GRIZZLY BEAR

Management Plan for Southwestern Montana

2002-2012

DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

Prepared by: Montana Fish, Wildlife & Parks

With Input From The
Montana Grizzly Bear Working Group
and other interested parties

April 2002

TABLE OF CONTENTS

Acknowledgements…….. c
Introduction…….. 1
Process for Plan Development……. 1
Montana Fish, Wildlife & Parks Goals for the Grizzly Bear……... 1
Purpose and Need……. 2
History of Bears and Bear Biology in the Greater Yellowstone Area…….. 4
Montana Fish, Wildlife & Parks Commission Policy…….. 7
Description of Grizzly Bear Management Area for Southwestern Montana……... 9
General Description……. 9
Size and Human Population……. 9
Land Ownership…….. 10
Special Management Areas…….. 11
Agricultural Interests…… 11
Recreational Opportunities……... 12
Summary of Grizzly Bear Biology……... 13
Habitat…….. 13
Habitat for Denning…….. 15
Habitat for Security…….. 16
Population Dynamics…….. 16
Issues Identified and Considered……. 19
Human Safety……... 20
Inform and Educate…….. 21
Enforcement of Food Storage Rules and Regulations……. 22
Bear Repellents and Deterrents……... 22
Aversive Conditioning……. 23
Management Control……... 23
Hunting to Address Human Safety Concerns……... 23
Habitat/Habitat Monitoring/Restrictions on Human Use of Bear Habitat……... 24
Specific Habitat Guidelines……. 26
Management……. 26
Population Monitoring……. 28
Future Distribution…….. 31
Trails ……... 36
Livestock Conflicts…….. 37
Property Damage…….. 39
Nuisance Guidelines……. 41
Bear-Human Interaction Risk Management Protocols……. 44
Rapid Response Protocols…… 44
Guidelines for Nuisance Bear Determination and Control…….. 45
General Criteria…… 45
Definitions…… 46
Criteria for Nuisance Grizzly Bear Determination and Control Outside the PCA…….. 46
Disposition Criteria for Bears Removed in Management Actions……... 47

Hunting……. 47
Enforcement……. 52
Education/Public Outreach…….. 53
Future Research…… 56
Costs and Funding…… 57
Expanded Local Involvement……... 58
Secondary and Cumulative Impacts……. 59
Irreversible/Irretrievable Resource Commitment……. 60
Glossary…… 61
Literature Used to Assist in Preparation of this Plan …….. 62

List of Figures

Figure 1. Location of the recovery zone/primary conservation area within Greater Yellowstone Ecosystem…….. 3
Figure 2. Location of Carbon, Stillwater, Sweet Grass, Park, Gallatin, Madison, and Beaverhead counties……. 7
Figure 3. Grizzly bear distribution in the Greater Yellowstone Ecosystem, 1990-2000. Map represents the outer edge of a composite polygon constructed by overlaying fixed kernel ranges constructed from (1) observations of unique unduplicated females with cubs of the year, (2) relocations of radio-collared bears, (3) locations of grizzly bear-human conflicts, confrontations, and mortalities. Points represent data not contained within this coverage…… 32
Figure 4. Grizzly bear distribution in the GYE…….. 33
Figure 5. Grizzly bear distribution from information on radio-collared animals…… 34
Figure 6. Light gray = areas occupied by black bears. Dark gray = areas with the potential to encounter grizzlies in Montana……. 35
Figure 7. Grizzly bear/human conflicts in Southwest Montana, 1991-2001……... 42
Figure 8. Grizzly bear conflicts in Southwest Montana, 1991-2001……... 43

List of Tables

Table 1. Selected size, population, and agricultural attributes of the seven counties in the grizzly bear conservation area…… 10
Table 2. Number of unduplicated females with cubs-of-the-year, number of COY, and average litter size at initial observation for the years 1990-2000 in the Greater Yellowstone Ecosystem. Six-year running averages were calculated using only unduplicated females with COY observed in the PCA and 10-mile perimeter……..... 18
Table 3. Grizzly bear mortalities in southwest Montana, 1992-2001……. 31

Acknowledgements

Many people participated in the development of this plan. Montana Fish, Wildlife & Parks (FWP) would like to express gratitude to all of those who committed their time and energy to make our program adequate to meet the needs of bears and the people who live with them.

Special recognition is due to the following individuals and organizations for their assistance through participation in our workshops. By recognizing their participation, we are by no means implying that they support the plan in part or in its entirety. However, their openness and willingness to contribute have made this a better plan. These meetings were productive because of the skill of our facilitator, Virginia Tribe, and we thank her as well.

Individuals

Elaine K. Allestad
Mark Anderson
Chuck Bennett
Dan Bjornlie
Tony Biel
Marion Cherry
Jack Clarkson
Sandra Cooper
Lance Craighead
Frank Culver
Kim Davitt
Jim DeBoer
Mark Donovan
David Ellenberger
Victor Fesolowitz
Hank Fischer
Tom France
David Gaillard
Heidi Godwin
Don Griffis
Lorents Grosfield
Lorents Grosfield
Joe Gutkoski
Lee Hart
Margot Higgins
Robin Hompesch
John Huntsberger
Ron Ireland
Minette Johnson
Noel Keogh
Jim Knight
Bernie Kuntz
Tim Mulligan
Sterling Miller
Randy Newberg
John Oldemeyer
Steve Pilcher
Steve Primm
Daryl Reimers
Ross Rodgers
Jim Roscoe
Patti Rowland
Chuck Schwartz
Michael Scott
Claire Simmons
Tim Stevens
Geoffrey Suttle
Gary Ullman
J.W. Westman
Louisa Wilcox
Louise Willcox
Becca Wood
Linda Young

Organizations

American Wildlands
Big Sky Trail Preservers
Beaverhead Outdoorsman Association
Billings Motorcycle Club
Defenders of Wildlife
Greater Yellowstone Coalition
Louisiana Pacific
Montana Stockgrowers Association
Montana Wilderness Association
National Wildlife Federation
Predator Conservation Alliance
Sierra Club
Safari Club International
Trade Research Center

Agencies

Bureau of Land Management
Carbon Conservation District
U.S. Forest Service
U.S. Geological Survey Biological Resources Division
Wyoming Game and Fish

INTRODUCTION

Process for Plan Development

Montana Fish, Wildlife & Parks (FWP) developed this draft plan and programmatic environmental impact statement (PEIS) through a series of meetings with affected agencies, governments, interested persons, and groups. FWP initiated the scoping processes 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 during September and October 2000 (Livingston, Bozeman, Missoula, Big Sky, Big Timber, Dillon, Ennis, Butte, West Yellowstone, Billings, Columbus, Gardiner, and Red Lodge). FWP solicited written comments throughout Fall 2000 through news releases, press interviews, and personal contacts. During these meetings, FWP sought to identify issues likely to involve significant impacts and those issues not likely to involve significant impacts as well as to identify possible alternatives for grizzly bear management. To further develop issues and ideas for possible alternatives, FWP held a meeting in Bozeman consisting of the Governor's Roundtable members and other invited interest groups and individuals on December 4-5, 2000. FWP invited the participation of those individuals and groups that had expressed interest in additional participation as well as other affected agencies. Following this meeting, a draft management plan was produced and resubmitted to a broader group of interested parties including those who attended the December meeting. An additional facilitated meeting was held in Bozeman April 30-May 1, 2001 to review and discuss approaches presented in the preliminary draft plan with the purpose of fine tuning a draft. A meeting was held on October 22, 2001, to further review the draft plan for release and formal public hearings. All of the meetings were open to the public. Formal public hearings will be conducted through the same area of Southwestern Montana as previous scoping sessions.

Montana Fish, Wildlife & Parks (FWP) Goals For The Grizzly Bear

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

1. To provide the people of Montana and visitors with optimum outdoor recreational opportunities emphasizing the tangible and intangible values of wildlife and natural and cultural resources of aesthetic, scenic, historic, scientific, and archaeological significance 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
2. Wildlife Program Goal -- To protect, perpetuate, enhance, and regulate the wise use of wildlife resources for public benefit now and in the future.
3. Grizzly Bear Management Goal -- To manage for a recovered grizzly bear population in southwestern Montana and to provide for a continuing expansion of that population into areas that are biologically suitable and socially acceptable. This should allow FWP to achieve population levels that support managing the bear as a game animal along with

other species of native wildlife and provide some regulated hunting when and where appropriate.

These goals will be achieved by addressing the following issues identified early in the planning process: human safety, habitat, population monitoring, future distribution, trails programs, livestock conflicts, property damage, nuisance guidelines, hunting, enforcement concerns, education, 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 social support for grizzlies.

President Theodore Roosevelt stated: "the nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased and not impaired in value". It is FWP's hope that this plan will allow the next generation of Montanans to manage a grizzly bear population that has increased in both numbers and distribution in southwestern Montana.

Development of this plan is further guided by recommendations of a group of citizens referred to as the Governor's Roundtable Group. This group was appointed by the governors of Montana, Wyoming, and Idaho and was composed of five representatives from each of the three states. These citizens were selected to represent a cross section of the people interested in grizzly bears in the greater Yellowstone area, and their purpose was to review the draft Conservation Strategy for grizzlies prepared by the Interagency Grizzly Bear Committee. The Roundtable was able to reach unanimous agreement on all 26 of its recommendations (Appendix A).

Among the key recommendations was support for continued management of the proposed Primary Conservation Area (PCA) as a secure "core" area for grizzly bears within the Yellowstone Ecosystem (Fig. 1). The group also recommended that the three states 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.
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.

Purpose and Need

The need for this plan was precipitated by changes in bear management in the Yellowstone Ecosystem during the 1980-90s, resulting in increasing numbers and expanding distribution of grizzly bears in this area. Current approaches to land management, wildlife management, and recreation within the PCA appear to be providing the conditions needed to establish a population of bears outside the PCA. 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 demonstrated problems with appropriate management changes. By maintaining existing uses, people will be able to continue their lifestyles, economy, and well-being and not feel threatened. This approach builds support and increases tolerance for an expanding grizzly bear population.

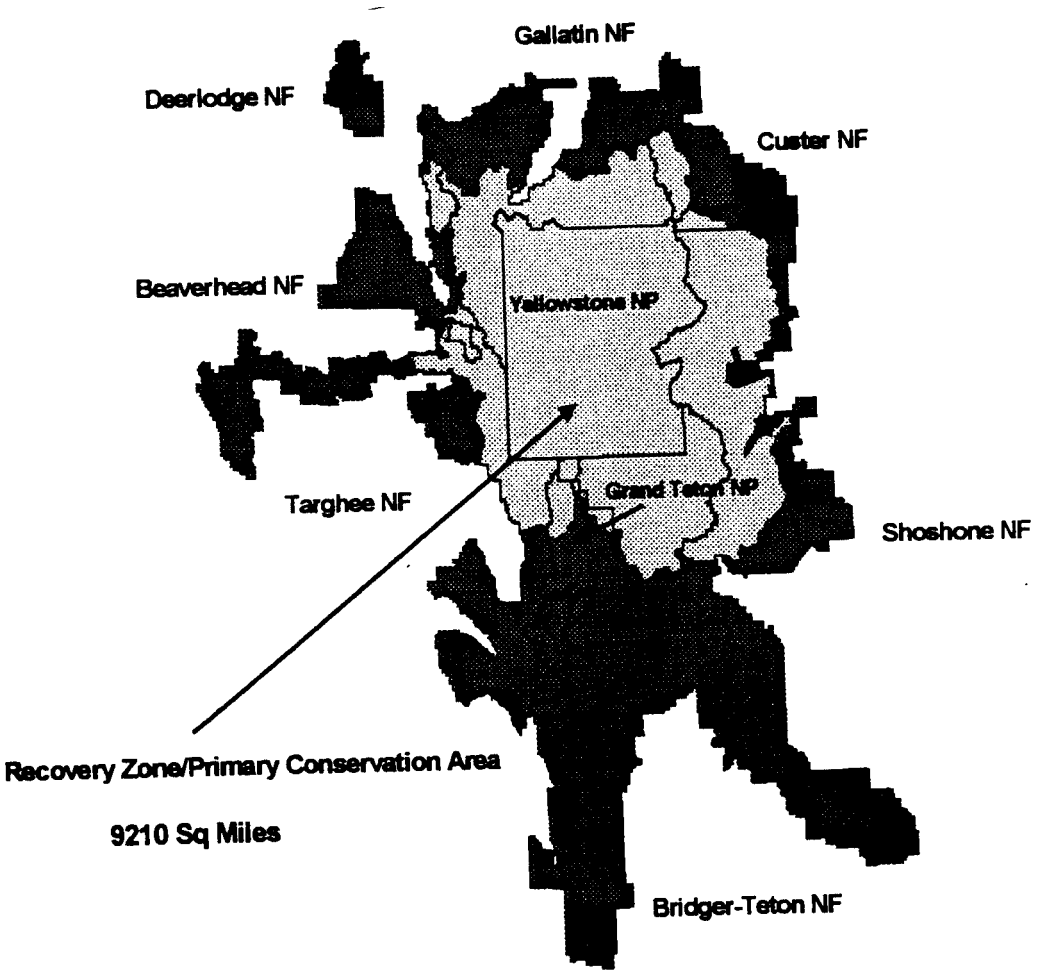


Figure 1. Location of the recovery zone/primary conservation area within Greater Yellowstone Ecosystem.

Along these same lines, the Governors' Roundtable produced a recommendation to allow grizzly bears to inhabit areas that are "biologically suitable and socially acceptable." The level of social acceptance of grizzlies in historic habitat is alterable, based on how the issues are approached, and how much faith people have in managers. To maximize the area of Montana that is "socially acceptable" grizzly bear range, the state planning and management effort will employ 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 increased. This approach already has demonstrated success in northwestern Montana along the Rocky Mountain Front where bear populations have increased and bears have reoccupied habitats from which they had been absent for decades.

Under such an approach, this document should be a strategy for initiating, implementing, and learning from a set of localized efforts. Once FWP has learned from these localized efforts and

changed programs or adapted approaches, they will become part of the State Grizzly Bear Management Plan.

This process will entail developing a set of plans on the relatively small scale of Ranger Districts, Conservation Districts, or valleys. FWP, other agencies, local citizens, and wildlife organizations would cooperatively design local strategies tailored to local conditions. These strategies would include monitoring provisions that would require management adaptations as conditions dictate or change. Ultimately, we would all learn from these localized efforts, and develop a basis of knowledge for replicating efforts elsewhere, incorporating successes in the statewide management of this and other species. The underlying basis for this approach is that as bears reoccupy areas from which they have been absent for decades, there are many issues that can't be anticipated or predicted with accuracy. Consequently, this approach allows FWP to adjust the program as necessary.

Localized efforts have many advantages:

1. They tend to generate less unproductive controversy and be more focused on solutions.
2. They provide low-conflict settings for trying out innovative ideas.
3. They also have tremendous local importance that can help increase political support (e.g., showing that ranchers can and do get along with grizzlies builds support for the agricultural community and for the benefits they provide to the rest of society).

The adaptive learning approach is ongoing, but does produce tangible results. In fact, innovative grizzly conservation efforts are already underway in Montana, so we can make use of the lessons already available. This approach will be described in more detail in the local management section. Ultimately this plan and approach will be re-evaluated in ten years to provide for a complete review of its successes and/or failures.

History of Bears and Bear Biology in the Greater Yellowstone Area

The Eurasian brown bear and the North American grizzly are considered the same species (*Ursus arctos*). Current theory holds that this species developed its large size, aggressive temperament, flexible feeding habits, and adaptive nature in response to habitats created by intermittent glaciation. It is believed that ancestors of the grizzly bear migrated to North America from Siberia across a land bridge at the Bering Strait at least 50,000 years ago. As the continental ice sheet receded about 10,000 years ago, the species began to work its way south over post glacial North America.

European explorers found grizzlies throughout most of the American West, including northern Mexico. It is not known exactly how many grizzlies lived in the U.S. before 1700, but based on historical sightings and modern-day densities, it is estimated that around 50,000-100,000 bears lived in parts of 17 states.

Prior to 1800, grizzly bears were undoubtedly common in the Yellowstone area. With newly acquired access to firearms by indigenous people and westward expansion of settlers, bears began to be impacted. With no mechanisms to provide protection on management, almost

without exception, bear numbers declined where man and bear came together for any length of time. The decline of the grizzly bear took less than 60 years, from the end of the trapping era in 1840 to the turn of the century. The decline was due to a number of factors including: a reduction of prey because of market hunting associated with gold exploration and mining; subsistence hunting associated with gold exploration and mining; construction of railroads, homesteading, and predator control; and loss of habitat related to ranching, farming, and human settlement. Much of the killing was based on the fact that the grizzly bear posed a threat to people and livestock.

Grizzly bears were gone from West Coast beaches by the 1870s, and gone from prairie river bottoms in the 1880s. By the turn of the century, they had disappeared from most broad, open mountain valleys. Fifteen years later, most foothill country lacked grizzlies.

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 has 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.

The Montana Fish and Game Commission (MFGC) adopted rules for implementing MEPA. These rules provide for the preparation and distribution of an environmental analysis evaluating a series of actions, programs or policies that affect the quality of the human environment. Grizzly bear management in Montana is being addressed within the framework of MEPA and its regulations. This plan and programmatic environmental impact statement deals directly with that portion of Montana known as the “Greater Yellowstone Ecosystem” (GYE) and adjacent lands in southwestern Montana and includes our management programs within the Primary Conservation Area. The GYE has been defined in many different ways by different people depending on their purposes. For the purpose of this plan, the GYE is defined very broadly for southwestern Montana to include lands which may be accessed by grizzly bears in the near future (Fig. 2).

Figure 2. Location of Carbon, Stillwater, Sweet Grass, Park, Gallatin, Madison, and Beaverhead Counties.

The people of Montana's early concern is evidenced in the fact that the state contains all or portions of four of the six areas in the lower 48 states identified for grizzly recovery. This concern continues to date as demonstrated by the fact that the species is Montana's "State Animal," and there is specific policy directing management of the species. Grizzly bear populations are currently increasing in the Yellowstone and portions of the Northern Continental Divide area. A small population in the Cabinet Yaak area of Montana appears to be slowly increasing. There are currently no documented grizzlies in the Bitterroot ecosystem.

It is important to recognize that the presence of a viable grizzly bear population is very important to many people in Montana as well as nationally. This species is one of the things that makes Montana such a special place to live, work, and recreate. Many people travel to Montana with the hope of seeing a bear, and the stories of such encounters are retold many times. There are also clear economic benefits from tourism, recreation, and potential harvest from the presence of grizzlies. While FWP is fully aware that there are also costs and potential risks associated with the species, this plan should allow FWP to manage these in a way that meets the needs of the public. In light of this, the State of Montana has adopted the following policy for this species:

Montana Fish, Wildlife And Parks Commission Policy

The Montana Fish, Wildlife and Parks Commission (MFWPC) is the policy making arm of Montana's fish and wildlife program. Section 87-1-301(1), Montana Codes Annotated (MCA) requires the Commission to "set 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. Section 87-5-301, MCA, states:

"It is hereby declared the policy of the State of Montana to protect, conserve, and manage grizzly bears as a rare species of Montana wildlife."

Section 87-5-302 describes the FWP Commission's power regarding grizzly bears.

Within this legal framework, the MFWPC developed a grizzly bear policy in Section 12.9.103, ARM (Appendix B). 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 Endangered Species Act (16 U.S.C. Sec. 1531, et seq.), that specific FWP goals for the grizzly bear were developed. Because of high mortality rates resulting from sudden closure of open dumps in Yellowstone National Park, concern over the status of the grizzly population in the greater Yellowstone area rapidly increased 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 Endangered Species Act in 1975. As a result of this listing, many management changes were made to benefit grizzlies. A 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 over 354 bears today. This has set the stage for a possible delisting of the species and a return of this species to state management which is predicated on a state management plan.

DESCRIPTION OF GRIZZLY BEAR MANAGEMENT AREA FOR SOUTHWESTERN MONTANA

Grizzly bears currently -- or could in the near future -- occupy suitable habitats in the seven southwest and south-central Montana counties adjacent to or near Yellowstone National Park (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 general description, size, human population, land ownership, special management areas, agricultural interests, and recreation. Not all portions of these counties are suitable grizzly bear habitat. However, some of the above attributes of these counties may affect the distribution and survival of grizzly bears. Given enough time and adequate management programs, grizzly bear distribution may extend beyond this seven-county area. For purposes of this plan, expansion in grizzly bear distribution during the next 10 years is most likely to occur within this seven-county area. It is anticipated that the programs outlined in this plan would apply should grizzlies extend their distribution beyond these counties sooner than anticipated. In addition, the success of our program rests on coordinating and cooperating with the surrounding states and federal agencies. We will continue to work with them so that the needs of the bear population as a whole are met.

General Description

Each county 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.) contain 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.

Size and Human Population

The seven-county area encompasses approximately 12,865,088 acres or 20,102 square miles of southwest and southcentral Montana (Table 1). This represents about 13.3% of Montana's

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	9,543	2,062	4.6	60,000	7,500	84,850
Stillwater	8,328	1,804	4.6	57,000	10,700	116,155
Sweet Grass	3,584	1,861	1.9	49,000	11,100	48,110
Park	15,982	2,667	6.0	44,000	3,100	69,200
Gallatin	63,881	2,533	25.2	57,000	6,400	163,250
Madison	6,927	3,603	1.9	78,000	7,500	92,900
Beaverhead	8,790	5,572	1.6	157,000	17,500	123,810
Totals	**117,035**	**20,102**	**5.8**	**502,000**	**63,800**	**698,275**

[1]Based on July 1999 population estimate from Montana Census Bureau.
[2]Based on inventory estimates of all cattle and calves for year 2000, from Montana Agricultural Statistics, October 2000.
[3]Based on inventory estimates of all sheep and lambs for year 2000, from Montana Agricultural Statistics, October 2000,
[4]Based on estimates of irrigated and non-irrigated acres harvested in 1999, from Montana Agriculture Statistics, October 2000.

human population. County population size ranges from Gallatin (pop. 63,881) to Sweet Grass (pop. 3,584). Population density for the entire area is 5.8 people/sq. mile, compared to 6.0 people/sq. mile for the entire state. The most densely populated county is Gallatin (25.2 people/sq. mile) and the least densely populated county is Beaverhead (1.6 people/sq. mile). Major population centers include Bozeman (30,723), Livingston (7,626), Belgrade (5,195), Dillon (4,342), Red Lodge (2,278), Big Timber (1,796), Three Forks (1,513), West Yellowstone (1,222), and Big Sky (1,221). Within the seven-county area, only these eight cities exceed a population of 1,000 people.

According to census figures, the population in this area has increased by 19,853 people (20.4%) from 1990-1999. During this same period the population of the entire state increased by 83,714 people or 10.5%. Gallatin County was the fastest growing county, increasing by 13,397 people (26.5%) from 1990-1999, while Beaverhead County grew by only 366 people (4.3%) in the last 10 years.

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), Montana Fish, Wildlife & Parks (FWP), Bureau of Land Management (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) public ownership. By far 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. Five National Wilderness Areas lie within mountain ranges in the seven-county area: the Absaroka-Beartooth Wilderness (936,000 acres) in the Custer and Gallatin National Forests, the Lee Metcalf Wilderness (261,000 acres) in the Gallatin National Forest, Bear Trap Canyon Wilderness (5,600 acres) Bureau of Land Management, and approximately half of the Anaconda-Pintler Wilderness (159,000 acres) in the Beaverhead-Deerlodge National Forest. 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 (32,000 acres) located in the Centennial Valley in Beaverhead County and eight FWP Wildlife Management Areas (approximately 86,000 acres) in Carbon, Park, Gallatin, Madison and Beaverhead counties.

Agricultural Interests

The seven-county area supports a large agricultural economy. In 1997, there were 3,472 farms and ranches in the seven-county area. By far the most common activity of these farms and ranches is raising beef cattle and growing forage (hay) for cattle. In some areas, small grain crops (wheat, oats, barley) are intensively grown. Horses, sheep, hogs and dairy cattle are also raised in smaller numbers on ranches and farms in southwest 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. Livestock depredation by grizzly bears is an issue that will continue to affect grizzly bear numbers, management and distribution.

Based on Montana agricultural statistics for 2000, there were an estimated 502,000 head of cattle (all cattle and calves) in the seven-county area (Table 1). Beaverhead County had the most cattle (157,000 head) while Park County had the lowest number (44,000 head). In terms of cattle production, Beaverhead and Madison counties ranked 1st and 7th, respectively, out of Montana's 56 counties. Since 1940, total cattle numbers statewide have increased from 1.2 million to 2.6 million head with a peak of over 3.2 million head in the mid-1970s.

In 2000, there were an estimated 63,800 sheep (adults and lambs) in the seven-county area (Table 1). Beaverhead County had the largest number of sheep (17,500) while Park County had the fewest sheep (3,100). In terms of sheep production, Beaverhead and Sweet Grass County ranked 5th and 6th, respectively, statewide in sheep production. Statewide, since 1940 sheep production has steadily declined from over 4.2 million to about 370,000 head.

