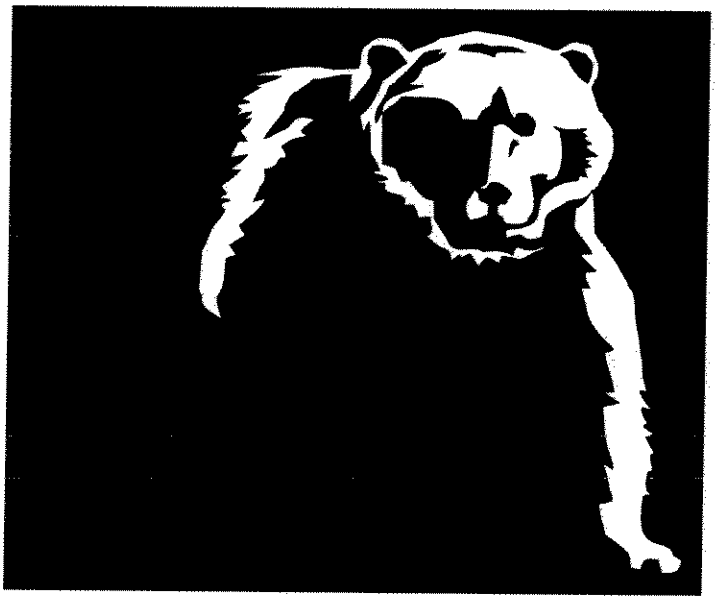
Wyoming Grizzly Bear Management Plan



Prepared By
David S. Moody, Dennie Hammer, Mark Bruscino,
Dan Bjornlie, Ron Grogan and Brian Debolt

February, 2002 (Amended July, 2005)

Wyoming Game and Fish Department

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OVERVIEW

The Yellowstone Ecosystem Subcommittee of the Interagency Grizzly Bear Committee produced a *Draft Conservation Strategy* for the Grizzly Bear in the Yellowstone Ecosystem. 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 determined that completion of such a plan, and a commitment to implement such a plan, are necessary prior to delisting.

During the spring of 2000, at the request of the state members of the Interagency Grizzly Bear Committee, the governors of Idaho, Montana, and Wyoming appointed a 15-member citizen roundtable to review the *Draft Conservation Strategy*. The roundtable was requested to provide recommendations the governors could use to develop a response to the *Draft Conservation Strategy*. The roundtable met three times. The roundtable reached complete consensus on 26 of its recommendations. The group also recommended that the three states develop management plans for areas outside the Primary Conservation Area to:

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

Public comment on the *Draft Conservation Strategy* was received and analyzed in 2001. The Yellowstone Ecosystem Subcommittee will use this input to revise the *Draft Conservation Strategy* and create a final document, which will then be approved by the U. S. Fish and Wildlife Service.

Wyoming submitted its draft management plan for public review during the summer of 2001. Over 8,000 written comments were received on the draft plan. In addition, the Wyoming Game and Fish Department (Department) contracted with an independent research firm to conduct a public attitude survey of Wyoming residents (Special Report, WGFD 2001). Over 1,000 residents were surveyed to obtain their attitudes related to grizzly bear management and nuisance issues. The results of both of these activities were used to modify the draft into this final version. Both of these documents can be obtained through the Department's Office of the Director in Cheyenne.

It is the objective of the Department and the Game and Fish Commission (Commission) to maintain existing renewable resource management and recreational use where possible and to develop a process where local publics can provide input to demonstrated problems. Human safety is a high priority within this plan. This approach allows for existing uses to continue, which should build support and increased tolerance for an expanding grizzly bear population. Therefore, Wyoming's Grizzly Bear Management Plan will employ an adaptive management approach. That is to say that within the Primary Conservation Area, the management focus will favor grizzly bears; outside the Primary Conservation

Area, grizzly bears will be managed in the context of multiple-use – something the Department is confident it can accomplish.

The Department strongly maintains that it is the appropriate agency to assume management of the grizzly bear once it is delisted and it is a role the agency wants to assume. This management plan will remain in effect until changes (i.e. better population and nuisance techniques or localized input) warrant modification of the plan.

INTRODUCTION

The grizzly bear (*Ursus arctos horribilis*) is considered by many to express the quality and depth of wild places. The species holds aesthetic value for much of the public. In the Greater Yellowstone Ecosystem of Wyoming, the grizzly bear also presents the challenge of balancing the needs of humans and wildlife to the advantage of both. The grizzly bear population in Wyoming is currently listed as "threatened" under the federal Endangered Species Act. Figure 1 delineates the Recovery Zone/Primary Conservation Area within the Greater Yellowstone Ecosystem.

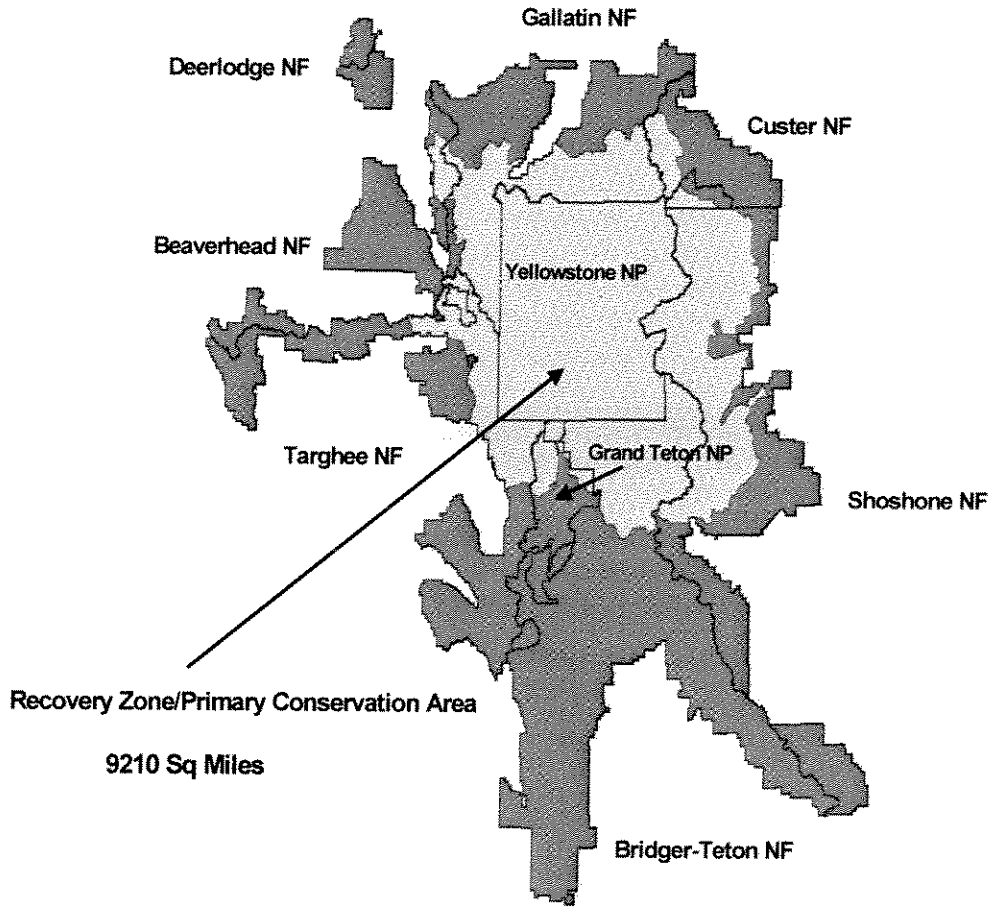

Figure 1. Recovery Zone/Primary Conservation Area within the Greater Yellowstone Ecosystem

With the listing of the grizzly bear as "threatened" under the Endangered Species Act in 1975 (Fed. Reg. 40:145,31734-31736), management goals within Wyoming have been largely defined by the United States Department of the Interior, U.S. Fish and Wildlife Service. Management goals and techniques are listed within the *Grizzly Bear Recovery Plan* (1993) and *Interagency Grizzly Bear Guidelines* (1986). Department currently has no grizzly bear management plan, since a state plan would be superceded by the federal *Recovery Plan* for this species.
However, some management objectives of the state are discussed in the Department publication "A Strategic Plan" (1990). The management objectives to be met by 1995 were:

1) To meet parameters identified in the revised *Grizzly Bear Recovery Plan* for the Yellowstone ecosystem.
2) To maintain at least 7,229 square miles of occupied grizzly bear habitat.
3) To obtain the informed consent of all potentially affected interests in structuring the population objectives, management strategies and regulations.

Wyoming's brief strategic plan is no longer adequate because it does not address management of the grizzly bear following delisting. This state management plan will do that.

The *Recovery Plan* identified specific criteria that must be accomplished prior to a change in status for the grizzly bear. Along with specific population criteria that have been met, habitat-based recovery criteria would be developed and a *Conservation Strategy* would be prepared. Amendments to the *Recovery Plan* and the *Draft Conservation Strategy* were submitted to the public for review in the spring of 2000. The habitat-based recovery criteria will be finalized and appended to the *Recovery Plan*. The *Draft Conservation Strategy*, created by an interagency technical team under the direction of the Interagency Grizzly Bear Committee, describes agency interactions, regulatory mechanisms, population management, population monitoring, habitat monitoring, and habitat management that will be in effect after delisting. The *Conservation Strategy* only applies to the existing Recovery Zone or Primary Conservation Area and a 10-mile buffer. While the final *Conservation Strategy* is in effect, there will be goals for population size and habitat status. If these goals are not met, the grizzly bear could be relisted. It is the intent that all participating federal and state agencies sign the *Conservation Strategy* and agree to its provisions prior to delisting.

Preparation of a state management plan is a necessary component for managing grizzly bears. When grizzly bears within Wyoming are delisted, management of the grizzly bear within the Primary Conservation Area and the 10-mile buffer must meet the requirements of the *Conservation Strategy*. When approved, and while in effect, the *Conservation Strategy* will become part of the Grizzly Bear Management Plan for Wyoming. As long as all population management criteria defined in the *Conservation Strategy* are met, the Department will have full management authority inside and outside the Primary Conservation Area, with the exception of Yellowstone National Park, Grand Teton National Park, and Tribal managed lands of the Wind River Indian Reservation. The state's grizzly bear management plan will provide the structure for management of grizzly

bears and the avenue for public input into grizzly bear management outside Yellowstone National Park, Grand Teton National Park, and Tribal managed lands of the Wind River Indian Reservation.

There has been considerable coordination between the states of Idaho, Montana, and Wyoming during the development of this state plan. Montana and Idaho are also developing state management plans, which should be completed sometime during 2002. The states realize there must be continued coordination after delisting to assure consistency in managing this population of grizzly bears.

RECOVERY CRITERIA

Currently, the *Recovery Plan*, *Grizzly Bear Management Guidelines*, and the *Draft Conservation Strategy* define criteria and methods for monitoring grizzly bear populations. Monitoring does not include estimating specific numbers of grizzly bears. Instead, monitoring measures indicators of population status. Three basic parameters are monitored: (1) sufficient reproduction to offset human-caused mortality; (2) adequate distribution of breeding females throughout the area; and (3) a limit on female and total human-caused mortality to ensure population viability that is related to the previous two parameters.

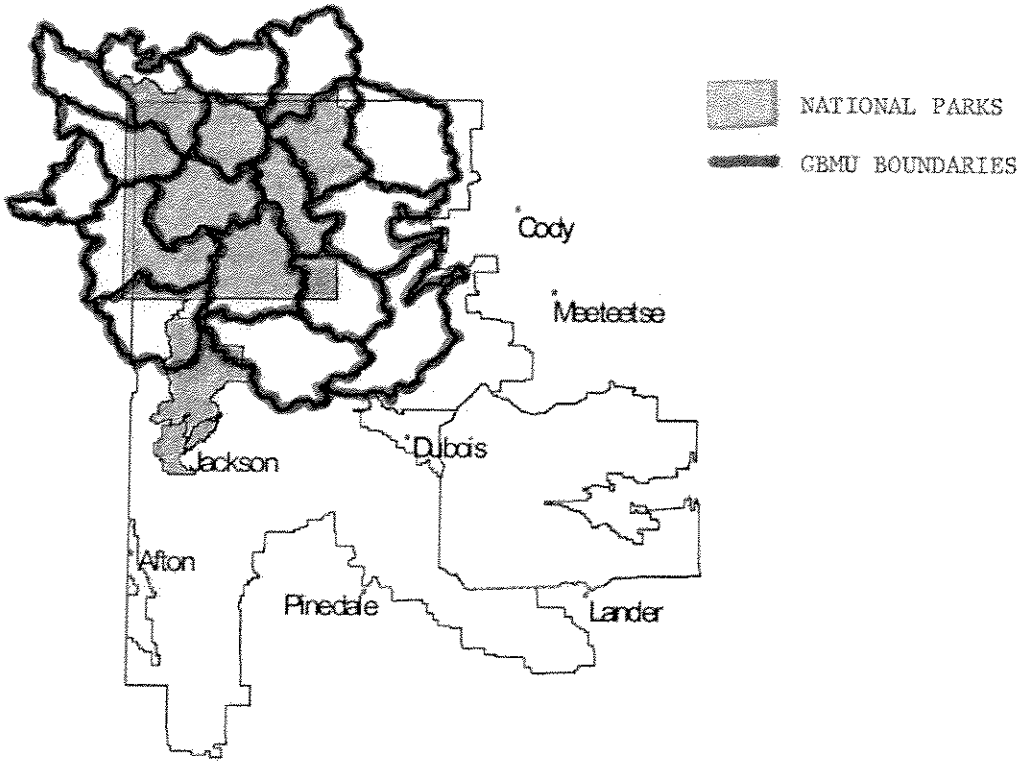

Figure 2. Current Grizzly Bear Management Units within the Primary Conservation Area in relation to the Greater Yellowstone Ecosystem.

