

**U.S. FISH AND WILDLIFE SERVICE**  
**SPECIES ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM**

SCIENTIFIC NAME: *Ursus arctos horribilis*

COMMON NAME: Grizzly Bear Populations in the North Cascades Ecosystem (warranted but precluded for reclassification from Threatened to Endangered)

LEAD REGION: Region 6

INFORMATION CURRENT AS OF: September 30, 2005

STATUS/ACTION

Species assessment - determined species did not meet the definition of endangered or threatened under the Act and, therefore, was not elevated to Candidate status

New candidate

Continuing candidate for uplisting

Non-petitioned

Petitioned - Date petition received: Cascades--03/13/1990

90-day positive - FR date: Cascades--08/07/1990

12-month warranted but precluded - FR date: 07/24/1991

- Reassessed 06/04/1998;

Is the petition requesting a reclassification of a listed species?

FOR PETITIONED SPECIES:

- a) Is up-listing warranted? **Yes**
- b) To date, has publication of a proposal to up-list been precluded by other higher priority listing actions? **Yes**
- c) Is a proposal to up-list the species as threatened or endangered in preparation? **No**
- d) If the answer to c) above is no, provide an explanation of why the action is precluded.

The Grizzly Bear is currently listed as threatened in the North Cascades Ecosystem under the Endangered Species Act of 1973, as amended (Act) and, therefore, receives protections of the Act. In addition, the U.S. Fish and Wildlife Service promulgated regulations extending take prohibitions under section 9 to threatened species. Prohibited actions under section 9 include, but are not limited to, take (i.e., harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in such activity). Under section 7 of the Act, Federal agencies must insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any endangered or threatened species. Given that these protections are already in place, we do not feel it is a prudent use of limited resources to uplist the North Cascades Ecosystem of Grizzly Bears before listing high priority candidate species.

Immediate issuance of a proposed rule and timely promulgation of a final rule for this species has been, for the preceding 12 months, and continues to be, precluded by higher priority listing actions. During the past 12 months, almost our entire national listing budget has been consumed by work on various listing actions to comply with court orders and court-approved settlement agreements, emergency listings, and essential litigation-related, administrative, and program management functions. We will continue to monitor the status of this species as new information becomes available. This review will determine if a change in status is warranted. For information on listing actions taken over the 12 months, see the discussion of "Progress on Revising the Lists," in the current CNOR which can be viewed on our Internet website <http://endangered.fws.gov/>.

Furthermore, additional biological information should be obtained before we formally analyze each of the recovery units under our policy regarding the recognition of a Distinct Population Segment (DPS) (61 FR 4722). We performed a preliminary DPS analysis in 1999 in a revised 12-month finding. The Service is presently collecting and analyzing biological information on genetic relationships between the grizzly bears in the Northern Continental Divide recovery area in Montana; the Cabinet-Yaak recovery area in Montana and Idaho; the Selkirk recovery area in Idaho and Washington; the North Cascades recovery area in Washington; and the Bitterroot recovery area in Idaho and Montana. The Service also is collecting and analyzing movement information within and between these areas using very high frequency radio-collars and global positioning system (GPS) collars; examining the effects of human developments such as highways on grizzly bear movements; and examining possible population linkage within and between areas. This information will be used in a comprehensive application of the DPS policy. The Service expects that this information will be available by the end of 2007.

ANIMAL/PLANT GROUP AND FAMILY: Mammal, *Ursidae*

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Western United States, Alaska, Canada, and Mexico

CURRENT STATES/COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE: Alaska, Idaho, Montana, Washington, Wyoming, and Canada

LAND OWNERSHIP: The North Cascades Recovery Zone encompasses approximately 9,500 mi<sup>2</sup> (25,000 km<sup>2</sup>) within north central Washington State. The recovery zone includes all of the North Cascades National Park and most of the Mount Baker Snoqualmie, Wenatchee, and Okanogan National Forests. The recovery zone is composed of about 85 percent Federal lands, 5 percent State lands, and 10 percent private lands.