In 1999, an estimated 698,275 acres of irrigated and non-irrigated crops were harvested in the seven-county area (Table 1). Crop harvest ranged from 163,250 acres in Gallatin County to 48,110 acres in Sweetgrass County.

Recreational Opportunities

Outdoor recreation and tourism is a major component of the economy in this seven-county area. Southwest 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, Yellowstone National Park 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 many private landowners. Recreationists have largely unhampered access to millions of acres of undeveloped land. Some of this land is currently or, based on documented trends of increasing distribution, will be occupied by grizzly bears. As bear numbers and distribution increase, contact and interaction with people engaged in outdoor activities is likely to increase.

SUMMARY OF GRIZZLY BEAR BIOLOGY
(modified from Mincher, B. J., 2000 and Schwartz et al., 2001)

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. Other patterns include (1) an overall gold or silver appearance and brown underparts, with an occasional dark back stripe, (2) no distinct silver tipping giving a general black or brown appearance, or (3) medium to dark brown underfur, rump, legs, and hump, with medium to heavily grizzled forequarters and face. Subadults often appear multicolored with various shadings of red, blond, brown, and great variation in silver tipping. Light-colored "yolks" on the chest and dark stripes on the back are common. These patterns fade as the bear matures into one of the four patterns described in adults.

The size of male and female grizzly bears will vary 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, samples from within the population, season of sampling, reproductive status, and differential mortality.

Body mass is dynamic in brown bears. During late summer and fall, brown bears gain weight rapidly, primarily as fat when they feed intensively prior to denning. Because bears rely solely on their stored energy reserves during hibernation, this predenning weight gain is essential for reproduction and survival. Peak body mass generally occurs in fall just prior to hibernation. Bears metabolize fat and muscle during the denning period.

Habitat

Brown 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 GYE 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. Because the active season for grizzlies is compressed to 5-7 months, during which bears must gain sufficient weight to supply their energetic needs for the next denning cycle, they tend to concentrate their activity seasonally in the most productive habitats available.

In general, GYE home ranges are larger than those of other brown bear populations. This larger range possibly indicates low environmental productivity in the GYE 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 GYE 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.

As a group, bear species deviate from most other meat-eating members of the Carnivora by the volume and variety of vegetative foods in their diets. Comparing the three North American bear species, feeding habits of brown bears fall somewhere between those of the largely herbivorous black bear and the primarily carnivorous polar bears. Brown bears are opportunistic omnivores; few taxa, from insects to vertebrates and fungi to angiosperms, are overlooked as potential foods. Evolutionarily, brown bears have developed several adaptations for herbivory, including expansion of molar chewing surfaces and longer claws for digging. Nevertheless, they have maintained an unspecialized digestive system capable of digesting protein with efficiency equal to obligate carnivores.

In the GYE, 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 study of Yellowstone grizzly bear food habits 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. The annual percentage of energy obtained from the ungulate meat is considerably higher in the GYE than for other interior populations although herbaceous foods remain important because they are more predictable. Grizzly bears at high densities as in some circumstances can impact the ungulate prey base. However, in this area the ungulate prey base is largely impacted by other factors such as winter severity. Also in this area, an estimated 30-50 grizzly bears forage annually on spawning cutthroat trout in tributary streams of Yellowstone Lake, a food source that may be jeopardized by the introduction of non-native lake trout in the lake. Bear density in Yellowstone may be limited by lack of fleshy fruits such as berries, making them more dependent than many other bear populations on unreliable crops such as moths, pines seeds, and meat.

Yellowstone area grizzlies preferred 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 were exploited as available. These foods include whitebark pine seeds and carrion.

Pine seeds are especially important because they are available during the hyperphagic period prior to denning. Many bears feed on pine seed 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. Whitebark pine seed is so important that there is currently a relationship between the number of bears destroyed in control

actions and the success of the annual crop. During good years, bears stay in high-elevation, whitebark pine habitats. But in poor years, they are found foraging near roads and settlements where they are more likely to encounter humans and become objects of control actions. Many whitebark pine stands in the northwest have been infected and killed by whitebark pine blister rust. Whitebark in the GYE has been infected by this disease, and the IGBST monitors the extent of infection.

A second, high-fat food source for grizzlies during the hyperphagic period is the army cutworm moth. Moths collect under rocks in alpine areas in late summer and fall. The importance of moth aggregation sites to grizzly nutrition has only gained appreciation in the last decade. This relationship is an area of current interest as new seasonal gathering sites are being discovered.

Anthropogenic foods (i.e. garbage, livestock feed, pet food, bird seed, human foods, garden crops, honey) are used by brown bears wherever humans and bears coexist. Open garbage dumps can be a source of highly nutritious foods when available. Use of dumps can lead to food conditioning, habituation, and increases in property damage and human-caused bear mortality. In the GYE, considerable effort has gone into eliminating availability of anthropogenic foods. These efforts have been largely successful in reducing incidents of bear-human conflicts. Here and in other regions where bears and people live in close proximity to one another, most conflicts occur during years when important natural foods fail.

Due to reliance on sporadic food sources, grizzly home ranges may be seasonally dependent. Ranges vary to include seasonal food aggregations, which may cause many individual ranges to overlap. Yet not all bears rely on all food sources, and individual variation is the norm.

In summary, grizzlies are opportunistic and omnivorous foragers, able to take advantage of a wide variety of locally important foods. Home range size seems determined by food abundance and many individuals are able to abandon or overlap their ranges to exploit concentrated food aggregations such as pine seeds, moths, fishes, carrion 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. Currently, designated wilderness areas as well as roadless areas which may be given wilderness status at some future points are important to meeting these spatial needs in major parts of this area. Monitoring of key foods is performed systematically by state and federal agencies both within and outside the PCA.

Habitat for Denning

Yellowstone grizzlies spend up 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, as late as mid-April. The exact timing for this event may be climate dependent.

Site selection for dens occurs on steep slopes and at high elevation ($\geq$6500 feet) and in all cover types in the Yellowstone ecosystem. 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 GYE.

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 of snowmobiles on denning bears. A study in northwestern Montana did not observe any overt effects of snowmobiles within 2 km of dens. The greatest potential impact on bears was during spring when females with cubs were still confined to the vicinity of the den, and also after bears had moved to gentler terrain more suitable to use by snow machines. Predictable denning chronology and the behavioral plasticity bears exhibit toward den and den site characteristics suggest potential human impacts to denning brown bears may be mitigated by careful consideration when implementing strategies for human activity.

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 visual security is an important habitat component, possibly as a function of social pressure from other bears or possibly in response to human pressure.

It has long been speculated that female grizzlies with cubs avoid adult males due to their aggressive and occasionally cannibalistic nature. The idea that males do not cannibalize their own young has not been tested.

In the GYE, 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 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. Probably the most significant effect of roads in grizzly habitat is that of increased access by humans. Some researchers have concluded that grizzly bears habituate to roads and human presence as required to meet their caloric energy needs. However, this is a disadvantage for hunted populations. Human presence can lead to grizzly bear moralities, whether due to legal hunting, if allowed, to poaching, or to kills by humans for self-defense.

In summary, grizzly habitat requirements are determined by large spatial needs for omnivorous foraging, winter denning, aggressive behavior and security cover. Large roadless areas are ideal as year round grizzly habitat. However, grizzly bears can and do survive in roaded areas if tolerance for their presence is high. Home ranges must include a number of habitat types. Habitat needs vary for individual bears depending on their age and sex. These requirements may also vary annually with seasonal changes in foraging needs.

Population Dynamics

Grizzly bears are long-lived animals that range over large geographic areas. This trait makes it difficult to census and assess population levels. Capture and marking of grizzlies is expensive

and dangerous for both researchers and bears. In conjunction, these issues result in limited sample sizes for statistical analyses. Thus, population estimates and dynamics calculations are often contested. Generally, researchers do not contest the facts that grizzlies have low reproductive rates and that grizzly populations are very susceptible to human impacts. Also recognized is that bear numbers are very sensitive to changes in female survival rates. For grizzlies in the Yellowstone area, breeding occurs in late spring with cubs born in the den the following winter. The average litter size is two cubs (range 1-4) and females produce cubs every third year. Age at first reproduction is generally 5.5 for females (range 4-7 years). Offspring remain with the female 2-4 years before weaning. Brown bears are promiscuous. Females mate with multiple males and may have a litter with offspring sired by different males. Males can sire litters with multiple females in a breeding season. Male bears are sexually mature around 5.5 years of age.

Rates of population change within the PCA are calculated using the Lotka equation. The solution to the equation relies on accurate measurements of parameters such as survival rates for various demographic classes of bears, age at first reproduction, rate of reproduction (a factor of litter size and frequency of litters), and life expectancy. The calculation of these parameters requires long-term monitoring of a representative subset of the population.

For the GYE, these parameters have been measured by the Craighead team for the pre-1970 population and by the IGBST after 1975. Thus, vital measurements are available for the same population before and after a significant decrease following the dump closures. Current information indicates the population the PCA is increasing at 4+% per year.

As with all other bear population in the world, it is not possible to determine the actual numbers of bears in the GYE, definitively. Therefore, any figure will be a result of some form of estimation. Estimated values have always been a matter of contention and many different estimates are found in the literature. 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 the Park, the pre-dump closure bear population was estimated at 312 animals. This value is now the widely accepted figure for the population for this period. Taken in conjunction with the Craighead demographic data of 43.6% adults and 53.7% females, an adult female population of 73 may be determined for that same time period. Dump census data indicated that this population was growing at an annual average rate of 2.4%.

The population probably decreased by a factor of two, following closure of the dumps beginning in 1969. A minimum of 158 grizzly mortalities was recorded during and immediately after dump closures, between 1969 and 1972. The majority were killed in control actions, as bears were forced to exploit new sources of forage. The grizzly was listed as threatened under the ESA in 1975.

An apparent decline in this bear population continued through the 1980s. Researchers modeled continuing declines based on a downward trend in females with cubs-of-year (COY). They calculated a population decline of 1.8% per year and also concluded that age of first reproduction had increased from 5 to 6 years and that average litter size had declined since dump closure. These changes were attributed to decreases in available food.

The tally of unduplicated females with COY is now accepted by the IGBC as the method to monitor population trend in the PCA. Females with COY are readily visible and uniquely identifiable. However, the tally is influenced by counting effort and seasonal cover as well as 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. Given a three-year breeding interval, a minimum adult female population is determined by summing three successive counts, which produces a three-year moving average. The average count for females with cubs observed during the period 1973-1982 was 12. This count suggests an average of 36 adult females in the population during that time.

Fortunately, the pessimistic predictions of the 1980s were unrealized. The models may have been based on assumptions that were too conservative. Management strategies designed to protect female grizzlies were largely successful which may have contributed to a reverse in the population decline. Researchers became cautiously optimistic that a population increase was occurring by 1987. Researchers calculated a rate of increase of 4.6% per year.

The female with COY count has been steadily increasing since the late 1980s. For the 2000 field season, a count of 37 was reported (Table 2). This figure suggests an adult female population of approximately 100. For the year 2000, the IGBST reported a minimum population estimate of 354. Mean litter size appears to have returned to the same level as that for the pre-dump closure.

Table 2. Number of unduplicated females with cubs-of-the-year (COY), number of COY, and average litter size at initial observation for the years 1990-2000 in the Greater Yellowstone Ecosystem (GYE). Six-year running averages were calculated using only unduplicated females with COY observed in the PCA and 10-mile perimeter.

				6-Year Running Averages		
Year	Female with COY	Total Number of Cubs	Mean Litter Size	F w/COY	Cubs	Litter Size
1990	25	58	2.3	18	36	2.0
1991[a]	24	43	1.9	20	41	2.0
1992	25	60	2.4	20	43	2.1
1993[b]	20	41	2.1	21	45	2.1
1994	20	47	2.4	21	46	2.1
1995	17	37	2.2	22	47	2.2
1996	33	72	2.2	23	50	2.2
1997	31	62	2.0	24	53	2.2
1998	35	70	2.0	26	55	2.1
1999[b]	33	63	1.9	28	58	2.1
2000[c]	37	72	2.0	31	62	2.0

[a] One female with unknown number of cubs. Average litter size was calculated using 23 females.
[b] One female with COY was observed outside the 10-mile perimeter.
[c] Two females with COY were initially observed outside the 10-mile perimeter.

The female COY tally for Yellowstone National Park has actually remained stable while the increase recorded is due to improved counting efforts in the GYE outside of the Park. However, the data suggest a GYE total population increase and the whole ecosystem population figure is the key recovery parameter. A minimum population of 354 is greater than the pre-dump closure population suggested as down-listing target in the initial recovery plan in 1982.

ISSUES AND ALTERNATIVES IDENTIFIED AND CONSIDERED

The following section presents the discussion of the issues identified from the scoping process and follow-up meetings described earlier. Within each section the issue is discussed along with FWP's preferred approach (identified by the statements preceded by a & at the head of each section) and any anticipated impacts and alternatives considered. Some issues presented here do not warrant specific actions. For those issues, no preferred or alternative approaches will be offered, and there will be no impacts described. This section concludes with a brief discussion of anticipated secondary and cumulative impacts of the program along with a discussion of irreversible/irretrievable commitments of resources.

FWP considered a no action alternative beyond continuing existing programs and approaches to grizzly bear management in this area. However, FWP rejected this alternative because the bear population will continue to expand with existing programs. Failure to modify the program would result in unnecessary conflicts and elevated risks to grizzly bears and to the people of Montana and its visitors.

While FWP recognizes that this approach deviates from that used in many environmental impact statements, it is our intent that this format makes the document more useful to the public and those interested in grizzly bear conservation.

Before discussing the different issues and alternatives this plan addresses, it is important to keep the following overall 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. For example, people intentionally feeding bears create enforcement problems, unnecessary bear mortalities, risk to human safety, property damage, and so on.
- This plan does not presuppose habitat problems exist with bear reoccupancy, 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 which 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 how bears will utilize some of the available habitats.
- The plan must respond as changes occur and be open to public scrutiny and input.

Human Safety

- Bears that kill people will be removed from the population.
- Bears displaying unacceptable aggression or considered a threat to human safety will be removed from the population as quickly as possible.
- The major emphasis of the program will be on educating people on safety measures and preventing conflicts with people.
- Information on safety in bear country will be provided in all big game hunting regulations.
- FWP will seek expansion and enforcement of food storage ordinances statewide.
- FWP will work with county governments to require bear-proof garbage containers for homeowners in bear country.

Grizzly bears are large, powerful animals and on rare occasions can threaten human safety and life. To be successful in grizzly bear recovery, threats to human safety must be minimized to the extent possible. However, they cannot be eliminated totally. Unfortunately people make mistakes which in turn can lead to conflicts with bears and increase risks to human safety. For example, by one individual failing to secure human foods from bears, it can start a chain of events which leads to a bear becoming ever more familiar with people and contacting them or their dwellings. This elevates risks unnecessarily. Also, as time goes by without conflict, people can become complacent. Also, individual bears can alter their behavior for reasons known or unknown and cause injury or death to people. It is through awareness of the risk and by responding accordingly that we can build support for grizzlies in Montana and minimize their risks. If we fail to respond adequately to concerns for human safety, there will not be local support for maintaining this species.

As grizzly bears in the Yellowstone ecosystem expand into new habitats outside the Primary Conservation Area (PCA), they will be expanding into habitats which in large part are already occupied by people living, working and recreating. With this expansion, the number of bear/human encounters will increase. These encounters could lead to injuries or death for both humans and bears.

Under Montana Statute 87-3-130, a citizen may legally kill a grizzly bear while acting in self-defense if the bear "… is molesting, assaulting, killing, or threatening to kill a person…" In the Yellowstone Ecosystem during the period 1990-99, 22 grizzly bears were killed by individuals acting in self-defense. With the potential for increasing human/bear encounters, safety for both humans and bears becomes an important issue.

One purpose of this management plan is to minimize the potential for human-grizzly 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.

Although there are a variety of situations that can result in a human-grizzly conflict, the primary categories are: 1) Food related - improper food storage or sanitation in either a backcountry (hunter camp, hiker or other backcountry recreationist), rural (farm/ranch, cabin, church camp, etc.) or urban setting (subdivision, town); 2) surprise encounters-females defending cubs, bears

defending a kill/carcass, bears surprised in close quarters and acting defensively, etc.; 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, bears associating gunshots with a food source (carcass or gut pile), etc.

In summary, it is recommended that any bears that have killed a human be removed from the population if they can be reasonably identified. Some people suggest that if evidence exists that the person precipitated the attack, that the bear not be removed. Although this is considered an alternative, in our judgment, allowing bears that have been known to kill someone to remain in the population will jeopardize local support. With effective management programs there will hopefully be very few of these incidents.

Strategies preferred to minimize or resolve human-grizzly conflicts include:

1. Inform and educate the public
2. Enforce food storage rules/regulation
3. Use of deterrents and/or aversive conditioning methods
4. Management control
5. Hunting

Inform and Educate

People living, working and recreating in the PCA have been exposed to grizzly bears for decades. However, outside the PCA most individuals have less experience with grizzly bears. People in these peripheral areas will initially have a much lower comfort level relative to grizzly bears. In the past, bear safety information has often been based on fear of the bear. It is apparent that some people do fear the grizzly bear. Some of the concerns are based on worries that the presence of bears in new areas would reduce people's freedoms and safety while they are recreating and conducting economic activities.

Ideally, fear of the bear should largely be replaced by awareness or informed respect. Respecting bears and learning proper behavior around them will help keep bear encounters positive for both people and bears, and reduce the likelihood of negative encounters. Education is the key. Bear safety information should be based on the biology and behavior of the bear, on how to interpret bear behavior, and on how to prevent encounters. Information should address the situations which cause the majority of human-bear conflicts: bear habituation to humans, bear use of human food sources, and close encounters. Bear safety information should be of a positive, non-alarmist nature and should target specific audiences – hunters, hikers/recreationists, rural homeowners, livestock operators, rural communities, commercial interests (loggers, miners, resort operators), etc. Community involvement is also important in developing bear safety programs. FWP will work in partnership with communities located in bear habitat to develop/promote programs which prevent human-grizzly conflicts. Some examples of the types of information available are found in the packet on the back cover of this document.

Information will be delivered at FWP regional headquarters and license agents in Regions 2, 3, and 5 in a variety of ways including brochures, pamphlets, and guides made available to the

public via media presentations (newspaper articles, TV spots, "Montana Outdoors" magazine, etc.). Public displays and presentations (slide shows/talks presented to schools, communities, sportsmen groups, sportsmen shows, etc.) will be presented by regional information officers, grizzly bear management specialists, and other FWP staff as requested or needed to address problems which may develop. Much of this information will also be made available through the Internet via the FWP website (**www.fwp.state.mt.us**). The International Association for Bear Research and Management (IBA) has produced a 50-minute video dealing with bear safety. This state-of-the-art video (*Staying Safe in Bear Country*) was written by bear biologists and is available to the public and for agency use from FWP.

Enforcement of Food Storage Rules and Regulations

Within the PCA the Forest Service has implemented food storage regulations designed to minimize bear-human conflicts (Appendix C). These regulations should be applied to all public lands statewide where bears may occur and should apply to anyone using these areas (loggers, miners and livestock operators as well as recreationists). FWP will seek to establish an MOU or other appropriate mechanism with the Forest Service and BLM to expand the food storage order. On private land and in communities, church camps, resorts, etc., people/users should be encouraged to use only bear-proof garbage containers. In British Columbia, some communities have revised waste laws making bear-proof garbage bins mandatory for residences and bear-proof container enclosures mandatory for all businesses. As recommended in this plan, local groups are the appropriate avenue for addressing these concerns and developing necessary solutions. Communities will need to remain vigilant when dealing with food storage/waste storage problems. In our experience, these efforts are very successful. However, over time people tend to forget about past problems and can revert to those behaviors that created problems in the past. FWP will seek support from the Fish, Wildlife & Parks Foundation, as well as other foundations, to assist with these programs.

Bear Repellents and Deterrents

Over the past decade considerable effort has been directed toward the development of non-lethal techniques for dealing with problem bears. Two promising techniques are repellents and deterrents. A repellent is activated by humans and should immediately turn a bear away during a close approach or attack. The most promising repellent is a capsaicin spray ("pepper spray"). Several brands have been developed which have been used successfully to repel attacking bears. These products are for defensive purposes only and to be effective must be sprayed at the bear's face (the eye area). People working and recreating in bear habitat should be encouraged to carry pepper spray. Information will be available as to what repellent products are available and how to use them properly. In addition, FWP will work with various private interests to make these more readily available (i.e. cost share, etc.).

A deterrent should prevent undesirable behaviors by turning bears away before a conflict occurs. Where removal of an attractant has not been possible, electric fencing has proven to be an effective deterrent to prevent bears from accessing human food sources (garbage, food storage areas, livestock boneyards, etc.). Rubber bullets and hard plastic slugs have been used to educate bears to avoid a particular area, usually when a bear has been attracted to a human food source or

when a bear shows indications of becoming habituated to human activities. Dogs have also been used to deter bears from livestock and from backcountry work camps.

Aversive Conditioning

Aversive conditioning is non-lethal bear control and is used as an alternative to killing or relocating bears that become too closely associated with people. Aversive conditioning should modify previously established undesirable behavior through the use of repellents or deterrents. This conditioning must be repeated until avoidance of people or their property has been firmly established. The primary goal of aversive conditioning is to train bears to avoid people and their activities. In recent years the Wind River Bear Institute has developed a Partners in Life Program with a goal of providing for coexistence of humans and bears by preventing and reducing conflicts. The program utilizes highly trained Karelian bear dogs in combination with other deterrents (rubber bullets, cracker shell, etc.) to teach bears to change their undesirable behaviors. Problem bears are taught to behave properly and the public is educated to behave in a manner that prevents bear problems and their reoccurrence. The program has been used successfully on both black and grizzly bears in Glacier National Park, Yosemite National Park, several Canadian parks, and on private and public land in northwest Montana and southwest Alberta. FWP preferred approach will be to expand this program into southwestern Montana. It will also be a flagship program for the FWP Foundation which provides opportunities for general public support of these efforts. It should be noted that aversive conditioning is not always successful, and some individual bears will still occasionally need to be removed.

Management Control

Bears may become habituated to human activities (ignore human activity) or food-conditioned (consume human food or garbage). These bears may lose their fear of humans and no longer avoid people. Habituated, and especially food-conditioned bears, are the ones most often involved in injury or death to human recreationists. To deal with these issues, FWP preferred approaches are as follows. If the bear is already habituated and/or food conditioned and is viewed as a threat to human safety, that bear would be removed (euthanized or relocated to a research facility/zoo). Any bear causing human injury or death while acting in a predaceous manner, will be destroyed. A bear displaying aggressive but non-predaceous behavior will not necessarily be removed, depending on the circumstances of the encounter and the sex, age and reproductive status of the bear.

Nuisance bears that have not yet become habituated or food conditioned may be candidates for either: 1) trapping and on-site release accompanied by aversive conditioning, 2) on-site aversive conditioning without trapping, or 3) trapping and relocation. Relocation is the least desirable option. Relocated bears often return or cause problems in another area and ultimately have to be destroyed.

Hunting To Address Human Safety Concerns

FWP believes hunting can play a role in addressing human safety issues. FWP therefore prefers to include this tool in the management program. Properly conducted hunting programs can

impact the behavior of the hunted population, making them wary of people. This occurs by changing the hunted animals' behavior making them avoid people. It also promotes survival and acceptance of potentially dangerous animals by those directly impacted by the presence of grizzly bears. The avoidance behaviors hunted animals exhibit may be unfamiliar to some people, but FWP experience with managing wildlife indicates they are real. One example is to notice how easily elk are approached in Yellowstone National Park and how difficult it is to get as close to them where they are hunted. These avoidance behaviors include fleeing, hiding, or being active when people are not, which will promote better acceptance of grizzlies. Other reasons are discussed later in the plan.

Habitat/Habitat Monitoring/Management of Human Use of Bear Habitat

This management plan recommends coordinated monitoring of major grizzly bear food sources and consulting with land management agencies on 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.

- FWP will continue to cooperate with other members of the IGBST in a coordinated effort to collect and analyze habitat data.
- FWP will work with land management agencies to monitor habitat changes in a manner consistent with our overall approaches for all other managed species.
- FWP will continue to use our statewide habitat programs to conserve key wildlife habitats in southwest Montana.
- FWP will identify and monitor whitebark pine, moth aggregation sites if identified, and other key foods such as ungulate population levels.
- FWP will recommend that land management agencies manage for an open road density of one mile per square mile of habitat consistent with FWP's statewide Elk Management Plan guidelines.
- FWP will support keeping existing inventoried roadless areas in a roadless state and work with local groups and land managers to identify areas where roads could be reclaimed.
- FWP will work with the Department of Transportation to address wildlife crossing needs on their projects.
- FWP will monitor coal bed methane activities and other oil and gas projects and input grizzly bear needs in these permitting processes.
- FWP will work with local groups to identify and promote habitat characteristics which benefit bears such as maintaining core areas or working with county planners in important habitat areas.

Because grizzly bears are omnivorous and opportunistic, they are often able to survive in a variety of habitats and utilize a variety of foods. Grizzly bear expansion and population increase is expected to be focused initially on areas in the GYE during the timeframe of this plan (10 years). Therefore, FWP will focus its grizzly bear habitat management activities in areas that are adjacent to, and being reoccupied from, the PCA within the GYE. FWP will also begin the process of evaluating other areas that may be occupied with the ongoing expansion of the grizzly bear population and evaluate them for needed habitat programs.