These parameters are measured by: (1) the number of unduplicated females with cubs of the year recorded annually; (2) the distribution of females with young or family groups within defined Grizzly Bear Management Units throughout the ecosystem; and (3) the annual number of known female and total human-caused mortalities. These three measures are used to judge the status of the grizzly bear population in the Recovery Zone (Figure 1). The rationale for monitoring these three parameters is discussed in the *Recovery Plan* (1993:20-21) and the *Draft Conservation Strategy* (2000, IGBC). The area to be monitored under the *Draft Conservation Strategy* is geographically identical to the Recovery Zone, but has been renamed the Primary Conservation Area. The area to be monitored under the *Draft Conservation Strategy* is limited to the Primary Conservation Area and a 10-mile area immediately surrounding the Primary Conservation Area.

The population and distribution demographic goals contained in the *Draft Conservation Strategy* for the Primary Conservation Area are: (1) a running six year average of 15 females with cubs-of-the-year within the Primary Conservation Area and 10-mile buffer; (2) a six year average of 16 of 18 Grizzly Bear Management Units (Figures 2 and 3) occupied by females with young with no two adjacent units unoccupied; (3) known human-caused mortality will not exceed, four percent of the population estimate with no more than 30 percent of the total human caused mortality being females - these mortality limits cannot be exceeded during two consecutive years inside the Primary Conservation Area and 10-mile buffer; and (4) a stable or increasing population trend. The methodology and calculation of numbers are discussed within the *Recovery Plan* (1993:41-46) and the *Draft Conservation Strategy*.

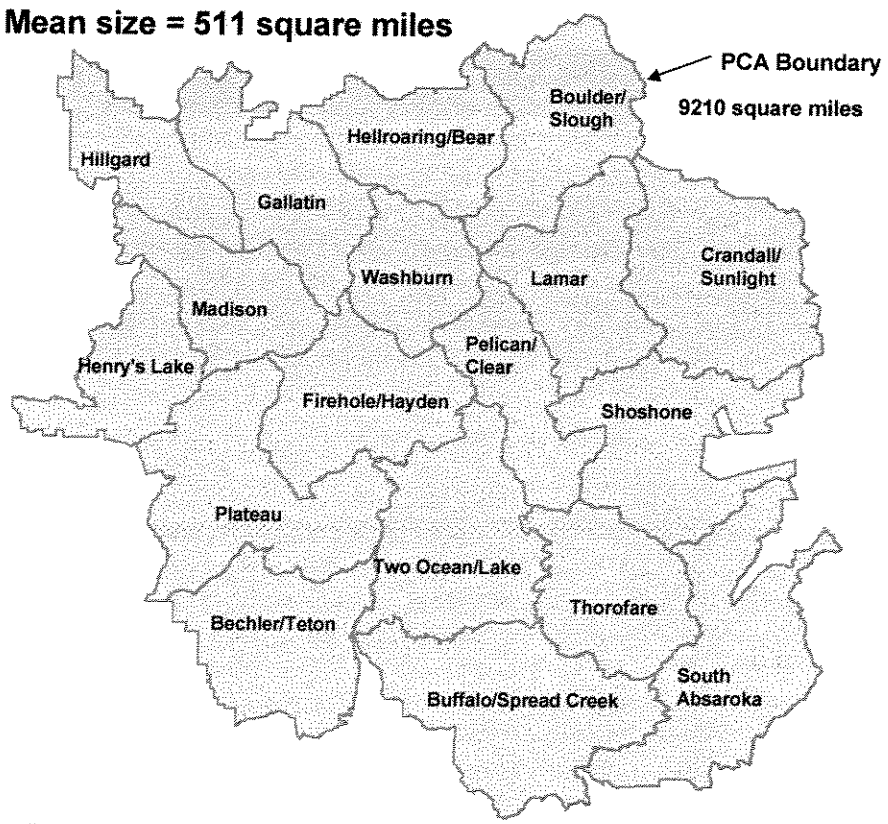

Figure 3. Eighteen Grizzly Bear Management Units within the Primary Conservation Area.

The recovery criteria previously referenced only address population goals. The *Recovery Plan* also directed federal agencies to develop habitat-based recovery goals for the Yellowstone population of grizzly bears. Draft goals were developed and submitted for public review in the fall of 1999. The draft goals will be reviewed and modified by the agencies, and final goals were taken to the public for review and comment in 2002. The U.S. Fish and Wildlife Service must approve these habitat goals before the Yellowstone grizzly bear population can be delisted.

As long as the population objectives in the final *Conservation Strategy* are maintained, the Department may implement additional management options, including regulated hunting.

POPULATION STATUS

Unduplicated Females and Distribution of Those Females

By 1999, all of the demographic goals in the *Recovery Plan* had been reached. The six-year average for occupancy was 18 of 18 Grizzly Bear Management Units (Figure 4). The number of unduplicated females with cubs has been 15 or higher since 1988. Numbers have exceeded 30 females with cubs since 1996 (Figure 5).

Department efforts to meet the population objectives have been very successful in increasing both grizzly bear numbers and the geographic area they occupy. Wyoming intends to continue to meet the population objectives for the Primary Conservation Area in the final *Conservation Strategy*. These demographic criteria have to be maintained in the Primary Conservation Area and the 10-mile area adjacent to the Primary Conservation Area. Wyoming has the option of creating other management criteria or objectives, as long as these existing population objectives are met.

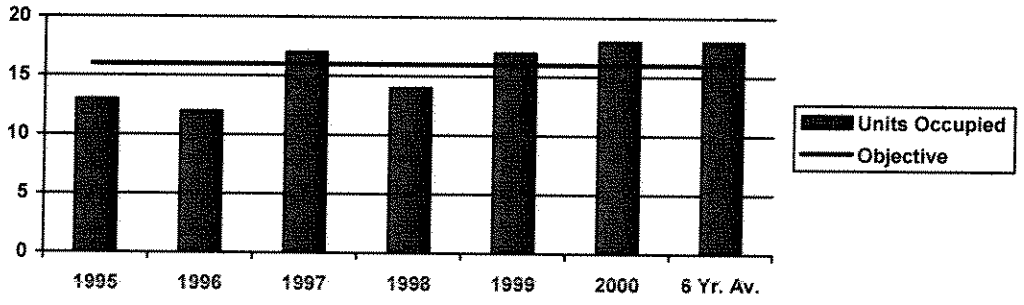

Figure 4. Number of Grizzly Bear Management Units occupied by females with young, 1995-2000 (IGBST, 2000).

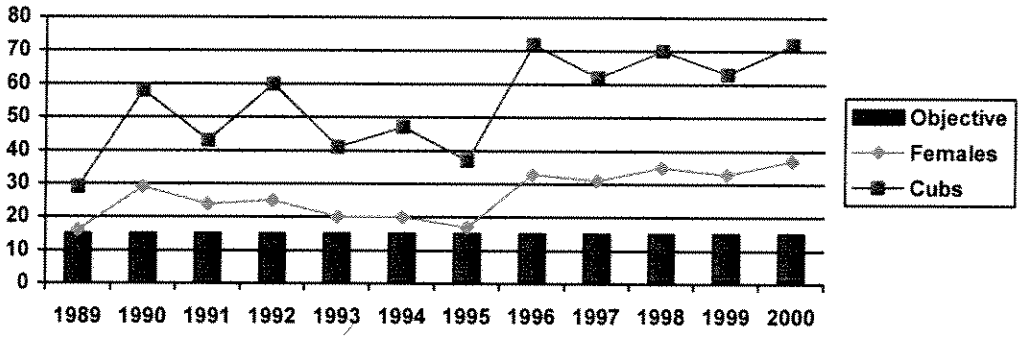

Figure 5. Number of unduplicated females and cubs-of-the-year from 1989-2000.

Hunting Mortality

Harvest of grizzly bears within Wyoming occurred before 1968, and from 1970 to 1974. Before 1968, there were no restrictions on the harvest of grizzly bears. From 1970 to 1974, a limited number of licenses were issued in Park and Teton counties following creation of a special license for the take of grizzly bears. The state's management of grizzly bears was affected by the federal listing of the Yellowstone grizzly bear population in Wyoming on July 28, 1975. When federal listing occurred, the Commission had already suspended the hunting of grizzly bears. This was considered a temporary closure, as reflected in "A Strategic Plan" (WGFD 1990), where an objective of five grizzly bears is still inferred as a harvest objective.

Before 1969, there was no mandatory hunter reporting of harvested grizzly bears, so data on annual harvest is incomplete. After 1970, when mandatory reporting was instituted, records are more accurate. Known harvest during 1970-1974 ranged from three to eight animals (Table 1). The number of permits issued decreased from a high of 30 in 1970 to a low of 12 in 1974.

Year	Harvest
1970	8
1971	6
1972	4
1973	3
1974	7
Total	28

Table 1. Annual grizzly bear harvest in Wyoming, 1970 - 1974.

Man-caused Mortality Within the Primary Conservation Area and 10-Mile Buffer

Although there was no legal sport harvest from 1975 to 2000, 194 known and probable human-caused grizzly bear mortalities were documented in the Yellowstone ecosystem. Female grizzly bears accounted for 29 percent (57) of the total known mortality. Annual human-caused mortality has not exceeded 17 since 1975, while human-caused mortalities of females has never exceeded 6 for the same time period (Figure 6).

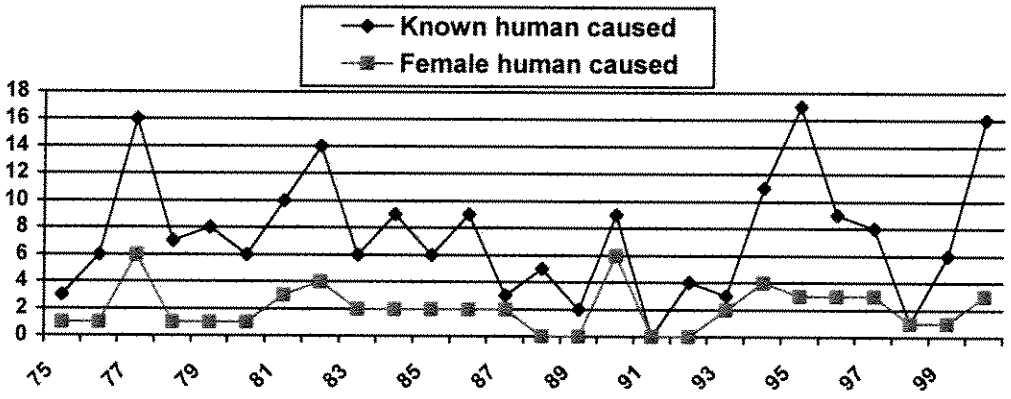

Figure 6. Known and probable human-caused mortality of grizzly bears in and within 10 miles of the Primary Conservation Area, 1975-2000 (IGBST, 2000).

From 1995 through 2000, the threshold for total mortalities of grizzly bears has not been exceeded (Figure 7). During the same period, the threshold for female mortality was exceeded only in 1995 (Figure 8). These mortality thresholds are based on a 6-year average compared against minimum population estimates, not total population estimates.

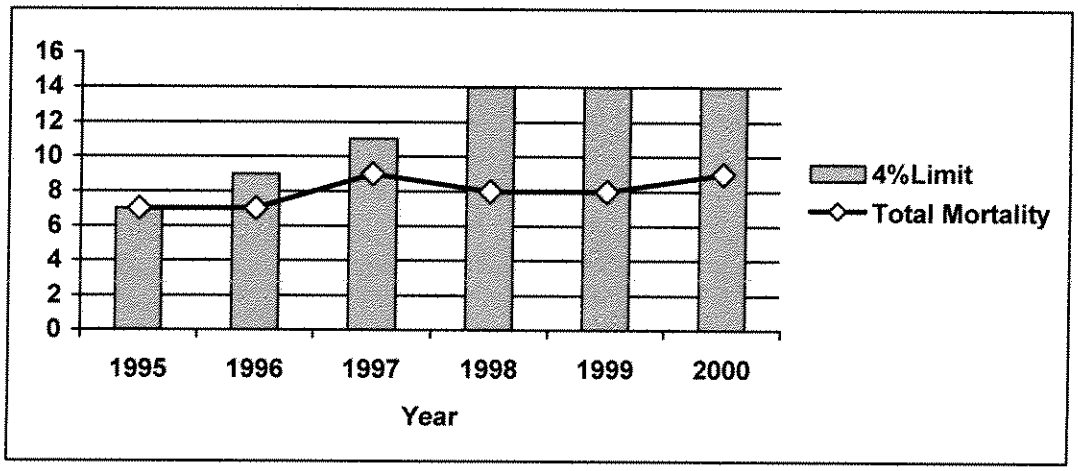

Figure 7. Human-caused total mortality versus threshold, 1995-2000.

