts of IGBST have focused on addressing this bias using mark-resight techniques (Higgs et al. 2013). Further

investigation of this technique is underway to improve its application in the GYA. Assessment of this technique is needed to determine the feasibility of estimating grizzly density at a large GYA scale based on findings from smaller focal study areas.

FWP will continue to conduct research captures of grizzly bears in Montana to monitor survivorship, habitat use, change in distribution and ensure that enough female and male bears are telemetry marked for demographic analysis. Assessment of other techniques such as camera and hair traps, and DNA population monitoring is needed to determine the most cost efficient and effective method of tracking the expanding population and to ensure adequate information is available for management and the public.

As the delisting process proceeds, FWP will assess the potential impacts of hunting on the GYA grizzly population size and distribution. Any future hunting losses would be considered within annual population estimates and annual mortality limit calculations. Continuous evaluation of the impacts of sport harvest are part of FWP's management for all harvested species.

FWP will continue to collaborate with the IGBST on ongoing research to determine if the slowed growth of the overall GYA grizzly bear population is a factor of density dependence and/or food abundance. Initial indications are that both factors may be playing a role. In any healthy population, one should expect that the population will slow or stabilize at some point in time, due to density and carrying capacity of the habitat. FWP is assessing the natural biological carrying capacity of actual or potential grizzly bear habitats through cooperative efforts with other agencies. Such assessments are important to ensure that management efforts for grizzly bears are appropriate throughout their range in Montana.

Finally, FWP will continue to conduct and collaborate on research into the importance of anthropogenic impacts on bear populations and habitats. As documented elsewhere, roads, commercial activities (e.g., mining, logging), livestock grazing, urban sprawl, and recreation (e.g., snowmobiling, off road travel) may impact the ability of bear populations to persist in an area. More research is needed to determine threshold levels at which these impacts become significant and to determine mitigation actions to limit negative impacts to grizzlies when possible. Similarly, it is important to recognize threshold levels of social tolerance of grizzly bears and to continue assessing the most effective ways to minimize conflict between humans and grizzlies.

Other priority grizzly research needs will be considered and prioritized by FWP during the life of this plan, using the standard research prioritization process used to identify all priority wildlife research needs. Under this plan, proposals are developed and submitted for review by wildlife program managers and division staff, and resources are directed to priority projects through consensus. Before FWP dedicates resources (staff time, money, data, etc.) to a research effort, for grizzlies and other wildlife or habitat, the project will be prioritized through this process. Today's grizzly research techniques can be expensive and labor intensive, requiring agreement on the need to dedicate resources prior to initiatation of a research project.

Costs and Funding

The grizzly bear is a species of national interest. The USFWS, through congressional appropriations, has funded FWP and other managing agencies for the initial implementation of the GYA Conservation Strategy (CS) with funding to bridge the time period between federal funding under listed status and state funding after delisting. This FWS bridge funding was to allow the state time to get internal state funding (or some other funding source) in place to fund Montana's responsibilities to implement the CS. As this FWS bridge funding was not intended to cover the state responsibilities under the CS in the long-term, a funding mechanism to support Montana's responsibilities for Yellowstone grizzly bear management is necessary. Such stable funding ensures all state and federal agencies have the ability to effectively manage this species under the direction of the CS once it is recovered and delisted.

The minimum estimated costs to implement this plan are presented below (Table 10). This is not intended to be a detailed description of program costs, but it does provide a yearly average of current and anticipated expenses tied directly to personnel that work exclusively on grizzly bear management and their operations costs. Another 1500 or so hours of personnel time for 27 FWP staff persons ranging from local conservation wardens time to administrators time can be assumed necessary for grizzly bear management throughout the year. This amounts to an additional $50,000 in personnel time spent on this work. Operations dollars to include vehicle mileage are not tracked separately from other work making it difficult to estimate additional operations for these 27 employees. Employees with duties such as a conservation warden are tasked to work on whatever high priorities need attention. This ranges from responding to game damage to responding to grizzly/human conflicts or assisting with grizzly capture. The coverage of this work out of FWP license and Pittman Robertson dollars is allowable and appropriate.

FWP does acknowledge the need for a bear management specialist to be based in the Billings office. Approximate cost of this new position would be $60,000. Securing the funding for this position as well as the FTE has proven difficult but as grizzlies expand their range further east of Yellowstone National Park the press for this type of assistance may be prioritized over funding for other new positions. Cooperative funds could be sought from outside partners.

Independent efforts, not reported in Table 10, by staff at the FWP Montana Wild Center to implement a bear aware program for school and civic groups costs could be as high as $15,000 but staff time and operation dollars are difficult to track as staff work on a variety of projects. In addition these programs are targeted towards awareness for hunters, recreationists and those who live in bear country throughout Montana, not just within the area covered by this plan.

Montana's cost to implement a grizzly bear management plan as shown in the 2007 Conservation Strategy was estimated to be over $400,000. A budget this large would allow FWP to do additional work such as hiring a bear specialists in Region 5 and assigning more staff to grizzly specific work. In the absence of such a budget, implementation of the grizzly bear management program is divided among many personnel as indicated. We have a history of success in doing this with other species management programs and believe we can continue to operate in this manner. Annual budgets are greatly impacted by both federal and state processes. Annual funding fluctuations impact program priorities.

Table 10. FWP Southwest Montana Grizzly Bear Management Plan minimum expenses.

Expenses	Current State Expenditures	Current Federal Expenditures
Bear Management (includes investigations of human injuries, bear mortalities, site conflicts, sanitation, conflict reduction materials, staff time and operations)	$91,500	$65,000
Monitoring (observations of females with cubs, radio tracking, DNA work, population expansion tracking and FWP Laboratory expenses)	$5,000	$22,000
Outreach (Conservation Education information releases, hunter education, etc.)	$2,500	$1,500
Grand Total	$100,000	$88,500

Irreversible/Irretrievable Resource Commitment

This section describes irreversible and irretrievable commitments of resources associated with implementation of the proposed grizzly bear management program outlined in this EIS. A resource commitment is considered irreversible when impacts from its use limit future use options. Irreversible commitment applies primarily to nonrenewable resources, such as fossil fuels or minerals, and to those resources that are renewable only over long time spans, such as soil productivity. A resource commitment is considered irretrievable when the use or consumption of the resource is neither renewable nor recoverable for use by future generations. In essence, irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the proposed action or preferred alternative. Such commitments include expenditure of funds, loss of production, or restrictions on resource use.

The grizzly bear management approaches recommended in this document should not result in any irreversible/irretrievable commitment of resources with few exceptions. If expansion of bears proves untenable in some areas because of issues related to public safety, FWP has demonstrated the ability to remove unwanted or nuisance bears. The level of recommended allowable mortality will not result in any irreversible commitment of the grizzly bear resource and should allow the species to flourish when its population is considered on a statewide scale. Some causes of grizzly mortality can be regulated or eliminated if necessary and the overall management program is designed to track the population and mortalities in a sustainable cost effective way. Likewise, habitat programs and access management actions can also be reversed or revised as needed.

The grizzly bear and other species are major components of our quality of life in Montana. This quality of life attracts new residents resulting in an expanding human population. Subdivisions, energy development, and other land development programs are slowly but steadily altering grizzly habitat. FWP is seeing some irretrievable commitment of resources to manage wildlife in the face of these changes as the department invests in habitat conservation efforts such as fee title purchase of quality habitats, attainment of conservation easements, and staff and equipment to manage nuisance bears.

Secondary and Cumulative Impacts

Successful implementation of this management plan does have some secondary impacts on other wildlife or habitat management programs, other wildlife species, and the public. Continued focus on habitat management, food storage, and conflict prevention actions as described in this plan can provide a positive secondary impact to black bear populations as black bear conservation and management issues are similar to grizzly bear issues. The careful management of road densities, off road vehicle use and seasonal area closures is beneficial to bears in addition to other sensitive species such as elk. In fact, road density standards as recommended have been in place for years and have allowed for expansion of the bear population while maintaining secure elk habitat. Reasonable limitations on subdivision or energy development are also beneficial to many of the wide ranging or migratory species. Increasingly smart development and recommendations as seen in the FWP subdivision recommendations (MFWP 2012) will maintain habitat for a diversity of species. Additionally, there is the potential that population levels of black bears could be somewhat reduced due to grizzly bear expansion into currently unoccupied habitats. Yet based on the current status of black bears in and adjacent to areas currently occupied by grizzlies in Montana, impacts are not anticipated to be significant.

In addition to secondary positive impacts to black bears, grizzly bear management can have positive secondary impacts to terrestrial and aquatic life and habitats because habitat management for grizzlies limits human uses and disturbance of habitats for all species. Management to limit open road densities and new developments ensure there is protected habitat for a diversity of wildlife. The enforcement of attractant storage orders and rules ensures other animals such as black bears and mountain lions do not gain access and become nuisance animals and generally results in greater public awareness of the risks of feeding wildlife.

There may also be secondary positive economic benefits to Montana from a recovered and sustainable bear population. Many people visit and relocate to Montana because of our diverse and abundant wildlife resources. FWP's successful education and outreach programs have made it possible for people to live and recreate in grizzly country, in essence, adding to the value of many Montana properties. Yet while there are many benefits to expanded grizzly bear populations, there is no denying that there will be impacts to property owners and livestock producers due to conflicts with grizzly bears. Data from Defenders of Wildlife on livestock losses from 2002-2012 show $8,500 was paid to producers who lost sheep, cattle or poultry to grizzly bears within the Montana portion of the GYA. Not all losses are submitted for claims. Implementing the programs recommended in this document will minimize impacts through prevention, where possible, and adequate management when conflicts do occur.

Agencies that manage lands in southwestern Montana could see increased costs with expanding grizzly populations due to an increase in area requiring food storage, or other habitat management measures. Many of the areas that grizzlies could occupy in the near future however already have adequate habitat management.

