Grizzly Bear (*Ursus arctos)*
Final Biological Assessment

for the

Forest Plan Amendments for Grizzly Bear Conservation for the Greater Yellowstone Area National Forests

Beaverhead-Deerlodge National Forest
Bridger-Teton National Forest
Caribou-Targhee National Forest
Custer National Forest
Gallatin National Forest
Shoshone National Forest

August 2005

Summary Table of Effects & List of Preparers & Reviewers

Species	No Effect	May Affect, Not Likely to Adversely Affect (NLAA)	May Affect, Likely to Adversely Affect (LAA)	Beneficial Effect	Not Likely to Jeopardize the Continued Existence
Grizzly Bear		X			

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Introduction

The USDA Forest Service is proposing to incorporate the habitat standards and other relevant provisions in the Final Conservation Strategy for the Grizzly Bear in the Yellowstone Ecosystem (hereafter referred to as the Conservation Strategy) (Interagency Conservation Strategy Team 2003) into the forest plans of the six Greater Yellowstone Area (GYA) National Forests. This action requires amendments to the existing Forest Plans of the six GYA National Forests (Figure 1). This Biological Assessment (BA) was developed to assess the effects of these amendments on the grizzly bear and its habitat.

In 2003, a Consultation Agreement was developed between the USDA Forest Service and the USDI Fish and Wildlife Service to help guide development of the BA and facilitate the consultation process between the two agencies (Appendix A).

Brief Overview of Grizzly Bear Conservation in the Greater Yellowstone Area

In 1975, the U.S. Fish and Wildlife Service (USFWS) listed the grizzly bear as a threatened species in the lower 48 states, placing the species under federal protection under the Endangered Species Act (ESA) of 1973, as amended. Since listing, government agencies have worked to improve management coordination and habitat conditions, minimize grizzly bear/human conflicts and bear mortality, and increase public awareness and appreciation for the grizzly bear in the Greater Yellowstone Area (GYA).

Interagency Coordination

In 1975, land management agencies in the GYA initiated an effort to develop consistent management direction for grizzly bears. The first document, Guidelines for Management Involving Grizzly Bears in the Greater Yellowstone Area, was completed in 1979 (Mealey 1979). The USFWS determined in a biological opinion (USDI FWS 1979) that implementation of the Guidelines would promote conservation of the grizzly bear. The Interagency Grizzly Bear Committee (IGBC) was formed in 1983 to coordinate management and research actions more effectively for recovery of the grizzly bear. The original 1979 Guidelines were modified slightly and the updated version, the Interagency Grizzly Bear Guidelines (Guidelines) (IGBC 1986), was approved by the IGBC in 1986. Following management direction in the Guidelines, lands within the Yellowstone grizzly bear recovery zone were mapped and managed according to three different management situations (Figure 2)[1]. The recovery zone was defined as the area within which the population and habitat would be monitored to assess achievement of recovery and would be large enough and of sufficient habitat quality to support a recovered grizzly bear population. Beginning in 1979, habitats for grizzly bears inside the recovery zone in the GYA have been managed under direction specified in the Guidelines[2]; this direction has been instrumental in recovery of the grizzly bear in the GYA.

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[1] Management Situation 1: Grizzly habitat maintenance and improvement, and grizzly bear/human conflict minimization receive the highest management priority.
Management Situation 2: The grizzly bear is an important, but not the primary use of the area.
Management Situation 3: Grizzly habitat maintenance and improvement are not management considerations. For a complete description of the three management situations, *see* Appendix B.

[2] Most Forests incorporated the 1986 Guidelines into their forest plans. Forest plans for the Custer and Beaverhead National Forests reference the 1979 Guidelines. The two Guidelines documents are very similar and all future references in this BA will refer to the 1986 Guidelines, unless otherwise stated.

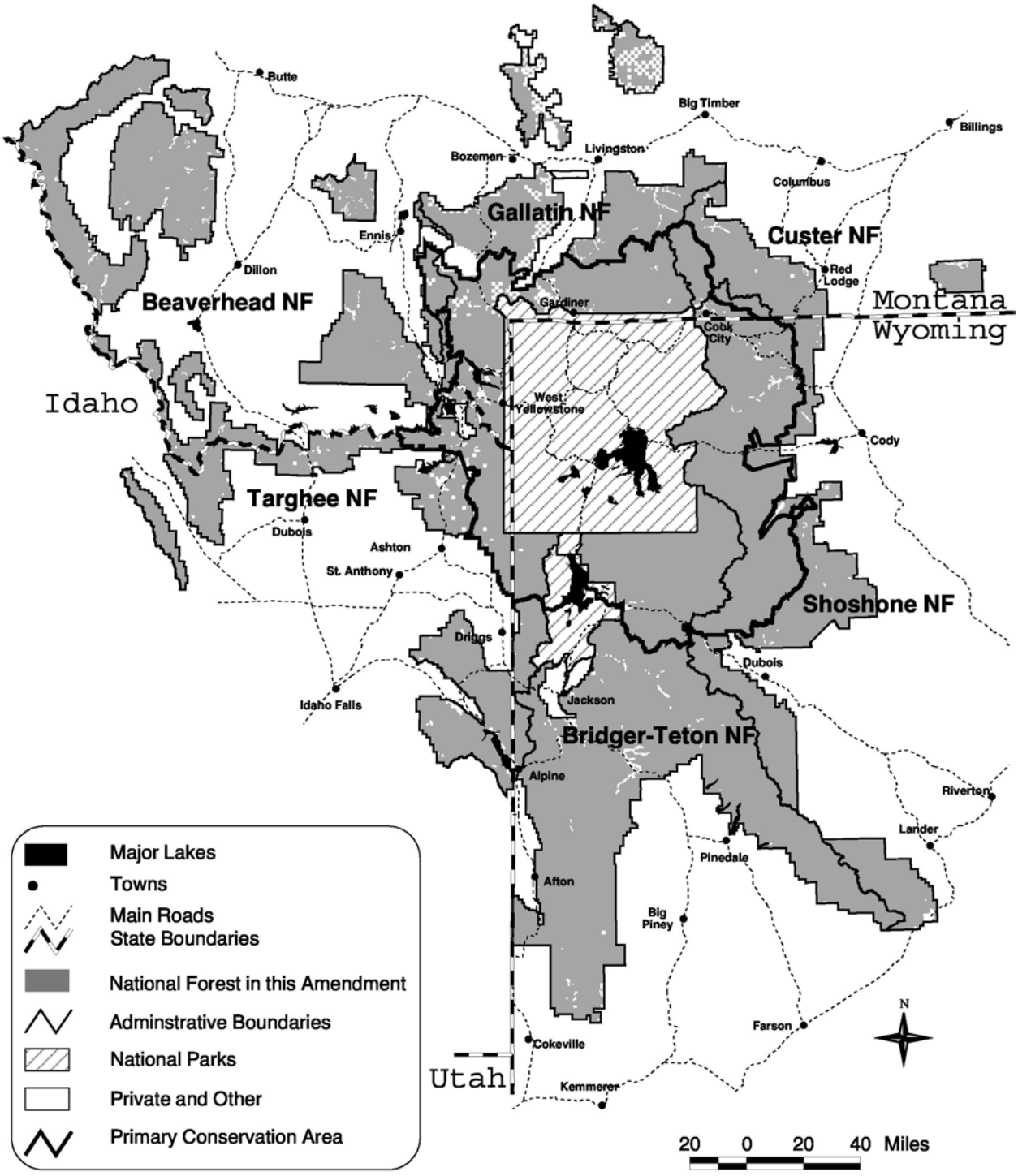


Figure 1. The six Greater Yellowstone Area National Forests.

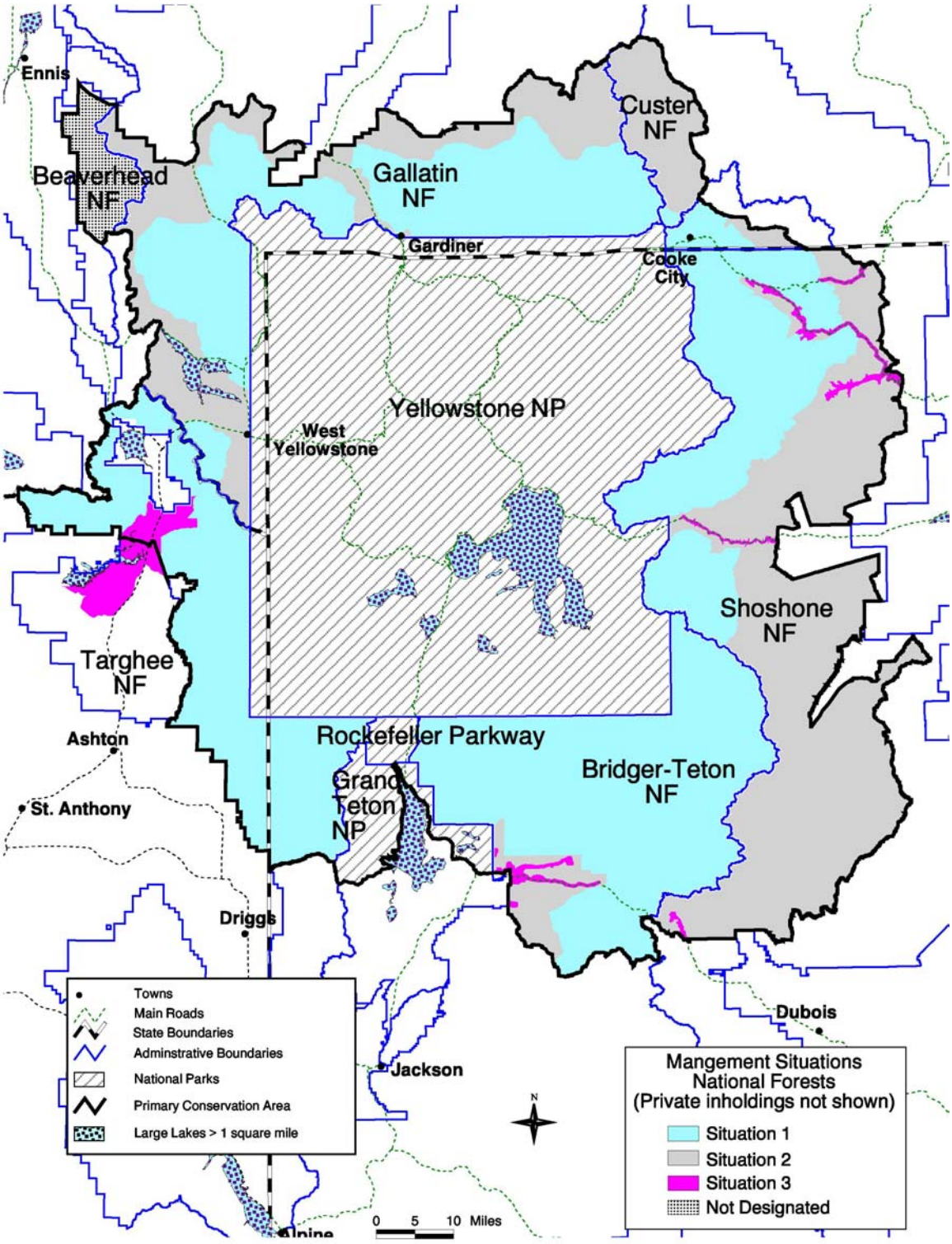


Figure 2. Management Situations on National Forest lands within the Recovery Zone or PCA.

In 1983, the Yellowstone Ecosystem Subcommittee (YES), a subcommittee of the IGBC, was formed to coordinate efforts specific to the GYA. The Interagency Grizzly Bear Study Team (IGBST) was created in 1973 to provide scientific information for the management and recovery of the grizzly bear in the GYA. Scientific protocols have been developed to monitor the grizzly bear population and important habitat parameters.

Recovery Plan

The 1982 and 1993 Grizzly Bear Recovery Plans[3] (USDI FWS 1982, USDI FWS 1993) were developed to identify actions necessary for the conservation and recovery of the grizzly bear. The 1993 Grizzly Bear Recovery Plan (Recovery Plan) required the documentation of the habitat necessary to support a recovered population, and referenced the existing grizzly bear recovery zone, divided into 18 bear management units (BMUs), to provide a basis for ensuring that grizzly bears and their habitats were well distributed across the recovery zone (Figure 3).

The Recovery Plan defined a recovered grizzly bear population as one that could sustain a defined level of mortality, and is well distributed throughout the recovery zone. The Recovery Plan outlined a monitoring scheme that employed three demographic sub-goals to measure and monitor recovery of the Yellowstone grizzly bear population.

- Maintain a minimum of 15 unduplicated females with cubs-of-the-year over a six-year average both inside the recovery zone and within a 10-mile area immediately surrounding the recovery zone.
- Sixteen of 18 BMUs within the recovery zone must be occupied by females with young, including cubs-of-the-year, yearlings, or two-year olds, as confirmed by the IGBST from a six-year sum of observations. No two adjacent BMUs may be unoccupied during the same six-year period. This is equivalent to verified evidence of at least one female grizzly bear with young at least once in each BMU over a six-year period.
- The running six-year average for total known, human-caused mortality as confirmed by the IGBST is not to exceed 4% of the minimum population estimate. The running six-year average annual known, human-caused female grizzly bear mortality is not to exceed 30% of the 4% total mortality limit over the most recent three-year period. These mortality limits cannot be exceeded in any two consecutive years.

The Recovery Plan did not designate critical habitat or specify recovery targets for habitat. Habitat management for grizzly bears in the GYA has been implemented according to the Guidelines. The USFWS has developed habitat criteria that will be added to the Recovery Plan before any proposal for delisting. Those criteria are the same as the habitat standards identified in the preferred alternative in this document for the recovery zone (the recovery zone will also be referred to as the primary conservation area or PCA). .

Land and Resource Management Plans for the Greater Yellowstone Area National Forests

The forest plans for the GYA forests were approved at various times between 1986 and 1997 (Figure 4). Since their approval, the Forest Service has amended these plans with some amendments relating directly to the management of grizzly bear habitat. As a minimum, all six GYA forests included the Guidelines in their plans or incorporated them through amendment; some forests have incorporated additional direction for grizzly bear management. As a result, existing forest plan direction regarding grizzly bear habitat management and the age of that direction vary between the six GYA national forests.

[3] The 1993 Recovery Plan is a revised and updated version of the original Recovery Plan, published in 1982. Throughout this BA, any reference to the Recovery Plan is to the 1993 version, unless otherwise stated.

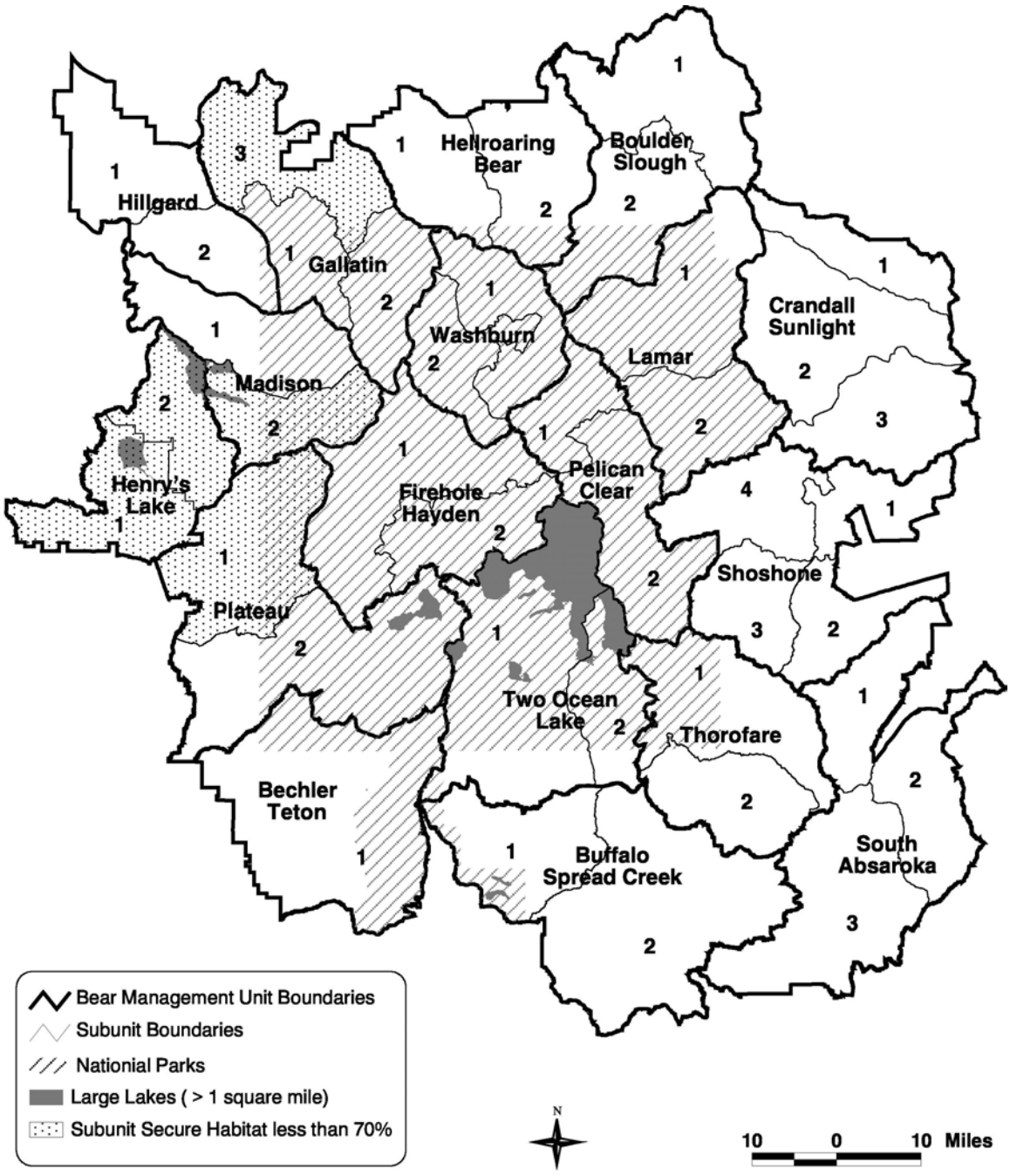


Figure 3. Bear Management Units (BMUs) and Subunits within the Recovery Zone or PCA.

A summary of current forest plan direction related to habitat for grizzly bears is found in the Environmental Baseline Section of this BA. USFWS biological opinions on the forest plans and amendments for the six GYA national forests have consistently noted that the implementation of the plans are not likely to jeopardize the continued existence of the grizzly bear in the GYA.

Figure 4. Overview of Land and Resource Management Plans to be amended.

National forest	Forest Service region	Land and resource management plan to be amended	Year plan approved	Year scheduled for plan revision completion
Beaverhead-Deerlodge	Region 1	Beaverhead Forest Plan	1986	2006
Bridger-Teton	Region 4	Bridger-Teton National Forest Land and Resource Management Plan	1990	2009
Caribou-Targhee	Region 4	1997 Revised Forest Plan—Targhee National Forest	1997	2012
Custer	Region 1	Custer National Forest and Grasslands Land and Resource Management Plan	1986	2010
Gallatin	Region 1	Gallatin National Forest Plan	1987	2010
Shoshone	Region 2	Shoshone National Forest Land and Resource Management Plan	1986	2008

Conservation Strategy

The Recovery Plan called for the development of a grizzly bear conservation strategy to 1) describe and summarize habitat and population management, and 2) demonstrate the adequacy, continuity, and continued agency application of population and habitat management regulatory mechanisms. Development of a conservation strategy began in 1993, when biologists representing federal and state land and wildlife management agencies were appointed to the Interagency Conservation Strategy Team. In March 2000, a draft conservation strategy was released to the public for review and comment. In 2003, the Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area (Conservation Strategy) (Interagency Conservation Strategy Team 2003) was released. The Conservation Strategy

- Describes and summarizes the coordinated efforts to manage the grizzly bear population and its habitat to ensure continued conservation in the GYA
- Specifies the population, habitat, and nuisance bear standards to maintain a recovered grizzly bear population
- Documents the regulatory mechanisms and legal authorities, policies, and management and monitoring programs that exist to maintain a recovered grizzly bear population
- Documents the commitment of the participating agencies

The Conservation Strategy was developed to be the document guiding management and monitoring of the Yellowstone grizzly population and its habitat upon recovery and delisting. The Conservation Strategy describes a Primary Conservation Area (PCA), which is the Yellowstone grizzly bear recovery zone identified in the Recovery Plan. Upon implementation of

the Conservation Strategy, management using grizzly bear management situations would no longer be necessary. The PCA boundary would replace the recovery zone boundary.

The states of Idaho, Montana, and Wyoming developed state grizzly bear management plans that would be implemented when the grizzly bear is delisted. The state plans were incorporated as appendices of the Conservation Strategy. These state grizzly bear management plans recommend and encourage land management agencies to maintain or improve habitats that are important to grizzly bears and to monitor habitat conditions outside the PCA in areas that are biologically suitable and socially acceptable. The State of Wyoming is currently working to identify the biologically suitable and socially acceptable areas outside the PCA. The State of Montana identified counties where grizzly bears could occur outside the PCA, but has not specifically identified the biologically suitable and socially acceptable areas outside the PCA. The State of Idaho identified the a broad general area where grizzly bears could occur within the next 5 to 10 years outside the PCA, but has not specifically identified the biologically suitable and socially acceptable areas within that broad area. Each state recognizes the importance of motorized access management and road density issues related to grizzly bears and other wildlife. This access management issue has also been recognized in each state's elk management efforts.

Land management agencies would work cooperatively with state wildlife agencies to meet identified population and habitat goals for grizzly bears in the GYA. The process of implementing these goals would be coordinated by the Yellowstone Grizzly Coordinating Committee[4] (YGCC), representing all the agencies with responsibility for grizzly bear management in the GYA. The Conservation Strategy emphasizes the importance of continued coordination and cooperative working relationships among management agencies to continue application of best scientific principles and maintain effective actions to benefit the coexistence of grizzly bears and humans in the ecosystem.

Description of the Preferred Alternative

The geographic area of interest for the preferred alternative is National Forest lands both within and outside of the PCA (Figure1).

The preferred alternative is programmatic in nature and guides implementation of site-specific projects that tier to forest plans. Additional NEPA compliance would be required for site-specific projects.

Six national forests (see Figure 1) are part of this proposal. Reconsideration of other goals, objectives, land allocations, and other direction in a forest plan are not part of the preferred alternative, but may be addressed when forest plans are revised. Figure 4 lists the schedule for forest plan revisions. The number of plans affected by this proposal is different from the number of administrative units affected, because some units have been consolidated.

The preferred alternative is proposed to go into effect when all partner agencies have signed the Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area, the Final Rule delisting the Yellowstone grizzly population has been published in the Federal Register, and the Record of Decision has been signed for the Forest Plan Amendments for Grizzly Bear

[4] The YGCC (Yellowstone Grizzly Coordinating Committee) replaces the YES (Yellowstone Ecosystem Subcommittee) when the grizzly bear is delisted.

Conservation for the Greater Yellowstone Area National Forests. If the grizzly bear is not delisted, the existing forest plan direction for grizzly bears would remain in place.

The goal, standards, guidelines, and monitoring requirements of the preferred alternative are described in Figure 5.

Figure 5. The Preferred Alternative (also referred to as Alternative 2- Modified).

Preferred Alternative or Alternative 2 - modified
Goal Manage grizzly bear habitat within the PCA to sustain the recovered Yellowstone grizzly bear population. Outside the PCA in areas identified in state management plans as biologically suitable and socially acceptable for grizzly bear occupancy, accommodate grizzly bear populations with other land use activities, if feasible[5], but not to the extent of the exclusion of other uses.
Standard 1 - Secure Habitat Inside the PCA, maintain secure habitat in BMU subunits at or above 1998 levels (Appendix D). Mitigation allowed using Application Rules (Appendix B).
Standard 2 - Developed Sites Inside the PCA, maintain the number and capacity of developed sites at or below 1998 levels, with the following exceptions: any proposed increase, expansion, or change of use of developed sites from the 1998 baseline in the PCA (as described in Appendix D) is analyzed and potential detrimental and positive impacts on grizzly bears are documented through biological evaluation or assessment. Mitigation of detrimental impacts and other exceptions must follow application rules (Appendix B).
Standard 3 - Livestock Grazing Inside the PCA, do not create new active commercial livestock grazing allotments, do not increase permitted sheep AMs from the identified 1998 baseline, and phase out existing sheep allotments as opportunities arise with willing permittees (see Application Rules for livestock grazing standard in Appendix B). Guideline 2 – Livestock Grazing Inside the PCA, cattle allotments or portions of cattle allotments with recurring conflicts that cannot be resolved through modification of grazing practices may be retired as opportunities arise with willing permittees. Outside the PCA in areas identified in state management plans as biologically suitable and socially acceptable for grizzly bear occupancy, livestock allotments or portions of allotments with recurring conflicts that cannot be resolved through modification of grazing practices may be retired as opportunities arise with willing permittees (see application rules for livestock grazing guideline in Appendix B).
Standard 5 - Nuisance Bears Coordinate with state wildlife management agencies to apply Conservation Strategy nuisance bear standards (Appendix C).
Standard 6 - Food Storage Inside the PCA, minimize grizzly bear/human conflicts using food storage, information and education, and other management tools. Guideline 3 – Food Storage Outside the PCA in areas identified in state management plans as biologically suitable and socially acceptable for grizzly bear occupancy, emphasize proper sanitation techniques, including food storage orders, and information and education, while working with local governments and other agencies
Guideline 1 – Winter Motorized Access Inside the PCA, localized area restrictions would be used to address conflicts with winter use activities, where conflicts occur during denning or after bear emergence in the spring.

[5] . *"Feasible" means one, which is compatible with (does not make unobtainable) major goals and objectives of other uses.*

Preferred Alternative or Alternative 2 - modified
Guideline 4 – Food Sources Inside the PCA and outside the PCA in areas identified in state management plans as biologically suitable and socially acceptable for grizzly bear occupancy, maintain the productivity, to the extent feasible, of the four key grizzly bear food sources as identified in the Conservation Strategy. Emphasize maintaining and restoring whitebark pine stands inside and outside the PCA.
Oil and gas leasing New leases, APDs, and operating plans would meet Standards 1 and 2.
Recreation Conflicts See Standard 5.
Bear Baiting No change from the existing situation.
Monitoring Item 1 – Secure Habitat and Motorized Access Inside the PCA, monitor, and annually submit for inclusion in the Interagency Grizzly Bear Study Team Annual Report: secure habitat, open motorized access route density (OMARD) greater than one mile/square mile, and total motorized access route density (TMARD) greater than two miles/square mile in each subunit on the National Forest. Outside the PCA in areas identified in state management plans as biologically suitable and socially acceptable for grizzly bear occupancy, monitor, and submit for inclusion in the IGBST Annual Report changes in secure habitat by national forest every 2 years.
Monitoring Item 2 – Developed Sites Inside the PCA, monitor, and annually submit for inclusion in the Interagency Grizzly Bear Study Team Annual Report: changes in the number and capacity of developed sites on the national forest, and compare with the 1998 baseline identified in Appendix D.
Monitoring Item 3 – Livestock Grazing Inside the PCA, monitor, and annually submit for inclusion in the Interagency Grizzly Bear Study Team Annual Report: the number of commercial livestock grazing allotments on the national forest and the number of permitted domestic sheep AMs within the PCA. Monitor and evaluate allotments for recurring conflicts.
Monitoring Item 4 – Habitat Effectiveness Inside the PCA, monitor, and every 5 years submit for inclusion in the IGBST annual report: changes in seasonal habitat effectiveness in each BMU and subunit on the National Forests through the application of the Cumulative Effects Model (CEM) or the best available system and compare outputs to the 1998 baseline. Annually review CEM databases, and update as needed. When funding is available, monitor representative non-motorized trails or access points where risk of grizzly bear mortality is highest.
Monitoring Item 5 – Whitebark Pine Systematically monitor whitebark pine occurrence, productivity, and health inside and outside the PCA in cooperation with other agencies.

Grizzly bear management direction for Yellowstone and Grand Teton National Parks is being updated to incorporate relevant portions of the Conservation Strategy. Upon delisting, the states of Idaho, Montana, and Wyoming would manage grizzly bear populations as directed by the Conservation Strategy and associated state grizzly bear management plans. The Forest Plan Amendments for the 6 GYA National Forest is an integral part of the interagency efforts agreed to under the Conservation Strategy for management of the recovered grizzly bear population in the GYA.

Additionally the grizzly bear will be managed as a regionally sensitive species.

Purpose and Need for This Project

The management of grizzly bear habitat on national forests in the GYA is a dynamic process. Experience provides the public and land managers with new understanding and insights regarding the conservation of grizzly bear habitat. Scientific research continues to bring forth new theories, observations, and findings relevant to the management of these resources. This learning is continuous. Most importantly, the Yellowstone grizzly bear population has increased over the past 25 years to the point where all demographic sub-goals in the Recovery Plan have been met since 1998, except in 2004 the female mortality quota was exceeded. The Yellowstone Ecosystem Subcommittee has approved new analysis protocols for estimating total population and sustainable mortality limits developed by the Interagency Grizzly Bear Study Team (IGBST 2005). This methodology will be incorporated into the Grizzly Bear Recovery Plan and appended to the Conservation Strategy.

As a result, the USFWS intends to review the status of the Yellowstone grizzly bear population under the Endangered Species Act. Part of the status review will be a determination of the adequacy of regulatory mechanisms and an examination of the threats identified when the grizzly bear was listed, and a determination of whether those threats have been remedied sufficiently so that listing is no longer necessary.
The proposed amendments would add certain habitat protections, monitoring requirements, and other provisions that were recommended in the Conservation Strategy, but are not included in current Forest Plans of the six GYA national forests."

The purpose of this proposal is to:

- Ensure conservation of habitat to sustain the recovered grizzly bear population
- Update the management and monitoring of grizzly bear habitat to incorporate recent interagency recommendations and agreements, as described in the Conservation Strategy
- Improve consistency among GYA national forests in managing grizzly bear habitat
- Ensure the adequacy of regulatory mechanisms for grizzly bear habitat protection upon delisting as identified in the Recovery Plan

There is a need to improve the coordination and consistency of forest plan direction in the GYA regarding grizzly bear habitat management, and to update this direction to reflect new management insight, the latest scientific information, and the changing characteristics of the Yellowstone grizzly bear population. Direction for managing the grizzly bear was recently developed through a nine-year interagency effort documented in the Conservation Strategy. Additionally, there is a need to clarify forest plan grizzly bear habitat management direction with the pending change in the Yellowstone grizzly bear population's status under the ESA. Further, there is a need to maintain habitat conditions in the PCA to sustain the recovered grizzly bear population in the foreseeable future.

Status of the Grizzly Bear (Life History & Habitat Requirements, Human Conflicts & Population Data)

Introduction

Grizzly bears in the lower 48 states occupy less than 2% of their historic range. Habitat loss and uncontrolled human-caused mortality have been the primary reasons for the elimination of bears

from much of their former range. How and where bears use existing habitat is primarily a function of available foods influenced or precluded by the presence of humans. Management of human activities in grizzly bear habitat is key for long-term sustainability of grizzly bear populations.

A viable population exists today largely because of two tracts of national park and adjacent national forest habitat that function as a core for the grizzly population. These areas are the Greater Yellowstone Ecosystem and the Northern Continental Divide Ecosystem.

Home Range Size

The home ranges of adult grizzly bears frequently overlap. The home ranges of adult male grizzlies are generally two to four times larger than that of females. The home ranges of grizzly females appear to be smaller while they are with cubs, but ranges expand when the young are yearlings in order to meet increased foraging demands. The average total home range for grizzly bears in the Yellowstone area is approximately 884 km^2 (341 mi^2) for females and 3,757 km^2 (1,450 mi^2) for males (Blanchard and Knight 1991).

Grizzly bears disperse as subadults. Their pattern of dispersal is not well documented. Dispersing young males apparently leave their mother's home ranges and their dispersal may be mediated by the avoidance of the home ranges of established adults. Young females may establish a home range soon after family breakup, often within the vicinity of their mothers' home ranges. Grizzly bear mothers may tolerate female offspring and may shift their home ranges to accommodate them (USDI FWS 1993).

Home range sizes of grizzly bears vary in relation to food availability, weather conditions, and interactions with other bears. In addition, individual bears may extend their range seasonally or from one year to the next (USDI FWS 1993).

BMUs are approximately the size of the lifetime home ranges of adult females; subunits approximate the size of the annual home ranges of adult females. These areas are important in evaluating the effect of human activities on grizzly bears because of their relationship to bear home ranges—impacts of human activities must be evaluated in the context of all other activities within a bear's home range.

Food Habits

The broad historic distribution of grizzly bears suggests adaptability in food habits of different populations. Although the digestive systems of bears are essentially that of carnivores, bears are successful omnivores, and in some areas may be almost entirely herbivorous. Bears feed on animal matter or vegetable matter that is highly digestible and high in starch, sugars, protein, and stored fat.

Grizzly bears must avail themselves of foods rich in protein or carbohydrates in excess of maintenance requirements in order to survive denning and post-denning periods. Other plant materials are eaten as the plants emerge, when crude protein levels are highest.

Grizzly bears are opportunistic feeders and will prey or scavenge on almost any available food including ground squirrels, ungulates, carrion, and garbage. In areas where animal matter is less available, roots, bulbs, tubers, fungi, and tree cambium may be important in meeting nutrient requirements. High quality foods such as berries, nuts, and fish are important in some areas.

The search for food has a primary influence on grizzly bear movements. Upon emergence from the den, they seek lower elevations, drainage bottoms, avalanche chutes, and ungulate winter

ranges where their food requirements can be met. Throughout late spring and early summer, they follow plant maturity back to higher elevations. In late summer and fall, there is a transition to fruit and nut sources, as well as other plant materials. This is a generalized pattern, however, and it should be kept in mind that bears are individuals trying to survive and will go where they can best meet their food requirements.

Grizzly bears in the GYA have the highest percent of meat consumption in their diet of any inland grizzly bear population (Hilderbrand et al. 1999). Approximately 30 to 70% of the Yellowstone grizzly bear diet is some form of meat. Adult males eat the greatest proportion of meat. Meat is considered to be any form of animal including ungulates (i.e. deer, elk, moose, bison), fish, army cutworm moths, other insects, and small mammals (i.e. ground squirrels, mice, voles).

Specific to the GYA, four seasonal foods have been identified as being important to the grizzly bear population.

- Ungulates (primarily elk and bison, but also deer and moose) are especially important during spring after emergence from dens and through the calving/fawning seasons (Cole 1972, Gunther and Renkin 1990, Mattson et al. 1991, Mattson and Knight 1992, Green et al. 1997, Mattson 1997a). Recent research has demonstrated that grizzly bears seek hunter-killed carcasses and gut-piles (Haroldson et al. 2004).
- Whitebark pine seeds are the most important fall food of Yellowstone grizzly bears, and the availability of nuts influences annual feeding strategies and movement patterns, and influences the number of grizzly bear/human conflicts and human-caused bear mortalities (Kendall 1983, Blanchard 1990, Mattson et al. 1992 a and 1992b, Mattson and Reinhart 1997, Mattson 1997b).
- Army cutworm moths are a preferred source of nutrition for many grizzly bears in the Yellowstone ecosystem and represent a high quality food that is available during the summer (Mattson et al. 1991, French et al. 1994, Ternent et al. 2001).
- Grizzly bears feed on spawning cutthroat trout along the tributaries of Yellowstone Lake during the spawning season from May 1 to July 15 (Mattson and Reinhart 1995).

The four major foods identified above are limited in distribution and subject to wide annual fluctuations in availability. While these foods are the most important to bears, bears have learned to utilize alternative foods during times when these foods are in short supply. During years when these food sources are abundant, there are few bear/human conflicts (Gunther et al. 1997). In contrast, during years when there are shortages of one or more of these foods, grizzly bear/human conflicts are more frequent as bears seek human foods and there are generally higher numbers of human-caused grizzly mortalities (Mattson et al. 1992a and 1992b, Gunther et al. 1997). As such, management efforts identified in the Conservation Strategy are focused on "providing adequate habitat and space and security for bears so they can meet their life requisite needs" and minimizing grizzly bear/human conflicts by controlling the availability of human food and garbage.

Concerns have been expressed over the potential future decline of these key foods for various reasons, especially whitebark pine, due to their importance to grizzly bears in the GYA (Pease and Mattson 1999, Willcox and Ellenberger 2000, Interagency Conservation Strategy Team 2003). For this reason, special interagency monitoring systems have been developed to monitor possible changes in these foods and these monitoring efforts will continue under the Conservation Strategy (Interagency Conservation Strategy Team 2003). If problems should occur, management strategies would be modified through appropriate interagency cooperative efforts.

Cover

The relative importance of cover to grizzly bears was documented by Blanchard (1978) in a four-year study in the GYA. Ninety percent of 2,261 aerial radio relocations of 46 instrumented grizzly bears were in forest cover too dense to observe the bear. The importance of an interspersion of open parks as feeding sites associated with cover is also recorded in Blanchard's study, as only 1% of the radio relocations were in dense forest more than a kilometer from an opening.

Forest cover was found to be very important to grizzly bears for use as beds. Most beds were found less than a yard or two from a tree; only 16 of 233 beds observed (6.7%) were without immediate cover (Blanchard 1978, USDI FWS 1993).

The IGBST studied the effects of the large 1988 wildfires on grizzly bears. On the average, grizzly bears used burned habitats in proportion to their availability within individual annual ranges during 1989 to 1992. Seasonal indices of movement and annual range sizes of cohorts (bears of the same gender and age) were not statistically different from the 1975 to 1987 averages (Blanchard and Knight 1996, Interagency Grizzly Bear Conservation Strategy Team 2003). Standards for grizzly bear cover were not developed for the Conservation Strategy or for this proposal because changes in the distribution and quantity and quality of cover are not necessarily detrimental to grizzly bears.

Denning Chronology and Habitat

Grizzly bears in the GYA can den from the end of September to the last week in April or early May, with entrance and emergence dates being affected by the gender and reproductive status of the bears (Judd et al. 1986, Haroldson et al. 2002).

- Den entry for females began during the fourth week in September, with 90% denned by the fourth week of November.
- Earliest den entry for males occurred during the second week of October, with 90% denned by the second week of December.
- Mean week of den entry for known pregnant females was earlier than males. The earliest week of den entry for known pregnant females was earlier than other females and males.
- Male bears emerged from dens earlier than females. The earliest den emergence for males occurred during the first week of February, with 90% of males out of dens by the fourth week of April.
- Earliest den emergence for females occurred during the third week of March; by the first week of May, 90% of females had emerged.
- Denning periods differed among classes and averaged 171 days for females that emerged from dens with cubs, 151 days for other females, and 131 days for males.
- Known pregnant females tended to den at higher elevations and, following emergence, remained at higher elevations until late May. Females with cubs remained relatively close (< 3 km) to den sites until the last two weeks in May.

Denning habitat has been described as follows (Judd et al. 1986, Haroldson et al. 2002):

- Den sites are associated with moderate tree cover (26 to 75% canopy cover).
- Den sites are usually on 30 to 60 degree slopes.
- Den sites occurred on all aspects, although northerly exposures were most common.
- Grizzly bears usually dig new dens, but occasionally used natural cavities or a den from a previous year.
- Mean elevation at den sites for females with cubs that emerged from dens was 8,845 feet. Mean elevation for other females was 8,467 feet, and for males was 8,444 feet.

.Denning habitat is well distributed and abundant throughout the GYA (Judd et al. 1986, Cherry 2001, Podruzny et al. 2002).

Habitat Connectivity and Linkage Zones

Habitat fragmentation has been widely recognized as a primary cause of the decline of many species. The importance of maintaining or improving connectivity between blocks of important habitat for grizzly bears and other carnivores is receiving increased attention. Several models have been developed in an attempt to identify linkage zones in the Northern Rockies between and within ecosystems and at various scales (Walker and Craighead 1997, Craighead et al. 2001, Servheen et al. 2003b, Merrill and Mattson 2004).

Servheen et al. (2003) define linkage zones as "the area between larger blocks of habitat where animals can live at certain seasons where they can find the security they need to successfully move between these larger blocks of habitat." Linkage zones are not corridors, which imply an area used just for travel. Linkage zones are areas that can support low-density wildlife populations often as seasonal residents. The main factors generally considered to affect the quality of linkage zones are major highways, railroads, road density, human site development, availability of hiding cover, and the presence of riparian areas.