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LEAD FIELD OFFICE CONTACT: Christopher Servheen, (406) 243-4903

BIOLOGICAL INFORMATION:

Species Description

In the lower 48 States, the average weight of grizzly bears is 400-600 pounds (200-300 kilograms) for males and 250-350 pounds (110-160 kilograms) for females. Grizzly bears are generally long-lived with some individuals known to have lived 40 years (Storer and Tevis 1955). Adult bears are individualistic in behavior and normally are solitary wanderers. Home ranges of adult bears frequently overlap. The home range of adult male grizzly bears is typically 3-5 times the size of adult females. The large home ranges of grizzly bears, particularly males, enhance genetic diversity in the population by enabling males to mate with numerous females. In the Cabinet-Yaak recovery zone a male bear had a home range of over 1,100 square miles ( $\text{mi}^2$ ) (2,800 square kilometers [ $\text{km}^2$ ]) from 1987 to 1992 (Kasworm et al. 2005). Grizzly bears have a promiscuous mating system. A single radio-collared adult female from the Cabinet-Yaak was observed over a period of 8 years with at least four different males prior to producing four litters of cubs, with more than one male present during at least two of those breeding seasons. Though we do not know that all these males successfully mated with this female, these observations indicate the ability of female bears even in this small population to have several mates. Recent genetic studies have determined that cubs from the same litter may have different fathers (Craighead et al 1998). These evolutionary strategies allow grizzly bears to exist at low population density and maintain genetic diversity. Grizzly bear population densities of one bear per 8  $\text{mi}^2$  (20  $\text{km}^2$ ) have been reported in Glacier National Park (Martinka 1974), but most populations are much less dense.

Mating occurs from May through July with a peak in mid June. Age of first reproduction and litter size may be related to nutritional state. Age of first reproduction varies from 3-8 years of age and litter size varies from one to four cubs. Cubs are born in a den in late January or early February and remain with the female for 2-3 years before subsequent mating and production of another litter.

The causes of natural mortality for adult grizzly bears are not well known. Parasites and disease do not appear to be significant causes of natural mortality (Jonkel and Cowan 1971; Kistchinskii 1972; Mundy and Flook 1973; Rogers and Rogers 1976). Bears do occasionally kill each other. Adults have killed juveniles or other adults. Human-caused mortality is better documented with causes related to livestock protection, threats to human safety, hunting, illegal kills, and nuisance behavior involving garbage and animal foods.

#### Taxonomy

Grizzly bears (*Ursus arctos horribilis*) are vertebrates that belong to the Class *Mammalia*, Order *Carnivora*, and Family *Ursidae*.

The grizzly bear is currently listed as a single entity in the lower 48 conterminous States. In 1991, we concluded in a 12-month finding that uplisting of the grizzly bear population in the North Cascades Ecosystem was warranted but precluded by higher priority actions. These actions predated the policy regarding the recognition of DPS (61 FR 4722). In 1999, we performed a preliminary DPS analysis in a revised 12-month finding and found that “the Selkirk and Cabinet-Yaak recovery zones are not discrete from one another, but are discrete from the Northern Continental Divide, North Cascades, Yellowstone, and Bitterroot recovery zones” and that “these combined recovery zones are significant” (64 FR 26725). Additional biological information is required to complete this analysis under our DPS policy. The Service expects that

this information will be available by the end of 2007.

### Habitat

Although the digestive system of bears is essentially that of a carnivore, bears are successful omnivores, and in some areas may be almost entirely herbivorous. Grizzly bears must acquire foods rich in protein and carbohydrates in excess of daily maintenance needs to survive denning and post-denning periods. Grizzly bears are opportunistic feeders and will consume almost any available food including ground squirrels, ungulates, carrion, and garbage. In areas where animal matter is less available, grasses, roots, bulbs, tubers, and fungi may be important in meeting protein requirements. High quality foods such as berries, nuts, and fish are important in some areas (Interagency Grizzly Bear Committee [IGBC] 1987).