Four major food sources utilized by bears inhabiting the GYE are whitebark pine (*Pinus albicaulis*) seeds, army cutworm moths (*Euxoa auxiliaris*), winter-killed large ungulates (elk and bison), and spawning cutthroat trout (*Oncorhynchus clarki*). While the existence and abundance of these food sources has been well documented inside the PCA, there is less documentation for the areas outside the PCA. Existing data indicates that winter-killed large ungulates and spawning cutthroat trout are less available to grizzly bears outside the PCA. However, neonate ungulates may be more available in these areas. Therefore, FWP will direct its monitoring of major grizzly bear foods toward whitebark pine and army cutworm moths if any are identified. Ungulate populations and cutthroat trout will be monitored using data collected during FWP annual fish and ungulate population and trend surveys. If it appears that bear use of these or other food sources is important, monitoring protocols will be implemented.

FWP, in cooperation with the USFS, will survey selected whitebark pine stands and identify any army cutworm moth aggregation sites using existing methodology implemented by the IGBST within the PCA. Whitebark pine stands will be identified and monitored for seed production, tree health (evidence of blister rust, *Cornartium ribicola*), and evidence of bear use. Any identified moth aggregation sites will be monitored for use by bears. Bear activity at moth aggregation sites is an indirect indicator of presence or absence of moths during a given year.

Security cover, the ability of an environment to protect against threats and disturbances, is another important component of habitat. Grizzly bear habitat can be impacted by a reduction of security cover as the direct or indirect result of various human activities, land management practices, and natural phenomenon including recreational development and primary roads, restricted roads and motorized trails, human use, oil and gas development, logging practices, and forest fires.

FWP recognizes the need to minimize negative impacts. Other than on FWP's own wildlife management areas, FWP is not the decision maker on Federal or State School Trust lands regarding management activities. However, FWP works closely with these land management agencies to minimize negative impacts on fish and wildlife. Additionally, FWP has been considering grizzly bears in comments and input regarding land management activity in occupied grizzly bear habitat, whether inside or well outside the PCA.

FWP has strong private land habitat initiatives. Most are funded through earmarked accounts, directed at private lands and include Montana's Migratory Bird Stamp (dollars directed toward wetland riparian areas), Upland Game Bird Habitat Enhancement Program (dollars go primarily towards enhancing via good management shrub/grassland communities) and Habitat Montana. Specifically, Habitat Montana allows FWP to conserve habitat on private lands via lease, conservation easements (purchased) or fee title acquisition. This program is not directed at specific species but rather at conserving Montana's most threatened habitats, i.e. wetlands/riparian areas, shrub/grasslands, and intermountain foothills. Habitat Montana funds have been used to conserve habitat in the Yellowstone system via the Northern Range Acquisition, Gallatin Lands Consolidation Program, and three conservation easements along the west face of the Madison Mountain Range in the Madison Valley. All of FWP's habitat conservation projects in the Yellowstone system have included components of important grizzly

bear habitat. Because of the subdivision threats, efforts to conserve habitat in this portion of Montana will continue to be a priority with FWP habitat initiatives.
The intermountain valleys between major mountain ranges of southwest 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. Major highways bisect most of the intermountain valleys. FWP reviews subdivisions, applies land conservation programs like Habitat Montana, and works with Montana Department of Transportation on mitigating barriers to crossing transportation routes in order to build tolerances in finding ways for wildlife, including grizzly bears, to "fit" on private land.

This approach is currently used for other species and has been proven to be very effective.

Specific Habitat Guidelines

A general statement of the approach FWP pursues when dealing with habitat issues is as follows: FWP will seek to manage all fish and wildlife habitat on public land, whether roaded or unroaded, as valuable and unique lands that will remain open to hunters, anglers, and other public users. Accessibility to public lands will be balanced with the year-round requirements of fish and wildlife (habitat, clean water, food, shelter, open space, and disturbance management), while maintaining a functioning road system, including keeping inventoried roadless areas roadless (with science-based exceptions made for forest health, restoration, and other national needs). By implementing this program we can maintain grizzly bears while still providing for other uses as appropriate. Reasons for the decline of brown/grizzly bears in North America are excessive human-caused mortality and habitat loss. Habitat loss results from conversion of native vegetation to agriculture, depletion of preferred food resources (i.e. salmon and whitebark pine), disturbance, displacement from human developments and activities (roads, mines, subdivisions), and fragmentation of habitat into increasingly smaller blocks inadequate to maintain viable populations.

Management

Radio telemetry studies have identified roads as significant factors in habitat deterioration and increased mortality of brown/grizzly bears. Areas of adult female displacement by roads and development totaled about 16% of available habitat in Yellowstone National Park. The percentage of habitat loss as a consequence of behavioral displacement from roads is a function of road density. The percentage is higher in areas having higher road density regardless of the distance at which roads affect bear behavior.

The distance at which bears appear to be displaced by roads varies in different areas and seasons. Correspondingly, the impact of roads on displacement from preferred habitats is greatest in spring. During fall, bears tend to move to higher elevations to forage. At this time they select habitats that are typically more distant from existing roads. Consequently, the importance of disturbance displacement by roads is less evident during fall than during spring. Level of traffic also appears to influence degree of bear avoidance of roads.

Bears living near roads have higher probability of human-caused mortality as a consequence of illegal shooting, control actions influenced by attraction to unnatural food sources, or by being mistakenly identified as a black bear by hunters.

Because of local concerns, FWP will seek to maintain road densities of 1 mile per square mile of habitat or less as the preferred approach. This is the goal of our statewide elk plan (including the southwestern Montana areas covered by this plan). The goal has been demonstrated to meet the needs of a variety of wildlife while maintaining reasonable public access. If additional management is needed based on knowledge gained as bears reoccupy areas, it should be developed and implemented by the local groups established or directed by this plan.

The following general management guidelines are applicable coordination measures that will be 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, both 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. Avoid human activities or combinations of activities on seasonally important wildlife habitats which may result in an adverse impact on the species or reduce the 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, etc.
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. Roads which are not compatible with area management objectives and are no longer needed for the purpose for which they were built will be closed and reclaimed. 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 deemed appropriate.
7. Impose seasonal closures and/or vehicle restrictions based on wildlife or other resource needs on roads which remain open and enforce and prosecute illegal use by off road vehicles if given authority.
8. FWP supports the U.S. Forest Service and Bureau of Land Management restrictions banning all motorized off road/trail use.

9. Efforts will be directed towards improving the quality of habitat in site specific areas of habitually high human caused bear mortality. Increased sanitation measures, seasonal road closures, etc., could be applied.

One alternative suggested was to expand the current higher level of habitat restrictions and programs in place in the PCA to bear occupied areas outside the PCA. It is our judgement that this approach would not generate social acceptance for the bear and its further 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, or to learn more and adapt the program in the future.

Population Monitoring

- For grizzly bears, like most species, density (number/unit area) is a key population parameter, and FWP will estimate densities using the best available data.
- FWP will monitor unduplicated females with cubs in the PCA and outside as appropriate.
- FWP will monitor mortality including timing and causes and gather survivorship data in cooperation with the IGBST.
- FWP will utilize verified sightings to document changes in bear distribution. They would include DNA samples, photographs, sightings by reliable observers, tracks, etc.
- FWP will conduct research in cooperation with other entities to obtain more detailed population information where needed.
- These monitoring efforts will be coordinated with the other states and information collected within the PCA by the IGBST as part of a cooperative effort and presented in annual reports.
- This effort will be conducted by and coordinated between FWP Area Biologists and bear management specialist, with assistance from IGBST.
- Population trend, in combination with habitat conditions, demographics, human/bear conflicts, social tolerance, and research findings, will be our guide to decisions regarding population management.

Analysis units will be established outside the PCA. These units will be used to collect and analyze demographic and occupancy data on grizzly bears by geographic area. FWP anticipates these units will be mountain ranges or groups of ranges similar to those used for black bear management. However, if information from bears outside the PCA indicates a change is required, the units will be modified as needed. These units will be created 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 inside and outside of the PCA, monitoring protocols will be similar, but the sampling may vary depending on the survey area. Monitoring of unduplicated females with young may be used as an index to assess population trend or abundance over time. The data are currently used to estimate a known minimum population size for the PCA. The number of unduplicated females are summed over a 3-year period and divided by the known percentage of females (27.4%) in the population to achieve a minimum population estimate, and it should be noted that this is a very conservative approach to assessing this population parameter. This minimum population estimate is used to set mortality thresholds for all human-caused mortalities. The IGBST is currently evaluating different statistical approaches and monitoring techniques that

will allow agencies to estimate total population size for this population of bears, but this is not yet available. FWP will review this information when available and will also attempt to identify protocol bias in any approach including females with cubs data.

Radio-marking techniques to estimate population size are not broadly applied outside of Alaska because of expense, need to capture bears to apply radio collars, and low sightability of bears in heavily forested habitats. Many researchers in Canada and the United States are focusing on development of techniques to estimate number and density employing hair-snaring methods. 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 in the barb of the wire. 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, expense, and typically have problems identifying the area inhabited by the estimated population. This closure problem creates difficulties in estimating density. So far, the DNA and camera techniques are not standardized for design or data analysis, hence results from different areas may not be comparable. In Glacier National Park, U.S. Geological Survey researcher Kate Kendall has conducted the most extensive effort to estimate grizzly bear abundance using hair-snaring and DNA analysis. Although her research is in progress, she has identified a minimum number of different individuals (>200) in Glacier National Park and vicinity that is larger than previously suspected.

Estimates of density frequently have problems associated with differential inclusion of age or sex groups. Because newborn cubs have high mortality rates, estimates made early in the year will be larger than estimates made later in the year for the same population. Closure problems may result in overestimation of males, the more mobile sex, in a density estimation area. FWP, when attempting to estimate bear density, will be aware of these sources of potential bias and specify which sex and age groups occur in density estimates. With DNA hair-snaring techniques, efforts are made to exclude cubs by setting the barbed wire too high to snag their hair. Regardless, some cubs leave hair samples behind, and some bears less than 1 year old may be able to go under the barbed wire without leaving hair. The age of a bear is not revealed by DNA analyses. The Alaska capture-mark-resight technique avoids most of these problems, but estimates of precision may be exaggerated by tabulating each member of a family group as a separate individual.

Management/research trapping and radio collaring provide necessary data on grizzly distribution, movements, and home ranges. Data collected will include estimation of seasonal, annual, and lifetime home ranges, identification of important seasonal habitats and foods, potential travel or linkage corridors, extent of occupation, and denning sites. Distribution of bears will be determined by using any or all of the following methods: hair corrals, observation flights, telemetry flights, nuisance activities, and verified sightings.

Survivorship data will also be obtained if funding is available utilizing aerial and ground telemetry of radio-collared bears. These data are used to determine average life expectancy by

sex and age class, causes of mortality, etc., for bears that inhabit different portions of the ecosystem. All suspected human-caused mortality will be investigated by FWP personnel to determine cause of death. These mortalities will be recorded and the information used, along with other mortality data, in the management of the population. This survivorship information will be fundamental to addressing the issue of the potential differences in survivorship of grizzly bears in the PCA, where there are extensive habitat protections, versus bears that live on multiple use areas outside the PCA. In addition, we recognize that no one factor can provide the needed information to assess population size and trend. Ultimately any assessments will result in some level of estimation and extrapolation for management purposes. This is the same approach FWP has used successfully for many other species of wildlife. To assure that our assessments of population size and trend are adequate, we will review the following in making our judgements.

1. Federal Restrictions: Federal laws and regulations may have major influence on the bear population. For example, changes are currently being developed in travel plans/forest plans that will affect bear conservation.
2. Results of population trend surveys: A systematic method to survey public and professional sectors will be developed. Results of the most recent survey will be consulted.
3. Public opinions and perceptions from annual tentative season meetings will be solicited and evaluated.
4. Results of population and habitat research will be consulted. Specific changes in age structure, unreported mortality from marked bears, population densities, habitat use, and habitat quality will be considered.
5. Major changes in human use of management areas will be evaluated. Because Montana's grizzly bears are linked to those in Wyoming and Idaho, land use changes in those states will be monitored as well.
6. Changes in the population status in Yellowstone National Park and Grand Teton Park will be gathered through discussions with the appropriate management agency.
7. Changes in state and federal road closure policies will be evaluated because they influence the number of grizzly bears susceptible to mortality.
8. The realized or perceived changes in the price of grizzly bear parts will be evaluated. Such changes may affect the level of profiteering.
9. An attempt will be made to document grizzly bear range expansions or contractions through data gathering. This data will help evaluate changes in the population status.
10. Based on all available evidence, changes in management areas or management unit boundaries will be evaluated.
11. The number of control actions will be determined annually. If a trend is apparent in four or five years of analysis, then the program will be re-evaluated and adjustments made to ensure the population is not being excessively impacted. The number of transplants from or into the ecosystems will be documented.
12. Grizzly bear management policies in Wyoming and Idaho will be evaluated in relation to FWP policies. If excessive mortality is occurring in a neighboring state, the FWP program will be adjusted accordingly to ensure survival of the population, and FWP will work with that state to reduce mortality.

13. Evaluation of mortality statistics will be conducted. It is recognized that not all bear deaths are detected and recorded. FWP will, however, try to be as complete as possible. The following mortality statistics are of particular importance:
    a. Male/female sex ratio.
    b. Median age of harvest should any occur: median ages should be calculated separately for males and females.
    c. Determine total mortality: trends in total number of bears should be evaluated in conjunction with other population statistics to determine if changes in mortality quotas are needed. It is anticipated that human caused mortality quotas will be very conservative at 5% or less of the total population on a 6 year average with no more than 40% females to allow for continued increased populations. This recommendation is based on our past experience with grizzly bear management in northwest Montana as reported in the Programmatic EIS for that area and subsequent updates.
    d. A summary of mortality from 1992-2001 is presented in Table 3.
14. Monitor litter sizes: litter sizes throughout the ecosystems will be recorded and evaluated annually.
15. Evaluate hunter effort if a hunt occurs: Changes in hunter effort, location of hunt, etc., will substantially aid interpretation of population statistics.

Table 3. Grizzly bear mortalities in southwest Montana, 1992-2001.

	YEAR											% of
CAUSE:	**'92**	**'93**	**'94**	**'95**	**'96**	**'97**	**'98**	**'99**	**'00**	**'01**	**Total**	**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
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	100

As an alternative, FWP has considered the collection of population data in a manner that would provide statistically precise population estimates. For a slowly reproducing species like grizzly bears in which even a maximum lambda will always be close to 1.0 (meaning the populations don't fluctuate greatly on an annual basis), it will seldom be possible to have a 95% confidence interval that does not overlap 1.0. However, in FWP's judgment, using the weight of evidence collected in different ways and multiple sources is a more practical and meaningful approach for assessing population trend. Population trend will be our guide to management decisions.

Future Distribution

- FWP expects grizzly bear distribution to continue to increase.
- FWP views linkage as providing opportunities for bears to naturally reoccupy suitable, but unoccupied habitat, and will continue to work with Idaho, Wyoming, and the IGBC to address this issue.
- Areas of potential focus to address problems with movement of bears are the Madison and Paradise valleys, Gallatin Canyon, and Bozeman Pass.

Current information demonstrates that the distribution of bears in the GYE is increasing. The most recent review of the distribution of grizzly bears in the GYE by the IGBST demonstrated occupancy well beyond the original recovery zone (PCA) (Fig. 3.) A comparison of the current distribution from the 1990s to previously published distribution maps showed an approximate increase in occupied habitat of 48% and 34% from the 1970s and 1980s, respectively. This expanded distribution has also been noted by others (Fig. 4). It should be noted that these

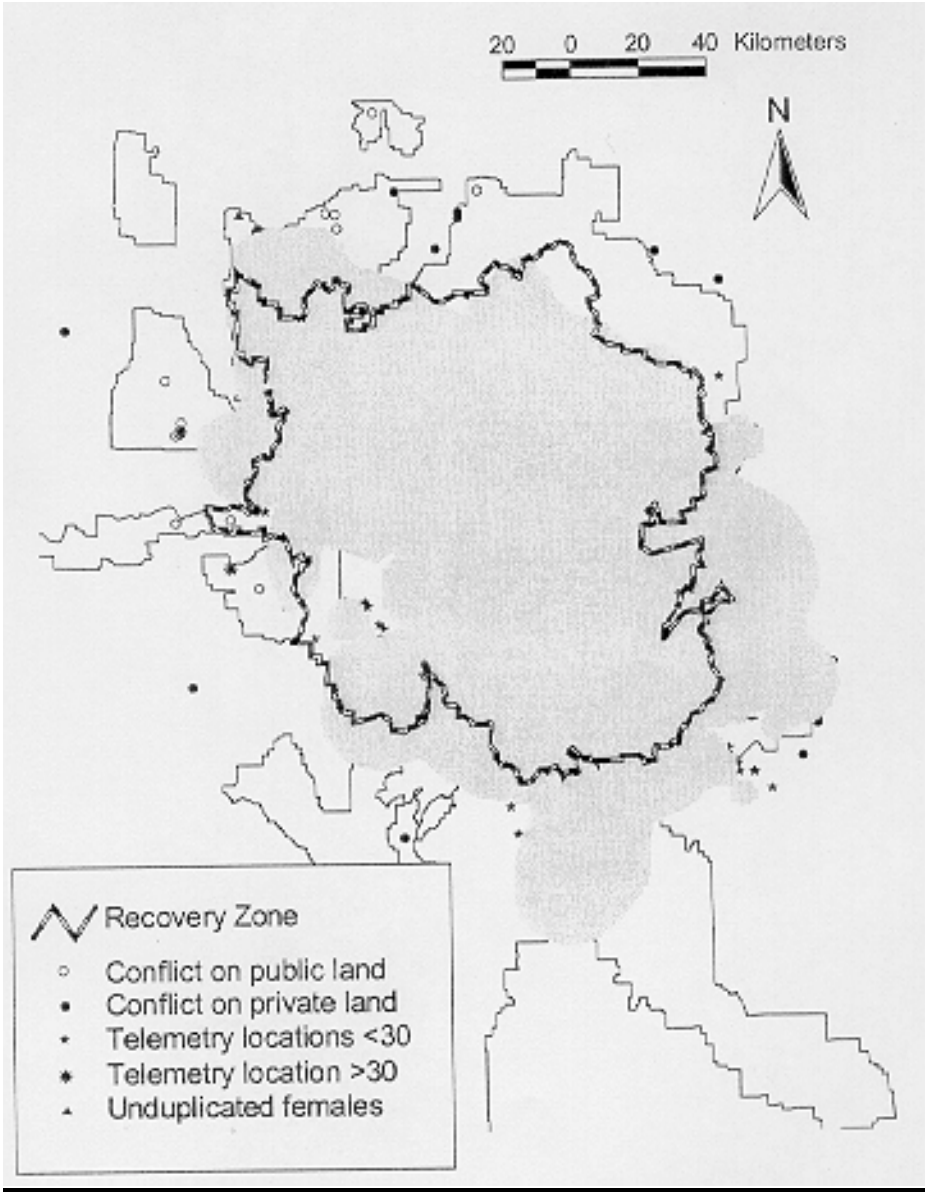


Figure 3. Grizzly bear distribution in the Greater Yellowstone Ecosystem, 1990-2000. Map represents the outer edge of a composite polygon constructed by overlaying fixed kernel ranges constructed from (1) observations of unique unduplicated females with cubs of the year, (2) relocations of radio-collared bears, (3) locations of grizzly bear-human conflicts, confrontations, and mortalities. Points represent data not contained within this coverage.

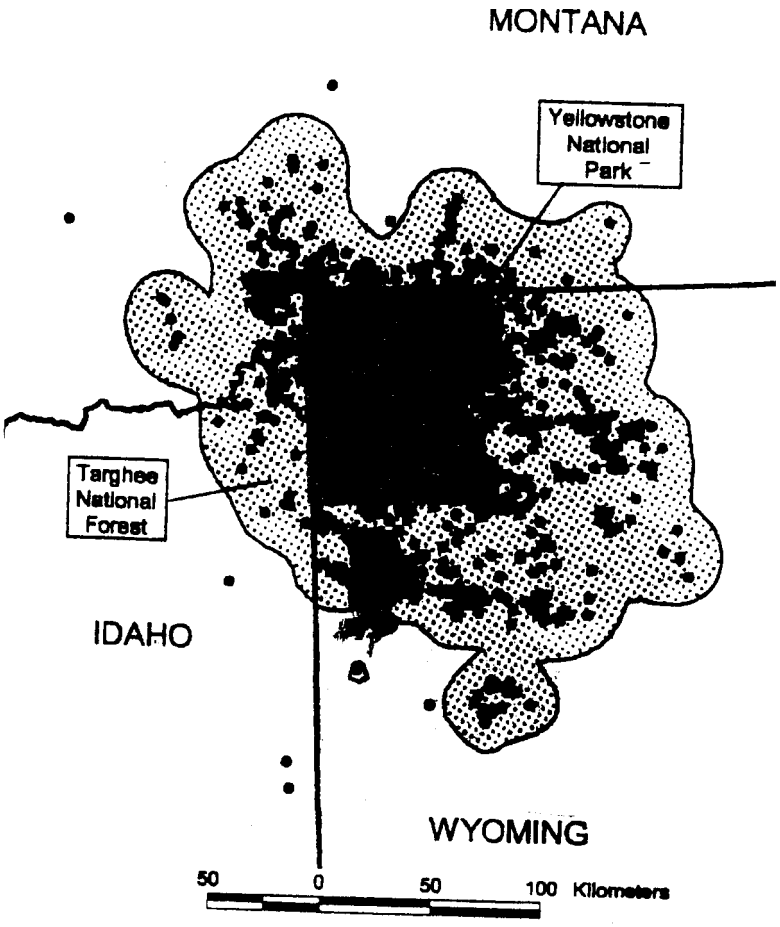


Figure 4. Grizzly bear distribution in the GYE from Bader, M. Northwest Science, Vol. 74, No. 4, 2000.

boundaries should be interpreted as a fuzzy approximation, and additional supportive evidence should be considered when making judgments about occupied habitat near the edge. Based on current programs, both within and outside of the PCA, it is expected this trend will continue during the period covered by this plan. Data from the composite home range of all marked bears in the GYE for 1980 and 1999 also demonstrate this trend and can be used to estimate potential future changes in distribution (Fig. 5). We recognize that distribution changes beyond the PCA and its immediate environs may occur at a somewhat slower pace; however, it is our intention to implement this management plan in a way that future expansion in distribution is allowed to continue. If the expected increase in distribution does not occur, FWP will evaluate, in conjunction with local work groups, the opportunity for translocation of surplus non-nuisance animals into suitable habitats in an effort to be pro-active in supporting distribution increases. This approach is consistent with that used for all of the species FWP manages. Because distribution is currently increasing without translocation, FWP does not anticipate that this would occur in this planning cycle.

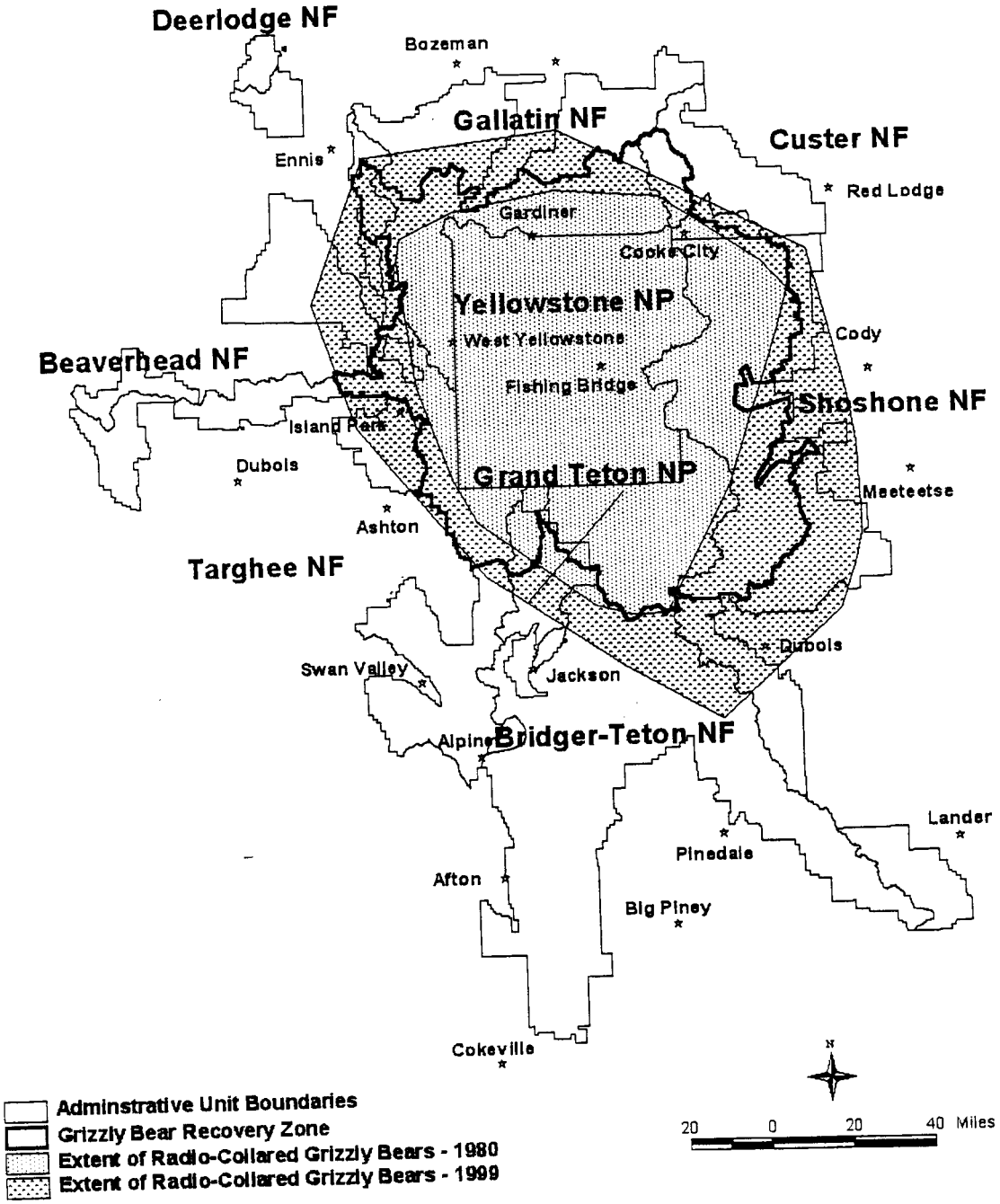


Figure 5. Grizzly bear distribution from information on radio-collared animals.