A negative secondary impact of ongoing management of grizzly bears can be the cost of program implementation. These costs can limit the resources available to manage other species. There can also be negative secondary costs to individuals and communities. There can be financial burdens on the property owners and recreationists who live or recreate within grizzly country as

they deal with livestock loss, property damage or increased costs of certain activities (e.g., purchase of food storage containers.) Anyone living or visiting grizzly country must accept the costs and risk of grizzlies on the landscape. Depending on a recreationists experience and comfort level their access to quality recreational and wilderness activities could be limited by their choice not to recreate in areas occupied by grizzlies. Grizzly bears are large and potentially dangerous animals. By their presence, they pose some risk to the human inhabitants of the state and to visitors. Current information shows that this risk is very real, but at surprisingly low levels. When one considers all of the people and activities that currently occur in grizzly habitat, and how few injuries or deaths happen, it demonstrates this low level of risk. In addition, the programs outlined in this plan should allow for management and further minimization of the risks of living with grizzlies knowing that no environment is totally risk free for people.

Impacts to local and state tax base and tax revenues are both positive and negative. Wildlife viewing and appreciation can bring visitors to Montana but wildlife can also decrease profitability and tolerance of local agricultural businesses, particularly livestock operations. While livestock losses have been minimal in southwest Montana, averaging 5 depredations per year from 2002-2012, the number of losses could increase as bears move farther outside of the Recovery Zone into private agricultural lands.

Since there are overlapping agency jurisdictions (USFWS, USFS, NPS, DNRC, and BLM) and associated agency plans for resource and wildlife management within Montana, there are some cumulative impacts to grizzlies and the humans that live, work, and recreate in southwest Montana. With the implementation of this proposed grizzly bear management plan, ongoing management of the species will continue to seek a balance between the habitat needs of grizzlies and humans in the area. An expansion of the grizzly bear population in the future may impact future land management, agency travel plans or agency projects. Furthermore, a great presence of grizzlies in an area may impact land use decisions by county officials. What these changes may be in the future is difficult to predict at this time, however past management changes have reflected the changing federal status of grizzlies. Any future changes to state or federal resource plans would be subjected to public review through either MEPA or NEPA processes.

The proposed southwestern management plan's strategies are designed to work in harmony with the department's grizzly bear management plan for western Montana as grizzlies continue to move across western Montana. This will ensure consistency of acceptable actions for the management of the species across its range.

FWP's proposed management plan for grizzlies in southwestern Montana is just one of the many resource management plans that will assist in the protection of grizzly bear habitat and conservation of the species in the coming years.

FWP does not believe there are secondary or cumulative impacts of grizzly bear management to any of the following: water quality, quantity, and distribution; geology; soil quality, stability, and moisture; vegetation cover, quantity and quality; aesthetics; air quality; unique, endangered, fragile, or limited environmental resources; historical and archaeological sites; demands on environmental resources of land, water, air and energy; social structures and mores; cultural uniqueness and diversity; quantity and distribution of employment; distribution and density of

population and housing; demands for government services; industrial and commercial activity; locally adopted environmental plans and goals; and other appropriate social and economic circumstances.

Preparers, Agencies, or Individuals Who were Consulted or Contributed Towards Preparation of the Final EIS and the Public Involvement Process

FWP's Lauri Hanauska-Brown and Kevin Frey were the primary authors of this document with oversight by Howard Burt, Rebecca Cooper, Quentin Kujala, Ken McDonald, Pat Flowers, and Ray Mule. Many additional FWP staff persons reviewed and edited drafts of this document including Shawn Stewart, Justin Gude, Jeremiah Smith, and Stephanie Adams. FWP's Adam Messer, Dan Tyers with the USFS, Mark Haroldson and Frank van Manen with the IGBST, Dan Bjornlie with Wyoming Game and Fish, and Chris Servheen and Rebecca Shoemaker with the USFWS all provided editing and technical assistance throughout document preparation.

FWP received an invitation by members of the Center for Biological Diversity, Defenders of Wildlife, Endangered Species Coalition, Greater Yellowstone Coalition, Natural Resources Defense Council, and Sierra Club to meet and discuss formulation of this plan in March 2013. FWP honored this invitation and listened to the groups suggestions.

GLOSSARY

APHIS – Animal Plant and Health Inspection Service
ARM - Administrative Rules of Montana
BLM - Bureau of Land Management
BMU - Bear Management Unit
CEM - Cumulative Effects Model
CMA - Conservation Management Area
COY - Cubs of the Year
CS - Conservation Strategy
DLP - Defense of Life or Property
DNA - Deoxyribonucleic acid -- the molecule that encodes genetic information
DNRC - Department of Natural Resources and Conservation
DOT - Department of Transportation
EIS - Environmental Impact Statement
ESA - Endangered Species Act
FCOY - Females with Cubs of the Year
FWP - Montana Fish, Wildlife & Parks
GYA - Greater Yellowstone Area
IGBC - Interagency Grizzly Bear Committee
IGBST - Interagency Grizzly Bear Study Team
MCA - Montana Codes Annotated
MEPA - Montana Environmental Policy Act
MOA - Memorandum of Agreement
MOU - Memorandum of Understanding
NEPA - National Environmental Policy Act
PCA - Primary conservation area or the designated Recovery Zone plus a 10 mile buffer
PEIS - Programmatic Environmental Impact Statement
USFS - United States Forest Service
USFWS - United States Fish & Wildlife Service
WMA - Wildlife Management Area
WS – Wildlife Services
YNP - Yellowstone National Park

LITERATURE CITED

Bentz, B.J., J. Regniere, C.J. Fettig, E.M. Hansen, J.L. Hayes, J.A. Hicke, R.G. Kelsey, J.F. Negron, and S.J. Seybold. 2010. Climate change and bark beetles in the western United States and Canada: direct and indirect effects. Bioscience 60:602-613.

Bjornlie, D.D., D.J. Thompson, M.A. Haroldson, C.C. Schwartz, K.A. Gunther, S.L. Cain, D.B. Tyers, K.L. Frey, B.C. Aber. 2013. Methods to Estimate Distribution and Range Extent of Grizzly Bears in the Greater Yellowstone Ecosystem. Wildlife Society Bulletin, doi: 10.1002/wsb.368.

Blanchard, B., and R. Knight. 1990. Reactions of grizzly bears to wildfire in Yellowstone National Park, Wyoming. The Canadian Field Naturalist 104:592-594.

Cayan, D.R., S.A. Kammerdiener, M.D. Dettinger, J.M. Caprio, and D.H. Peterson. 2001. Changes in the onset of spring in the western United States. Bulletin of the American Meteorological Society 82:399-415.

Clevenger, T., J. Wierzchowaki, B. Hruszcz, and K. Gunson. 2002. GIS-generated, expert-based models for identifying wildlife habitat linkages and planning mitigation packages. Cons. Biol. 16:503-514.

Craighead, F.C., Jr., and J.J. Craighead. 1972. Grizzly bear prehibernation and denning activities as determined by radiotracking. Wildlife Monographs 32:1-35.

Duffy, P.B., R.W. Arritt, J. Coquard, W. Gutowski, J. Han, J. Iorio, J. Kim, L.-R. Leung, J. Roads, and E. Zeledon. 2006. Simulations of present and future climates in the western United States with four nested regional climate models. Journal of Climate 19:873-895.

Eberhardt, L.L. and R.R. Knight. 1996. How many grizzlies in Yellowstone? Journal of Wildlife Management 60: 416-421.

Fagre, D.B., D.L. Peterson, and A.E. Hessl. 2003. Taking the pulse of mountains: Ecosystem responses to climatic variability. Climatic Change 59:263-282.

Gunther, K.A., R. Shoemaker, K. Frey, M.A. Haroldson, S.L. Cain, and F.T. van Manen. In press. Grizzly bear foods in the Greater Yellowstone Ecosystem, 1891-2012. Ursus.

Gunther, K.A., R. Shoemaker, K. Frey, M.A. Haroldson, S.L. Cain, and F.T. van Manen. In review. Annotated List of Grizzly Bear Foods in the Greater Yellowstone Ecosystem, 1925–2012. Ursus.

Harris, R.B., G.C. White, C.C. Schwartz, and M.A. Haroldson. 2007. Population growth of Yellowstone grizzlies: uncertainty, correlation, and future monitoring. Ursus 18(2): 167-177.

Haroldson, M.A. 2008. Assessing trend and estimating population size from counts of unduplicated females. Pages 9-15 *in* C.C. Schwartz, M.A. Haroldson, and K. West, editors. Yellowstone grizzly bear investigations: annual report of the Interagency Grizzly Bear Study Team, 2007. Geological Survey, Bozeman, Montana, USA.

Haroldson, M.A., and K. Frey. 2008. Estimating sustainability of annual grizzly bear mortalities. Pages 24–27 *in* C.C. Schwartz, M.A. Haroldson, and K. West, editors. Yellowstone grizzly bear investigations: annual report of the Interagency Grizzly Bear Study Team, 2007. U.S. Geological Survey, Bozeman, Montana, USA.

Haroldson, M.A., M. Ternent, K. Gunther, and C.C. Schwartz. 2002. Grizzly bear denning chronology and movements in the Greater Yellowstone Ecosystem. Ursus 13:29-37.

Higgs, Megan D., William A. Link, Gary C. White, M.A. Haroldson, and D.D. Bjornlie. 2013. Insights Into the Latent Multinomial Model Through Mark-Resight Data on Female Grizzly Bears With Cubs-of-the-Year. Journal of Agricultural, Biological, and Environmental Statistics. doi: 10.1007/s13253-013-0148-8.

Interagency Grizzly Bear Committee. 1998. Task force report, Grizzly Bear/Motorized Access Management. 6 pp.