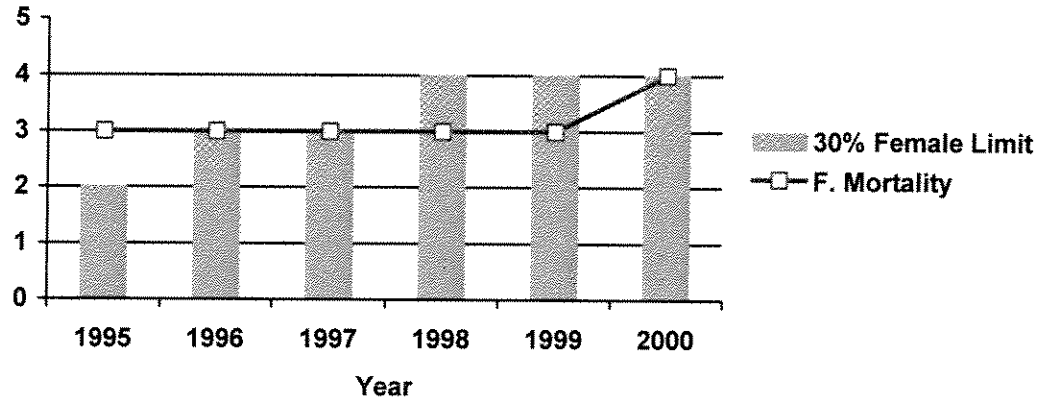

Figure 8. Human-caused female mortality versus mortality thresholds, 1995-2000.

Grizzly Bear Mortalities in Wyoming

Since grizzly bears have been listed as threatened under the Endangered Species Act, federal law has allowed legal take of any grizzly that was an immediate threat to human safety. Authorized state or federal agency personnel have also taken grizzly bears for chronic livestock depredations, property damage, or threat to public safety. These are classified as management removals. On average, 2.6 grizzly bears have been taken by the public in self-defense situations per year since 1990. Management removals and illegal losses have averaged 1.0 grizzly bear per year, respectively, during the same time period (Figure 9).

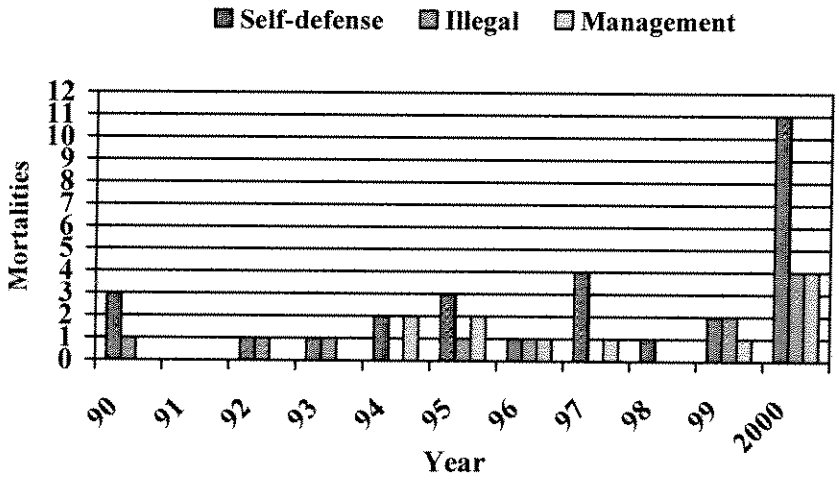

Figure 9. Self-defense, illegal, and management removals of grizzly bears in Wyoming, 1990-2000 (IGBST, 2000).

REGULATIONS

History

Management of grizzly bears did not receive much attention within Wyoming during the early part of the 20th century. The 1899 *Game and Fish Laws of Wyoming* made no mention of grizzly bears or their management. The 1903 *State Game Warden Report* simply stated it to be a misdemeanor to hunt, kill or trap grizzly bears upon any of the National Forest Reserves in the state, except during the open game (ungulate) seasons. In 1937, black and grizzly bears were classified as game animals on most national forests and in the Black Hills, and as predators in the remainder of the state. Game animals could not be trapped nor hunted with dogs without the approval of the Chief Game Warden or local game warden. Predatory animals could be taken at any time and by most means. Except where otherwise indicated, hunting seasons for black and grizzly bears corresponded with elk or deer hunting season. A resident or non-resident elk and/or deer license holder could kill one bear of either species.

Current Statutes and Regulations

The grizzly bear is classified as a "trophy game animal" in Wyoming. This places management of the grizzly under authority of the Commission and empowers that body to fix hunting seasons and bag limits for grizzly bears. Traditionally, states have the right to manage and regulate all wildlife within their borders. It is the policy of the state to provide an adequate and flexible system for control, propagation, management, protection, and regulation of all Wyoming wildlife. Currently, federal law (i.e. the Endangered Species Act) prohibits the take of grizzly bears.

The Commission has authority to establish zones and areas in which trophy game animals may be taken, in the same manner as predatory animals without a license. Statutes prohibit use of dogs in taking bears, except when authorized by the Chief Game Warden, for animals causing damage to private property. Regulations prohibit placement of baits to hunt black bears in most habitats occupied by grizzly bears and provide penalties for violations of these regulations. Statutes and regulations forbid importation or sale of any living bear, except as permitted by the Commission. The private ownership of grizzly bears is also prohibited. Statutes allow taking of grizzly bears as trophy game animals with a proper license and prohibit wanton destruction. Currently, state regulation prohibits hunting of grizzly bears.

Several Wyoming state statutes and a Commission regulation address procedures for reporting, claiming, and filing for compensation for damage caused by grizzly bears (Appendix I).

MANAGEMENT STRATEGIES

1. OCCUPANCY

The current extent of the grizzly bear's range in Wyoming is not precisely known, but monitoring radio-collared bears through 2000 has documented the general area in Wyoming occupied by grizzlies (Figure 10). This area includes all of Yellowstone and Grand Teton National Parks, as well as portions of adjacent National Forest and private lands to the south and east of Yellowstone, extending to the eastern edge of the Absaroka Mountains, the western portion of the Owl Creek Mountains, south into the Gros Ventre Range to the Pinnacle Peak area, and south in the Wind River Range to the Green River Lakes area.

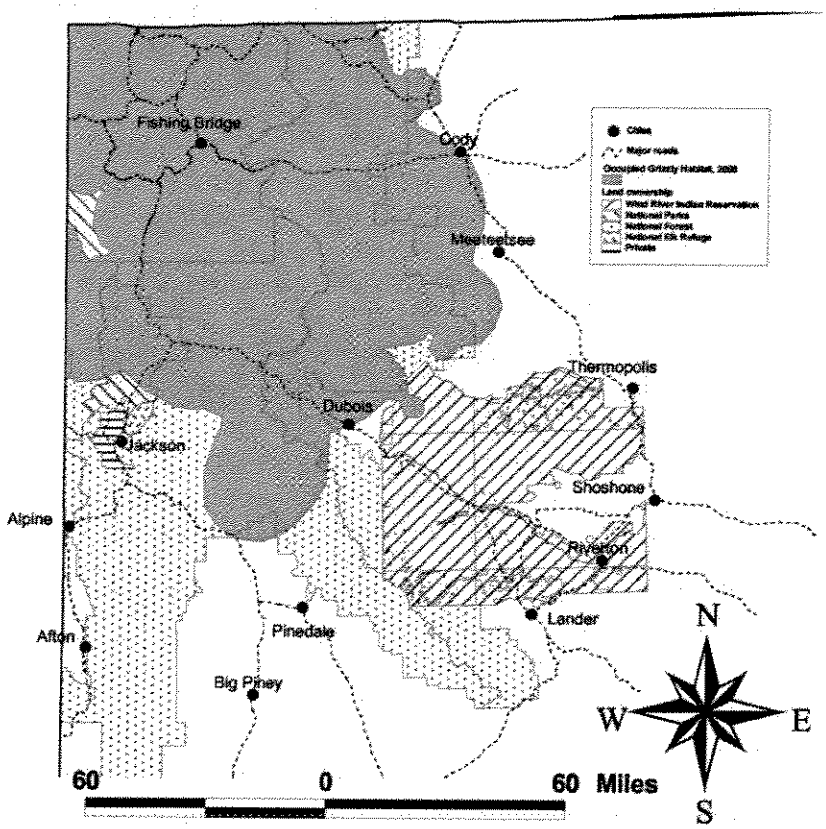

Figure. 10. Occupied grizzly bear habitat in the Greater Yellowstone area of Wyoming through 2000 (Schwartz et al. 2002).

The most suitable habitat for grizzly bears, both biologically and socially, occurs in those portions of northwestern Wyoming with large tracts of undisturbed habitat and minimal human presence. These suitable habitat areas occur in portions of the geographic area commonly referred to as the Greater Yellowstone Ecosystem (GYE). The Wyoming portion of the GYE includes parts of Park, Hot Springs, Fremont, Teton, Sublette and Lincoln counties. The GYE includes all lands within the Shoshone, Bridger-Teton, and Caribou-Targhee National Forests, Yellowstone and Grand Teton national parks, the National Elk Refuge, and the western portion of the Wind River Indian Reservation. It also incorporates private, state and federal lands within and adjacent to the above mentioned national forests (Figure 11).

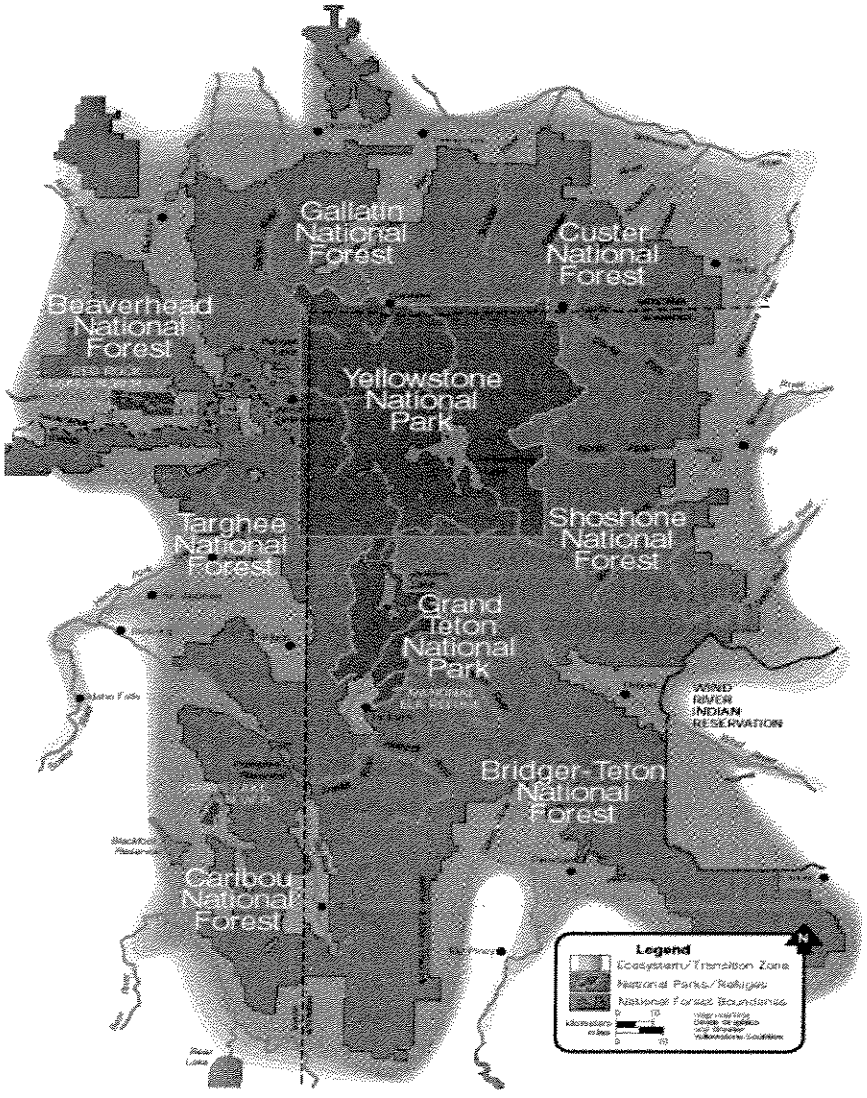

Figure 11. The Greater Yellowstone Ecosystem and ecosystem transition zone.

Consultation with the U.S. Fish and Wildlife Service (USFWS) determined that the existing outer boundary of the Grizzly Bear Data Analysis Unit (GBDAU) (Fig. 12) must remain intact as it was identified in the state's initial management planning efforts and adopted by the USFWS as part of the Conservation Strategy (CS). This does not mean that all of the area within that boundary must, or will be occupied by grizzly bears. There are large blocks of lands, especially private lands, that do not provide suitable habitat for grizzly bears where grizzly occupancy will be discouraged, and other lands where the potential for increased human-grizzly bear conflicts will require that grizzly bears be managed at lower densities, depending on localized situations.