In all areas studied, home ranges of grizzly bears encompass a mosaic of numerous habitat types. This phenomenon may be related to the breadth of the species' food habits. Use of cover varies with sex, age, reproductive status, human activity, or management (hunted or unhunted populations).

The unavailability of food, deep snow, and low air temperature appear to make winter sleep essential to bear survival (Craighead and Craighead 1972). Grizzly bears spend up to 6 months in dens beginning in October or November. Bears exhibit a marked decline in heart and respiration rate, but relatively slight drop in body temperature.

### Historical Range/Current Range/Distribution

The grizzly bear historically occurred throughout the western half of the contiguous United States, western Canada, and most of Alaska. Within the contiguous United States, the grizzly bear remains in only six general areas, identified as recovery zones. These include--the Yellowstone of northwest Wyoming, eastern Idaho, and southwest Montana (9,500 mi<sup>2</sup> [25,000 km<sup>2</sup>]), the Northern Continental Divide of north central Montana (9,600 mi<sup>2</sup> [25,000 km<sup>2</sup>]), the North Cascades of north central Washington (9,500 mi<sup>2</sup> [25,000 km<sup>2</sup>]), the Selkirk Mountains of north Idaho, northeast Washington, and southeast British Columbia (2,200 mi<sup>2</sup> [5,700 km<sup>2</sup>]), the Bitterroot Mountains of central Idaho and western Montana (5,800 mi<sup>2</sup> [15,000 km<sup>2</sup>]), and the Cabinet-Yaak of northwest Montana and northern Idaho (2,600 mi<sup>2</sup> [6,700 km<sup>2</sup>]). The Bitterroot Mountains have no current evidence of a grizzly bear population. The San Juan Mountains of Colorado also were identified as an area of grizzly bear occurrence, but not as a recovery unit because it was "still being evaluated as a potential recovery area." No evidence of grizzly bears have been found in the San Juan Mountains since a bear was killed there in 1979. Grizzly bears could be extinct from this area today.

The North Cascades recovery zone includes all of North Cascades National Park and most of the Mount Baker-Snoqualmie, Wenatchee, and Okanogan National Forests. A recovery plan chapter for the North Cascades was completed in 1997 (Service 1997).

### Population Estimates/Status

Historic population levels for the western United States are believed to be in the range of 50,000 animals. Within the contiguous United States, the grizzly bear populations estimates for the 6 identified recovery zones include--the Yellowstone population at >580, the Northern

Continental Divide population at >400, the North Cascades population at <20, the Selkirk Mountains population at 40 to 50, the Cabinet-Yaak population at 30 to 40, and the Bitterroot Mountains where no bears have been documented in past 30 years.

The grizzly bear was historically abundant in the North Cascades Recovery Zone and vicinity, but numbers have declined substantially in recent decades. Sullivan (1983) compiled 233 reports of grizzly bears in the North Cascades and adjacent British Columbia from the mid-1800s through 1983. The last grizzly bear killed in the North Cascades was in Fisher Creek in 1967 (Sullivan 1983). The last verified sighting occurred in the Glacier Peak Wilderness during 1996 (Gaines pers. comm.). A grizzly bear habitat evaluation of the North Cascades was conducted from 1986 to 1991 (Almack et al. 1993; Gaines et al. 1994). The evaluation and a Technical Committee Review Team (Servheen et al. 1991) concluded that the ecosystem contained sufficient habitat to maintain and recover a grizzly bear population.