Finally, there has been and continues to be a great deal of discussion on the potential for linking the various segments of the 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 even today there is the possibility of encountering a grizzly bear (Fig. 6).

Figure 6. Light gray = areas occupied by black bears. Dark gray = areas with the potential to encounter grizzly or black bears in Montana.

There is currently a great deal of discussion and work to address the issue of population linkage, and many different definitions of what linkage means. The IGBC is currently creating two linkage-zone working groups to further address this issue. Generally, a linkage zone is an area between two areas of habitat where animals can live at certain seasons and where they can find the security they need to move between these areas. Linkage zones are broad areas of seasonal habitat where animals can find food, shelter, and security. The long-term health of populations of carnivores will benefit from linkage and population interaction at broader levels. These linkage areas can likely serve multiple carnivore species as well as other wildlife species such as ungulates. Dramatic changes are currently occurring in the remaining possible linkage areas due to ongoing human development and the time to maintain connection opportunities is growing short due to development of some of these lands. A linkage zone is not a corridor. A corridor implies an area just used for travel, however movement between ecosystems by carnivores rarely if ever occurs this way. For carnivores to get between ecosystems they require habitats that can

support their feeding and behavioral needs in these intervening areas. As such, linkage zones are areas that will support low density carnivore population often as seasonal residents. There are several models which attempt to address this issue, notably by American Wildlands "Corridors of Life" and Craighead Environmental Research Institute as well as the U.S. Fish and Wildlife Service (the Yellowstone Area model is not yet complete). These models use GIS to predict the broad areas of highest potential for linkage between habitat units for various carnivores. Each model has different assumptions. However, the main assumption is that human activities determine wildlife distribution in disturbed areas. Models generally look at the following: road density, human developed sites (i.e. houses, campgrounds, et.) and the influence zone around them, presence or lack of vegetative hiding cover, and presence of riparian zones. Linkage zone models used predict where grizzly bears and other wildlife species, particularly large carnivores, are most likely to cross between the large block of public land in the northern Rocky Mountains. This prediction is based on the assumption that movement is most likely to be successful where human activity is least. This does not mean that grizzly bears and other species will not try and cross in other areas. The linkage zone concept is based on maintaining and enhancing movement possibilities in areas where such movement is most likely to be successful -- the linkage zones. The most critical element of these reviews is the pivotal role that private landowners will play in maintaining these areas. Clearly FWP must meet their needs to engage them in these programs.

It is our long-term goal to allow the populations in western Montana to reconnect by occupying currently unoccupied habitats. FWP anticipates that successful implementation of this plan along with adequate local involvement can allow this to occur. In the near term we need to address those land use patterns that promote or hinder bear movement. Focus areas currently are the Bozeman Pass area, the Gallatin Canyon, and Madison and Paradise Valleys. FWP currently utilizes habitat programs in these areas to provide for wildlife needs and anticipates additional efforts with the Department of Transportation to address issues of wildlife movement across roads. FWP will also work with landowners and private interests to promote programs which provide for wildlife access to their lands. In summary, FWP's goal is to expand recovery in southwestern Montana.

An alternative considered was limiting grizzly bear distribution to just the PCA. However, in FWP's judgment this approach is logistically impossible and biologically undesirable. In order to maintain resiliency in the population to changes in habitat, tolerance levels and other factors, bears need to be allowed to occupy a broader landscape. Also, we cannot confine bears to the PCA because there are no barriers which would contain them, and it is impossible to know the location of every animal all the time.

Trails

- FWP will gather information on trail use where appropriate. Without good data, management programs trend toward extreme solutions. For example, if season of use creates problems only at specific times, it may be possible to accommodate use at other times. Conversely, without season information we will be unable to make such determinations.
- All FWP trails projects will be reviewed by the area biologist and grizzly bear concerns addressed.

- Federal trails programs are currently being adjusted, and FWP is participating in and support those efforts. FWP will seek Forest Service and BLM support of our programs/data gathering.
- Adjustments to trail access and uses should be developed through local citizen involvement using the best available science.
- FWP will evaluate snowmobile programs to ensure they avoid impacting grizzly bears, especially during den emergence.

Major changes are currently underway to address the issue of trails, trail management, off road vehicle use, and how they affect wildlife, including bears. Many people including sportspersons have recognized the need for change.

Effective July 1, 2001, motorized, wheeled cross-country travel is prohibited on National Forest lands yearlong. 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. Under the new policy, 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 that single-track road or trail. Several exceptions will apply. Cross-country travel will continue to be allowed for military needs, fire suppression, search and rescue, or law enforcement vehicles in emergencies. Forest users can also drive cross-country to campsites within 300 feet of existing roads or trails, after locating their campsite in a non-motorized fashion. As part of the decision, national forests will identify areas where more detailed local travel plans should be developed. FWP and local groups should be active participants in such plans.

FWP has developed an Environmental Impact Statement on the trails program. This document recommends that all trail activities be coordinated with a biologist to avoid unacceptable impacts to wildlife. These processes are underway because changes in technology of off-road vehicles has dramatically changed use patterns on public lands. These issues are being addressed, and it is FWP's intention that the needed changes to programs will also be developed and implemented with involvement of local citizens.

An alternative considered was to deal with bear specific trail restrictions prior to reoccupancy. However, in our judgement, this approach would result in unnecessarily impacting user groups without clear evidence of a problem. FWP's efforts on this issue are intended to build higher levels of social acceptance across user groups while still providing the necessary mechanisms to respond should problems occur.

Livestock Conflicts

- Wildlife Services will continue to be the lead agency dealing with livestock depredation (MOU Appendices D and E).
- Our focus will be on preventive programs to minimize livestock conflicts with priority toward those areas with a history of conflict or currently occupied by bears.

- FWP will work with beekeepers to provide electric fences for all apiaries accessible to bears, and FWP will re-evaluate the Guidelines for bear depredation to beehives and modify if needed.
- FWP will encourage private funding for compensation of livestock loss.
- FWP will respond to conflicts within 12 hours with at least an initial contact by telephone or in person if possible and in cooperation with Wildlife Services.

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 that support a wide variety of wildlife, including grizzlies. At the same time, they can suffer significant losses from bears. These losses tend to be directed at sheep and young cattle. In addition, honey bees are classified as livestock in Montana, and apiaries can be significantly damaged by bears. Our ability to deal with this issue will, in large part, determine the overall success of our grizzly management efforts. Currently, issues of livestock depredation are dealt with by Wildlife Services, and we anticipate this will continue. It is our intent, however, to try and focus future programs and efforts on prevention of conflicts where possible. We envision programs where landowners can contact our agency's grizzly bear management specialist for assistance with assessments of risks from bears and possible preventative approaches to minimize those risks. We will work to provide landowners and beekeepers with the appropriate tools (ex. electric fencing, aversive conditioning, guard dogs, etc.) to minimize conflicts. In addition, we will work to develop programs which provide private livestock operations with additional benefits if they implement preventive approaches and maintain opportunities for wildlife, including bears on their private lands and their public land allotments. In this way the program and its benefits are focused on operators who make an effort to address the concerns and issues that result from the presence of grizzlies. Also, as a long-term goal we will seek to enclose all bee yards in areas accessible to bears 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. We will work with the livestock industry to identify sources of funding to accomplish this. However, some funding could come from monies FWP already provides for animal damage management to Wildlife Services in cooperation with the Dept. of Livestock. Current funding is $160,000, and it is recommended that these dollars be used to support wildlife services staff whose sole responsibility would be to develop/implement preventative programs. These personnel should also be available to any livestock operation when requested to assess potential depredation risks and identify possible solutions prior to any depredations.

Devices to protect apiaries, corralled livestock, chicken and turkey coops, and stored feeds may be provided by FWP to property owners for protection of agricultural products. Protective supplies include electric fencing, audible and visual deterrent devices, and aversive conditioning devices. FWP may form partnerships with livestock operators and land management agencies to promote livestock management techniques that reduce bear depredations. For example, some people request that dead livestock be removed from grizzly bear areas. While there may be times this is appropriate, there have also been cases in Montana where livestock which have died due to poison plants or lightening have provided food for bears in areas away from potential conflict sites. Recognizing this, FWP has a program to redistribute livestock carcasses on the Rocky Mountain Front so that they remain available to bears but in areas that minimize the potential for conflict. These types of programs will also be evaluated for the GYE. Conflict

management will emphasize long-term, non-lethal solutions, but relocating or removing offending animals will be necessary to resolve some problems. FWP will continue to promote the development of new techniques and devices that can be used to protect agricultural products from bear damage.

At the present there are private conservation groups which area also assisting in developing preventative approaches, and FWP will cooperate with them to address this issue. Defenders of Wildlife has already cost shared the purchase of electric fence to protect sheep and bee yards through their Proactive Carnivore Conservation Fund. They have also purchased dogs and made them available for hazing bears away from houses and humans. These programs will be a key component of any long-term solutions to these issues.

One of the issues that frequently comes up regarding livestock damage is that of compensation of livestock operators for their losses to bears. While FWP encourages private groups (notably Defenders of Wildlife through the Bailey Grizzly Compensation Trust) to continue compensating operators, we prefer to take the approach of providing flexibility to operators as a long-term solution. Giving operators the opportunity to develop proactive problem solving plans to respond to a potential problem before it develops can build support for the long-term program of increasing bear numbers and distribution. Compensation relies on verification and this is not easily accomplished in Montana's multi-predator environment. It also requires assessment of value which can vary greatly between individual animals (for example, not every cow has the same value), and it requires ongoing funding sources. Fundamentally, however, it deals with a problem after it has occurred. If we can implement a program that provides landowners flexibility within reason and with some constraints, we believe it will build broader public support. Groups interested in conservation of the bear will need assurances that the flexibility provided will not jeopardize long-term survival or ongoing recovery prospects. We believe these needs can be met and the State Legislature has adjusted statutes to assure that this is the case (Senate Bill 163). This statute will allow FWP to adjust the flexibility afforded to landowners if needed due to excessive mortality.

An alternative suggested and considered was to force livestock operators to absorb losses which occurred on public lands no matter what the cost. However, in our judgement, this approach fails to recognize the significant contribution of private lands, which provide important bear conservation benefits. In fact, in many portions of the GYE these same private lands are critical to the survival of the bear and to accommodating an expanded distribution of the population. If a permittee could not manage depredation risks on public lands, the converse is allowing them to eliminate risks (meaning bears) on their private lands. This either/or approach is not a productive solution to these problems. Additionally, this approach actually significantly conflicts with the FWP objective of building public support necessary for expansion and long-term survival of bear populations.

Property Damage

- FWP focus will be on preventive measures, eliminating attractants, and sanitation measures, and our bear management specialist will work on these issues on public and private lands.

- FWP will secure funding for the grizzly bear management specialist position currently stationed in Bozeman and seek funding for an additional position stationed in Region 5.
- FWP will respond to conflicts within 12 hours by phone or in person if possible.
- FWP will summarize efforts annually.

Bears can and will on occasion damage personal property other than livestock. They can enter buildings, chew on snowmobile seats, tear down fruit trees, and so on. Bears are highly attracted to almost any potential food source. Processed human food, gardens, garbage, livestock and pet feeds, livestock carcasses, and septic treatment systems are particularly attractive to bears near camps and residential areas, and are often the cause of human-bear conflicts.

FWP will work to identify potential sources of attractants and will work with private property owners, recreationists, and government agencies to reduce the source of attractant with long-term resolution being emphasized and making attractants inaccessible to bears. When the attractant cannot be eliminated, FWP will provide technical assistance to protect the property and to reduce the potential for human-bear conflicts. Techniques to prevent damage may include aversive conditioning, physical protection (i.e., electric fencing), relocating or removing offending animals, and deterrent devices. FWP will continue to encourage the development of effective non-lethal damage management techniques and equipment. FWP will cooperate with city, county, state, and federal governments to develop model systems of managing attractants, provide incentives for property attractant management, and pursue penalties that result in compliance with food storage regulations.

In FWP judgment, the key to dealing with this issue is the same as all nuisance situations in that prevention is better than responding after damage has occurred. Teaching people how to avoid problems is key to this approach along with rapid response if damage does occur. FWP will work to keep bears from obtaining unnatural foods or becoming habituated to humans. In general, the nuisance guidelines from the PCA will be followed. FWP response to property damage will also include those techniques currently employed through the Partners for Life program including the use of Karelian bear dogs and on-site aversive conditioning.

FWP will use program such as "Living With Wildlife" to further these goals. Living With Wildlife is a grant program developed by Montana Fish, Wildlife & Parks (FWP) and funded by the Montana Legislature to promote the successful coexistence of people and wildlife in urban and suburban settings. Living With Wildlife will fund projects that emphasize local involvement, partnership approaches, cost sharing, innovation, prevention, and proactive solutions to human/wildlife conflicts. Although FWP administers Living With Wildlife, other agencies, local government, non-governmental organizations, and private citizens will develop and implement most of the successfully funded projects.

An alternative considered was to keep bears and people apart. However, in FWP's judgement, this approach will fail because bear distribution and densities would have to be so low that it would preclude the objective of maintaining a healthy bear population.

Nuisance Guidelines

- FWP will focus our immediate action in areas already occupied by grizzly bears, i.e., Absaroka/Beartooth, Gallatin, Madison, and Gravelly Mountain ranges.
- FWP will attempt to minimize the number of bears removed from the population. This will also be the case even if this population is delisted.
- Develop a cost-sharing program to do preventative work, thus encouraging a variety of interest groups to work together with our agency to minimize problems and increase tolerance for bears.
- FWP will review and adjust the guideline for dealing with damage to beehives (Appendix E).
- FWP will consider the actions and potential impacts of programs in Wyoming and Idaho when determining our response.
- Determination of nuisance status and response is described in Appendix F.

Considering how many people live, work, and recreate in southwest Montana, it is important to note there have been minimal conflicts overall. A summary of conflicts with humans and grizzlies in southwest Montana is presented in Figs. 7 and 8. However, nuisance or "problem" bears that are not managed successfully may threaten the entire grizzly bear program. When bear problems are not adequately addressed, there are negative consequences for the individual bear, the public, and the reputation of grizzlies in general is damaged. The primary goal is to maximize human safety and minimize losses to property while maintaining viable populations of grizzly bears. Strategies that address nuisance bears should be timely and informed. Successful co-existence and social acceptance of grizzly bears is largely dependent on prevention and mitigation of human-bear conflicts. 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, providing the problems are not the result of intentional human actions. Agency management of nuisance bears will be based on risk management protocols that consider the impacts to humans as well as the impacts to the bear population, and will range from no action to lethal control. FWP will use an effective “rapid response” system for nuisance bear determination and control, and will employ any technique that is legal, effective, and appropriate to manage the conflict (Appendix F).

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

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

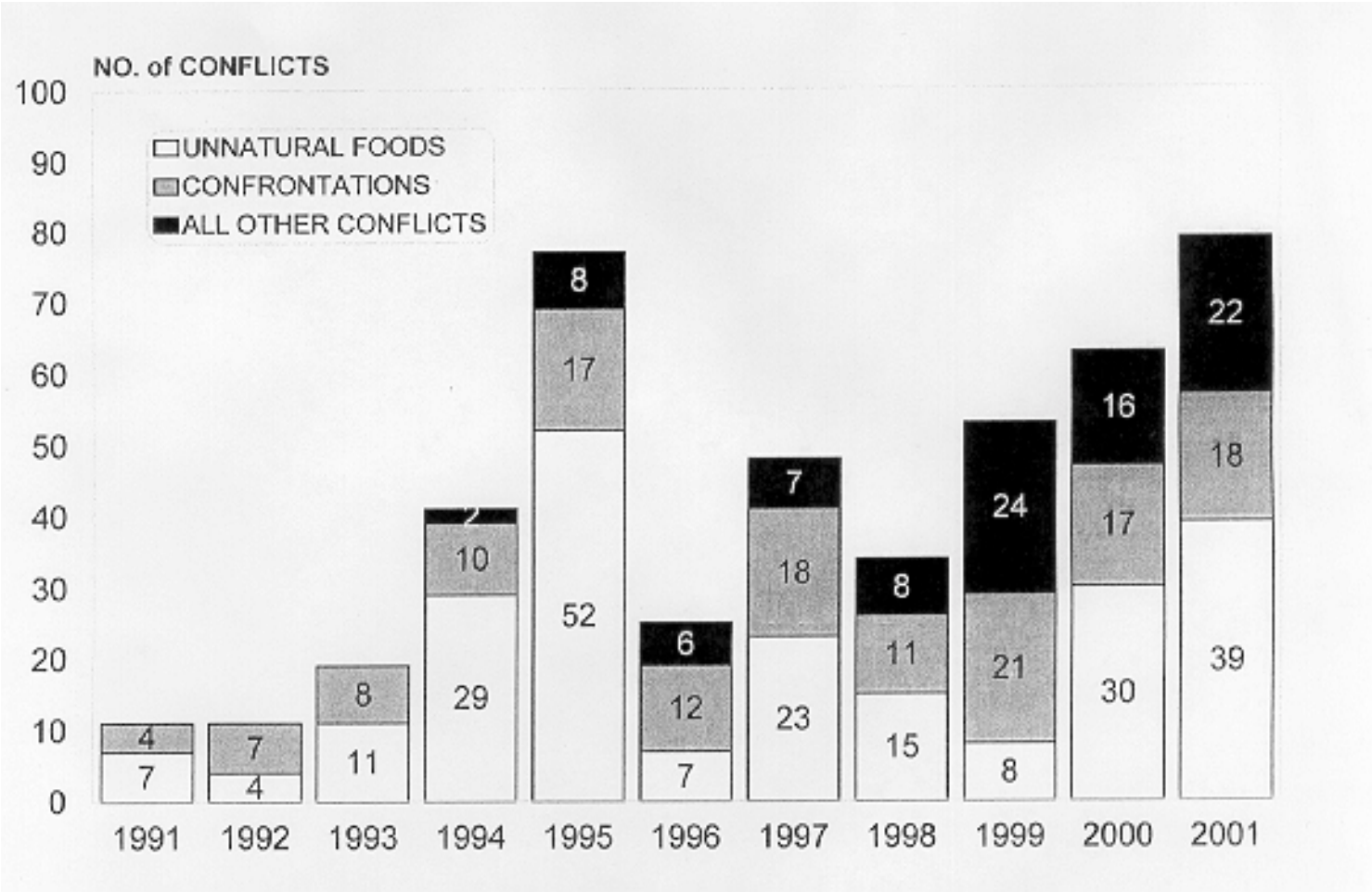


Figure 7. Grizzly bear/human conflicts in Southwest Montana, 1991-2001.

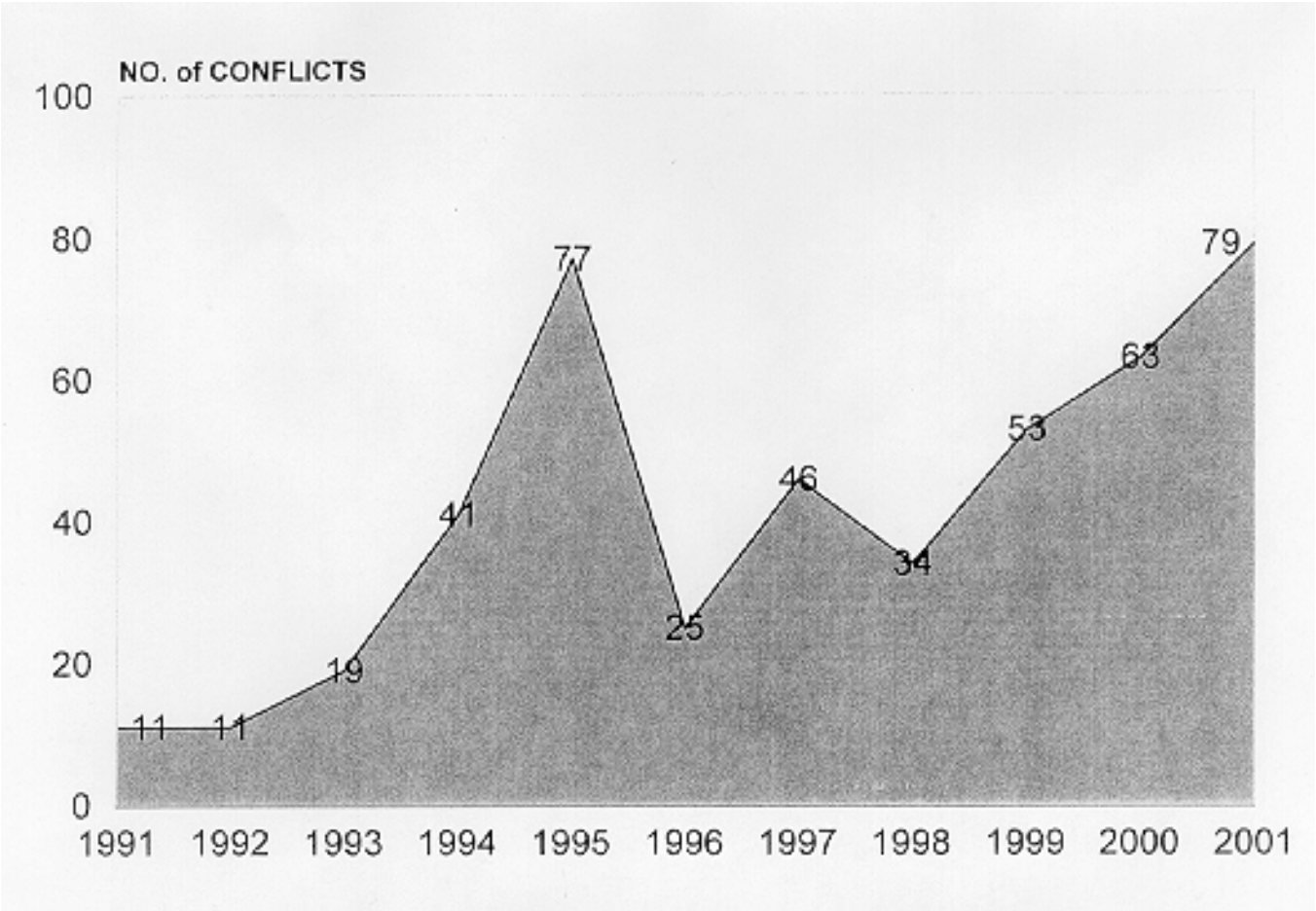


Figure 8. Grizzly bear conflicts in Southwest Montana, 1991-2001.

Capture: FWP will initiate capture operations when other options are not applicable or where human safety is a concern. Capture efforts will be initiated when they are practical, and in a timely manner. Management agencies often resort to translocation to reduce human-caused mortality associated with problem bears. Relocating grizzly bears from human-bear conflict situations is often times a short-term solution to an immediate crisis because many bears return to the conflict site or continue problem behaviors where relocated. Survival of translocated bears is largely affected by whether the bear returned to the capture site; return rates were most affected by distance transported, and age and sex of the bear. Return rates decreased at distances $\geq$75 km, and subadult females returned the least. Because of low survival and high return rates, transporting grizzly bears should be considered a final action to eliminate a conflict situation. However, transporting females must be considered a viable technique because some translocated females have contributed to the population through successful reproduction.

Removal: Lethal control techniques will be employed when other options are not practical and a reasonable opportunity for removal exists.