Interagency Grizzly Bear Study Team. 2006. Reassessing methods to estimate population and sustainable mortality limit for the Yellowstone grizzly bear workshop document supplement. U.S. Geological Survey, Northern Rocky Mountain Science Center, Bozeman, Montana, USA.

Interagency Grizzly Bear Study Team. 2009. Yellowstone grizzly bear mortality and conflict reduction report. Interagency Grizzly Bear Study Team, Northern Rocky Mountain Science Center, Montana State University, Bozeman, Montana. USA. 53 pp.

Interagency Grizzly Bear Study Team. 2012. Updating and evaluating approaches to estimate population size and sustainable mortality limits for grizzly bears in the Greater Yellowstone Ecosystem. U.S. Geological Survey, Northern Rocky Mountain Science Center, Bozeman, Montana, USA.

Kendall, K.C., J.B. Stetz, D.A. Roon, L.P. Waits, J.B. Boulanger, and D. Paetkau. 2008. Grizzly Bear Density in Glacier National Park, Montana. Journal of Wildlife Management . 72(8):1693-1705.

LeFranc, M.N., Jr., M.B. Moss, K.A. Patnode, and W.C. Sugg III, editors. 1987. Grizzly bear compendium. The National Wildlife Federation, Washington, D.C., USA.

Leung, L.R., Y. Qian, X. Bian, W.M. Washington, J. Han, and J.O. Roads. 2004. Mid-century ensemble regional climate change scenarios for the western United States. Climatic Change 62:75-113.

Mace, R., J.S. Waller, T. Manley, L.J. Lyon, and H. Zuuring. 1996. Relationships among grizzly bears, roads, and habitat in the Swan Mountains, Montana. Journal of Applied Ecology 33: 1305-1404.

McWethy, D. B., S.T. Gray, P.E. Higuera, J.S. Litell, G.T. Pederson, A.J. Ray, and C. Whitlock. 2010. Climate and terrestrial ecosystem change in the U.S. Rocky Mountains and Upper Columbia Basin: Historical and future perspectives for natural resource management. U.S. Department of the Interior, National Park Service Natural Resource Report NPS/GRYN/NRR–2010/260, Fort Collins, Colorado, USA.

Mincher, B.J. 2000. Issues affecting grizzly bear management in the Greater Yellowstone Ecosystem. 17 pp.

Montana Fish, Wildlife and Parks. 2011. Montana State Trails Plan. 186 pp. fwp.mt.gov/recreation/management/stateTrailsPlan.html.

Montana Fish, Wildlife and Parks. 2002. Grizzly bear management plan for southwestern Montana 2002-2012. Helena, Montana, USA.

Montana Fish, Wildlife and Parks. 2012. Fish and Wildlife Recommendations for Subdivision Development in Montana: A Working Document. Montana Fish, Wildlife & Parks, Helena, Montana. 174 pp.

Nitschke, C.R., and J.L. Innes. 2008. Climatic change and fire potential in south-central British Columbia, Canada. Global Change Biology 14:841-855.

Pederson, G.T., S.T. Gray, T. Ault, W. Marsh, D.B. Fagre, A.G. Bunn, C.A. Woodhouse, and L.J. Graumlich. 2011. Climatic controls on the snowmelt hydrology of the northern Rocky Mountains. Journal of Climate 24:1666-1687.

Proctor, M.F. 2003. Landscape use, dispersal, geneflow, and population fragmentation of grizzly bears (*Ursus arctos*) in southeast British Columbia, southwest Alberta, and the northwestern USA. Ph.D. Dissertation. University of Calgary.

Proctor, M.F., et al. 2012. Population Fragmentation and Inter-Ecosystem Movements of Grizzly Bears in Western Canada and the Northern United States. Wildlife Monographs. 180:1-46. doi: 10.1002/wmon.6.

Reynolds, P.E., H.V. Reynolds, and E.H. Follmann. 1986. Responses of grizzly bears to seismic surveys in northern Alaska. Pages 169-175 *in* Bears: their biology and management. Proceedings of the 6th International Conference on Bear Research and Management, Grand Canyon, AZ, USA.

Rodriguez, C., J. Naves, A. Fernandez-Gil, J.R. Obeso, and M. Delibes. 2007. Long-term trends in food habits of relict brown bear population in northern Spain: the influence of climate and local factors. Environmental Conservation 34:36-44.

Schwartz, C.C., M.A. Haroldson, K. Gunther, and D. Moody. 2002. Distribution of grizzly bears in the Greater Yellowstone Ecosystem, 1990-2000. Ursus 13:203-212.

Schwartz, C.C., S.D. Miller, and M.A. Haroldson. 2003. Grizzly/brown bear. Pages 556-586 *in* G. Feldhamer, B. Thompson, and J. Chapman, editors. Wild mammals of North America: biology, management, and conservation. Johns Hopkins University Press, Baltimore, Maryland, USA.

Schwartz, C.C., M.A. Haroldson, and S. Cherry. 2006. Reproductive performance of grizzly bears in the Greater Yellowstone Ecosystem, 1983-2002. Pages 18-24 *in* C.C. Schwartz, M.A. Harolson, G.C. White, R.B. Harris, S. Cherry, K.A. Keating, D. Moody, and C. Servheen, eds. Temporal, spatial, and environmental influences on the demographics of grizzly bears in the Greater Yellowstone Ecosystem. Wildlife Monographs 161.

Schwartz, C.C., M.A. Haroldson, S. Cherry, and K.A. Keating. 2008. Evaluation of rules to distinguish unique female grizzly bears with cubs in Yellowstone. Journal of Wildlife Management 72(2):543–554.

Schwartz C.C., P.H. Gude, L. Landenburger, M.A. Haroldson, S. Podruzny. 2012. Impacts of rural development on Yellowstone wildlife: linking grizzly bear (*Ursus arctos*) demographics with demographics with projected residential growth. Wildlife Biology 18(3):246-263.

Servheen, C., J. Waller, and P. Sandstrom. 2003. Identification and management of linkage zones for grizzly bears between the large blocks of public land in the Northern Rocky Mountains. U.S. Fish and Wildlife Service, University of Montana, Missoula. 87 pp.

Servheen, C. and M. Cross. 2010. Climate change impacts on grizzly bears and wolverines in Northern U.S. and Transboundary Rockies: Strategies for Conservation. Report on workshop held Sept. 13-15, 2010 in Fernie, British Columbia. 23 pp.

Stewart, I.T., D.R. Cayan, and M.D. Dettinger. 2004. Changes in snowmelt runoff timing in western North America under a 'business as usual' climate change scenario. Climatic Change 62:217-232.

U.S. Fish and Wildlife Service. 2002. Biological Opinion on greater Yellowstone ecosystem snowmobile use consultation. Helena, MT, USA.

U.S. Fish and Wildlife Service. 2003. Draft bear recovery plan. Missoula, Montana. 181 pp.

U.S. Fish and Wildlife Service. 2007. Grizzly Bear Recovery Plan Supplement: Revised demographic criteria for the Yellowstone Ecosystem. 72 FR 11377. Available at http://www.fws.gov/endangered/recovery/index.html.

U.S. Fish and Wildlife Service. *In Draft*. Supplement to the Demographic Recovery Criteria of the Greater Yellowstone Grizzly Bear in *draft* to be published in 2014,)

Van Daele, L.J., V.G. Barnes, and R.B. Smith. 1990. Denning characteristics of brown bears on Kodiak Island, Alaska. Pages 257-267 *in* Bears: their biology and management. Proceedings of the 8th International Conference on Bear Research and Management, Victoria, British Columbia, Canada.

Walther, G.R. 2003. Plants in a warmer world. Perspectives in Plant Ecology, Evolution and Systematics 6:169-185.

Walther, G.R., S. Berger, and M.T. Sykes. 2005. An ecological 'footprint' of climate change. Proceedings of the Royal Society B 272:1427-1432.

Walther, G.R., E. Post, P. Convey, A. Menzel, C. Parmesan, T.J.C. Beebee, J.M. Fromentin, O. Hoegh-Guldberg, and F. Bairlein. 2002. Ecological responses to recent climate change. Nature 416:389-395.

APPENDICES

APPENDIX A: Memorandum of Understanding between Montana Fish, Wildlife and Parks and US Department of Agriculture Animal and Plant Health Inspection Service Wildlife Services regarding cooperative wildlife damage control program for grizzly bears, gray wolves, black bears, and mountain lions in the state of Montana

APPENDIX B: Bee Bear Policy Guidelines for Black Bears

APPENDIX C: Memorandum of Agreement for cooperative law enforcement between the US Fish and Wildlife Service and Montana Fish, Wildlife and Parks

APPENDIX D: Summary of Public Comments

See FWP webpage for Appendices:
http://fwp.mt.gov/fishAndWildlife/management/grizzlyBear/grizEis.html

Appendix D

Montana, Fish, Wildlife and Parks Grizzly Bear Management Plan for Southwestern Montana Draft Programmatic Environmental Impact Statement

Summary of Public Comments

The draft Grizzly Bear Management Plan for Southwestern Montana was released for public comment on August 15, 2013. Montana Fish, Wildlife and Parks solicited public comment through three open houses held August 26, 27, and 28 in Bozeman, Helena and Billings respectively. Thirteen individuals attended the open houses. Written comment was accepted. The original comment period of 30 days was extended twice, ultimately resulting in a comment period of 57 days, ending October 11. Over 3,000 written comments were received from across the country. Of those 3,000 comments fewer than 350 were from Montana citizens. 322 of those comments came in via the Survey Monkey web tool.

Comments were used to improve the final plan. Where noted in the following, language has been edited in the draft plan to answer direct questions, provide emphasis, correct minor errors, or clarify confusing statements. Additional maps and figures have been added to the final plan in attempts to clarify and expand discussions where appropriate.