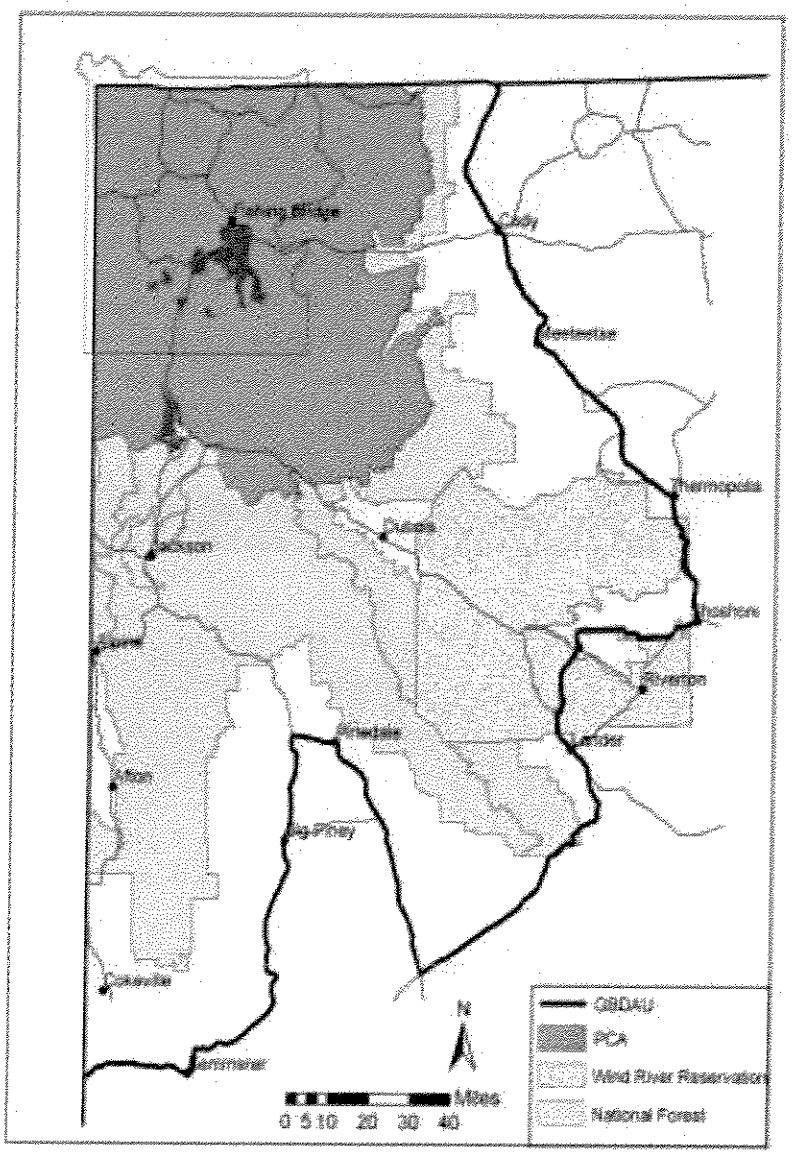

Figure 12. Primary Conservation Area (PCA) and Grizzly Bear Data Analysis Unit (GBDAU) within the Greater Yellowstone Area of Wyoming.

The outer boundary of the GBDAU in Wyoming encompasses most of the area within the Wyoming portion of the Greater Yellowstone Ecosystem. Specifically, it includes an area with an outer boundary beginning at the intersection of Wyoming Highway 120 and the Montana border; southerly along said highway through Cody and Meeteetse to U.S. Highway 20 in Thermopolis; southerly along said highway to Wyoming Highway 789 in Shoshoni; southwesterly along said highway to Wyoming Highway 134; westerly along said highway to Wyoming Highway 132; southerly along said highway to U.S. Highway 287; southeasterly along said highway to Wyoming Highway 28 approximately eight miles south of Lander; southerly along said highway to U.S. Highway 191 in Farson; northerly along said highway through Pinedale to U.S. Highway 189; southerly along said highway to U.S. Highway 30 in Kemmerer; west along said highway to the Utah border (Figure 12).

In 2005 the Department completed an analysis (Grizzly Bear Occupancy Management Guidelines, July, 2005) to determine which areas within the GBDAU (Fig. 12) should be managed for grizzly bear occupancy. The analysis also identified those portions of the GBDAU where grizzly bear dispersal and occupancy will be discouraged through a combination of agency conflict management actions, including bear removals and relocations, and regulated sport hunting to discourage grizzly bears from occupying the areas. (Moody et. al. 2005).

The Department will not allow grizzly bear populations to reoccupy areas outside the GBDAU, including mountain ranges such as the Bighorns, Sierra Madres, Snowy Range, Laramie Peak, and the Black Hills. These mountain ranges are relatively small compared to the Greater Yellowstone Ecosystem, and, as such, do not provide suitable habitats in sufficient quantities for the Wyoming Game and Fish Department (WGFD) to permit populations of grizzly bears to re-establish in these areas. All are spatially separated from the Greater Yellowstone Ecosystem by large expanses of high desert habitats that are not conducive to grizzly bear occupancy, and all present an extraordinarily high potential for conflicts. Grizzly bears that occur outside the GBDAU will be dealt with on an individual basis, utilizing the Department's full array of management options. Any grizzly bears removed from this area will not count against mortality thresholds for the Greater Yellowstone Area grizzly bear population.

Management strategies within the PCA will be designed to retain optimum densities of grizzly bears. This does not equate to a hands off policy. Public take will be allowed but generally at lower levels compared to areas outside the PCA. Site-specific problem areas will be addressed through a full array of management options. Within the PCA, human-grizzly bear conflict management will be consistent with the guidelines established in the CS where males are managed on a case-by-case basis and females are afforded a higher level of protection. Human-grizzly bear conflict management outside the PCA will adhere to the criteria in the WGFD Grizzly Bear Management Plan.

Grizzly bear occupancy will be managed for in areas adjacent to the PCA where biologically suitable habitats exist and human activity levels will not contribute to high levels of human-grizzly bear conflict or grizzly bear mortalities exceeding threshold levels. These occupancy areas will occur primarily on Forest Service and Park Service lands north of the Snake River Canyon and Hoback River, which includes a contiguous

region bounding the Absaroka Range, and that portion of the Wind River Range north of Boulder Creek. Increased management actions, hunting and agency take, will be utilized to address specific areas where chronic problems occur. The Department is not proposing that all of this geographic area be managed to provide optimum bear densities. However, mortality management must account for the potential affects on that segment of the population that resides along the boundary between the PCA and this area. Greater management flexibility will occur in this portion of the GBDAU such as increased hunting opportunity. However, overall mortality must not exceed mortality limits set annually by the Yellowstone Grizzly Bear Coordinating Committee (YGCC) as detailed in the CS. Grizzly bears will not be given a higher level of priority compared to other species or land uses. Human–grizzly bear conflicts will be addressed on a case-by-case basis.

The remainder of the GBDAU, areas south of the Snake River Canyon and Hoback River, the portion of the Wind River Range south of Boulder Creek, and all private and BLM lands adjacent to the National Forests, will be managed to discourage grizzly bear dispersal and occupancy due to human activity levels that will contribute to a high level of human-grizzly bear conflict. Human caused mortality will consist primarily of hunter harvest and case-by-case conflict resolution as described in the Wyoming Grizzly Bear Management Plan (Moody et al. 2002). The total exclusion of grizzly bears in this area is not possible, as portions of this area provide biologically suitable habitat for bears. Management flexibility will be increased in these areas in an effort to discourage occupancy. While public harvest will be used to discourage occupancy in this portion of the GBDAU, it will be regulated to assure that population and distribution goals for the entire population will not be adversely affected and that mortality limits established annually by the YGCC are not exceeded.

Upon delisting, when the CS and associated state management plans are implemented, management objectives will be established to support the ecosystem wide population and distribution goals detailed in the CS and state management plan. Data collection and analysis to assess population trend, mortality, distribution, and other factors will be conducted annually as specified in the CS. Unduplicated numbers of females with cubs of the year will continue to be used as an index of population size and trend. Mortality thresholds for the Yellowstone grizzly bear population will be established based on these indices using the best available science and will ensure the maintenance of the CS population objective of a minimum of 500 bears.

When delisting occurs the overall population goal in Wyoming will have been met. With delisting, mortality thresholds will be adopted to allow Wyoming to stabilize its segment of the population, and management strategies will be adopted to achieve desired distribution within those areas considered suitable for grizzly bear occupancy. Mortality management and methods to allocate or direct mortality to areas where management objectives have been met will be coordinated with the other Yellowstone Grizzly Bear Coordinating Committee (YGCC) agencies and will be based on the best available science to ensure adherence to the CS population management objectives. All forms of mortality will be monitored within the GBDAU as per the Conservation Strategy. While the allowable human caused mortality threshold for the Wyoming segment of this population will be determined through a collaborative effort of all YGCC members,

Wyoming will have the latitude to determine where to apply the mortality. The Department will have the ability to direct its share of the human caused mortality limit to the areas it deems appropriate. The only constraint will be that the Department cannot exceed the overall mortality threshold for the state. Consultation with appropriate state and federal agencies will continue to assure that management objectives for Montana, Idaho and the National Parks are not compromised.

Any annual mortality quotas for public hunting will be set to assure that established thresholds are not exceeded. All proposed hunting seasons and quotas will go through a Commission approved grizzly bear hunting regulation that will be developed through the normal hunting season public review process and will be consistent with goals set forth in the CS. Females with dependent young at side (cubs-of-the-year, yearlings, two year olds) will be protected in any hunter harvest scheme. To minimize human-grizzly bear conflict management, efforts to prevent and/or reduce bear human conflicts will continue in all areas within the GBDAU where grizzly bears occur. Public take may be directed to areas of highest human-grizzly bear conflict in an effort to reduce these conflicts.

This plan does not address potential expansion and management within the boundaries of the Wind River Indian Reservation. The Department lacks wildlife management authority on Tribal lands within the Reservation. Portions of the Reservation are believed to be occupied by grizzly bears and the potential for expansion exists. The Department, along with the YGCC, will continue efforts to work with the Shoshone and Arapaho Tribes and include the Reservation in the coordinated management program with compatible protocols for data collection and management so that mortality management, outreach, and nuisance protocols will exist within the Reservation and management of the Reservation grizzly bears is fully coordinated with the other agencies under the YGCC.

2. POPULATION MONITORING AND MANAGEMENT

Effective population management requires the collection of data to determine the status of the population and whether objectives are being met. Work is underway to refine population estimators that should be completed by the end of 2002. These protocols should result in a more precise population estimate that will assist in the development of strategic population management objectives to assure a sustainable population of grizzly bears in the Greater Yellowstone Ecosystem. Data collection protocols and analysis techniques will be updated and modified as new information becomes available.

Grizzly bears within the Primary Conservation Area will be managed to meet the population objectives established in the final *Conservation Strategy* to assure a long-term viable population. Grizzly bears outside the Primary Conservation Area may be managed for lower numbers in specific management units, especially in those areas with high potential for human/grizzly bear conflicts.

Population Monitoring

Grizzly Bear Management Units will be established outside the Primary Conservation Area. These units will be used to collect and analyze demographic and distribution data on grizzly bears by area. These units will be established based upon geographic features such as mountain ranges or drainages, as is done with analysis units for other wildlife species in the state. As changes occur in grizzly bear distribution and density, new units may be created and/or old units may be modified to accommodate these changes. Analysis units will be created for the collection of demographic, distribution and other data.

To maintain consistency in data collection and compare grizzly bear population parameters inside and outside of the Primary Conservation Area, monitoring protocols should be similar to those inside the Primary Conservation Area. However, sampling effort may vary depending on the survey area and available funding. Monitoring of unduplicated females with cubs-of-the-year may be used as an index to assess population trend or abundance over time. This data is currently used to estimate a known minimum population size for the area within the Primary Conservation Area and the 10-mile buffer. The number of known individual females with cubs-of-the-year observed in the past three years are summed and divided by the estimated percentage of females with cubs-of-the-year (27.4%) in the population to achieve a minimum population estimate (Knight et al. 1988). This minimum population estimate is used to set mortality thresholds for all human-caused mortalities inside the Primary Conservation Area and 10-mile buffer. However, this method tends to underestimate the population size due to inherent biases in sampling techniques (IGBC 2000). The Interagency Grizzly Bear Study Team is currently evaluating different statistical approaches that will produce an estimate of the number of females with cubs-of-the-year with confidence intervals around that estimate (Keating et al. in review). The goal of this research is to provide a tool to allow agencies to estimate total population size for this population of grizzly bears.

Another population estimation technique is mark-resight sampling protocol. Mark-resight involves surveying the extent of occupied habitat and counting the number of marked and unmarked grizzly bears. Marked bears that were not observed on the initial survey are then located. The comparison of marked versus unmarked sighting is then used to estimate total population size. Radio marking and resighting techniques for population estimation of grizzly bears similar to those used in northern Canada and Alaska are much less effective in heavily forested habitats, such as those found in the Greater Yellowstone Ecosystem. The effectiveness of the resight observation flights is also greatly impacted by the season in which they are conducted.

Many researchers are now focusing on DNA hair snares as a technique to estimate populations and distribution. In this method, grizzly bears are attracted with scents to a station surrounded by a strand of barbed wire. The wire snags a tuft of hair as the bear passes under it. The follicles of the hair sample are analyzed for DNA and used to identify individual grizzly bears. This technique has been used in Yellowstone and Glacier national parks to identify a minimum number of individuals that was larger than had been previously thought to exist in those areas. Although hair snares can be effective in some cases, it is labor intensive and costly to implement for large areas. There are also

problems with a lack of population closure (i.e. no movement in or out) in large areas that can result in population overestimation, especially for adult males.