The concept of linkage zones is not specific to grizzly bears but rather an issue for many wildlife species, especially carnivores (Walker and Craighead 1997, Ruediger et al. 1999, Ruediger et al. 2000, Claar et al. 2003, Servheen et al. 2003b). Human population increase is rapidly affecting many of the remaining possible linkage areas between ecosystems in the Northern Rockies and the time for maintaining these connection opportunities is growing short (Ruediger et al 1999). As such, the IGBC has agreed through an MOU to support linkage zone identification and the maintenance of existing linkage opportunities for wildlife. The IGBC has appointed three task forces (public lands, private lands, and highways) to evaluate linkage opportunities. The private land task force has completed a report (Parker and Parker 2002) that provides agency personnel with guidance for involving rural communities in the development of linkage zones.

Servheen et al. (2003b) identified potential linkage zones between the northern grizzly bear ecosystems and the USFWS is currently working on a similar evaluation of habitat fracture and potential linkage between the Yellowstone recovery zone and the NCDE and Bitterroot recovery zones. Grizzly bears, however, have never been documented moving between ecosystems in the Northern Rockies in recent times (Servheen personal communication 2004).

Concerns for maintaining the genetic diversity of the Yellowstone grizzly bear population in the absence of movement between ecosystems is addressed in the Conservation Strategy. The Conservation Strategy recommends translocation of two or more bears from other ecosystems by 2020 if genetic analysis shows no movement into the GYA from the NCDE. The Conservation Strategy also recognizes that roads and highways may impact bear movements, and requires that monitoring and surveys be conducted throughout the GYA before designs are initiated. This information would be used to complete a connectivity analysis to identify important crossing areas. This direction applies to all federal and state signatories of the Conservation Strategy.

Maintaining or improving connectivity between the GYA and other ecosystems is outside the scope of this proposal; the environmental baseline and the preferred alternative provide various amounts of protection to areas identified as important in maintaining or improving connectivity within the GYA. See discussion on secure habitat management inside and outside the PCA on pages 70-77.

Grizzly Bear/Human Interactions

A primary factor in providing for the conservation of grizzly bears is the management of grizzly bear/human interactions. Grizzly bear mortality is almost solely attributable to grizzly bear/human conflicts with a common outcome of bear removal by interagency bear managers or killing by humans for other reasons. In addition to mortality concerns, providing secure habitat (areas free of motorized access) is important to enable bears to fully use their food sources, denning sites, and other living needs. Human presence can limit bear use of habitat, create tolerance among some bears that allows for interaction at great risk to the bears, or attract bears to unnatural or unsecured food sources increasing the risk of habituation to unnatural foods and human conflict.

Grizzly Bear Mortalities

Figure 6 and 7 display the trend of known and probable grizzly bear deaths in the GYA from 1973 (after closing the Yellowstone National Park garbage dumps) to 2004. Figure 6 shows human-caused grizzly bear deaths, and Figure 7 shows natural and unknown-caused grizzly bear deaths. From 1973 to 2004, there were a total of 414 grizzly bear deaths (Haroldson and Frey 2003, Haroldson and Frey 2005). There have been 303 human-caused grizzly bear deaths (73% of the total) and 111 natural and unknown-cause grizzly bear deaths (27% of the total). The abundance of natural food sources, such as years of abundant whitebark pine cone production, contributes to fewer deaths. From 1973 through 1996, grizzly bear deaths occurred outside of the PCA in only five years. Starting in 1997, grizzly bear deaths have occurred each year outside the PCA.

Figure 6. Human-caused grizzly bear deaths in the GYA, 1973 through 2004.

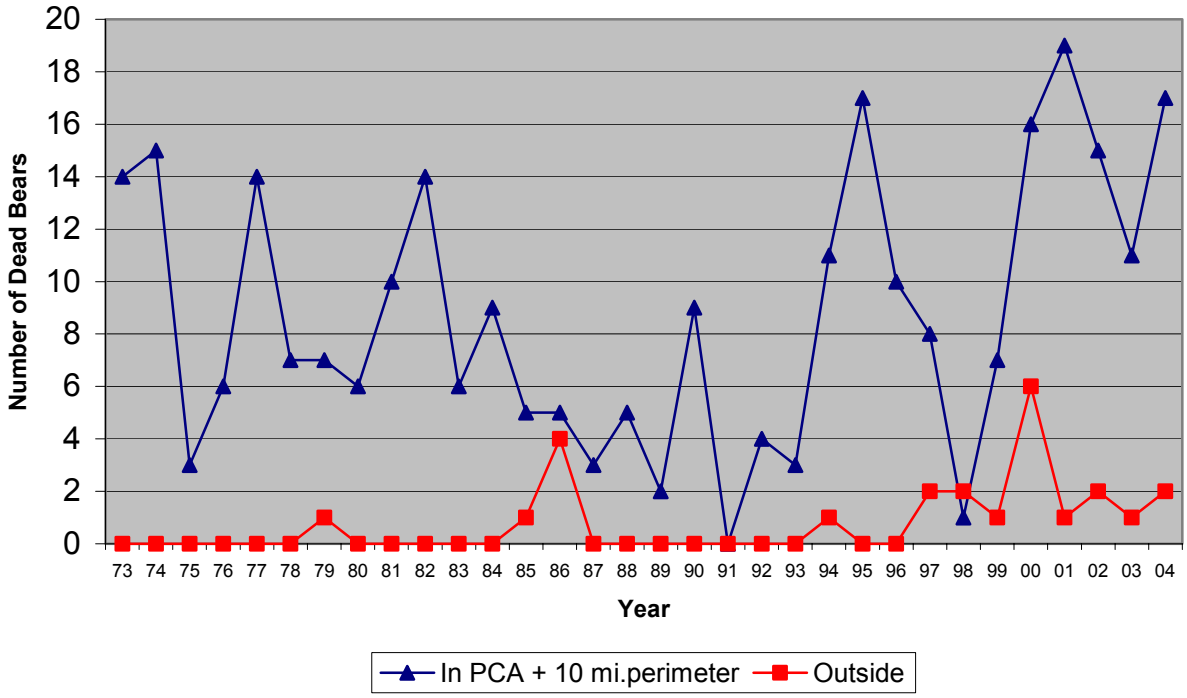
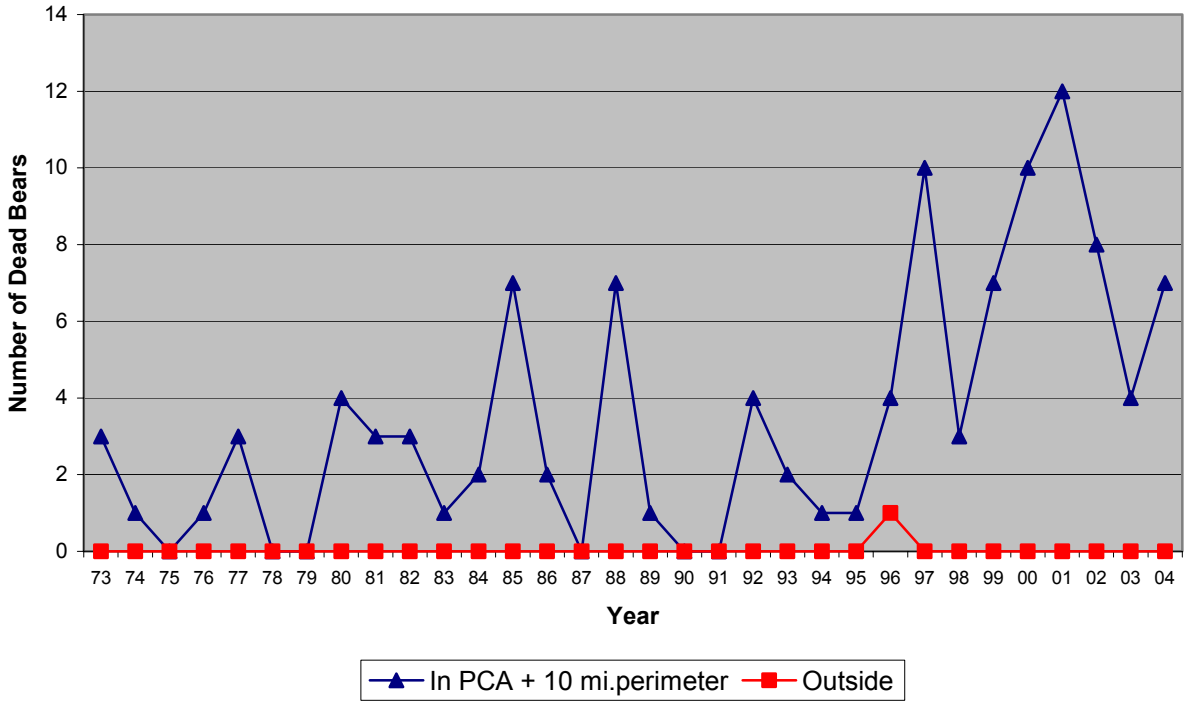


Figure 7. Natural and unknown-caused grizzly bear deaths in the GYA, 1973 through 2004.



The causes of grizzly bear deaths and their distribution by landownership are shown in Figure 8. For the years 1975 to 2004, 60% of the grizzly bear deaths (161 out of 270) occurred on National Forest System lands. However, not all of those deaths are attributable to Forest Service management activities or actions. On National Forest System lands, 123 of the 161 grizzly bear deaths (76%) are in the categories of accidents, mistaken ID, vandal killings and hunter related self defense killings, which are not directly attributable to Forest Service management activities or actions. The remaining 27 grizzly bear deaths (24%) are in the categories of site conflicts, livestock or livestock related vandal killings, which are indirectly attributable to Forest Service management activities or actions. To reduce grizzly bear deaths on National Forest System lands, the Forest Service has closed domestic sheep allotments and cattle allotments with recurring conflicts, established food storage regulations, provided bear resistant containers for garbage and food storage, provided information and education materials and programs, established special grizzly bear requirements in contracts and permits, and issued access restrictions and regulations.

Figure 8. Known and probable human-caused grizzly bear deaths by reason and landownership from 1975 through 2004 (excluding natural causes and undetermined causes, IGBST data).

Land Ownership	Mortality Category						Total
	Site conflicts[3]	Self-defense[1]	Vandal killing[4]	Mistaken ID	Livestock[2]	Accidents	
Gallatin NF	7	9	11	3	0	5	35
Shoshone NF	8	15	19	5	1	6	54
Bridger-Teton NF	7	21	18	5	3	0	54
Targhee-Caribou NF	0	1	14	0	0	2	17
Beaverhead NF	0	0	0	0	1	0	1
Yellowstone NP	15	2	1	0	0	16	34
Grand Teton NP	1	0	0	1	1	0	3
Other public lands	1	0	0	2	0	1	4
Private	46	3	4	1	11	3	68
Total	85	51	67	17	17	33	270

[1] 46 of the 51mortalities are hunter related (90%)
[2] Includes 14 management removals (3 sheep depredation, 9 cattle depredation and 1 horse depredation) and 3 bears legally killed by sheepherders in self defense.
[3] Includes 12 bears killed in self defense at backcountry camps, 69 management removals due to conflicts at front-country sites and 4 management removals of bears that either injured humans or showed unnatural aggression towards humans.
[4] 11 of these are livestock related

Grizzly Bear/Human Conflicts

Grizzly bear/human conflicts are defined as incidents, in which grizzly bears injure people, damage property, kill or injure livestock, damage beehives, obtain anthropogenic (unnatural) foods, or damage or obtain garden and orchard fruits and vegetables. All conflicts reported to state and federal agencies are entered into state databases and complied annually by Yellowstone National Park and reported in the IGBST Annual Report. Grizzly bear/human encounters that did not result in human injury or property damage are also recorded but categorized as confrontations rather than conflicts.

Figure 9 displays grizzly bear/human conflicts that occurred in 6 categories from 1992 through 2004.

Figure 10 displays the locations of grizzly bear/livestock conflicts from 1992 through 2004. Some of the livestock allotments where conflicts have occurred inside the PCA have been closed. All of the sheep allotments where conflicts occurred on the Caribou-Targhee National Forest have been closed, and one cattle allotment where conflicts occurred on the Bridger-Teton National Forest has been closed.

Figure 11 displays the causes of the conflicts and where they have occurred by land management agency. From 1992 through 2004, 814 grizzly bear/human conflicts (47% of the total recorded conflicts) occurred on National Forest System lands. The majority of the conflicts on National Forest System lands were due to livestock depredation (59%), followed by unnatural foods (24%), property damage (14%), and human injury (4%).

Figure 9. Grizzly bear/human conflicts throughout the GYA, 1992 through 2004 (IGBST Conflicts Database).

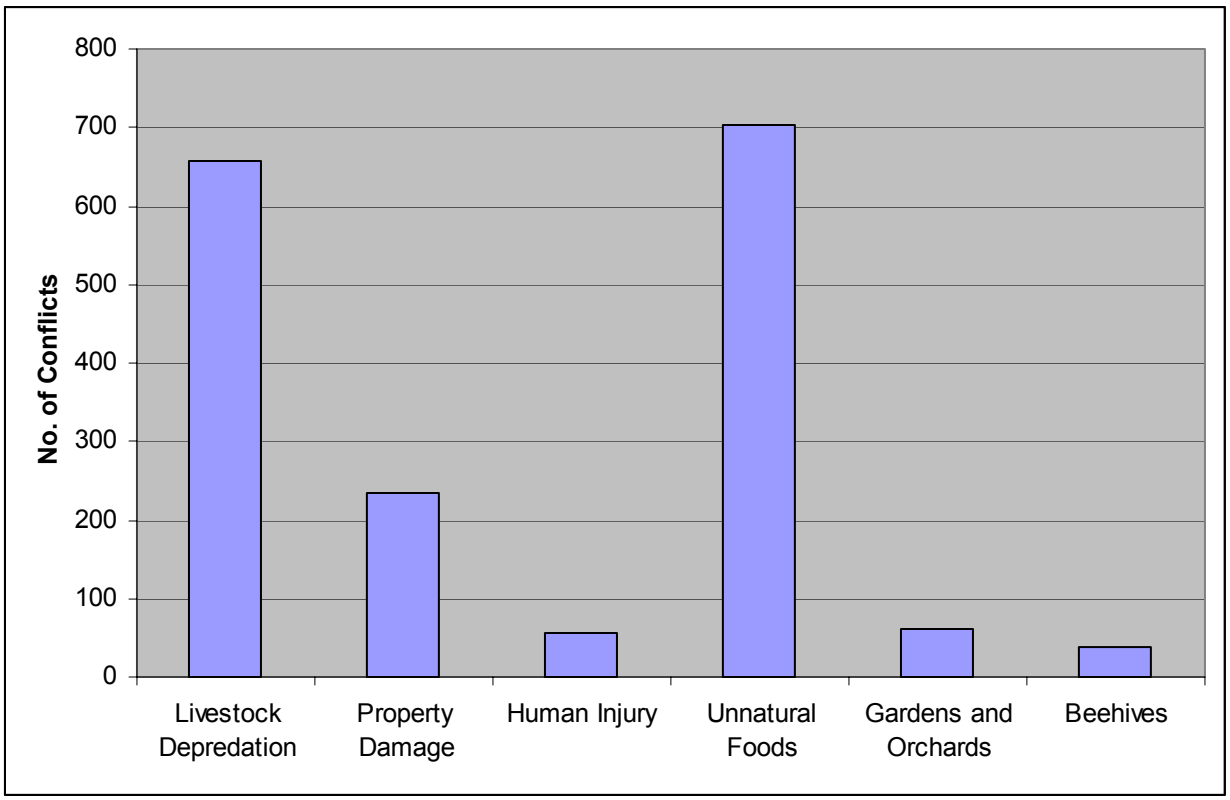


Figure 10. Grizzly bear/livestock conflicts for the years 1992 through 2004.

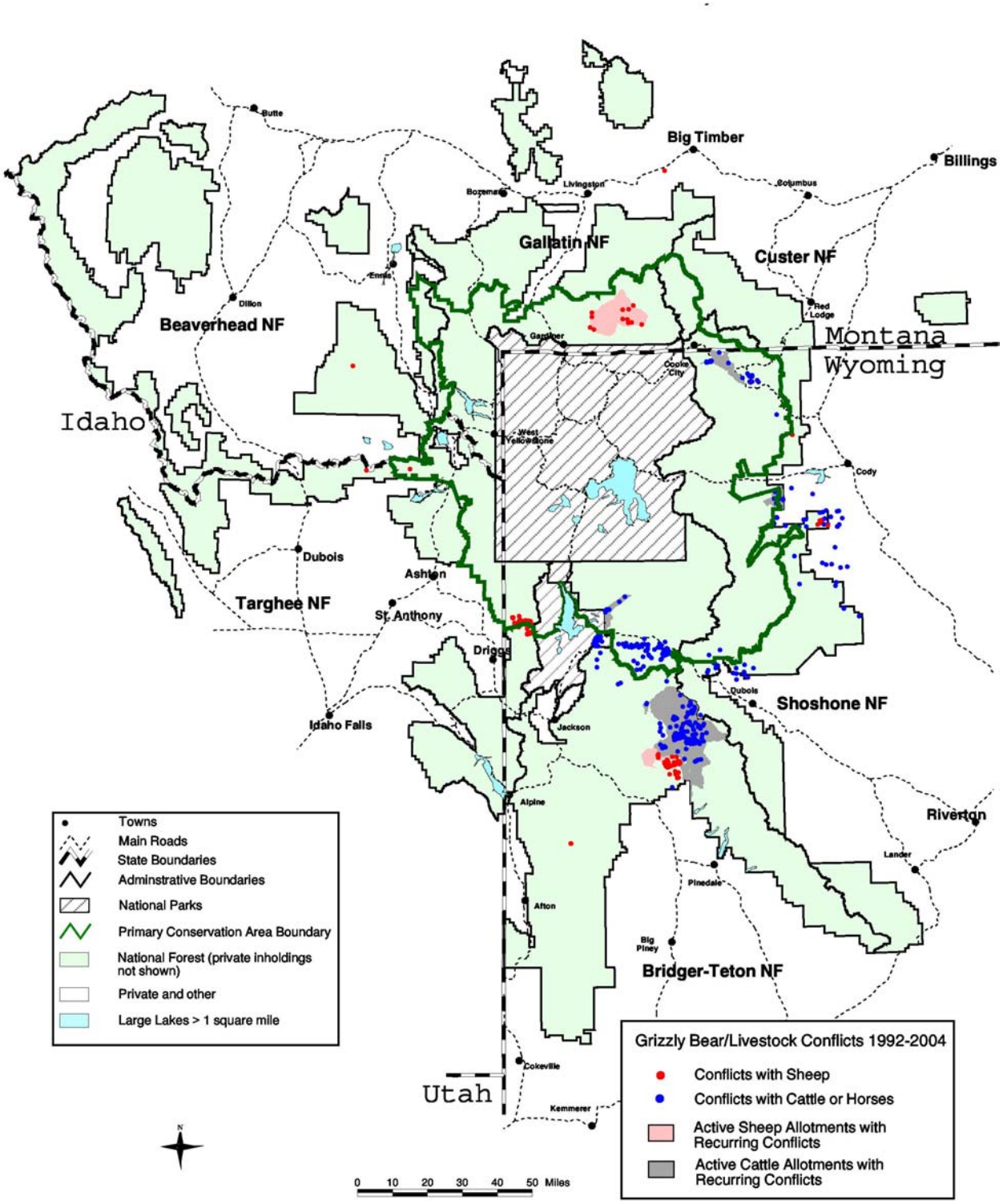


Figure 11. Number of grizzly bear/human conflicts by landowner and category, 1992 through 2004 (IGBST Conflicts database).

Land management agency	Category						
	Livestock depredation	Property damage	Human injury	Unnatural foods	Gardens and orchards	Beehives	Total
Beaverhead NF	1	1	0	1	0	0	3
Bridger-Teton NF	319	16	13	27	0	0	375
Custer NF	0	1	0	1	0	0	2
Gallatin NF	13	25	9	50	0	0	97
Shoshone NF	95	68	9	113	0	0	285
Targhee NF	50	0	0	2	0	0	52
Yellowstone NP	0	34	16	31	12	0	93
Grand Teton NP	35	1	5	3	0	0	44
Private MT	16	16	2	132	28	0	194
Private WY	123	67	2	318	21	35	566
Private ID	1	1	0	17	1	0	20
State MT	0	1	0	0	0	0	1
State WY	3	3	0	7	0	2	15
State ID	1	0	0	0	0	0	1
BLM	1	0	0	0	0	0	1
Total	658	234	56	702	62	37	1,749

Grizzly Bear/Motorized Access and Secure Habitat Interactions

The management of human use levels through access route management is one of the most powerful tools available to balance the needs of grizzly bears with the needs and activities of humans. It has been documented in several research projects, completed and ongoing, that unregulated human access and development within grizzly bear habitat can contribute to increased bear mortality and affect bear use of existing habitat (IGBC 1998, Interagency Conservation Strategy Team 2003).

Historically, management of motorized use has been primarily accomplished through restriction of certain types of motorized use on established access routes, i.e. management of open motorized route densities. Recent research has shown that secure habitat (areas that are free of motorized traffic, also referred to as core areas) is an important component of grizzly bear habitat (IGBC 1998).

By managing motorized access, the following grizzly bear management objectives can be met (IGBC 1998):

- Minimize human interaction and potential grizzly bear mortality
- Minimize displacement from important habitats
- Minimize habituation to humans
- Provide relatively secure habitat where energy requirements can be met

The IGBC Taskforce Report (IGBC 1998) identifies three access parameters for measuring motorized access and its effect on habitat security for grizzly bears:

- Total Motorized Access Route Density (TMARD)
- Open Motorized Access Route Density (OMARD)

- Secure Habitat or Core Areas

OMARD and TMARD are calculated as the percent of a BMU subunit in a defined density category, including areas with zero density. Secure habitat is calculated as the area greater than 500 meters from an open or gated motorized access route (greater than or equal to 10 acres in size) and free of motorized access. In the process of the development of the Conservation Strategy it was determined that development of habitat standards for all three access parameters was unnecessary and somewhat redundant in meeting the grizzly bear management objectives identified above.

History has demonstrated that grizzly bear populations survived where frequencies of contact with humans were very low. Populations of grizzly bears persisted in those areas where large expanses of relatively secure habitat were retained and where human-induced mortality was low. In the Yellowstone area, this is primarily associated with national parks, wilderness areas, and large blocks of public lands (IGBC 1998). Habitat security requires minimizing mortality risk and displacement from human activities in a sufficient amount of habitat to allow the population to benefit from this secure habitat and respond with increasing numbers and distribution. Habitat security allows a population to increase in numbers and distribution as lowered mortality results in more reproduction and cub recruitment into the adult population. This results in an increasing population. As the population increases, it begins to expand in range and distribution. Both of these responses to habitat security are currently ongoing in the Yellowstone population as the population is increasing at 3 to 4% per year (Boyce et al. 2001) and increasing in distribution (Schwartz et al. 2002).

Secure habitat must also provide the basic seasonal habitat requirements for grizzly bears and should be representative of seasonal habitats available to bears in the entire analysis area (IGBC 1998). The CEM was used to evaluate the relative habitat value of the existing secure habitat inside the PCA (Interagency Conservation Strategy Team 2003). Habitat value, as currently used in the CEM, is an index of the inherent productivity of grizzly bear habitat. The CEM is also used to measure habitat effectiveness, which is a measure of the energy potentially derived from an area given the impacts of human activities on bear habitat use. Habitat effectiveness is higher in secure habitat than non-secure habitat of the same habitat value because of the absence of motorized access routes.

Calculations for secure habitat are presented in the Environmental Baseline section of this BA. OMARD and TMARD calculations are in Appendix D.

Grizzly Bear/Developed Site Interactions

The effects of human activity associated with developments on grizzly bear habitat use have been reported by Mattson et al. (1987), and include the following:

- Grizzly bear use was lower in areas near human developments
- Foraging behavior was disrupted
- Dominant bears tended to displace subordinate bears into areas with more human development
- Adult females and subadult males residing closer to developments were more likely to be involved in management actions (such as being trapped and relocated)

The Forest Service and National Park Service have instituted food storage orders or regulations and have provided bear resistant garbage containers at developed sites throughout the PCA and many areas outside. This work was undertaken to reduce grizzly bear/human conflicts associated with developed sites as well as dispersed sites. Mattson and Knight (1991) analyzed grizzly bear mortality data by three eight-year periods (1962 to 1969, 1975 to 1982, and 1983 to 1990) and by association with different levels of human access, including major developments, primary roads, secondary roads, and backcountry areas. They reported that unit area mortality rates associated

with all levels of access decreased over the three time periods. Renkin and Gunther (1996) evaluated bear mortalities in relation to developed sites over a 10-year period (1987 to 1996) and found that bear mortalities in relation to developed areas declined during that period. Even though grizzly bear/human conflicts still occur throughout the GYA, these studies show that efforts to reduce those conflicts have been successful.

Grizzly Bear/Livestock Interactions

Knight and Judd (1983) reported the following information about bears that kill livestock:

- All instrumented (radio-collared) grizzly bears known to have had the opportunity (bears that came in close contact with sheep), killed sheep.
- Most grizzly bears that encountered cattle did not make kills.
- All known cattle killers were adult bears, while sheep killers included both adults and subadults.
- They concluded that sheep grazing in occupied grizzly range is a serious problem, since bears kill sheep more readily and because the sheep are closely tended by herders that are protective of their flocks.

Anderson et al. (1997) reported the following information from a study on grizzly bear/cattle interactions on two cattle allotments in northwest Wyoming:

- From a minimum of 24 grizzly bears that were known to use two cattle allotments during a three-year period, seven bears (possibly eight) preyed on cattle.
- Thirty percent of 194 cattle mortalities documented during the three years were the result of bear predation, 65% were not bear-related, and 5% were classified as unknown.
- Predatory grizzly bears selected calves (51 of 58, or 88%) over adult and yearling cattle.
- All sex/age groups of grizzly bears, except subadult male, were associated with cattle depredations. However, three adult males were responsible for 84% of the documented losses where individual depredators could be identified.
- Cattle depredations were limited to a relatively short period (three to eight weeks) during two of the three grazing seasons, and five of the eight bears suspected of killing cattle did not appear to kill more than one calf each.
- Translocating grizzly bears appears to be a viable option for reducing losses, since homing bears may not return before that depredation period ends. Additionally, translocation could prevent the occasional depredator, which appears to be common among grizzlies, from being unnecessarily removed from the population.
- Removing cattle carcasses from allotments also appeared to reduce bear densities, but it could not be determined whether this would reduce depredations.
- Since adult males are responsible for the majority of cattle depredations, selective removal may also be a possible management option, particularly when habitual adult males are involved and translocation, aversion tactics, or carcass removal efforts are ineffective.

In summary, most, if not all, grizzly bears that come in contact with domestic sheep prey on sheep and conflicts are inevitable. Within the PCA, 40% of the sheep allotments active in 2003 have had documented grizzly bear conflicts. Several sheep allotments that have had conflicts with grizzly bears have been closed.

The majority of grizzly bears that come in contact with cattle do not make kills. Within the PCA, 24% of the cattle allotments active in 2003 have had documented grizzly bear conflicts.

Conflicts between livestock and grizzly bears have resulted in the relocation, removal, or direct mortality of grizzly bears. Many of the conflicts with grizzly bears and sheep have been resolved inside the PCA due to the closure of many of the affected allotments. Conflicts with livestock have increased in recent years primarily outside the PCA. There were 478 documented grizzly bear/livestock conflicts on the six national forests from 1992 to 2004 (Figure 11). However, only 10% of the documented grizzly bear mortalities since 1975 have been livestock related (Figure 8).

Grizzly Bear/Snow Machine Interactions

Five of the GYA national forests (Beaverhead, Bridger-Teton, Custer, Gallatin, and Shoshone) analyzed the effects of snow machine use on grizzly bears and consulted with the USFWS (USDA Forest Service 2001a, USDI FWS 2002). This analysis provided the following findings:

- Snow machine use has been around for many years, and has increased over a long period.
- Bears have had a chance to either habituate or move to new den sites if disturbed.
- Bears tend to den in remote areas with characteristics that are not entirely conducive to snow machining (steep, forested habitats).
- Snow is an excellent sound insulator.
- A large proportion of the PCA and area where bears may occur (68 and 63%, respectively) provides suitable denning habitat.
- A large proportion of known dens in the Yellowstone area (88%) are located in areas where snow machine use does not occur and suitable denning habitat is well distributed on the forests.
- On the five national forests, only 3 to 19% of the secure area within the PCA that is suitable for denning is potentially used by snow machines. In the area where bears may occur, 6 to 31% falls into this category.
- Information on effects of snow machining on bears is largely anecdotal, although there is sufficient information to indicate that some individual bears have the potential to be disturbed.
- Potential effects of snow machining on reproduction and survival in Yellowstone grizzly bears are not evident in the population statistics. The grizzly bear population in the GYA has achieved all demographic recovery parameters as established in the 1993 Grizzly Bear Recovery Plan.

The USFWS issued a biological opinion stating that current authorized snow machine activity is not likely to jeopardize the continued existence of the grizzly bear (USDI FWS 2002). The USFWS stated that the best information suggests that current levels of snow machine use are not appreciably reducing the likelihood of either the survival or recovery of grizzly bears in the Yellowstone PCA. The USFWS did not anticipate a high level of incidental take, and stated that incidental take was unquantifiable. The USFWS concluded that the level of take of grizzly bears that has and would result from snow machine use is low, based on the best available recent and long-term Yellowstone grizzly bear population information, the amount of protected and unprotected denning habitat available in the Yellowstone ecosystem, the location and characteristics of most grizzly bear den sites, the expert opinions of grizzly bear researchers in the Yellowstone ecosystem, and the best available information on grizzly bear denning.

For the Targhee National Forest, grizzly bear denning habitat and potential conflicts with snow machine use were analyzed and included in consultation with the USFWS as part of the 1997 Revised Forest Plan. There have been no documented grizzly bear/snow machine use conflicts on the Targhee. The 1997 Revised Forest Plan contains a standard allowing curtailment of snow machine use to resolve documented conflicts with grizzly bears within the PCA.

Grizzly Bear Population

The Recovery Plan established three demographic (population) recovery targets that must be achieved for a recovered grizzly bear population, and defined a recovered grizzly bear population as one that could sustain a defined level of mortality and is well distributed throughout the PCA. The three demographic (population) recovery targets include:

- Maintain a minimum of 15 unduplicated females with cubs-of-the-year (COY) over a six-year average both inside the PCA and within a 10-mile area immediately surrounding the PCA.
- Sixteen of 18 BMUs within the PCA must be occupied by females with young, including COY, yearlings, or two-year olds, as confirmed by the IGBST from a six-year sum of observations. No two adjacent BMUs may be unoccupied during the same six-year period. This is equivalent to verified

evidence of a least one female grizzly bear with young at least once in each BMU over a six-year period.

- The running six-year average of total known, human-caused grizzly bear mortality as confirmed by the IGBST is not to exceed 4% of the minimum population estimate. The running-six-year average known, human-caused female grizzly bear mortality is not to exceed 30% of the 4% total mortality limit over the most recent three-year period. These mortality limits cannot be exceeded in any two consecutive years. Beginning in 2000, probable mortalities were included in the calculation of mortality thresholds; COY orphaned as a result of human causes will be designated as probably mortalities.

At the end of 2004, the number of unduplicated females with COY over a six-year average both inside the PCA and within a 10-mile area immediately surrounding the PCA was 40, more than double the Recovery Plan target of 15 (Figure12). In fact, the Recovery Plan target for the number of unduplicated females with COY (15) has been exceeded since 1988 (Interagency Conservation Strategy Team 2003). In 2004, 46 unduplicated females with COY were documented inside the PCA and within a 10-mile area immediately surrounding the PCA (Figure 13). Unduplicated females with COY were also documented outside the PCA and the 10-mile area (Figure 13).

At the end of 2004, the distribution of females with young, based on the most recent six years of observations in the ecosystem, was 18 out of 18 BMUs. Figure 14 displays the BMUs occupied by verified female grizzly bears with young for the entire Yellowstone Grizzly Bear Recovery Area from 1992 to 2004. Since 1997, all eighteen of the BMUs have been occupied by a female with young within a 6-year span, thereby achieving this recovery requirement. This criterion is important as it ensures that females occupy the majority of the PCA and that successful reproductive females are not concentrated in one portion of the ecosystem.

At the end of 2004, the minimum population estimate was 431 bears, the running six-year average of known and probable human-caused grizzly bear mortality was 13.3, and the running-six-year average of known and probable human-caused female grizzly bear mortality was 6.0 (Figure 12). The total mortality is under the mortality threshold set in the Recovery Plan, but the female mortality exceeds the mortality threshold set in the Recovery Plan (Figure 12). Beginning in 2000, the number of mortalities counted each year includes known and probable mortalities, but the mortality thresholds are set using only the minimum population estimate. The Yellowstone Ecosystem Subcommittee has approved new analysis protocols for estimating total population and sustainable mortality limits developed by the IGBST. This methodology will be incorporated into the Grizzly Bear Recovery Plan and appended to the Conservation Strategy.

Figure 12. The status of the Recovery Plan demographic (population) recovery parameters, 1999 through 2004[1].

Recovery Plan demographic (population) recover parameters	Recovery Plan target six-year average	Existing number six-year average
Maintain a minimum of 15 unduplicated females with COY over a six-year average both inside the PCA and within a 10-mile area immediately surrounding the PCA.	>15	40
Sixteen of 18 BMUs within the PCA must be occupied by females with young, including COY, yearlings, or two-year olds, as confirmed by the IGBST from a six-year sum of observations. No two adjacent BMUs may be unoccupied during the same six-year period.	>16	18
Human-caused mortality: The running six-year average of total known, human-caused mortality[2] as confirmed by the IGBST is not to exceed 4% of the minimum population estimate[3]. The running-six-year average of known, human-caused female grizzly bear mortality[2] is not to exceed 30% of the 4% total mortality limit over the most recent three-year period.	<17.2 <5.2	13.3 6.0

[1]Data for this table came from information provided by the Interagency Grizzly Bear Study Team.
[2] Beginning in 2000, probable mortalities were included in the calculation of mortality thresholds, and COY orphaned as a result of human causes will be designated as probably mortalities (Interagency Conservation Strategy Team 2003).
[3]At the end of 2004, the minimum population estimate was 431 bears (Interagency Grizzly Bear Study Team).

Figure 13. Unduplicated females with Cubs-of-the-year in the GYA.

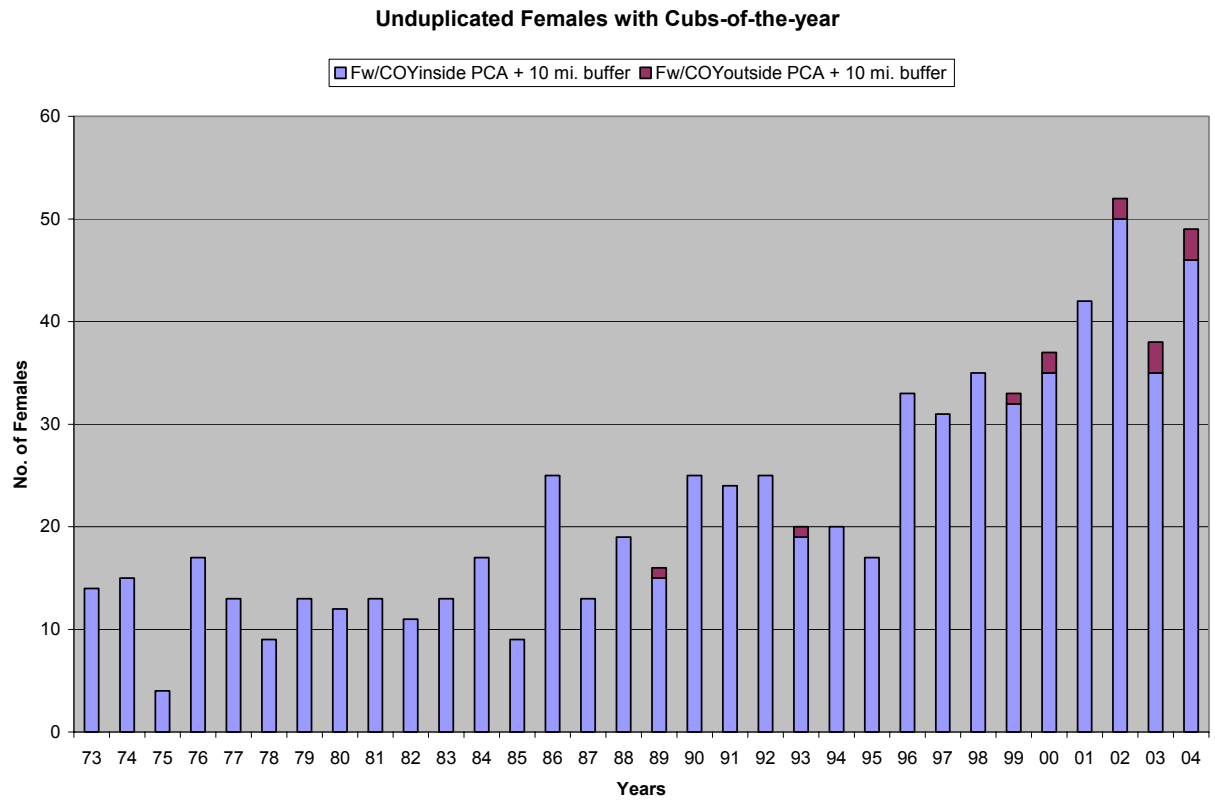


Figure 14. BMUs Occupied by Verified Female Grizzly Bears with Young within the Recovery Zone or Primary Conservation Area.

Greater Yellowstone Area Grizzly BMUs	Occupancy by Year													Years Occupied
	92	93	94	95	96	97	98	99	00	01	02	03	04	
Hilgard	x	x	x	x		x		x	x	x	x	x	x	11
Gallatin	x	x	x	x	x	x	x	x	x	x	x	x	x	13
Hellroaring/Bear		x				x		x	x	x	x	x		7
Boulder/Slough				x	x	x		x	x	x	x	x	x	9
Lamar	x	x	x	x	x	x	x	x	x	x	x	x	x	13
Crandall/Sunlight	x	x		x		x	x	x	x	x	x	x	x	11
Shoshone	x	x	x	x	x	x	x	x	x	x	x	x	x	13
Pelican/Clear	x	x	x	x	x	x	x	x	x	x	x	x	x	13
Washburn	x	x	x		x	x	x	x	x	x	x	x	x	12
Firehole/Hayden	x	x	x	x	x	x	x	x	x	x	x	x	x	13
Madison		x	x			x	x	x	x	x	x		x	9
Henry's Lake				x		x	x		x	x	x		x	7
Plateau			x					x	x	x	x	x	x	7
Two Ocean/Lake	x	x		x	x	x	x	x	x	x	x	x	x	12
Thorofare	x	x	x	x	x	x	x	x	x	x	x	x	x	13
South Absaroka	x	x	x	x	x	x	x	x	x	x	x	x	x	13
Buffalo/Spread Creek	x	x	x	x	x	x	x	x	x	x	x	x	x	13
Bechler/Teton	x	x			x	x	x	x	x	x	x	x	x	11
Number of BMUs occupied each year	**13**	**15**	**12**	**13**	**12**	**17**	**14**	**17**	**18**	**18**	**18**	**16**	**17**	**--**
Number of BMUs occupied at least once w/in a 6-year span	**--**	**--**	**--**	**--**	**--**	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**--**

Source of data: Annual Reports of the IGBST, 1997-2004 and IGBST data provided in 2005.

Grizzly Bear Population Research

Grizzly bear population trends in the GYA have been researched extensively. The following provides a sequential summary of research over the last decade pertaining to grizzly bear population trends in the GYA.