Major comments and issues along with our response are as follows (all page numbers are page numbers from the final plan):

Population Monitoring

Comment: The current population size is too small for genetic diversity because it is an island population.

We disagree. The GYA grizzly population is of sufficient size and adequate genetic diversity to be sustainable. Furthermore, the US Fish and Wildlife Service believes the population is vital enough to be delisted and proposed such in March 2007. Montana District Judge Molloy later stated in the 2009 district court finding that 'The Service has provided reasonable explanation for its conclusions about genetic diversity and population size, and the concerns about long-term genetic diversity do not warrant a continued threatened listing for the Yellowstone DPS.' (CV 07-134-M-DWM, Greater Yellowstone Coalition, Inc. vs USFWS et al.)

Comment: Some analysis using new methods to estimate population size and trend indicate the population is actually declining.

FWP supports science by the Interagency Grizzly Bear Study Team to include being an active member of team discussions and in many cases, co-authors on publications. The current methods being used by the study team are peer reviewed and rigorous (IGBST 2012). There is no evidence to date of a population decline however there is evidence of a slowing rate of population increase. FWP, along with the study team will continue to monitor the population and the trend based on the best available science.

Comment: Mortality limits are being regularly exceeded ecosystem wide.
While mortality limits have been exceeded in a number of years as shown on Table 3 in the draft plan, the limits have not been exceeded to the extent or frequency to cause the population to decline. In fact, new information from the Interagency Grizzly Bear Study Team shows the number of males in the population has increased resulting in a higher number of male mortalities than allowed under the old limits. New male mortality limits, as described in the plan, are more aligned with the actual makeup of the population. Management of mortalities into the future within southwestern Montana will continue to consider mortality limits based on the best available science.

Comment: This plan should not be approved until results of the million dollar hair snare study to estimate population size are summarized.
Hair snare studies have only been conducted in the Northern Continental Divide Ecosystem and the Cabinet-Yaak Ecosystem. A systematic hair snare study has not been conducted within the GYA because other methods have been sufficient to establish baseline population estimates. Furthermore, the information gathered from a hair snare study gives a population count for only one point in time. Monitoring of grizzly bears through existing methods in the GYA will provide adequate measures of population density, occupied range, reproduction, and survival as it has for 30 years.

Comment: We don't need more grizzly bears in Sanders County or other counties in northwest Montana.
This plan covers the seven county area of southwest MT depicted in Figure 2. This plan does not cover management actions or conservation planning for the 17 counties covered under the Grizzly Bear Management Plan for Western Montana (2006-2016) which include Lincoln, Flathead, Glacier, Pondera, Teton, Lewis and Clark, Powell, Missoula, Lake, Sanders, Mineral, Ravalli, Granite, Deer Lodge, Silver Bow, Jefferson, and Broadwater counties. The management plan for western Montana can be accessed at http://fwp.mt.gov/fishAndWildlife/management/grizzlyBear/managementPlan.html.

Comment: FWP needs to manage predators to allow for maximum ungulate hunting opportunity.
As described in Montana Code Annotated (MCA) 87-5-302 (1) The commission may: (a) pursuant to subsection (2), regulate the hunting of grizzly bears, ….2) When special grizzly bear licenses are to be issued pursuant to 87-2-701, the commission shall establish hunting season quotas for grizzly bears that will prevent the population of grizzly bears from decreasing below sustainable levels and with the intent to meet population objectives for elk, deer, and antelope. The Commission is tasked with following this policy and determining the appropriate balance between grizzly bear harvest and ungulate population sustainability. FWP conducts annual surveys for big game, as well as grizzly bears, to provide the Commission with current and relevant data so that sound species management and hunting decisions can be made.

Comment: The plan is built on a philosophy that predation by large carnivores drives big game populations.
This plan is built on the management and conservation needs of one species within the management and conservation needs of a host of other wildlife species FWP is mandated to manage. While the FW Commission is tasked with following the policy to balance grizzly bear harvest and ungulate population sustainability, it is also tasked to honor the goals to manage for a recovered grizzly bear population.

Comment: Why can't bears be moved between the GYA and Northern Continental Divide Ecosystem systems to ensure genetic health of the populations rather than imposing land use restrictions on habitats between the two systems to encourage natural dispersal of bears?
FWP has no concerns pertaining to the genetic viability of the GYA grizzly bear population at this time (Miller and Waits 2003), so there has been no need to move bears between ecosystems to infuse genetic material. Promoting an avenue for natural dispersal, through habitat connection is a less intrusive approach than forced translocations. No new land use restrictions are being proposed within this plan. With documentation of bears moving south from Northern Continental Divide Ecosystem and bears from the GYA moving slowly west and north, it is expected that there will be genetic interchange between the populations at some point.

Boyce et al. (2001) demonstrated that in light of the uncertainty surrounding factors out of our control (e.g., environmental variability or changes in food sources due to changing climatic conditions) natural connection between wildlife populations is best for healthy populations.

Habitat

Comment: The plan area too closely aligns with the proposed wilderness areas in the Forest and Recreation bill of Senator Tester.

Any similarity between the conservation boundaries described within this plan and the wilderness areas identified in Senator Tester's bill is merely coincidental. The proposed updates to the FWP grizzly bear management plan for southwest Montana are in no way related to the Forest and Recreation legislation. These areas and boundaries depicted in this plan were developed through efforts of the Interagency Grizzly Bear Study Team based on grizzly bear habitat use and population monitoring. FWP does not take a position on increased wilderness area within this document as that would be outside the scope and authority of a species management plan.

Comment: Lines on the maps within this plan will limit land uses in the future. More restrictive policies on public land use are unacceptable.

The land management agencies within the seven county area of this plan have already met the minimum requirements for food storage and road densities as described within the Conservation Strategy. The Conservation Strategy is the guiding document for federal land management agency decisions relative to grizzly bear habitat management.

FWP does not have jurisdiction over road densities or area closures on most public land but is committed to continued multiple use of the landscape; 'FWP views fish and wildlife habitat on public land, as valuable property that preferably remains open to hunters, anglers, and other public users. Accessibility to public lands will be balanced with the year-round requirements of fish and wildlife, while maintaining a functioning road system. By implementing this program, FWP can maintain grizzly bears while still providing for other appropriate uses' (page 35).

FWP has no jurisdiction over private lands (language has been added to this effect on page 37) but is committed to working with private landowners as FWP acknowledges 'Private lands are vital to the areas's agricultural economy and provide important habitat for a variety of fish and wildlife' (page 37). Finally, 'It is FWP's opinion that expanding the current level of habitat restriction and programs to bear occupied areas outside the Primary Conservation Area would not generate social acceptance for the bear and its further recovery.' (page 39).

Comment: State clearly how you will ensure suitable and functional habitat connectivity essential for bear recovery and survival.

The current minimum requirements for food storage and the limits on mortality have proven adequate for restoration of the grizzly population to date and are expected to do so into the future. In addition, a number of already protected areas can be found throughout southwest Montana that provide suitable habitat for dispersing bears (see new Figure 3). For these reasons FWP believes suitable and functional habitat is currently available for bear recovery and survival.

Comment: FWP needs to spell out a process for working collaboratively with federal land managers to assure the maintenance of core grizzly habitat and the restoration of degraded habitats.

The collaborative efforts to manage grizzly bears and their habitat among the federal land management agencies, state management agencies, and national park service are described in the Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area (2007). FWP is a signatory to that document and will continue to be a participating member of the multi agency coordination body, currently known as the Yellowstone Ecosystem Subcommittee that meets twice a year, even after delisting.

Comment: Would like to see the park develop some artificial grizzly bear feeding programs during periods of low food.
The management of wildlife within Yellowstone National Park is beyond the jurisdiction of FWP. Regardless, wildlife managers generally avoid supplemental feeding of wildlife. Bears in particular habituate quickly to unnatural or illegal supplemental feeding programs resulting in food conditioned, often human habituated, and potentially dangerous bears. Additionally, artificial feeding can lead to an artificial population that is not regulated by the natural factors that all species must deal with.

Comment: Climate change should not be included nor addressed in this plan.
While the impacts of a changing climate may not negatively impact grizzlies due to their omnivorous nature, the potential effects of a changing climate are a real concern for the health of fish and wildlife populations overall. It is unknown what the long term result will be with climate change; while some food sources may lessen, others (e.g. berries) may increase. Not mentioning some potential impact to the habitat of the grizzly bear due to climate change would be irresponsible of the wildlife management agency mandated to manage all wildlife in the state.

In fact, the 9th District Circuit Court finding against the US Fish and Wildlife Service on the original GYA grizzly bear delisting rule focused partly on the failure by the Service to adequately consider the effects of declines in whitebark pine related to climate change. Consideration of all relevant factors must occur in these types of environmental assessments, to include this type of plan, before the US Fish and Wildlife Service or the courts will accept this plan as adequate for delisting.

Comment: The state needs a long term research plan for addressing the issue of climate change and the potential impact of climate change on bear distribution.
There are currently no resources within FWP budgets to develop a long term research plan of this sort but the following statement in the final plan does commit FWP to monitoring and mitigating negative changes when possible, 'Monitor changes to habitat or bear behavior suspected to be climate change related and mitigate when possible' (page 35). FWP in cooperation with the Interagency Grizzly Bear Study Team monitors all scientific publications to ensure relevant, new information is considered when making management decisions.

Future Distribution

Comment: There is no need or justification for an expansion of the grizzly bear population.
FWP is following the recommendations of the Governor's Roundtable to 'Support expansion of grizzly bears beyond the Primary Conservation Area in areas that are biologically suitable and socially acceptable.' There is no intent to force grizzlies to expand beyond what they are naturally doing.