Current population levels are unknown, but believed to be less than 20 animals (Almack et al. 1993). Adjacent to the United States recovery zone is the North Cascades grizzly bear population unit in British Columbia. This unit encompasses about 3,800 mi<sup>2</sup> (9,800 km<sup>2</sup>) of habitat and an estimated population of less than 25 bears with 4 to 6 adult females (North Cascades Grizzly Bear Recovery Team [NCGBRT] 2001). A graduate study project to identify resident grizzly bears by extraction of DNA from snagged hair was completed in 2002 (Romain-Bondi et al. 2004). The study sampled about 1,500 mi<sup>2</sup> (3,800 km<sup>2</sup>) of habitat in British Columbia and Washington (about 11 percent of the recovery zone), but detected only one grizzly bear in British Columbia. The study indicated that additional grizzly bears might have gone undetected, but that the population was small and dispersed. During 2003 a rancher near Chesaw, Washington, reported a grizzly bear on his property to Washington Department of Fish and Wildlife. Tracks, scat, and hair were photographed or collected at the site. Genetic analysis confirmed the hair sample as a grizzly bear. Chesaw is located approximately 30 miles (50 kilometers) east of the recovery zone and 6 miles (10 kilometers) south of the Canadian border.

## THREATS

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range. The 1975 listing of the grizzly bear identified a substantial decrease in the range of the species in the conterminous 48 States and stated that timbering and other practices have resulted in an increase in road and trail construction into formerly inaccessible areas. Since 1975, habitat protection measures have focused on providing secure habitat for bears that lessens the opportunity for human-caused mortality. The North Cascades grizzly bear recovery plan (Service 1997) population goal is 200-400 bears for this recovery zone and is based on the expectation that these areas would remain connected to other grizzly bear populations in southern British Columbia. These small populations require particular attention to habitat protection.

Populations of grizzly bears and other large carnivores have persisted largely in those areas where significant expanses of relatively secure habitat were retained and where human-caused mortality was low (Mattson and Merrill 2002). Threats to habitat remain through alteration of habitat, road construction, and the resulting increase in human access; all of which may result in

displacement from important habitat and grizzly bear mortality. Cumulative impacts of timber harvest activities, mining, recreation, and other forest uses, and the associated road construction, can reduce the amount of secure, effective habitat for grizzly bears (Service 1993).

Approximately 41 percent of the North Cascades recovery zone is within a National Park and designated wilderness areas. Motorized access is limited or not permitted within these areas. Access management also has been addressed by an interagency task force that produced recommendations to standardize definitions and methods (IGBC 1998). This report identified three parameters that are recommended components of access management. These parameters are total motorized route density, open motorized route density, and core area. Core area is the percentage of the analysis area that contains no motorized travel routes or any restricted roads upon which administrative use may occur. Core areas may contain roads that are impassible due to permanent barriers or vegetation. The report recommended that for each recovery zone specific criteria be developed for route densities. Additionally, it recommended that core areas be monitored and managed based on female grizzly bear numbers in the recovery zone, other research results, and social or other management considerations. The North Cascades subcommittee of the IGBC adopted Bear Management Unit (BMU) boundaries for the recovery zone in 1996 and an interim policy of no net loss of core areas within these BMUs. Efforts are currently underway through Forest Plan revisions to refine core areas through an evaluation of seasonal habitat distribution. Forest Plan revision will be conducted under the new 2005 planning rules (70 FR 1023). No estimates or inventories of open road density or total road density are currently available, but will be examined in the Forest Plan revision process.

The Washington Department of Natural Resources is currently renewing the Habitat Conservation Plan for lands inside the North Cascades grizzly bear recovery zone. This plan will promote grizzly bear conservation by addressing issues relating to sanitation, access management, public information, timber harvest, and grazing activities.

Forestry, mining, recreation, and road building also affect grizzly bear habitat in British Columbia. In 1995, the British Columbia provincial government developed a grizzly bear conservation strategy (British Columbia Ministry of Environment, Lands, and Parks 1995) to address these effects. A major goal of the British Columbia Grizzly Bear Conservation Strategy is to ensure effective, enhanced protection and management of habitat through land use planning processes, new protected areas, and the Forest Practices Code. Many of these processes are ongoing, and have not had the opportunity to achieve the stated goals of grizzly bear habitat protection.