The Department will monitor the progress in solving the problems in both mark-resight and hair snares and may implement one or both of these techniques if they are deemed feasible.

While management/research trapping and radio-collared grizzly bears may not provide efficient means of population estimation in the Greater Yellowstone Ecosystem, it does provide crucial data on distribution, movements, mortality, habitat use, and home ranges. Data results in estimation of seasonal, annual, and lifetime home ranges, identification of important seasonal habitats and foods, potential travel or linkage corridors, activity patterns, extent of occupation, and denning sites. Radio collars also provide data necessary for the calculation of the rate of change in the population estimate. The formula for this rate of change requires accurate, long-term measurements of survival rates for various demographic classes, age at first reproduction, rate of reproduction, and life expectancy from a representative subset of the population.

The Department will utilize data, such as reproduction, distribution, average life expectancy by sex and age class, and causes of mortality for grizzly bears in various areas of their range, to set annual mortality quotas. The Department will also document all human-caused mortality. All mortality data, as well as reproductive information, will be used in the management of the population. The Department anticipates using an approach similar to the one currently used in the Primary Conservation Area to manage human caused mortalities. Harris (1986) reported that total human-caused mortality in excess of 6.5 percent decreases the long-term stability of grizzly bear populations. The current human-caused mortality threshold within the Primary Conservation Area is 4 percent of the minimum population estimate, and only 30 percent of that number can be female mortality.

Eventually grizzly bears will occupy all areas within the Greater Yellowstone Ecosystem that are biologically suitable and socially acceptable. When that occurs, a stable population of grizzly bears will be the management objective, with mortality equaling recruitment over the long term. Human-caused mortalities may increase in specific areas in some years due to shortages of natural food sources and resulting conflicts with humans, especially in newly occupied areas where the Department can't predict what level of nuisance activity and mortality may occur. The Department will manage grizzly bear mortalities in relation to population objectives and status within the Greater Yellowstone Ecosystem.

Hunting

Throughout recent history, regulated hunting has played an instrumental role in the recovery and continued health of wildlife populations. Hunting is not only useful in keeping populations at desired levels, it is also an important method for maintaining public support and ownership, as well as tolerance, of certain species, especially large predators. Even with the extremely low reproductive rates of grizzly bears, they will

ultimately exceed desired objectives in some areas, and the population will require regulation. Any hunting seasons authorized by the Commission will be designed to meet Department management objectives.

Regulated hunting will be part of the Department's overall grizzly bear management program. Grizzly bear hunts may not necessarily begin immediately upon delisting, however, they will occur when grizzly bears are at a population level able to sustain limited harvest. The timing of implementation and level of harvest may vary. Regulated harvest in areas where grizzly bear numbers or human/grizzly bear conflicts are high will likely begin before regulated harvest in areas of lower densities or conflicts. These areas may also have higher harvest quotas than areas of lower grizzly bear densities. Hunting seasons may also be established in the Primary Conservation Area, consistent with demographic guidelines established in the *Conservation Strategy*. Regulated hunting, along with other tools, will be utilized to ensure the long-term conservation of grizzly bears in Wyoming.

Human/grizzly bear conflicts cause problems with individuals directly affected by the grizzly bear. These conflicts also erode overall support for grizzly bears statewide. Hunting may be a useful method in reducing the number of nuisance grizzly bear incidents, thus reducing the need for agency control. Nuisance grizzly bears are often the most visible in the population and thus more apt to be encountered by hunters.

Grizzly bear hunting seasons in Wyoming will be established in the same manner as seasons for other species in the state. In general, the process will begin when wildlife managers propose a season. This season will be justified based upon biological data such as population objectives, population trends, habitat, and social constraints. This proposal will then be reviewed internally by biologists, game wardens, supervisors, and administrators. The proposed season will next be made available for public comment in accordance with provisions found in the Wyoming Administrative Procedures Act. Public meetings will be held to gather input. At the end of this public comment period, comments received from meetings and other written or verbal comments will be provided to the Commission. The Commission will ultimately decide on the proposal based on biological data and social concerns expressed in the public comments.

Regulations will be put in place to protect female grizzly bears. Females with young at side will be protected from harvest, by Commission regulation. The timing of hunting seasons may also be set in order to protect females. Early spring and late fall hunts tend to focus hunting pressure on males, because females with young are in their dens. Males are more vulnerable to harvest than females because they range more widely and are more likely to be encountered by hunters.

Baiting of grizzly bears will continue to be illegal within the Primary Conservation Area, throughout the life of the *Conservation Strategy*. Outside the Primary Conservation Area, the policy of baiting black bears will be evaluated in areas occupied by grizzly bears. If grizzly bear mortalities occur over black bear bait sites, black bear baiting may be discontinued in those areas. It is the policy of the Department to prevent the conditioning of grizzly bears to human foods. Human food conditioning has been shown to increase incidents of human/bear conflicts (Herrero, 1985).

Research Recommendations

With an expanding grizzly bear population, continued research on population estimation techniques is a priority. Currently, research is underway that may more accurately estimate the Greater Yellowstone grizzly bear population using a modeling technique to account for different detection probabilities with individual grizzly bears (Boyce et al. 2001). Work is also being conducted on improved estimation of unknown and unreported human-caused grizzly bear mortalities (Cherry et al. in review). In addition, new abundance estimation techniques utilizing hair snares and DNA analysis (Woods et al. 1996, 1999; Mowat and Strobeck 2000) are being tested. However, these techniques have limited application because of concerns about cost, demographic and geographic closure, potential capture biases, and a need for standardization of experimental design.

Much of the land within the Primary Conservation Area has extensive habitat protection, whereas, much of the land outside of the Primary Conservation Area is managed for multiple use. With the diversity of land management strategies outside the Primary Conservation Area, differences in grizzly bear population parameters and habitat utilization may emerge. Differences in survivorship, home range size, human caused mortality, food habits, travel patterns, seasonal use of habitat, and denning sites may all occur due to differing land management practices. Monitoring of these parameters is important to the successful management of grizzly bears outside the Primary Conservation Area. The Department and federal land management agencies need to identify these differences outside of the Primary Conservation Area to create effective management strategies.

3. HABITAT AND LAND MANAGEMENT

Management of grizzly bear habitat in Wyoming, outside the Primary Conservation Area, is complicated. Important habitats need to be identified and managed where grizzly bears exist. Most currently occupied grizzly bear habitat in the state is on U. S. Forest Service land, although grizzly bears do use other federal, state and private lands. The Department's authority over land use decisions is limited to Department-owned lands, yet the Department is responsible for management of grizzly bears on all lands except Yellowstone National Park, Grand Teton National Park, and Tribal managed lands of the Wind River Indian Reservation. The Department will seek to influence management decisions on all fish and wildlife habitat on public land, as valuable and unique lands that will remain open to hunters, anglers and other public users. Access to public lands should be balanced with the year-round requirements of fish and wildlife – that is, habitat, clean water, food, shelter, open space and disturbance management. It includes maintaining a functioning road system. Coordination among state and federal agencies and private landowners will be crucial. The Department recognizes the need to minimize negative impacts. The Department will continue to closely coordinate with these land management agencies to minimize negative impacts on fish and wildlife. Additionally, the Department has considered, and will continue to consider, grizzly bears in comments and input regarding land management activity in all occupied grizzly bear habitat.

Grizzly bears are omnivorous and very opportunistic. They are able to survive in a variety of habitats (Craighead 1998) and utilize a variety of foods (Craighead and Mitchell 1982). Four major food sources utilized by grizzly bears inhabiting the Greater Yellowstone Ecosystem are whitebark pine (*Pinus albicaulis*) seeds, army cutworm moths (*Euxoa auxiliaris*), large ungulates (newly born young and winter kills), and spawning cutthroat trout (*Oncorhynchus clarki*) (Mattson et al. 1991). Not all grizzly bears utilize all of these food sources. The proportion of the population that utilizes any one of these foods varies annually. A major segment of the population also utilizes gut piles of elk and moose that are killed by hunters. It is estimated that approximately 370 tons of edible biomass are available to grizzly bears and other scavengers annually (Servheen et al. 1986). This represents a vital food source for grizzly bears, especially during years of poor white bark pinecone production. Grizzly bears also use a wide variety of vegetative matter varying from grass to berries.

While the existence and utilization of these food sources has been well documented inside the Primary Conservation Area, there is less documentation for areas outside the Primary Conservation Area. Existing data indicates that spawning cutthroat trout are less available to grizzly bears outside the Primary Conservation Area. While the use of ungulates by grizzly bears is important, extensive monitoring of this food source does not appear to be warranted at this time. Therefore, the Department will direct its monitoring of major grizzly bear foods toward whitebark pine and army cutworm moths. Ungulate populations and cutthroat trout will be monitored using existing Department practices and policies. Other important food sources may be monitored as they are identified.

This management plan recommends coordinated monitoring of major grizzly bear food sources and continued consultation with land management agencies and private land owners on issues related to grizzly bear habitat protection, disturbance, enhancement and mitigation. The Department, in cooperation with the U. S. Forest Service, will survey selected whitebark pine stands and army cutworm moth aggregation sites using existing methodology implemented by the Interagency Grizzly Bear Study Team within the Primary Conservation Area (IGBC 2000). Whitebark pine stands will be identified and monitored for seed production, tree health (i.e. evidence of blister rust, *Cornartium ribicola*), and evidence of grizzly bear use. Existing, as well as newly identified, moth aggregation sites will be monitored for use by grizzly bears. Grizzly bear activity at moth aggregation sites is an indirect measure of presence or absence of moths during a given year.

One of the key reasons for the decline of brown/grizzly bears in North America is increased mortality due to habitat loss. Habitat loss results from conversion of native vegetation, depletion of preferred food resources (i.e. salmon and whitebark pine), disturbance, displacement from human developments and activities (i.e. roads, mines, subdivisions), and fragmentation of habitat into increasingly smaller blocks inadequate to maintain viable populations.

Radio telemetry studies have identified roads as a significant factor in habitat deterioration and increased mortality of brown/grizzly bears. For example, adult females have been displaced from approximately 16 percent of the total available habitat in Yellowstone National Park by roads and development (Mattson, et al. 1987). The

percentage of habitat loss as a consequence of behavioral displacement from roads is a function of road density. Female displacement is higher in areas having higher road density, regardless of the distance at which roads affect grizzly bear behavior. The distance at which grizzly 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 the fall, grizzly 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. Traffic levels appear to influence the degree of grizzly bear avoidance of roads. Grizzly bears living near roads have a higher probability of human-caused mortality as a consequence of illegal shooting, control actions influenced by attraction to unnatural food sources, and vehicle collisions.

The Department will seek to influence federal land management agencies to maintain average road densities of one mile per square mile of habitat or less. This is the goal the Department advocates for all occupied elk habitat in northwestern Wyoming. This goal has been demonstrated to meet the needs of a variety of wildlife, while maintaining reasonable public access. If different road management is warranted, based on knowledge gained as grizzly bears reoccupy areas, it should be developed and implemented by land management agencies.

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 including land management practices, recreational development and primary roads (Mattson et al. 1987), restricted roads and motorized trails (Mace et al. 1996), human use (Knight et al. 1988, Mattson 1989, McLellan and Shackleton 1989), oil and gas development (Schallenberger 1977, Reynolds et al. 1983, McLellan and Mace 1985), logging practices (Zager et al. 1983, Archibald et al. 1987, Bratkovich 1986, Hillis 1986, Skinner 1986), and forest fires (Zager et al. 1983, Blanchard and Knight 1990). While the Department recognizes the need to minimize negative impacts, it has no direct jurisdiction over land management activities on a majority of the land adjacent to the Primary Conservation Area. Therefore, the Department will provide technical advice and encourage land management agencies to consider the grizzly bear in their land management plans.

Because of the threat due to land use changes, the Department will coordinate with appropriate federal, state and county governments in an effort to conserve habitat in this portion of Wyoming.

Habitat fragmentation is not as problematic in Wyoming as it is in Montana and Idaho. For the most part, the Greater Yellowstone Ecosystem within Wyoming is intact. However, there are several two-lane highways that bisect portions of the ecosystem. Some of these highways have been scheduled for major improvements in the near future. The Department will work with appropriate land management agencies and the Wyoming Department of Transportation to minimize impacts to grizzly bears and other wildlife as these projects move forward.

Human presence in occupied grizzly bear habitat is linked to disturbance, human/grizzly bear conflicts and mortalities. In areas occupied, or likely to be occupied, by grizzly bears, the Department promotes the use of pepper spray and recommends that land management agencies require food/waste handling practices (i.e. food storage orders) that reduce the potential for conflicts.

Specific Habitat Recommendations

The following general management guidelines may be considered when evaluating the effects of existing and proposed human activities in important habitats within the Greater Yellowstone Ecosystem for a variety of wildlife species, including grizzly bears:

- The Department will work with land management agencies to monitor habitat changes in a manner consistent with overall approaches for all other managed wildlife species.

- Identify and evaluate the cumulative effects of all activities for all proposed 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 an appropriate unit of land.

- Monitor, and if warranted, recommend changes in human activities on seasonally important wildlife habitats which may adversely impact wildlife species or reduce the long-term habitat effectiveness.

- Base road construction proposals on completed transportation plans which consider 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.

- 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.

- Provide site-specific recommendations to locate roads, drill sites, landing zones, etc., to avoid adversely impacting important wildlife habitat.