- Eberhardt et al. (1994) reported: The trend of the Yellowstone grizzly bear (*Ursus arctos horribilis*) population was estimated using reproductive rates calculated from 22 individual females and survival rates from 400 female bear-years. The point estimate of the rate of increase was 4.6%, with 95% confidence limits of 0 and 9%. The major finding of the present study is that the Yellowstone grizzly bear population appears to be increasing. Adult survival is the most important determinant of the rate of increase of the population, with reproductive rate the next most important factor and subadult survival somewhat less important than reproductive rate.
- Knight et al. (1995) reported: Using annual totals of distinct family groups suggested an increasing trend. The slope of a log-linear regression (R^2=0.41) indicated a 3.9% annual increase. Confidence limits (95%) obtained by bootstrapping were 2 to 6%. These results compared favorably with those of Eberhardt et al. (1994).
- Eberhardt and Knight (1996) reported: The initial results of our study indicated a slow rate of decrease through 1980, roughly 2% per year (Knight and Eberhardt 1985). Current analyses (Eberhardt et al. 1994, Knight and Blanchard 1995; Knight et al. 1995) show a positive annual rate of change (roughly 2 to 5%). The turning point appeared to occur in the mid 1980s, when the policy of preventing adult female mortalities whenever feasible began to be widely observed. A high adult female survival rate is essential to maintain large mammal populations having low reproductive rates.
- Pease and Mattson (1999) reported: We concluded that, within the limits of uncertainty implied by the available data and our methods, of data analysis the size of the Yellowstone grizzly bear population changed little from 1975 to 1995. Our analysis used demographic data from 202 radio-telemetered bears followed between 1975 and 1992 and accounted for whitebark pine (*Pinus*

albicaulis) crop failures during 1993 to 1995. We calculate the population growth rate = 1.00 from 1975 to 1983 (four mast and five nonmast years) and 1.02 from 1984 to 1995 (seven mast and five nonmast years). Overall, we find that population growth rate = 1.01 ± 0.04 (mean ± 1 se) from 1975 to 1995.

- Boyce et al. (2001) reported: We provide a Monte Carlo technique, which confirms that the Yellowstone ecosystem grizzly bear population increased during the period 1986 to 1998.
- Boyce et al. (2001) updated earlier research (Boyce 1995) and reported: The trend in the adjusted number of adult females with COY corroborates other data indicating that the GYE bear population increased during 1983 through 1997. Recent data provide optimistic projections of the likelihood of persistence for grizzly bears in the GYE—a 99.2% probability that the GYE grizzly bear population will persist for 100 years. Extending to a 500-year period, we find that probability of persistence decreases to 96.1%. Hunters are the second greatest source of grizzly bear mortality in the GYE. Hunters shoot grizzly bears deliberately, in self-defense, or because they mistake grizzlies for black bears. Reducing hunter related mortalities could increase the probability of long-term persistence of grizzlies in the GYE. Count data, demographic analysis, and grizzly bear distribution all indicate that the GYE bear population increased during the past decade, probably because of cooperative efforts by state and federal agencies and the public to reduce conflicts between humans and bears. Managing to ensure capability of dispersal for bears among subpopulations through linkage zone management and/or by transplants can improve prospects for long-term viability of grizzly bear populations.
- Schwartz et al. (2002) reported: The Yellowstone grizzly bear has been expanding its range during the past two decades and now occupies historic habitats that had been vacant. We used kernel estimators to develop distribution maps of occupied habitats based on initial sighting of unduplicated females (n=300) with cubs-of-the-year, information from radiomarked bears (n=105), and locations of conflicts, confrontations, and mortalities (n=1,235). The current distribution (1990 to 2000) extends beyond the recovery zone identified in the Recovery Plan. Range expansion is particularly evident in the southern portion of the ecosystem in Wyoming. A comparison of our results from the 1990s to previously published distribution maps show an approximate increase in occupied habitat of 48% and 34% from the 1970s and 1980s, respectively.
- Keating et al. (2002) reported: Previous approaches underestimate the total number of females with COY, thereby underestimating population size and sustainable mortality. Estimated numbers of females with COY in the Yellowstone population ranged from 20 animals in 1987 and 1989 to 60 in 2000. The total number of unique females with COY actually observed ranged from 13 in 1987 to 42 in 2001. The number of unique females with COY detected through random sightings alone ranged from 12 in 1987 to 39 in 2001.
- Mattson and Merrill (2002) reported: With respect to current conservation, grizzly bears survived from 1920 to 1970 most often where ranges at the beginning of this period were either larger than 20,000 km^2 or larger than 7,000 km^2 but with a ratio of perimeter to area of <2. Without reductions in human lethality after 1970, there would have been no chance that core grizzly bear range would be as extensive as it is now. Although grizzly bear range in the Yellowstone region is currently the most robust of any to potential future increases in human lethality, bears in this region are threatened by the loss of whitebark pine.
- Pyare et al. (2004) reported: Expansion in the southern end of the ecosystem was exponential and the area occupied by grizzly bears doubled approximately every 20 years. A complementary analysis of bear occurrence in Grand Teton National Park also suggests an unprecedented period of rapid expansion during the last 20 to 30 years. The grizzly bear population currently has reoccupied about 50% of the southern GYA. Based on assumptions of continued protection and ecological stasis, our model suggests total occupancy in 25 years.

In summary, current information indicates that this population of grizzly bears is growing at approximately 3 to 4% or more annually. In addition, the grizzly bear has increased its distribution in the GYA by almost 50% since the 1970s; expansion is expected to continue. While there is some debate related to the actual level of population increase since the bear was listed in 1975, all of the current information (i.e. number of unduplicated females, distribution of

reproducing females, distribution of bears, informal sightings by agency personnel, and areas where nuisance bears are being managed) indicates this population has increased in both numbers of bears and the geographic area they occupy (Interagency Conservation Strategy Team 2003). The geographic extent of the grizzly bear population in 2000 (Schwartz et al. 2002) is displayed in Figure 22 in the Environmental Baseline section of this BA.

Environmental Baseline

The environmental baseline for this BA includes the existing grizzly bear habitat conditions and grizzly bear management direction in the existing land and resource management plans for the six GYA National Forests. This environmental baseline information is summarized in this section.

Current forest plans guide management of grizzly bear habitat in the recovery zone. All forests have goals that provide suitable and adequate amounts of habitat for recovery of a viable grizzly bear population in the Greater Yellowstone Area as identified in the Recovery Plan. All forests have incorporated the Guidelines. Some forests have added more specific forest plan direction that builds upon general statements in the Guidelines. Individual forests have added forest plan direction on grizzly bear management since 1986. The six GYA forests have previously completed ESA Section 7 consultation on applicable Forest Plan direction within the PCA. In addition Section 7 consultation has been conducted on Forest Plan Amendments, selected program areas, and site-specific projects both inside and outside the PCA.

Other direction includes special orders, biological opinions issued by the USFWS, cooperative agreements, and Forest Service manual and handbook direction. The goals and objectives of the forest plans, as amended, and other existing grizzly bear management direction are part of the environmental baseline.

The grizzly bear is currently listed as a threatened species under the Endangered Species Act, and all forests consult with the USFWS on all actions authorized, funded, or carried out by the Forest Service that may affect the grizzly bear.

The Six GYA National Forests and Analysis Areas

The six national forests included in this proposal have a total area of about 12.7 million acres within proclaimed boundaries (Figure 15). The preferred alternative in this BA includes National Forest lands within the PCA and National Forest lands outside of the PCA that are termed the "best estimate of biologically suitable outside of the PCA" (Figure 15). For the Custer National Forest only the Beartooth Ranger District is included in the area of the preferred alternative. (Note: National Forest lands outside of the PCA that are termed the "best estimate of biologically suitable outside of the PCA" will be referred to as "BEBS outside PCA" in this BA. Existing evaluations of suitable habitat and linkage areas were used as the basis for delineation of the BEBS outside PCA boundary (Mattson and Merrill 2002, Walker and Craighead 1997 and Willcox and Ellenberger 2000)).

The acres displayed in Figure 15 include all private, state, and Bureau of Land Management inholdings. GIS coverages used in the various effects analysis varied as to whether inholdings were identified. Land management status on many of the national forests has changed since the time some of the coverages were developed. Direction identified in this proposal does not apply to inholdings. No attempts were made to refine these data due to the programmatic nature of this proposal. Acres of inholdings in each national forest as of 2003 are displayed in Figure 16.

Large lakes greater than 640 acres were not included in the analysis. Large lakes comprise about 43,000 acres on the six national forests (Figure 15). To be consistent with the approach used in

the Conservation Strategy and to improve the accuracy of secure habitat calculations, large lakes were excluded from the analysis of grizzly bear secure habitat. Other publications referenced in this BA may not have excluded large lakes; therefore, comparing acres and calculations in this BA with other references and between the various sections in the BA may result in small discrepancies in acre totals due to the presence or absence of inholdings and large lakes in the analysis.

The total PCA is approximately 5,893,000 acres in size and includes portions of six national forests, two national parks, and other intermingled lands. National forests account for 58.5% of the PCA, national parks account for 39.4% of the PCA, and other ownerships account for 2.1% of the PCA. These totals include about 118,000 acres of large lakes on all ownerships.

For the BEBS outside PCA, the approximately 6,301,000 acres inside proclaimed Forest Service boundaries include 15,000 acres of large lakes and 242,000 acres of inholdings (Figure 15 and 16).

Figure 15. Area (in thousands of acres) of the six GYA national forests within proclaimed boundaries (acres of large lakes in parentheses)[1].

National forest	Total	Inside PCA	Outside PCA	Best Estimate of Biologically Suitable outside PCA
Beaverhead	2,198	71	2,127	1,580
Bridger-Teton	3,465 (10)	724	2,741 (10)	1,294
Custer[2]	603	114	489	341
Gallatin	2,126 (13)	909 (13)	1,217	1,004
Shoshone	2,468	1,232	1,236	1,099
Targhee	1,868 (21)	486	1,381 (21)	985 (15)
Total	12,727 (43)	3,536 (13)	9,192 (30)	6,301 (15)

[1] Includes large lakes > 640 acres and non-Forest Service inholdings.
[2] Only the Beartooth Ranger District is included in the preferred alternative.

Figure 16. Acres (in thousands) of inholdings inside the proclaimed boundaries of the six GYA national forests[1].

National Forest	Total	Inside PCA	Outside PCA	Inholdings within the Best Estimate of Biologically Suitable outside PCA
Beaverhead	38	2	36	24
Bridger-Teton	38	3	35	14
Custer[2]	13	1	12	3
Gallatin	277	62	215	144
Shoshone	31	9	22	17
Targhee	61	11	50	39
Total	459	88	371	242

[1] Acres of inholdings shown here may not match acres depicted as inholdings in the various effects analyses in this document. These acres reflect the land status as of 2003; many of the GIS coverages used in the effects analyses have not been updated to show changes due to land exchanges or acquisitions. Discrepancies are most pronounced for the Gallatin National Forest.
[2] Only the Beartooth Ranger District is included in the preferred alternative.

Overview of Management Area Direction in Forest Plans

The six national forest plans allocated lands to management area categories. A management area category describes the natural resource setting for an area of land and establishes the types of management actions that are allowed to occur within the area of land. All management areas can be placed into eight management area categories. The acres within these management area categories in the PCA and BEBS outside PCA vary by national forest (Figure17 and 18).

Figure 17. Acres (in thousands) of National Forest System lands within the PCA and percent within seven management area categories.

National forest	Acres within the PCA[1]	Percent within seven management area categories [2]						
		1	2	3	4	5	6	8
Beaverhead	69	100	0	0	0	0	0	0
Bridger-Teton	724	80.7	4.2	6.2	5.5	3.3	0	0.1
Custer	114	92.8	0	5.8	0	1.4	0	0
Gallatin	809	51.7	9.7	21.8	15.3	1.1	0	0.5
Shoshone	1223	76.3	0.1	0	16.3	7.3	0	0
Targhee	475	16.8	20.8	8.5	0	53.6	0	0.2
Total	3,413	64.2	6.1	7.9	10.6	11.1	0	0.2

[1] These acres do not include large lakes > 640 acres. Large lakes comprise about 13,000 acres within proclaimed Forest Service boundaries in the PCA (Figure 15). Non-Forest Service inholdings are excluded except for the Bridger-Teton and Custer National Forests. Acres of non-Forest Service inholdings on the Gallatin National Forest have changed since the management area GIS coverages that generated these acres were developed. The acres of inholdings depicted in Figure 16 represent the status of inholdings on the six national forests. Management area direction applies only to National Forest System lands.
[2] Management area category 7 is not used in the GYA.

Figure 18. Acres (in thousands) of National Forest System lands in the BEBS outside the PCA and percent within seven management area categories.

National forest	Acres for Best Estimate of Biologically Suitable outside the PCA[1]	Percent within seven management area categories						
		1	2	3	4	5	6	8
Beaverhead	1,556	30.5	0.3	26.5	0.5	19.8	22.1	0.3
Bridger-Teton	1,294	60.6	17.9	2.0	0	19.2	0	0.3
Custer	341	67.9	0	9.5	4.0	15.2	0.9	2.5
Gallatin	783	50.2	3.6	11.2	13.1	20.5	1.2	0.3
Shoshone	1,081	44.4	0	0	35.6	19.9	0	0
Targhee	934	19.2	14.5	15.5	0.3	37.3	12.6	0.6
Total	5,989	42.5	6.7	11.7	8.5	22.3	7.9	0.4

[1]These acres do not include large lakes > 640 acres. Large lakes comprise about 15,000 acres within proclaimed Forest Service boundaries in BEBS areas outside the PCA (Figure 15). Non-Forest Service inholdings are excluded except for the Bridger-Teton and Custer National Forests. Acres of non-Forest Service inholdings on the Gallatin National Forest have changed since the management area GIS coverages that generated these acres were developed. The acres of inholdings depicted in Figure 16 represent the status of inholdings on the six national forests. Management area direction only applies to National Forest System lands.

Descriptions of the 8 management area categories are summarized below:

Category 1. Ecological processes such as fire, insects, and disease are allowed to operate relatively free from the influence of humans. Typical types of Management Area Category 1 areas are designated as wilderness, roadless, and backcountry lands.

Category 2. These areas provide for conservation of representative or particularly rare and narrowly distributed ecological settings or components. These areas are often formally designated. Research Natural Areas, National Recreation Areas, designated Wild and Scenic Rivers, and Special Interest Areas are typically included in Management Area Category 2.

Category 3. Ecological values are in balance with human occupancy and consideration is given to both. Resource management activities may occur, but natural ecological processes and resulting patterns will normally predominate. Restrictions on motorized travel may vary from area to area and from season to season.

Category 4. Ecological values are managed to provide recreational use, but are maintained well within the levels necessary to sustain overall ecological systems. Sights and sounds of people on the site are expected and may even be desired. Motorized transportation is common.

Category 5. These areas are primarily forested ecosystems that are managed to meet a variety of ecological and human needs. A substantially modified natural environment often characterizes these areas. Users expect to see other people and evidence of human activities. Motorized transportation is common. Areas with a timber harvesting emphasis are included in this category.

Category 6. These areas are primarily grasslands or other non-forested ecosystems managed to meet a variety of ecological and human needs. Users expect to see other people and evidence of human activities. Motorized transportation is common. Areas with intensive grazing are included in this category.

Category 8. Ecological conditions, including processes, are likely to be permanently altered by human activities beyond the level needed to maintain natural-appearing landscapes and ecological processes. These areas include campgrounds, mining areas, and ski areas.

For all of the National Forest System lands combined, 64.2% of the acres within the PCA and 42.5% of the acres in the BEBS outside PCA are in Management Area Category 1 (wilderness, roadless, and backcountry lands).

Grizzly Bear Guidelines

The Guidelines require management of grizzly bear habitat by Management Situation (MS) 1, 2, or 3 (Figure 2 and Figure 19; also see Appendix E for descriptions and definitions of MS 1, 2, and 3). Specific management guidelines for each of five resource areas for each MS are identified. The five resource areas are 1) wildlife, 2) timber and fire, 3) range, 4) recreation, and 5) minerals, watershed and special uses. The specific guidelines relate to 1) maintaining or improving habitat, 2) minimizing grizzly bear/human conflict potential, and 3) resolving grizzly bear/human conflicts. MS direction for habitat management, keeping attractants unavailable to bears, and resolving conflicts in the Guidelines is specific to the recovery zone, except for an area of MS 3 on the Targhee National Forest that is outside of the recovery zone (Figure 2). No other MS direction is given for management of grizzly bears or their habitat outside the recovery zone. Outside of the recovery zone, forests implement management direction in their existing forest plans, but they consult as necessary with the USFWS in areas occupied by grizzly bears. The Guidelines are considered dynamic and subject to change as research provides additional data. In addition, MS designations are subject to review and reclassification, as occurred with the 1997 revision of the Targhee Forest Plan when MS 2 habitat was changed to MS 1 habitat.

Figure 2 and Figure 19 display the MS 1, 2, and 3 areas for the six GYA National Forests. For the National Forest System lands in the grizzly bear recovery zone

- 59.3% are within MS 1
- 37.3% are within MS 2
- 1.4% are within MS 3
- 2% are not identified as a MS (The acres not identified as MS are all on the Beaverhead National Forest and are primarily designated wilderness.)

Figure 19. Acres (in thousands) of lands within the PCA and management situation emphasis.

Land management agency	Acres within the PCA[1] (% of total PCA)	Percent of PCA acres in MS 1 for each agency	Percent of PCA acres in MS 2 for each agency	Percent of PCA acres in MS 3 for each agency
Beaverhead National Forest	69 (1.2%)	Not identified	Not identified	Not identified
Bridger-Teton National Forest	724 (12.5%)	90.7%	7.8%	1.5%
Custer National Forest	114 (2.0%)	3.0%	97.0%	0.0%
Gallatin National Forest	809 (14.0%)	60.3%	39.6%	0.1%[5]
Shoshone National Forest	1,223 (21.2%)	33.8%	64.1%	2.1%
Targhee National Forest	475 (8.2%)	98.0%[4]	0.0%[4]	2.0%
National parks[2]	2,225 (38.5%)	99.8%	0.1%	0.1%
Other[3]	138 (2.4%)	Not applicable	Not applicable	Not applicable

[1] These acres do not include acres of lakes > 640 acres. Large lakes comprise 118,000 acres within the PCA (2% of the PCA). Non-Forest Service inholdings are excluded except for the Bridger-Teton and Custer National Forests. Acres of non-Forest Service inholdings on the Gallatin National Forest have changed since the GIS coverages that generated these acres were developed. The acres of inholdings depicted in Figure 16 represent the status of inholdings on the six national forests. Management Situation direction only applies to federal lands.
[2]National parks include Yellowstone and Grand Teton National Parks and the Rockefeller National Parkway.
[3] Other includes Bureau of Land Management lands, state lands, and private lands.
[4] The 1997 Revised Forest Plan changed all Management Situation 2 areas to Management Situation 1.
[5] MS 3 acreage estimated, as it was not delineated in the forest plan.

Individual Forest Plan Direction for Grizzly Bear Habitat Management

Beaverhead National Forest

The Beaverhead Forest Plan, approved in 1986, includes a goal to provide habitat that contributes to the recovery of threatened and endangered species in accordance with approved Recovery Plans.

The Forest Plan states that there is no "occupied habitat" on the Forest. However, the Forest Plan contains direction to document all grizzly bear use of the Forest and to evaluate habitat suitability in the Madison Range. Any habitat designated in the future as "occupied" will be managed according to the Greater Yellowstone Grizzly Bear Recovery Plan. The Recovery Plan states that the Guidelines should be applied. Nuisance bears will also be managed according to the Guidelines. Amendment 10 closed the non-wilderness portion of the recovery zone to motorized access.

The grizzly bear is a management indicator species and the Forest Plan requires annual monitoring of acres of habitat and number of animals.

Bridger-Teton National Forest

Forestwide grizzly bear recovery objectives identified in the 1990 Bridger-Teton National Forest Land and Resource Management Plan are:

- Provide suitable and adequate amounts of habitat for recovery of a viable grizzly bear population in the Greater Yellowstone Area as identified in the Grizzly Bear Recovery Plan

- Long-term Forest habitat management should provide vegetation diversity, approximate natural conditions, and include all successional stages important to the grizzly bear
- Prevent needless encounters between grizzly bears and people, and prevent grizzly bears from gaining access to attractants such as food and garbage

Management of grizzly bears and habitat inside the recovery zone is directed by "existing and future Interagency Grizzly Bear Management Guidelines." Direction is also specified to follow the special order for sanitation, to make some changes in livestock distribution and numbers as necessary to avoid adverse effects to grizzly bears and not to allow changes in class of livestock in MS 1 and MS 2. Several management areas inside the recovery zone emphasize enhancement of habitat and maintenance of recovered grizzly bear populations. Various standards and guidelines in these management areas require considerations for cover retention, size of openings, duration of activities, and size of the area impacted. Direction for several management areas inside the recovery zone states that no surface disturbing activities can occur until the grizzly bear CEM can be run to help determine potential effects on the bear. An oil and gas stipulation on part of the recovery zone states that if the grizzly bear is removed from protections under ESA, no surface occupancy (NSO) stipulation will apply.

The grizzly bear is a management indicator species and monitoring requirements include compliance with interagency grizzly bear guidelines by ground checking 75% of certain Forest activities to ensure compliance with food storage regulations and to use the CEM to ensure habitat capability for grizzly bears does not drop below recovery levels.

Custer National Forest

There is a Forestwide goal in the 1986 Custer National Forest and Grasslands Land and Resource Management Plan for the management of threatened and endangered species "to provide habitat that contributes to the recovery of the species." Management inside the recovery zone is directed by the Guidelines and is incorporated into the Forest Plan by reference. Forestwide wildlife standards state that if threatened or endangered species are found during project level planning, the surface disturbing activity will be modified in such a way that the species will not be adversely affected, the surface disturbing activity will be disallowed, or consultation with the USFWS will be arranged. Additionally, all non-wilderness areas inside the recovery zone have oil and gas stipulations for no surface occupancy, or are available but not offered for lease. The Forest Plan requires monitoring of acres by habitat condition for grizzly bears.

Gallatin National Forest

The 1987 Gallatin National Forest Plan has a goal to provide habitat for viable populations of threatened and endangered species, including the grizzly bear.

A modified version of the Guidelines provides direction for grizzly bear management inside the recovery zone and is included in the Forest Plan as Appendix G. Direction is in the form of either standards or guidelines and the applicable MS. Additional direction for MS 1 and MS 2 areas on the duration of timber harvest activities, timing of re-entry, and maintenance of 5,000-acre security areas adjacent to sale activities is incorporated through the Biological Opinion on the Forest Plan and is included in the Forest Plan as Appendix H. Management area direction inside the recovery zone includes direction to 1) manage roads and trails and recreation activities to control public use in areas with a high potential for grizzly conflicts, 2) limit minerals activities to specific areas or periods to reduce mortality risk and reduction in habitat quality for grizzly bears, and 3) no new sheep allotments and sheep will not be restocked onto vacant allotments in MS 1 areas.

Amendment 19 established an objective to manage human access within the recovery zone in order to help meet the goal of grizzly bear recovery. Access standards were included in the Forest Plan that require, within BMU subunits, no increase in open motorized access route

density and total motorized access route density, no decrease in core areas from 1995 levels, and to adopt "Yellowstone access standards" when they become available.

The Forest Plan includes requirements to monitor preventable grizzly bear mortalities and population trends of the grizzly bear as a management indicator species.

In 2006, the Forest will complete a new travel management plan for public access and travel within the entire Forest and incorporate it into the Forest Plan.

Shoshone National Forest

The 1986 Shoshone National Forest Land and Resource Management Plan includes a goal to "maintain or improve habitat for threatened and endangered species including participation in recovery efforts for listed species."

An amendment to the Forest Plan in 1991 established the primacy of the Guidelines over all other Plan direction. This amendment incorporated the Guidelines, in total, by reference. In addition, the Forest Plan provides specific direction for minimizing impacts to grizzly bears from timber harvest activities. Standards provide direction on the timing and duration of timber harvest activities, restrict the number of entries per decade in a sale area for MS 1 areas, require periods of inactivity following sale activities before reentry in MS 2, prohibit entry in drainages with cover for grizzly bears below certain levels, and require 5,000-acre security areas adjacent to sale activities. Direction is also specified to apply a permit system in wilderness areas if necessary to prevent grizzly bear/human conflicts. A no surface occupancy stipulation for oil and gas development is applied to MS 1 lands outside wilderness, some MS 2 lands, and in moth aggregation areas. Security areas (5,000 acres) are required adjacent to oil and gas activity and no drilling is allowed within two miles of grizzly bear denning sites. A Forestwide standard in the Allowable Sale Quantity amendment (USDA Forest Service 1994a and b) specifies no net increase in roads and a biological opinion from the USFWS requires no net gain in developed sites along the North Fork Shoshone River corridor.

The grizzly bear is a management indicator species and served as the basis for formulation of habitat diversity standards in the Forest Plan. Monitoring is required for known human-caused grizzly bear mortalities, compliance with the 1986 Guidelines, and grizzly bear habitat effectiveness.

Targhee National Forest

The Revised Targhee National Forest Plan was approved in 1997. Forestwide goals specific to the grizzly bear include direction to maintain habitat conditions sufficient to sustain a recovered population of grizzly bears, to integrate the forest road and trail system with the needs of humans and grizzly bears, and to increase grizzly bear security.

Forestwide objectives for grizzly bear habitat are to

- Meet the recovery criteria in the Grizzly Bear Recovery Plan
- Implement the IGBC Guidelines
- Provide safe, secure sites for nuisance bears
- Achieve road density standards in the BMUs within three years of the implementation of the ROD [Record of Decision] in coordination with USFWS and state wildlife agencies
- Develop fire management plans for each of the BMUs to address wildfires and prescribed fire

In addition to direction requiring implementation of the Guidelines, the Forest has included Forestwide and specific management area direction for management areas inside the recovery zone. The Forest Plan incorporates many of the management concepts embedded in the Conservation Strategy, as the revised Plan was being developed in close coordination with the development of the Conservation Strategy.

The Forest Plan includes a Forestwide guideline identifying focus groups for grizzly bear education. All sheep allotments inside the recovery zone will be phased out on an opportunity basis. Prescriptions are designated for grizzly bear core and security areas where human activities are restricted or limited. Open and total motorized access route density standards are identified for each of the BMUs inside the recovery zone. Inside the recovery zone, operating plans, special use permits, and grazing permits require management of human attractants and livestock carcasses. Temporary cessation or modification of permitted activities will occur to resolve grizzly bear/human conflicts. Where grazing is allowed inside the recovery zone, high quality food production areas for grizzly bears will receive special grazing direction. In areas where timber harvest is allowed inside the recovery zone, it is required that 7,000-acre security areas are maintained adjacent to sale areas.

There are numerous other standards and guidelines relating to timing of projects, size of projects, location of roads, administrative use of roads, restricting roads to project activities, improving grizzly bear habitat, and minimizing grizzly bear/human conflicts depending on the management area. The recovery zone is not available for oil and gas leasing. All standards and guidelines specifically for grizzly bears are directed only within the recovery zone.

The grizzly bear is a management indicator species and monitoring items specific for grizzly bears include grizzly bear population trend in cooperation with the IGBST, habitat changes through annual updates of relevant GIS databases, and improvement of grizzly bear habitat through use of the CEM. In addition, the Forest will monitor achievement of road density standards and road closure effectiveness.

Secure Habitat

Secure Habitat Definition

Secure habitat is defined as areas more than 500 meters from an open or gated motorized access route or recurring helicopter flight line, greater than or equal to 10 acres in size. This is the same definition used in the Conservation Strategy. Secure habitat for this analysis is divided into long and short term secure habitat based on the management area category. A management area category describes the natural resource setting for an area of land and established the types of management actions that are allowed to occur within the area of land.

Long term secure habitat is secure habitat within management area categories 1, 2, 3 (see page 35). These management area categories typically include wilderness, backcountry lands, research natural areas, national recreation areas, designated wild and scenic rivers, special interest areas, and other areas where some management activities may occur but natural ecological process and resulting patterns will normally predominate. Generally new motorized access routes will not be constructed in these areas. In some of these areas oil and gas surface occupancy may be allowed. For this analysis all secure habitat in these management categories (1,2,3 see page 35) that may allow surface occupancy inside the PCA are considered long term because oil and gas development will likely be very limited due to the mitigation necessary under the secure habitat and developed site standards. Surface occupancy is only allowed on 3% of the National Forest System lands inside the PCA. Outside the PCA any secure habitat in these management categories that allow surface occupancy on the Bridger-Teton National Forest are considered short term secure habitat (see below) due to the higher occurrence potential for oil and gas (47,000 acres in the biologically suitable habitat outside the PCA). Similar areas on the Beaverhead and Targhee National Forests have primarily moderate to low potential and are considered long term secure habitat (244,000 acres in biologically suitable habitat outside the PCA). See discussion under secure habitat outside PCA for a definition of biologically suitable habitat.

Short term secure habitat is secure habitat within management area categories 4, 5 6 and 8. These categories typically include areas that are managed to provide recreational use; forested ecosystems that are managed to meet a variety of uses, timber harvesting emphasis areas, areas of intensive grazing, and areas likely to be permanently altered by human activities.

Secure Habitat inside the PCA

There are 2,827,000 acres of secure habitat on National Forest System lands within the PCA, which is 83% of the total National Forest System lands within the PCA; 87% is considered long-term secure and 13% allows for management activities that may reduce the amount of secure habitat (short term secure habitat) (Figures 20 and 21).

Figure 20. Existing Secure Habitat within the PCA.

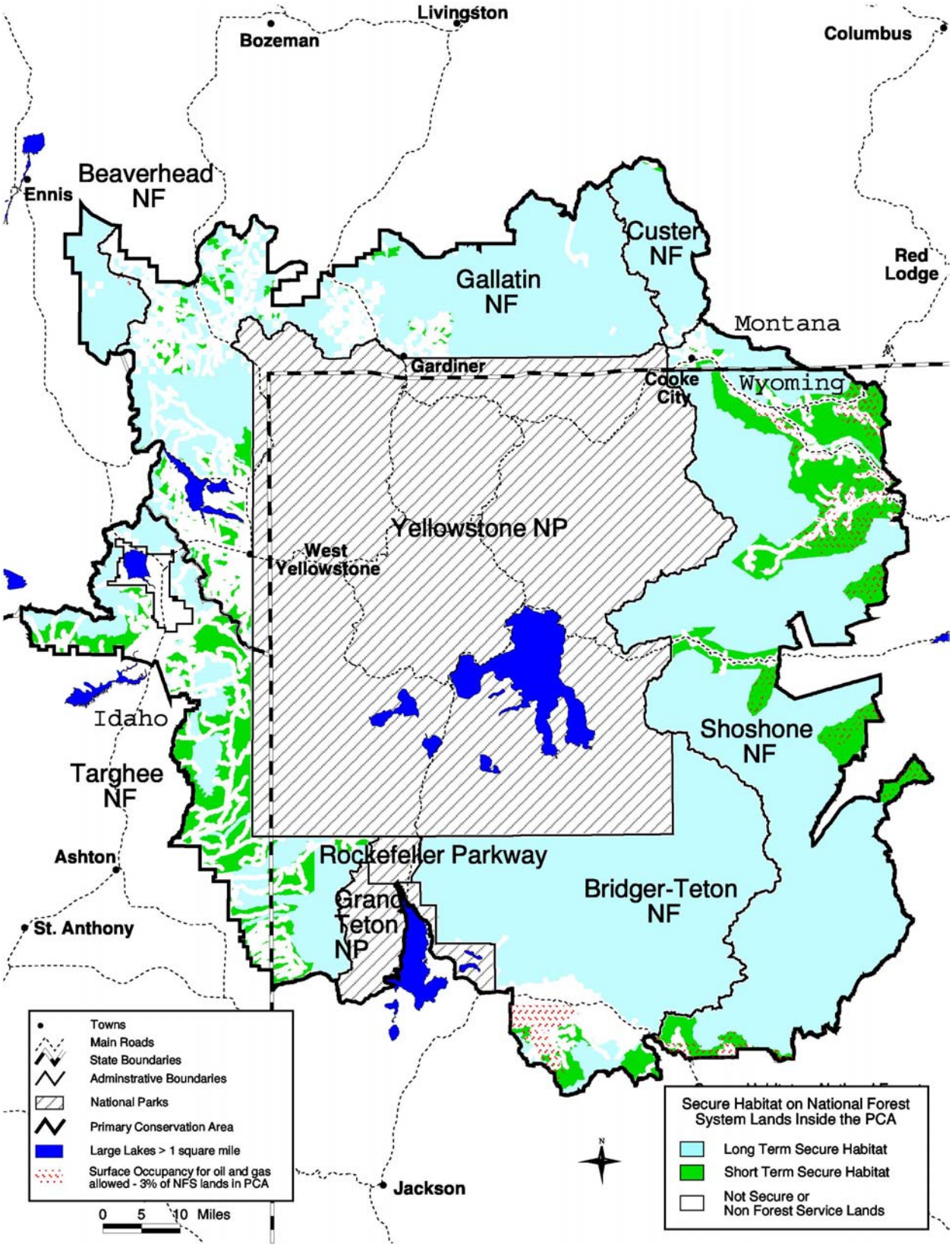


Figure 21. Acres (in thousands) in the PCA and percent of the area that is long and short term secure habitat on National Forest System Lands for each of the GYA National Forests.[1]

Forest	PCA Acres	Secure habitat acres and percent of PCA that is secure habitat	Acres of long term secure habitat and % of secure habitat that is long term secure	% of area that is long term secure habitat	Acres of short term secure habitat and % of secure habitat that is short term secure
Beaverhead	68	66 (96%)	66 (100%)	97%	0 (0%)
Bridger-Teton	724	637 (88%)	618 (97%)	85%	19 (3%)
Custer	114	111 (97%)	110 (99%)	96%	1 (1%)
Gallatin	809	587 (73%)	554 (94%)	69%	33 (6%)
Shoshone	1,223	1,137 (93%)	929 (82%)	76%	207 (18%)
Targhee	475	290 (61%)	181 (62%)	38%	109 (38%)
Total	3,413	2,827 (83%)	2,458 (87%)	72%	369 (13%)

[1] These acres do not include acres of lakes > 640 acres. Large lakes comprise 13,000 acres within National Forest proclaimed boundaries in the PCA. Non-Forest Service inholdings are excluded except for the Bridger-Teton and Custer National Forests. Acres of non-Forest Service inholdings on the Gallatin National Forest have changed since the GIS coverages that generated these acres were developed.
Long term = secure habitat acres within Management Area Categories 1, 2, and 3.
Short term = secure habitat acres within Management Area Categories 4, 5, 6, and 8.

Beaverhead National Forest. There is no motorized access to the Beaverhead National Forest portion of the PCA. Ninety-six percent of the National Forest System lands within the PCA are secure habitat. The vast majority of this area is designated wilderness, and the relatively small non-wilderness portion of the PCA was closed to motorized use year round by Amendment 10 of the Beaverhead Forest Plan (Off-highway Vehicle Amendment). The amount of secure habitat in the Beaverhead National Forest portion of Hilgard BMU subunit 1 has not changed over the last 10 years.

Bridger-Teton National Forest. Management area prescriptions in the Bridger-Teton Forest Plan emphasize motorized use on approximately 46,900 acres (7%) of the PCA within the Forest. Motorized use is prohibited or discouraged on the remaining 677,000 acres of the PCA. Currently, 88% of the National Forest System land within the PCA is secure habitat. The Bridger-Teton Forest Plan does not contain any Forest wide standard addressing open or total motorized access density or secure habitat areas. Access prescriptions and standards for individual management areas are variable, with some suggesting that motorized route density may exceed one mile per square mile of the management area. Over the last five years, the amount of secure habitat has remained unchanged.

Custer National Forest. Most of the PCA (98.6%) is designated wilderness or in a management area which emphasizes wildlife habitat protection and discourages permanent road construction. Currently, 97% of the National Forest System land within the PCA is secure habitat. A small portion (1.4% of the PCA) emphasizes the exploration, development, and production of energy and mineral resources, but no activity has occurred. Secure habitat has remained the same over the last five to 10 years.

Gallatin National Forest. During the last five to 10 years, the Gallatin National Forest has closed or obliterated more than 100 miles of road within BMU subunits, increasing the amount of secure habitat. The road closures occurred mainly on the Hebgen Lake Ranger District in the

Taylor Fork (Hilgard 1 and 2), the Madison 1 and 2, and the Henrys Lake 2 BMU subunits. Currently, 73% of the National Forest System land within the PCA is secure habitat.

Shoshone National Forest. The Shoshone Forest Plan, as amended, has a standard for no net increase in road miles. The activity levels associated with Plan objectives are relatively low. In practice, secure habitat is being maintained or increased. The amount of secure habitat has increased in Shoshone BMU subunits 3 and 4 due to road closures in the North Fork of the Shoshone River corridor. The amount of secure habitat has stayed the same over the last decade in all other BMU subunits. Currently, 93% of the National Forest System land within the PCA is secure habitat.

Targhee National Forest. Forestwide access management standards limit open motorized access route density to 0.6 miles per square mile in Henrys Lake subunits 1 and 2, the Plateau BMU, and the Bechler-Teton BMU. This standard also limits total motorized access route density in these same BMUs and subunits to one mile per square mile. The standards specify management requirements for road closures and administrative use on restricted roads. Standards associated with individual management areas supplement these Forestwide standards. The Targhee Forest Plan contains a Forestwide goal to increase grizzly bear security. The amount of secure habitat within each BMU increased after the 1997 Revised Targhee Forest Plan was completed. The reason for the increase in the amount of secure habitat was that the Revised Forest Plan called for the decommissioning of about 433 miles of road within the BMUs to achieve the open motorized access route density standards and the total motorized access route density standards. The Forest has completed about 80% of the decommissioning work; the remaining 20% is waiting on additional site-specific NEPA to be completed. Decommissioning will likely be completed in 2005. When the road density standards are fully implemented, 61% of the National Forest System land within the PCA will be secure habitat.

There are 290,000 acres of existing secure habitat, with 181,000 acres (62%) within management prescriptions that maintain the secure habitat long term (Figure 21). The remaining secure habitat (109,000 acres, or 38%) is within management prescriptions that allow project work and potential motorized access that could affect a portion of this secure habitat. Forest Plan standards for open motorized access route density (0.6 miles per square mile) and total motorized access route density (1.0 miles per square mile) limit the amount of secure habitat that could be affected. In addition, there are guidelines for maintaining large areas (no less than 7,000 acres in size) without project activities adjacent to the areas with project activities, which limits the amount of secure habitat that could be affected.

Secure Habitat Outside the PCA

For this analysis the National Forest System land on the six GYA National Forests outside the PCA is divided into two areas.

1. The first area is defined as the Best Estimate of Biologically Suitable habitat (BEBS) outside the PCA. Existing evaluations of suitable habitat and linkage areas were used as the basis for delineation of this boundary (Mattson and Merrill 2002, Walker and Craighead 1997 and Willcox and Ellenberger 2000). This area in Wyoming is similar to the area where grizzly bear populations outside the PCA would be managed to allow for population growth and eventually for a sustainable population under the Wyoming State Grizzly Bear Management Plan. Similar designations have not been made for Idaho and Montana. This BEBS habitat includes 96% of the area known to be occupied by grizzly bears on National Forest System lands outside the PCA in 2000 (Schwartz et al 2002, Figure 22).
2. The remaining National Forest System lands outside of the BEBS area will be referred to in this analysis as biologically unsuitable habitat. Although this area may provide

some habitat for grizzly bears, in general the current level of human activity and/or land uses are assumed to be incompatible with grizzly occupancy. This designation of biologically unsuitable habitat in Wyoming is similar to the area where the Wyoming Game and Fish Department will discourage occupancy by grizzly bears under their State Grizzly Bear Management Plan.

Secure Habitat in BEBS Outside of the PCA

Currently, there are 4,331,000 acres of secure habitat on National Forest System lands in the BEBS outside of the PCA, which is 72% of the total National Forest System lands within this area (Figures 22 and 23). Seventy-one percent of the secure habitat is long-term (3,089,000) and 29% (1,242,000 acres) is short term secure habitat that would allow for management activities that could affect secure habitat (Figure 23).

Beaverhead National Forest. There are 995,000 acres of secure habitat in the BEBS outside the PCA (64% of the National Forest System land within the analysis area). There are 707,000 acres (71%) of existing secure habitat that are in management area prescriptions that provide for long-term security (Figure 23). There are 289,000 acres (29%) of existing secure habitat in management area prescriptions that may allow motorized access for management activities, and this could result in a decrease or change in location of the secure habitat.