There are no areas beyond the Demographic Monitoring Area where grizzly bear presence is required nor are there lines on the map that grizzly bears cannot disperse beyond. The creation of such a line would not be viewed by the US Fish and Wildlife Service as adequate for management nor would it be acceptable to many who agree with the Governor's Roundtable recommendation. Grizzlies are wide ranging species that have the ability to move long distances. Natural expansion will continue to occur as it has in the past and FWP will do its best to manage conflicts to include lethal removal of grizzlies in some conflict situations.

Comment: An ever expanding grizzly bear population amounts to a taking of my private property.
Similar to the natural movements and dynamic populations of other species such as deer and elk, natural grizzly bear expansion onto private lands does not constitute a taking of private property. The Montana Supreme Court affirmed in Sackman v. State Fish & Game Commission that wildlife is a natural part of the landscape, and that the rights and privileges of private property ownership also come with the challenge and benefits associated with having wildlife on the landscape. The court stated, "Wild game existed here long before the coming of man. One who acquires property in Montana does so with the notice and knowledge of the presence of wild game."

Comment: Define biologically suitable and socially acceptable habitat. Remove grizzly bears found outside the socially acceptable line as they do in Wyoming.
The biological suitability of a particular habitat is fluid through time. Many areas where whitebark pine stands are no longer productive may be less suitable habitat for grizzlies now than in the past. Habitat once occupied by domestic sheep may become suitable when sheep are no longer present. The same applies to the social acceptability of an area. As land ownership and/or land use practices change over time, so too can the social acceptance of grizzlies in the area. FWP cannot speak for groups of individuals such as all private landowners and thus cannot make statements such as 'grizzly presence on any private lands is socially unacceptable.' Social acceptance of any species must be determined by individuals. In many areas of southwest Montana to include private lands, grizzly presence is acceptable when appropriate conflict prevention and response programs are in place. Note: Wyoming is not mandated to remove bears found outside of any line, they respond to bear issues as FWP does, i.e. on a case by case basis. A grizzly bear found in an area where it provides little biologic value and has a high probability of conflict may or may not be removed depending on the circumstances.

Comment: FWP is in violation of MCA 87-5-301 by not proactively moving grizzlies to control grizzly distribution and prevent conflicts.
FWP disagrees. FWP bear specialists have moved grizzly bears out of areas where human safety concerns were identified or the current situation pointed to an imminent conflict. For example, a grizzly bear was captured and removed from the population in West Yellowstone due to concerns of the bear's old age, its propensity to be involved in conflicts due to its condition, and its proximity to a school. During the last 20 years throughout Montana, multiple bears have been captured and relocated as a preventative measure to avoid potential conflicts. Proactively moving wildlife to limit natural expansion and population distribution is inconsistent with FWP's goal to protect, perpetuate, and enhance wildlife resources for public benefit now and in the future. Proactively relocating a grizzly that has wandered far from the core recovery area and is clearly outside of biologically suitable habitat where conflict is

imminent is an action FWP would undertake under the auspices of conflict prevention. Furthermore, resources are simply not available to capture and relocate any grizzly that wanders far from the core area but is not involved in any grizzly/human conflict. Very few people are even aware of the presence of grizzly bears that remain out of conflict.

FWP believes any approach to 'limit distribution' is logistically impossible and biologically undesirable. In order to maintain population resilience to habitat changes, social tolerance and other factors, bears need to occupy a broad landscape. Grizzly bears cannot be confined to designated zones because there are not barriers to contain them and it is impossible to know the location of every animal all the time. Drawing lines for a population to stay within has been demonstrated to complicate population management, e.g., Yellowstone National Park bison. Furthermore, FWP believes drawing acceptable occupancy lines on a map violates the intent of the Governor's roundtable recommendation: 'Support expansion of grizzly bears beyond the PCA in areas that are biologically suitable and socially acceptable.' Declaring a 'no grizzly bear occupancy' area of any kind would likely be found inadequate for delisting by both the US Fish and Wildlife Service and the courts.

In response to concerns that we are in violation of MCA we have added the following statement to the Human Safety section (page 49): 'Consider preemptively relocating a grizzly bear to avoid conflicts when there is a demonstrated threat to human safety'.

Comment: Identify specific linkage zones for grizzlies between the different ecosystems i.e., Greater Yellowstone Area and, Northern Continental Divide Ecosystem.
As stated in the Final Rule (72 CFR 14866) and upheld by the Courts, connectivity is not mandatory to ensure genetic isolation will not threaten the GYA grizzly bear population. That being said, allowing the opportunity for animals to move into or out of the GYA is desirable because it increases the ability of the population to respond to changes in environmental conditions and/or other factors that we have no authority or control over such as private land development. We do expect bears to gradually reoccupy habitat between the GYA and the Northern Continental Divide Ecosystem in the Highland and Tobacco Root mountain ranges as bear captures, mortalities, and observations have been documented in the Deer Lodge/ north Butte areas over the past ten years. Current evidence indicates grizzly bears in these areas have been bears genetically linked to the Northern Continental Divide Ecosystem but GYA grizzly bears are expected to eventually move north into these areas as well. To allow the opportunity for non-nuisance grizzly bears to reoccupy these mountain ranges at low densities, grizzly bears will not be captured and removed unless there are conflicts or demonstrated threats to human safety. Management emphasis will be on conflict prevention and response. Attractant storage rules are in place on National Forest lands. Additional habitat protections are not necessary for recovery.

Furthermore, the identification of specific linkage zones is complicated by ever changing habitat conditions, human presence and land use. Past radio collared grizzly movement has pointed to specific areas that are biologically suitable for grizzly presence but individual bears demonstrate diverse preference for habitat and different tolerances for human presence. For these reasons and for simply not wanting to draw circles on a map potentially highlighting private property FWP does not plan to identify specific linkage zones. Rather, FWP will pursue opportunities for habitat conservation or restoration in areas between the GYA and Northern Continental Divide Ecosystem systems as they arise. Grizzly bears will naturally explore and utilize habitats that are biologically suitable. Overtime, habitat use by individual bears will point to the best linkage areas.

Comment: Concern was expressed over the specific mention of the Tobacco Root and Highland Mountains as areas within which presence of grizzly bears would assist in maintaining genetic linkage between the GYA and Northern Continental Divide Ecosystem populations.
While this statement is true, FWP has no intention to artificially increase populations in the area through grizzly bear relocation. The following language has been added to the final version of the plan to clarify mention of these two specific mountain ranges (page 44): 'Management of non-conflict grizzly bears in areas between the Northern Continental Divide Ecosystem management area and the demographic monitoring area of the GYA (see new Figure 7) will be compatible with maintaining some grizzly occupancy. Maintaining presence of non-conflict grizzly bears in areas such as the Tobacco Root and Highland Mountains would likely facilitate periodic grizzly movements between the Northern Continental Divide Ecosystem and GYA.' We do expect bears to gradually reoccupy habitat between the GYA and the Northern Continental Divide Ecosystem in the Highland and Tobacco Root mountain ranges as bear captures, mortalities, and observations have been documented in the Deer Lodge/ north Butte areas over the past ten years. Conflict management and removal of problem grizzly bears will remain a priority within these areas like in the rest of Montana. Human safety will always be prioritized over facilitation of grizzly movement for genetic connection between the ecosystems.'

Comment: Many of the areas proposed in the plan are not suitable grizzly bear habitat. These mountains contain significant deeded private property, are covered in roads, used by recreationists, loggers, etc. and have active cattle allotments.
No specific areas have been 'proposed' for grizzly bear reintroduction within this plan. Grizzly bears will however be allowed to occupy biologically suitable and socially acceptable habitats through natural expansion. Grizzly bears are opportunistic omnivores with very flexible habitat requirements. They currently occupy a wide range of habitats throughout the GYA with roads, private land, people, and livestock. FWP works with land management agencies, private landowners, ranchers, and recreationists to prevent conflicts when possible and resolve conflicts when they do occur. Many Montana mountain ranges do contain suitable habitat, but due to high human activity and presence it is unclear if grizzly bears will be able to or even desire to utilize these habitats.

Comment: FWP should not delineate new core areas as suggested in bullet 11 of the habitat section that states 'Work with local community groups to identify and promote habitat characteristics that benefit bears such as maintaining core areas.'
FWP has no intention of delineating new core areas for grizzlies within southwest Montana. FWP does intend to continue working with local community groups to identify and promote habitat characteristics that benefit bears such as neighborhoods free of accessible garbage that can ultimately result in food conditioned bears, property damage and human safety concerns. The text suggesting maintenance or even an increase of core areas has been deleted from this bullet point.

Nuisance Bears

Comment: FWP should have a list of relocation sites prepared in advance of needing a site, that is approved by local communities.

FWP currently works from a list of public land sites that have been used historically for grizzly relocations and have been preapproved by the land management agency. All relocations are conducted in conjunction with the US Fish and Wildlife Service and with approval of the involved land management agency. No site is used if there is current high levels of public use or human activity or if the risk of continued conflict is high. Relocation sites are chosen to minimize the chance of repeat conflicts so the particular type of conflict is important in the consideration of the relocation site. No relocations occur or would occur on private land without prior landowner permission. There has been only one relocation of a grizzly bear to private land in the past 20 years.

Comment: Collect specific location information on all grizzly bear mortalities in addition to information on timing and cause as stated in bullet 3 in the Population Monitoring section 'Monitor bear mortalities including timing and causes and gather survivorship data in cooperation with the Interagency Grizzly Bear Study Team.'

Information on the location of all grizzly mortalities is collected and language has been added in several places throughout the final document to reflect the importance of location information. All bear mortalities are investigated and annually reported through FWP and the Interagency Grizzly Bear Study Team. Additionally, there is a current mortality data base on the study team website and grizzly bear management removals are reported on the FWP website.

Comment: The State should continue to participate in local working groups that work to reduce grizzly/human conflicts and use data from past work to improve these efforts.