Bear-Human Interaction Risk Management Protocols

1. Provide conflict avoidance information and education to people living, working, and recreating in grizzly bear habitat.
2. Provide timely information to the public and land management agencies about current bear distribution, including relocations, food conditions, activity, potential and current conflicts, and behaviors (news releases, etc.). Land management agencies will be encouraged to contact their permittees with information that will help them avoid conflicts.
3. Monitor situations where the activities or behaviors of bears inhabiting areas increase the likelihood of conflicts.
4. Cooperate with livestock operators and land managers to develop strategies that minimize the potential for bear damage.
5. Cooperate with property owners, recreationists, and land managers to identify and resolve potential conflicts.
6. Pre-emptively relocate, aversively condition, deter, or remove bears when potential for conflict is high and other techniques are not applicable.
7. Relocate, adversely condition, deter, or remove bears involved in conflicts with humans, or property when other techniques are not applicable.
8. Design occupancy and population objectives that reduce the potential for conflicts in specific grizzly management units.

Rapid Response Protocols

1. Within each appropriate FWP region (in this case Regions 3 and 5), personnel will be trained and equipped to handle conflicts.
2. Conflict reporting procedures will be made available to the public through personal contracts and a variety of media channels.

3. Appropriate state and federal agency personnel will be trained and equipped to manage conflicts under circumstances predetermined by FWP and consistent with their jurisdiction.
4. Property owners may be provided deterrent or aversive conditioning supplies when deemed appropriate for management of specific conflicts.
5. Livestock depredation information and evaluation training will be available to livestock producers and their employees.
6. Timely response by FWP for property destruction will be implemented. Management actions will be determined based on the situation.

In the future, FWP will evaluate the potential for a limited harvest hunting season in areas where a reduction in grizzly bear numbers or densities would likely result in a decrease in chronic conflicts with humans and their property. FWP will integrate nuisance bear considerations into management objectives for each management unit. When applicable, killing of nuisance bears by affected property owners will be allowed through special authorization from FWP. However, any such mortality will be constrained by mortality limits established for the population (initially 5% or less). FWP would direct the disposition of any bear killed under special authorization.

In situations where bears occupy areas where the potential for conflicts are high (i.e., subdivisions), FWP will pre-emptively and actively manage grizzly bears to prevent damage and provide for human safety.

Development and implementation of a comprehensive information and education program designed for people who live, work, and recreate in grizzly bear habitat is essential to conflict prevention. A technical assistance program, including information on preventative and aversive techniques will be available to property owners, outfitters, and land managers, and will promote successful co-existence and bear conservation. Specific information and education recommendations are addressed in the Information and Education Section.

Guidelines for Nuisance Bear Determination and Control

The focus and intent of nuisance grizzly bear management outside the PCA will be predicated on strategies and actions to prevent human/bear conflicts. It is recognized that active management aimed at individual nuisance bears will be required as part of the management program. Management actions outside the PCA will be implemented according to this management plan. Any management will be conservative and will continue to provide the female segment of the population with additional protections.

General Criteria

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 action.

Definitions

Unacceptable Aggression: Grizzly bear behavior that includes causing human injury or death when unprovoked by surprise, food, etc., approaching humans or human use areas, such as camps, in an aggressive way, or aggressive behavior when the bear is also unprovoked by self-defense, defense of cubs, defense of foods, or in a surprise encounter.

Natural Aggression: Defense of young, food, during a surprise encounter, or self-defense.

Food-Conditioned: A bear that has received a significant reward of non-natural foods such as garbage, camp food, pet food, or processed livestock food and persistently seeks those foods.

Habituated: When a bear does not display avoidance behavior around humans or in human use areas such as camps, residential areas, or along roads.

Relocation: The capture and movement of a bear involved in a conflict with humans or their property by management authorities to a remote area away from the conflict site.

Repeat Offense: The involvement of a bear that has been previously relocated in a nuisance situation or continues to repeat a behavior that constituted a human/bear conflict.

Removal: The capture and placement of a bear in an authorized public zoological or research facility or destruction of the 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: Damage to any property including agricultural products.

Criteria for Nuisance Grizzly Bear Determination and Control Outside the PCA

1. FWP or its authorized representative will investigate reported human-grizzly bear conflicts as soon as practical. FWP will initiate consultation with the affected parties or their representatives within 12 hours of the initial investigation either by telephone or in person if possible. Property owners will be advised of the process to secure compensation if provided by private interests. FWP will also attempt to notify potentially affected neighbors, livestock producers, permittees, etc., of the nuisance and any ongoing risks if possible.
2. Bears displaying unacceptable aggression or considered a threat to human safety will be removed from the population as quickly as possible.
3. Bears displaying natural defensive behavior will be removed when it is the judgment of FWP that the particular circumstances warrant removal and non-lethal methods are not feasible or practical.
4. Bears displaying food-conditioned or habituated behaviors, or damaging property may be relocated, aversively conditioned, or removed based on specific details of the incident. Management authorities will make this judgment after considering the cause, location, and severity of the incident or incidents. FWP will inform the affected people of the desired management direction.

5. Bears may be preemptively moved when they are in areas where they are likely to come into conflicts with humans or their property. Conversely, people may be temporarily excluded 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.
6. Bears may be relocated as many times as FWP determines is appropriate, especially in years where mortality may be excessive in other areas.
7. Bears involved in chronic significant depredations or in the opinion of FWP have a high probability to cause significant or chronic depredations will be removed when it is practical and in a timely manner.
8. Bears relocated because of nuisance activities will be released in a location where the probability to cause additional damage is low. Authorities have and will continue to cooperate to provide adequate and available sites for relocations. Bears not suitable for relocation or release will be removed.
9. All grizzly bears captured in management actions that are to be released into the wild will be permanently marked with a unique identifying tattoo and radio collared as necessary to follow their movements.

An alternative we considered was to provide unfettered flexibility to livestock operators and property owners to deal with conflict situations as they see fit. However, in our judgment this approach will fail to provide the necessary assurances for long-term conservation. None of our other programs for managed species in Montana allow for flexibility without constraints.

Disposition Criteria for Bears Removed in Management Actions

Captured grizzly bears identified for removal may be given to public research institutions or public zoological parks for appropriate non-release educational or scientific purposes as per state laws and regulations. Grizzly bears not suitable for release, research, or educational purposes will be killed. FWP will direct the disposition of all parts of a bear killed for any purpose.

Hunting

- Regulated harvest will be a part of our long-term conservation program.
- Any hunting program will be justified and open to public review, similar to the processes used for all other managed species in Montana, and coordinated with surrounding states to avoid excessive mortality.
- The female segment of the population will be given additional protections in any proposed hunting program. For example, the killing of females accompanied by young will be prohibited.
- The purpose for a hunt will be to manage “for the species”, and garnering additional public support and ownership to ensure its long-term survival and reoccupancy of habitats.
- FWP will encourage hunters and other recreationists to carry pepper spray in bear habitat.
- FWP is committed to utilizing all or a portion of any harvestable surplus to support recovery in other areas within or outside Montana if such opportunities should arise.

Regulated harvest of wildlife has been and continues to be one of the major tools that allows the recovery and maintenance of predators and prey populations in Montana and elsewhere. Persons

who participate in that harvest have been pivotal to recovery of prey and the predators that depend on it. In addition, regulated harvest of predators builds tolerance by those most negatively impacted by their presence. It is therefore intended that regulated harvest of grizzly bears will be a part of our program and commitment to grizzlies, when and where appropriate. By managing grizzly bears as a game species they are provided recognition as a valuable wildlife species, protected from illegal harvest, afforded population monitoring and research, and all of the other benefits managed species receive.

Regulated hunting as a management tool for grizzly bears has a long successful history in Montana. Reasons why hunting is such an important tool for promoting long term recovery and survival of grizzlies are discussed briefly. Regulated hunting allows us to select against unwary bears or bears that associate and habituate to people. This approach was also recognized in the 1975 USFWS rule listing the grizzly, which stated that isolated taking of nuisance bears is not sufficient by itself to prevent numerous depredations, threats to human safety, or selection for wary bears. In contrast, a regulated hunt does select against unwary bears and creates a behavioral response in bears causing them to avoid people in time and/or space in a manner different than unhunted populations. This instills wariness in individual bears and the population, potentially keeping them from becoming problem animals and promotes the long-term survival of the bear population and of people who come into contact with bears. Without benefit of a regulated hunt, FWP response to conflict situations can only occur after they have developed.

Because wildlife populations produce surplus animals, some can be removed, and the population can still increase. Population estimates and trend data for the GYE as well as other data indicate this is the case. It is important to make the distinction between regulated removal as we now know it and the unregulated mortalities that occurred in the past. Current highly managed and regulated hunting programs can promote population increases and recovery. At the turn of the century, the situation was unregulated. Bears were persecuted and killed without provocation, license, limit, or season and in excessive numbers.

The State of Montana's grizzly bear management program uses hunting as only one tool among many to promote the long-term conservation of the grizzly bear. The regulated public hunt must therefore be evaluated in the context of an overall bear management program and its efforts to promote recovery of this species. Hunting programs or recommendations will be conservatively applied.

Because of this, hunting pressure exerted on this population should be too limited to result in loss of access by bears to substantial portions of their habitat. Hunting may alter the timing and nature of use of some habits for short periods of time, but any negative impacts to the population are negligible when considering the size of the ecosystem and the limited amount of hunting anticipated.

Another specific purpose of the regulated hunt is to remove some nuisance animals. Information from the Northern Continental Divide demonstrated that this was the case. During the last legal hunt in Montana in 1991, two of the three bears taken were known problem bears.

Finally, since some hunting mortalities occur in relatively remote areas, removal of bears in a regulated hunt could allow opportunities for young and subadult bears to establish home ranges in areas away from people, further reducing bear-human conflicts. Also, harvest is usually directed at the male segment so the sex ratio in harvested populations tends to be skewed towards females. This in turn could assist with long-term distribution increase by allowing more females to survive.

Hunting impacts population composition in different ways, and regulations can impact the composition of harvests. Because bears are promiscuous, regulations that direct harvests toward males and away from adult females permit higher hunter quotas. In early spring, hunters kill primarily males because they are the first to emerge from dens. Females accompanied by newborn cubs are the last to emerge from dens. Similarly, males are the last to enter dens in the fall, so late fall seasons have higher proportions of males. Regardless of regulations, male bears are more vulnerable to hunters than female bears because they range more widely and are more likely to encounter areas frequented by hunters. In central Alaska, females constituted 18% of the spring season hunter kill prior to May 1, but >40% of the harvest after the third week in May. In the fall, females represented 53% of the kill during the first week of September, but <43% of the kill during October. In Alaska and Canada, regulations prohibit shooting females accompanied by cub-of-year or yearling offspring, which also contributes to a male bias in hunter harvests. In the Yukon, a point system is used that provides incentives for outfitters to avoid harvesting females. It is difficult for hunters to distinguish between males and female bears unless the female is accompanied by offspring or the male is exceptionally large. However, by using season timing and protective regulations for females with young, FWP was able to focus harvests on males during the legal hunt.

In summary, FWP recommends a regulated hunting season be a part of the overall 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 and bear/human conflicts could be reduced through such harvest.
3. Hunting reduces the need for agency control of problem bears.
4. Hunting selects against unwary bears and causes bears to be wary of humans. This promotes long-term survival of the bear population in areas they share with humans. Hunting promotes better acceptance of this large and potentially life threatening animal by the local public who are asked to live with grizzlies, and this <u>acceptance</u> is a key to long-term survival of the bear. If the local publics feel threatened by grizzlies or the management program, they will defend themselves as necessary. This in turn can have detrimental effects on existing grizzly populations and clearly limits opportunities for expanded recovery efforts due to local resistance.
5. Hunting grizzlies may alter cub survival and recruitment providing for population increase. While there is currently some scientific disagreement on this possibility, there is no question that initial harvest levels in the GYE will be so low that any effect of regulated take on increasing cub survival and recruitment would be impossible to measure.
6. Hunters have been and continue to be one of the strongest supporters of long-term conservation efforts. Hunters have purchased more habitat than any other group in the GYE

and returned it to wildlife use including grizzly bears. This strong connection between hunters and habitat is critical to continued successes at 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.

7. Hunting allows the grizzly to be a social asset instead of being considered by some groups as a liability. Hunting provides revenues to governmental entities for enforcement of wildlife management regulations as well as alleviating potential costs and risks associated with problem animals. Without a regulated hunt, these costs must be paid by the government, and the positive effects of grizzly hunting are lost to society.
8. The presence of licensed hunters can reduce illegal activities.

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 and regulations on the books in Montana that would affect any proposed hunt. In addition, we can anticipate some specific constraints on any hunt as summarized below:

1. Hunting will not be proposed immediately upon delisting. It is clear that the public will want some assurance that the other components of the grizzly bear management program are being adequately implemented prior to a regulated hunt.
2. There are areas that won't be hunted. There are currently areas outside the PCA and within that are closed to hunting.
3. The justification for any proposed hunt will be available to public scrutiny and comment prior to implementation.
4. Regulations have been and will be established to protect the female segment of the population as much as possible. For example, if a hunt were to occur, Commission regulations make it illegal to kill females accompanied by cubs or young.
5. After March 27, 1987, a state statute was implemented which only allows someone to kill one grizzly bear in that person's lifetime (87-2-702).
6. The FWP Commission has the authority to close seasons at any time if mortality was excessive, i.e. occurring at levels which would have long-term negative impacts on the population due to unforeseen circumstances.
7. Our experience with "damage hunts" targeting individual bears indicates that this technique is of limited value in the management program.
    a. Damage hunts characterize the species as a "problem" instead of the valuable wildlife resource they represent.
    b. Response time is critical in damage situations and locating a hunter can delay response time.
    c. There are ethical problems with using technology, for example radio collars, to locate and kill problem animals.
    d. Many nuisance animals are unaccessible to hunting during daylight hours.
    e. There are ethical problems with the department guiding a hunter for an individual bear.
8. No baiting or use of dogs to hunt grizzlies is permitted.

9. Any bear taken must be used for food. It is illegal to waste bear meat or leave it in the field. Also, bears will be hunted when their fur is in good condition to allow complete use of animals harvested.
10. It is illegal to buy or sell grizzly bear parts unless they have been registered with FWP.

Montana's hunting season setting process is one of the most open and dynamic processes found in state government although it may be unfamiliar to nonhunters. The following is a synopsis of the process: A proposal is generated by a biologist or a group of biologists. The proposal is accompanied by a justification relying heavily on biological data including: population objectives, trends, habitat, weather trends, and often include social constraints. The proposal is next reviewed internally and if found adequate is sent to the FWP Commission. After reviewing the proposal and justification, the Commission at its December meeting either adopts, modifies, or rejects it as a tentative. If adopted as a tentative, it is then released for public review and comment. The public review process occurs annually in January and February. During this period, biologists around the state conduct public meetings and formal hearings in nearly all of the major cities and towns across the state as well as with any groups or organizations that request them. Additionally, the tentatives are published and otherwise made available to any who wish to review and comment on them. At the end of the comment period, all of the comments received during the meetings and any written or other verbal comments received during the comment period are summarized and sent on to the Commission for its review. In early March, the Commission then formally either accepts, modifies, or rejects the proposals based on the biological justification and the social concerns expressed during the review period. Additionally, the public can also make proposals to the Commission in the form of a tentative at the December meeting. This process is repeated on an annual basis.

An alternative FWP considered was to eliminate hunting as a part of our 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. Additionally, this would greatly hinder FWP's ability to develop increased tolerance for the species.

It was also suggested that FWP make pepper spray mandatory for hunters. While FWP is currently prepared to assist in notifying people of the benefits of pepper spray and encouraging recreationists to carry it, it is premature to make it mandatory at this time. Mandatory carrying of pepper spray may be appropriate at certain times or places and FWP will evaluate this option as appropriate. However, there are currently 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 careful backcountry practices. Pepper spray can be ineffective in windy areas, and individual bears can have very different responses to the spray. Also, in some situations people would be better to assume a defensive posture (on the ground with no movement) than to be actively fumbling for a spray can. Also the spray comes in many brands, with many pepper concoctions, with many shelf-life constraints and propellant systems. It is no doubt a valuable tool, but it is only one of many and cannot replace common sense or other recommendations of appropriate behavior. However, to provide an example for the public, FWP will make pepper spray available to all field personnel operating in bear country and encourage employees to carry it.

Enforcement

- FWP will seek authority by developing an MOU with Federal agencies to enforce food storage regulations on federal lands.
- FWP will implement our statutory authority to address intentional feeding of both black and grizzly bears to eliminate the problem.
- FWP will seek additional funding and authority to enforce travel management plans including off-road vehicle use.

FWP enforcement efforts concerning grizzly bears are focused in three areas: patrols of both wilderness and non-wilderness areas, damage control, and poaching investigations.

Wilderness and non-wilderness areas are patrolled during the general hunting season and at other times. Hunter camps are checked for harvested game and compliance with outfitter regulations.

Response to nuisance bear complaints can involve many FWP personnel in some capacity, although enforcement division personnel are frequently the first on the scene.

FWP enforcement personnel investigate and prosecute all violations involving illegal mortality. Cases are processed through the county attorney's office or turned over to the U.S. Fish and Wildlife Service when they appear to involve interstate movement of grizzly bear parts. FWP also coordinates with federal officials in undercover operations. Current state fines for illegally killing a grizzly bear are $2,000 restitution plus $500 to $2000 more, and imprisonment in the county detention center for not more than 6 months or both. In addition, that person, upon conviction or forfeiture of bond or bail, shall forfeit any current hunting, fishing, recreation 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 forfeiture period. Fines for the interstate movement of illegally killed or possessed animals can be much higher.

The U.S. Forest Service manages food storage restrictions on Forest Service lands and some counties have county ordinances on food storage, which are enforced by the county sheriffs.

The FWP enforcement personnel do not currently enforce federal travel restrictions except for hunters and anglers conducting those activities under Commission Rules and Regulations.

There are currently Memorandums of Understanding between U.S. Fish and Wildlife Service and FWP. These MOUs outline joint responsibilities for violations of federal and state laws. They also address responsibilities and guidelines for joint investigations by Montana game wardens and USFWS special agents, as well as between ADC (now Wildlife Services) and FWP outlining joint investigations of grizzly bear depredations (Appendix G).

Discussions to date indicate two areas where statutes and/or regulations need to be changed to support the full implementation of this plan. Earlier drafts of this plan recommended that statutes must be passed to make it illegal to intentionally feed or attract bears. Such legislation was in fact passed in 2001 (MCA 87-3-103, Appendix H). People who intentionally feed or

attract bears to their residence create problems which impact their neighbors, jeopardize human safety, and result in problem situations. These actions are now illegal. Secondly, FWP wardens have no enforcement authority to enforce food storage regulations on Forest Service lands. Measures should be taken to establish this authority. This will be increasingly important as the bear population expands and, hopefully, food storage regulations are required on additional Forest lands. FWP wardens spend a great deal of time in backcountry areas checking people on Forest lands, and their ability to enforce these rules would ultimately result in greater compliance and fewer bear/human conflicts.

Finally, the enforcement aspects are critical enough to program success that additional resources should be made available for them to implement these new responsibilities. These would include sufficient funds for equipment and necessary overtime required to operate in remote areas and ultimately additional staffing. The U.S. Forest Service and Bureau of Land Management will be approached to secure additional funding to support FWP in these efforts due to additional responsibilities enforcing food storage and travel plan regulations if that authority is developed.

An alternative we considered was to not seek additional authority either through MOUs and statutes to expand our enforcement authority in dealing with preventive measures relating to human/bear conflicts. However, in our experience, FWP enforcement personnel are in the most effective position to address these problems.

Education/Public Outreach

- FWP will include lessons on human safety while hunting in bear habitat in each hunter education class.
- FWP will expand efforts in assisting hunters with identification of black versus grizzly bears. FWP has implemented mandatory training for people interested in hunting black bears.
- FWP will develop ways to target education efforts towards “new” Montana residents regarding human/bear issues as well as long-term residents.
- FWP will encourage the Board of Outfitters to require that all outfitters and guides operating in bear habitat be certified in human/bear safety.
- FWP will work with private organizations and interest groups as well as the media to include safety tips on recreating in bear habitat including proper use of pepper spray.
- Education and public outreach will be integrated with enforcement on sanitation, etc., to effectively minimize human activities that can lead to human/bear safety issues.
- FWP will work with local planning entities to address the needs of grizzly bears in new developments and new residential areas.

Management strategies are unlikely to succeed without useful, state-of-the-art public information and education programs. A partnership information and education approach involving FWP, as well as other agencies, local communities, and private interests, can result in minimizing human/bear tragedies as well as develop a stronger sense of agreement among Montana residents about the state’s goals and management programs related to the bear.

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 will incorporate a lesson on human safety while hunting in bear habitat in each hunter education class. In Montana, no person between the ages of 12-17 may apply for and receive any hunting license unless the person possesses and can exhibit a hunter safety certificate. Current records show that approximately 7,000 students are certified each year through FWP's hunter education program.

The Montana Fish, Wildlife & Parks Commission has adopted a program to require mandatory bear identification testing to be completed by black bear hunters in Montana prior to the purchase of a black bear license.

The program is being offered because Montana's grizzly bear population is increasing in both number and in range. Today, grizzly bear encounters are on the rise, and black bear hunters must be aware that they are likely to encounter grizzly bears in areas they may not have inhabited just a few years ago. 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 Commission is concerned about the impact that mistaken identity killings could have on maintaining a recovered grizzly bear population or on recovery in areas that are still below objectives. The Commission believes a solution can be found in directly informing and educating all black bear hunters. Some consider the solution to the problem to be elimination of the black bear hunting season in Montana. That action would minimize FWP's ability to manage bears and create a myriad of other problems essentially lessening the support for management and expanded distribution of grizzlies.

Following is a summary of the bear identification requirements the Commission approved:

- The requirement applies to everyone purchasing a bear license.
- Testing is required before purchase of a license.
- A minimum score of 80% is needed to pass the test. One can retake the test until a passing grade is obtained.
- Recertification is not required.
- The test is available on line at www.fwp.state.mt.us, by mail, or at regional headquarters in Regions 1-5.

Limited quota big game hunting seasons exist in many areas occupied by grizzly bears. Limited quota licenses require a special application and license issuance process. A brochure on bear country safety should be mailed to each successful applicant when their license is issued; this includes both resident and non-resident hunters.

FWP will encourage federal land management and wildlife agencies to continue to play a vital role in grizzly bear education. FWP will continue to encourage and coordinate with these agencies to provide bear safety literature at their respective trailheads and offices in occupied bear areas. Often this is already happening. The Forest Service should be encouraged to assess the appropriate number and location of bear resistant food storage containers (bear boxes), meat

poles, and bear resistant garbage containers (at all campsites) in occupied areas in order to protect bears while assuring wilderness values.

FWP will promote the grizzly bear as a valuable state resource through public school and community presentations, community-based workshops, news releases, magazine articles, and radio and television spots.

The Board of Outfitters will be encouraged to require that all outfitters and guides that provide services within areas occupied by bears be certified in human safety in bear country. The outfitting industry has voluntarily developed a bear education course in partnership with the U.S. Fish and Wildlife Service, U.S. Forest Service, National Park Service, the Wyoming Game and Fish, and the Professional Guides Institution. This course would serve as the model for training in Montana.

A bear safety video has been purchased and made available by FWP.

Examples of current FWP programs are as follows:

- FWP presentations to schools, colleges, civic and sportsmen's groups.
- Interviews with newspaper, radio, and TV reporters.
- Statewide newspaper features.
- News releases, some with other interested cooperators.
- Radio reports.
- FWP Web site devoted to bear identification.
- Public Information Plan designed by Conservation/Education Division in reaching public.
- Video entitled "Bears and Bees," advising beekeepers about avoiding conflicts with bears.
- Information on electric fencing to keep bears out of orchards, garbage, grain storage, bee yards.
- Meetings with homeowner groups on sanitation, bear-proof containers at Big Sky, bear-proof enclosure fence for garbage containment at Corwin Springs.
- Adoption of the South Gallatin County Ordinance to address sanitation in upper Gallatin Canyon.
- Cooperative efforts with Defenders of Wildlife and Yellowstone National Park in producing an informational book on bears for the "gateway communities" in the north and west portions of the Yellowstone ecosystem.
- Day-to-day public contacts by FWP personnel during conflict situations with bears.
- "Living with Grizzlies" brochure.
- "Who's Who? Know Your Bear" brochure.
- "Bears" brochure.
- "Be Bear Aware" children's handout.
- "BEAR HUNTERS—Know Your Target!" wallet card
- Internal education and training

An alternative we considered was to not expand these efforts. However, in our judgment, expanded efforts are essential to our objective of allowing expanded bear distribution and long-term survival of the species.

Future Research

Humans have the greatest influence on brown/grizzly bear distribution and abundance in North America. Today's research techniques are expensive and labor intensive. Also, some population estimation techniques are subjective, have no estimate of precision, and cannot be replicated in a systematic manner. Some techniques require radio-marking large numbers of individuals which may not be feasible in some environments. These techniques also typically provide density estimates in only small portions of the area inhabited by the entire population, and they are currently expensive and have problems with demographic and geographic closure, potential capture biases, and standardization of experimental design. Design issues include grid size and scent lure rotation frequency, sample collection frequency, and mathematical techniques for data analysis. Techniques based on visual observations of unduplicated adult females accompanied by newborn cubs have been used to estimate minimum population size and establish mortality quotas for bears in the Yellowstone area, but extrapolation to a total population number or population density remain problematic. Observational techniques using double-count procedures are under investigation in Alaska.