Bridger-Teton National Forest. There are 985,000 acres of secure habitat in the BEBS outside the PCA (76% of the National Forest System land within the analysis area). There are 844,000 acres (86%) of existing secure habitat that are in management area prescriptions that provide for long-term security (Figure 23). There are 142,000 acres (14%) of existing secure habitat in management area prescriptions that may allow motorized access for management activities, and this could result in a decrease or change in location of the secure habitat.

Custer National Forest. There are 307,000 acres of secure habitat in the BEBS outside the PCA (90% of the National Forest System land within the analysis area). There are 250,000 acres (82%) of existing secure habitat that are in management area prescriptions that provide for long-term security (Figure 23). There are 57,000 acres (18%) of existing secure habitat in management area prescriptions that may allow motorized access for management activities, and this could result in a decrease or change in location of the secure habitat.

Gallatin National Forest. There are 619,000 acres of secure habitat in the BEBS outside the PCA (79% of the National Forest System land within the analysis area). There are 474,000 acres (77%) of existing secure habitat that are in management area prescriptions that provide for long-term security (Figure 23). There are 145,000 acres (23%) of existing secure habitat in management area prescriptions that may allow motorized access for management activities, and this could result in a decrease or change in location of the secure habitat.

Shoshone National Forest. There are 852,000 acres of secure habitat in the BEBS outside the PCA (79% of the National Forest System land within the analysis area). There are 478,000 acres (56%) of existing secure habitat that are in management area prescriptions that provide for long-term security (Figure 23). There are 375,000 acres (44%) of existing secure habitat in management area prescriptions that may allow motorized access for management activities, and this could result in a decrease or change in location of the secure habitat. However, the Shoshone Forest Plan, as amended, has a standard for no net increase in road miles.

Figure 22. Secure habitat on National Forest System lands in the BEBS outside of the PCA

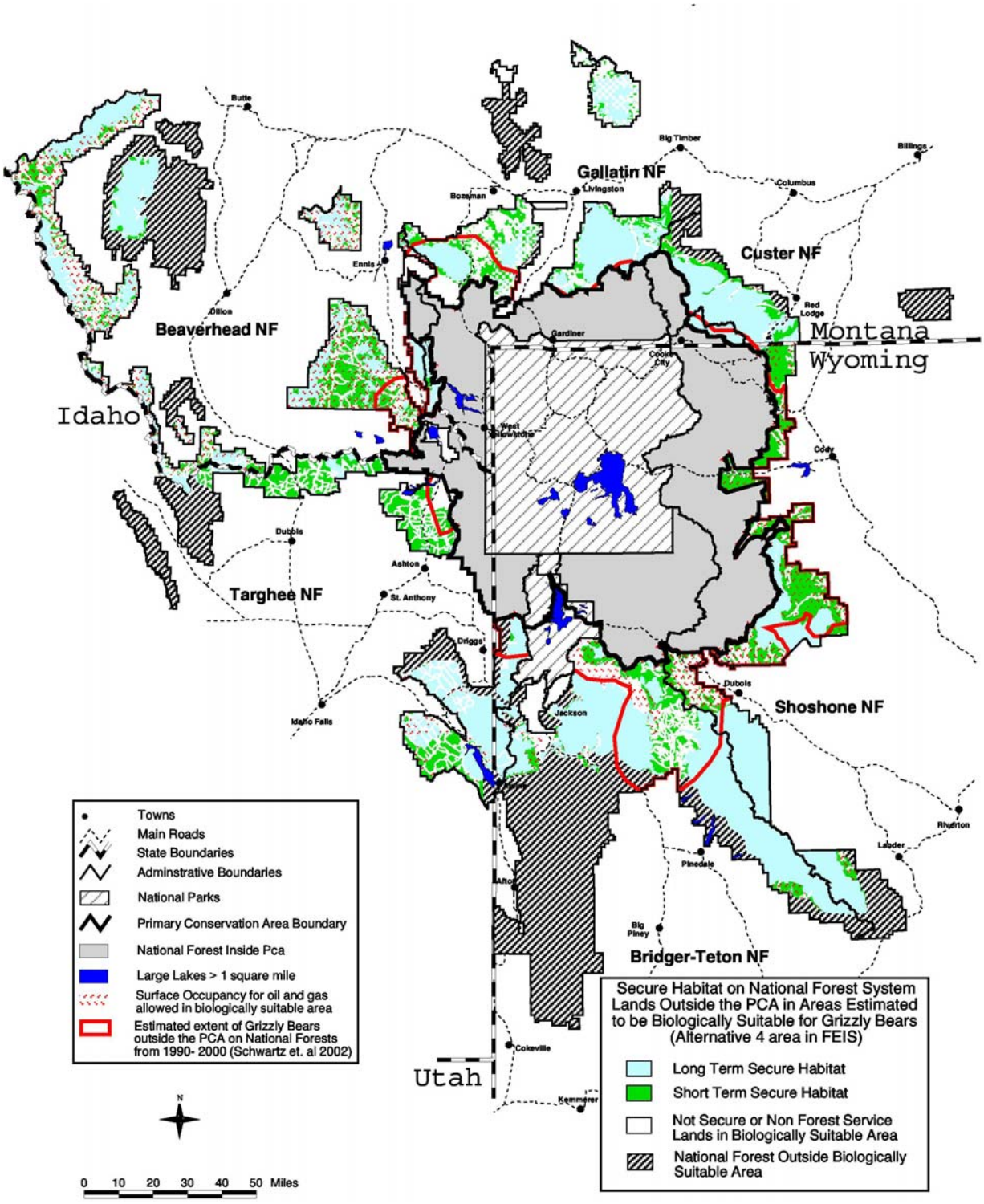


Figure 23. Acres (in thousands) in the BEBS outside PCA and percent of the area that is long and short term secure habitat on National Forest System Lands for each of the GYA National Forests .[1]

Forest	Biologically suitable habitat (outside the PCA)[2]	Secure habitat acres and percent of area that is secure habitat	Acres of long term secure habitat and % of secure habitat that is long term secure	% of area that is long term secure habitat	Acres of short term secure habitat and % of secure habitat that is short term secure
Beaverhead	1,567	995 (64%)	707 (71%)	45%	289 (29%)
Bridger-Teton	1,293	985 (76%)	844 (86%)	65%	142 (14%)
Custer	341	307 (90%)	250 (82%)	73%	57 (18%)
Gallatin	783	619 (79%)	474 (77%)	61%	145 (23%)
Shoshone	1,081	852 (79%)	478 (56%)	44%	375 (44%)
Targhee	934	572 (61%)	336 (59%)	36%	236 (41%)
Total	5,999	4,331 (72%)	3,089 (71%)	52%	1,242(29%)

[1]These acres do not include acres of lakes > 640 acres. Large lakes comprise 15,000 acres within Forest Service proclaimed boundaries in the biologically suitable areas outside the PCA. Non-Forest Service inholdings are excluded except for the Bridger-Teton and Custer National Forests. Acres of non-Forest Service inholdings on the Gallatin National Forest have changed since the GIS coverages that generated these acres were developed.
Long term = secure habitat acres within Management Area Categories 1, 2, and 3.
Short term = secure habitat acres within Management Area Categories 4, 5, 6, and 8.
[2]This area was the original the alternative 4 area outside the PCA as defined using evaluations of suitable habitat by Walker and Craighead (1997), Willcox and Ellenberger (2000), and Merrill and Mattson (2002).

Targhee National Forest. There are 572,000 acres of secure habitat in the BEBS outside the PCA (61% of the National Forest System land within the analysis area). There are 336,000 acres (59%) of existing secure habitat that are in management area prescriptions that provide for long-term security (Figure 23). There are 236,000 acres (41%) of existing secure habitat in management area prescriptions that may allow motorized access for management activities, and this would result in a decrease or change in location of the secure habitat. However, the 1997 Revised Targhee Forest Plan has motorized access standards that limit the number of miles of new roads and motorized trails that can be established on the Forest.

Secure Habitat in the Biologically Unsuitable Areas Outside of the PCA

Currently, there are 1,641,000 acres of secure habitat on National Forest System lands within the area estimated to be biologically unsuitable habitat for grizzly bears outside the PCA, which is 59% of the total National Forest System lands in this area. Forty-nine percent of the secure habitat is long-term (799,000) and 51% (842,000 acres) is short term secure habitat that would allow for management activities that could affect secure habitat (Figures 24 and 25).

Figure 24. Acres (in thousands) in the area estimated to biologically unsuitable for grizzly bears outside the PCA that is long and short term secure habitat on National Forest System Lands for each of the GYA National Forests.[1]

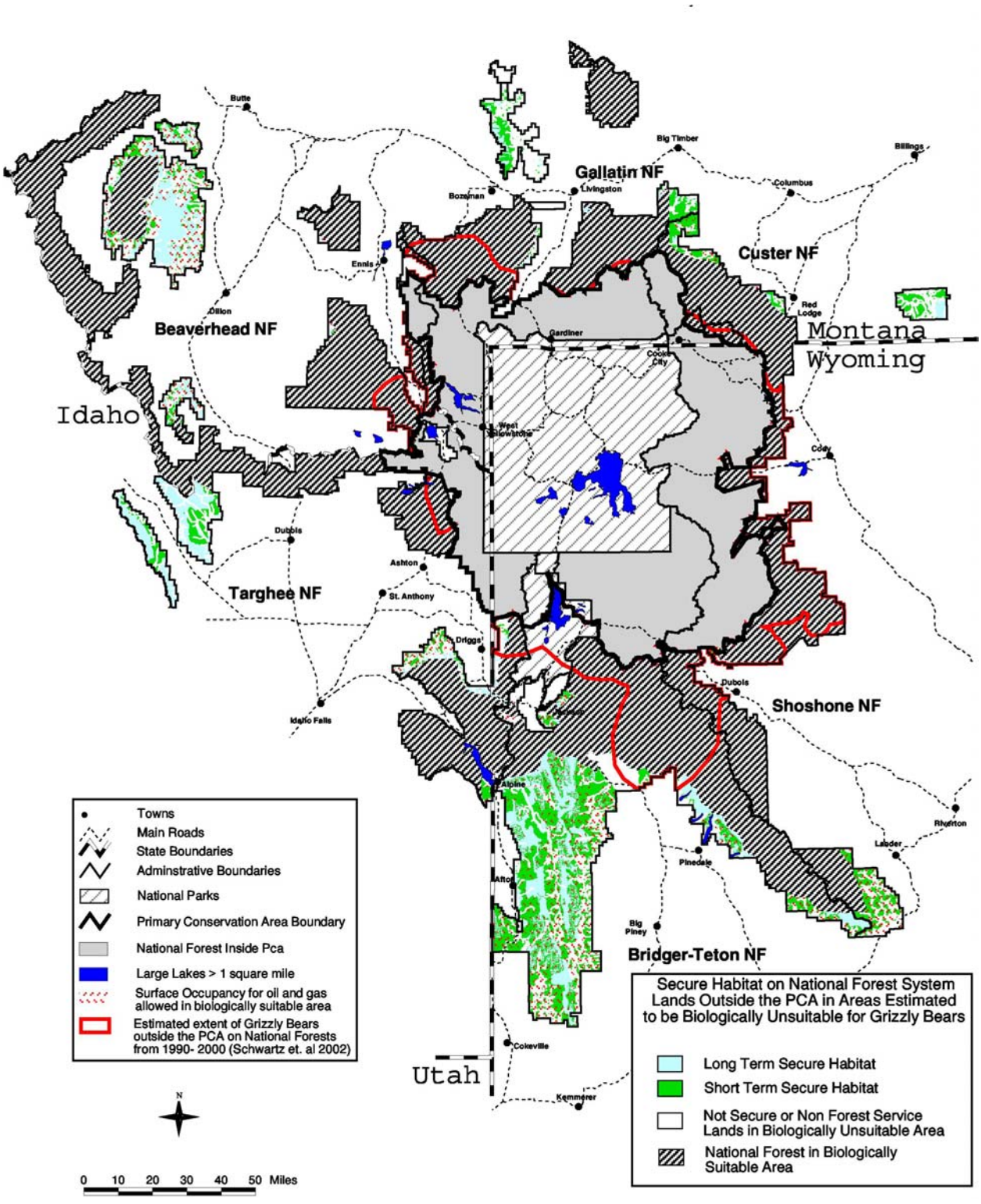
Forest	Biologically unsuitable habitat (outside the PCA)	Secure habitat acres and percent of area that is secure habitat	Acres of long term secure habitat and % of secure habitat that is long term secure	% of area that is long term secure habitat	Acres of short term secure habitat and % of secure habitat that is short term secure
Beaverhead	536	276 (51%)	197 (72%)	37%	79 (29%)
Bridger-Teton	1,438	933 (65%)	420 (45%)	29%	514 (55%)
Custer	148	77 (52%)	12 (15%)	8%	65 (85%)
Gallatin	149	91 (61%)	27 (30%)	18%	64 (70%)
Shoshone	132	56 (42%)	<1 (0.3%)	0.1%	56 (99.7%)
Targhee	381	208 (54%)	143 (69%)	37%	65 (31%)
Total	2,785	1,641 (59%)	799 (49%)	29%	842 (51%)

[1]These acres do not include acres of lakes > 640 acres. Large lakes comprise 15,000 acres within Forest Service proclaimed boundaries. Non-Forest Service inholdings are excluded except for the Bridger-Teton and Custer National Forests. Acres of non-Forest Service inholdings on the Gallatin National Forest have changed since the GIS coverages that generated these acres were developed.

Long term = secure habitat acres within Management Area Categories 1, 2, and 3.

Short term = secure habitat acres within Management Area Categories 4, 5, 6, and 8.

Figure 25. ***Secure habitat on National Forest System lands in the Biologically Unsuitable Area outside of the PCA***



Livestock Grazing within the PCA

The livestock grazing standard within the PCA in the preferred alternative identifies 1998 as the baseline year for monitoring changes in livestock grazing. The number of active commercial livestock grazing allotments within the PCA for the years 1998 and 2004 are displayed in Figure 26. The locations of these allotments are displayed in Figure 27. Seven sheep allotments, two on the Shoshone National Forest and five on the Targhee National Forest, were closed between 1998 and 2004. There are only 4 active sheep allotments remaining within the PCA, 2 on the Gallatin National Forest and 2 on the Targhee National Forest. The increase in numbers of cattle allotments and AMs between 1998 and 2004 is primarily the result of restocking vacant cattle allotments during the five-year period with some sheep allotments converted to cattle use.

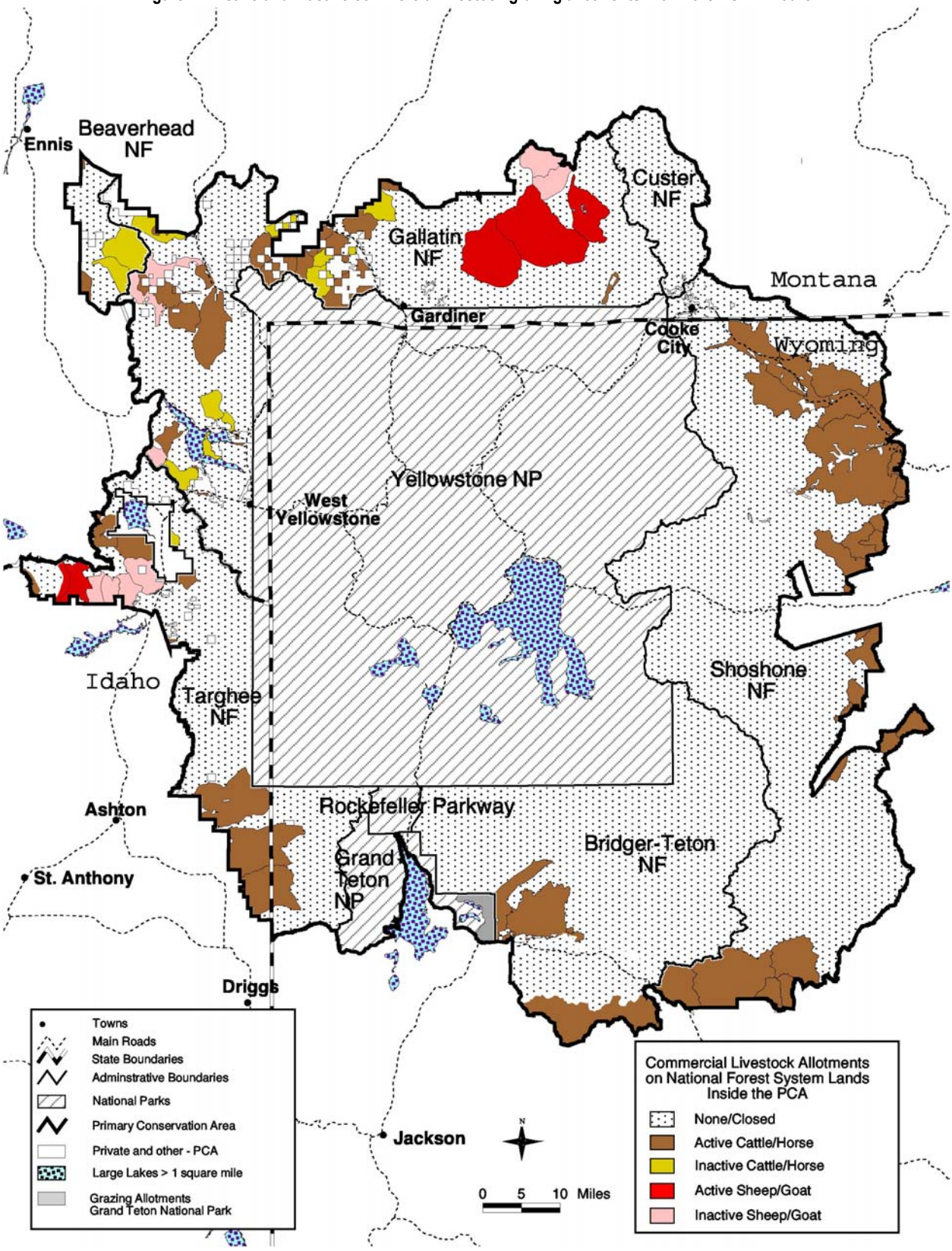
Figure 26. The number of active commercial livestock grazing allotments within the PCA for 1998 and 2004.

Year	Active sheep allotments	Active cattle allotments[1]	Total livestock allotments
1998	11	68	79
2004	4	70	74
Difference	-7	+2	-5

[1]Includes horse grazing.

Since 1998, and earlier in some cases, all grazing allotments that were entirely or partially within MS 1 or 2, and many allotments outside the PCA, have had Allotment Management Plans, Annual Operating Instructions, and/or Livestock Grazing Permits that allow an authorized Forest Service officer to order the immediate removal of livestock in the event of or to prevent grizzly bear/human conflicts. In addition, measures specifying the timely removal of livestock carcasses, food storage requirements, and protection of important grizzly bear food sources were included.

Figure 27. Active and inactive commercial livestock grazing allotments within the PCA in 2004.



Livestock Grazing Outside the PCA

The numbers of active commercial livestock grazing allotments in the BEBS outside the PCA for 2004 are displayed in Figure 28. Active sheep allotments (73 in total) are located on 3 National Forests, while active cattle allotments (280 in total) are located on all 6 of the National Forests.

Figure 28. Number of active commercial livestock grazing allotments in 2004 in the BEBS outside the PCA for each of the six national forests.

National Forest	Allotments in the BEBS outside the PCA	
	Cattle[1]	Sheep
Beaverhead	108	10
Bridger-Teton	35	24
Custer	13	0
Gallatin	47	0
Shoshone	33	0
Targhee	44	39
Total	280	73

[1] Includes horse grazing.

In the biologically unsuitable areas outside the PCA, there are 112 active cattle allotments and 61 active sheep allotments.

Figure 29 displays the location of all sheep and cattle allotments outside of the PCA.

Conflicts between livestock and grizzly bears have resulted in the relocation or removal of grizzly bears or the permitted livestock, depending on the location of the incident and the associated management situation designation. While there have been recent increases in bear conflicts with livestock in the Greater Yellowstone Area, the number of allotments, stocking rate, and distribution of livestock inside the PCA has not precluded achieving recovery of the grizzly bear. Most of the conflicts with grizzly bears and sheep have been resolved inside the PCA due to the closure of many of the affected allotments. Increases in conflicts with bears and livestock are primarily outside the PCA in areas where the grizzly bear is expanding its range. Conflicts with cattle and grizzly bears often occur sporadically, sometimes going years between incidents. However, several cattle allotments have a history of recurring conflicts (Figure 31). Recurring livestock/grizzly bear conflicts for this analysis are defined as three or more years of recorded conflicts during the most recent five-year period.

Figure 29. Location of all sheep and cattle allotments outside of the PCA.

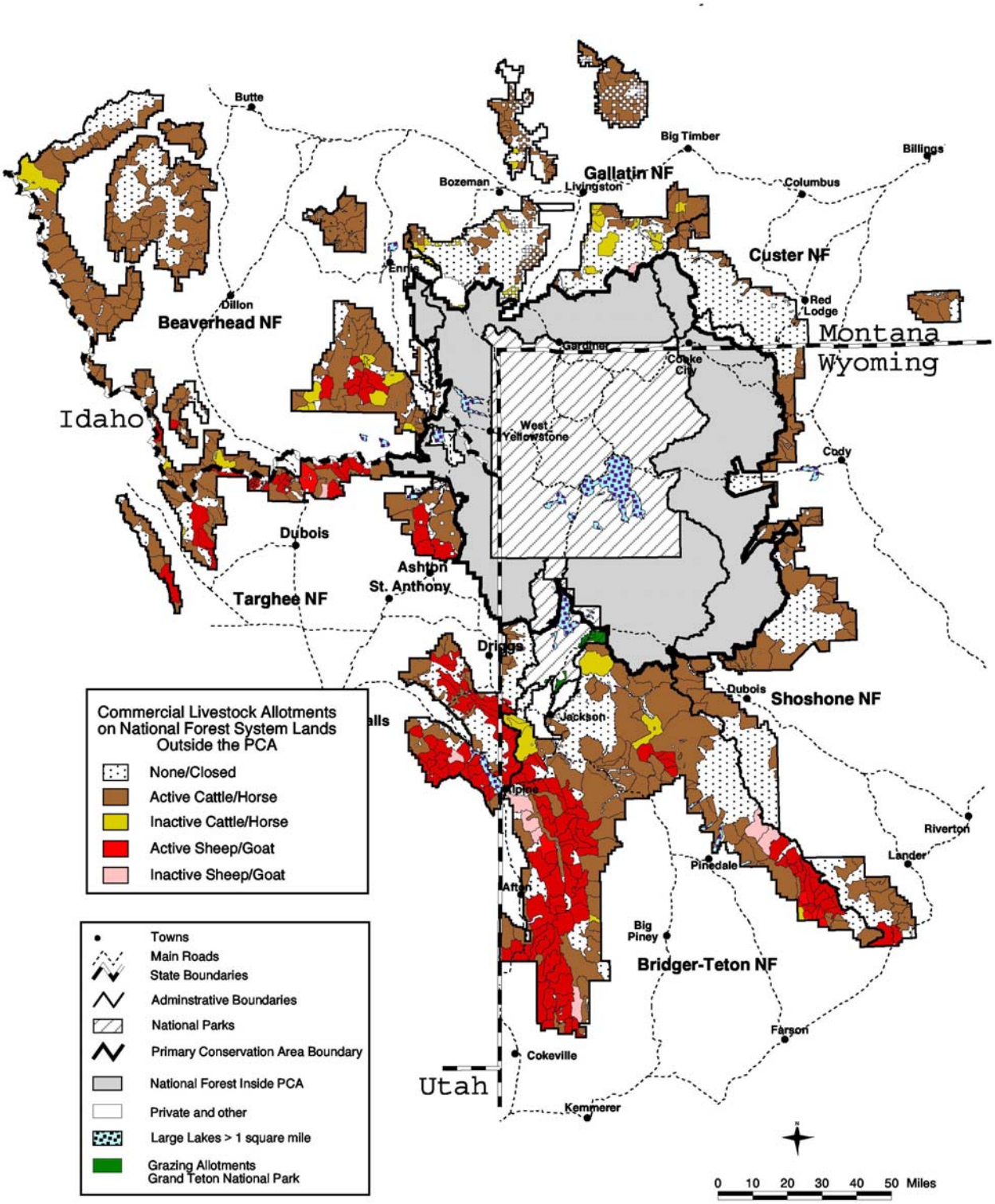


Figure 30. Number of active livestock allotments in 2004 inside the PCA and in the BEBS outside the PCA with grizzly bear/livestock conflicts, 1992 through 2004[1].

National forest	Allotments inside PCA		Allotments outside PCA (within the BEBS area)	
	Cattle[2]	Sheep	Cattle[2]	Sheep
Beaverhead	0	0	0	1
Bridger-Teton	3	0	2	4
Custer	0	0	0	0
Gallatin	0	1	0	0
Shoshone	12	0	9	0
Targhee	2	1	0	1
Total	17	2	11	6

[1] There are 3 cattle allotments on the Bridger-Teton NF with recurring conflicts (one inside PCA in MS 1). There are 2 cattle allotments with recurring conflicts on the Shoshone NF with recurring conflicts (Both inside PCA and 1 in MS1). There are no allotments with recurring conflicts on the other National Forests.

[2] Includes horse grazing.

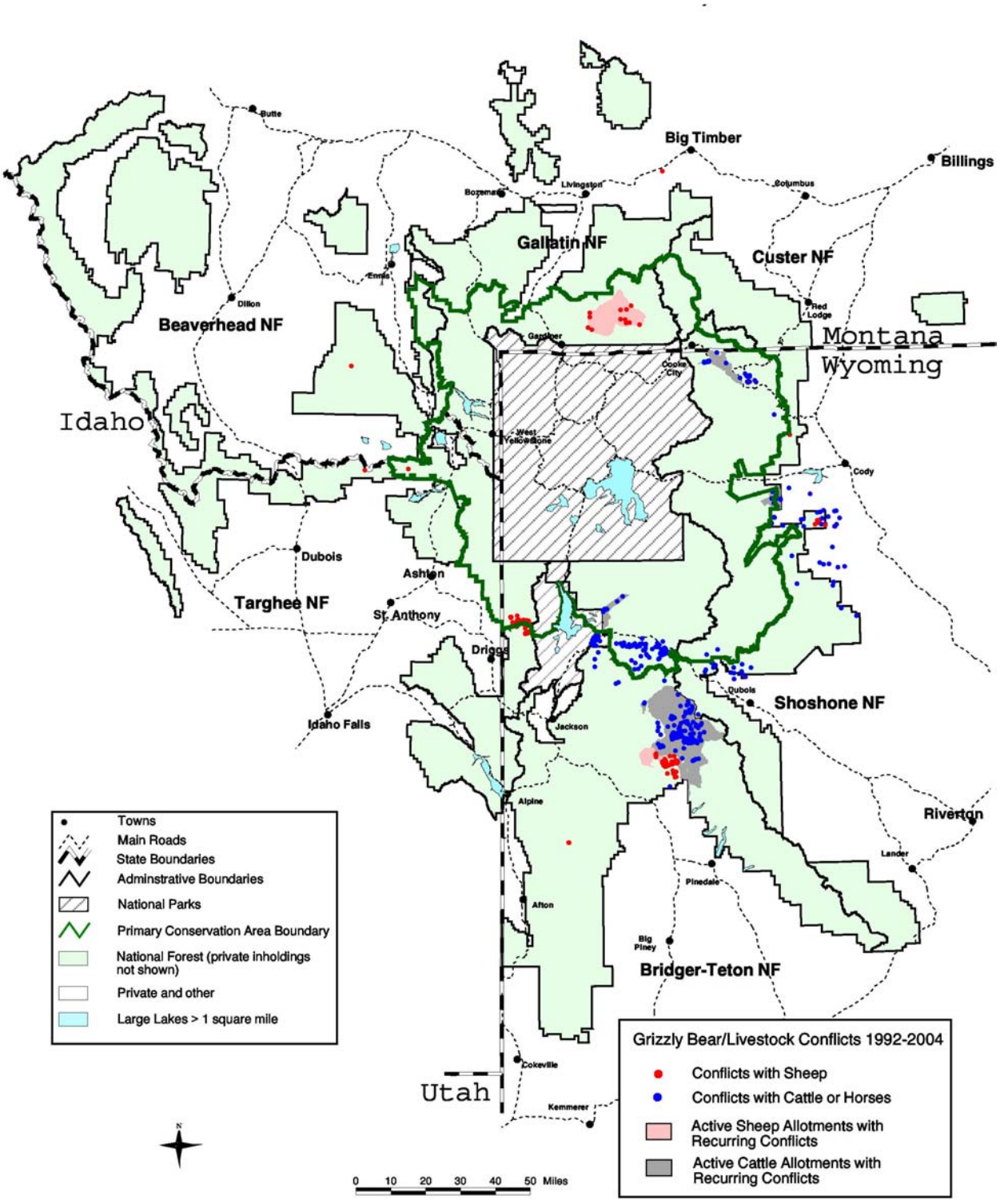
During the years 1992 through 2004, grizzly bear conflicts were documented on 17 of the 70 (24%) cattle allotments active in 2004 inside the PCA. Two of the four sheep allotments active in 2004 (50%) inside the PCA (Figure 30). had documented grizzly bear conflicts during this time. Several additional sheep allotments that had experienced conflicts with grizzly bears were closed between 1992 and 2004.

In 2004, in the BEBS outside the PCA, there were 280 active cattle allotments (Figure 28). During the years 1992 through 2004, there were 11 cattle allotments active in 2004 (4%) with documented grizzly bear conflicts. Six of the 73 sheep allotments active in 2004 (8%) in the BEBS outside the PCA had documented grizzly bear conflicts during this period. At least two cattle allotments that had conflicts with grizzly bears between 1992 and 2004 are currently vacant. The Custer, Gallatin, and Shoshone National Forests do not have any sheep allotments in the BEBS outside the PCA.

Figure 31 displays the locations of grizzly bear/livestock conflicts for the years 1992-2004.

There has been a general trend to reduce sheep allotments over the past 20 years, both inside and outside the PCA. Inside the PCA this has been in response to grizzly bear/livestock conflicts. Outside of the PCA this had been in response to address other resource management concerns such as disease transmission between bighorn sheep and domestic sheep, achieving a desired rangeland condition, or a decreased demand for grazing from the sheep industry.

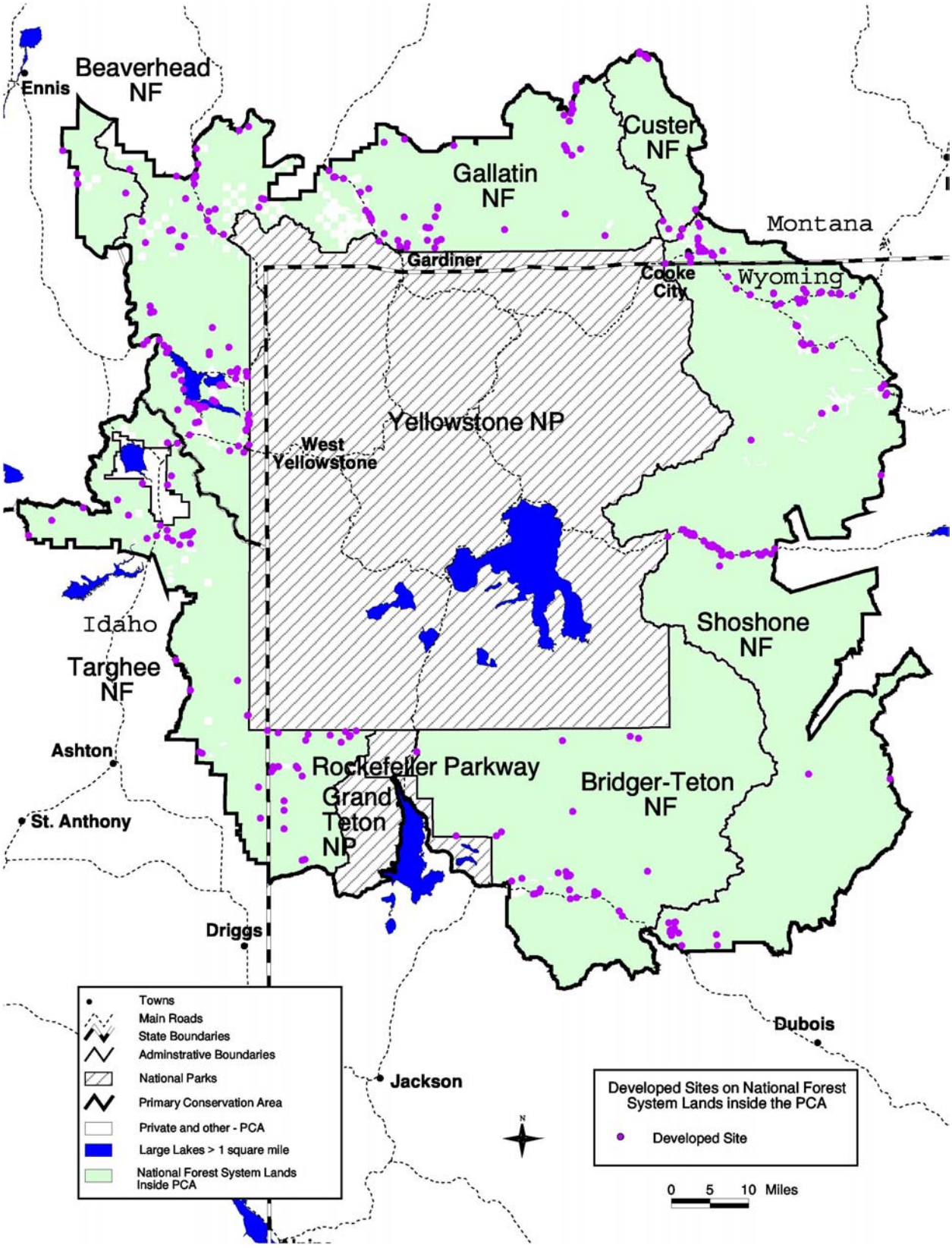
Figure 31. Locations of grizzly bear/livestock conflicts, 1992-2004.



Developed Sites Inside the PCA

Developed sites include all sites on public land developed or improved for human use or resource development such as campgrounds, trailheads, lodges, administrative sites, service stations, summer homes, restaurants, visitor's centers, and permitted resource development sites such as oil and gas exploratory wells, production wells, plans of operation for minerals activities, work camps, etc. Developed sites on public lands are currently inventoried in existing GIS databases and are an input item to the Yellowstone Grizzly Bear Cumulative Effects Model (CEM). Appendix D displays the number of developed sites for each administrative unit by BMU subunit as of 1998. Figure 32 displays the location of developed sites on National Forest System land.

Figure 32. Location of developed sites on National Forest System lands.



Summary of Management Actions Related to Habitat and Mortality Risk Implemented with Existing Forest Plans

The following is a brief summary of the actions and projects that national forests have accomplished both inside and outside the recovery zone to maintain or improve grizzly bear habitat and reduce grizzly bear/human conflicts. A more detailed list of the actions and projects for each national forest is included in the project record.

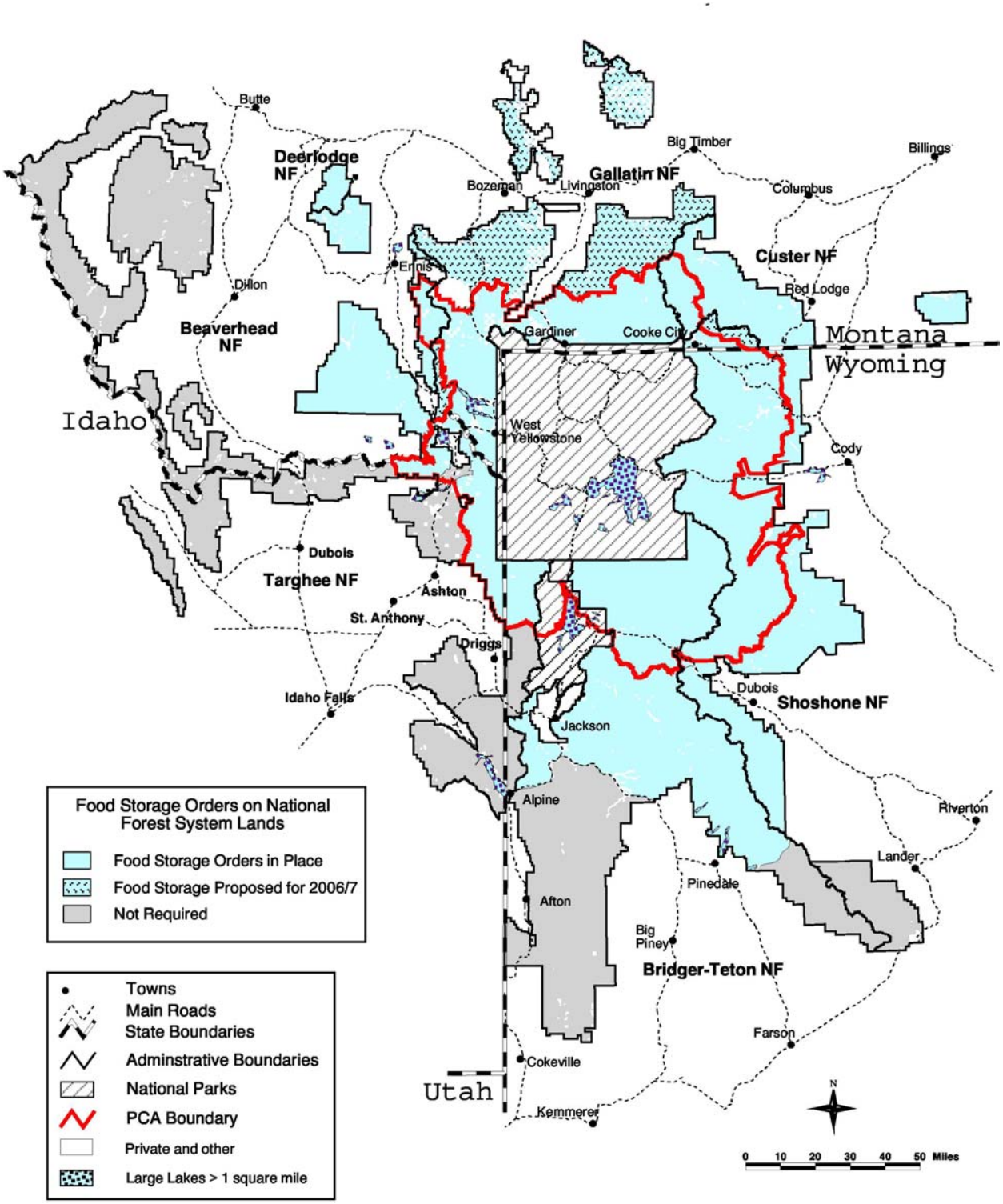
Food storage orders/regulations. Forests began implementing food storage orders in the mid to late 1980s. Food storage orders require the public to store food and garbage properly so bears cannot obtain access to the food or garbage. Food storage orders have been applied to the recovery zone and many areas outside the recovery zone (Figure 32a). In some areas where grizzly bears have expanded outside of the recovery zone, some forests have implemented voluntary sanitation programs to reduce grizzly bear/human conflicts. Efforts are currently underway to expand the food storage orders to additional areas outside of the recovery zone.

Bear resistant facilities/sanitation. Forests have provided bear resistant facilities (i.e. bear resistant food boxes, food tubes, garbage containers, meat hanging poles, panniers, etc.) at campgrounds, trailheads, dispersed campsites, and other areas. These bear resistant facilities have been provided within the recovery zone and some areas outside of the recovery zone. Some forests have programs to loan or rent bear resistant facilities to the public for short-term uses. National forests have worked with local communities to fence garbage dumps and close garbage dumps to resolve conflicts with grizzly bears. The Forest Service has worked with communities, counties, and organizations to implement food and garbage storage ordinances and to provide bear resistant garbage containers on lands outside of the national forests.