FWP agrees. Throughout the final document are statements demonstrating FWPs commitment to work with local communities and NGO groups working to reduce grizzly/human conflicts such as; 1) 'continue to work with *city and* (added) county governments on requirement of bear-resistant garbage containers for homeowners in bear country' (page 50), 2) 'work with private organizations, wildlife advocacy groups and other interested parties to promote 'living in bear country' messages including safety tips for recreating in bear habitat and the utility and proper use of bear spray' (page 65), 3) 'encourage interest groups to work together with FWP to minimize problems and increase tolerance for bears' (page 53). The following language was added to clarify intent to cooperatively work on preventing livestock conflict (page 52): 'FWP anticipates continued partnership with outside groups offering technical assistance and materials to private landowners in order to prevent livestock loss.'

Lessons from past efforts of working with local communities and NGO groups are considered when conducting new efforts. It is beneficial to have local communities support when conducting efforts to increase public awareness/safety and reduce conflicts, potential human injuries and bear mortalities. An example of this is the sanitation effort implemented by FWP through US Fish and Wildlife Service funding in the Gardiner area. A local community group was formed and general support has been gained. The placement of over 200 bear-resistant containers in the area has greatly reduced garbage associated residential conflicts.

Comment: This plan should articulate specific preventative actions FWP will take to reduce grizzly/human conflicts. FWP should continue to work with outside partners on prevention efforts.
While it is difficult to list specific preventative actions in specific locations FWP does engage routinely in the following; 1) press releases prior to big game seasons reminding hunters of grizzly presence, 2) hunter education course lessons specific to hunting in grizzly country and the differences between grizzlies and black bears, 3) distribution of 'living/recreating/hunting in bear country' education materials to appropriate user groups, 4) cooperative work with counties and cities to obtain and place bear resistant garbage receptacles in areas of potential conflict and bear-proofing commercial garbage collection sites, and 5) use of aversive techniques (e.g. electric fencing) to alleviate or prevent conflicts, while increasing public safety and reducing bear mortalities.

FWP works with agencies of the Yellowstone Ecosystem Subcommittee to release information throughout the ecosystem particularly in poor food years when conflicts over unnatural foods could be high.

Periodic review of the causes of conflict and human-caused mortality such as the 2009 Yellowstone Mortality and Conflicts Reduction Report by the Interagency Grizzly Bear Study Team ensures the causes of conflict and grizzly mortalities are being addressed with the most up to date management actions. This report specifically made 21 recommendations and implementation suggestions to reduce hunter-conflict related mortalities; 4 recommendations to reduce mistaken identification mortalities, and 8 recommendations to reduce mortality from other causes. FWP was involved in the mortality review in 2004 and in 2009. FWP has put extensive effort into reducing unnecessary bear mortalities and reducing grizzly/human conflicts. The Montana portion of the GYA has been very consistent in the number of annual grizzly bear mortalities for over 20 years. There is always annual variation in total mortalities, but the average has remained four mortalities per year over the past 21 years. Additionally, the average rate has not changed from the period of 1991-2001 to the period of 2002-2012. This is very significant considering the increase in the overall bear population, bear distribution and human use of the landscape. Montana has kept bear mortalities as low as could be expected and it would be naïve to believe that there will be no bear mortalities from human or natural causes.

Comment: FWP needs to run a detailed analysis on conflict data in order to prioritize conflict prevention efforts.
FWP regularly reviews information relative to conflicts in attempts to identify hot spots, human activities contributing to the conflicts, and appropriate preventative actions. Annual data collection by FWP and the Interagency Grizzly Bear Study Team ultimately results in a spatial, temporal and cause specific look at conflicts. Preventative actions are prioritized based on this review as well as population expansion information.

Periodic review of the causes of conflict and human-caused mortality such as the 2009 Yellowstone Mortality and Conflicts Reduction Report by the Interagency Grizzly Bear Study Team ensures the causes of conflict and grizzly mortalities are being addressed with the most up to date management actions.

Comment: Bears and humans do not mix. The danger to humans is too great. The plan should include more data on human injuries and mortalities.
Since completion of the 2002 plan there have been 22 human injuries and one human death from grizzly/human interactions in the Montana portion of the GYA. Three additional incidents involved a bear making physical contact with a person, but no injuries were received. This is an average of two human injuries per year in MT's portion of the GYA, from 2002 thru 2012. During the previous 11 year period (1991–2001), an average of one person per year was injured. During 1993, 1998, 1999, 2005 and 2006 no human injuries were reported or investigated. Of the people actually injured during a grizzly bear(s) encounter from 2002 thru 2012, five were recreationally hiking, three were recreationally camping/sleeping during nighttime hours, one was mountain biking, six were archery hunting, six were rifle hunting and one was severely injured from being shot by his hunting partner. Nearly all (19) injury incidences involved surprise encounters with female bears and cubs. A wide array of situations precipitated these events and this is why it is so difficult to predict or eliminate these chance encounters. Some individuals had been unwisely tracking the bear(s), some encountered bears at a food source, some were either rapidly or quietly moving, and some were scent/visually camouflaged while hunting.

Concern was raised by some that FWP does not have all of the information on human injuries caused by grizzly bears. While we do not believe this is true, we can only report on the number of incidents reported to us. To FWP's knowledge all grizzly bear caused human injuries have been reported and investigated. This information is annually reported through the Interagency Grizzly Bear Study Team yearly reports and covered by local and sometimes national media. (The above information has been added to the final document.)

Comment: Problem bears need to be dispatched period. Bears that cause problems should never be relocated.
Since being listed as a threatened species and under the US Fish and Wildlife Service jurisdiction, we have been obligated under the Recovery Plan for the Yellowstone grizzly bear to follow guidelines regarding the relocation or removal of nuisance bears. In the entire GYA, all conflict situations are considered on a case by case basis. Records indicate some individual conflict bears remain out of trouble after being relocated to an area without the stimulating conflict factor, e.g. available human garbage. Regardless, FWP always considers the severity of the conflict, the circumstances leading to the conflict, and the potential for repeat offense by the conflict bear when making decisions on conflict resolution. Again, throughout the GYA, depending on the conflict type, age/sex of bear(s) and location, some bears are candidates for relocation and some are not. Relocation of problem bears has become more challenging as the density of bears within the ecosystem has increased. FWP does not move conflict bears to areas outside of currently occupied habitat. Conflict bears that cannot be relocated due to the severity of the conflict, history of the bear, or lack of a suitable relocation site are euthanized or placed in zoos.

Comment: Problem bears should be driven off using non-lethal methods such as bear dogs rather than lethal methods.
In the earlier days of grizzly bear recovery, non-lethal solutions to include the use of bear dogs to address conflict situations were preferred. However, as the population has recovered some lethal removal has proven necessary. This is particularly true in situations when non-lethal removal measures have been unsuccessful or the severity of the conflict has been such that lethal removal seemed most prudent, e.g. cases involving human injury or death, repetitive property damage or history of chronic conflicts. It does not improve social tolerance of bears to leave problem bears on the landscape. The population as a whole can suffer from the actions of a few conflict bears if they are not dealt with under appropriate management program guidelines.

Hunting

Comment: The basic parameters of a hunting season should be articulated in this plan to foster realistic expectations and strengthen the plan against litigation.
Parameters of a hunt such as season framework (i.e., quota or limited tags, open hunt areas), license fees, allowable non-resident take, etc. will be determined under Commission rule to include the standard public participation process.

Comment: How will grizzly bears be classified under state authority post de-listing?
MCA 87-2-101 defines all of the following as 'game animals'; deer, elk, moose, antelope, caribou, mountain sheep, mountain goat, mountain lion, bear, and wild buffalo.

Comment: The presence of grizzly bears in an area will result in the elimination of black bear hunting seasons.
FWP has had many years of experience in maintaining black bear seasons in occupied grizzly bear habitat from our management of grizzly bears in northwest Montana. MCA 87-1-217 states 'In managing large predators, the primary goals of the department, in order of listed priority, are to: (a) protect humans, livestock, and pets; (b) preserve and enhance the safety of the public during outdoor recreational and livelihood activities; and (c) preserve citizens' opportunities to hunt large game species.' While large game species within this statute are defined to include deer, elk, mountain sheep, moose, antelope, and mountain goats, FWP will not limit hunting opportunity for any huntable species, to include black bear, due to the presence of a listed species or a large predator. The dispersal of a grizzly bear or grizzly bears into a previously thought to be unoccupied area would not result in an automatic closure of any open black bear season. As grizzly bear populations have increased and expanded in the past 20 years, no black bear hunting seasons have been closed due to grizzly presence.

MCA 87-1-304 (4): The FW Commission may declare a closed season on any species of game, fish, game birds or fur-bearing animals threatened with undue depletion from any cause. The mere presence of grizzly bears in a zone with open black bear hunting would not be sufficient reason to close the season.

The concern over mistaken identity killings of grizzlies by black bear hunters has been addressed through extensive hunter education programs, increased enforcement, and implementation of the mandatory bear ID test, described on page 65. The 2002 US Fish and Wildlife Service Biological Opinion regarding incidental take of grizzly bears (e.g., mistaken identity or self defense killing by big game and black bear hunters) stated: 'The impact of the recent levels or reduced levels of mortality [from big game and black bear hunting programs] will not appreciably diminish the survival or recovery potential of the GYA grizzly populations.' Mortality from incidental take within the Montana portion of the GYA since that biological finding remains on average less than 1.5 bears per year as it was during the years previous to publication of the finding.

Comment: FWP needs to consider additively the impacts to grizzly populations of influences such as poor food years when setting hunting seasons.
The FW Commission relies on data from field biologists and managers when setting any take season regulations. In addition, management of a species to prevent an ESA listing, or in this case a re-listing is a requirement under Montana code. MCA 87-1-201 states 'The department shall implement programs that: (i) manage wildlife, fish, game, and nongame animals in a manner that prevents the need for listing under 87-5-107 (state list of endangered species) or under the federal Endangered Species Act.' The Commission must consider additive impacts to grizzlies from all influences in order to be in compliance with this code.