Better means of assessing potential impacts of hunting are needed because brown/grizzly bears have one of the lowest reproductive rates among North American mammals. Without such techniques, appropriate hunting opportunities may be needlessly curtailed or populations may be overharvested.

Montana needs a better means of assessing the biological carrying capacity of actual or potential grizzly bear habitats. Such assessments are important to ensure that restoration efforts for grizzly bears are successful in areas where they are currently expanding or to adapt management policy to environmental change to ensure long-term persistence.

Further research is also needed on the importance of anthropogenic impacts on bear habitats. As documented elsewhere, roads, commercial activities (mining, logging), livestock grazing, suburban sprawl, and recreational uses impact (i.e. snowmachining, off road vehicles) the ability of bear populations to persist in an area. More intensive research is needed on threshold levels at which these impacts become significant and possible ways to mitigate adverse human impacts on brown/grizzly bear populations. Similarly, it is important to find ways to identify threshold levels of tolerance for adverse impacts of grizzly bears on humans. Additional research on genetic conservation, deterrent/repellants, and conflict management would also be helpful.

Efforts to restore grizzly bears also require better information on economic costs and benefits of bears and social attitudes towards bears. Among other reasons, such information is needed to demonstrate the value of preserving wildlife movement and access to habitats.

Costs and Funding

- The majority of funding for these programs will be borne by the sportspersons of Montana through license fees as well as federal Pittman-Robertson funds from excise taxes on firearms and ammunition currently in place.
- FWP will seek significant additional federal funding for the five-year post-delisting monitoring period and develop on MOU with federal agencies to contribute funding support and involvement with habitat and population monitoring within the PCA and on federal lands outside the PCA.
- FWP will explore avenues to procure Montana bed tax monies to allow tourists to participate in program funding.
- FWP will continue to work to find ways for national interests in this species to be reflected in long-term funding commitments, i.e., a national endowment, Congressional act, or other vehicles.
- While cost of the program will initially increase over current levels, these costs should stabilize or even decrease over time as the species is managed as one component of our overall wildlife program.
- FWP will explore development of a grizzly bear specialty license later as an additional source of funding.

Sportspersons in Montana have been and continue to be the proper source of funding for state efforts to manage grizzly bears. Each year the department spends $350,000+ in direct costs to manage grizzly bears. These funds are used to monitor and manage population status, distribution, nuisance, and mortality within the state.

As grizzly numbers and the area occupied increase, management costs will also rise. Certain management data will need to be collected to assess population status and to manage nuisance activities. Total costs are difficult to determine at this point in time, especially considering that expansion may not be limited in the near future. The costs associated with data collection and nuisance management will certainly exceed funds currently available. As a result, the grizzly program will not be self-sufficient and will likely always rely on existing funding sources to a large extent. This is not unusual as the costs associated with managing most big and small game, as well as fisheries, programs exceed revenues from license sales. Adequate management of grizzly bears should take place wherever they are allowed to reoccupy, just like any other managed species in the state.

The grizzly bear is a species of national interest. As such, FWP will continue to pursue some form of a national endowment with funds generated from Congress. Interest from the endowment would be used to offset the costs of managing the grizzly bear in the Greater Yellowstone Ecosystem. This would truly empower all state and federal agencies with the ability to more effectively manage this species.

FWP will also seek implementation of expanded funding sources such as that proposed with the Conservation and Reinvestment Act (CARA) that was presented to Congress in 2000 and resubmitted in 2001, but has yet to pass.

An alternative we considered was that this program be solely contingent on increases in federal funding. However, our experience indicates that a solid state funding base is key to long-term success. The estimated cost for implementing this plan are presented below (Table 4).

Table 4. FWP Southwest Montana Grizzly Bear Management Plan Expenses (Yellowstone Ecosystem)

Expense	Current Expenditures	Additional $$ Needs
Human/Bear Conflict (includes wildlife specialists, bear dog contract, preventative measures, wardens, biologists, and staff time)	158,000	68,000
Monitoring (Females with cubs, radio tracking, DNA work, FWP Laboratory expenses)	25,000	75,000
Outreach (Cons Education news releases, etc.)	40,000	25,000
Admin (statewide program admin. Costs)	20,000	20,000
Grand Total	243,000	188,000

Expanded Local Involvement

- On approval of this plan, FWP will conduct town meetings in southwest Montana explaining the programs and cultivating local interests.
- FWP will form local work groups in Big Sky, Red Lodge, Ennis, Dillon, Alder/Virginia City, Emigrant/Gardiner, Bozeman, and Livingston. Additional groups will be formed as needed or existing groups with interests in these issues will be identified and contacted. The local area biologist will coordinate and conduct at least one meeting annually to address grizzly bear management concerns and to share with local residents current grizzly bear science, information, status, etc.
- These local meetings will not only react to problems after they happen, it is FWP's hope they will anticipate conflicts, prepare for them, and try to prevent them. The goal of adaptive management will be promoted by regular monitoring and making policy changes when needed with the input of local residents and other interests.

It is our intent through these efforts to increase local participation in program development and long-term local ownership of bear conservation programs.

- Sanitation in rural communities that lie within occupied bear habitat is an ongoing major issue. Efforts have been ongoing in Cooke City, Gardiner, and West Yellowstone. Sanitation efforts at Big Sky are just starting. These efforts require strong citizen involvement. For example, Big Sky straddles two counties. The Gallatin County portion has a bear proof garbage ordinance while the Madison County portion does not. We envision a cooperative effort between FWP, Big Sky citizens, county commissioners, private interest groups and garbage haulers to solve that sanitation problem.
- Local work groups in Bozeman, Livingston, Red Lodge, Ennis, Dillon, Big Sky, Alder/Virginia City, and Emigrant/Gardiner should be formed, act in an advisory role, and partner with FWP. The purpose is to share information, generate citizen recommendations

for resolving bear/human conflicts, and increase tolerance for bears. These work groups should have agriculture, sportsmen, conservationists, land management agency, and community business representation and should coordinate across state boundaries where appropriate.

- FWP will seek to develop an MOU between counties and cities with bear proof garbage ordinance so as to enhance enforcement effectiveness at the state, county, and community level.
- FWP recognizes that there is a national interest in the long-term conservation of this species. As such, we also anticipate providing opportunities for those representing that interest to be involved as this program is developed and implemented. Any local meetings will be open to the public and opportunities will be provided for others to share their perspectives and contributions to program success.

Secondary and Cumulative Impacts

Successful implementation of the program will have some secondary and cumulative impacts on other programs and some individuals.

Implementing the habitat measures and preventative management programs will undoubtedly benefit other species of wildlife in Montana, especially black bears. Black bear issues parallel those surrounding grizzlies, and the programs recommended should assist our agency with their management as well. Also, when habitats are managed in a way that allows occupancy and expansion of the grizzly bear population, many other species benefit as well. For example, areas where road accesses are adequately managed benefit elk and other species as well as bears. There will also be economic benefits to Montana from an expanded bear population. Many people travel to, and in fact relocate to Montana because of our state's diverse and abundant wildlife resources. In addition, the value of many properties in Montana are enhanced by the presence of wildlife and the opportunities for associated recreation and potential harvests.

There is the potential that population levels of black bears could be somewhat reduced due to the presence of grizzly bears in currently unoccupied habitats. 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.

Other agencies that manage lands in southwestern Montana could see increased costs due to expanded food storage rules, habitat management changes, and so on. Most of these changes are already occurring in the areas which could be occupied by grizzly bears in the near term, and the public has clearly indicated support for these efforts. Also, because grizzly bears have always had and will always have a high public profile, public pressure could result in FWP and other agencies reprioritizing programs to focus more effort on grizzly bear management. It is FWP's hope that by managing grizzlies as one more component of our wildlife programs such reprioritization would have minimal affect on other programs.

While there are many benefits to expanded grizzly bear populations, there is no denying that there will be impacts to livestock producers and property owners due to conflicts with grizzly bears as the population expands. Implementing the programs recommended in this document

will minimize those impacts through prevention, where possible, and adequate management if conflicts occur.

Irreversible/Irretrievable Resource Commitment

The programs 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, we have demonstrated the ability to eliminate bears. Likewise, habitat programs, access management, etc. can all be reversed or revised if needed. The level of recommended mortality will not result in any irreversible commitment of the grizzly bear resource and should allow it to flourish. Because these levels of removal can be regulated or eliminated on an annual basis, or even short time basis (should data indicate that to be prudent), the management program poses no threat to the species, and should benefit it.

Conversely, because the grizzly bear and our other wildlife serve as a major component of our quality of life in Montana and this is attracting new residents and an expanding human population, we are seeing some irretrievable commitment of resources. Subdivisions, energy development, and other "land development" programs are slowly but steadily altering grizzly habitat. While we can moderate this loss to a degree by allowing the bear population to expand into currently unoccupied habitats and by managing occupied habitats to meet their needs, we will ultimately have to forego some things to allow grizzlies to survive at viable levels. These issues will be decided by the citizens of Montana and the nation through the appropriate political and social processes.

Finally, grizzly bears are large and potentially dangerous animals. By their presence, they pose some risk to the human inhabitants of the state and our visitors. Current information shows that this risk is very real, but at a surprisingly low level. When one considers all of the people and activities which 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.

No environment is totally risk free for people. Through education and understanding, people can minimize their risks of injury and/or death from grizzlies.

GLOSSARY

ARM -- Administrative Rules of Montana
ATV -- All terrain vehicle
BLM -- Bureau of Land Management
CARA -- Conservation and Reinvestment Act
CEM -- Cumulative Effects Model
COY -- Cubs of the Year
DNA -- Deoxyribonuleic acid -- the molecule that encodes genetic information
DNRC -- Department of Natural Resources and Conservation
EIS -- Environmental Impact Statement
FWP -- Montana Fish, Wildlife & Parks.
GIS -- Geographic Information Ssytem
GYE -- Greater Yellowstone Ecosystem. This area includes all lands in or adjacent to Yellowstone National Park.
IBA -- International Association for Bear Research and Management
IGBC -- Interagency Grizzly Bear Committee.
IGBST -- Interagency Grizzly Bear Study Team. A multi-state, multi-agency group studying grizzlies in the greater Yellowstone area.
MCA -- Montana Codes Annotated
MDOT -- Montana Dept. of Transportation
MEPA -- Montana Environmental Policy Act
MFGC -- Montana Fish and Game Commission
MFWPC -- Montana Fish, Wildlife & Parks Commission
MFWPC -- Montana Fish, Wildlife & Parks Commission
MOU -- Memorandum of Understanding.
NEPA -- National Environmental Policy Act
PCA -- Primary conservation area or the designated recovery zone. This area will receive more intensive management which favors the needs of grizzly bears.
PEIS -- Programmatic Environmental Impact Statement
USC -- United States Congress
USFS -- United States Forest Service
USFWS -- United States Fish & Wildlife Service

LITERATURE USED TO ASSIST IN PREPARATION OF THIS PLAN

Albert, D.M., T.R. Bowzer, and S.D. Miller. 2001. Effort and success of brown bear hunters in Alaska. Wildlife Society Bulletin 28(2): 501-508.

Bader, M. 2000c. Spatial needs of grizzly bears in the U.S. Northern Rockies. Alliance for the Wild Rockies Special Report No. 10, Missoula MT. 28 p.

Bader, M. 2000. Distribution of grizzly bears in the U.S. Northern Rockies. Northwest Science, vol. 74, No. 4. 325-334.

Berger, J., J.E. Swenson, and I. Persson. 2001. Recolonizing carnivores and naïve prey: conservation lessons from Pleistocene extinctions. Science 291:1036-1039.

Caughley, G. 1994. Directions in conservation biology. Journal of Animal Ecology 63:215-244.

Clevenger, A. P., B. Chumszyz, and K. E. Gunson. 2001. Highway mitigation fencing reduces wildlife-vehicle collisions. Wildlife Society Bulletin 29(2):646-653.

Conover, M. R. 2001. Effect of hunting and trapping on wildlife damage. Wildlife Society Bulletin 29(2):521-532.

Conover, M.R., and D. V. Conover. 2001. For whom do we manage wildlife: the resource, society, or future generations. Wildlife Society Bulletin 29(2) 675-679.

Craighead, F.L., M.E. Gilpin, and E.R. Vyse. 1999. Genetic considerations for carnivore conservation in the Greater Yellowstone Ecosystem. Pages 285-321 in T.W. Clark, A.P. Curlee, S.C. Minta, and P.M. Kareiva, editors, Carnivores in Ecosystems: The Yellowstone Experience. Yale U. Press.

Craighead, L. 2000. Regional corridors. A comparison of the Walker-Craighead reserve model with the Merrill-Mattson CERI reserve model. Craighead Environmental Research Institute. Bozeman, MT.

Davitt, K. 2001. Grizzly bear habitat connectivity. Pers. Comm.

Davradou, M., and G. Namkoong. 2001. Science, ethical arguments, and management in the preservation of land for grizzly bear conservation. Conservation Biologist, 15(3), 570-577.

Dobson, A. et al. 1999. Corridors: reconnecting fragmented landscapes. Pages 129-170 in M.E. Soule and J. Terborgh, editors, Continental Conservation: Scientific Foundations of Regional Reserve Networks. Island Press.

Dood, A.R., R. B. Brannon, and R.D. Mace. 1986. Final programmatic environmental impact statement, the grizzly bear in northwestern Montana. Montana Fish, Wildlife & Parks. 287 pp.

Dood, A.R., and H. I. Pac. 1993. Five year update of the programmatic environmental impact statement, the grizzly bear in northwestern Montana 1986-1990. Montana Fish, Wildlife & Parks. 228 pp.

Eberhardt., L. L., and R. R. Knight. 1996. How many grizzlies in Yellowstone? Journal of Wildlife Management 60(2):416-421.

Frey, K. 1999. Grizzly bear management of the Yellowstone Ecosystem in Montana. Montana Fish, Wildlife & Parks Final report. 17 pp.

Grizzly bears in British Columbia, the real story. 2000. Guide Outfitter Association of British Columbia. 17 pp.

Gunther, K.A., et al. 1999. Grizzly bear-human conflicts, confrontations, and management actions in the Yellowstone Ecosystem. Interagency Grizzly Bear Committee. 62 pp.

Henry, G. V., and Muchash. May 2000. Red wolf reintroduction lessons regarding species restoration. Red wolf management series technical report no. 12. 17 pp.

Hood, G. A., and K. L. Parker. 2001. Impact of human activities on grizzly bear habitat in Jasper National Park. Wildlife Society Bulletin 28(2): 624-638.

Infield, M. 2001. Cultural Values: a forgotten strategy for building community support for protected areas in Africa. Conservation Biology 15(3), 800-802.

Interagency Conservation Strategy Team. 2000. Draft conservation strategy for the grizzly bear in the Yellowstone area. 138 pp.

Johnson, S. 2000. Building a species recovery program on trust. Conservation biology in Practices pg 35-37.

Keating, K., C. C. Schwartz, M.A. Haroldson, and D. Moody. 2001. Estimating numbers of females with cubs-of-the-year in the Yellowstone grizzly bear population. In Press. Ursus.

Lacy, R.C. 1997. Importance of genetic variation to the viability of mammalian populations. Journal of Mammalogy 78(2):320-335.

Lande, R. 1993. Risks of population extinction from demographic and environmental stochasticity and random catastrophes. The American Naturalist 142(6):911-927.

Lenton, S.M., E. F. John, and J. Perez Del Val. 2000. A single non-parametric GIS model for predicting species distribution: endemic birds in Bioko Island West Africa. Biodiversity and Conservation 9:869-885.

Linnell, J.D.C., J. E. Swenson, and R. Andersen. 2000. Conservation of biodiversity in Scandinavian boreal forests: large carnivores as flagships, umbrellas, indicators, or keystones? Biodiversity and Conservation 9:857-868.

McLellan, B. N., and F. W. Harvey. 2001. Habitats selected by grizzly bears in a multiple use landscape. Journal of Wildlife Management 65(1):92-99.

Mech, D. L. 2001. Managing Minnesota's recovered wolves. Wildlife Society Bulletin 29(1):70-77.

Messmer, T.A., D. Reiter, and B.C. West. 2001. Enhancing wildlife sciences' linkage to public policy: lessons from the predator-control pendulum. Wildlife Society Bulletin 2001, 29(4):1253-1259.

Miller, S. D. 2001. Rates of brown bear, *Ursus arctos*, cub survivorship in hunted and unhunted portions of Alaska (in press).

Miller, S.D., G.C. White, R.A. Sellers, H.V. Reynolds, J.W. Schoen, K. Titus, V.G. Barnes, Jr., R.B. Smith, R.R. Nelson, W.B. Ballard, and C. C. Schwartz. 1997. Brown and black bear density estimation in Alaska using radiotelemetry and replicated mark-resight techniques. Wildl. Monogr. 133. 55 pp.

Miller, S.D. 1990. Population management of bears in North America. Int. Conf. Bear Res. and Manage. 8:357-373.

Miller, S.D. 1993. Brown bears in Alaska: A statewide management report. Alaska Dept. Fish and Game Wildl. Tech. Bull. 11. 40 pp.

Miller, S.D. Impact of increased bear hunting on survivorship of young bears. Wildl. Soc. Bull. 18:462-467.

Miller, S.D. 1990. Denning ecology of brown bears in southcentral Alaska and comparisons with a sympatric black bear population. Int. Conf. Bear Res. And Manage. 8:279-298.

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

Noss, R. F., H.B. Quigley, M.G. Hornocker, T. Merrill, and P.C. Paquet. 1996. Conservation biology and carnivore conservation in the Rocky Mountains. Conservation Biology 10(4):939-963.

Pac, H.I., and A.R. Dood. Five-year update of the programmatic environmental impact statement, the grizzly bear in northwestern Montana, 1991-1995. Montana Fish, Wildlife & Parks. 53 pp.

Schwartz, C., S. Miller, and M. Haroldson. 2001. Grizzly/brown bear in Wild Mammals of North America (in prep.)

Schwartz, C.C., and M.A. Haroldson, editors. 2001. Yellowstone grizzly bear investigations: annual report of the Interagency Grizzly Bear Study Team, 2000. U.S. Geological Survey, Bozeman, MT. 126 pp.

Schwartz, C.C., M.A. Haroldson, K.A. Gunter, and D. Moody. 2001. Distribution of grizzly bears in the greater Yellowstone Ecosystem, 1990-2000. Interagency Grizzly Bear Study Team, Bozeman, MT. In press.

Schwartzman, S., A. Moreira, and D. Nepstad. 2000. Rethinking tropical forest conservation: perils in parks. Conservation Biology 14(5) 1351-1357.

Servheen, C, J. S. Waller, and P. Sandstrom. 2001. 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. 87 pp.

Stritthold, J.R., and D. A. Dellasala. 2001. Importance of roadless areas in biodiversity conservation in forested ecosystems: case study of the Klamath-Siskiyou Ecoregion of the United States. Conservation Biology 15(6):1742-1754.

Teddy Roosevelt Conservation Alliance. Square Deal Initiative #1. The Square Dealer Vol. 1, Issue 2.

Turback., G. 2000. Food for thought, what does the future hold for Yellowstone's grizzlies? National Wildlife Federation Oct.-Nov. P. 43-48.

Willcox, L., and D. Ellenburger. 2000. The bear essentials for recovery. An alternative strategy for long-term restoration of Yellowstone's great bears. Sierra Club grizzly bear ecosystems project. 25 pp.

Yaffee, S.L., and J. M. Wondolleck. 2000. Making collaboration work! Conservation Biologist in Practice p. 17-25.

APPENDIX A

DRAFT
FINAL REPORT OF THE GOVERNORS' ROUNDTABLE ON THE DRAFT CONSERVATION STRATEGY FOR THE GRIZZLY BEAR IN THE YELLOWSTONE AREA

May 30, 2000

Executive Summary

The Yellowstone Ecosystem Subcommittee (YES) of the Interagency Grizzly Bear Committee (IGBC) produced a draft Conservation Strategy for the Grizzly Bear in the Yellowstone Area. This document outlines a cooperative management strategy to be implemented by state and federal agencies upon delisting of this population of grizzly bears. The U.S. Fish and Wildlife Service (FWS) determined that completion of, and a commitment to implement, such a plan is a necessary prerequisite to delisting. The FWS took the lead in drafting the document, with assistance from technical staff from other agencies in the YES.

At the request of the state members of the IGBC, the Governors of Idaho, Montana and Wyoming agreed to appoint a 15 member citizen roundtable to review the draft conservation strategy. The role of the roundtable was to develop consensus recommendations the Governors could use in formulating the states' responses to the draft.

The roundtable met three times in the spring of 2000 to discuss the draft conservation strategy. A neutral party facilitated meetings. Staff from the three state wildlife agencies, the FWS and the U.S. Forest Service provided technical advice to the roundtable during and between meetings. All meetings were open to the public.

Given the limited time available and the technical nature of much of the document, the roundtable took a policy level view of the draft conservation strategy. They identified a number of issues and generated the following set of recommendations. The roundtable reached complete consensus on all of these items.

The roundtable affirmed the conceptual approach of maintaining a Primary Conservation Area (PCA) managed conservatively to protect a core of secure habitat and bear numbers. They endorsed the proposed size and management of the PCA, which corresponds to the current Recovery Zone.

The most significant concern that surfaced during the roundtable discussions was uncertainty regarding management of bears and habitat outside the PCA. Environmental and sportsmen interests fear that bears will be forever limited to the PCA, while commodity interests fear that severe restrictions on land use could expand with the bear.

All interests recognized the key to moving forward is development of state management plans for area outside the PCA. State plans should be developed concurrent with revision of the Conservation Strategy and should seek to:

1. Insure the long-term viability of grizzly bears and preclude re-listing.
2. Support expansion of grizzly bears beyond the PCA in areas that are biologically suitable and socially acceptable.
3. Manage grizzly bears as a game animal, including allowing regulated hunting when and where appropriate.

In the short term, state should continue funding essential grizzly bear recovery efforts. In the long term, better funding mechanisms are needed to distribute the cost equitably between the national interests that support grizzly conservation. The governors and congressional delegations from Idaho, Montana and Wyoming should pursue additional federal funding.

The proposed Yellowstone Grizzly Management Committee should be expanded to include 3 non-voting members from each state appointed by the governor. to add citizen perspectives to management.

The agencies should establish a joint agency-citizen education committee to promote better understanding and awareness of grizzly conservation needs. Key messages should include realistic information on bear management, how to live with grizzlies and how to hunt in grizzly country without encountering problems.

Complete text of all 26 unanimous recommendations begins on page 11.

Background

The U. S. Fish and Wildlife Service (FWS) listed the grizzly bear in the coterminous states as "Threatened" under the Endangered Species Act in 1975. Shortly after that, the state and federal agencies involved in efforts to recover the grizzly bear formed the Interagency Grizzly Bear Committee (IGBC) to help coordinate conservation efforts. The Yellowstone Ecosystem Subcommittee (YES) was assigned lead responsibility for recovery efforts in the Yellowstone ecosystem.

The FWS's listing decision identified a number of threats to the long term viability of grizzly bears in the Yellowstone area. Among the factors considered were lack of habitat security and inadequate regulatory mechanisms to control grizzly bear mortality to acceptable levels. The FWS Recovery Plan outlined a number of steps necessary to address these problems. One task in the Recovery Plan was development of a Conservation Strategy by the state and federal agencies in the Yellowstone area that identified how bears and their habitat would be managed after the bear was delisted. The goal of the Conservation Strategy is to ensure the recovered population remains sufficiently healthy that protection under the Endangered Species Act is not necessary.

A technical team composed of staff from state and federal agencies in the YES collaborated on drafting a Conservation Strategy during 1998 and 1999. The FWS Grizzly Bear Recovery Coordinator led the process and was the primary author. Although the technical team sought consensus on content of the strategy, some aspects of the draft strategy were not fully acceptable to all members.

The YES recognized the need for public review of the draft strategy to develop understanding and acceptance of the strategy. The YES was also open to suggestions for change to make the strategy more effective. The YES proposed to submit the draft for public review during the spring of 2000. The FWS agreed to facilitate the review through publication, notice in the Federal Register and compilation of public comment.

Given the state's lead role in management of grizzlies after delisting and the significant costs the states will incur, the IGBC identified the need for understanding of, and commitment to, the Conservation Strategy at the highest levels in state government. Accordingly, as part of the public review process, the IGBC invited the governors of Idaho, Montana and Wyoming to appoint a citizen roundtable to review the draft conservation strategy to help formulate the states' recommendations on the draft.

Governors' Roundtable Members and Process

Governor Kempthorne (ID), Governor Racicot (MT) and Governor Geringer (WY) signed a Memorandum of Understanding in December, 1999, agreeing to appoint a 15 member citizen roundtable to review the draft Conservation Strategy for the Grizzly Bear in the Yellowstone Area. The governors' goal was to coordinate the states' review and provide a meaningful role for state residents in defining the future of grizzly bear

conservation in the Yellowstone area. The governors agreed to appoint members from a broad range of interests, to provide support to the roundtable process and to meet jointly to consider the recommendations of the roundtable.