Information and education. Substantial information and education materials (pamphlets, brochures, signs, videos, etc.) and programs have been provided to the public at all GYA Forest Service offices. Signs and brochures are available at campgrounds, trailheads, dispersed recreation sites, picnic areas, etc. Forests contributed financing for the production of the information and education film “Living in Grizzly Country.” Forests have cooperated with state wildlife management agencies and other cooperating institutions and individuals in giving “Living in Bear Country Workshops,” which includes bear identification, safe camping, hiking, hunting, and working procedures to use in bear country, and the proper use of bear deterrent pepper spray. Wilderness rangers and other backcountry patrols have been used to inform and educate the public on food storage orders, and to check on compliance with these orders. Field patrols have been used during hunting seasons to reduce hunter-caused conflicts and grizzly bear mortalities.

Special grizzly bear requirements in contracts and permits. Contracts and special use permits contain clauses requiring protection of the grizzly bear and its habitat, and proper food storage and sanitation. Some contract and permit clauses require temporary or permanent cessation of permitted activities to resolve grizzly bear/human conflicts. Timber sale prescriptions and contracts incorporate provisions to protect grizzly bear habitat, for example, silvicultural prescriptions maintain or enhance food sources, timing clauses reduce chances of grizzly bear/human conflicts, and contract clauses require proper food storage and sanitation and temporary or permanent cessation of permitted activities to resolve grizzly bear/human conflicts. Oil and gas leases have been modified to protect grizzly bear habitat.

Figure 32a. The area covered by food storage orders on National Forest System lands in the GYA.



Access restrictions/regulations. Important food sites (such as army cutworm moth sites) have been identified, with management emphasis to keep new trails and other human activities away from these sites. Roads and trails have been decommissioned (permanently closed) or restricted to motorized access to provide security for grizzly bears. Ninety-Eight percent of the National Forests in the GYA, both inside and outside the recovery zone are closed to cross-country motorized travel to provide security and habitat protection. Areas have been closed to overnight camping to avoid grizzly bear/human conflicts. Temporary area closures have been implemented when necessary to resolve grizzly bear/human conflicts. Annual monitoring is performed to evaluate compliance with access restrictions and to provide information and education to the public. Gates and signs are maintained annually. The Forest Service has completed formal consultation with the USFWS on the effects of snow machine use on grizzly bears.

Black bear baiting. In Idaho and Wyoming, forests have worked with state wildlife management agencies to prohibit black bear baiting within the recovery zone, and to educate hunters on the identification of grizzly bears. Black bear baiting is illegal in Montana.

Whitebark pine. Whitebark pine seeds are an important food source for grizzly bears. A GYA Whitebark Pine Task Group has been formed to gather information on the status of this tree in the GYA. Current work on whitebark pine includes planting in several areas of the GYA to provide long-term habitat improvement, cone collection from healthy superior trees, silvicultural treatments to improve growth and establishment, prescribed burning to encourage whitebark pine seedling establishment, inventory and blister rust surveys, inventories to locate superior trees, work to prevent mountain pine bark beetle attacks on superior trees, and reading of whitebark pine cone production transects every year in cooperation with the IGBST.

In 2004 51 transects were established and monitored by the GYA Whitebark Pine Task Group to evaluate the viability and health of whitebark pine stands inside the grizzly bear recovery area (Dennitto et. al 2004). Additional transects will be established outside the recovery area in 2005 and 2006. Each transect will be monitored every 5 years. The U.S. Geolological Survey completed the first draft of a map in 2004 that displays the distribution of whitebark pine within the GYA (Podruzney et. all 2004).

Planning, coordination, monitoring, and cooperation. The Guidelines, developed in cooperation with other federal and state agencies, have been incorporated into existing forest plans and have provided the overall management direction for maintaining or improving grizzly bear habitat on National Forest System lands. Forest Service personnel contributed to the development of the Conservation Strategy and the state management plans for the grizzly bear, and participated in annual coordination meetings with state agencies, other federal agencies, organizations, and various committees. In cooperation with other federal agencies, the Forest Service developed the grizzly bear Cumulative Effects Model (CEM) to help assess the habitat value and the habitat effectiveness of grizzly bear habitat within the recovery zone. The Forest Service cooperates in the collection of data on the grizzly bear population and habitat throughout the GYA. The national forests also work cooperatively with the USFWS and state wildlife management agencies on nuisance grizzly bear management.

Livestock grazing. To resolve conflicts with grizzly bears, many domestic sheep allotments both within and outside the recovery zone have been closed. Portions of cattle allotments have been rested from cattle grazing to reduce conflicts with grizzly bears, and one cattle allotment has been closed to grazing. Livestock grazing permits include special provisions such as proper food and attractant storage and carcass removal. Annual monitoring of livestock allotments is performed to check on compliance and conflicts. Animal carcasses are disposed of to reduce conflicts with grizzly bears.

Land adjustment. On the Gallatin, Shoshone, and Targhee National Forests, important grizzly bear habitat has been acquired through land exchanges and acquisitions.

Summary of Existing Direction for all GYA National Forests

Direction for long-term maintenance of secure habitat would continue as per the management area direction for individual forest plans, and would primarily occur in Management Area Categories 1, 2 and 3. Any changes in secure habitat and motorized access route density outside of management areas that preclude road construction would be determined through analysis directed by the Guidelines for each management situation and other specific forest plan direction. Reductions in secure habitat and increases in motorized access route density could occur.

Any proposed changes in the number and capacity of developed sites would primarily be evaluated as directed by the Guidelines according to the management situation. In most situations increases could occur, especially in MS 2 and MS 3 areas.

Increases in the number of allotments or number of sheep would be directed primarily by the Guidelines; increases could occur, particularly in MS 2 and MS 3.

Inside the recovery zone, all forests (except 2.4% of the Targhee National Forest and 8.6% of the Bridger-Teton National Forest) would restrict motorized access to designated routes.

Over-the-snow use would be monitored and mitigated around known denning sites, according to the terms and conditions of the 2002 Biological Opinion on the Effects of Snowmobile Use on Grizzly Bears (USDI FWS 2002). The Targhee National Forest would restrict over-the-snow use to resolve specific conflicts with grizzly bears.

Most areas inside the recovery zone would be either not available for oil and gas leasing, or the no surface occupancy stipulation would apply. Approximately 2.8% of National Forest System lands in the recovery zone are available for surface occupancy for oil and gas leasing. Outside the recovery zone, oil and gas leasing would vary by forest. Hardrock minerals and salable minerals operations would be allowed and mitigated under current laws and regulations and forest plan standards.

Direction to keep human food and garbage and pet and processed livestock foods unavailable to bears is included in all forest plans as per the Guidelines.

BMUs and subunits have been used for over a decade to evaluate population and habitat information inside the recovery zone (Figure 3 and Appendix D). Subunits provide the optimal scale for evaluation of seasonal feeding opportunities and landscape patterns of food availability for grizzly bears (Weaver et al. 1986). Existing forest plans, except the Gallatin Forest Plan and the 1997 Revised Targhee Forest Plan, do not contain specific direction for management of habitats by subunit. However, habitat inside the PCA on all forests would continue to be evaluated and monitored by subunits in cooperation with the IGBST. Individual forests would monitor whitebark cone production in cooperation with the IGBST, as part of monitoring grizzly bear food sources.

Bear baiting, under state direction, is not allowed inside the PCA. Outside the PCA, Montana is closed to bear baiting, Idaho is open for black bear baiting, and Wyoming allows bear baiting in most areas, unless conflicts occur with grizzlies (some areas are currently closed).

Determination of Effects

To provide the rationale for the determination of effects, a few displays will first be presented that compares the preferred alternative (Alternative 2-Modified) to the environmental baseline (the existing forest plans).

Comparison of Grizzly Bear Habitat Management Direction between the Environmental Baseline and the Preferred Alternative

Figure 33 provides a comparison between the environmental baseline and the preferred alternative for the goals, standards and guidelines that apply to grizzly bear habitat.

Figure 33. Comparison between the environmental baseline and the preferred alternative.

Environmental Baseline (Existing Forest Plans/Alternative 1)	Preferred Alternative (Alternative 2 – modified)
Goal All forest plans have direction to provide suitable and adequate amounts of habitat for recovery of a viable grizzly bear population in the GYA as identified in the Recovery Plan.	Goal Manage grizzly bear habitat within the PCA to sustain the recovered Yellowstone grizzly bear population. Outside the PCA in areas identified in state management plans as biologically suitable and socially acceptable for grizzly bear occupancy, accommodate grizzly bear populations with other land use activities, if feasible[6], but not to the extent of the exclusion of other uses.
Secure habitat Long-term secure habitat maintained by existing forest plan direction. Short-term secure habitat could change with changes in motorized access routes following existing forest plan management direction. Consultation with USFWS required for all access decisions in occupied grizzly bear habitat.	Standard 1 - Secure Habitat Inside the PCA, maintain secure habitat in BMU subunits at or above 1998 (Appendix D) levels. Mitigation allowed using Application Rules (Appendix B). (Outside the PCA – Same as environmental baseline, except no consultation with USFWS as the grizzly bear would be delisted.)
Developed sites Consultation with USFWS using the Guidelines required for all developed site decisions.	Standard 2 - Developed Sites Inside the PCA, maintain the number and capacity of developed sites at or below 1998 levels, with the following exceptions: any proposed increase, expansion, or change of use of developed sites from the 1998 baseline in the PCA (as described in Appendix D) is analyzed and potential detrimental and positive impacts on grizzly bears are documented through biological evaluation or assessment. Other exceptions and mitigation must follow application rules (Appendix B).

[6] . *"Feasible" means one which is compatible with (does not make unobtainable) major goals and objectives of other uses.*

Environmental Baseline (Existing Forest Plans/Alternative 1)	Preferred Alternative (Alternative 2 – modified)
Livestock grazing Grizzly bear/livestock conflicts in MS 1 favor the grizzly bear.	Standard 3 - Livestock Grazing Inside the PCA, do not create new active commercial livestock grazing allotments, do not increase permitted sheep AMs from the identified 1998 baseline, and phase out existing sheep allotments as opportunities arise with willing permittees (see Application Rules for livestock grazing standard in Appendix B).
Livestock grazing Grizzly bear/livestock conflicts in MS 1 favor the grizzly bear.	Guideline 2 – Livestock Grazing Inside the PCA, cattle allotments or portions of cattle allotments with recurring conflicts that cannot be resolved through modification of grazing practices may be retired as opportunities arise with willing permittees. Outside the PCA in areas identified in state management plans as biologically suitable and socially acceptable for grizzly bear occupancy, livestock allotments or portions of allotments with recurring conflicts that cannot be resolved through modification of grazing practices may be retired as opportunities arise with willing permittees (see Application Rules for livestock grazing guideline in Appendix B).
Nuisance bears Nuisance bear management is guided by the Guidelines.	Standard 5 - Nuisance Bears Coordinate with state wildlife management agencies to apply Conservation Strategy nuisance bear standards.
Motorized access Inside the PCA, all forest plans restrict motorized access to designated routes. Over-the-snow use is monitored and would be mitigated around known denning sites.	Guideline 1 – Winter motorized access Inside the PCA, localized area restrictions would be used to address conflicts with winter use activities, where conflicts occur during denning or after bear emergence in the spring.
Oil and gas leasing Most areas inside the PCA are either not available or no surface occupancy for oil and gas leasing. Outside the PCA, oil and gas leasing varies by forest.	Oil and gas leasing Same as environmental baseline. New leases, APDs, and operating plans would meet Standards 1 and 2.
Recreation conflicts The Guidelines provide direction for grizzly bear/human conflicts at developed and dispersed sites.	Recreation conflicts See Standard 5.
Food sources The Guidelines provide direction for grizzly bear habitat improvement, including whitebark pine.	Guideline 4 – Food Sources Inside the PCA and outside the PCA in areas identified in state management plans as biologically suitable and socially acceptable for grizzly bear occupancy, maintain the productivity, to the extent feasible, of the four key grizzly bear food sources as identified in the Conservation Strategy. Emphasize maintaining and restoring whitebark pine stands inside and outside the PCA.

Environmental Baseline (Existing Forest Plans/Alternative 1)	Preferred Alternative (Alternative 2 – modified)
Bear baiting Bear baiting is not allowed inside the PCA, per state regulations. Outside the PCA, state management varies.	Bear baiting Same as environmental baseline.
Food storage Food storage orders would remain in place in all areas inside the PCA and in some areas outside the PCA.	Standard 6 - Food Storage Inside the PCA, minimize grizzly bear/human conflicts using food storage, information and education, and other management tools. Guideline 3 – Food Storage Outside the PCA in areas identified in state management plans as biologically suitable and socially acceptable for grizzly bear occupancy, emphasize proper sanitation techniques, including food storage orders, and information and education, while working with local governments and other agencies
Monitoring Monitoring under forest plan direction would continue; generally this includes, but is not limited to, population and habitat parameters in cooperation with Interagency Grizzly Bear Study Team.	Monitoring Item 1 – Secure Habitat and Motorized Access Inside the PCA, monitor, and annually submit for inclusion in the Interagency Grizzly Bear Study Team Annual Report: secure habitat, open motorized access route density (OMARD) greater than one mile/square mile, and total motorized access route density (TMARD) greater than two miles/square mile in each subunit on the National Forest. Outside the PCA in areas identified in state management plans as biologically suitable and socially acceptable for grizzly bear occupancy, monitor, and submit for inclusion in the IGBST Annual Report changes in secure habitat by national forest every 2 years.
No specific direction.	Monitoring Item 2 – Developed Sites Inside the PCA, monitor, and annually submit for inclusion in the Interagency Grizzly Bear Study Team Annual Report: changes in the number and capacity of developed sites on the national forest, and compare with the 1998 baseline identified in Appendix D.
No specific direction.	Monitoring Item 3 – Livestock Grazing Inside the PCA, monitor, and annually submit for inclusion in the Interagency Grizzly Bear Study Team Annual Report: the number of commercial livestock grazing allotments on the national forest and the number of permitted domestic sheep AMs within the PCA. Monitor and evaluate allotments for recurring conflicts.

Environmental Baseline (Existing Forest Plans/Alternative 1)	Preferred Alternative (Alternative 2 – modified)
No specific direction.	Monitoring Item 4 – Habitat Effectiveness Inside the PCA, measure changes in seasonal habitat effectiveness in each BMU and subunit on the national forest by regular application of the Cumulative Effects Model (CEM) or the best available system and compare outputs to the 1998 baseline. Annually review CEM databases, and update as needed. When funding is available, monitor representative non-motorized trails or access points where risk of grizzly bear mortality is highest.
No specific direction.	Monitoring Item 5 – Whitebark Pine Systematically monitor whitebark pine occurrence, productivity, and health inside and outside the PCA in cooperation with other agencies.

Comparison of 1986 Interagency Grizzly Bear Guidelines to the Preferred Alternative Standards and Guidelines

In the environmental baseline, existing forest plans incorporated the management direction in the 1986 Interagency Grizzly Bear Guidelines (often referred to as just the Guidelines). The standards and guidelines in the Preferred Alternative will replace the Guidelines. Figure 34 provides a comparison between a summary of the Guidelines and the Preferred Alternative standards and guidelines. The Guidelines only apply with the PCA. All standards and some of the guidelines in the preferred alternative also only apply to the PCA, but several of the guidelines in the preferred alternative apply to areas identified in state management plans as biologically suitable and socially acceptable for grizzly bear occupancy outside the PCA.

Figure 34. Comparison of significant portions of the 1986 Interagency Grizzly Bear Guidelines and the Preferred Alternative Standards and Guidelines

Management Situations	Interagency Grizzly Bear Guidelines (Guidelines)	Preferred Alternative Standards and Guidelines (PA)
Sit 1	59.3 % of National Forest System land within the PCA is Sit 1.	There is no distinction between Sit 1 and Sit 2 within the PCA.
Sit 1	Guidelines are almost silent on developed sites except for minimizing conflicts. They say little about adding new developed sites or increasing capacity but rather stress keeping human foods away from bears. Food storage order deals with most of the items in the guidelines in minimizing grizzly-human conflict potential column.	PA deals with dev sites much better than the guidelines. The PA developed site standards apply to all developed sites inside the PCA. The PA food storage standard requires the minimization of grizzly bear conflicts using food storage and other management tools in all areas inside the PCA. Food storage orders on each NF take care of the 'minimize grizzly human conflict potential' (middle column) in the Guidelines.
Sit 1	The guidelines specify measures to be taken within the different resource management systems, which will protect, maintain and improve grizzly bear populations and habitat.	In the PA, the secure area standard and the developed site standard apply to all resource management systems, and were developed to protect, maintain and improve grizzly bear populations and habitat. The grazing standards in the PA will protect, maintain and improve grizzly bear populations and habitat. The PA food storage standard requires the minimization of grizzly bear conflicts using food storage and other management tools in all areas inside the PCA. Food storage orders provide additional direction for a myriad of recreation conflict issues. The food sources guideline provides direction for maintaining the productivity of the 4 key grizzly bear foods.
Sit 1	Contracts, operating plans and special use permits will include specific measures to protect, maintain and/or improve grizzly habitat and meet management goals and objectives and clauses requiring cancellation or temporary cessation of permits if needed to resolve a conflict.	The primary measure used under the Guidelines to protect, maintain and/or improve grizzly bear habitat was the management of human attractants. Food storage orders on each NF and PA nuisance bear guidelines would continue to provide the necessary direction. Such clauses and measures have become standard operating procedure on all six National Forests.

Management Situations	Interagency Grizzly Bear Guidelines (Guidelines)	Preferred Alternative Standards and Guidelines (PA)
Sit 1	Grizzly bear habitat will be improved through vegetation manipulation. Methods listed.	There is little opportunity to improve grizzly bear habitat through vegetation manipulation (Mattson et al. 2003). Some opportunities exist for improvement for specific seasonal habitat values but the same treatment would decrease habitat values for other seasons. Secure habitat was deemed to be more important than the ability to do vegetation management. The FS can still identify ways to improve vegetation such as whitebark pine and prescribed fire within the secure habitat standard. Most plans have identified management areas and guidelines to protect import winter range habitats. The GYCC has formed a committee to monitor and enhance whitebark habitats. The food sources guideline provides direction for maintaining the productivity of the 4 key grizzly bear foods with an emphasis on maintaining and restoring whitebark pine stands.
Sit 1	Silvicultural treatments will be designed to maintain or favor a mature, cone-producing stand of whitebark pine where it exists within a sale (also in sit 2).	See comment in previous item above.
Sit 1	Grizzly habitat enhancement through a silvicultural treatment; sale area improvement or managed burning will not be done in close proximity to private property, resorts etc	National fire plan consultation streamlining provides specific direction for how vegetation manipulation should occur near these types of facilities to avoid attracting grizzly bears. All such sites are outside of secure habitat.
Sit 1	All roads used for timber sale purposes or minerals activities will be single purpose roads only, and will be closed to public use not associated with timber sale operation and administration. Some exceptions. (In Sit 2 the qualifier, "if the road provides access to an important grizzly use area or MS 1 area")	Any new roads created into secure habitat under the PA will either be mitigated by creating new secure habitat or will be temporary roads specifically for the identified project. There is little opportunity for new road construction outside of secure habitats.
Sit 1	**Nuisance guidelines**	Nuisance bear standards are part of the PA.
Sit 1	Trails and roads accessing areas with histories of grizzly-human encounters or areas where such encounters are probable or likely will be closed to human use either temporarily or permanently as necessary to reduce conflict potential.	Most roads with a history of bear/human conflicts have been closed or seasonally restricted. Secure areas currently contain the habitats most important to bears. The secure habitat standard limits the development of new roads. In addition, roads and trails outside secure habitat will be managed to minimize human/bear conflicts as identified in the nuisance bear standard.
Sit 1	Special care will be taken to assure that camping, grazing activities, and trail and road construction will not degrade or compromise important grizzly use areas (forage sites, denning areas or travel routes).	Secure areas currently contain the habitats most important to bears. The secure habitat standard limits the development of new roads. The grazing standard does not allow for any increase in grazing allotments or sheep AM's, and sheep allotments will be phased out on an opportunity basis. In

Management Situations	Interagency Grizzly Bear Guidelines (Guidelines)	Preferred Alternative Standards and Guidelines (PA)
		addition, the site development standard requires mitigation for any increase or change in developed sites. Denning habitat is abundant and has never been identified as a limiting factor. The food sources guideline provides direction for maintaining the productivity of the 4 key grizzly bear foods.
Sit 1	Mineral exploration and/or development activities and logging and/or burning activities will occur at a time or season when the area is of little or no biological importance to grizzlies.	The secure habitat and developed site standards significantly limit the level of development or vegetation management activities. Biological evaluations conducted, as part of any project will provide additional guidance for timing of activities that may affect grizzly bears.
Sit 1	Allotment management plans will specify measures for the timely removal, destruction or treatment of livestock carcasses. Allotment management plans will specify measures to protect, in time and space, food production areas vitally import to grizzlies (also in Sit 2).	Such clauses and measures are included in permits and allotment management plans as standard operating procedure in most cases on all six National Forests. The grazing standard does not allow for any increase in grazing allotments or sheep AM's, and sheep allotments will be phased out on an opportunity basis. The food storage order requires the management of carcasses to avoid conflicts with grizzly bears. The nuisance standard also identifies guidelines for attractant management.
Sit 1	Logging and/or fire management activities, minerals activities, special uses and grazing activities which will adversely affect grizzly bear populations and their habitat, will not be permitted. (Adverse habitat effects are reductions in habitat quantity or quality).	The secure habitat standard significantly limits the amount of vegetation management or minerals activities that require road construction in secure habitat. Any loss of secure habitat through these activities will be mitigated with habitat of equal or higher value to bears. Many areas will likely be precluded from any future management requiring motorized access in secure habitat due to this standard. The grazing standard precludes any increases in areas grazed by livestock and calls for the reduction in sheep numbers. The PA standards, based on the 1998 habitat baseline, were identified as the habitat standards required to maintain a recovered grizzly bear population and also to allow for an increase in numbers and distribution. The food sources guideline provides direction for maintaining the productivity of the 4 key grizzly bear foods with an emphasis on maintaining and restoring whitebark pine stands.
Sit 1	(Recreation activities) Existing or proposed uses which will adversely affect grizzly populations and/or their habitat will be terminated, removed, relocated or denied. (Adverse habitat effects are reductions in habitat quantity or quality).	In the PA, the developed site standard requires maintenance of developed sites at 1998 levels. This level of developed sites was identified as the level that could be maintained and allow for an increasing bear populations. Any change must be mitigated. The PA food storage standard requires the minimization of grizzly bear conflicts using food storage and other management tools in all areas inside the PCA. The food storage

Management Situations	Interagency Grizzly Bear Guidelines (Guidelines)	Preferred Alternative Standards and Guidelines (PA)
		orders require management of attractants at all recreation sites. The nuisance bear standards also provide guidance on the management of facilities to minimize bear/human conflicts.
Sit 1	In cases of grizzly human conflict or grizzly-livestock depredation, if the problem bear is not determined to be a nuisance then correct the problem immediately by removing the man-related cause. (i.e. if the bear was attracted by improperly stored human foods, or if the domestic livestock are disrupting the grizzly's natural activities in meeting its biological needs).	The grazing standard in the PA is designed to phase out (eventually to do away with) all sheep grazing in the PCA and limit expansion of cattle grazing in the PCA. The grazing guideline allows for the retirement of cattle allotments that experience recurring conflicts with grizzly bears. The nuisance bear standards provide guidance in the management of livestock in cases of grizzly bear depredation. The PA food storage standard requires the minimization of grizzly bear conflicts using food storage and other management tools in all areas inside the PCA. The food storage orders require proper management of attractants.
Sit 1	On sheep allotments where grizzly-livestock depredation has been authenticated, adjustments will be made for the primary purpose of grizzly bear conservation. This may mean, changes in season of use, grazing practices, changing class of livestock or removing livestock and closing the allotment.	The grazing standard in the PA is designed to do away with all sheep grazing in the PCA. The nuisance bear standards also provide additional guidance on management of livestock.
Sit 2	37.3% of National Forest System land inside the PCA is Sit 2. Most of the conflicts and loses are similar under Sit 2. However, the guidelines for Sit 2 are qualified by the following statements: "If grizzly use does not constitute need for species survival and recovery then proceed with project;" "where populations and habitats use is likely;" "if feasible will be avoided;" "specify feasible measures;" "operating plans etc will include feasible measures to protect and maintain grizzly bear habitat;" "Habitat improvement will generally not be a consideration. If it is, where indicated, habitat will be improved if feasible."	In the PA, the secure habitat standard and the developed site standard and the livestock grazing standard apply equally to all areas in the PCA. The PA food storage standard requires the minimization of grizzly bear conflicts using food storage and other management tools in all areas inside the PCA. The existing food storage orders apply to all Sit 2 areas in the PCA. The nuisance bear guidelines apply to all areas in the PCA. In general the PA provides more specific direction than the guidelines in Sit 2 areas.

Management Situations	Interagency Grizzly Bear Guidelines (Guidelines)	Preferred Alternative Standards and Guidelines (PA)
Long-termSit 3	Nuisance guidelines make it easy to relocate or remove the bear.	Nuisance standard allows for preemptive relocation of bears in these areas.
Sit 3	Grizzly habitat needs are not a consideration.	Most of these habitats are outside of secure habitat and thus the secure habitat standard does not apply.
Sit 3	Guidelines require similar measures as Sit 1 and Sit 2 to minimize grizzly bear-human conflicts and for meeting grizzly bear management goals.	The developed site standard requires maintenance of the 1998 level of developed sites in these old sit 3 areas. The PA food storage standard requires the minimization of grizzly bear conflicts using food storage and other management tools in all areas inside the PCA (at the present time, food storage requirements do not apply to the Sit 3 area on the C-T NF; the C-T is working with Fremont County to implement a county sanitation order that would apply to the Sit 3 area and additional areas).
Outside PCA	With the exception of the Targhee NF, no National Forest System land outside of the PCA has been identified as Sit 1, 2 or 3. Therefore, outside of the PCA, there is no management direction provided by the guidelines. On the Targhee, there is a small area of Sit 3 identified outside of the PCA.	In the PA, management direction outside the PCA includes a goal for grizzly bear occupancy, a guideline for livestock grazing, a guideline for maintaining the productivity of food sources, a guideline for food storage, a monitoring item for secure habitat, and a monitoring item for whitebark pine. Also, the Forests would work with the States in managing nuisance bears outside the PCA as identified in State grizzly bear management plans.

Comparison of Secure Habitat Within the PCA

Under the environmental baseline, there are 2,827,000 acres of secure habitat on National Forest System lands within the PCA, which is 83% of the National Forest System lands within the PCA (87% of the existing secure habitat is considered long-term secure, and 13% allows for management activities that may temporarily or permanently reduce the amount of secure habitat) (Figure 35).

Compared to the environmental baseline, the preferred alternative increases the amount of long-term secure habitat inside the PCA, but allows temporary changes in a portion of the long-term secure habitat according to the 1% rule (Figure 35, 35a and Appendix B). The long-term secure habitat subject to the 1% rule was defined as short-term secure habitat in the environmental baseline as it is within management area types 4,5,6 and 8 that allows for management activities. However, under the preferred alternative any secure habitat affected by the 1% rule would be restored after project completion. Even if all subunits had projects going simultaneously within subunits on National Forest System lands inside the PCA, which is unlikely, only 29,500 acres of secure habitat could be affected at any one time (Figure 35). This means that in the worst case, 82% of the habitat on National Forest System Lands inside the PCA would always be secure.

Potential for oil and gas development There are no active oil and gas leases inside the PCA. Under the environmental baseline oil and gas development could occur but surface occupancy is only allowed on 3% of the National Forest System lands inside the PCA. Management direction about oil and gas would not be changed under the environmental baseline. Requirements for wildlife protection are provided in 36 CFR 228.108(f), which requires operators to comply with ESA.

Leasing decisions have yet to be made for the Gallatin and a small portion the Bridger-Teton inside the PCA.

Areas available for surface occupancy are not changed under the preferred alternative. However, the mitigation necessary under the developed site and secure habitat standards makes oil and gas development even more unlikely than under the environmental baseline. New proposals inside the PCA would likely have to be mitigated by closing out other types of developed sites or consolidating dispersed camping sites and closing roads to maintain the 1998 levels of developed sites and secure habitat. The Gallatin and Bridger-Teton National Forests' future oil and gas decisions would be constrained by the direction in the preferred alternative.

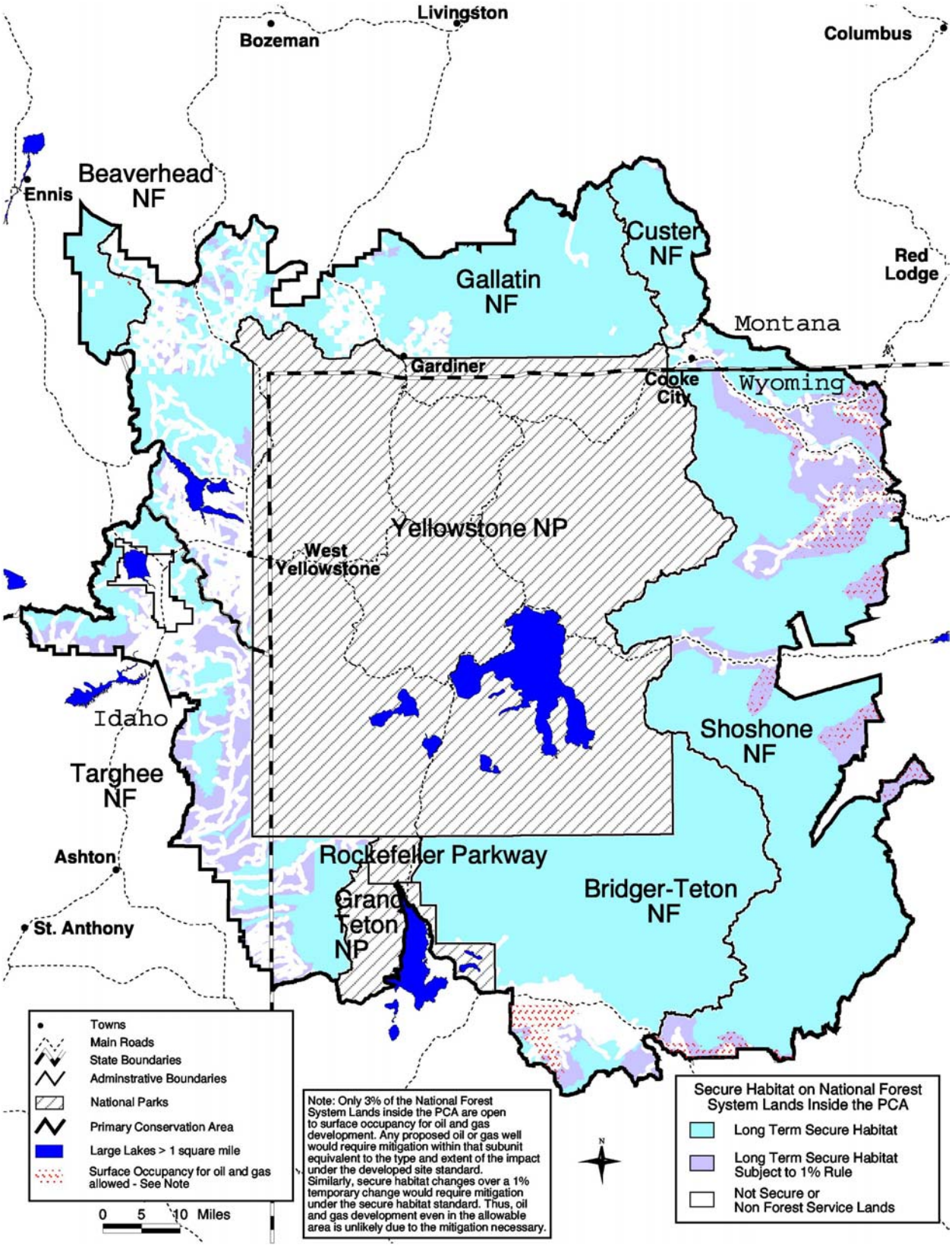
Appendix D displays existing secure habitat information for each BMU subunit.

Figure 35. Secure habitat acres (in thousands) on each national forest within the PCA for the environmental baseline and the preferred alternative (See Appendix D for data on individual BMU subunits). [1]

National Forest	Environmental Baseline		Preferred Alternative		
	Secure habitat long term[2]	Secure habitat short term[3]	Secure habitat long term	Percent Long term secure habitat subject to the 1% rule[5]	Maximum acres affected at one time under 1% rule
Beaverhead	66	0	66	0	0
Bridger-Teton	618	19	637	3.0%	[4]
Custer	110	1	111	0.9%	[4]
Gallatin	554	33	587	5.6%	[4]
Shoshone	929	207	1,137	18.2%	[4]
Targhee	181	109	290	37.6%	[4]
Total Acres	2,458	369	2,827	13.1%	29.5[4]

[1] Non-Forest Service inholdings are excluded except for the Bridger-Teton and Custer National Forests.
[2] Long term = secure habitat acres within Management Area Categories 1, 2, and 3.
[3] Short term = secure habitat acres within Management Area Categories 4, 5, 6, and 8.
[4] 1% Rule: a) large lakes were not included when calculating the 1% rule, b) acres are only those BMUs with National Forest System land included within the BMU. Because of overlap between national forests and national parks, it is not possible to display accurately the acres in the 1% rule for each national forest.
[5] The long-term secure habitat subject to the 1% rule was defined as short-term secure habitat in the environmental baseline as it is within management areas types 4,5,6 and 8 that allow for management activities. However, under the preferred alternative any secure habitat affected by the 1% rule would be restored after project completion.

Figure 35a. Long term secure habitat inside PCA for the preferred alternative.



The following are a few notes about each National Forest to better explain the comparison between the environmental baseline and the preferred alternative for the PCA.

Beaverhead National Forest. There is no motorized access to the Beaverhead National Forest portion of the PCA. Ninety-six percent of the National Forest System lands within the PCA are secure habitat. The vast majority of this area is designated wilderness, and the relatively small non-wilderness portion of the PCA was closed to motorized use year round by Amendment 10 of the Beaverhead Forest Plan (Off-highway Vehicle Amendment). The amount of secure habitat in the Beaverhead National Forest portion of Hilgard BMU subunit 1 has not changed over the last 10 years. Within the PCA, there would be no change in existing secure habitat between the environmental baseline and the preferred alternative.

Bridger-Teton National Forest. Management area prescriptions in the Bridger-Teton Forest Plan emphasize motorized use on approximately 46,900 acres (7%) of the PCA within the Forest. Motorized use is prohibited or discouraged on the remaining 677,000 acres of the PCA. Currently, 88% of the National Forest System land within the PCA is secure habitat. The Bridger-Teton Forest Plan does not contain any Forest wide standard addressing open or total motorized access density or secure habitat areas. Access prescriptions and standards for individual management areas are variable, with some suggesting that motorized route density may exceed one mile per square mile of the management area. Over the last five years, the amount of secure habitat has remained unchanged. Under the environmental baseline, 3% of the existing secure habitat could be changed. With the preferred alternative, all of the existing secure habitat would be maintained, with the allowance of the 1% rule to accomplish various management objectives.

Custer National Forest. Most of the PCA (98.6%) is designated wilderness or in a management area which emphasizes wildlife habitat protection and discourages permanent road construction. Currently, 97% of the National Forest System land within the PCA is secure habitat. A small portion (1.4% of the PCA) emphasizes the exploration, development, and production of energy and mineral resources, but no activity has occurred. Secure habitat has remained the same over the last five to 10 years. Under the environmental baseline, about 1% of the existing secure habitat could be changed. With the preferred alternative, the existing secure habitat (111,000 acres) would be maintained, with the allowance of the 1% rule to accomplish various management objectives.

Gallatin National Forest. During the last five to 10 years, the Gallatin National Forest has closed or obliterated more than 100 miles of road within BMU subunits, increasing the amount of secure habitat. The road closures occurred mainly on the Hebgen Lake Ranger District in the Taylor Fork (Hilgard 1 and 2), the Madison 1 and 2, and the Henrys Lake 2 BMU subunits. Currently, 73% of the National Forest System land within the PCA is secure habitat. Under the environmental baseline, about 6% of the existing secure habitat could be changed. With the preferred alternative, the existing secure habitat (587,000 acres) would be maintained, with the allowance of the 1% rule to accomplish various management objectives.

Shoshone National Forest. The Shoshone Forest Plan, as amended, has a standard for no net increase in road miles. The activity levels associated with Plan objectives are relatively low. In practice, secure habitat is being maintained or increased. The amount of secure habitat has increased in Shoshone BMU subunits 3 and 4 due to road closures in the North Fork of the Shoshone River corridor. The amount of secure habitat has stayed the same over the last decade in all other BMU subunits. Currently, 93% of the National Forest System land within the PCA is secure habitat. Under the environmental baseline, little change would occur in the amount of existing secure habitat because of the standard for no net increase in road miles. With the

preferred alternative, the existing secure habitat (1,137,000 acres) would be maintained, with the allowance of the 1% rule to accomplish various management objectives.

Targhee National Forest. Forestwide access management standards limit open motorized access route density to 0.6 miles per square mile in Henrys Lake subunits 1 and 2, the Plateau BMU, and the Bechler-Teton BMU. This standard also limits total motorized access route density in these same BMUs and subunits to one mile per square mile. The standards specify management requirements for road closures and administrative use on restricted roads. Standards associated with individual management areas supplement these Forestwide standards. The Targhee Forest Plan contains a Forestwide goal to increase grizzly bear security. The amount of secure habitat within each BMU increased after the 1997 Revised Targhee Forest Plan was completed. The reason for the increase in the amount of secure habitat was that the Revised Forest Plan called for the decommissioning of about 433 miles of road within the BMUs to achieve the open motorized access route density standards and the total motorized access route density standards. The Forest has completed about 80% of the decommissioning work; the remaining 20% is waiting on additional site-specific NEPA to be completed. When the road density standards are fully implemented, 61% of the National Forest System land within the PCA will be secure habitat. This direction will remain under the preferred alternative.

There are 290,000 acres of existing secure habitat, with 181,000 acres (62%) within management prescriptions that maintain the secure habitat long term. The remaining secure habitat (109,000 acres, or 38%) is within management prescriptions that allow project work and potential motorized access that could affect a portion of this secure habitat. Forest Plan standards for open motorized access route density (0.6 miles per square mile) and total motorized access route density (1.0 miles per square mile) limit the amount of secure habitat that could be affected. In addition, there are guidelines for maintaining large areas (no less than 7,000 acres in size) without project activities adjacent to the areas with project activities, which limits the amount of secure habitat that could be affected. With the preferred alternative, the existing secure habitat (290,000 acres, 61% of the National Forest System land within the PCA) would be maintained, with the allowance of the 1% rule to accomplish various management objectives.

Secure habitat management in BEBS Habitat Outside the PCA

There is no difference in management direction for secure habitat outside the PCA between the environmental baseline and the preferred alternative. The following discussion highlights secure habitat information and management direction outside the PCA.

In the BEBS outside the PCA on National Forest System lands, 72% of the almost 6 million acre area is secure habitat (Figures 22 and 23). Seventy-one percent of that secure habitat is long term secure. The other 29% (1,242,000) acres would be available for project activities. All activities in or out of secure habitat would require a biological evaluation. The sensitive species designation requires that that land management activities be managed so as to maintain a sustainable grizzly bear population and avoid listing under the Endangered Species Act. Secure habitat would be a consideration in these evaluations.

Schwartz et al (2002) estimated the area occupied by grizzly bears in the GYA through the year 2000 (Figure 22). Approximately 34% of the area occupied by grizzly bears from 1990-2000 was outside the PCA. Twenty-one percent of the area occupied by grizzly bears was outside the PCA on National Forest System lands. The remaining occupied area was outside the PCA within Grand Teton National Park (2%) or on State, Bureau of Land Management or private lands (11%). National Forest System lands provide approximately 1,100,000 acres of secure habitat (64% long term) in this area occupied by grizzly bears (Figure 36). From 1990-2000 the estimated total population of grizzly bears in the GYA was between 500 and 550 bears with

about 10% of the population living outside the PCA (Schwartz, personal communication 2005). The Conservation Strategy has a goal of maintaining at least 500 grizzly bears in the GYA.