A draft recovery plan for the grizzly bear population in the British Columbia portion of the North Cascades was completed in 2001 (NCGBRT 2001; Austin 2004) and a final decision is pending. The Service was represented on the team drafting the plan. The recovery plan proposes to provide sufficient habitat quantity and quality for a recovered population of 150 bears through access management, forestry practices, and fire management on approximately 3,800 mi<sup>2</sup> (9,800 km<sup>2</sup>) in the North Cascades population unit. This plan recommends population augmentation by transplanting grizzly bears as a recovery technique.

At this point in time, we feel that threats to habitat still exist from new road construction and lack of access management for the existing road system. This poses a significant threat to the grizzly

bear population in the North Cascades recovery zone, and warrants endangered status for that population.

**B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes.**

Unregulated killing of grizzly bears, prior to listing of the species as threatened in 1975, was a major reason for population declines. As noted under Factor D, the State of Washington and the province of British Columbia have maintained closed hunting seasons for grizzly bears in the North Cascades region since the animal was listed in 1975.

New road construction and high open road densities within grizzly bear habitat pose threats to bear populations resulting in the potential for bear mortality and the potential for bear habituation to humans that may lead to conflicts and the removal of bears. The recovery plan directs monitoring and aims for the reduction of human-caused grizzly bear mortality. This is accomplished through: intensive enforcement efforts to investigate and prosecute individuals illegally killing grizzly bears; educational efforts to minimize encounters among workers, recreationists, and local residents utilizing or living in grizzly bear habitat; improving sanitation procedures that could attract grizzly bears into proximity with humans; minimizing use of predator or rodent toxicants; and practicing lethal control of nuisance situations only when necessary. A nuisance bear protocol including contact information, release sites, and relocation guidelines was adopted by the Interagency Grizzly Bear North Cascades Subcommittee in 2002 and has been updated annually.

Although current population trends are unknown, it does not appear that the historic overutilization experienced by this species continues today. Since being listed as threatened in 1975, there have been no known human-caused grizzly bear mortalities in the North Cascades Ecosystem. Thus, overutilization is not likely to be a significant factor in the reclassification decision.

**C. Disease or Predation.**

This factor was not identified as a threat to grizzly bears in the original listing. The recovery plan indicates that parasites and disease do not appear to be significant causes of natural mortality among bears (Jonkel and Cowan 1971; Kistchinskii 1972; Mundy and Flook 1973; Rogers and Rogers 1976). Research in Alaskan grizzly bears has shown previous exposure by some grizzly bears to rangiferine brucellosis and leptospirosis, though impacts to populations are unknown (Zarnke 1983). The most common internal parasite noted in grizzly bears is *Trichinella* for which 62 percent of grizzly bears tested positive from 1969 to 1981 (Greer 1982). Disease screening of captured black and grizzly bears in the Cabinet-Yaak, Selkirk Mountains, and Northern Continental Divide recovery zones during 2000 showed antibody levels consistent with exposure to several diseases, but no clinical sign of disease (Port et al. 2001). Effects of these levels of incidence are unknown but monitoring will continue.

Mortality summaries from the Yellowstone Ecosystem for 1959 to 1987 did not identify disease as a significant factor resulting in mortality (Craighead et al. 1988). Only 1 of 477 known mortalities was attributed to disease or parasites. Thirty-eight mortalities could not be identified by cause and some of these may have been related to disease or parasites, but these factors do not appear to be significant causes of mortality affecting Yellowstone grizzly bears.