Roundtable members were:

Idaho	Montana	Wyoming
Ms. Jan Brown	Sen. Lorents Grosfield	Mr. Dennis Oden
Sen. Golden Linford	Mr. Tom France	Ms. Jill Siggings
Mr. Roy Moulton	Mr. Tim Mulligan	Mr. Albert Sommers
Mr. Brent Robson	Mr. Randy Newberg	Mr. Steve Thomas
Mrs. Cindy Siddoway	Mr. Gary Ullman	Mr. Harold Turner

Interests represented included conservation and environmental groups, sportsmen, livestock owners, oil and gas industry, local business, county government, state fish and wildlife commissions and state legislatures.

Mrs. Virginia Tribe of Missoula, Montana facilitated the roundtable process. As a neutral party, her role was to keep the group on task and ensure all interests had a fair opportunity to influence the outcome.

The roundtable met March 16 in Bozeman, Montana, April 20 in Idaho Falls and May 17 and 18 in Jackson, Wyoming. All meetings were open to the public.

Staff from the governors' offices, the state wildlife agencies, the FWS and U.S. Forest Service attended the roundtable meetings, and was available between meetings, to provide technical advice to the members.

Given the limited time available and the technical nature of the draft conservation strategy, the roundtable took a policy level view of the document. At their initial meeting, they agreed to accept the science in the strategy as the best available at the time. They agreed to seek consensus on recommendations that:

- can be used collectively by the three Governors to develop their formal comments on the Conservation Strategy;
- acknowledge the importance of flexibility as the situation changes;
- are within the context of states (Idaho, Montana and Wyoming);
- encourage successful partnerships; and
- address states' issues so that states are willing and have the capabilities to accept responsibilities that result from de-listing.

The roundtable organized their discussion and analysis around a number of issues that arose from their individual perspectives. They used the following criteria for evaluating and determining priority issues:

- Is there a legal mandate?
- Will it have significant effect on long-term Grizzly Bear viability?

- How well does it meet the expectations of the MOU?
- Is it an area where all three States have a problem with the proposal? Is it an area where all three States will have to agree?
- To what degree do local, state, and federal agencies agree/disagree?
- Is the issue considered high priority by a large number of Roundtable members or all the Roundtable members of a particular state or interest group?
- Do the States consider it feasible to implement in its present form?
- Can the States afford it?

At their second meeting, the roundtable reached agreement on a list of the most important issues to address. They formulated a statement that outlined key elements of the issue and agreed on guiding principles for resolution of the issue. They identified what interests were affected by the issue and what the affected interests needed to be satisfied with resolution. They developed potential recommendations related to the issue and agreed to network within their states during the interim between their second and final meeting.

Issues

Clarity of the plan; management of the process (roles; decision authorities; citizen involvement in the management process/committee; peer review; guidance for nuisance bears).

Issue Statement

This proposal is based on the assumption that the grizzly bear has been de-listed and that federal and state agencies will fulfill and fund the Conservation Strategy responsibilities assigned to them. Idaho, Montana and Wyoming are deemed to have management plans in place that are satisfactory to carry out the Conservation Strategy. The issue is: How do we develop and implement a state management plan that:

- Utilizes existing state processes and is adapted to reflect issues related to grizzly bears;
- Integrates with the federal Conservation Strategy;
- Coordinates with other agencies and jurisdictions (federal and all 3 states);

Guiding Principles

- The likelihood of success is increased by involvement of local citizenry.
- It is critical to recognize realistic budget constraints.
- The plans must be flexible to respond to biological, social and political change.

Interests/Needs

- It is in the interest of those signing the Conservation Strategy to coordinate their efforts.
- It is in the interest of the environmental community to have assurance that state agencies listen to more than just hunters.
- It is in the interest of private property owners to be satisfied that their property rights have been adequately considered.
- It is in the interest of the hunting community to have state agency funding augmented from sources other than traditional license dollars until hunting is an active component of state management plans.
- It is in the interest of local communities and businesses to have assurance that state plans are responsive to their economic future.

Initial Ideas Toward Recommendations

- Utilize existing state agency processes to reflect the interest of all concerned parties.
- Clarify accountability and responsibility among agencies.
- Establish clear protocol for nuisance bear problems.
- Integrate the plans of all 3 states through the YGMC.
- Expand the YGMC to include citizen members from each state.
- Consider compensation for depredation.
- Identify suitable grizzly bear habitat outside the PCA and manage populations in those areas while mitigating adverse social and economic consequences (in the same way state manage for other major species).
- Consider hunting as a reasonable and anticipated management tool.
- To the extent possible, incorporate state management plans into federal land and resource management decisions.
- Incorporate education programs to reduce nuisance bear problems.

Primary Conservation Area boundaries and habitat requirements.

Issue Statement

This issues related to a number of questions regarding the size of the Primary Conservation Area (PCA), including:

- Do the proposed guidelines exceed or underestimate habitat requirements?
- Are the geographic boundaries within the Conservation Strategy appropriate?
- Is the 10 mile buffer zone adjusting for habitat realities; should there be better criteria for determining the buffer zone?
- Will other species (listed, petitioned and/or otherwise) in the PCA have their habitat needs met?

- Are the PCA and buffer zone boundaries based on biological habitat and science?
- Will Bear Management Units (BMUs) as currently drawn meet "adjacent unit" criteria or are they set up to fail as proposed in the draft?
- Is there a better way (i.e., larger PCA; less restrictions, BMU boundaries, etc.)?
- Can the BMUs be better configured to delete poor habitat?
- Should boundaries be expanded?

Guiding Principles

- Use this process to support bear recovery and not to advance agendas unrelated to bear recovery.
- Seek solutions that constitute a balance among competing interests.
- Seek to maximize benefits to the bear for the money and time invested.
- Meet minimum legal requirements for bear recovery.
- Seek local wisdom and perspective in order to achieve "buy in" with boundaries and habitat objectives.

Interests/Needs

- It is in the interest of counties, communities and businesses in grizzly bear country to have reasonable certainty in their lives.
- It is in the interest of the states have management discretion.
- It is in the interest of federal agencies to have local support rather than continued controversy on boundaries.
- It is in the interest of the US Fish & Wildlife Service to have an area large enough to assure recovery and fulfill the de-listing goal.

Initial Ideas Toward Recommendations

- Modify the monitoring zone boundary to reflect habitat realities (arbitrary 10 miles).
- Accept the current boundary as a reasonable compromise based on assumed science.
- Eliminate portions of BMUs of dubious habitat quality (i.e., some private lands). Consider combining units that have not reached goals due to habitat limitations.
- Consider adding those areas outside the current boundary with high habitat and bears.
- Consider the inclusion of restricted lands (wilderness areas) that have decent habitat.
- Draw a boundary that reflects where the bears want to be and under what conditions.
- Get rid of one circle with BMUs. Look at core federal lands, secondary zones under state responsibility and linkages. In these zones, develop management strategies that consider multiple species including humans.

- Boundaries that are biologically based with social considerations.
- Reconfigure the core area to encompass the highest quality habitat and bear occupation (primarily federal land).
- Develop a "new" secondary (qualitative) habitat category that considers human activities and co-existence, other species, linkages, current management designations, etc. with state primacy in these areas.
- Pool resources and responsibilities for long-term monitoring among federal, state and local (universities) and multi-state entities.

Human use restrictions - Clarity, flexibility, tolerance, and monitoring.

Issue Statement

Concern over human use restrictions exist within three distinct zones: (1) Inside the PCA; (2) Outside the PCA but inside the 10 mile buffer; (3) Outside the 10 mile buffer. Uses being restricted include commercial use, recreational use, and uses on private property.

Guiding Principles

- Maintain a sustainable, recovered grizzly bear population.
- Meet the needs of affected partners.
- Meet the needs of local communities.

Interests/Needs

- It is in the interest of local communities and counties in grizzly bear country to have healthy social/economic situations and maintain and/or increase their tax base.
- It is in the interest of users to have roads available to support their activities.
- It is in the interest of recreationists to have access to recreation areas and sites and to have hunting and fishing opportunities.
- It is in the interest of local ranchers to be able to continue livestock grazing, be viable economically, and continue their way of life and culture.
- It is in the interest of outfitters to have areas that appeal to their clientele.
- It is in the interest of the timber industry to have areas available for timber harvest.
- It is in the interest of oil and gas developers to have areas available for exploration.
- It is in the interest of private property owners to be able to protect their property values and have flexibility in managing their land.
- It is in the interest of the general public, local publics and involved agencies to meet the ESA requirements for de-listing the grizzly bear.

- It is in the interest of involved states to optimize their authority and flexibility to manage human use restrictions.
- It is in the interest of grizzly bears to have adequate habitat and to be managed for their long-term sustainability.

Initial Ideas Toward Recommendations

- Inside the PCA, management flexibility should be provided for people living, working and recreating while still satisfying the recovery objectives for grizzly bear populations and habitat. Monitoring is critical to reducing the level of restriction.
- Outside the PCA, human uses would best be served by management guidelines developed by the states. Grizzly moralities should only be counted inside the PCA.

Cost, budget and funding

Issue Statement

It is critical to determine how the Conservation Strategy will be funded both in the short and long term.

Guiding Principles

- This should/cannot be an unfunded mandate, but rather a shared responsibility.
- The funding burden should not fall unfairly on licensed/permitted users (hunters/anglers, landowners, commercial interests, local communities) of public lands.
- The level of federal funding should be determined based on the part grizzly bear management plays in the whole ESA program.
- Entities who pay for grizzly bear management should have some involvement in decisions related to management strategies.

Interests/Needs

- It is in the interest of commercial users to not bear the financial burden of grizzly bear management.
- It is in the interest of communities and counties to not bear the financial burden of grizzly bear management nor have other economic elements affected negatively.
- It is in the interest of conservation groups to have adequate funding available to support long term sustainability of the grizzly bear, particularly if it is de-listed.
- It is in the interest of the general public to have grizzly bear management funded for the long term sustainability of the grizzly bear.

Initial Ideas Toward Recommendations

- Total federal funding.

- Total state funding.
- Total private funding.
- Combination of all or part of the above.
- Short term - Continued funding by federal and state governments.
- Long term - Creation of an Endowment Fund seeded by the federal government. Interest from the corpus will be used to fund the majority of costs. (Current proposal being forwarded by the Wyoming Game and Fish Department)

The need for comprehensive, ongoing education to help people understand management strategies and increase tolerance for the bear.

Issue Statement

Education is critical to the success of the recovery strategy in order to increase tolerance of the bear and reduce bear mortality; move toward a less restrictive strategy; and promote human safety. The desired end results include safety and the ability to share public lands with bears and long-term survivability of grizzly bears. Educational materials should use accurate, current science, be based on educational curriculum design, and be easily understood. Materials should also help people understand the social and economic factors involved in managing for grizzly bears. The responsibility should be appropriately shared among federal, state, local and citizen interest groups with materials develop to reach a variety of audiences and users including local governments, hunters/outfitters, those who use the land for grazing, recreationists, commodity extractors, Homeowners, school children and visitors from out of the area.

Guiding Principles

- Maximize human safety.
- Minimize bear mortality.
- Use current, accurate, science-based educational curriculums.
- Assure user-friendly materials and programs.
- Identify and prioritize target groups.

Interests/Needs

- In areas managed for grizzly bear, it is in the interest of homeowners, the local public, public land recreationists and commodity users, and out-of-the area visitors:
    - To be adequately informed so they understand safety measures.
    - To understand the social and economic factors related to managing grizzly bears.
    - To understand "nuisance bear" guidelines.
- It is in the interest of advocacy groups to have public tolerance of grizzly bears and to have people understand management strategies.

- It is in the interest of commodity users and recreationists to understand the rationale supporting grizzly bear management strategies so that their actions on the land may eventually lead to less restrictive approaches.
- It is in the interest of local, state and federal governments to have citizenry that are informed about grizzly bears, roles and responsibilities, and authorities in their areas.
- It is in the general public interest to have sustainable populations of grizzly bears and grizzly bear habitat.
- It is in the interest of the US Fish & Wildlife Service to have ongoing management strategies that sustain viable populations of the grizzly bear.

Initial Ideas Toward Recommendations

- Form a committee of state, federal and local government and citizens to develop an education program or programs to meet the needs of the general public and certain target groups.
- Identify tools being used today and find out what's happening currently and by whom.
- Use success stories in educational materials.
- Think "marketing".
- Create "bear country" support groups in and around communities where grizzly bears live.

Final Recommendations

At their third meeting, the roundtable refined their recommendations until agreement was reached on language for each item. Caucusing among similar interests, divergent interests and state representatives was used to expedite discussion. The following lists the final recommendations of the roundtable.

Unanimous Recommendations Related to the Conservation Strategy and the Primary Conservation Area (PCA)

The PCA boundary should be adopted as presented in the draft Conservation Strategy. The Round Table affirms the proposed management within the PCA, including the approach of allowing minimum, temporary reductions in grizzly bear secure areas, only for the purpose of overall grizzly bear habitat improvement.

The Conservation Strategy should include and explain the concept of adaptive management in understandable terms, explain how adaptive management will be applied, and explain how the Conservation Strategy may be amended in the future. (For example, the document should explain how management changes in the Targhee National Forest that may affect habitat in the Plateau and Henry's lake Bear Management Units will be evaluated in relation to occupancy and re-listing criteria, and what changes in the Conservation Strategy might result.)

When data demonstrate that bear populations are healthy and robust outside the PCA according to state plan goals, more flexible management may be considered within the PCA, provided the basic objectives for the PCA are maintained.

Eliminate references to monitoring population parameters and mortality in the 10 mile area surrounding the PCA in relation to management decisions in the Conservation Strategy. (i.e. Eliminate the 10 mile "buffer.") Monitoring and management outside the PCA should be governed by state management plans to be developed as outlined below. Decisions in the Conservation Strategy should be limited to results of monitoring within the PCA unless monitoring under state plans outside the PCA indicates the need for management review and action either inside or outside the PCA.

Continue centralized coordination of ecosystem-wide population monitoring to insure data integrity and to provide a database available to the 3 states and other appropriate entities. The Round Table recommends that the Conservation Strategy include a data validation process for the purpose of eliciting and sustaining confidence in the data.

Unanimous Recommendations Related to State Plans

Assuming adoption of the above recommendations on the Conservation Strategy, the three states should initiate development of state grizzly bear management plans for areas outside the PCA. These plans should be developed concurrent with revision of the draft Conservation Strategy.

State and federal agencies should develop and communicate a process agreement that outlines and harmonizes state and federal planning as well as de-listing.

State plans should be developed through a public process and should seek to:

- Insure long-term viability of grizzly bears and preclude re-listing.
- Support expansion of grizzly bears beyond the PCA in areas that are biologically suitable and socially acceptable.
- Manage grizzly bears as a game animal, including allowing regulated hunting when and where appropriate.

Unanimous Recommendations Related to Funding

Short Term

- Continue funding state efforts and make funding for state plans a priority.
- Re-evaluate state costs, including local government needs (information and education, planning, etc.), so that budgets are realistic.
- Continue federal dollars to support management within the PCA.

Long Term

- Develop mechanisms to assure long term funding. Options include establishment of an Endowment for Grizzly Bear management, Conservation And Reinvestment Act dollars, or other national appropriations through Congress.

- Involve the Governors' Offices and the states' delegations in lobbying for federal dollars.
- Develop funding for livestock depredation compensation.

Unanimous Recommendation Related to Citizen Involvement

Add 3 non-voting citizen members per state to the Yellowstone Grizzly Management Committee (YGMC). In making these citizen appointments, the Governors should strive for a balanced representation. The YGMC should encourage their active participation in each meeting through establishment of Committee ground rules and clarification of roles and authorities. After three years, evaluate the structure and based on the evaluation, make appropriate changes.

Unanimous Recommendations Related to Education

Establish and fund an interagency education working group and include citizen members from each state appointed by the three Governors in a manner that reflects balanced representation.

Produce education materials based on the following criteria and messages:

- Honest and realistic messages about bears and bear management
- The need for nuisance protocol and removal of problem bears
- No jargon
- Safety and sanitation
- The need for and achievement of informed hunters
- Resident and non-resident messages
- Living with bears/bear country communities
- The importance of networks and communication
- Responsibility of local government
- Develop signage appropriate to "bear country"

Think about tools in "bear country" within the PCA that might encourage human safety, survival of the bear, and increased capacity for local governments, managers and private landowners (i.e., habitat-oriented and open space tax incentives; development restrictions and responsibilities; zoning and subdivision regulation).

Tools in "bear country" outside the PCA should be developed in coordination with state management plans.

Unanimous Recommendations Related to Plan and Process Clarity

Make a strong effort to provide citizens with a clear, understandable version of the plan and process.

Find avenues through the IGBC to start communication among states and federal entities about interrelationships among threatened and endangered species in the Yellowstone area and encourage language to this effect in the Conservation Strategy.

Unanimous Recommendations Related to the Montana Legislature

Once the Grizzly Bear is de-listed, add it to the list of animals in 87-1-115 that provides enhanced protection and significant fines under Montana law.

Revise Montana law with regard to taking Grizzlies for potential livestock depredation in a manner that eliminates this barrier to de-listing.

Unanimous Recommendations Related to Nuisance Bear Policy

Nuisance bear policy in the Conservation Strategy should be clarified and defined to increase public understanding and decrease misconceptions.

The Roundtable affirms that management authority for nuisance bears outside Nation Park boundaries lies with state agencies and that clear, effective protocols, including sensitivity to the placement of nuisance bears, need to be part of the Conservation Strategy as well as state plans.

APPENDIX B

Grizzly Bear Policy MCA 12.9.103

MCA 12.9.103 GRIZZLY BEAR POLICY (1) 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; and

Whereas the secure habitat for the grizzly has been greatly reduced as a result of the human development and population growth from 1850 through 1950 in the bear's traditional range in all western states; and

Whereas, a significant portion of the remaining grizzly bear habitat and population is located in Montana and these Montana populations occur in wildlands such as wilderness, primitive areas, de facto wilderness areas, national forests, national parks, Indian reservations, and seasonally, on adjacent private lands.

Now, therefore, in order to promote the preservation of the grizzly bear in its native habitat, the commission establishes the following policy guidelines for the Montana Department of Fish, Wildlife and Parks action when dealing with grizzly bear.

(a) Habitat. The department shall work to perpetuate and manage grizzly bear in suitable habitats of this state for the welfare of the bear and the enjoyment of the people of Montana and the nation. In performing this work the department should consider the following:

(i) the commission has the responsibility for the welfare of the grizzly and advocates the protection of the bear's habitat;

(ii) management of Montana's wildlands, including the grizzly bear habitat, is predominately, but not exclusively, a responsibility of various federal agencies and private landowners;

(iii) land use decisions made by these agencies and individuals affect grizzly bear habitat, thus cooperative programs with these agencies and individuals are essential to the management of this species;

(iv) preservation of wildlands is critical to the protection of this species and the commission advocates wildland preservation in occupied grizzly bear habitat; and

(v) while some logging may not be detrimental to grizzly habitat, each logging sale in areas inhabited by grizzly bear should be carefully reviewed and evaluated.

(b) Research. It is recognized by the commission that research on the habitat requirements and population characteristics of the grizzly bear is essential for the welfare of the species. Departmental research programs and proposals directed at defining those habitat requirements are encouraged and supported.

(c) Hunting and recreational use. The commission recognizes its responsibility to consider and provide for recreational opportunities as part of a grizzly bear management program. These opportunities shall include sport hunting, recreational experiences, aesthetics of natural ecosystems, and other uses consistent with the overall welfare of the species.

(i) the department should consider the variability of values between individuals, groups, organizations, and agencies when management programs for various grizzly bear populations are developed.

(ii) sport hunting is considered the most desirable method of balancing grizzly bear numbers with their available habitat, minimizing depredations against private property within or adjacent to grizzly bear habitat, and minimizing grizzly bear attacks on humans.

(d) Depredations. Contacts between grizzly bear and humans, or property of humans, require delicate handling and careful consideration. When these contacts reach the stage for definite action, the following actions should be carried out:

(i) grizzly bear, in the process of threatening or endangering human life, shall be captured or dispatched immediately.

(ii) where no immediate threat to human life exists, individual bear encounters with humans shall be evaluated on a case-by-case basis and when the attack is abnormal or apparently unprovoked, the individual bear involved shall be captured or dispatched.

(iii) when the attack is normal (e.g. a female defending her cubs, any bear defending its food, or any bear defending itself) but the situation leads itself to no reasonable possibility of leaving the bear in place, then the bear should be removed.

(iv) grizzly bear committing depredations that do not directly endanger human life but that are causing property losses shall be evaluated on an individual case basis.

(v) where removal is determined to be the best resolution to the problem, depredating or nuisance bear shall be trapped, and if determined to be suitable for transplanting, shall be marked and released in suitable habitat previously approved with appropriate land management agencies.

(vi) reasonable efforts shall be made to inform the public of the transplant program, fully explaining the reasons for the capturing and locations of the release area.

(vii) upon request by an authorized scientific investigative agency or public zoological institution, a captured bear may be given to that agency or institution, for appropriate nonrelease research purposes. A reasonable charge may be required to cover costs of handling.

(e) Depredating grizzly bear that are not suitable for release or research because of old age, acquired behavior, disease, or crippling, shall be killed and sent to the department's research facilities for investigation. The public shall be fully informed when these actions are taken and the reasons for these actions shall be fully explained.

(f) Coordination. The department shall consult with appropriate federal agencies and comply with applicable federal rules and regulations in implementation of this policy. (History: Sec. 87-1-301 MCA, IMP, 87-1-201, 87-1-301 MCA; Eff. 12/31/72; AMD, 1977 MAR p. 257, Eff. 8/26/77.)

APPENDIX C

SPECIAL ORDER IN THE
NORTHERN REGION - GALLATIN, BEAVERHEAD, AND CUSTER NATIONAL FORESTS
ROCKY MOUNTAIN REGION - SHOSHONE NATIONAL FOREST
INTERMOUNTAIN REGION - BRIDGER-TETON AND TARGHEE NATIONAL FORESTS

This order is implemented under the authority of 36 CFR 261.50 (a) and (b) with a primary goal of minimizing grizzly/human encounters and thereby providing for user safety and protection of this nationally threatened species.

Definitions

1. "Bear resistant container" means a securable container constructed of solid non-pliable material capable of withstanding 200 foot-pounds of energy (using the approved bear-resistant container impact testing machine). When secured and under stress the container will not have any cracks, openings, or hinges that would allow a bear to gain entry by biting or pulling with its claws. Wood containers are not considered bear-resistant unless they are reinforced with metal.

2. "Food" means any nourishing substance, solid or liquid (excluding baled hay or water) or refuse thereof, that is not native to the immediate area, which is or may be eaten or otherwise taken into the body to sustain life, provide energy, or promote growth of any person or animal.

3. "Grizzly bear use area" means those area(s) delineated by a Forest Supervisor on maps identified as part of this order (Exhibit A).

4. "Animal carcass" means the dead body or parts thereof, of any mammal, bird, or fish, including domestic livestock.

5. "Acceptable storage" means:

   a. stored in a bear resistant container or;

   b. stored in a closed vehicle constructed of solid, nonpliable material or;

   c. suspended at least 10 feet clear of the ground at all points and 4 feet horizontally from any supporting tree or pole.

Prohibitions

The following acts are prohibited while occupying or using the grizzly bear use areas shown in Exhibit A of this Order.

1. Possessing or leaving unattended any animal carcass (36 CFR 261.58 (s)) unless the carcass is:

   (a) at least 1/2 mile from any sleeping area, trail, or recreation site or

   (b) at least 100 yards from any sleeping area, trail, or recreation site and acceptably stored, or

   (c) being eaten, being prepared for eating, or being transported

2. Possessing or leaving unattended any food during the daytime period 1 hour before sunrise until 1/2 hour after sunset (36 CFR 261.58 (cc)) unless it is:

   (a) acceptably stored or

   (b) being eaten, being prepared for eating, or being transporte or

   (c) being attended and acceptable storage methods are present a can be shown to a Federal, State, or local law enforcement officer.

3. Possessing or leaving unattended any food during the nighttime perio 1/2 hour after sunset until 1/2 hour before sunrise (36 CFR 261.58 (cc)) unless food is:

   (a) acceptably stored or

   (b) being eaten, being prepared for eating, or being transporte

4. Camping within 1/2 mile of any animal carcass or within 100 yards of any acceptably stored animal carcass except when such carcass is bei eaten, being prepared for eating, or being transported (36 CFR 261.5 (e)).

Exceptions

1. Prohibitions 1, 2, 3, or 4 do not apply to any person with a permit issued by the Beaverhead, Custer, Gallatin, Shoshone, Bridger-Teton, Targhee National Forest Supervisors or District Rangers authorizing otherwise prohibited act.

2. Any Federal, State, or local law enforcement officers of other emergency personnel are exempt from these prohibitions only when suc prohibited actions are necessary and/or essential for performance of their official duties.

SPECIAL ORDER FOR FOOD STORAGE WITHIN GRIZZLY BEAR RECOVERY AREA

To provide for public safety and protection of the grizzly bear, a threatened species, regulations as summarized below have been issued under the authority of 36 CFR 261.50 (a) and (b).