Figure 36. Acres (in thousands) in the area occupied by grizzly bears outside the PCA and percent of the area that is long and short term secure habitat on National Forest System lands for each of the GYA National Forests.[1]

Forest	Occupied area outside the PCA	Secure habitat acres and percent of area that is secure habitat	Acres of long term secure habitat and % of secure habitat that is long term secure	% of area that is long term secure habitat	Acres of short term secure habitat and % of secure habitat that is short term secure
Beaverhead	127	83 (65%)	56 (68%)	44%	26 (32%)
Bridger-Teton	584	329 (56%)	219 (67%)	38%	110 (34%)
Custer	5	5 (98%)	5 (100%)	98%	0
Gallatin	246	194 (79%)	149 (77%)	61%	45 (23%)
Shoshone	656	441 (67%)	139 (32%)	21%	302 (68%)
Targhee	106	51 (48%)	35 (69%)	33%	16 (31%)
Total	1,723	1,102 (64%)	603 (55%)	35%	498 (45%)

[1]These acres do not include acres of lakes > 640 acres. Large lakes comprise 15,000 acres within Forest Service proclaimed boundaries. Non-Forest Service inholdings are excluded except for the Bridger-Teton and Custer National Forests. Acres of non-Forest Service inholdings on the Gallatin National Forest have changed since the GIS coverages that generated these acres were developed.
Long term = secure habitat acres within Management Area Categories 1, 2, and 3.
Short term = secure habitat acres within Management Area Categories 4, 5, 6, and 8.

It seems prudent that the amount of secure habitat that allowed for a population of 500-550 bears from 1990-2000 should be maintained in order to maintain the population above 500 grizzly bears. Secure habitat inside the PCA will remain at levels present in 1998 (which is the same as existed in 2000), even under the 1% rule, which allows for some level of forest management activities. Forest management activities were ongoing throughout the late 1990s and into 2000 at similar levels. In the BEBS outside the PCA there were 4,431,000 acres of secure habitat (Figure 23) in 2003 (basically unchanged from 2000, 71% long term). This is approximately 3 ½ million acres more secure habitat and almost 2 million acres of long term secure habitat in excess of the total secure habitat being used by bears from 1990 through 2000. Some of the secure habitat could be lost in the area occupied by grizzly bears from 1990 through 2000 due to management activities, but the abundance of both long term and short term secure habitat in the adjacent biologically suitable areas would allow the bear population to expand to new areas. Although it is recognized that there is not a one to one relationship between the amount of secure habitat and bear population numbers, the amount of secure habitat maintained inside the PCA and in the BEBS outside the PCA should allow bear numbers to increase above the 500-550 bears estimated for 2000. There is an additional 800,000 acres of long term secure habitat in the biologically unsuitable habitat some of which could be occupied by bears (Figure 24). In addition, the density of bears in the area occupied by grizzly bears outside the PCA in 2000 on National Forest System lands is likely below carrying capacity (Chuck Schwartz personal communication 2005). This area could probably support more bears than it did from 1990 through 2000 even with some loss of secure habitat

Maintaining or improving connectivity between the GYA and other ecosystems is outside the scope of this proposal. However, the maintenance of over 3 million acres of long term secure habitat, supplemented with over 1 million acres of short term secure habitat will provide the

security necessary for bears to occupy many new areas within the GYA, improving chances for movement between ecosystems.

There is concern over the potential decline of whitebark pine and the impact on the carrying capacity of the ecosystem for grizzly bears. This additional secure habitat in the BEBS area would provide almost 3 ½ million acres of additional secure habitat (2 million acres of long term secure) over the total secure habitat available to bears when their numbers were estimated at 500-550. If carrying capacity does decline due to the loss of whitebark pine, this additional secure habitat outside the PCA could help offset this loss to maintain populations at desired levels.

Others could argue that the loss of private lands currently used by bears will decrease bear numbers. This additional availability of secure habitat could offset the loss of any viable private land habitats. However, more bears die at front country developed sites than from any other cause (Figure 8) and over half of those have occurred on private lands. Private lands, in general, are not and will not be managed for grizzly bear occupancy.

What does the future hold for the maintenance of the 1,242,000 acres of short term secure habitat in the BEBS outside the PCA? If past trends are any indication, we can expect road miles to decline and secure habitat to increase. In the past 17 years, over 1,400 miles of road have been decommissioned in the GYA national forests, with less than 400 miles of road being constructed, a net reduction of over 1,000 miles of road. In all areas outside the PCA, the net reduction in miles of road has contributed almost 3% to the current level of secure habitat (Figure 37). Similarly, the average acres treated per year by timber harvest outside the PCA have been on a downward trend (Figure 39, DEIS). Road construction and associated timber harvest has been limited in recent years in part due to the roadless policies in place from 2000-2003. Under current policies, an EIS is required to build roads inside inventoried roadless areas, because it is considered an irretrievable effect. It will vary by forest, but many of the roadless areas will likely remain roadless as forest plans are revised. In addition, approximately 30 % of the short term secure habitat in the BEBS outside the PCA is on the Shoshone National Forest (375,000 acres). The Shoshone Forest Plan has a standard for no net increase in road miles. While the standard does not say where a road must be closed to compensate for any new roads constructed, it is likely that any road built in the biologically suitable habitat will be mitigated within this area and the amount of secure habitat maintained. Only the very southern tip of the Shoshone Forest is estimated to be biologically unsuitable. Similarly, the Targhee National Forest has road and motorized trail density standards for all areas outside the PCA (236,000 acres in the BEBS area). These standards will only allow small changes in existing motorized access route density and associated secure habitat. The Gallatin National Forest is currently developing a travel management plan that is targeted for completion in 2006. The preferred alternative in the Draft EIS (USDA 2005a) includes a forest-wide standard for no increase in public motorized access routes. A forest-wide guideline in the DEIS for the preferred alternative states: "Temporary roads constructed for project activity or other administrative purposes should be gated and public motorized use restricted. Once the activity is complete, these roads should be permanently and effectively closed and revegetated." The May 2005 draft of the revised forest plan for the Beaverhead-Deerlodge National Forest (USDA 2005b) includes an objective to "Manage for 60% or greater secure areas in the Gravelly Landscape" which is within the BEBS area on the Beaverhead National Forest (Figure 22).

Figure 37. Average percent increase in the level of secure habitat outside the PCA (biologically suitable and biologically unsuitable habitat) on each national forest in the GYA due to the difference in average miles of road constructed per year and average miles of road decommissioned per year between 1986 and 2002.

Forest	Secure habitat acres in thousands and percent of area outside PCA that is secure in 2003[1]	17 year (1986-2002) avg. miles of road constructed per year outside the PCA	17 year (1986-2002) avg. miles of road decommission per year outside the PCA	17 year (1986-2002) avg. difference between miles of road constr. and miles of road decomm.	Average secure habitat lost/gained per mile of road constr. or decomm. (acres)[1]	Average secure habitat gained per year (acres)[1]	Average % of secure habitat gained per year	Total % of secure habitat gained in 17 year period[1]
Beaverhead	1,271(60%)	4.1	4.9	+0.8	397.7	318	0.03	0.43
Bridger-Teton	1,919(70%)	2.6	11.1	+8.5	397.7	3380	0.18	2.99
Custer	384(79%)	0	0.2	+0.2	397.7	80	0.02	0.35
Gallatin	710 76%)	3.9	6.1	+2.2	397.7	875	0.12	2.10
Shoshone	908(75%)	1.2	4.3	+3.1	397.7	1233	0.14	2.31
Targhee	780(59%)	3.5	14.0	+10.5	397.7	4176	0.54	9.10
Total	5,972(68%)	15.3	40.6	+25.3	397.7	10,062	0.17	2.86

[1]These acres do not include acres of lakes > 640 acres. Large lakes comprise 15,000 acres within Forest Service proclaimed boundaries.. Non-Forest Service inholdings are excluded except for the Bridger-Teton and Custer National Forests. Acres of non-Forest Service inholdings on the Gallatin National Forest have changed since the GIS coverages that generated these acres were developed.

The preferred alternative does not provide any specific direction for managing secure habitat outside the PCA for grizzly bears. However, there is a goal for outside the PCA that states, "*Manage grizzly bear habitat within the PCA to sustain the recovered Yellowstone grizzly bear population. Outside the PCA in areas identified in state management plans as biologically suitable and socially acceptable for grizzly bear occupancy, accommodate grizzly bear populations with other land use activities, if feasible*[7]*, but not to the extent of the exclusion of other uses*". In addition, outside the PCA in areas identified in state management plans as biologically suitable and socially acceptable for grizzly bear occupancy, the Forest Service will monitor, and submit for inclusion in the IGBST Annual Report changes in secure habitat outside the PCA by national forest every 2 years. Monitoring of secure habitat outside the PCA will be used along with all other required habitat and population monitoring to annually evaluate the status of the grizzly bear population and make necessary modifications in management as required by the Conservation Strategy. The Conservation Strategy also states *"The agencies are committed to be responsive to the needs of the grizzly bear by dynamic management actions based on the results of detailed annual population and habitat monitoring."*

Potential for oil and gas development The potential for oil and gas development in the BEBS area is basically the same under the baseline and the preferred alternative. Consultation with U.S. Fish and Wildlife Service would be required under the baseline but any proposals for development would likely proceed, as a Jeopardy call is highly unlikely due to the current status of the grizzly bear population. Surface occupancy for oil and gas is allowed on approximately 37% of the short term secure habitat in the BEBS area (Figure 22 and 23). However, much of this area has a very low to moderate potential for occurrence and there are only 4 active leases.

[7] . *"Feasible" means one which is compatible with (does not make unobtainable) major goals and objectives of other uses.*

Effects on Denning Habitat

Within the PCA, there are over two million acres of grizzly bear denning habitat (Figure 38). In the BEBS outside of the PCA, there are also over two million acres of grizzly bear denning habitat (Figure39). The management direction for denning habitat inside and outside the PCA is the same for the environmental baseline and the preferred alternative. Within the PCA, 68% of the grizzly bear denning habitat would be closed to snow machine use in the environmental baseline and the preferred alternative. In the BEBS outside the PCA, 35% of the grizzly bear denning habitat would be closed to snow machine use in the environmental baseline and the preferred alternative.

A 2002 biological opinion from the USFWS requires all forests in the GYA, except the Caribou-Targhee, to monitor winter snowmobile use around grizzly bear denning sites and to confer with the USFWS and IGBST regarding any necessary mitigation. Similarly, a guideline in the preferred alternative states that localized restrictions would be used to address conflicts with winter use activities inside the PCA. The current information on effects of snow machining on grizzly bears as discussed previously in this BA shows that disturbance and conflicts with grizzly bears has always been very low.

Figure 38. Grizzly bear denning habitat[1], in thousands of acres, closed to snow machine use within the PCA.

National forest	Acres of denning habitat	Environmental Baseline acres (%) closed to snow machine use	Preferred Alternative acres (%) closed to snow machine use
Beaverhead	51	49 (96%)[2]	49 (96%)
Bridger-Teton	560	467 (83%)[2]	467 (83%)
Custer	35	28 (80%)[2]	28 (80%)
Gallatin	644	369 (57%)[2]	369 (57%)
Shoshone	731	567 (78%)[2]	567 (78%)
Targhee	220	49 (22%)[3]	49 (22%)[2]
Total acres	2,241	1,529 (68%)	1,529 (68%)

[1] Podruzny et al. 2002

[2]These forests are required to confer with the USFWS when there is a known den site to evaluate if snow machine use needs to be curtailed in the immediate denning area.

[3] The 1997 Revised Forest Plan has a standard to curtail snow machine use in areas with documented conflicts with denning grizzly bears.

Figure 39. Grizzly bear denning habitat[1], in thousands of acres, closed to snow machine use in the BEBS outside the PCA.

National forest	Acres of denning habitat	Environmental Baseline acres (%) closed to snow machine use	Preferred Alternative acres (%) closed to snow machine use
Beaverhead	283	41 (14%)	41 (14%)
Bridger-Teton	698	335 (48%)	335 (48%)
Custer	117	50 (43%)	50 (43%)
Gallatin	450	184 (41%)	184 (41%)
Shoshone	510	178 (35%)	178 (35%)
Targhee	358	58 (16%)	58 (16%)
Total acres	2,416	846 (35%)	846 (35%)

[1] Podruzny et al. 2002

Effects on Grizzly Bear/ Human Conflicts and Displacement Associated with Developed Sites

Developed sites in grizzly bear habitat increase the potential for conflict with humans primarily due to the potential availability of human foods. Developments also reduce the effectiveness of the natural habitat near these sites. Dominant bears sometimes displace subordinate bears into less desirable habitat, resulting in increased conflicts compared to bears using habitats further away from developed sites. The larger the developed site and the more people using the site, the greater the potential for conflicts and reduction in the effectiveness of the adjacent habitat for bears (Mattson et al.1987).

Inside the PCA

There are 371 developed sites on the six national forests inside the PCA (Appendix D). Forest Service food storage regulations minimize the potential for grizzly bear/ human conflicts in both the environmental baseline and the preferred alternative. Minerals development under the 1872 General Mining Law would be permitted and mitigated as possible.

Environmental Baseline. Conflicts with grizzly bears and people would likely continue at existing levels in association with the current number of developed sites. Changes in the number and capacity of developed sites would be managed under the Guidelines and increases minimized in MS 1. However, in most cases, increases in capacity and number of sites could occur in MS 2 and 3. Oil and gas development could occur on lands open to surface occupancy in MS 2 and 3; mitigation would be guided by the Guidelines. Grizzly bear/human conflicts would increase and the effectiveness of habitats adjacent to these sites would be reduced.

Preferred Alternative. Increases in capacity and the number of developed sites would occur only if it were determined that there were no impacts to grizzly bears or the impacts could be mitigated. Conflicts at developed sites would likely remain at current levels, or decrease, and the acreage of impacted habitat would remain at 1998 levels. The few existing oil and gas leases on the Gallatin National Forest would be honored. Impacts would be mitigated where possible according to the Application Rules for Standard 2, but increases in conflicts and displacement of grizzly bears would occur if those leases were developed on the Gallatin National Forest.

Outside the PCA

There are 598 developed sites on the six national forests in the BEBS outside the PCA. Existing Forest Service food storage regulations outside the PCA would continue to minimize the potential for grizzly bear/human conflicts in both the environmental baseline and the preferred alternative. Minerals development under the 1872 General Mining Law would be permitted and mitigated as possible.

Environmental Baseline and Preferred Alternative. The number and capacity of developed sites would be subject to management direction in existing forest plans. Recreation use and associated demand for developed sites are expected to increase. As previously discussed there are only 4 active oil and gas leases outside the PCA. However there is the potential for additional leases, which could result in an increase in developed sites, but much of the area has low to moderate occurrence potential for oil and gas. Consultation with the USFWS would be required under the environmental baseline for projects that may affect the grizzly bear. Appropriate analysis would be required under the preferred alternative for projects that may affect the grizzly bear as a sensitive species. The number and capacity of developed sites would likely increase outside the PCA under both the environmental baseline and the preferred alternative. Grizzly bear/human conflicts would increase outside the PCA as bears expand their range even with the existing level of developed sites. An increase in number and capacity of developed sites would further increase the potential for conflicts and displacement.

Effects on Grizzly Bear/Livestock Conflicts

Inside the PCA

Environmental Baseline. The two remaining sheep allotments on the Targhee National Forest would be phased out. The two sheep allotments in MS 1 on the Gallatin National Forest would be managed under the Guidelines. However, conflicts with bears and sheep would likely continue. If management actions were unable to resolve the problem, these allotments could potentially be closed.

Grizzly bear conflicts with cattle would also be managed under the Guidelines. Cattle allotments in MS 1 would be closed if conflicts could not be resolved. Cattle allotments in MS 2 would remain; conflicts with cattle are anticipated to occur.

Sheep and cattle allotments could be created inside the PCA and numbers of sheep could increase, particularly in MS 2. This is highly unlikely, based on past trends; however, the environmental baseline does not preclude these actions. Increased numbers of livestock would increase the potential for conflicts. The past management of grizzly bear livestock conflicts under the Guidelines has not precluded achieving recovery of the grizzly bear.

Preferred Alternative. Sheep AMs would remain at or below1998 levels until all the sheep allotments inside the PCA were phased out with willing permittees. Conflicts with grizzly bears and sheep would continue until all sheep allotments were closed. No new allotments would be created in the PCA and numbers of cattle would likely remain close to 1998 levels in existing allotments. Conflicts with cattle would likely continue at current levels and any potential for increase in conflicts would not be a result of new allotments. Inside the PCA, cattle allotments or portions of cattle allotments with recurring conflicts that cannot be resolved through modification of grazing practices may be retired as opportunities arise with willing permittees. However, similar to the environmental baseline, the past level of conflicts and grizzly bear mortalities has not precluded achieving recovery of the grizzly bear and, in addition, sheep conflicts would eventually be eliminated.

Outside the PCA

Environmental Baseline. The existing sheep allotments would be maintained. Grizzly bear conflicts are expected on the six sheep allotments that have had previous conflicts, and are anticipated on the other sheep allotments if the grizzly bear population expands into these areas. Grizzly bear conflicts are also expected on the 11 cattle allotments outside the PCA that have had previous conflicts, and are anticipated on some but not all of the other cattle allotments if the grizzly bear population expands into these areas. Both cattle and sheep conflicts would be handled under state nuisance grizzly bear guidelines. These nuisance grizzly bear guidelines allow a variety of management actions, depending on site-specific conditions and situations. Consultation with the USFWS would occur under with the grizzly bear listed under ESA.

Preferred Alternative. Similar to the environmental baseline, with the following additional management direction: Outside the PCA in areas identified in state management plans as biologically suitable and socially acceptable for grizzly bear occupancy, livestock allotments or portions of allotments with recurring conflicts that cannot be resolved through modification of grazing practices may be retired as opportunities arise with willing permittees. Biological evaluations would be done to assess effects of conflicts.

Effects on the Grizzly Bear Population

Effects Common to the Environmental Baseline and Preferred Alternative

Both the environmental baseline and preferred alternative provide protections to grizzly bear habitat; however, the quantity and quality of available habitat are only two of the factors that influence total population numbers. Controlling human-caused mortality has been key to

increases in bear numbers over the last 25 years. Human-caused mortality, coupled with the amount of effective habitat, would be the ultimate limiting factors for grizzly bear populations in the GYA.

Coordinated management of nuisance bears, food storage orders, information and education efforts, and the availability of Forest Service facilities to store food unavailable to bears would minimize conflicts and grizzly bear mortalities.

Grizzly bear numbers are expected to be stable or increase inside the PCA and bears would likely increase occupation and use of habitats outside the PCA. Recreational use of National Forest System lands is expected to increase over the next decade as the human population in the counties in the GYA continues to grow. As a result, grizzly bear/human conflicts and human-caused mortalities would likely increase with increased contact between bears and humans on the six national forests. Many of the grizzly bear/human conflicts occur on private lands in the GYA (Figure 11), where the Forest Service has no authority to require food storage.

Weather conditions play a key role in the yearly availability of foods for bears, which in turn affects female fecundity and cub survival (Schwartz et al. in press). In poor food years, bears often seek non-traditional foods and end up in trouble with humans, which increases the risk of mortality. Regardless of the amount of habitat protection, weather conditions would still influence the basic productivity of the land and the foods available to bears and ultimately the carrying capacity of the landscape for grizzly bears.

Minerals development could impact grizzly bears but would be minimized by mitigation efforts.

Effects of the Environmental Baseline on the Grizzly Bear Population

The grizzly bear population has increased in numbers and expanded its range with the current habitat protections under the environmental baseline. Project level direction contained in the Guidelines emphasizes minimizing grizzly bear/human conflicts and disturbance to grizzly bears during project activities. This direction would continue to minimize conflicts and mortalities associated with land management activities inside the PCA. Current management area designations identify about 2.5 million acres as long-term secure habitat inside the PCA (Figure 20 and 21); however, current standards for habitat management on the remaining acres provide no specific direction for maintaining secure habitat. Activities requiring new roads, such as timber sales or oil and gas development, could occur, particularly in MS 2 and 3, without mitigating for any permanent loss of secure habitat. Incremental loss of secure habitat could occur over time to a point where less security could affect bear numbers. In addition, connectivity options could be reduced, impacting the ability of bears to move effectively between key habitats in the PCA.

The number and capacity of developed sites inside the PCA could increase under the environmental baseline. Consultation with the USFWS would continue and mitigation would result. The Guidelines provide direction on management of developed sites inside the PCA. However, new developed sites would be permitted if proposed, especially in MS 2, and the potential for grizzly bear/human conflicts, displacement, and mortalities associated with developed sites could increase over time.

Conflicts with existing sheep allotments could result in grizzly bear mortalities before existing allotments on the Targhee National Forest are phased out. The two sheep allotments on the Gallatin National Forest could remain and pose a mortality risk to bears. These allotments are in MS 1 where management to resolve conflicts with livestock rarely results in the removal of grizzly bears. However, if the bear is determined to be a nuisance, according to the Guidelines, the bear could be removed. The potential for increased numbers of livestock, especially sheep, even though unlikely, would increase grizzly bear/livestock conflicts and associated mortality.

The past management of grizzly bear/livestock conflicts under the Guidelines has not precluded achieving recovery of the grizzly bear. Only two cattle allotments with recurring conflicts remain in MS 1, one on the Bridger-Teton NF and one on the Shoshone NF (Figure 30). Livestock-related grizzly bear mortalities account for only 10% of the known human-caused grizzly bear mortalities since 1975 (Figure 8).

The environmental baseline provides no specific direction for grizzly bear habitat management outside the PCA. However, Management Category 1, 2, and 3 areas provide about 3.1 million acres of long term secure habitat outside the PCA in the BEBS area (Figure 22 and 23). These management area designations would continue.

Consultation with the USFWS is required for all land management activities outside the PCA that may affect the grizzly bear while it is listed as a threatened species under ESA. This situation outside the PCA should allow bears to continue to occupy existing habitat and to expand into new suitable areas not currently occupied. However, even with consultation, existing road densities, land management activities, and proximity to private land developments would preclude many areas from being effectively occupied by grizzly bears.

Human-caused bear mortality has been within identified limits from 1998 through 2004, except in 2004 the female mortality quota was exceeded. Bear numbers continue to increase at 3 to 4% or more annually (Eberhardt et al. 1994, Boyce 1995, Boyce et al. 2001, Interagency Conservation Strategy Team 2003). The Yellowstone Ecosystem Subcommittee has approved new analysis protocols for estimating total population and sustainable mortality limits developed by the Interagency Grizzly Bear Study Team. (IGBST 2005). This methodology will be incorporated into the Grizzly Bear Recovery Plan and appended to the Conservation Strategy.

Monitoring of grizzly bear population parameters and the abundance of the four major foods would continue under the auspices of the YES and the IGBST. Monitoring of grizzly bear habitats under current forest plans would continue. Results from these efforts would provide managers with the base information needed to evaluate the status of the habitat and the grizzly bear population and the need for changes in management direction. However, as habitat-monitoring requirements differ among forests, the full picture on the status of the habitat for grizzly bears in the GYA may not be obvious. Coordinated, consistent monitoring efforts identified for the preferred alternative may be more effective in evaluating the habitat conditions for the grizzly bear on a larger scale.

Effects of the Preferred Alternative on the Grizzly Bear Population

Long-term maintenance of secure habitat, developed sites, and numbers of livestock allotments at 1998 levels inside the PCA would likely allow bear numbers to continue to increase at current rates and occupy new habitats outside the PCA. Numbers inside the PCA would likely remain stable, as it appears most habitats inside the PCA are at carrying capacity.

Phasing out the remaining sheep allotments inside the PCA would eliminate conflicts with bears and sheep and associated mortality risk. Cattle conflicts could increase slightly without the Guidelines that favor the bear over cattle in MS 1. The nuisance grizzly bear standard in the Conservation Strategy does not allow the state wildlife management agencies to remove a female grizzly bear for livestock depredation inside the PCA. All livestock depredating male bears would be relocated at least once and the removal of grizzly bears that kill sheep on the sheep allotments on the Gallatin National Forest inside the PCA would not be allowed. In addition, the guidelines that allow for the retirement of allotments with recurring conflicts inside and outside the PCA provides a mechanism for the resolution of chronic livestock conflicts. While the preferred alternative would allow a temporary 1% deviation in secure habitat within the PCA, this level of secure habitat modification is consistent with land management practices over the last decade, which resulted in an increase in bear numbers. Population numbers would more

likely be limited by human-caused mortality and the carrying capacity of the habitat, rather than temporary habitat loss inside the PCA.

Project-level direction in the Guidelines would no longer apply. In many cases, management activities could occur without regard to seasonal timing restrictions, project duration limits, and other site-specific standards for grizzly bears. Individual projects could have a greater potential for displacing bears from important seasonal habitats than under the environmental baseline. However, under the preferred alternative, projects would be limited in size and only one project could occur at a time in a subunit. Most of the subunit would remain secure, providing refuge from ongoing projects. Large projects requiring extensive roading and/or site development would not occur under the 1% rule unless additional roads were closed for mitigation, whereas under the environmental baseline they would be allowed in most MS 2 and 3 areas. The Preferred Alternative would preclude any permanent large-scale changes to the existing level of secure habitat and developed sites, and would be more effective in providing long-term protections to the habitat and the grizzly bear population than the environmental baseline. Connectivity between key habitats in the PCA is more likely to be maintained with the Preferred Alternative than the Environmental Baseline.

Monitoring by the Forest Service of the 4 key grizzly bear foods under the environmental baseline is limited to the monitoring of whitebark production transects and cooperation in the development of protocols for monitoring the health of whitebark pine in the PCA. The Guidelines provide direction for maintenance and improvement of foraging areas for grizzly bears, but only inside the PCA. The preferred alternative includes direction for maintaining the productivity of the 4 key grizzly bear foods both inside and outside the PCA with emphasis on maintaining and restoring whitebark pine stands. Whitebark pine occurrence, productivity and health would be monitored both inside and outside the PCA. This direction should help to further ensure the availability of important habitats to grizzly bears over the environmental baseline both inside and outside the PCA.

Inside and outside the PCA, the effects differ in one context to the environmental baseline in that consultation with USFWS would not occur with the grizzly bear delisted. The grizzly bear would, however, be listed as a Forest Service sensitive species throughout its range in the GYA. Land management activities would be managed so as not to contribute to a trend for listing or loss of viability for the grizzly bear. There must be no impacts to sensitive species without an analysis of the significance of adverse effects on the population or its habitat. The Forest Service would cooperate in maintaining at least 500 bears as identified in the conservation strategy and with state wildlife agencies in attaining desired population goals above this level.

Outside the PCA, existing long-term secure habitat (Management Category 1 areas) would remain, but existing road densities and land management activities would preclude many areas from being effectively occupied by grizzly bears. The Guidelines under the environmental baseline provide no direction for areas outside the PCA. The preferred alternative, however, includes direction to use food storage orders, maintain the productivity of the four key grizzly bear foods, direction for resolving chronic livestock conflicts outside the PCA. In addition, changes in secure habitat in those areas outside the PCA that are determined by the states to be biologically suitable and socially acceptable for grizzly bear occupancy will be monitored and changes evaluated in annual monitoring reviews by the Yellowstone Grizzly Coordinating Committee.

The Conservation Strategy (updated by the new sustainable mortality limits, IGBST 2005), which would apply when the bear is delisted, sets a GYA-wide mortality limit that is designed to facilitate population increase and expansion. Allowable mortality would likely be increased when bears occupy all the areas where the states have agreed to manage for grizzly bears.

Hunting would likely be used as a tool by the state wildlife agencies to keep bears at desired population levels.

Each forest would monitor adherence to the secure habitat, developed site and livestock standards. Open and total motorized access route density would be monitored inside the PCA. Secure habitat would also be monitored outside the PCA. Habitat effectiveness would be monitored collectively on a regular basis inside the PCA to track any changes to the habitat from fire, insects and disease, and other human activities not measured by the habitat standard monitoring efforts. The occurrence, productivity and health of whitebark pine would be monitored both inside and outside the PCA. The Results of habitat monitoring along with the demographic and foods monitoring required under the Conservation Strategy would be reviewed annually by the Yellowstone Grizzly Coordinating Committee. The Conservation Strategy requires a management review if population or habitat standards are not met. This coordinated approach would better ensure that potential threats to the grizzly bear or its habitat were evaluated quickly and efficiently.

The long-term common protections to the habitat provided by the Preferred Alternative, the addition of direction for grizzly bear habitat outside the PCA, and the consistent coordinated monitoring efforts would improve the potential for long-term sustainability of the grizzly bear population in the GYA over that provided by the Environmental Baseline.

Based on the above comparisons between the Environmental Baseline and the Preferred Alternative, the determination of effects for the Preferred Alternative is that it may affect, but is not likely to adversely affect, grizzly bear habitat and the grizzly bear population.

Other Related Efforts

Canada lynx

The Forest Service is currently in the process of amending 18 forest plans in the northern Rockies (Northern Rockies Lynx Amendment) (USDA Forest Service and USDI Bureau of Land Management 2004) to incorporate recommended management direction for lynx conservation that was not included in the existing plans. The management direction proposed for the Northern Rockies Lynx Amendment was developed by an interagency team of government biologists and was written into the Lynx Conservation Assessment and Strategy (Ruediger et al. 2000). Canada lynx were listed as a threatened species in 2000 due to lack of guidance for conservation of lynx and snowshoe hare habitat in existing plans. The recommended management direction focuses on managing vegetation within the historic range of variability, maintaining dense understory conditions for prey (primarily snowshoe hares) by limiting pre-commercial thinning with some exceptions, recommending no expansion of snow routes and play areas in lynx habitat to minimize snow compaction, and identifying and maintaining connectivity within and between habitat areas. Lynx habitat exists within the lodgepole pine, subalpine fir, and Engelmann spruce forests throughout the PCA.

Forest Health Initiatives

Based on direction in the National Fire Plan, the Healthy Forests Initiative, and the Healthy Forests Restoration Act of 2003, the Forest Service has initiated proposals for maintaining or restoring healthy forests and lands by reducing heavy fuel loading and insect and disease risks. Management of vegetation and reduction of fuel loadings is generally emphasized around structures, called the wildland urban interface.

Roadless

Since 2000, the Forest Serviced has had various roadless management policies in place. On May 5, 2005, the Department of Agriculture announced the adoption of a final rule that established a

process for governors to propose locally supported regulations for conserving inventoried roadless areas within their states. This policy makes the commitment to work closely with the nation's governors to meet the needs of local communities and to maintain the undeveloped character of these unique areas of national forests and grasslands.

Forest Plan Revision and other Amendments

Five GYA national forests will revise their forest plans in the next few years, as shown in Figure 4. Additionally, the Gallatin National Forest is currently amending its forest plan for travel management.

National Park Plans

Yellowstone National Park and Grand Teton National Park manage bears under the Guidelines and respective park General Management Plans. Until such time that each park is able to incorporate the Conservation Strategy into its General Management Plan, the parks will implement the Conservation Strategy by amending their respective Superintendents' Compendiums, followed by concurrence from the Regional Director that this mechanism will stand in place until each Park is able to incorporate the Conservation Strategy into a General Management Plan. The superintendents of each park will incorporate the guidelines and procedures outlined in the Conservation Strategy during their next respective updates of the park General Management Plans. Yellowstone National Park's revised direction on winter use is currently in litigation.

National Elk Refuge

The updated management plan for the National Elk Refuge near Jackson, Wyoming is scheduled for completion in 2006.

Appendix A

Consultation Agreement
Between
USDA Forest Service
Region 1: Beaverhead-Deerlodge, Custer, and Gallatin National Forests
Region 2: Shoshone National Forest
Region 4: Bridger-Teton and Caribou-Targhee National Forests
And
USDI Fish and Wildlife Service
Region 1: Idaho
Region 6: Montana and Wyoming
For
Grizzly Bear Habitat Amendments
For
Land and Resource Management Plans (Forest Plans)
For The
Greater Yellowstone Area National Forests

Purpose

The purpose of this Agreement is to establish an effective and cooperative process by which Endangered Species Act (ESA) Section 7 consultation will be conducted for land and resource management plan (LRMP) amendments on six national forests in the Greater Yellowstone Area.

- USDA Forest Service - Region 1: Beaverhead-Deerlodge, Custer, and Gallatin National Forests
- USDA Forest Service - Region 2: Shoshone National Forest
- USDA Forest Service - Region 4: Bridger-Teton and Caribou-Targhee National Forests

These six national forests are found within the following regions and state field offices of the U. S. Fish and Wildlife Service:

- U. S. Fish and Wildlife Service - Region 1: Idaho
- U. S. Fish and Wildlife Service - Region 6: Montana and Wyoming

This Agreement was developed under the auspices of the Memorandum of Agreement on Endangered Species Act Section 7 Programmatic Consultations and Coordination among the Bureau of Land Management, National Marine Fisheries Service, Fish and Wildlife Service, and Forest Service, signed on August 30, 2000. These six national forests are concurrently amending their land and resource management plans to incorporate the habitat standards and habitat monitoring requirements established in the *Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area* (March 2003).

This Agreement will serve as guidance and direction to the Forest Service and Fish and Wildlife Service (FWS) while working together on the consultation process.

Specific Goals

1. Provide consistency across all forests
2. Streamline the ESA consultation process
3. Improve conservation through larger scale examination
4. Establish responsibilities and time lines
5. Meet Section 7(a)(2) responsibilities

Scope
The scope of activities conducted through this Agreement:

1. The Forest Service will amend land and resource management plans on six national forests to incorporate the habitat standards and habitat monitoring requirements established in the *Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area*. The six LRMPs to be amended are:

Beaverhead-Deerlodge National Forest: Beaverhead National Forest Plan (1986)

Custer National Forest: Custer National Forest and Grasslands Land and Resource Management Plan (1987)

Gallatin National Forest: Gallatin National Forest Plan (1987)

Shoshone National Forest: Shoshone National Forest Land and Resource Management Plan (1986)

Bridger-Teton National Forest: Bridger-Teton National Forest Land and Resource Management Plan (1989)

Caribou-Targhee National Forest: 1997 Revised Forest Plan - Targhee National Forest

2. In collaboration with the FWS, and using existing information, the Forest Service will determine effects of the grizzly bear habitat standards, habitat monitoring requirements, and resulting LRMP amendments on all threatened, endangered, proposed, and candidate species identified by the FWS that are within the area affected by the habitat standards and habitat monitoring requirements as written in the *Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area.*
3. Both the Forest Service and the FWS agree that the habitat standards and habitat monitoring requirements as written in the *Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area* are the exact habitat criteria that the FWS will include in, or append to, the 1993 *Grizzly Bear Recovery Plan*.
4. The Forest Service will prepare one Biological Assessment (BA) covering the six national forests and associated LRMPs to be amended.
5. The FWS will prepare one Biological Opinion (BO) and/or written concurrence covering the six national forests and LRMPs to be amended.
6. This proposed action is limited to consideration of the grizzly bear habitat standards and habitat monitoring requirements as proposed in the March 2003 *Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area* and as applicable to each of the six forest plans. The scope of the BA/BO is limited to the effects associated with the proposed habitat standards, i.e., motorized access/secure habitat, developed sites, and livestock grazing within the grizzly bear recovery zone. No discussion or analysis will be included regarding other management direction in existing forest plans that were addressed in previous BOs.

During preparation of the Biological Assessment and consultation the Forest Service will provide:

1. The lead Forest Service office for this project is the Shoshone National Forest Supervisor's Office in Cody, Wyoming. Rebecca Aus is the lead Forest Supervisor for this project, and will lead the Forest Service local issue resolution working group.
2. Two Forest Service program level ESA working group wildlife biologists will be responsible for preparation and approval of the Biological Assessment. These wildlife biologists are Kim Barber (Shoshone National Forest) and Mark Orme (Caribou-Targhee National Forest).
3. An *ad hoc* technical working group that includes biologists, planners, and other interdisciplinary staff from Forest Service regional offices and the six national forests as necessary to obtain data, complete analysis, and review the Biological Assessment.
4. Prepare one Biological Assessment covering all six national forests and associated LRMPs to be amended.
5. Other information deemed relevant to the consultation process.

During consultation the FWS will provide:

1. The lead FWS State Field Office for this project is the State Field Office in Cheyenne, Wyoming. Brian Kelly is the lead FWS State Field Supervisor for this project.
2. One lead FWS program level ESA working group wildlife biologist who will be responsible for preparation and approval of the Biological Opinion and/or written concurrence and will participate in Interdisciplinary Team meetings as necessary. This wildlife biologist is Terry Root (Cody, Wyoming).
3. An *ad hoc* technical working group that includes biologists and other staff from FWS regional offices and state offices as necessary to complete the consultation process.
4. Prepare one Biological Opinion and/or written concurrence covering all six national forests and associated LRMPs to be amended. The FWS will include an Incidental Take Statement as part of any Biological Opinion.
5. Other information deemed relevant to the consultation process.

The Forest Service and the FWS mutually agree to:

1. Cooperate as partners to the commitments each agency has made.
2. Informal and open exchanges of information and data needs and expeditious responses to requests for information and clarification.
3. Work cooperatively to utilize a consultation process that conforms to the FWS Programmatic Consultation Guidance.
4. The FWS and Forest Service agree that the elements of the BA for this project are[8]:

Description of the proposed action

Status of the species/critical habitat:

Species/critical habitat description
Life history
Population dynamics
Status and distribution
Analysis of the species/critical habitat likely to be affected

Environmental baseline:

Status of the species within the action area
Factors affecting species environment within the action area

Effects of the action:

Factors to be considered
Analyses for effects of the action
Species' responses to a proposed action

Cumulative effects

Interrelated and interdependent effects

Determination of effects

5. The FWS and Forest Service agree that the elements of the BO, if prepared, for this project are:

Documentation of how the proposed amendments affect listed species

Jeopardy or non-jeopardy finding as appropriate

Incidental take statement as appropriate, for grizzly bear and other T&E species

6. The FWS and Forest Service agree that the BA and BO may contain summary statements and references to published documents (e.g., the 1993 *Grizzly Bear Recovery Plan*, Interagency Grizzly Bear Study Team annual reports, etc.) where appropriate, to avoid reiteration.

[8] Consultation Handbook - March 1998 - Final, page 4-13

Timeline

The agreed upon timeline is as follows:

Task	Date for completion
Completion of consultation agreement	May 1 to June 15, 2003
Completion of proposed action, purpose and need	May 1 to June 30, 2003
File NOI to amend plans	July 1, 2003
Scoping	July 1 to July 30, 2003
Content analysis	August 1 to September 15, 2003
Complete environmental analysis	July 1 to December 15, 2003
Prepare BA/BE	August 1 to October 1, 2003
Complete consultation w/BO	120 days: October 1, 2003 to January 30, 2004
Submit amended BA, as necessary	December 15, 2003
Complete decisions	December 15, 2003 to January 30, 2004
Issue decision and environmental documents	February 15, 2004

General Provisions

1. This Agreement and timeline can be amended by mutual agreement of both parties.
2. This Agreement is intended only to improve the internal management of the Forest Service and FWS and is neither intended to nor creates any right or benefit, substantive or procedural, enforceable at law or equity by a party against the United States, its Agencies or instrumentalities, its officers or employees, or any other person.
3. Unresolved issues will be elevated in writing to a local resolution working group consisting of the lead Forest Supervisor, Rebecca Aus, Shoshone National Forest, Cody, Wyoming, and the lead FWS State Field Supervisor, Brian Kelly, Cheyenne, Wyoming. If not resolved at that level, issues will be elevated to the regional issue resolution working group consisting of the Regional Forester, Intermountain Region, Jack Troyer and the Regional Director, Mountain-Prairie Region, Ralph Morgenweck.
4. Terry Root and Brian Kelly will participate in the Grizzly Bear Habitat Amendment Steering Team's regularly scheduled conference calls.

This Consultation Agreement is Entered Into By

/s/ Ralph O. Morgenweck	6/27/03
Regional Director U.S. Fish and Wildlife Service, Mountain-Prairie Region	Date
/s/ Dave B. Allen	7/14/03
Regional Director U.S. Fish and Wildlife Service, Pacific Region	Date
/s/ Bradley E. Powell	9/05/03
Regional Forester U.S. Forest Service, Northern Region	Date
/s/ Jack G. Troyer	9/12/03
Regional Forester U.S. Forest Service, Intermountain Region	Date
/s/ Rick D. Cables	9/15/03
Regional Forester U.S. Forest Service, Rocky Mountain Region	Date

Appendix B

Application Rules for the Preferred Alternative

Application Rules for Changes in Secure Habitat

Permanent changes to secure habitat. A project may permanently change secure habitat if secure habitat of equivalent habitat quality (as measured by the CEM or equivalent technology) is replaced in the same BMU subunit. The replacement habitat must be maintained for a minimum of 10 years and be either in place before project initiation or concurrent with project development. Increases in secure habitat may be banked to offset the impacts of future projects of that administrative unit within that subunit.