The Montana Department of Fish, Wildlife, and Parks operates a wildlife laboratory at Bozeman. One of the laboratory's objectives is to necropsy wildlife specimens suspected of being diseased, parasitized, or dying of unknown causes, to identify the cause of death (Aune and Schladweiler 1995). Tissue samples are examined by Veterinary Pathologists at the State Diagnostic Laboratory. Though disease was not considered a threat at the time of listing, we will continue to have dead grizzly bears processed through a laboratory to determine cause of death and to maintain baseline information on diseases and parasites occurring in grizzly bears. This action will serve to continue monitoring of these agents as potential mortality sources. If disease is later determined to be a threat, we will evaluate and adopt specific measures to control the spread of any disease agent and treat infected animals, where such measures are possible. These measures will depend on the disease agent identified.

Monitoring of this factor will continue, but disease and natural mortality do not appear to be limiting the population. If levels of natural mortality increase in the future, the Service will reconsider this factor.

#### D. The Inadequacy of Existing Regulatory Mechanisms.

The Grizzly Bear is currently listed as threatened in the North Cascades Ecosystem under the Act and, therefore, receives protections of the Act. In addition, the U.S. Fish and Wildlife Service promulgated regulations extending take prohibitions under section 9 to threatened species. Prohibited actions under section 9 include, but are not limited to, take (i.e., harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in such activity). Under section 7 of the Act, Federal agencies must insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any endangered or threatened species. As such, the grizzly bear receives special protection and management of Federal lands. Federal and State personnel cooperatively developed guidelines for grizzly protection and management in the National Forests, National Parks, and Bureau of Land Management lands in the grizzly bear ecosystems in compliance with Act (U.S. Forest Service [USFS] 1986). These Interagency Guidelines direct the USFS to establish and implement uniform planning and management procedures including:

- 1) A grizzly bear habitat mapping and cumulative effects analysis process (a tool for assessing effects of land management activities in time and space on occupied grizzly bear habitat.)
- 2) The resource management guidelines and grizzly management situations as established in the "Interagency Grizzly Bear Management Guidelines" (Guidelines).
- 3) Quantification of recovery objectives in Forest Plans including--(a) the amount of habitat needed for recovery, expressed as habitat capability when possible, and (b) objectives to decrease preventable human-caused mortalities.

The core habitat inventory, core designation, and no net loss policy are examples of progress in this area. A satellite image based habitat mapping process was completed and published in 1994 (Gaines et al. 1994). The Interagency Grizzly Bear North Cascades subcommittee directed the mapping of situation lines as an additional goal. Mapping of management situation areas is

occurring through Forest Plan revisions on the Okanogan and Wenatchee National Forests and may be part of an amendment to plans for the Mount Baker-Snowquahmie National Forests. North Cascades National Park also is considering mapping management situations. Full implementation of the guidelines would maintain and enhance habitat, minimize potential for grizzly-human conflicts, and manage habitats essential to bear recovery for multiple land use benefits, to the extent these land uses are compatible with the goal of grizzly recovery. Land uses which cannot be made compatible with the goal of grizzly recovery, and are under USFS control, will be redirected or discontinued.

The Interagency Grizzly Bear Management Guidelines (USFS 1986) specified that at developed recreation sites, dispersed recreation sites, special use campsites, and fire camps all human and prepared livestock or pet food and human refuse will be made unavailable to grizzly bears through proper storage, handling, and disposal. Furthermore the guidelines stated that in areas where survivorship of individual grizzly bears is considered important for recovery or conflicts have been documented that special care be taken for attractant storage and game meat storage at camps. The North Cascades grizzly bear recovery zone encompasses North Cascades National Park and portions of the Mount Baker-Snowquahmie, Wenatchee, and Okanogan National Forests, but there is inconsistency in application of food storage requirements. North Cascades National Park has food storage requirements, but the National Forest System does not. Special use permits on all forests contain food storage requirements. Several garbage dumpsters and cans have been replaced with bear resistant containers and an education campaign is underway to inform the public about proper storage of bear attractants. The Service continued funding for a bear hazard assessment for the United States portion of the North Cascades Grizzly Bear Recovery Zone. The assessment has identified areas with a high potential for conflict from recreational use such as horseback riding, hunting, hiking and camping, and compliments the placement of sanitation containers at campgrounds described above. Completion of the bear hazard assessment is targeted for fall of 2006. Future management changes may result from this assessment.