Comment: Hunting is not a substitute for management.
FWP believes hunting is just one tool among many for managing a species. The plan details many other management tools to include conflict resolution and population monitoring for informed decision making.

Comment: There is no data to show that the hunting of grizzlies improves the public's acceptance of this species, and no reason for FWP to declare hunting of grizzlies as a management goal.
Indeed, while there is no data proving that hunting improves tolerance of a species it is our experience that the allowance for public harvest does improve the social tolerance of the species by at least some segment of the public. The language within bullet #5 on page 61 has been changed to reflect 'tolerance by 'some' of the local publics may be increased'.

FWP recently conducted four separate surveys of resident Montanans regarding Montana's wolf hunt. Survey findings revealed that tolerance with wolves being on the Montana landscape was quite low. At the same time, there was considerable tolerance for the concept of wolf hunting in the state. Other survey findings revealed that public satisfaction with wolf management in the state significantly improved as a result of the 2011 Montana wolf hunt. FWP believes some increase in public satisfaction with grizzly management is important and may in fact result in some increase in social tolerance of the species. During actual on site conflict management, it is often a question and desire of home-owners, campers, ranchers and hunters/outfitters to someday be allowed to hunt grizzly bears.

It is within FWP's goals for grizzly bear management and the recommendations of the Governor's Roundtable to manage the grizzly as a game animal and provide some regulated harvest opportunity. These goals and recommendations were created through collaborative public process and reflect the wishes of the public. In addition, there is simply great public demand for a reinstated grizzly bear hunt that would serve to generate revenue, provide public harvest opportunity, and put the grizzly bear back into the group of species managed in part by sportsmen and women.

MCA 87-2-814 allows the 'FW Commission to issue one grizzly bear license each year through a competitive auction or lottery. (2) All proceeds remaining from the auction or lottery, whether conducted by the Commission or as otherwise authorized by the Commission, must be used by the department for the management of grizzly bears.' The revenue generated by the auction of a grizzly bear license may be needed to fund overall management programs (conflict response, population monitoring, illegal activity investigations, public awareness, sanitation projects, etc.).

Comment: Hunters and recreationists should be legally mandated to carry bear spray while in grizzly bear country.
FWP continues to believe that requiring all hunters or recreationists within the range of the grizzly bear to carry bear spray is an unrealistic and irresponsible approach. As stated on page 62 'FWP believes that there are significant liability and enforcement issues around a "mandatory" approach. ….In addition, carrying spray can give people a false sense of security and replace common sense and thoughtful backcountry practices. Approved bear spray is a valuable tool, but it cannot replace knowledge of bear behavior and appropriate human behavior in bear encounter situations…..FWP will continue to encourage hunters and recreationists to carry bear spray.' Finally, even if it was mandatory to carry bear spray, there is no current law that would require people to use it.

Comment: Insert language from the 2002 plan that stated 'there are areas that won't be hunted.'
The FW Commission will define the regulations for any grizzly bear hunt to include open and closed units (MCA 87-5-302). FWP would likely not institute hunting seasons in areas where bear density is low, harvest mortality is not sustainable and grizzly presence is desired. (This statement has been added to page 61).

Note: Specifics of a hunt such as season framework (i.e., quota or limited tags), license fees, allowable non-resident take, etc. will be determined under FW Commission rule to include the standard public participation process. Page 62 states 'The justification for any proposed hunt will be available for public scrutiny and comment prior to any decision or possible implementation.'

Comment: Insert language from the 2002 plan that stated 'hunting will not be proposed immediately after delisting.'
Page 61states 'Upon delisting, hunting will be proposed only after all components of the grizzly bear management program and Conservation Strategy are adequately implemented.' Upon implementation of those programs the FW Commission will determine the appropriate year to reinstate a grizzly bear hunt (MCA 87-5-302) however, FWP does believe the population is secure enough to sustain some amount of limited hunting upon delisting. Any hunting mortalities within the Demographic Monitoring Area will be counted as human-caused mortalities and counted against the annual sustainable mortality limits.

Comment: Hunting should not be allowed in areas important to connecting the GYA grizzly bears to the Northern Continental Divide Ecosystem grizzly bears.
Management of non-conflict grizzly bears in areas between the Northern Continental Divide Ecosystem management area and the Demographic Monitoring Area of the GYA will be compatible with maintaining some grizzly occupancy. Maintaining presence of non-conflict grizzly bears in areas such as the Tobacco Root and Highland Mountains would likely facilitate periodic grizzly movements between the Northern Continental Divide Ecosystem and GYA. Conflict management and removal of problem grizzly bears will however remain the priority within all areas of Montana. Human safety and the protection of private property will always be prioritized over facilitation of grizzly movement for genetic connection between the ecosystems.

FWP would likely not institute hunting seasons in areas where bear density is low and removal of bears would negatively impact the potential for movement of grizzlies between ecosystems when desired and acceptable. (This statement has been added to page 61.)

Enforcement

Comment: Why only 'limit' intentional feeding? Bullet 1 from the Enforcement section: 'Enforce statute that limits intentional feeding of both black and grizzly bears (MCA 87-6-216).'

Response: Language in the statute makes it unlawful to purposely or knowingly attract any bear with supplemental feed attractants. Wording within the 1st bullet under Enforcement has been changed to 'Enforce statute that criminalizes feeding…'

Education

Comment: The social tolerance of grizzly bears could be significantly improved through extensive, comprehensive, site specific and detailed education programs.

Response: FWP has increased education programs over the last decade to include hunter education course instruction, public service announcements, flyers and handouts, and most recently substantial effort by FWP staff of the Montana Wild center through a 'Bear Aware' program. We routinely work with partners to provide educational experiences and materials to groups of various backgrounds, ages, and experience in living with grizzly bears. Education and preventative efforts will continue to be a focus for FWP to include commitments such as the following found throughout the final plan: 1) Increase resource stewardship within grizzly bear habitat through recreationists education and regulations compliance (page 35), 2) Continue to provide information on safety in bear country in the big game hunting regulations, during hunter education courses, through mailings to license holders, and on trailhead informational signs (page 49) 3) Education programs for hunters, recreationists, and homeowners will hopefully limit the number of these incidents and the need to remove bears (page 51).

Costs and Funding

Comment: The costs for grizzly bear management as presented are unrealistic and far too low.
The minimum estimated costs to implement this plan were presented in the draft. These were the costs that could be tied directly to grizzly bear management staff. Clarification has been provided in the final draft as to what other costs are associated with grizzly management and what costs are expected into the future.

Comment: The Environmental Impact Statement should consider the cost of stress and loss of a safe living from grizzly presence.
Recreationists, hunters, and landowners must assume some personal responsibility for their own safety while outdoors. The Montana Supreme Court affirmed in Sackman v. State Fish & Game Commission that wildlife is a natural part of the landscape, and that the rights and privileges of private property ownership also come with the challenge and benefits associated with having wildlife on the landscape. The court stated, "Wild game existed here long before the coming of man. One who acquires property in Montana does so with the notice and knowledge of the presence of wild game."

Secondary and Cumulative Impacts

Comment: FWP should conduct a full economic analysis to determine the cost of grizzlies in new areas.

FWP does not believe an analysis based on assumptions, poorly understood variables, and speculative modeling is required or useful. The assumptions of how much a county may lose based on livestock losses or lost revenue from hunters no longer visiting an area could be as wrong as assumptions of how much a county may gain from an increase in interest by conservationists or easement purchases. Another uncertain variable is all of the direct and indirect costs of grizzly bears remaining on the Endangered Species list versus having enough conservation measures in place to enable delisting.

Furthermore, the assumption that bears are going to inhabit any new areas in any number worth analyzing is false. An economic analysis would indeed seem appropriate if this management plan called for reintroducing grizzlies into currently unoccupied areas and maintaining some minimum population. That action however is not within the alternatives presented in this Environmental Impact Statement. The intent of Alternative II is to allow bears that stay out of conflict situations to inhabit suitable areas.

Defenders of Wildlife provided reimbursement for livestock losses during the period of the previous plan. Data indicated that $8,500 was paid to producers who lost sheep, cattle or poultry to grizzly bears within the Montana portion of the GYA from 2002-2012. Not all losses are submitted for claims. This information has been added to the Impact section of the plan.

Environmental Impact Statement Development Process

Comment: This plan was conducted in a manner contrary to Montana Environmental Policy Act statutes.

FWP disagrees. Department legal and technical staff were consulted prior to and during the preparation of the draft Environmental Impact Statement to ensure the requirements of the statutes were met.

Scoping: We did not perform any public scoping in preparation of this document. Scoping under the Montana Environmental Protection Act is required to identify issues or concerns that the Department may not be aware of. We believe through ongoing dialogue with all constituents that we are aware of all pertinent issues relative to grizzly bear management and in fact addressed them within the draft document. Many Montana FWP staff were involved in completion of the 2007 Conservation Strategy for the Greater Yellowstone Ecosystem and have remained intimately involved with grizzly bear management. FWP is confident that staff is very familiar with the issues of grizzly management as well as the concerns of the public. While the grizzly population has indeed expanded, the issues of conflict management, habitat use and management, livestock conflicts, property damage, human injuries, etc. remain.

Public notification for release of the draft document: FWP followed the same public notification process for release and review of this document as with all other releases of this nature. What the media picks up to advertise or publish is at their discretion. Press releases were issued August 12th. Letters notifying county commissioners within the seven county plan area and all FWP Commissioners were mailed out at the time the document was released. Notification of the public comment period was on the front page of our website under the 'popular this week' for much of the comment period.