Within the grizzly bear recovery area shown at right, the following requirements must be met:

a) Human food and beverages, horse feeds, dog food, etc. either in possession or left unattended must be kept unavailable* to grizzly bears unless being consumed, prepared for consumption, or transported.

b) Fish and wildlife carcasses must be kept unavailable to grizzly bears and at least 100 yards from any tent or sleeping area, trailhead, or recreation site, unless being eaten, prepared for eating, or transported.

c) Fish and wildlife carcasses must be kept unavailable to grizzly bears except at locations more than 1/2 mile from campsites, trailheads, and recreation areas.

d) When departing the area, all food and refuse is removed from any bear resistant containers left in the area.

* Items are considered unavailable if they are:

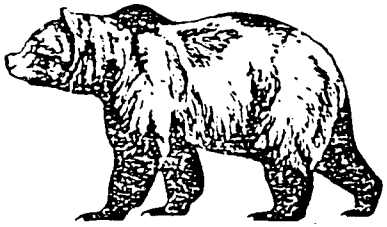
1) stored in a closed, bear resistant container,

2) enclosed within a vehicle constructed of solid, nonpliable material, or

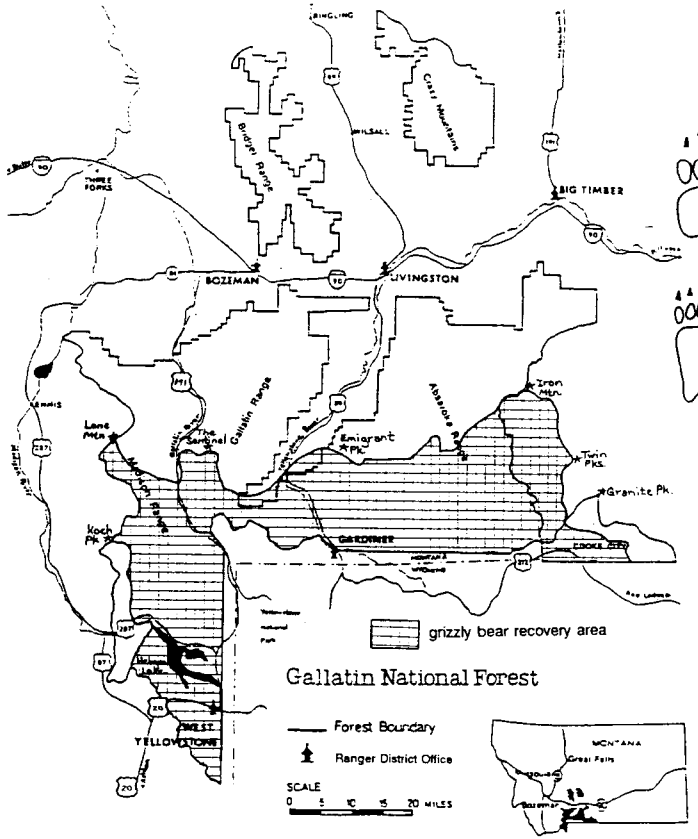
3) suspended at least 10 feet clear of the ground at all points and 4 feet horizontally from any supporting tree or pole.

Violation of this special order is punishable by a fine of not more than $500.00 or imprisonment for not more than six months, or both.

For more detailed information, contact the local Ranger District Office



GRIZZLY BEAR RECOVERY AREA
GALLATIN NATIONAL FOREST



NOTE: This map is intended to give an idea of where grizzly bears are known to range. This does not mean that grizzlies are never seen outside the recovery area, or that visitors are certain to see them within the shaded area. The recovery area shown includes that portion of the Gallatin National Forest that is known to be frequented by grizzly bears, and which contains the habitat components necessary for recovery of the species.

Black bears are found throughout the forest and should be treated with equal respect.

APPENDIX D

MEMORANDUM OF UNDERSTANDING
BETWEEN
MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS (FWP)
AND
UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
ANIMAL DAMAGE CONTROL (ADC)

COOPERATIVE ANIMAL DAMAGE CONTROL PROGRAM IN THE STATE OF MONTANA

ARTICLE 1

The purpose of this Memorandum of Understanding (MOU) is to initiate a cooperative relationship between FWP and ADC for planning, coordinating, and implementing animal damage control programs developed to prevent or minimize damage caused by wild animal species, including threatened and endangered species, to agriculture, animal husbandry, forestry, wildlife, and public health and safety.

ARTICLE 2

FWP is authorized to control wildlife damaging livestock or property or for public health and safety by Montana Codes Annotated, Sections 87-1-201 Powers and duties of the department and 87-1-225 Regulation of wild animal damaging property.

ADC is authorized by the Animal Damage Control Act of March 2, 1931 (7 U.S.C. 426-426b), and the Rural Development, Agriculture, and Related Agencies Appropriations Act, 1988 (P.L. 100-202) to cooperate with States, local jurisdictions, individuals, and public and private agencies, organizations and institutions.

ARTICLE 3

FWP and ADC agree that:

A. Both parties will cooperate by providing facilities, equipment, personnel and funds to conduct a joint program in the state of Montana which will prevent or minimize the economic effects of depredations caused by wild animals.

B. ADC will be responsible for capture of grizzly bears, black bears and mountain lions which are involved in livestock depredation, including bees and beehives. Upon notification of a livestock depredation where grizzly bear may be involved, the receiving party will contact the other party and a joint investigation will be conducted.

C. Grizzly bear control activities will follow the action procedures for determining grizzly bear nuisance status and for controlling nuisance grizzly bear in the Interagency Grizzly Bear Guidelines (attached) and 50 CFR 17.40 (b), whereby FWP will be responsible for the disposition of the animal.

D. Grizzly/livestock depredation reports will be prepared by FWP for submittal to the Great Bear Foundation. In cases where there remains a question on whether it was a grizzly involved, all information obtained during the investigation will be provided to Dr. Bart O'Gara for review and assessment.

E. FWP will be responsible for responding to non-livestock complaints involving grizzly bears, black bears and mountain lions. All non-livestock complaints will be referred to FWP.

F. Control activities and field investigations conducted pursuant to this MOU will emphasize sound management practices and due regard for the protection of domestic animals, nontarget wildlife, endangered species and the environment.

G. At the written request of FWP Regional Supervisor and/or the ADC District Supervisor, notification will be provided in these regions when nuisance or livestock depredation control actions are initiated for black bear and mountain lion. All depredation complaints will be responded to within (48) hours. Assistance may be requested of either party when necessary.

H. Both parties will consult as often as necessary to review the number of depredation complaints received and the actions taken to resolve the complaints. Contacts should be made at the local level. FWP Regional Supervisors will coordinate with ADC District Supervisors.

I. ADC will submit an annual report of activities conducted. In addition, ADC will continue to provide the FWP a copy of all Bear and Lion Justification Reports.

J. Salvaging of animals will be reported on the ADC Bear and Lion Justification Report. Carcasses and/or parts will be turned over to FWP. In cases where it is impractical to turn in carcasses or all parts, those parts that remain salvageable will be turned in.

K. Both parties agree to identify areas and notify the other party where preventative measures may be taken to minimize or prevent animal damage. Cooperative preventative efforts will be undertaken whenever possible.

L. Both parties will encourage joint participation at training sessions involving animal damage control.

M. The Field Services Services Division for FWP will provide for statewide liasion with the Montana Director of ADC regarding activities related to this MOU.

ARTICLE 4

All animal damage control activities will be conducted in accordance with the applicable Federal, State, and local laws and regulations.

ARTICLE 5

This agreement and any continuation thereof shall be contingent upon the availability of funds appropriated by the Congress of the United States and the State of Montana. It is understood and agreed that any monies allocated for the purpose of this agreement shall be expended in accordance with its terms and in the manner prescribed by the fiscal regulations and/or administrative policies of the agency making the funds available.

ARTICLE 6

Pursuant to Section 22, Title 41, United States Code, no member of or delegate to Congress shall be admitted to any share or part of this MOU or to any benefit to arise therefrom.

ARTICLE 7

This MOU shall supersede all existing memorandums of understanding and supplements thereto relating to the conduct of animal damage control programs with FWP. All cooperative animal damage control programs now in progress shall be incorporated and continued under this MOU for the purpose of being consistent.

ARTICLE 8

This MOU shall become effective upon date of final signature and shall continue indefinitely. This MOU may be amended at any time by mutual agreement of the parties in writing. It may be terminated by either party upon 60 days written notice to the other party.

MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS

K. L. Cool
Director

August 17, 1990
Date

USDA
Animal and Plant Health Inspection Service

Acting Administrator

SEP 20 1990
Date

APPENDIX E

5-7-87

GUIDELINES FOR BEAR DEPREDATION OF BEEHIVES

Bear depredation to beehives is considered a specialized depredation problem. Consequently, the following guidelines are considered a supplement to the existing, more extensive game damage guidelines dated September 30, 1985. Existing statutes and rules classify bees as livestock. Bees must, therefore, be included with other livestock in statutes which address predation and other problems related to livestock (87-3-127 and 87-3-130). These statutes allow livestock owners to shoot, trap or chase with dogs any bears that have destroyed, or are threatening to destroy beehives. These statutes do not supercede private property rights. Landowners may prevent bears from being killed by both beekeepers and Department personnel by preventing access to their property.

1. All bear depredation complaints to the Department will be investigated within 48 hours (87-1-225). Complaints by beekeepers should be made to local ADC agents or Department of Fish, Wildlife and Parks' personnel. "First contact" individuals or procedures may vary locally. Coordination with ADC relative to bear-bee issues will be accommodated at regional level by Regional Supervisor.

2. All bears known by the Department to have destroyed beehives will be killed in compliance with Department policy. When the Department responds to a verified beeyard damage complaint where bees have been killed by the bear, killing the bear is the only alternative. Beekeepers must have permission of the landowner to kill depredating bears on property other than their own.

3. Beekeepers may shoot, trap, snare or chase with dogs, any bears that have destroyed, or are threatening to destroy beehives (87-3-127; 87-3-130). Beekeepers must have reasonable evidence that bears killed have caused damage and avoid the killing of "innocent" bears. Any bears killed by landowners or beekeepers shall be reported to the Department as soon as practical and no later than 72 hours (87-3-130). After report of a bear kill, FWP personnel will complete the depredation report and the necessary parts and data will be obtained (e.g. tooth, claws, skull).

4. Trapping or snaring of bears by beekeepers must occur within 50 feet of beehives. Snares should only be used after damage has occurred. All traps and snares must be checked at least every 12 hours (87-3-127).

5. Beekeepers using a beehive within 50 feet of an active, occupied registered beeyard, for the purpose of trapping, snaring or shooting depredating black bears, are not baiting as defined under state law (87-3-101).

6. Bears caught by agency personnel in culvert or live traps in the general vicinity of beeyards, but not known to have actually caused damage, will be held up to 12 hours in the trap so that stools may be inspected for evidence of having caused damage to beehives.

7. Live-trapped bears showing evidence of having caused depredation on beehives will be killed.

8. Live-trapped bears that do not display evidence of having caused beehive damage, and have no history of other nuisance problems, may be relocated under the following circumstances and in compliance with 87-1-231 to 234.

   A. All relocated nuisance black bears will be marked with special "nuisance bear" eartags; records of marked bears will be kept at the regional level; proper distribution of "nuisance bear" eartags will be the responsibility of the Regional Supervisor.

   B. Grizzly bear relocation will follow the IGBC Nuisance Bear Guidelines;

   C. Release sites of nuisance black bears will preferably be at least 50 miles away, in a different mountain range, in an area of low bear density and not in an area of known chronic bear problems. It is recognized that it may not always be possible to meet all of these criteria. Selection of areas for relocations will be the responsibility of the Regional Supervisor.

9. When possible, hunters will be utilized in removing known damage-causing bears during open bear hunting season. A hunter roster for damage hunts will be considered on a region by region basis and will be the responsibility of the Regional Supervisor.

10. The Department will work towards refining of techniques for the protection of beeyards from depredating bears. As new technology becomes available, information will be passed on to beekeepers. New techniques may be pilot tested with cooperating beekeepers.

11. The Department will consider cost-sharing protective structures in certain situations. In "chronic" bear problem areas, the Department will provide a charger to beekeepers who wish to protect their beeyards with electrified fences and who are willing to purchase the materials and erect and maintain such a fence.

12. Other options, such as moving beeyards, should be considered when trying to reduce chronic bear problems. Beekeepers will be encouraged to prevent bear depredation problems whenever possible.

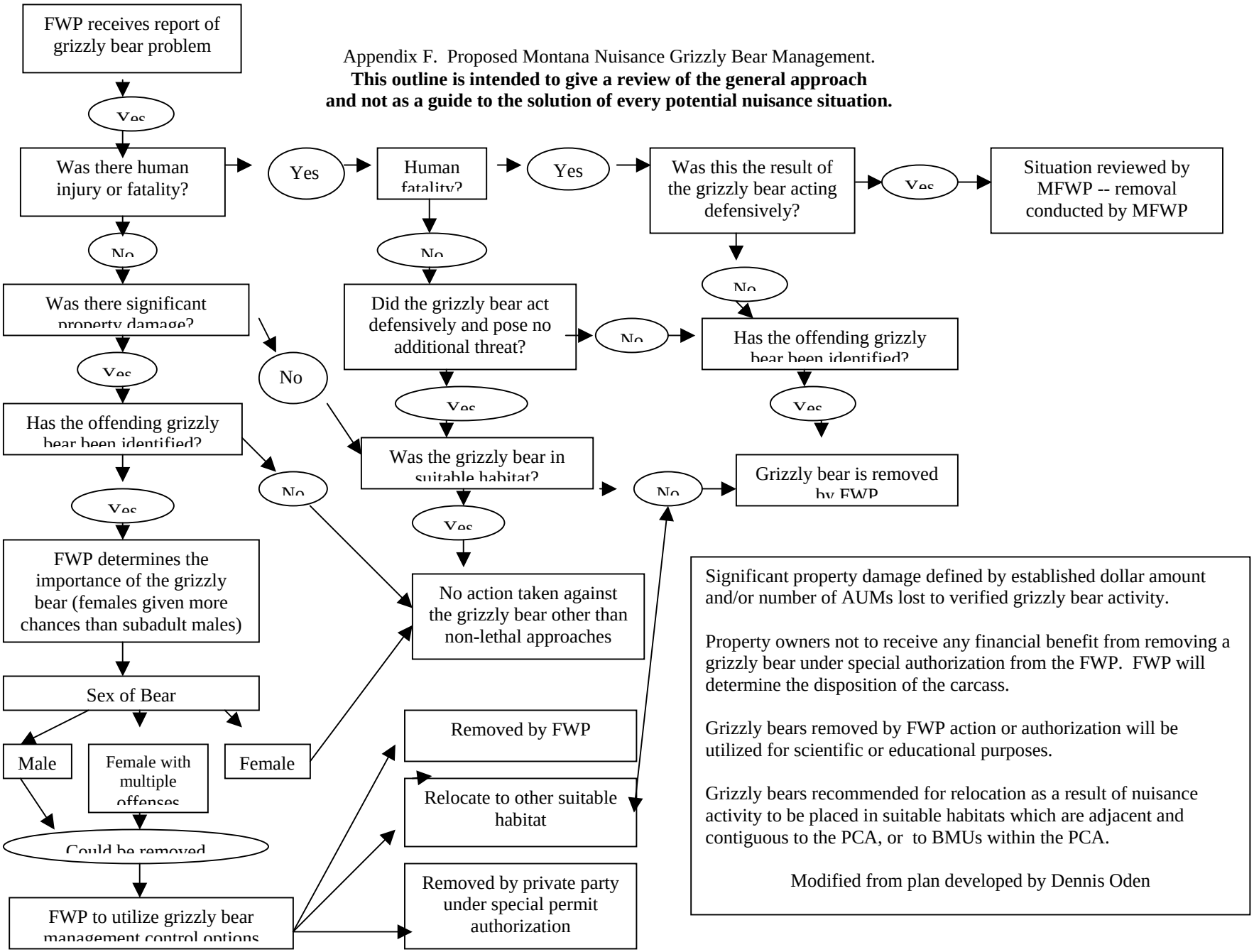
13. The Field Services Division will be responsible to maintain an active liaison with the Beekeepers Association to mutually seek preventative measures to protect beehives and discourage bears from damaging hives.

Contact individuals relative to these guidelines are Glenn Erickson, 444-2612; Gene Allen, 444-2602; Bob Bird, 444-2452.

GA/ph
508/27

Appendix F. Proposed Montana Nuisance Grizzly Bear Management.

This outline is intended to give a review of the general approach and not as a guide to the solution of every potential nuisance situation.



Significant property damage defined by established dollar amount and/or number of AUMs lost to verified grizzly bear activity.

Property owners not to receive any financial benefit from removing a grizzly bear under special authorization from the FWP. FWP will determine the disposition of the carcass.

Grizzly bears removed by FWP action or authorization will be utilized for scientific or educational purposes.

Grizzly bears recommended for relocation as a result of nuisance activity to be placed in suitable habitats which are adjacent and contiguous to the PCA, or to BMUs within the PCA.

Modified from plan developed by Dennis Oden

APPENDIX G

MEMORANDUM OF UNDERSTANDING
BETWEEN THE
MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS
AND THE
U.S. FISH AND WILDLIFE SERVICE

WHEREAS, the U.S. Fish and Wildlife Service (FWS) has been delegated the authority of the Secretary of the Interior for the administration and enforcement of laws pertaining to fish, wildlife and plants; and

WHEREAS, The Montana Department of Fish, Wildlife and Parks (MFWP) has been delegated the authority for the administration and enforcement of laws pertaining to fish and wildlife in the State of Montana; and

WHEREAS, the Montana Department of Fish, Wildlife and Parks and the U.S. Fish and Wildlife Service have law enforcement personnel located in the State of Montana, these people having the necessary training, qualifications, and experience to enforce all of these laws; and

WHEREAS, the Secretary of the Interior has delegated law enforcement authority to the Director of the U. S. Fish and Wildlife Service and given the Director responsibility for cooperative assistance in enforcing these acts in accord with any cooperative agreement;

NOW, THEREFORE, the Assistant Regional Director for Law Enforcement of the U. S. Fish and Wildlife Service, Region 6, and the Director of the Montana Department of Fish, Wildlife and Parks do hereby agree as follows:

1. Special Agents of the FWS and Law Enforcement Officers of the MFWP are expected to recognize possible violations of State and Federal laws, develop intelligence, collect evidence, and report their activities to the officer responsible for case coordination.

2. Specific requests for investigative assistance by the State of Montana Coordinating Officer will be handled on an individual basis through the nearest Resident Special Agent in Montana.

3. When Special Agents of the FWS provide investigative assistance to the MFWP, the following guidelines shall apply:

   a. Both FWS and MFWP shall each designate a Case Agent who will be responsible for directing the operation and case reporting.

b. Supervision will follow the routine of the parent agency.

c. Decisions relating to investigative direction shall be initially decided by the designated Case Agents and confirmed by the appropriate level(s) of supervision in the respective agency.

d. When operating within the respective investigation, the most restrictive legal policy shall apply (search and seizure, rules of evidence, laws of arrest, etc.).

e. The State of Montana may supply up to $100,000 per annum on any State/Federal cooperative investigation. The FWS shall supply that funding needed to complete a mutually agreed upon operation. All administrative reporting requirements shall be met as procedurally required by each parent agency.

f. The MFWP and the FWS, within each agencies administrative guidelines and upon mutual agreement, may assist each other in the payment of expenses necessary to the administration or routine operation on cooperative operations.

g. All funding initially provided by the MFWP will remain in an interest bearing account and any initial funding issued will require the signature of one person from the law enforcement unit.

h. Decisions to allocate <u>any</u> funds to further the operation will be cleared, in advance, through the appropriate level of supervision in each agency and in accordance with agency administrative policy.

i. All expenditures are to be documented if at all possible except when case officer safety is an issue. In those cases documentation is not mandated except as can be noted on monthly report forms. MFWP expenditures will be recorded in the checking ledger or covert/business books and the FWS will provide monthly accounting of funding expended to MFWP, office of the chief.

j. Documentation on all expenditures will be available for audit only when the specific investigation is completed or upon advice of the United States Attorney or Attorney General for the State of Montana.

k. The MFWP and FWS will request that the prosecuting agency(s) seek reimbursement through the courts of any identified expended funds for return to the MFWP fund for re-use within the parameters of agency policy.

l. Operational closedown dates, charges to be filed, courts to be utilized and prosecution direction will be decided by the Case Agents and the appropriate level(s) of supervision.

m. All news releases will be coordinated with the appropriate State/Federal attorneys' offices and the appropriate level(s) of supervision. There will be no release of case information without concurrence of all the above listed parties. The Public Affairs Office(s) to assume the lead in information dissemination will be determined by the parties prior to closedown.

n. All seized property will be disposed of by the courts and/or mutual State/Federal agreement.

o. Equipment may be loaned by one party to the other on an individual basis. Such equipment becomes the responsibility of the borrower and will be returned in the same condition as when received, normal wear and tear excepted. Damage in excess of normal wear and tear will be repaired by the user. Lost or stolen property will be replaced or reimbursed.

p. Emphasis will be placed on the long term operation, with the goal of apprehending all major targeted violators. However, the length of time an operation will run will be dependent upon the mutual decision of the Case Agents and the State/Federal attorneys.

q. Intelligence relative to joint operations will be centrally located and shared among the parties involved. Arrangements for intelligence centralization will be determined prior to initiation of operations.

r. All property lawfully acquired under color of the covert operation will be disposed of in accordance with agency requirements/regulations.

s. Business contracts may be entered into by either or both parties with cooperating private individuals in accordance with agency policy(s) to further covert operations. Both parties represented by this MOU must consent however to such 3rd party contracts.

This Memorandum of Understanding will become effective when signed by the Director of Fish, Wildlife and Parks for the State of Montana and the Assistant Regional Director for Law Enforcement, U.S. Fish and Wildlife Service. Either of the aforementioned parties may cancel this Memorandum of Understanding upon (30) days written notice to the other party member.

Director
Montana Department of Fish,
Wildlife and Parks

9-28-98
Date

Assistant Regional Director
U. S. Fish and Wildlife Service
Region 6

10/22/98
Date

APPENDIX H

87-3-130. Taking of wildlife to protect persons or livestock. (1) This chapter may not be construed to impose, by implication or otherwise, criminal liability for the taking of wildlife protected by this title if the wildlife is attacking, killing, or threatening to kill a person or livestock, except that, for purposes of protecting livestock, a person may not kill or attempt to kill a grizzly bear unless the grizzly bear is in the act of attacking or killing livestock. In addition, a person may kill or attempt to kill a wolf or mountain lion that is in the act of attacking or killing a domestic dog. A person who, under this subsection, takes wildlife protected by this title shall, within 72 hours, notify the department and surrender or arrange to surrender the wildlife to the department.

(2) A person may not provide supplemental feed attractants to game animals by:

(a) purposely or knowingly attracting bears with supplemental feed attractants;

(b) after having received a previous warning, negligently failing to properly store supplemental feed attractants and allowing bears access to the supplemental feed attractants; or

(c) purposely or knowingly providing supplemental feed attractants in a manner that results in an artificial concentration of game animals that may potentially contribute to the transmission of disease or that constitutes a threat to public safety.

(3) A person who is engaged in the normal feeding of livestock, in a normal agricultural practice, in cultivation of a lawn or garden, or in the commercial processing of garbage is not subject to civil or criminal liability under this section.

(4) A person who violates subsection (2) is guilty of a misdemeanor and is subject to the penalty provided in 87-1-102(1). This section does not apply to supplemental feeding activities conducted by the department for disease control purposes.

(5) As used in this section:

(a) "livestock" includes ostriches, rheas, and emus; and

(b) "supplemental feed attractant" means any food, garbage, or other attractant for game animals.

History: En. Sec. 1, Ch. 306, L. 1981; amd. Sec. 13, Ch. 206, L. 1995; amd. Sec. 3, Ch. 540, L. 1995; amd. Sec. 3, Ch. 275, L. 2001; amd. Sec. 6, Ch. 316, L. 2001.

Compiler's Comments

2001 Amendments — Composite Section: Chapter 275 in (1) in first and third sentences after "protected by this" substituted "title" for "chapter" and in third sentence at end inserted "and surrender or arrange to surrender the wildlife to the department"; in (2) in introductory clause after "A person may not" deleted "intentionally" and after "supplemental feed" inserted "attractants"; inserted (2)(a) prohibiting attracting bears; inserted (2)(b) regarding failure to properly store supplemental feed attractants; in (2)(c) at beginning inserted "purposely or knowingly providing supplemental feed attractants" and at end after "transmission of disease" inserted "or that constitutes a threat to public safety"; inserted (3) concerning person engaged in feeding of livestock; inserted (5)(b) defining supplemental feed attractant; and made minor changes in style. Amendment effective April 20, 2001.

Chapter 316 in (1) in first sentence substituted "if the wildlife is attacking" for "if the wildlife is molesting, assaulting" and at end inserted exceptions for grizzly bear attacking or killing livestock and inserted second sentence concerning wolves and mountain lions attacking or killing a domestic dog; and made minor changes in style. Amendment effective April 21, 2001.