The State of Washington and the province of British Columbia have maintained closed hunting seasons for grizzly bears in the North Cascades region since the animal was listed in 1975.

Complete implementation of the Interagency Guidelines (USFS 1986) with sanitation regulations and the associated land management stratification and management direction is an important issue for this population, but does not appear to be a significant factor in the reclassification decision.

E. Other Natural or Manmade Factors Affecting Its Continued Existence.

**ISOLATION AND POPULATION SIZE** - The United States and Canadian portions of the North Cascades recovery zone may be isolated from other grizzly bear populations (NCGBRT 2001; Singleton et al. 2004). Because of their low numbers (e.g., fewer than 20 individuals) and the lack of demographic connection to other populations, grizzly bears in the North Cascades recovery zone are more vulnerable to environmental events such as floods, droughts, or fires (Boyce et al. 2001). These events may result in direct mortality or indirect mortality through effects on food supplies.

The North Cascades Grizzly Bear Recovery chapter (Service 1997) stated the need for an EIS to evaluate recovery alternatives including population augmentation. Augmentation may be necessary to recover this population. If the population on the United States side of the border is declining, population recovery through augmentation is likely to become more difficult because a smaller number of bears will be available in the base population of the North Cascades recovery zone. Funding for this effort has not been secured by the agencies.

Analysis of the small, adjacent population in the North Cascades of British Columbia by the Canadian North Cascades Grizzly Bear Recovery Team, made the recommendation to augment that population (NCGBRT 2001, Austin 2004). As part of preparation for population augmentation, a “source area” for bears has been identified in Well-Gray Provincial Park in British Columbia. The Park is located about 250 kilometers north of the international border. Within the Park, research is being conducted to identify bears suitable for transplant (Austin, pers. comm. 2005). Bears should have no history of conflicts with people and not depend on anadromous fish for part of their diet (there are few fish runs in the target area). Currently, there are seven grizzly bears collared (one adult male, five adult females and one sub-adult female) with GPS radio-collars. These collars will indicate areas of travel by bears and subsequent observations will confirm reproductive status to ensure that translocated bears are appropriate for the target area. In 2005, the Service contributed funds to download grizzly bear habitat use data from collared grizzly bears in British Columbia. The habitat use information will be used in the bear hazard assessment project on the United States side of the North Cascades Ecosystem. Transplants of bears could not occur until the liaison committee meets and reviews the augmentation plan.

**CONNECTIVITY AND BEAR MOVEMENT** - High-speed highways and associated human development can affect grizzly bear habitat use and cause direct mortality (Gibeau et al. 2002; Proctor et al. 2002; Chruszcz et al. 2003). Highway reconstruction or expansion can lead to further fragmentation of grizzly bear habitat. These projects also can provide chances to improve crossing opportunities for grizzly bears and other forms of wildlife. We completed fieldwork on a study of high-speed highways on the periphery of Glacier National Park. Results from that study may prove useful in identifying impacts related to grizzly bears and making recommendations on future highway design and construction to maintain crossing opportunities. The goal is to maintain crossing opportunities on Highways 2 and 20 that bisect the North Cascades recovery zone. We are specifically concerned about increasing traffic levels and future improvements to the highway system such as creation of additional lanes for traffic. We will have an opportunity to monitor these activities within the United States through section 7 review of all Federal actions as long as these populations remain listed under the Act.