Temporary changes to secure habitat. Projects can occur with temporary reductions in secure habitat if all the following conditions are met:

- Only one active project per BMU subunit can occur at any one time.
- The total acreage of active projects within a given BMU does not exceed 1% of the acreage in the largest subunit within that BMU (Appendix D). The acreage of a project that counts against the 1% limit is the acreage associated with the 500-meter buffer around any gated or open motorized access route or recurring low level helicopter flight line, where the buffer extends into secure habitat.
- Secure habitat must be restored within one year after completion of the project.

Acceptable activities in secure habitat. Activities that do not require road construction, reconstruction, opening a restricted road, or recurring helicopter flight lines at low elevation do not detract from secure habitat. Examples of such activities include thinning, tree planting, prescribed fire, trail maintenance, and administrative studies/monitoring. However, these activities should be concentrated in time and space to the extent feasible to minimize disturbance. Effects of such projects are analyzed in the NEPA process.

- Helicopter use for short-term activities such as prescribed fire ignition/management, periodic administrative flights, fire suppression, search and rescue, and other similar activities does not constitute a project and does not detract from secure habitat.
- Motorized access routes with permanent barriers, decommissioned or obliterated roads, non-motorized trails, winter snow machine trails, and other motorized winter activities do not count against secure habitat.
- Project activities occurring between December 1 and February 28 do not count against secure habitat.
- Minimize effects on grizzly habitat from activities based in statutory rights, such as access to private lands under the Alaska National Interest Lands Conservation Act (ANILCA) and the 1872 General Mining Law. Where the mitigated effects exceed the 1998 baseline within the affected subunit, compensate secure habitat to levels at or above the 1998 baseline, in this order: 1) in adjacent subunits, or 2) nearest subunits, or 3) in areas outside the PCA adjacent to the subunit impacted.
- Honor existing oil and gas leases. Proposed APDs (Application for Permit to Drill) and operating plans within those leases should meet the Application Rules for changes in secure habitat. New leases, APDs, and operating plans must meet Standards 1 and 2.

Figure 40. One-percent rule acres (in thousands) and national forest/national park overlap when applying the 1% rule[1].

BMU #	Largest BMU subunit	1% rule acres[2]	National forests within the entire BMU	National parks within the entire BMU
18	Bechler/Teton #1	3.4	Targhee	Yellowstone, Grand Teton
4	Boulder/Slough #1	1.8	Custer, Gallatin	Yellowstone
17	Buffalo/Spread Creek #2	3.3	Bridger-Teton	Grand Teton
6	Crandall/Sunlight #2	2.0	Gallatin, Shoshone	
10	Firehole/Hayden #1	2.2		Yellowstone
2	Gallatin #3	1.4	Gallatin	Yellowstone
3	Hellroaring/Bear #2	1.5	Gallatin	Yellowstone
12	Henrys Lake #1	1.2	Gallatin, Targhee	
1	Hilgard #1	1.3	Beaverhead, Gallatin	Yellowstone
5	Lamar #1	1.9	Custer, Gallatin	Yellowstone
11	Madison #1	1.5	Gallatin	Yellowstone
8	Pelican/Clear #2	1.6		Yellowstone
13	Plateau #2	2.7	Gallatin, Targhee	Yellowstone
7	Shoshone #4	1.2	Shoshone	
16	South Absaroka #3	2.2	Shoshone	
15	Thorofare #1	1.2	Bridger-Teton	Yellowstone
14	Two Ocean/Lake #1	2.4	Bridger-Teton	Yellowstone, Grand Teton
9	Washburn #1	1.1		Yellowstone
PCA	Total 1% rule acres	34.4		
	Total 1% rule acres—BMUs with national parks only	4.9		
	Total 1% rule acres—BMUs with national forests only	6.6		
	Total 1% rule acres—BMUs with national forests plus national parks	22.9		

[1] The 1% rule is based on the size of the largest BMU subunit. When BMU boundaries include more than one national forest and/or national park, administrative units will need to coordinate to ensure that the 1% rule is not exceeded.
[2] Large lakes not included in 1% rule acre calculations.

Application Rules for Developed Sites

Mitigation of detrimental impacts must occur within the affected subunit and be equivalent to the type and extent of impact. Mitigation measures must be in place before the initiation of the project or included as an integral part of the completion of the project.

- New sites must be mitigated within that subunit to offset any increases in human capacity, habitat loss, and increased access to surrounding habitats. Consolidation and/or elimination of dispersed campsites is adequate mitigation for increases in human capacity at developed campgrounds if the new site capacity is equivalent to the dispersed camping eliminated.
- Administrative site expansions are exempt from human capacity mitigation expansion if such developments are necessary for enhancement of management of public lands and other viable alternatives are not available. Temporary construction work camps for highway construction or other major maintenance projects are exempt from human capacity mitigation if other viable alternatives are not available. Food storage facilities and management must be in place to ensure food storage compliance, including camp monitors. All other factors resulting in potential detrimental impacts to grizzly bears must be mitigated as identified for other developed sites.
- To benefit the grizzly bear, capacity, season of use, and access to surrounding habitats of existing developed sites may be adjusted. The improvements may then be banked to mitigate equivalent impacts of future developed sites within that subunit.
- Minimize effects on grizzly habitat from activities based in statutory rights, such as the 1872 General Mining Law. Where the mitigated effects exceed the 1998 baseline within that subunit, provide mitigation to levels at or below the 1998 baseline in this order: 1) adjacent subunits, or 2) the nearest subunit, or 3) in areas outside the PCA adjacent to the subunit impacted. Mitigation for Mining Law site impacts must follow standard developed site mitigation to offset any increases in human capacity, habitat loss, and increased access to surrounding habitats.
- Honor existing oil and gas leases. Proposed APDs and operating plans within those leases should meet the developed site standard. New leases, APDs, and operating plans must meet the developed site standard.
- Developments on private land are not counted against this standard.

Application Rules for Livestock Grazing

Application Rules for Livestock Grazing Standard

Allotments include both vacant and active commercial grazing allotments. Reissuance of permits for vacant cattle allotments may result in an increase in the number of permitted cattle, but the number of allotments must remain at or below the 1998 baseline. Allow combining or dividing existing allotments as long as acreage in allotments does not increase. Any such use of vacant cattle allotments resulting in an increase in permitted cattle numbers could be allowed only after an analysis to evaluate impacts on grizzly bears.

Application Rules for Livestock Grazing Guideline

Permittees with allotments with recurring conflicts will be given the opportunity for placement in a vacant allotment outside the PCA where there is less likelihood for conflicts with grizzly bears as these allotments become available.

Appendix C

Nuisance Bear Standards from the 1986 Interagency Grizzly Bear Guidelines

and

Conservation Strategy Nuisance Bear Standards

Nuisance Bear Standards From the 1986 Interagency Grizzly Bear Guidelines, pages 6 through 39

Grizzly Bear Management Guidelines for Management Situation 1

Management System or Activity: Wildlife Management

Resolve Grizzly-Human Conflicts

Line Officers will be provided with instructions for:

1. Fact finding, including

   Determination of where, why, when, and how the conflict occurred

   Who was involved

   Determination of status of problem bear (nuisance or non-nuisance) considering unnatural food dependency and individual bear history. See the Guidelines for Determining Nuisance Bear Status, beginning on page 286 of this appendix.
2. Grizzly control, including names and phone numbers of personnel from State wildlife management agencies and the U.S. Fish and Wildlife Service.
3. Live trapping
4. Tranquilization
5. Removal, including carcass disposal
6. Relocation, including maps of specific recommended relocation sites. Relocation plans with implications for National Parks, National Forests, and BLM lands will be reviewed and agreed upon by Park Service, and State wildlife management personnel.

Management System or Activity: Timber and Fire Management

Resolve Grizzly-Human Conflicts

In cases of grizzly-human conflict, District Rangers in cooperation with state wildlife management agencies will immediately identify the cause by determining where, why, when, and how the conflict occurred. If the problem bear is not determined to be a nuisance then correct the problem immediately by removed the man-related cause. Likely man-related causes are grizzly attractants and/or human activities interfering with grizzly use of habitat. Attractants include food and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, camps or other dwellings, game meat in possession of man, and transportation and/or work livestock. Interference activities are those associated with logging or burning or fire control (camps) which disrupt grizzlies, grizzly habitat and/or grizzly use of habitat. Cause removal could involve simple activity modification or temporary or permanent activity curtailment.

If the problem bear is determined to be a nuisance and all reasonable measures have been taken to protect the bear and habitat and a more natural grizzly population would be a likely result of its control, the U.S. Fish and Wildlife Service and State wildlife agencies will be requested to exercise control.

See the Guidelines for Determining Nuisance Bear Status, beginning on page 286 of this appendix.

Management System or Activity: Range Management

Resolve Grizzly-Human Conflicts

In cases of grizzly-human conflict or grizzly-livestock depredation, District Rangers in cooperation with State wildlife management agencies, will immediately identify the cause by determining where, when, why, and how the conflict occurred. If the problem bear is not

determined to be a nuisance then correct the problem immediately by removing the man-related cause. Likely man-related causes are grizzly attractants and/or activities interfering with grizzly use of habitat. Attractants include foods and food odors associated with man, domestic livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, camps or other dwellings, game meat in possession of man, and domestic and/or transportation livestock. Interference activities are domestic livestock and/or any other livestock operation activity disrupting the grizzly's natural activities in meeting its biological requirements (i.e., food use in wet areas with succulent, herbaceous vegetation which is scarce and thereby vitally important to the species especially during dry years or in late summer and autumn). Cause removal could involve simple activity modification or temporary or permanent activity curtailment in deference to seasonal or year-long grizzly use needs.

If the problem bear is determined to be a nuisance and all reasonable measures have been taken to protect the bear and its habitat and a natural grizzly population would be a likely result of its control, the U.S. Fish and Wildlife Service and state wildlife agencies will be requested to exercise control.

See the Guidelines for Determining Nuisance Bear Status, beginning on page 286 of this appendix.

Management System or Activity: Recreation Management

Resolve Grizzly-Human Conflicts

In cases of grizzly-human conflict, District Rangers, in cooperation with State wildlife management agencies, will immediately identify the cause by determining where, why, when, and how the conflict occurred. If the problem bear is not determined to be a nuisance then correct the problem immediately by removing the man-related cause. Likely man-related causes are grizzly attractants and/or human activities interfering with grizzly use of habitat. Attractants include foods and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, camps or other dwellings, game meat in the possession of man, and transportation and/or domestic livestock. Interference activities are those associated with recreation activities (transportation livestock grazing, camping, trail and road access, etc.) which disrupt grizzlies, grizzly habitat and/or grizzly use of habitat. Cause removal could involve simple activity modification or temporary or permanent activity curtailment or access closure.

If the problem bear is determined to be a nuisance and all reasonable measures have been taken to protect the bear and its habitat and a more natural grizzly population would be a likely result of its control, the U.S. Fish and Wildlife Service and State wildlife agencies will be requested to exercise control.

See the Guidelines for Determining Nuisance Bear Status, beginning on page 286 of this appendix.

Management System or Activity: Minerals, Watershed, and Special Uses Management

In cases of grizzly-human conflict, District Rangers in cooperation with State wildlife management agencies will immediately identify the cause by determining where, why, when, and how the conflict occurred. If the problem bear is not determined to be a nuisance then correct the problem immediately by removing the man-related cause. Causes are grizzly attractants and/or human activities interfering with grizzly use of habitat. Attractants include foods and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, camps or other dwellings, game meat in possession of man, and transportation and/or work livestock. Interference activities are those associated with mining, watershed development, and special uses which disrupt grizzlies, grizzly habitat, and/or grizzly use of habitat. Cause

removal could involve simple activity modification or temporary or permanent activity curtailment.

If the problem bear is determined to be a nuisance and all reasonable measures have been taken to protect the bear and its habitat and a more natural grizzly population would be a likely result of its control, the U.S. Fish and Wildlife Service and State wildlife agencies will be requested to exercise control.

See the Guidelines for Determining Nuisance Bear Status, beginning on page 286 of this appendix.

Grizzly Bear Management Guidelines for Management Situation 2

Management System or Activity: Wildlife Management

Resolve Grizzly-Human Conflicts

Line Officers will be provided with instructions for:

1. Fact finding, including

   Determination of where, why, when, and how the conflict occurred

   Who was involved

   Determination of status of problem bear (nuisance or non-nuisance) considering unnatural food dependency and individual bear history, see Appendix page 51
2. Grizzly control, including names and phone numbers of personnel from State wildlife management agencies and the U.S. Fish and Wildlife Service.
3. Live trapping
4. Tranquilization
5. Removal, including carcass disposal
6. Relocation, including maps of specific recommended relocation sites. Relocation plans with implications for National Parks, National Forests, and BLM lands will be reviewed and agreed upon by Park Service, and State wildlife management personnel.

Management System or Activity: Timber and Fire Management

In cases of grizzly-human conflict, District Rangers in cooperation with State wildlife management agencies will immediately identify the cause by determining where, why, when, and how the conflict occurred. If the problem bear is not determined to be a nuisance then correct the problem immediately by removing, if feasible, the man-related cause. Likely man-related causes are grizzly attractants and/or human activities interfering with grizzly use of habitat. Attractants include foods and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, camps or other dwellings, game meat in possession of man, and transportation and/or work livestock. Interference activities are those associated with logging or burning or fire control (camps) which disrupt grizzlies, grizzly habitat and/or grizzly use of habitat. Cause removal could involve simple activity modification or temporary activity cessation.

If the area does not warrant reclassification under Management Situation 1 and temporary cessation or activity modification is not possible or does not solve the problem or if the problem bear is determined to be a nuisance, the U.S. Fish and Wildlife Service and State wildlife agencies will be requested to exercise control.

See the Guidelines for Determining Nuisance Bear Status, beginning on page 286 of this appendix.

Management System or Activity: Range Management

In cases of grizzly-human conflict or grizzly-livestock depredation, District Rangers in cooperation with state wildlife management agencies, will immediately identify the cause by

determining where, when, why, and how the conflict occurred. If the problem bear is not determined to be a nuisance then correct the problem immediately by removing, if feasible, the man-related cause. Likely man-related causes are grizzly attractants and/or activities interfering with grizzly use of habitat. Attractants include foods and food odors associated with man, domestic livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, camps or other dwellings, game meat in possession of man, and domestic and/or transportation livestock. Interference activities are domestic livestock and/or any other livestock operation activity disrupting the grizzly's natural activities (i.e., food use in wet areas with succulent, herbaceous vegetation which is scarce and therefore vitally important to the species especially during dry years or in late summer and autumn). Cause removal could involve simple activity modification or temporary activity cessation. If the area does not warrant reclassification under Management Situation 1 and temporary activity cessation or activity modification is not feasible or does not solve the problem or if the problem bear is determined to be a nuisance, the U.S. Fish and Wildlife Service and State wildlife agencies will be requested to exercise control.

See the Guidelines for Determining Nuisance Bear Status, beginning on page 286 of this appendix.

Management System or Activity: Recreation Management

In cases of grizzly-human conflict, District Rangers in cooperation with state wildlife management agencies, will immediately identify the cause by determining where, why, when, and how the conflict occurred. If the problem bear is not determined to be a nuisance then correct the problem immediately by removing, if feasible, the man-related cause. Likely man-related causes are grizzly attractants and/or human activities interfering with grizzly use of habitat. Attractants include food and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, camps or other dwellings, game meat in possession of man, and transportation and/or domestic livestock. Interference activities are those associated with recreation activities (transportation livestock grazing, camping, etc.) which disrupt grizzlies, grizzly habitat and/or grizzly use of habitat. Cause removal could involve simple activity modification or temporary activity cessation. If the area does not warrant reclassification under Management Situation 1 and temporary activity cessation or activity modification is not feasible or does not solve the problem or if the problem bear is determined to be a nuisance, the U.S. Fish and Wildlife Service and state wildlife agencies will be requested to exercise control.

See the Guidelines for Determining Nuisance Bear Status, beginning on page 286 of this appendix.

Management System or Activity: Minerals, Watershed, and Special Use Management

In cases of grizzly-human conflict, District Rangers in cooperation with state wildlife management agencies, will immediately identify the cause by determining where, why, when, and how the conflict occurred. If the problem bear is not determined to be a nuisance then correct the problem immediately by removing, if feasible, the man-related cause. Likely man-related causes are grizzly attractants and/or human activities interfering with grizzly use of habitat. Attractants include food and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, camps or other dwellings, game meat in possession of man, and transportation and/or work livestock. Interference activities are those associated with mining, watershed development and special uses which disrupt grizzlies, grizzly habitat and/or grizzly use of habitat. Cause removal could involve simple activity modification or temporary activity cessation. If the area does not warrant reclassification under Management Situation 1 and temporary activity cessation or activity modification is not possible or feasible or does not solve the problem or if the problem bear is determined to be a nuisance, the U.S. Fish and Wildlife Service and State wildlife agencies will be requested to exercise control.

See the Guidelines for Determining Nuisance Bear Status, beginning on page 286 of this appendix.

Grizzly Bear Management Guidelines for Management Situation 3

Management System or Activity: Wildlife Management

Resolve Grizzly-Human Conflicts

Line Officers will be provided with instructions for:

1. Fact finding, including

   Determination of where, why, when, and how the conflict occurred

   Who was involved
2. Grizzly control, including names and phone numbers of personnel from State wildlife management agencies and the U.S. Fish and Wildlife Service, page 51.
3. Live trapping
4. Tranquilization
5. Removal, including carcass disposal
6. Relocation, including maps of specific recommended relocation sites. Relocation plans with implications for National Parks, National Forests, and BLM lands will be reviewed and agreed upon by Park Service, and State wildlife management personnel.

Management System or Activity: Timber and Fire Management

In cases of grizzly-human conflicts, District Rangers in cooperation with state wildlife management agencies will immediately identify the cause by determining where, why, when, and how the conflict occurred. Correct the problem immediately by removing the man-related cause and controlling the problem bear. Likely man-related causes are grizzly attractants. Attractants include foods and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, unsanitary camps or other dwellings, and game meat in possession of man. The U.S. Fish and Wildlife Service and State wildlife agencies will be requested to exercise control.

Management System or Activity: Range Management

In cases of grizzly-human conflict or grizzly livestock depredation, District Rangers in cooperation with state wildlife management agencies will immediately identify the cause by determining where, why, when, and how the conflict occurred. Correct the problem immediately by removing the man-related cause and controlling the problem bear. Likely man-related causes are grizzly attractants. Attractants include foods and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, unsanitary camps or other dwellings, and game meat in possession of man. The U.S. Fish and Wildlife Service and State wildlife agencies will be requested to exercise control.

Management System or Activity: Recreation Management

In cases of grizzly-human conflict, District Rangers in cooperation with state wildlife management agencies, will immediately identify the cause by determining where, why, when, and how the conflict occurred. Correct the problem immediately by removing the man-related cause and controlling the problem bear. Likely man-related causes are grizzly attractants. Attractants include food and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, unsanitary camps or other dwellings and game meat in possession of man. The U.S. Fish and Wildlife Service and State wildlife agencies will be requested to exercise control.

Management System or Activity: Minerals, Watershed, and Special Uses Management

In cases of grizzly-human conflict, District Rangers in cooperation with state wildlife management agencies, will immediately identify the cause by determining where, why, when,

and how the conflict occurred. Correct the problem immediately by removing the man-related cause and controlling the problem bear. Likely man-related causes are grizzly attractants. Attractants include food and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, unsanitary camps or other dwellings and game meat in possession of man. The U.S. Fish and Wildlife Service and State wildlife agencies will be requested to exercise control.

Guidelines for Determining Grizzly Bear Nuisance Status

From the 1986 Interagency Grizzly Bear Guidelines, pages 53 through 57

These guidelines apply to the Management Situation Areas defined in Interagency Grizzly Bear Guidelines. In Management Situations Areas 1 and 2, grizzlies must be determined to be a nuisance by specific criteria before they can be controlled. In Situation Areas 3 and 5, any grizzly involved in a grizzly-human conflict situation is considered a nuisance and will be controlled. Control must be compatible with Grizzly Bear Recovery Plan objectives for limiting man-caused grizzly mortality and with Federal and State laws and regulations.

A grizzly bear may be determined to be a nuisance if any or all of the following conditions apply:

- Condition A. The bear causes significant depredation to lawfully present livestock or uses unnatural food materials (human and livestock foods, garbage, home gardens, livestock carrion, and game meat in possession of man) which have been reasonably secured from the bear resulting in conditioning of the bear or significant loss of property.
- Condition B. The bear has displayed aggressive (not defensive) behavior toward humans which constitutes a demonstrable immediate or potential threat to human safety and/or a minor human injury resulted from a human/bear encounter.
- Condition C. The bear has had an encounter with people resulting in a substantial human injury or loss of human life.

The following are considerations in determining grizzly nuisance status under Condition A:

Unnatural foods were reasonably secure from grizzlies. Reasonably secure means all steps were taken to comply with guideline objectives (a) Maintain and Improve Habitat and (b) Minimize Grizzly-Human Conflict Potential. The following are examples of reasonably secure conditions:

1. Sight and/or smell of edibles and/or garbage was not dominant (i.e. food was canned or in other sealed containers) and edibles and/or garbage was made unavailable (hung out of reach or secured in a solid-sided-bear-proof structure). Livestock use did not occur in habitat components critically important to grizzlies in time or space
2. Livestock and wildlife carcasses were removed, destroyed or treated so that the material would not reasonably be expected to attract grizzlies
3. Game meat was stored at least 100 yards from any sleeping area
4. No baits were placed for purposes of sport hunting black bears, nor did any artificial feeding of bears occur

The following are considerations in determining grizzly nuisance status under Condition B:

The bear has displayed aggression toward man. Sound evidence must be available to establish that the bear acted aggressively without provocation (not defensively), and that such behavior constituted a threat to human safety and/or a minor human injury occurred as a result of a nondefensive grizzly attack.

The following are considerations in determining grizzly nuisance status under Condition C:

An encounter with people which resulted in a serious human injury or loss of human life. A bear that is involved in an accidental encounter with people, defense of young, or in a provoked attack (the bear acted defensively not aggressively) which results in a minor human injury should not be considered a nuisance under this condition.

If information is insufficient to clearly establish the above requisites under Conditions A, B, and C, then the involved bear(s) probably should not be determined a nuisance under that condition. The criteria in Table 1 should be used to guide control actions.

Preventive Action

Certain specific grizzlies have known behavioral patterns, which, when combined with location, time and other factors, indicate that an incident is highly probable. In such situations, direct preventive action designed to safely remove the bear(s) from the situation (prior to an occurrence which would result in nuisance status and possible loss of the bear(s) to the ecosystem) can be implemented regardless of the Management Situation involved. Human activities must be in compliance with applicable guidelines to minimize potential for grizzly-human conflicts for that Management Situation. Control actions should be designed to capture and remove the specific target bear(s).

In other situations, a bear may move into a visitor use or residential area without causing an incident, but there is indication that due to its persistent use of the area, it may become overly-familiar with humans and may become habituated. The animal may be relocated if a suitable release site (free of circumstances similar to the capture site) is available. This is an action to prevent a possible incident or habituation of the bear. It does not count as an offense when determining the disposition of the bear (using Table 1), should the bear be recaptured in a future control action.

III. Grizzly Bear Control Action

1. If a grizzly bear is not determined to be a nuisance after consideration of criteria in Section II, no control action will be initiated.
2. Capture of nuisance grizzly bears outside the National Parks is the primary responsibility of the State Fish and Game Agency in conjunction with the U.S. Fish and Wildlife Service. The National Park Service is responsible for bear capture within National Parks. Figure 1 is a schematic diagram showing the sequence of notification and the decision process which will be used in all grizzly control actions. Data forms for recording information about the captured bear(s) and the control action are provided in the Appendix. Nuisance bear forms should be completed by the on-site official and forwarded to the Grizzly Bear Recovery Coordinator for subsequent distribution.
3. Nuisance grizzlies that are sick or injured beyond a point where natural recovery is likely will be removed from the population. Other nuisance grizzlies will be controlled according to the guidelines in Table 1.
4. After a bear has been captured during a control action, the decision on where to relocate the bear or whether to kill it must be made within 24 hours of its capture. The relocation must be made as expeditiously as possible after the disposition of the bear is determined. Bears will not be held in a snare but will be immobilized, marked, and placed in an appropriate holding facility (can be a culvert trap).

With due consideration of mortality risk associated with immobilization, grizzly bears released should be marked with numbered ear tags, lip tattoo, and functioning radio transmitters. Monitoring will be a cooperative effort between State and Federal agencies. On-site release may be accomplished if the bear taken is: (a) determined not to be a nuisance bear or, (b) on a first offense when the bear cannot be relocated because of terrain, weather, or inaccessibility to a relocation site. Females with cubs, where relocation is identified in the above table, will be released on-site if relocation is not feasible for previously stated reasons or if the cubs cannot also be caught and relocated with the female. An on-site release will not be conducted in developed areas. On-site releases will be accomplished after approval of the land management agency if the release is monitored in such a way to determine its success or failure with respect to bear survival and conflict resolution.

5. If a bear is to be killed, the action will be completed only by authorized State or Federal or Tribal employees. A grizzly bear mortality report form should be completed and the carcass forwarded to

the Montana Department of Fish, Wildlife and Parks lab in Bozeman, Montana for examination and subsequent disposition.

6. The initiating agency may "take back" a relocated bear, according to case-by-case agreements.
7. The State Fish and Game Regional Office will be the principal coordination point for all control actions, unless specified otherwise in the initial discussions on a particular incident.

The public and news media are extremely interested in all operations involving grizzly bears. To ensure that they receive the proper information, it is critical that information be shared between all involved agencies in an accurate and timely manner. Planned news releases will be the responsibility of the State Fish and Game agency in close consultation with the administering land management agency (or Tribe) and the Grizzly Bear Recovery Coordinator.

Table 1. Guidelines for Grizzly Bear Control Action.

Type of Problem

Type of Grizzly	No Offense	Condition A			Condition B		Condition C
	Offense	1st	2nd	3rd	1st	2nd	1st
Females							
Orphaned Cub	RLS[1]/REL[2]						
Cub		REL	REL	REM[3]	REL	REM	REM
Yearling		REL	REL	REM	REL	REM	REM
Subadult		REL	REL	REM	REL	REM	REM
Prime Adult with young		REL	REL	REM (Adult)	REL	REM (Adult)	REM (Adult)
Old Adult		REL	REM	---	REM	---	REM
Old Adult with young		REL	REL	REM (Adult)	REL	REM (Adult)	REM (Adult)
Males							
Orphaned Cub	RLS/REL						
Cub		REL	REL	REM	REL	REM	REM
Yearling		REL	REM	---	REM	---	REM
Subadult		REL	REM	---	REM	---	REM
Prime Adult		REL	REL	---	REM	---	REM
Old Adult		REM		---	REM	---	REM

[1]RLS=Release on site [2]REL=Relocate [3]REM=Remove from population
(Nuisance grizzlies that are sick or injured beyond a point where natural recovery is likely will be removed.)
Cub=Young of the Year. **Yearling** =12 to 24 months old. **Subadult** =24 to 48 months old.
Young=Cub, yearling, or subadult accompanying mother. Old=advanced age and deteriorated physical state; indicators are tooth wear and physical appearance.

Action Procedures in Cases of Grizzly-Human Conflict

From the 1986 Interagency Grizzly Bear Guidelines, page 59

All grizzly bear habitat

1. All incidents of grizzly-human conflict will be investigated immediately and a factual and detailed report (answering who, what, when, why, where and how) submitted to the line officer. In case of human death, notify the County Sheriff and County Coroner. In case of grizzly death, notify the U.S. Fish and Wildlife Service and the appropriate State wildlife management agency.
2. State wildlife management agencies and/or the U.S. Fish and Wildlife Service, National Park Service, Tribe will handle nuisance grizzlies.
3. County sheriffs will have primary responsibility for backcountry rescue outside National Parks and Indian Reservations.
4. The site of an incident will be closed immediately to human use until the investigation is complete and the problem solved or corrected. This closure is the responsibility of the managing agency.
5. All incidents resulting in serious human injury or death will be investigated by an interagency team with members from the county law enforcement agency, State wildlife management agency, land management agency, U.S. Fish and Wildlife Service, NPS and appropriate outside experts as necessary.
6. News releases involving grizzly-human conflict incidents will be coordinated through all concerned agencies.

Further, in National Parks,

7. All grizzly-human conflicts will be investigated and a factual and detailed bear incident report submitted to the Superintendent's Office. In incidents where injury and/or property damage have occurred, the investigating officer's report will be supplemented when possible by the statements of witnesses to the incident. All incidents of grizzly inflicted human death will be investigated by an interagency investigation team (as in 5.).
8. All management actions involving bears will be reported by telephone to the Bear Management Office/Resource Management Office.
9. All grizzly bear sightings will be recorded in the station log and telephoned daily to the Bear Management Office/Resource Management Specialist. Information shall include observer, data, location, time, number, activity, and if possible, sex, age class, and individual description.

Nuisance Bear Standards From the 2003 Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area (pages 59 and 60)

The focus and intent of nuisance grizzly bear management inside and outside the PCA are predicated on the strategies and actions to prevent grizzly bear/human conflicts. It is recognized that active management aimed at individual nuisance bears will be required in both areas. Management actions outside the PCA will be implemented according to state management plans in coordination with landowners and land management agencies. These actions will be compatible with grizzly bear population management objectives for each state for the areas outside the PCA.

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 will be carefully considered and consistent with mortality limits for the GYA as described in the Conservation Strategy. Recognizing that conservation of female bears is essential to maintenance of a grizzly population, removal of nuisance females will be minimized.

Within the Primary Conservation Area

Within the PCA, management of nuisance bears will be addressed according to the following standards:

- Bears displaying food conditioning and/or habituation may be either relocated or removed based on specific details of the incident. State wildlife agencies, following consultation with other appropriate management authorities, and national parks will make this judgment after considering the cause, location, and severity of the incident or incidents.
- 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 representatives of affected agencies document the reason in writing. All relocations outside the PCA will be governed by state management plans.
- Bears may be preemptively moved when they are in areas where they are likely to come into conflicts with site-specific human activities, but only as a last resort. Such preemptive moves will not count against the bear as nuisance moves.
- Bears preying on lawfully present livestock (cows, domestic sheep, horses, goats, llamas, etc.) on public lands will be managed according to the following criteria:
    - No grizzly bear involved in livestock depredations inside the PCA shall be removed unless it has been relocated at least one time and continues to cause livestock depredations. This does not apply to depredations occurring in sheep allotments inside the PCA in areas that were designated Management Situation 1[9] under the Interagency Grizzly Bear Guidelines (IGBC 1986).
    - Grizzly bears will not be removed or relocated from sheep allotments on federal land inside the PCA in areas that were designated Management Situation 1 under the Interagency Grizzly Bear Guidelines (IGBC 1986).
- Before any removal, except in cases of human safety, management authorities will consult by telephone or in person to judge the adequacy of the reason for removal.
- Bears displaying natural aggression are not to be removed, even if the aggression results in human injury or death, unless it is the judgment of management authorities that the particular circumstances warrant removal.
- Bears displaying unnatural aggression will be removed from the population.

[9] Management Situation 1 areas are described in forest plans.

- Decisions based on criteria for relocation and removal inside the PCA for management of nuisance bears in the Conservation Strategy and best biological judgment of authorities.
    - Authorized National Park Service authorities will implement removals and relocations within YNP and GTNP.
    - Authorized state authorities outside YNP and GTNP will implement other removals and relocations.
    - State wildlife agencies in coordination with the appropriate federal agencies will predetermine adequate and available sites for relocations. Relocation sites should be agreed upon before the need for relocation occurs. In order to deal with problem bears more efficiently, managers should have full access to relocation sites without having to conduct individual consultation for each relocation.
    - Livestock damage prevention and compensation are addressed in individual state management plans.
- Management of all nuisance bear situations will emphasize removal of the human cause of the conflict, when possible, or management and education actions to limit such conflicts. Relocation and removal of grizzly bears may occur if the above actions are not successful.

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 will be removed as described in appropriate state management plans or in compliance with national park rules and regulations.

Outside of national parks, individual nuisance bears deemed appropriate for removal may be taken by a legal hunter in compliance with rules and regulations promulgated by the appropriate wildlife agency commission, as long as such taking is in compliance with existing state and federal laws, and as long as mortality limits specified for the GYA as described in this Conservation Strategy are not exceeded. This could include licensed hunters or property owners or their agents who have obtained appropriate permits from the state. Licensed hunters will be allowed to possess bear parts for bears that are legally harvested under a state permit.

Monitoring Protocol

All nuisance bear control actions, and grizzly bear/human and grizzly bear/livestock conflicts will be summarized annually in the Annual Report of the IGBST. Most conflicts are due to availability of human foods, human developments, or livestock depredations in occupied grizzly bear habitat. This report will detail the cause and location of each conflict and management action and display an annual spatial distribution of conflicts that can be used by managers to identify where problems occur and to compare trends in locations, sources, landownership, and types of conflicts.

Appendix D

BMU/Subunit Information Inside the PCA

BMU/Subunit Information within the PCA

Within the PCA there are 18 bear management units (BMUs) and 40 BMU subunits, totaling 5,894,00 acres (Figure 3 and Figure 41). The major land management agencies include six national forests and two national parks.

Secure Habitat and Motorized Access Route Density within the PCA for each BMU Subunit

Using GIS databases created by each administrative unit, the percent secure habitat, open motorized access route density (OMARD) > 1 mile per square mile, and total motorized access route density (TMARD) > 2 miles/square mile were estimated as of 1998 for each BMU subunit (Figure 42). OMARD is evaluated for each of two seasons, as access routes may be restricted in one season and not another. TMARD and secure habitat are single values by definition and do not vary by season.

The contribution of private roads and state and county highways was also evaluated for each BMU subunit (Figure 43). These values represent a minimum percent for OMARD and TMARD, and a maximum percent for secure habitat even if all motorized access features administered by the land management agencies were obliterated or decommissioned on public lands.

A standardized program (AML) that runs in the ARC/INFO software environment was used to make the calculations. The buffer command in ARC/INFO is used to buffer all relevant motorized access features by 500 meters. The area outside of this buffer is secure habitat. Motorized access route density is calculated using a moving windows process with 30-meter cells and a one-mile square window.

Figures 44 and 45 display OMARD > 1 mile per square mile for each of two seasons for the PCA. Figure 46 displays TMARD > 2 miles/square mile for the PCA.

Figure 41. General BMU subunit information (thousands of acres) inside the PCA.

Subunit name	BMU #	Acres	Land management agencies
Bechler/Teton	18	341.8	Caribou-Targhee NF, Yellowstone NP, Grand Teton NP
Boulder/Slough #1	4	180.5	Custer NF, Gallatin NF
Boulder/Slough #2	4	148.5	Custer NF, Gallatin NF, Yellowstone NP
Buffalo/Spread Creek #1	17	142.1	Bridger-Teton NF, Grand Teton NP
Buffalo/Spread Creek #2	17	325.1	Bridger-Teton NF
Crandall/Sunlight #1	6	83.2	Gallatin NF, Shoshone NF
Crandall/Sunlight #2	6	202.2	Gallatin NF, Shoshone NF
Crandall/Sunlight #3	6	142.1	Shoshone NF
Firehole/Hayden #1	10	217.0	Yellowstone NP
Firehole/Hayden #2	10	113.3	Yellowstone NP
Gallatin #1	2	81.9	Yellowstone NP
Gallatin #2	2	99.2	Yellowstone NP
Gallatin #3	2	139.5	Gallatin NF
Hellroaring/Bear #1	3	118.4	Gallatin NF, Yellowstone NP
Hellroaring/Bear #2	3	146.6	Gallatin NF, Yellowstone NP
Henrys Lake #1	12	128.6	Caribou-Targhee NF
Henrys Lake #2	12	97.9	Caribou-Targhee NF, Gallatin NF
Hilgard #1	1	128.6	Beaverhead-Deerlodge NF, Gallatin NF
Hilgard #2	1	90.2	Beaverhead-Deerlodge NF, Gallatin NF
Lamar #1	5	192.0	Yellowstone NP
Lamar #2	5	115.8	Yellowstone NP
Madison #1	11	145.3	Beaverhead-Deerlodge NF, Gallatin NF
Madison #2	11	100.5	Gallatin NF
Pelican/Clear #1	8	69.1	Yellowstone NP
Pelican/Clear #2	8	164.5	Yellowstone NP
Plateau #1	13	183.0	Caribou-Targhee NF, Gallatin NF, Yellowstone NP
Plateau #2	13	268.8	Caribou-Targhee NF, Yellowstone NP
Shoshone #1	7	78.1	Shoshone NF
Shoshone #2	7	84.5	Shoshone NF
Shoshone #3	7	90.2	Shoshone NF
Shoshone #4	7	121.0	Shoshone NF
South Absaroka #1	16	104.3	Shoshone NF
South Absaroka #2	16	122.2	Shoshone NF
South Absaroka #3	16	222.7	Shoshone NF
Thorofare #1	15	175.4	Bridger-Teton NF, Yellowstone NP
Thorofare #2	15	115.2	Bridger-Teton NF, Yellowstone NP
Two Ocean/Lake #1	14	310.4	Bridger-Teton NF, Yellowstone NP
Two Ocean/Lake #2	14	91.5	Bridger-Teton NF, Yellowstone NP
Washburn #1	9	113.9	Yellowstone NP
Washburn #2	9	92.2	Yellowstone NP

Figure 42. The 1998 baseline values for secure habitat, OMARD >1 mile per square mile, and TMARD >2 miles per square miles for 40 BMU subunits in the GYA. Includes USFS, BLM, state, county and private motorized access routes. Size is shown in thousands of acres[1].

Subunit name	BMU #	OMARD % > 1 mi/sq mi		TMARD % >2 mi/sq mi	% secure habitat[2]	Size
		S1	S2			
Bechler/Teton	18	12.7	12.7	4.7	78.1	341.8
Boulder/Slough #1	4	2.2	2.2	0.1	96.6	180.5
Boulder/Slough #2	4	1.0	1.0	0	97.7	148.5
Buffalo/Spread Creek #1	17	10.1	10.2	4.1	88.3	142.1 (140.8)
Buffalo/Spread Creek #2	17	13.3	14.5	10.4	74.3	325.1
Crandall/Sunlight #1	6	11.9	16.2	4.0	81.1	83.2
Crandall/Sunlight #2	6	13.6	14.6	8.9	82.3	202.2
Crandall/Sunlight #3	6	12.8	16.6	8.2	80.4	142.1
Firehole/Hayden #1	10	6.3	6.3	1.2	88.4	217.0
Firehole/Hayden #2	10	6.3	6.3	0.9	88.4	113.3
Gallatin #1	2	1.6	1.6	0.1	96.3	81.9
Gallatin #2	2	7.8	7.8	3.8	90.2	99.2
Gallatin #3	2	41.5	42.5	16.9	55.3	139.5
Hellroaring/Bear #1	3	20.8	21.5	13.5	77.0	118.4
Hellroaring/Bear #2	3	0.6	0.6	0.2	99.5	146.6
Henrys Lake #1	12	44.7	44.7	25.9	45.4	128.6 (122.2)
Henrys Lake #2	12	46.1	46.1	28.1	45.7	97.9 (89.6)
Hilgard #1	1	25.1	25.1	12.5	69.8	128.6
Hilgard #2	1	16.0	16.0	10.3	71.5	90.2
Lamar #1	5	7.0	7.0	3.3	89.4	192.0
Lamar #2	5	0	0	0	100	115.8
Madison #1	11	24.2	24.5	10.2	71.5	145.3
Madison #2	11	31.7	31.7	22.3	66.5	100.5 (95.4)
Pelican/Clear #1	8	1.3	1.3	0.4	97.8	69.1
Pelican/Clear #2	8	3.0	3.0	0.2	94.1	164.5
Plateau #1	13	19.0	19.2	9.8	68.9	183.0

Subunit name	BMU #	OMARD % > 1 mi/sq mi		TMARD % >2 mi/sq mi	% secure habitat[2]	Size
		S1	S2			
Plateau #2	13	6.1	6.1	2.4	88.7	268.8
Shoshone #1	7	1.5	1.5	0.9	98.5	78.1
Shoshone #2	7	1.1	1.1	0.4	98.8	84.5
Shoshone #3	7	3.4	3.4	1.3	97.0	90.2
Shoshone #4	7	3.9	4.6	2.0	94.9	121.0
South Absaroka #1	16	0.4	0.4	0	99.2	104.3
South Absaroka #2	16	0	0	0	99.9	122.2
South Absaroka #3	16	2.1	2.1	2.3	96.8	222.7
Thorofare #1	15	0	0	0	100	175.4
Thorofare #2	15	0	0	0	100	115.2
Two Ocean/Lake #1	14	1.8	1.8	0.1	96.3	310.4 (238.1)
Two Ocean/Lake #2	14	0	0	0	100	91.5 (80.0)
Washburn #1	9	12.4	12.4	2.9	83.0	113.9
Washburn#2	9	3.6	3.6	0.7	92.0	92.2
Mean for PCA/total acres		10.4	10.7	5.3	85.6	5,893.8 (5,782.4)

[1] Lakes >1 mile in size were removed from subunit totals, OMARD, TMARD, and secure habitat calculations. Numbers in parentheses are acres of subunit without these lakes.
[2] Percent secure habitat was rounded to the nearest whole percent for showing BMU subunits that are below 70%.