- Native plant species should be used whenever possible to provide proper watershed protection on disturbed areas. Wildlife forage and/or cover species should be used in rehabilitation projects where deemed appropriate.

- The Department recommends that land management agencies manage for an average of one mile of open road per square mile, which is consistent with the Department's elk management guidelines.

- The Department recognizes that large tracts of roadless areas are critical to grizzly bear survival and the success of related conservation efforts. It will work with local groups and land managers to identify areas where additional roads may be justified and where others can be reclaimed. Roads which are identified as being incompatible with area management objectives and are no longer needed, should be closed and reclaimed.

- When necessary for the benefit of wildlife, recommend seasonal road closures and/or vehicle restrictions during important seasonal time periods.

- Encourage the U.S. Forest Service and Bureau of Land Management to enforce regulations banning all motorized off road/trail use.

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

One suggestion that originated from the public involvement process was to expand the current higher level of habitat restrictions and programs in place in the Primary Conservation Area, to grizzly bear occupied areas outside the Primary Conservation Area. It is the Department's judgment that this approach would not generate social acceptance for grizzly bears and their conservation. Incorporating grizzly bears as another component of the Department's ongoing programs for all wildlife is deemed to be a more productive approach.

4. NUISANCE GRIZZLY BEAR MANAGEMENT

Common definitions used in relation to grizzly bear nuisance management are presented in Appendix II.

The nuisance guidelines outlined in the final *Conservation Strategy* will be followed inside the Primary Conservation Area for the term of the *Conservation Strategy*. The *Draft Conservation Strategy* guidelines are presented in Appendix III.

Management of conflicts outside the Primary Conservation Area will be governed by the guidelines in this document. Outside the Primary Conservation Area, significant consideration will be given to humans when grizzly bears and people come into conflict. Agency management of nuisance grizzly bears will be based on risk management analysis that considers the impacts to humans, as well as impacts to the grizzly bear population. Response alternatives may include no action, aversive conditioning, deterrence, relocation or removal. All actions will be documented in an annual report.

The program to manage human-grizzly bear interactions, property and agriculture damage, and hunter-grizzly bear interactions outside the Primary Conservation Area, will focus on strategies and actions to prevent human-grizzly bear conflicts. Active management of individual nuisance grizzly bears is required as part of the management

program. Public safety concerns will remain paramount in agency management actions dealing with nuisance grizzly bears. Considering logistics and manpower, nuisance grizzly bears will be controlled in a timely and effective manner. Non-lethal control measures will be used whenever the techniques are appropriate and practical, while providing for public safety. Location, cause of incident, severity of incident, history of the offending grizzly bears, health, age, and sex of grizzly bears involved, will all be considered in any management action. Response alternatives that will be utilized by the Department, follow.

Response Alternatives

No Action: The Department may take no action after the initial investigation, if the circumstances of the conflict do not warrant control or the opportunity for control is low.

Many conflicts between humans and grizzly bears are one-time events. The events leading to the conflict may not be repeated, making a response unnecessary. In other situations, the location of the grizzly bear or the next conflict is unknown, making the opportunity to manage the conflict low until events become localized.

Aversive Conditioning, Deterrence, and Protection: The Department may employ various options that deter or preclude grizzly bears from depredation or human interaction activities (i.e. electrical fencing, bear proof structures or containers, scare devices, etc.).

Managing the cause of the conflict is often the most desirable action. Protection of property or attractants will often result in grizzly bears abandoning the area and discontinuing undesirable behaviors. Actively deterring, or aversive conditioning grizzly bears, will sometimes have the same effects. Public safety must be the foremost consideration prior to application of any management action.

Relocation: The Department may initiate capture and relocation operations when other options are not applicable or where human safety is a concern. Capture and relocation efforts will be initiated in a timely manner, when practicable.

When the cause of the conflict cannot be managed, moving the grizzly bear away from the site may resolve the problem. Relocating grizzly bears is often the preferred option when grizzly bears are occupying undesirable areas or when public safety is a concern. While relocation often has short-term desirable affects, the grizzly bear may return to the original area and cause additional conflicts, or continue the undesirable behaviors at a different location.

Removal: Lethal control may be employed when other options are not practical or not feasible.

Food-conditioned, human-habituated, or aggressive behaviors occasionally become ingrained in grizzly bears resulting in no practical non-lethal management alternative. Grizzly bears persistently displaying these behaviors are a public safety threat and often are involved in continual property damage incidents. In addition, some grizzly bears may

not be suitable for release because of injury, illness or physical condition. Removal from the population is a useful management option that should be followed when appropriate, with management of the cause of the conflict.

When applicable, lethal take of nuisance grizzly bears by affected property owners will be allowed through special authorization from the Department. The Department would direct the disposition of any grizzly bear taken under special authorization.

Grizzly bears occupying areas where the potential for conflicts are high (i.e. subdivisions) will be proactively managed to prevent damage and provide for human safety.

All sub-adult and adult grizzly bears captured in management actions to be relocated or released on site, will be permanently marked and may be radio-collared.

Grizzly bears relocated because of human-grizzly bear conflicts will be released in a location where the probability to cause additional problems is low. Nuisance grizzly bears will not be relocated into unoccupied habitat. Grizzly bears not suitable for relocation or release on site will be removed from the population.

Management Program

To effectively carry out the response alternatives, the following management procedures may be implemented:

- Within each appropriate Department Region, personnel will be trained and equipped to manage conflicts.
- Conflict reporting procedures will be made available to the public.
- Appropriate state and federal agency personnel will be trained, authorized, and equipped to manage conflicts in circumstances determined by the Department.
- The Department may provide property owners with deterrent or aversive conditioning supplies when deemed appropriate.
- Livestock depredation information and evaluation training will be made available to livestock producers and their employees.
- The Department will respond in a timely manner to reports of human-grizzly bear conflicts. The appropriate response will be implemented after evaluating the circumstance of the conflict.

Human-Grizzly Bear Interaction Management

Grizzly bears and humans interact in environments that they share. Most encounters have little or no negative effects on either humans or grizzly bears, but some result in a harmful outcome for one, the other, or both. The Department will work to prevent, manage and mitigate detrimental encounters between humans and grizzly bears by implementing the following actions:

- The Department or its authorized representative will evaluate and, if appropriate, investigate reported human-grizzly bear interactions in a timely manner. The Department will inform the affected parties or their representatives of the findings as soon as feasible.

- The Department will provide information and technical assistance for prevention, management, and mitigation of human-grizzly bear interactions.

- The Department may provide deterrent or aversive conditioning devices or supplies to the public for use in preventing or managing interactions.

- Grizzly bears may be proactively captured and relocated to prevent interactions with humans, if deemed appropriate.

- Grizzly bears may be captured and relocated to prevent additional conflicts with humans, if deemed appropriate.

- When relocation is not possible or practicable, grizzly bears may be removed from the population, if deemed appropriate.

- Grizzly bears displaying natural aggression may be removed from the population, if the particular circumstances warrant removal.

- Grizzly bears displaying unnatural aggression or considered a continued threat to human safety will be removed from the population.

- Grizzly bears displaying food-conditioned or habituated behaviors may be relocated, aversively conditioned, or removed, based on specific details of the incident. When requested, the Department will inform the affected people of the management decision.

Property Damage Management

Processed human food, gardens, garbage, livestock and pet feeds, livestock carcasses, improperly stored big game carcasses, and septic treatment systems are particularly attractive to grizzly bears near camps and residential areas, and are often the basis for property damage by grizzly bears.

The Department will identify potential sources of attractants and work with private property owners, outdoor users and government agencies to reduce the source of the attractant with long-term solutions being emphasized. When the attractant cannot be eliminated, the Department will provide technical advice for the protection of property and the reduction of potential for human/grizzly bear conflicts. Techniques to prevent damage may include aversive conditioning, physical protection such as electric fencing, relocating or removing offending animals, and the use of deterrent devices. The Department will encourage the development of effective non-lethal damage management techniques and equipment. The Department may use the following actions to manage property damage caused by grizzly bears:

- The Department or its authorized representative will evaluate and, if appropriate, investigate reported property damage incidents caused by grizzly bears in a timely manner. The Department will inform the affected parties or their representatives of the findings as soon as feasible.

- The Department will provide information and technical assistance to the affected parties to assist with the mitigation of property damage caused by grizzly bears.

- The Department may provide deterrent or aversive conditioning devices or supplies to property owners for use in preventing damage, if deemed appropriate.

- Grizzly bears may be proactively captured and relocated to prevent damage, if deemed appropriate.

- Grizzly bears may be captured and relocated to prevent additional damage to personal property, if deemed appropriate.

- When relocation is not possible or practicable, or when it is likely it will not solve the problem because of food conditioning, habituation, or other behavioral traits, grizzly bears may be removed from the population.

Agriculture Damage Management

Domestic animals, livestock feeds, and apiaries often attract grizzly bears that can cause extensive damage to agricultural products when they are left unprotected or when grizzly bears are allowed to remain in the area. The Department will cooperate with livestock operators and land management agencies to promote livestock management techniques that reduce depredations. Depredation management will emphasize long-term, non-lethal solutions, however, relocating or removing offending animals will be necessary to resolve some conflicts. The Department will continue to promote the development of new techniques and devices that can be used to protect agricultural products from damage. The Department may use the following actions to manage agricultural damage caused by grizzly bears:

- The Department or its authorized representative will evaluate and, if appropriate, investigate reported damage to livestock or agricultural products caused by grizzly bears, as soon as practical. The Department will inform the affected parties or their representatives of the findings, as soon as feasible.

- The Department will provide information and technical assistance to the affected parties to assist with the management and mitigation of agricultural damage caused by grizzly bears.

- The Department may provide protective, deterrent, or aversive conditioning devices or supplies to farmers, ranchers, or their representative for use in preventing damage or deterring grizzly bears.

- Grizzly bears may be proactively captured and relocated to prevent agricultural damage, if deemed appropriate.

- Grizzly bears may be captured and relocated to prevent additional damage to agricultural products, if deemed appropriate.

- Grizzly bears that exhibit chronic livestock killing behaviors may be removed from the population.

- The Department will pay for all compensable damage to agricultural products as provided by state law and regulation.

The Department will continue efforts to establish a long-term funding mechanism that includes resources to compensate property owners for livestock and apiary losses caused by grizzly bears. Materials will be developed that explain the damage claim program and describe the steps to obtain evaluation and payment for livestock killed or apiaries damaged by grizzly bears.

Hunter-Bear Conflict Management

Encounters between grizzly bears and hunters may result in dead or injured grizzly bears and/or injury to hunters. To provide for human safety and grizzly bear conservation, the Department may use the following actions to manage conflicts between hunters and grizzly bears.

- The Department will encourage hunters to report all instances of grizzly bear conflicts.

- The Department will encourage the development of products and techniques that can be used by hunters to manage interactions with grizzly bears in a non-lethal manner.

- The Department will utilize a multi-faceted hunter information and education program to assist in managing hunter-grizzly bear conflicts.

- The Department will investigate all reported hunter-grizzly bear conflicts resulting in human or grizzly bear injury or death.

Grizzly bears identified for removal may be given to public research institutions or public zoological parks for appropriate non-release educational or scientific purposes in compliance with state laws. Grizzly bears not suitable for release, research, or educational purposes will be lethally removed. The Department will direct the disposition of a grizzly bear lethally removed, other than by a licensed hunter. Grizzly bears taken under special authorizations shall be retained by the Department or donated to scientific or educational institutions.

A licensed hunter or individual authorized by the Department may be utilized to take specific nuisance grizzly bears deemed appropriate for removal.

Deviation from these nuisance procedures will be allowed when extraordinary circumstances dictate a need. The Department will include these circumstances in its annual report on nuisance grizzly bear management.

5. INFORMATION AND EDUCATION

In 1991, the Department launched an education outreach effort that emphasizes learning to co-exist with grizzly bears and reduce human-grizzly bear conflicts. Its focus was aimed at increasing the public's understanding and awareness of grizzly bears, their behavior, physical characteristics, and how to avoid conflicts with them.

Three "target audience" categories were identified and continue to be a high priority:

- Residents and non-residents hunting in occupied grizzly bear habitat.
- Schools, teachers and youth organizations with special emphasis on Grades 3-12.
- The general populace of Wyoming with emphasis on residents of, and visitors to, the Greater Yellowstone Ecosystem.

The tools used to reach the audience are varied, thereby maximizing the likelihood the information being offered will be available, with emphasis on those individuals and groups with the most need. The following is a compilation of actions the Department has used over the last ten years and will continue to use to reduce conflicts with large predators:

- Prior to the annual hunting seasons, 8,000-12,000 letters with information (i.e. brochures and pocket bear identification cards) were mailed to outfitters, non-resident elk hunters and all permit holders in elk and bighorn sheep areas of northwest Wyoming.

- Hunters were provided opportunities to acquire information at regional offices, hunter check stations, hunter information stations, hunter management stations, and through field personnel.

- Permanent bear display kiosks were erected at the Cody and Dubois hunter check stations, as well as the Dubois Forest Service office and the Department's Cody regional office. The bear displays include information on bear identification, food storage, and conflict avoidance.

- In late summer and fall, television and radio public service announcements were broadcast throughout Wyoming. The Center for Wildlife Information and the spokesperson for the national grizzly bear campaign, General Norman Schwartzkopf, have assisted in the filming.