Length of the comment period: The preferred alternative within the draft called for continued responsive and effective management of the grizzly within the working landscapes of Montana. Citizens are generally familiar with this management that includes both proactive conflict prevention and reactive conflict management. FWP believes that current grizzly bear management, even under the federal listing status, has been adequate and thus continued management as proposed is easily understood. We believed a 30 day comment period was adequate with this is mind, as the level of analysis in any environmental assessment is based on the complexity and seriousness of the issue, per ARM 12.2.433. However, to honor requests for extension FWP extended the comment period two times for a total comment period of nearly 60 days.

Meeting with organizations early during the planning process: No organizations were specifically contacted for input during the drafting of this plan with the exception of federal land management agencies and the Interagency Grizzly Bear Study Team. The non-government organizations listed on page 74 of the draft contacted the Region 3 FWP office to meet with staff assuming a re-write would be in process based on the 2002-2012 timeframe of the first plan. Those organizations organized a small meeting that one of the plan authors attended. The organizations provided input and suggestions for the re-write during that meeting but received no early drafts to review. Following release of the draft FWP attended three citizen led meetings to discuss the plan draft. FWP attempts to be responsive to meeting invitations as well as inclusive during processes such as these. In no way was there any attempt to exclude any constituents from plan development and in fact MEPA process for public involvement was followed throughout. Concerns and suggestions by all who commented on the draft were considered.

Comment: Counties were not involved in the re-write of this plan.
All counties within the seven county plan area were notified upon release of this draft. This notification was sufficient to allow for consultation between FWP and the counties during the public review process. Indeed, FWP met specifically with some county commissioners to go over plan components during the public comment period. The language from MCA 87-1-217 (5) 'Policy for management of large predators -- legislative intent' has been added to the final document. This legislation requires some consultation with counties prior to passage of any policy with implications for large predator management. Acceptance of this plan would be considered policy as it will guide management into the future.

Miscellaneous

Comment: What triggers a revision of this state management plan?
Through the yearly monitoring of the Yellowstone grizzly bear, data that would indicate any significant change in the population demographics is obtained for review. Under the conservation strategy and recovery plan, repetitive negative population demographics can trigger a status review to determine cause and actions that may be necessary to reverse the trend. A status review of the population would likely trigger a look at the actions within this plan but generally, this plan is designed to be adaptive to changing habitat conditions, management protocols, or grizzly populations. As with all FWP species management plans, this plan could be re-visited at any time if deemed appropriate.

Comment: What needs to happen for grizzlies to be removed from the endangered list?
To remove grizzlies in the GYA from the endangered species list, the US Fish and Wildlife Service (Service) must determine the population is recovered and will remain recovered in the foreseeable future. For this determination to occur, the Service must conduct a threats analysis as described in the Endangered Species Act. For recovery (and subsequent delisting) to occur the Service must demonstrate that threats to the bear's habitat have been adequately mitigated and will remain so; the population's size and distribution are adequate to ensure maintenance of recovered status; and the existence of adequate regulatory mechanisms. One of these regulatory mechanisms is this state management plan for grizzly bears in southwest Montana, in other words, this plan is a required component for delisting. This plan provides the Service a description of grizzly bear management in Montana's portion of the GYA and how it would meet the Service criteria for survival of the species into the future.

Comment: FWP is using false and selective science that is more than 10 years old.
The best available science, including the most recent population estimation methods and mortality limits from the Interagency Grizzly Bear Study Team, was used to calculate the numbers presented in this document. The tables and figures that present information on conflicts, grizzly mortalities, population distribution, and estimated home range size are current through 2012 and the science used to determine these was published by Interagency Grizzly Bear Study Team in September 2012.

Comment: A process is needed to coordinate management efforts with surrounding states and Yellowstone National Park.
The following statement from the draft plan addressed coordination on ecosystem linkage specifically, 'Continue to work with Idaho, Wyoming, and the Interagency Grizzly Bear Committee to address the issue of linkage between grizzly recovery areas and follow the goal set forth in the Interagency Grizzly Bear Committee work plan to promote linkage between the GYA and Northern Continental Divide Ecosystem grizzly populations (page 41).' Beyond linkage discussions, the 2007 Conservation Strategy lays the framework for continued coordination between GYA land and wildlife managers as well as continuation of the multi agency coordinating body, currently known as the Yellowstone Ecosystem Subcommittee that meets twice a year. Management actions and management of mortalities are coordinated by the states and national parks. All actions are evaluated and reported annually through the Interagency Grizzly Bear Study Team reports.

Comment: All mention of bear-proof containers should be changed to say bear-resistant.
Reference to bear-proof has been changed throughout the document to the more accurate term bear-resistant.

Comment: The lack of an end date to this plan is concerning.
FWP does not anticipate the need for drastic changes to management protocols within the foreseeable future and believes this management plan can operate successfully for many years. This plan can be amended at any time to incorporate new science or significant management techniques. In addition, this plan works in coordination with the GYA Conservation Strategy. That strategy calls for five year or even more frequent updates to include public participation. Appropriate revisions to the Conservation Strategy could be incorporated into the state plan when necessary as the state plans are formally amended to the Conservation Strategy.

Comment: This proposed action is connected to United Nations Agenda 21.
Agenda 21 is a comprehensive plan of action to integrate knowledge of the environment and integrations for development in order to improve living standards for all peoples and to better protect and manage ecosystems that sustain all peoples to be taken globally, nationally, and locally by organization of the United Nations System (UN 2009). There is no intended link between Agenda 21 and this proposed action. This proposed action was not designed in any way to meet the objectives of Agenda 21.

Montana, Fish, Wildlife and Parks Grizzly Bear Management Plan for Southwestern Montana
Draft Programmatic Environmental Impact Statement

Frequently Asked Questions

Is completion of this plan necessary for the Yellowstone grizzly bears to be removed from the federal list of threatened species?
Yes, Montana must have a current state plan that is in place and acceptable to the US Fish and Wildlife Service in order for the Service to propose delisting.

How will grizzly bears be classified under state authority post de-listing?
MCA 87-2-101 defines all of the following as 'game animals'; deer, elk, moose, antelope, caribou, mountain sheep, mountain goat, mountain lion, bear, and wild buffalo.

Is there a boundary outside of which grizzly bears are not allowed and can be lethally removed at any time?
No, there are no lines on the map that grizzly bears cannot disperse beyond. The creation of such a line would not be viewed by the US Fish and Wildlife Service as adequate for management nor would it be acceptable to many who agree with the Governor's Roundtable recommendation to 'support expansion of grizzly bears beyond the original Primary Conservation Area in areas that are biologically suitable and socially acceptable.' There is no management boundary that grizzly bears cannot cross, nor is there intent to force grizzly bears to expand beyond what they are naturally doing.

Grizzly bears are wide ranging species that have the ability to move long distances. Natural expansion will continue to occur as it has in the past and FWP will do its best to manage conflicts to include lethal removal of grizzlies in some conflict situations.

FWP believes any approach to 'limit distribution' is logistically impossible and biologically undesirable. In order to maintain population resilience to habitat changes, social tolerance and other factors, bears need to occupy a broad landscape. As with other wildlife species, grizzly bears cannot be confined to designated zones because there are not barriers to contain them and it is impossible to know the location of every animal all the time.

Has FWP designated 'linkage zones' to foster movement of grizzly bears between the Northern Continental Divide Ecosystem and the Greater Yellowstone Area?
No, the identification of specific linkage zones is complicated by ever changing habitat conditions, human presence and land use. Past radio collared grizzly movement has pointed to specific areas that are biologically suitable for grizzly presence but individual bears demonstrate diverse preference for habitat and different tolerances for human presence. For these reasons and for simply not wanting to draw circles on a map potentially highlighting private property FWP does not plan to identify specific linkage zones. Rather, FWP will pursue opportunities for habitat conservation or restoration in areas between the GYA and Northern Continental Divide Ecosystem systems as they arise.

Will completion of this plan result in increased densities of grizzly bears in places where they are not currently present?
FWP remains committed to allowing grizzly bears to live in biologically suitable and socially acceptable habitats with natural expansion between ecosystems occurring within the Governor's Roundtable recommendations and the goals of FWP. As and if grizzly bear expansion occurs naturally, it is possible the density of grizzlies could increase in certain areas. Habitat value dictates the density of grizzly bears and all other wildlife species on the landscape. However, conflict management will remain a priority in all areas of grizzly bear presence.

Why aren't the specifics of any future hunting season included in this plan?
Parameters of a hunt such as season dates, number of tags, license fees, allowable non-resident take, etc. will be determined under Commission rule to include the standard public participation process. Any hunting mortalities will be counted against allowable annual mortality limits.

Will hunting be implemented immediately after de-listing of the GYA grizzly population?
Upon delisting, hunting will be proposed only after all components of the grizzly bear management program and Conservation Strategy are adequately implemented. Upon implementation of those programs the FW Commission will determine the appropriate year to reinstate a grizzly bear hunt (MCA 87-5-302) however, FWP does believe the population is secure enough to sustain some amount of limited hunting upon delisting. Any hunting mortalities within the Demographic Monitoring Area will be counted as human-caused mortalities and counted against the annual sustainable mortality limits.

Does implementation of the preferred alternative influence day to day grizzly bear management operations?
No, Alternative II basically calls for status quo management to include cooperative population and habitat monitoring, conflict prevention efforts, and responsive conflict management.

What is the cost to implement Alternative II?
Annual costs to implement a complex plan such as this are difficult to predict exactly, particularly due to annual variability in the number of bear conflicts. However, a minimum of around $200,000 is currently utilized to hire and cover operations of dedicated bear management staff from the FWP Region 3 office, who also assist FWP Region 5 with grizzly bear conflict issues. Additional staff such as game wardens, area biologists, and administrators contribute time and dollars to program implementation that are not tracked separately. An ideal program that would allow FWP to hire a bear management specialist in FWP Region 5 and increase efforts to prevent conflicts would cost upwards of $400,000.