Figure 43. The 1998 baseline values for secure habitat, OMARD >1 mile per square mile, and TMARD >2 miles per square mile for 40 BMU subunits in the GYA. Includes only private roads and state and county highways[2]. Size is shown in thousands of acres[1, 2].

Subunit name	BMU #	OMARD % > 1 mi/sq mi		TMARD % >2 mi/sq mi	% secure habitat[2]	Size
		S1	S2			
Bechler/Teton	18	0	0	0	99	341.8
Boulder/Slough #1	4	2	2	0	97	180.5
Boulder/Slough #2	4	0	0	0	100	148.5
Buffalo/Spread Creek #1	17	0	0	0	99	142.1 (140.8)
Buffalo/Spread Creek #2	17	2	2	0	95	325.1
Crandall/Sunlight #1	6	6	6	1	92	83.2
Crandall/Sunlight #2	6	8	8	1	89	202.2
Crandall/Sunlight #3	6	5	5	1	93	142.1
Firehole/Hayden #1	10	0	0	0	100	217.0
Firehole/Hayden #2	10	0	0	0	100	113.3
Gallatin #1	2	0	0	0	99	81.9
Gallatin #2	2	1	1	0	99	99.2
Gallatin #3	2	16	16	8	81	139.5
Hellroaring/Bear #1	3	9	9	4	91	118.4
Hellroaring/Bear #2	3	0	0	0	100	146.6
Henrys Lake #1	12	31	31	16	67	128.6 (122.2)
Henrys Lake #2	12	14	14	7	85	97.9 (89.6)
Hilgard #1	1	6	6	2	91	128.6
Hilgard #2	1	2	2	3	92	90.2
Lamar #1	5	2	2	1	97	192.0
Lamar #2	5	0	0	0	100	115.8
Madison #1	11	6	6	3	94	145.3
Madison #2	11	8	8	4	90	100.5 (95.4)
Pelican/Clear #1	8	0	0	0	100	69.1
Pelican/Clear #2	8	0	0	0	100	164.5

Subunit name	BMU #	OMARD % > 1 mi/sq mi		TMARD % >2 mi/sq mi	% secure habitat[2]	Size
		S1	S2			
Plateau #1	13	2	2	1	95	183.0
Plateau #2	13	0	0	0	99	268.8
Shoshone #1	7	1	1	0	99	78.1
Shoshone #2	7	0	0	0	99	84.5
Shoshone #3	7	1	1	0	98	90.2
Shoshone #4	7	1	1	0	96	121.0
South Absaroka #1	16	0	0	0	99	104.3
South Absaroka #2	16	0	0	0	100	122.2
South Absaroka #3	16	0	0	0	100	222.7
Thorofare #1	15	0	0	0	100	175.4
Thorofare #2	15	0	0	0	100	115.2
Two Ocean/Lake #1	14	0	0	0	100	310.4 (238.1)
Two Ocean/Lake #2	14	0	0	0	100	91.5 (80.0)
Washburn #1	9	0	0	0	100	113.9
Washburn#2	9	0	0	0	100	92.2
Mean for PCA/total acres		3	3	1.3	96	5,893.8 (5,782.4)

[1] Lakes >1 square mile in size were removed from subunit totals, OMARD, TMARD, and secure habitat calculations. Numbers in parentheses are acres of subunit without these lakes.
[2] These motorized features are not subject to management under this proposal and the values in this table represent a minimum percent for OMARD and TMARD, and a maximum percent for secure habitat even if all motorized access features administered by the land management agencies were obliterated or decommissioned on public lands.

Figure 44. Open Motorized Access Route Density (OMARD) for bear management subunits inside the PCA (Season 1).

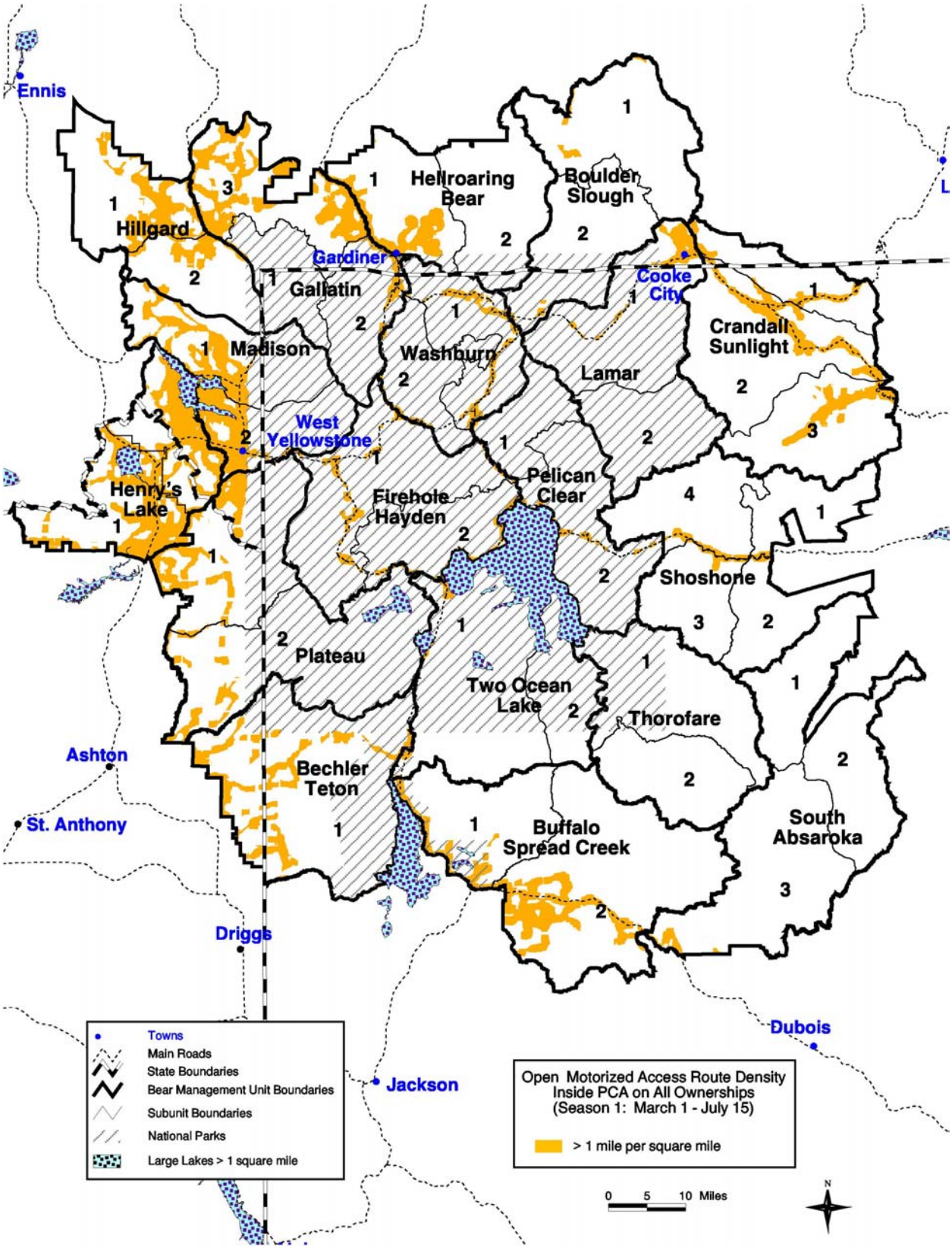


Figure 44. Open Motorized Access Route Density (OMARD) for bear management subunits inside the PCA (Season 2).

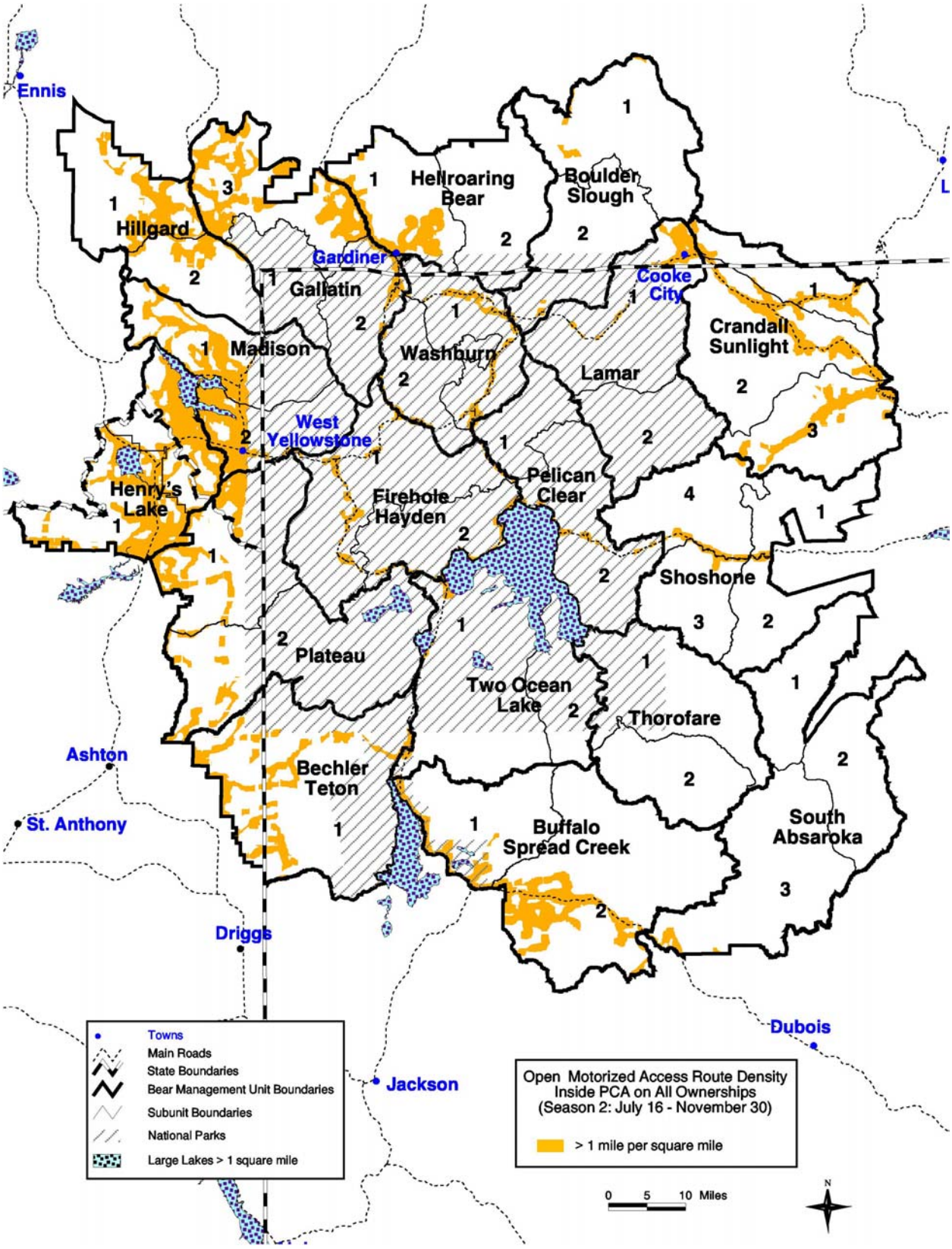
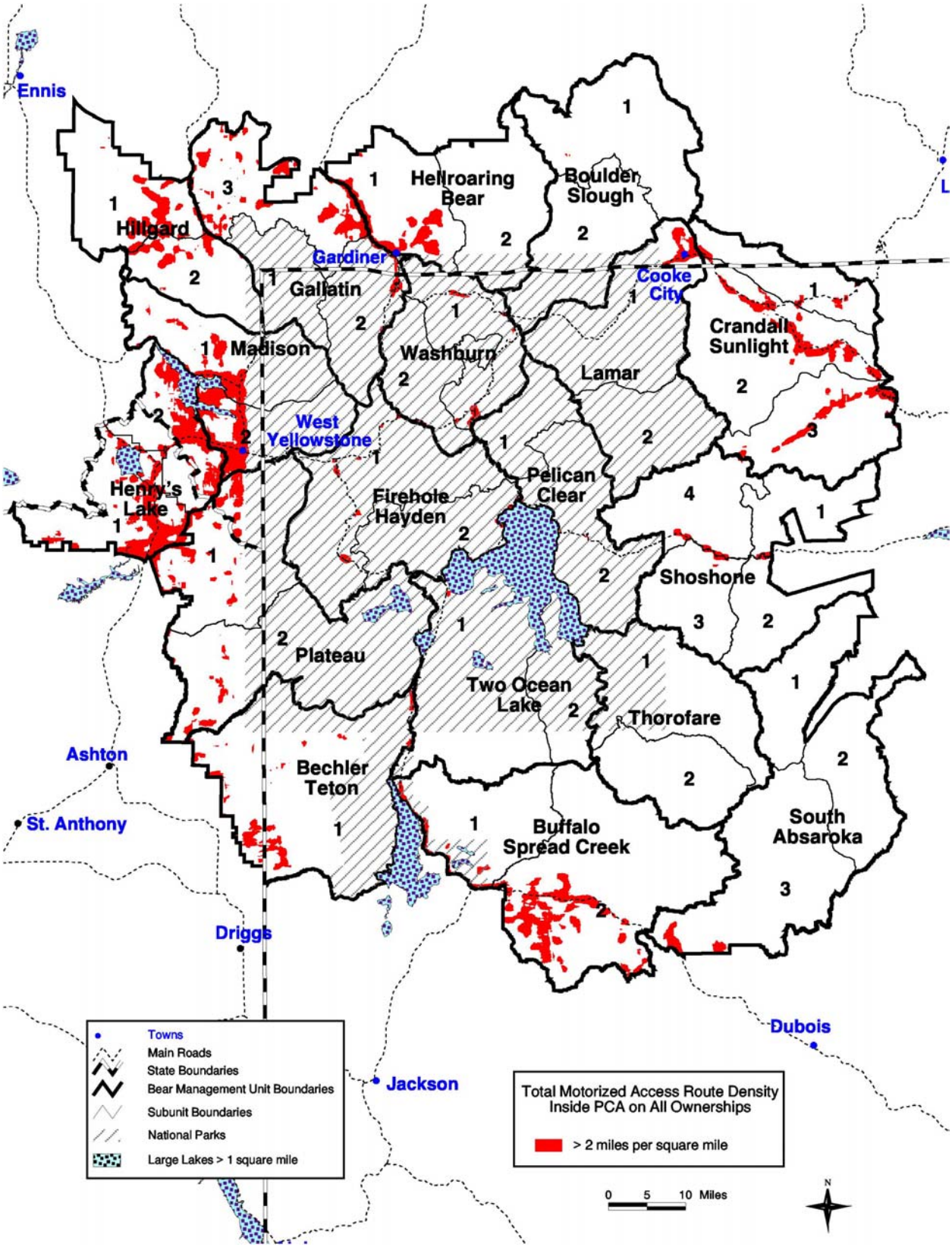


Figure 44. Total Motorized Access Route Density (TMARD) for bear management subunits inside the PCA.



Developed Sites on Public Lands within the PCA

Developed sites include all sites on public land developed or improved for human use or resource development such as campgrounds, trailheads, lodges, administrative sites, service stations, summer homes, restaurants, visitor's centers, and permitted resource development sites such as oil and gas exploratory wells, production wells, plans of operation for minerals activities, work camps, etc. Developed sites on public lands are currently inventoried in existing GIS databases and are an input item to the Yellowstone Grizzly Bear Cumulative Effects Model (CEM). Figure47 displays the number of developed sites for each administrative unit by BMU subunit as of 1998.

Figure 47. The 1998 baseline for number of developed sites on public lands within each of the BMU subunits in the GYA.

Subunit	Administrative units	Permitted summer home complexes[1]	Developed campgrounds[2]	Trailheads	Major developed sites and lodges	Administrative or maintenance sites	Other developed sites[3]	Plans of operation for minerals activities[4]
Bechler/Teton	Targhee NF Yellowstone NP Grand Teton NP	0 0 0	1 0 8	5 2 3	2 0 1	4 2 3	17 2 10	0 0 0
Boulder/Slough #1	Custer NF Gallatin NF	0 0	0 1	1 7	0 0	0 1	0 3	6 2
Boulder/Slough #2	Gallatin NF Yellowstone NP	0 0	0 1	0 3	0 0	2 2	0 1	0 0
Buffalo/Spread Creek #1	Bridger-Teton NF Grand Teton NP	0 0	1 0	1 7	0 2	0 2	1 3	0 0
Buffalo/Spread Creek #2	Bridger-Teton NF	1	4	3	3	4	5	2
Crandall/Sunlight #1	Shoshone NF Gallatin NF	0 0	2 1	5 2	1 0	1 0	5 5	0 0
Crandall/Sunlight #2	Shoshone NF Gallatin NF	0 0	5 1	4 0	1 0	2 0	5 0	1 0
Crandall/Sunlight #3	Shoshone NF Wyoming Game and Fish	0 0	2 2	3 0	0 0	1 1	2 0	0 0
Firehole/Hayden #1	Yellowstone NP	0	1	5	1	6	13	0
Firehole/Hayden #2	Yellowstone NP	0	1	3	1	2	8	0
Gallatin #1	Yellowstone NP	0	0	3	0	1	0	0
Gallatin #2	Yellowstone NP	0	2	5	1	12	1	0
Gallatin #3	Gallatin NF Yellowstone NP	0 0	2 0	10 0	0 0	0 0	7 0	0 0

Subunit	Administrative units	Permitted summer home complexes[1]	Developed campgrounds[2]	Trailheads	Major developed sites and lodges	Administrative or maintenance sites	Other developed sites[3]	Plans of operation for minerals activities[4]
Hellroaring/Bear #1	Gallatin NF Yellowstone NP	0 0	5 0	12 1	1 0	1 0	5 1	8[5] 0
Hellroaring/Bear #2	Gallatin NF Yellowstone NP	0 0	0 0	1 0	0 0	1 2	0 0	0 0
Henrys Lake #1	Targhee NF	2	3	1	0	3	10	1
Henrys Lake #2	Targhee NF Gallatin NF	0 6	0 3	1 4	0 0	1 0	1 2	1 0
Hilgard #1	Beaverhead NF Gallatin NF	0 0	0 0	0 6	0 1	3 2	0 2	0 0
Hilgard #2	Gallatin NF Yellowstone NP	0 0	0 0	4 3	0 0	1 0	1 0	0 0
Lamar #1	Yellowstone NP Gallatin NF Shoshone NF Custer NF	0 0 0 0	1 2 0 0	5 5 0 1	0 0 0 0	3 6 0 0	2 4 0 0	0 6 0 2
Lamar #2	Yellowstone NP	0	0	0	0	4	0	0
Madison #1	Gallatin NF Yellowstone NP	0 0	1 0	11 0	0 0	1 0	9 0	0 0
Madison #2	Gallatin NF Yellowstone NP	8 0	2 0	1 1	1 0	6 2	6 1	0 0
Pelican/Clear #1	Yellowstone NP	0	0	2	0	0	0	0
Pelican/Clear #2	Yellowstone NP	0	1	4	1	4	3	0
Plateau #1	Targhee NF Gallatin NF Yellowstone NP	1 0 0	0 0 0	0 1 0	0 0 0	0 0 1	1 0 0	0 0 0
Plateau #2	Targhee NF Yellowstone NP	0 0	1 0	1 0	0 0	1 4	1 0	0 0
Shoshone #1	Shoshone NF	1	2	0	0	0	6	0

Subunit	Administrative units	Permitted summer home complexes[1]	Developed campgrounds[2]	Trailheads	Major developed sites and lodges	Administrative or maintenance sites	Other developed sites[3]	Plans of operation for minerals activities[4]
Shoshone #2	Shoshone NF	0	0	1	1	0	0	0
Shoshone #3	Shoshone NF	2	0	1	1	0	0	0
Shoshone #4	Shoshone NF	3	3	3	6	0	8	0
South Absaroka #1	Shoshone NF	0	0	0	0	0	0	0
South Absaroka #2	Shoshone NF	0	0	0	0	2	0	0
South Absaroka #3	Shoshone NF	1	3	4	1	1	4	0
Thorofare #1	Bridger-Teton NF Yellowstone NP	0 0	0 0	0 0	0 0	0 4	0 0	0 0
Thorofare #2	Bridger-Teton NF Yellowstone NP	0 0	0 0	0 0	0 0	2 0	0 0	0 0
Two Ocean/Lake #1	Yellowstone NP Bridger-Teton NF Grand Teton NP	0 0 0	2 1 0	3 0 1	1 0 0	3 0 0	2 0 1	0 0 0
Two Ocean/Lake #2	Yellowstone NP Bridger-Teton NF	0 0	0 0	0 0	0 0	2 1	0 0	0 0
Washburn #1	Yellowstone NP	0	2	8	2	7	6	0
Washburn #2	Yellowstone NP	0	1	6	0	1	4	0
Primary Conservation Area	All	25	68	164	29	115	168	29

[1] Single permitted recreation residences are classified as other developed sites in this table.
[2] Four trailheads on the Bridger-Teton National Forest are combined with the associated campgrounds and are considered a single developed site.
[3] Includes developed recreation sites, as well as community infrastructure sites, dams, and other miscellaneous facilities.
[4] Mining claims with plans of operation are considered developed sites for this baseline. Currently, not all sites have active projects.
[5] Includes one mineral materials site with an outside contractor.

Figure 48. Number of mining claims as of 1998 in BMU subunits in the PCA[1].

Subunit	Gallatin NF	Custer NF	Caribou-Targhee NF	Shoshone NF	Bridger-Teton NF
Boulder/Slough #1	8	144			
Buffalo/Spread Creek #1					14
Buffalo/Spread Creek #2					6
Hellroaring/Bear #1	653				
Henrys Lake #1			5		
Henrys Lake #2			3		
Lamar #1	429	42			
Shoshone #3				16	
South Absaroka #2				28	
South Absaroka #3				6	
Total	1,090	186	8	50	20

[1] Activities based in statutory rights, such as oil and gas leases and mining claims under the 1872 General Mining Law are also tracked as part of the developed site monitoring effort. Mining claims and or oil and gas leases do not in and of themselves constitute a site development, but have the potential to be developed sometime in the future. There were no oil and gas leases inside the PCA as of 1998, and 1,354 mining claims in ten subunits inside the PCA. It is important to note that one mining claim does not necessarily mean a potential for one operating plan. Claims are often staked around known mineral deposits to protect the original claim, and operating plans can sometimes encompass hundreds of claims. In addition, there are always a number of claims filed that, after detailed exploration, do not prove to have enough mineralization to be economically developed. Claims or claim groups with approved operating plans are included in the developed site baseline (Figure).

Livestock Grazing on Public Lands within the PCA

There were 100 commercial livestock grazing allotments inside the PCA in 1998 and 23,090 permitted sheep AMs (Figure49). Allotments with less than 100 acres inside the PCA were not included. Where several allotments are managed as one, this was counted as a single allotment. Sheep AMs are calculated by multiplying the permitted number of sheep times the months of permitted use. In many cases, actual use by sheep may have been less than the permitted numbers identified for 1998.

Allotments include both vacant and active commercial grazing allotments. Vacant allotments are those without an active permit but may be used periodically by other permittees at the discretion of the land management agency to resolve resource issues or other concerns. Reissuance of permits for vacant cattle allotments may result in an increase in the number of permitted cattle but the number of allotments would remain the same as the 1998 baseline. Combining or dividing existing allotments would be allowed as long as acreage in allotments does not increase. Any such use of vacant cattle allotments resulting in an increase in cattle numbers will only be done after an analysis to evaluate impacts on grizzly bears. Where chronic conflicts occur on cattle allotments inside the PCA, and an opportunity exists with a willing permittee, one alternative for resolving the conflict may be to phase out cattle grazing or to move the cattle to a currently vacant allotment where there is less likelihood of conflict. Should such cattle grazing be phased out, the cattle allotment with the history of chronic conflicts may be closed to grazing without further NEPA analysis.

Figure 49. Number of commercial livestock grazing allotments and sheep AMs inside the PCA in 1998.

Administrative unit	Cattle allotments		Sheep allotments		Sheep AMs[1]
	Active[2]	Vacant	Active[1]	Vacant	
Beaverhead-Deerlodge NF	2	3	0	0	0
Bridger-Teton NF	9	0	0	0	0
Caribou-Targhee NF	9	1	7	4	14,163
Custer NF	0	0	0	0	0
Gallatin NF	24	9	2	3	3,540
Shoshone NF	24	0	2	0	5,387
Grand Teton NP	1	0	0	0	0
Total in PCA	69	13	11	7	23,090

[1]Since 1998 five of the seven active sheep allotments on the Caribou-Targhee National Forest and the two active sheep allotments on the Shoshone National Forest within the PCA have been closed. As of 2004, there are only four active sheep allotments in side the PCA, totaling 7,130 AMs.
[2] One of the active cattle allotments on the Bridger-Teton National Forest was closed in late 2003.

Appendix E

Definitions and Descriptions of the Management Situations from the 1986 Interagency Grizzly Bear Guidelines

Management Situation 1

Population and habitat conditions

The area contains grizzly population centers (areas key to the survival of grizzly where seasonal or year-long grizzly activity, under natural, free-ranging conditions is common) and habitat components needed for the survival and recovery of the species or a segment of its population. The probability is very great that major federal activities or programs may affect (have direct or indirect relationships to the conservation and recovery of) the grizzly.

Management direction

Grizzly habitat maintenance and improvement (improvement does not apply to Park Service), and grizzly-human conflict minimization will receive the highest management priority. Management decisions will favor the needs of the grizzly bear when grizzly habitat and other land use values compete. Land uses which can affect grizzlies and/or their habitat will be made compatible with grizzly needs or such uses will be disallowed or eliminated. Grizzly-human conflicts will be resolved in favor of grizzlies unless the bear involved is determined to be a nuisance. Nuisance bears may be controlled through either relocation or removal but only if such control would result in a more natural free-ranging grizzly population and all reasonable measures have been taken to protect the bear and/or its habitat (including area closures and/or activity curtailments).

Management Situation 2

Population and habitat conditions

Current information indicates that the area lacks distinct population centers; highly suitable habitat does not generally occur, although some grizzly habitat components exist and grizzlies may be present occasionally. Habitat resources in Management Situation 2 either are unnecessary for survival and recovery of the species, or the need has not yet been determined but habitat resources may be necessary. Certain management actions are necessary. The status of such areas is subject to review and change according to demonstrated grizzly population and habitat needs. Major federal activities may affect the conservation of the grizzly bear primarily in that they may contribute toward (a) human-caused bear mortalities or (b) long-term displacement where the zone of influence could affect habitat use in Management Situation 1.

Management direction

The grizzly bear is an important, but not the primary, use of the area. In some cases, habitat maintenance and improvement may be important management considerations. Minimization of grizzly-human conflict potential that could lead to human-caused mortalities is a high management priority. In this management situation, managers would accommodate demonstrated grizzly populations and/or grizzly habitat use in other land use activities if feasible, but not to the extent of exclusion of other uses. A feasible accommodation is one which is compatible with (does not make unobtainable) the major goals and/or objectives of other uses. Management will at least maintain those habitat conditions which resulted in the area being stratified Management Situation 2. When grizzly population and/or grizzly habitat use and other land use needs are mutually exclusive, the other land use needs may prevail in management consideration. In cases where the need of the habitat resources for recovery has not yet been determined, other land uses may prevail to the extent that they do not result in irretrievable/irreversible resource commitments, which would preclude the possibility of eventual restratification to Management Situation 1. If grizzly population and/or habitat use represents demonstrated needs that are so great (necessary to the normal needs or survival of the species or a segment of its population)

that they should prevail in management considerations, then the area should be reclassified under Management Situation 1. Managers would control nuisance grizzlies.

Management Situation 3

Population and habitat conditions

Grizzly presence is possible but infrequent. Developments, such as campgrounds, resorts or other high human use associated facilities, and human presence result in conditions which make grizzly presence untenable for humans and/or grizzlies. There is a high probability that major Federal activities or programs may affect the species' conservation and recovery.

Management direction

Grizzly habitat maintenance and improvement are not management considerations. Grizzly-human conflict minimization is a high priority management consideration. Grizzly bear presence and factors contributing to their presence will be actively discouraged. Any grizzly involved in a grizzly-human conflict will be controlled. Any grizzly frequenting an area will be controlled.

Appendix F

National Categories for Management Areas

National Categories for Management Areas

Category 1

In Category 1, ecological processes such as fire, insects, and disease are allowed to operate relatively free from the influence of humans. A predominately diverse, native vegetation results from natural succession and disturbance processes, while non-native vegetation is rare. People who use Category 1 areas must be self-reliant and should expect little contact with others. Few, if any man-made facilities and structural improvements are present. Travel is non-mechanized with few exceptions. Typical types of Category 1 areas are designated as wilderness, roadless, and backcountry lands. A small amount of motorized use may be required to restore desired conditions in core restoration areas.

Category 2

These areas provide for conservation of representative, or particularly rare and narrowly distributed, ecological settings or components. They help ensure conservation of ecosystems or ecosystem components that may provide important functions ensuring the overall sustainability of larger landscapes. Human influences on the ecological processes are limited to the degree possible, but are sometimes evident. Type of human use varies, but generally is not intensive. Travel is generally non-motorized. Some of these areas help provide an important role under an adaptive management philosophy by providing "natural" reference areas that are intensively managed for a particular objective. These areas are often formally designated. Research Natural Areas, National Recreation Areas, designated Wild and Scenic Rivers, and Special Interest Areas are typically included in Category 2.

Category 3

Ecological values are in balance with human occupancy and consideration is given to both. Resource management activities may occur, but natural ecological processes and resulting patterns will normally predominate. Ecosystems are allowed to function naturally while resource use may change over time to accommodate the ecological factors. Although these areas are characterized by predominantly natural appearing landscapes, an array of management tools may be used to restore or maintain relatively natural patterns of ecological progress. This will result in some evidence of human activities. Users expect to experience some isolation from the sights and sounds of people in a setting that offers some challenge and risk. Restrictions on motorized travel may vary from area to area and from season to season.

Category 4

Ecological values are managed to provide recreational use, but are maintained well within the levels necessary to sustain overall ecological systems. Resource use for other values is not emphasized and has little impact on ecological structure, function, or composition. Human use is recreation oriented. Sights and sounds of people on the site are expected and may even be desired. Motorized transportation is common.

Category 5

These areas are primarily forested ecosystems that are managed to meet a variety of ecological and human needs. They are often characterized by a substantially modified natural environment. A wide variety of structure and composition is present, some showing the effects of past management activities, others affected by predominantly natural forces such as fire, insects, and diseases. Ecological conditions are maintained, while emphasizing selected biological structures and compositions considering the range of natural variability. These lands often display high levels of investment, use, and activity; density of facilities; and evidence of vegetative

manipulation. Users expect to see other people and evidence of human activities. Facilities supporting the various resource uses are common. Motorized transportation is common.

In some ecosystems, intensive management is necessary to restore the systems to their range of natural variability. This management is usually a combination of prescribed fire and timber harvest treatments. These lands appear similar to "natural" landscapes if left to function under natural disturbance processes. Restoration to the range of natural variability will only be a goal when the stated as part of the decision documented in the Record of Decision for a particular forest plan. On some forests in Region 2, the decision may be to manage these resources outside of their range of natural variability, or a documented decision that management within the range of natural variability is not possible to accomplish within the life of the forest plan.

Category 6

These areas are primarily grasslands or other non-forested ecosystems managed to meet a variety of ecological and human needs. They are often characterized by a substantially modified natural environment. Ecological conditions are maintained while emphasizing selected biological structures and compositions considering the range of natural variability. A wide variety of structure and composition is present, some showing the effects of past management activities, others affected by predominantly natural forces such as fire, insects, and diseases. These lands often display high levels of investment, use and activity, density of facilities, and evidence of vegetative manipulation. Users expect to see other people and evidence of human activities. Facilities supporting the various resource uses are common. Motorized transportation is common.

Category 7

Public lands are intermingled with private lands to such an extent that ecosystem management objectives for National Forest System lands must be tempered by other landowners' uses and objectives. Human activities have altered the natural appearance of these landscapes in most areas on both the public and private lands. Sights and sounds of people predominate. Private land use is often residential. Resource use is not planned on a sustainable basis, but may occur in concert with surrounding private land values. Motorized transportation is common.

Category 8

Ecological conditions including processes are likely to be permanently altered beyond the level needed to maintain natural-appearing landscapes and ecological processes by human activities. These areas are generally small in scale. Ecological values are protected where they affect the health and welfare of human occupancy. Areas such as mines or other concentrated uses are included in this category. Human activities are generally commercial in nature and directly or indirectly provide jobs and income. Motorized transportation is common.

Figure 50. Management area crosswalk to the national categories for the six GYA national forests.

		National Management Area Category						
MA	**Description**	**1**	**2**	**3**	**4**	**5**	**6**	**8**
	Beaverhead National Forest							
1	Custodial management	X						
6	Research Natural Areas		X					
7	Developed recreation sites							X
8	Dispersed recreation sites			X				
9	Wilderness	X						
10	Wilderness study	X						
13	Timber/wildlife					X		
14	Wetlands			X				
16	Timber					X		
17	Timber/range					X		
18	Timber/range/recreation					X		
19	Wildlife/timber(low)/range					X		
20	Wildlife/timber(mod)/range					X		
21	Wildlife/timber(mod)					X		
22	Range (high)						X	
23	Range (mod)						X	
24	Wildlife/range						X	
25	Big game winter range			X				
26	Big game summer range/timber					X		
27	Watershed restoration				X			
28	Recreation complex							X
30	Historic/scenic trails			X				
	Bridger-Teton National Forest							

		National Management Area Category						
MA	**Description**	**1**	**2**	**3**	**4**	**5**	**6**	**8**
1B	Timber/range					X		
2A	Primitive and semiprimitive nonmotorized recreation		X					
2B	Motorized recreation					X		
3	River recreation			X				
4	Municipal watersheds		X					
6A-6D, S	Wilderness	X						
7A	Grizzly bear recovery through scheduled timber harvest				X			
8	Grizzly bear habitat recovery—few roads/habitat security			X				
9A	Developed and administrative sites							X
9B	Special use recreation areas			X				
10	Some development and roads while having no adverse wildlife effects			X				
12	Backcountry, dispersed recreation and wildlife security areas		X					
Custer National Forest								
B	Livestock grazing/minerals						X	
C	Key wildlife habitat/MS 1/current allotment status maintained			X				
D	Timber/range/wildlife					X		
E	Mineral management emphasis						X	

		National Management Area Category						
MA	**Description**	**1**	**2**	**3**	**4**	**5**	**6**	**8**
F	Recreation							X
G	Timber					X		
H	Wilderness study	X						
I	Absaroka-Beartooth Wilderness	X						
L	Research Natural Areas		X					
P	Administrative sites							X
Q	Wild horses			X				
R	Municipal watersheds				X			
T	Scenic highway			X				
	Gallatin National Forest							
1	Developed recreation sites							X
2	Ski area special use permits							X
3	Custodial management/maintain present conditions	X						
4	Absaroka-Beartooth and Lee Metcalf Wildernesses and recommended wilderness	X						
5	Travel corridors			X				
6	Semiprimitive motorized and nonmotorized			X				
7	Riparian areas (timber and grazing suitable)				X			

		National Management Area Category						
MA	**Description**	**1**	**2**	**3**	**4**	**5**	**6**	**8**
8	Timber management					X		
9	Timber with dispersed recreation					X		
10	Timber interspersed with grassland					X		
11	Forested big game habitat					X		
12	Wildlife summer and winter range				X			
13	Occupied grizzly bear habitat (forested suitable timber)				X			
14	Occupied grizzly bear habitat, big game winter range, not suitable for timber but suitable for grazing			X				
15	Occupied grizzly bear habitat (mostly grassland), suitable grazing			X				
16	Grassland, unsuitable timber						X	
17	Forage production for livestock and wildlife			X				
18	Hyalite-Porcupine-Buffalo Horn Wilderness Study Area		X					
19	Hyalite-Porcupine-Buffalo Horn Wilderness Study Area		X					
20	Cabin Creek recreation and wildlife management area		X					
21	Proposed Research Natural Areas		X					
24	Mineral extraction							X
26	Administrative sites							X
	Acquired lands		X					

		National Management Area Category						
MA	**Description**	**1**	**2**	**3**	**4**	**5**	**6**	**8**
	Shoshone National Forest							
2A	Semiprimitive motorized recreation			X				
2B	Rural and roaded natural recreation				X			
3A	Semiprimitive nonmotorized recreation				X			
4B	Management indicator species					X		
5A	Big game winter range (nonforested)					X		
5B	Big game winter range (forested)					X		
7E	Wood fiber production					X		
8A	Pristine wilderness	X						
8B	Primitive wilderness	X						
8C	Semiprimitive wilderness	X						
8E	Fitzpatrick Wilderness addition	X						
9A	Riparian area management			X				
9E	Water impoundments				X			
10A	Research Natural Areas		X					
10D	Wild and scenic rivers	X						
10E	High Lakes Wilderness Study Area	X						

		National Management Area Category						
MA	**Description**	**1**	**2**	**3**	**4**	**5**	**6**	**8**
10F	Dunoir Special Management Area	X						
	Targhee National Forest							
1.1.6, 7, 8	Designated wilderness	X						
1.2	Wilderness study area	X						
1.3	Recommended wilderness	X						
2.1.1	Special management areas		X					
2.1.2	Visual quality maintenance		X					
2.2	Research Natural Areas		X					
2.3	Eligible wild river		X					
2.4	Eligible scenic river		X					
2.5	Eligible recreational river		X					
2.6.1(a)	Grizzly bear habitat (no ASQ, no cross country, no sheep)		X					
2.6.2	Grizzly bear core area		X					
2.6.5	Grizzly bear security area		X					
2.7(a,b)	Elk and deer winter range		X					
2.8.3	Aquatic influence zone		X					
2.9.1	South Fork Snake River eligible scenic river		X					

		National Management Area Category						
MA	**Description**	**1**	**2**	**3**	**4**	**5**	**6**	**8**
2.9.2	South Fork Snake River eligible recreation river		X					
3.1.1(a)	Nonmotorized			X				
3.1.2	Nonmotorized			X				
3.2(b-j)	Semiprimitive motorized			X				
4.1	Developed recreation sites							X
4.2	Special use permit recreation sites							X
4.3	Dispersed camping management				X			
5.1(c)	Timber management					X		
5.1.3(a,b)	Timber management (no clearcutting, urban interface)					X		
5.4(a-c)	Elk summer range					X		
5.2.1,2	Visual quality maintenance and improvement					X		
5.3.5	Grizzly bear habitat (non-interchangeable [NIC] for ASQ), no cross country, phase out sheep)					X		
6.1(b)	Range management						X	
8.1	Concentrated development areas							X
	Water		X					

Appendix G

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