- *Wyoming Wildlife News* and statewide print media news releases have gone out each fall immediately prior to and during hunting seasons.

- Project WILD workshops for teachers were offered with emphasis on bear activities for students.

- Bear education packets were purchased and mailed to all of the middle/junior high schools in Wyoming. The packets contained the Audubon Wildlife Adventure "Grizzly Bear" simulation program, the National Wildlife Federation's "Owner of the Earth" teaching guide, a list of wildlife personnel to serve as a resource for teachers, Grizzly Country publications video entitled "The Last Parable" by Montana Department of Fish, Wildlife and Parks and other miscellaneous publications.

- Bear education teaching trunks were purchased and made available to teachers, youth group leaders, and others for checkout through Department regional offices.

- A cost-shared, "Wildlife Stewardship" poster was developed with the Center for Wildlife Information for classrooms and youth group leaders and the Center's video "Give them Room to Live" and "Be Bear Aware" coloring book/activity guides were made available.

- A human-bear safety session was provided at each of the Department's Whiskey Mountain Youth and Teacher Conservation Camps, discussing bear behavior, conflict prevention, and human behavior in an encounter.

- Each spring television public service announcements were broadcast over Wyoming stations informing people about their responsibility in avoiding grizzly bear conflicts and where to obtain information.

- Exhibits on grizzly bears and the human role and responsibility in avoiding conflicts and conserving grizzly bear habitat are on display at the Information Center in Jackson, and at the Yellowstone Regional Airport in Cody.

- Community-based "Living in Bear and Mountain Lion Country" workshops were developed and are offered each spring around the state.

- A "Train the Trainer" workshop was conducted for state and federal agencies from Idaho, Wyoming, and Montana on how to provide the community-based "Living in Bear and Mountain Lion Country" workshops.

- Other workshops and programs were given upon request by the Department's Trophy Game Section, conflict resolution personnel, Education Branch, and Information Branch personnel.

- Publications were developed and made available. Titles include "Living in Bear Country", "Bear Necessities-How to Avoid Bears", "Grizzly Bear Encounters-Getting Out Safely", "The Forest Visitor-Storing your Food", "Women in Grizzly Country", "Mountain Biking in Grizzly Country", "Fishing in Grizzly Country", "Grizzly Bears and You-The Big Game Hunter", and "You the Hunter". These are used throughout the forests of the Greater Yellowstone Ecosystem. The publications and associated posters were cooperatively designed, printed, and distributed by the U. S. Forest Service and the Department.

- Bear safety publications were provided to the Cody Country "Welcome Wagon" and distributed to new Cody area residents.

- The Department provided training on "Hunting Safely in Grizzly Country" to the Wyoming Outfitters and Guides Association at their annual meeting.

- Department personnel worked cooperatively with the U.S. Fish and Wildlife Service and the Wyoming Outfitters and Guides Association to develop the "Grizzly Encounter Education Course".

- Seminars on hunting safely and recreating safely in bear and lion country were offered annually at the Casper Sports Show, Hunting and Fishing Heritage Exposition, and Central Wyoming Fair.

- "The Bear Trail" educational exhibit was set up annually at the Wyoming Hunting and Fishing Heritage Exposition. The interactive walking trail teaches participants proper camp placement and food storage, grizzly bear and black bear tracks, scat, physical identification, food habits, proper use of bear pepper spray, and options available in encounter situations.

- In the fall of 2001, the Department purchased and distributed copies of the video "Staying Safe in Bear Country" to all of the public libraries in northwest Wyoming. The video was developed by the Safety in Bear Country Society and the International Association for Bear Research and Management and is one of the most useful tools when describing human-bear interaction.

- "Bear Alert" postcards were used to inform residents when grizzly bears begin frequenting residential areas.

Human safety is of utmost concern when hunting in grizzly bear country. In order to teach hunters proper techniques for hunting in grizzly bear country, the Department will include bear safety education in all entry level and advanced hunter education classes. Approximately 7000 students are certified each year through the Department's hunter education program.

- A bear identification and safety test will be added to the Department's website in 2002. Black bear hunters will be encouraged to take the test to heighten their bear awareness.

- By January, 2004, the entry-level mandatory hunter education course subjects and instructor manuals will be written. The new entry-level course will include a one-hour class entitled "Preventing Conflicts and Avoiding Confrontations with Bear and Mountain Lion". By July, 2004, all volunteer hunter education instructors will receive this training.

The Department will continue to make available appropriate material on grizzly bear safety for everyone who hunts, recreates and works in occupied grizzly bear habitat. New material will be developed or obtained as constituent needs arise.

- The Department will expand its efforts on the value of carrying bear pepper spray as a deterrent when recreating and working in grizzly bear habitat. Recommendations on proper use will be incorporated whenever encounters are discussed.

- The Center for Wildlife Information's "Bear Pepper Spray" video is available for public checkout at each Department regional office.

The Department will provide a copy of "Staying Safe in Bear Country" video to each guest lodge in occupied grizzly bear habitat. A copy of this video will be provided to all schools located in areas frequented by grizzly bears and is also available for public checkout at each Department regional office.

The Department strongly encourages federal land management and wildlife agencies to continue their vital role in educating all users in grizzly bear safety. Federal land management agencies will be encouraged to assess needs and provide the appropriate number and type of bear resistant food storage containers, meat poles, and bear resistant garbage containers in occupied areas to protect grizzly bears and people while assuring wilderness values. The Department will seek modification of existing memoranda of understanding with federal land use agencies to accomplish these goals.

The Department will promote grizzly bears as a valuable state resource through public outreach, community based workshops, news releases, magazine articles, and radio and television spots.

The Department will provide personnel to assist in teaching the "Grizzly Encounter Education Course" for outfitters and guides and in the revision and reprinting of the course syllabus. Wyoming's outfitting industry voluntarily developed the course in partnership with the U. S. Fish and Wildlife Service, U. S. Forest Service, National Park Service, the Department, and the Professional Guides Institute. The Commission supports the continuation of this effort by the outfitting industry.

The Department will develop a two-hour seminar specifically designed to minimize hunter-grizzly bear conflicts. The first seminar will be offered in 2002. Development and implementation of a comprehensive information and education program designed for people that live, work, and recreate in grizzly bear habitat is essential to conflict prevention.

Information on preventative and aversive techniques will continue to be available to property owners, outfitters and land managers. The assistance will be refined as new techniques and ideas become available. This technical assistance will promote successful co-existence, human safety and grizzly bear conservation.

Over the course of the last decade, Wyoming's grizzly bear education outreach has been a cooperative program involving partnerships and additional funding. Other entities responsible for its success are the Bridger-Teton National Forest, Shoshone National Forest, Caribou-Targhee National Forest, the U. S. Forest Service's Missoula regional office, U. S. Fish and Wildlife Service, Center for Wildlife Information, Greater Yellowstone Coalition, Sierra Club, National Fish and Wildlife Foundation and the Interagency Grizzly Bear Committee.

6. COSTS AND FUNDING

In fiscal year 2000, the Department spent approximately $804,000 to manage grizzly bears. This amount includes $481,000 in direct costs. The remaining $323,000 was indirect costs assigned to the grizzly bear program through the Department's cost accounting system.

As grizzly bear numbers and distribution increase, management costs will also rise because of the need to collect data and manage conflicts. Total costs are difficult to determine at this time, especially since grizzly bear population expansion will continue in the near future. The costs associated with data collection and nuisance management will certainly exceed funds generated from this species. As a result, the grizzly bear program will not be self-sufficient. This is not unique, as the costs associated with managing most wildlife species exceed revenues generated by those species.

The grizzly bear is a species of national interest. Consequently, the Commission and Department believe that alternative funding should be made available to assist with the financial responsibility of managing grizzly bears. Accordingly, the Department is assisting in development of a Northern Rocky Mountain Grizzly Bear and Gray Wolf National Management Trust. The Department is urging state and national legislators to pursue this national endowment. Other options include seeking additional funding from

other sources including the Wildlife Legacy Trust, the Wildlife Heritage Foundation of Wyoming and, potentially, the Conservation and Reinvestment Act or similar state grant programs administered by the federal government. These potential funding sources could be used to partially pay for grizzly bear management.

— W G F D —

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APPENDIX I

WYOMING STATE STATUTES AND WYOMING GAME AND FISH COMMISSION REGULATIONS THAT ADDRESS DAMAGE CAUSED BY TROPHY GAME.

§ Wyoming Statute 23-2-101. Fees; restrictions; nonresident application fee; nonresident licenses; verification of residency required.

(e) Resident and nonresident license applicants shall pay an application fee in an amount specified by this subsection upon submission of an application for purchase of any limited quota drawing for big or trophy game license or wild bison license. The resident application fee shall be three dollars ($3.00) and the nonresident application fee shall be ten dollars ($10.00). The application fee is in addition to the fees prescribed by subsections (f) and (j) of this section and by W.S. 23-2-107 and shall be payable to the department either directly or through an authorized selling agent of the department. At the beginning of each month, the commission shall set aside all of the fees collected during calendar year 1980 and not to exceed twenty-five percent (25%) of the fess collected thereafter pursuant to this subsection to establish and maintain a working balance of five hundred thousand dollars ($500,000), to compensate owners or lessees of the property damaged by game animals and game birds.

§ Wyoming Statute 23-1-901: Damage Caused by Game Animals or Game Birds.

Article 9 – Damage Caused by Game Animals or Game Birds

23-1-901. Owner of damaged property to report damage; claims for damages; time for filing; determination; appeal; arbitration.

(a) Any landowner, lessee or agent whose property is being damaged by any of the big or trophy game animals or game birds of this state shall, not later than fifteen (15) days after the damage is discovered by the owner of the property or the representative of the owner, report the damage to the nearest game warden, damage control warden, supervisor or commission member.

(b) Any landowner, lessee or agent claiming damages from the state for injury or destruction of property by big or trophy game animals or game birds of this state shall present a verified claim for the damages to the Wyoming game and fish department not later than sixty (60) days after the damage or last item of damage is discovered. The claim shall specify the damage and amount claimed. As used in this subsection, "verified claim" means a claim which the claimant has signed and sworn to be accurate before a person authorized to administer oaths.

(c) The department shall consider the claims based upon a description of the livestock or bees damaged or killed by a trophy game animal, the damaged land, growing cultivated crops, stored crops including honey and hives, seed crops, improvements and

extraordinary damage to grass. Claims shall be investigated by the department and rejected or allowed within ninety (90) days after submission, and paid in the amount determined to be due. In the event the department fails to act within ninety (90) days, the claim, including interest based on local bank preferred rates, shall be deemed to have been allowed. No award shall be allowed to any landowner who has not permitted hunting on his property during authorized hunting seasons. Any person failing to comply with any provision of this section is barred from making any claim against the department for damages. Any claimant aggrieved by the decision of the department may appeal to the commission within thirty (30) days after receipt of the decision of the department as provided by rules of practice and procedure promulgated by the commission. The commission shall review the department decision at its next meeting following receipt of notice of request for review. The commission shall review the investigative report of the department, and it may approve, modify or reverse the decision of the department.

(d) Within ninety (90) days after receiving notice of the decision of the commission, the claimant may in writing to the department call for arbitration. Within fifteen (15) days after the department receives the call for arbitration, the claimant and the department shall each appoint a disinterested arbitrator who is an elector residing in the county where the damage occurred and notify each other of the appointment. Within twenty (20) days after their appointment, the two (2) arbitrators shall appoint a third arbitrator possessing the same qualifications. If the third arbitrator is not appointed within the time prescribed, the judge of the district court of the county or the court commissioner in the absence of the judge shall appoint the third arbitrator upon the application of either arbitrator.

(e) At least twenty (20) days before the hearing, the board of arbitrators shall provide the claimant and department notice of the time and place in the county when and where the parties will be heard and the claim investigated and decided by the board. A written copy of the decision shall be promptly served upon each party. Within ten (10) days after receipt of the decision, either party may apply to the board for modification of the decision under W.S. 1-36-111. Either party may apply to the district court for vacation of a decision under W.S. 1-36-114(a) or correction or modification of a decision under W.S. 1-36-115 within thirty (30) days after receipt of the decision or within twenty (20) days after action by the board on an application for modification under W.S. 1-36-111.

(f) If no applications under subsection (e) of this section are made after receipt of the decision, the commission shall promptly pay the amount, if any, including interest based on local bank preferred rates, awarded by the board. Within thirty (30) days after the award is final, the Board's reasonable service and expense charges shall be paid by:

(i) The claimant if the award is no greater than the amount originally authorized by the commission;

(ii) Otherwise, the commission.

Wyoming Game and Fish Commission Chapter XXVIII Regulation governing Big and Trophy Game Animals or Game Bird Damage

Section 1. Authority. This regulation is promulgated by authority of W.S. 23-1-302.

Section 2. Regulations and Effective Date. The Wyoming Game and Fish Commission hereby adopts the following regulation governing damage claims, filed in accordance with W.S. 23-1-901.

Section 3. Definitions. For the purpose of this regulation, definitions will be as set forth in Title 23, Wyoming Statutes, and the Commission also adopts the following definitions:

(a) "Office of the Department" means Wyoming Game and Fish Department, 5400 Bishop Blvd, Cheyenne, Wyoming 82002.

(b) "Office of the Commission" means Wyoming Game and Fish Commission, 5400 Bishop Boulevard, Cheyenne, Wyoming 82002.

(c) "Damage" as used in W.S. 23-1-901 means actual damage as proved to have occurred by the claimant, to livestock, land, crops, improvements and extraordinary grass damage, and shall not include any amount for punitive damages under any circumstances.

(d) "Extraordinary Damage to Grass" as used in W.S. 23-1-901(c) means the consumption or use of non-cultivated grass plants in excess of the consumption or use which normally occurred during the two years immediately preceding the time period covered by the damage claim.

(e) "Permitted Hunting" as used in W.S. 23-1-901(c) means the claimant operated in such a manner as to allow or provide for hunting on his land and access to adjoining land to allow for a harvest sufficient to meet the objectives for the area and herd.

(f) "Disinterested Arbitrator" shall mean any person, otherwise qualified, who is capable of making a reasoned and unbiased decision on evidence presented by both parties to the Arbitration Board.

(g) "Hearing" as used in W.S. 23-1-901(e) shall mean a procedurally correct arbitration hearing which shall be conducted in such a manner as to afford both parties to present, examine and cross-examine all witnesses and other forms of evidence received by the arbitrators. The decision of the arbitrators shall become a part of the agency file and shall be considered co-evidence in the event of an appeal of the arbitrators' decision and any appeal there from to district court shall be conducted in conformity with the Wyoming Administrative Procedure Act.

(h) "Investigated by the Department" as used in W.S. 23-1-901(c) means a reasonable inspection of the damaged premises, crops or livestock as deemed adequate by the Department to evaluate and to report to the Commission the extent of damage incurred. Failure of the claimant to allow such reasonable inspection, upon request, shall constitute a bar to making claim as specified under W.S. 23-1-901(c).

(i) "Reasonable Service Charges" as used in W.S. 21-1-901(f) means fifty dollars ($50.00) per day while performing duties as an arbitrator.

(j) "Reasonable Expense Charges" as used in W.S. 23-1-901(f) means actual expenses incurred by the arbitrators for telephone calls, paper supplies, mail service, meeting rooms, plus per diem allowance and transportation expenses as allowed state employees by Wyoming Statutes.

Section 4. Verified Claim Requirements. The verified claim required by W.S. 23-1-901(b) shall be submitted on the form prescribed by the Department designated as "Damage Claim Affidavit." The claim shall set forth a legal description of damaged land, a description of the property damaged, the dates during which damage occurred, the type and number of big or trophy game animals or game birds which caused the damage, when the damage was discovered, to whom the damage was reported and the manner and date reported, whether or not the claimant permitted hunting during the most recent authorized hunting season for the species causing damages. Additional supporting information may be submitted and will be considered as part of the verified claim. Amended damage claims may be filed with the office of the Department in the even that all information is not immediately known by claimant. In any event, the entire claim must be submitted in writing to the office of the Department within 60 days of the last item of damage.

Section 5. Arbitration Notification Procedure. During the process of establishing an arbitration board to act upon a damage claim, written notification will be made from the claimant to the office of the Department and from the Department to the claimant regarding the names and mailing addresses of arbitrators selected by them. The two arbitrators selected shall notify in writing both the claimant and the office of the Department of the name and address of the third arbitrator selected.

Section 6. Savings Clause. If any provision of this rule or its application to any person or circumstance is held invalid or in conflict with any other provision of this rule, the invalidity shall not affect other provisions or application of this rule which can be given effect without the invalid provision or applications and to this end the provisions of this rule are severable.

APPENDIX II

DEFINITIONS OF TERMS USED IN NUISANCE GRIZZLY BEAR MANAGEMENT

Aversive Conditioning: The application of techniques that are intended to change a bear's behavior.

Capture: Any action to catch a bear for management purposes.

Deterrence: The application of techniques that are designed to discourage a bear from causing further damage or inhabiting undesirable areas.

Depredation: Damage to any property including agricultural products.

Food Conditioned: A grizzly 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 grizzly bear does not display avoidance behavior around humans or in human use areas such as camps, residential areas, or along roads.

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

No Action: When the circumstances of the conflict do not warrant control or the opportunity for control is low resulting in no initiation of control actions.

Nuisance Grizzly Bear: A grizzly bear that depredates livestock, causes property damage, or uses unnatural food that has been reasonably secured from the grizzly bear; or, a grizzly bear that displays unnatural aggression toward humans or that constitutes a demonstrable immediate, or potential threat to human safety.

Property Damage: Damage to any property including agricultural products.

Protection: The application of any device or technique to protect property from bear damage.

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

Removal: The capture and placement of a grizzly bear in an authorized public zoological or research facility or destruction of the grizzly bear. Removal can also involve lethal removal of a grizzly bear through active measures in the wild when it is not otherwise possible to capture the grizzly bear.

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

Unnatural Foods: Includes, but is not limited to human, pet and livestock foods, garbage, gardens, livestock carrion, and game meat in possession of man.

APPENDIX III

NUISANCE GRIZZLY BEAR GUIDELINES FOR THE PRIMARY CONSERVATION AREA FROM THE DRAFT CONSERVATION STRATEGY

Introduction

Since the beginning of time, humans and grizzlies have occasionally come into conflict in areas were they live in close proximity to one another. As few as 10, and as many as 160 grizzly bear-human conflicts per year have been reported in the Greater Yellowstone Ecosystem during the most recent thirteen years (1986-1998).

The objective of management is to minimize human-bear conflicts. Management is essential to successful grizzly conservation, and is often necessary to prevent property damage, livestock losses, and human injury or death. Grizzly bears cannot be totally protected. They develop individual traits, like other species, and some of those traits are not acceptable. Management emphasis is to shift from protecting every individual in the population to assessing an individual's importance to the entire population prior to instituting management actions. Females are to continue to receive a higher level of protection than males. Management of nuisance bears requires rapid response by agencies to address situations of bear-human conflict. This agency response is to address the sources of the conflict through public education, removal of attractants, or preventative sanitation of human use areas. Agencies are to also capture, relocate, or destroy repeat offender grizzly bears when necessary and when other options have been exhausted.

Analysis of human-bear incidents indicate that most property damage incidents are the result of bears attempting to gain access to garbage, human foods, livestock or pet foods, or other human-related foods in areas of human presence. Livestock losses to grizzlies occur primarily on USFS allotments, summer ranges of cattle and sheep, although occasionally they will take livestock close to human dwellings. Occasionally bears will prey on domestic swine, fowl, and goats or will damage apiaries. They have rarely injured horses.

Although aggression towards people and human injury or death is rare, bears will occasionally harm people. Incidents of injury are usually a result of a surprise encounter, protection of cubs, defense of a food cache, harassment or when bears have become accustomed to obtaining food from humans.

Management of nuisance bears usually falls into one or more of the following categories:

1) Removing or securing the attractant;

2) Deterring the bear from the site through the use of aversive conditioning techniques;

3) Capturing and relocating the nuisance bear;

4) Removal of the bear from the wild.

Management Zones

Nuisance grizzly bears in the Yellowstone Ecosystem Area are to be managed according to whether they are inside or outside the Primary Conservation Area (PCA). The purpose of this system is to provide increased security for grizzly bears inside the PCA. Bears are to be given greater consideration in most bear-human conflicts inside the PCA. The PCA is comprised primarily of public lands managed as National Parks (YNP & GTNP), USFS wilderness areas and USFS multiple use public lands, which are essential for continued survival of the bear in the GYE Yellowstone Area. The PCA is the current grizzly bear recovery zone, and includes all lands currently managed as the recovery zone. Minimization of bear-human conflicts and management of individual nuisance bears is the primary direction within the PCA.

Outside the PCA more consideration is to be given to existing human uses in circumstances that result in a nuisance bear situation. Site-specific conflict areas within and outside the PCA are to routinely be documented and prioritized to focus pro-active management actions in order to minimize bear-human conflicts and address potential activities that may cause future conflicts.

Management Guidelines

The focus and intent of nuisance grizzly bear management inside and outside the PCA is to be predicated on strategies and actions to prevent bear-human conflicts. It is recognized that active management aimed at individual nuisance bears will occasionally be required in both areas. Management actions outside the PCA are to be implemented according to state management plans, such as Wyoming Game and Fish Department's "Criteria for Nuisance Grizzly Bear Determination and Control". These actions are to be compatible with the grizzly bear population management objectives for each state for the areas outside the PCA.

Within the PCA, management of nuisance bears is to be addressed according to the following definitions and criteria:

Definitions

Unnatural aggression by a grizzly bear is defined as behavior that includes active predation on humans, approaching humans in an aggressive way, or aggressive behavior when the bear is unprovoked by self-defense, defense of cubs, defense of foods, or in a surprise encounter.

Natural aggression by a grizzly bear is defined as defense of young, food, during a surprise encounter, or self-defense.

A bear is classified as "food conditioned" when it has received a significant food reward of human foods such as garbage, camp food, pet food, or processed livestock food.

A habituated bear is a bear that does not display avoidance behavior around humans or in human use areas such as camps or town sites or within 100 meters of open roads.
Relocation is the capture and movement by management authorities of a bear involved in a conflict with humans or human-related foods to a remote area away from the conflict site, usually after fitting the bear with a radio-collar.

Repeat offense is the involvement of a bear that has been previously relocated or, if not relocated, continues to repeat a behavior that constitutes a bear-human conflict.

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

Management authorities are the designated representatives of the agencies in the PCA including Yellowstone National Park, Grand Teton National Park, Wyoming Game & Fish Dept., Montana Fish Wildlife & Parks, Idaho Fish & Game, Interagency Grizzly Bear Study Team, each of the National Forests - Gallatin, Custer, Shoshone, Bridger-Teton, Targhee, and Beaverhead, and the U.S. Fish and Wildlife Service Grizzly Bear Recovery Coordinator, as requested. These authorities are to make the decision to classify a bear as "nuisance" inside the PCA in compliance with the nuisance bear criteria. Subsequent management actions are to be coordinated and completed by state wildlife agencies, after discussing with the appropriate land management agency, outside YNP within the PCA. Because of existing Memorandums of Understanding between the WGFD and GTNP that will be continued under this Conservation Strategy, nuisance bear management are to be coordinated between those two agencies. When nuisance bears are in YNP, decisions are to be made by the park representatives with coordination with state and forest representatives.

Criteria for Nuisance Grizzly Bear Determination and Control Inside the PCA

Grizzly bears displaying unnatural aggression are to be removed from the population.

Bears displaying natural aggression are to not be removed, even if the aggression results in human injury or death, unless it is the judgment of management authorities that the particular circumstances require removal.

Bears displaying food conditioning and or habituation may be either relocated or removed based on specific details of the incident. This judgment is to be made by management authorities after considering the cause, location and severity of the incident.

Bears may be relocated as many times as judged prudent by management authorities. No bear may be removed for any offense, other than unnatural aggression, without at least one relocation unless the reason is documented in writing by representatives of affected agencies.

Bears preying on lawfully present livestock (cows, horses, goats, lamas, etc.) on public lands are to be managed according the following criteria:

1. No male grizzly bear involved in livestock depredations inside the PCA shall be removed unless it has been relocated at least one time and has been found to return and continue livestock depredations.

2. No females involved in livestock depredations inside the PCA shall be removed, even after relocation and subsequent continued depredation on livestock. The only exception to this could be in the case of animals considered dangerous to human safety through their behavior and use of cattle grazing areas where humans are present.

Management of all nuisance bear situations is to emphasize removal of the human cause of the conflict or management and education actions to limit such conflicts. Relocation and removal of grizzly bears may occur if the above actions are not successful.

Prior to any removal, except in cases of human safety, involved management authorities are to consult by phone or in person to judge the adequacy of the reason for removal and the current level of human-caused mortality so as to avoid exceeding mortality limits through such removals.

The basis for decisions on relocation and removal inside the PCA are to be criteria for management of nuisance bears in the Conservation Strategy and best biological judgment of authorities.

Removals inside the PCA are to be done by authorized state authorities outside of YNP. Removals within GTNP may be conducted by GTNP or WGFD. Removals inside YNP are to be done by authorized National Park Service authorities.

Authorities are to cooperate to provide adequate and available sites for relocations.

General criteria: 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 relocation or removal. Removal of nuisance bears is to be conservative and consistent with mortality limits outlined for the population in the PCA in the Conservation Strategy. Recognizing that conservation of female bears is essential to maintenance of a grizzly population, removal of nuisance females is to be minimized. Management actions are to be carried out only with conservation of the grizzly bear population in mind, and consistent with state regulations, policy, and state and federal laws.

Specific criteria for removals: 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 regulations of states and National Parks. Grizzly bears not suitable for release, research, or educational purposes are to be removed as described in appropriate state management plans or incompliance with National Park rules and regulations.

Individual nuisance bears deemed appropriate for removal may be taken by a sport hunter outside of National Parks in compliance with rules and regulations promulgated by the appropriate state wildlife agency commission, as long as such taking is in compliance with existing state and federal laws, and as long as mortality limits in the Conservation Strategy are not exceeded.

All grizzly bear relocations and removals are to be documented and reported annually by the IGBMTIGBST. Such actions may be subject to the Management Review process if requested by a member of the Management Committee.

Management of nuisance bears outside the PCA is to be the sole responsibility of appropriate state wildlife agencies and is not to be regulated by the Conservation Strategy.