**INFORMATION AND EDUCATION PROGRAMS** - A public outreach effort directed at the east side of the Cascades began in 2002 (Morgan et al. 2004). This public and private partnership has produced several information sessions and developments of materials to inform the public about living, working, and recreating safely in bear country. Additional sessions and products are planned and the effort has been expanded to the west side of the Cascades in Skagit and Whatcom counties. In advance of education efforts, a survey of public knowledge and attitudes toward grizzly bears was conducted (Davis and Morgan 2005). The survey will be replicated at the end of educational efforts to gauge success. The survey was conducted in two rural counties

on the northwest edge of the recovery zone. Survey results indicated that 52 percent of respondents strongly supported grizzly bear recovery and 24 percent indicated moderate support. Questions regarding level of support for grizzly bear recovery if augmentation was necessary indicated that 33 percent of respondents would be more supportive of recovery with augmentation and 43 percent would show the same level of support. Results from questions of grizzly bear biology and recovery processes indicated a mixed level of knowledge and suggested areas of improvement. This effort has been supported by a combination of funding from public and private sources including agencies and nongovernment organizations. A web site with bear information was made available at [www.bearinfo.org](http://www.bearinfo.org).

Small population size and the potential for genetic isolation appear to warrant reclassification to endangered status.

#### CONSERVATION MEASURES PLANNED OR IMPLEMENTED

Various conservation activities ongoing within this ecosystem may assist in reducing threats to the grizzly bear. These conservation activities include Federal Agency actions being conducted in conformance with Interagency Grizzly Bear Guidelines, the Grizzly Bear Recovery Plan Chapters prepared for the North Cascades ecosystem, and section 7 of the Act (consultation).

#### SUMMARY OF THREATS

*Ursus arctos horribilus* (grizzly bear, North Cascades) – The following summary is based on information contained in our files and is current as of September 30, 2005. Grizzly bears are a long lived species with a low reproductive rate and live in low density populations. This grizzly bear population occupies the North Cascades recovery zone (9,500 mi<sup>2</sup>) of north central Washington. Current population is unknown but believed to be <20 individuals. Primary threats to the population include incomplete habitat protection measures in the form of access management, small population size, population fragmentation, and associated potential for genetic isolation. The population was determined to be warranted for endangered status in 1993, but precluded by higher priority listing action. The listing priority is currently three and should be retained.

## LISTING PRIORITY

THREAT			
MAGNITUDE	IMMEDIACY	TAXONOMY	PRIORITY
High	Imminent	Monotypic genus	1
		Species	2
		Subspecies/population	3*
	Non-imminent	Monotypic genus	4
		Species	5
		Subspecies/population	6
Moderate to Low	Imminent	Monotypic genus	7
		Species	8
		Subspecies/population	9
	Non-imminent	Monotypic genus	10
		Species	11
		Subspecies/population	12

### RATIONALE FOR LISTING PRIORITY NUMBER

Grizzly bears were listed as a threatened species in 1975 in the conterminous 48 States. In 1991, the Service issued a warranted but precluded finding to uplist the North Cascades recovery zone population to endangered status. This uplisting action continues to be precluded by higher priority listing actions. The 1975 listing of grizzly bears has resulted in section 7 (Act) reviews of all federally funded projects and section 9 (Act) prohibitions on the import and export, take, illegal sale, or interstate sale or transport of the species or parts. A grizzly bear recovery plan was approved in 1982 and revised in 1993 (Service 1993). The plan defines a sequence of actions that should provide for the conservation and recovery of the grizzly bear in selected areas of the conterminous 48 States. Listing and recovery actions have resulted in increased effort focused on the conservation of the species; however, actions taken or funded thus far appear to be insufficient to address threats to the species (access management, small population size, genetic isolation, sanitation measures to avoid conflicts that result in removal of animals). Other threats to the species (such as population fragmentation and genetic isolation) are magnified because of a small population size and a low inherent reproductive rate. When uplisted to endangered, the Service expects a number of minor changes in the future management of this population. For example, “a final regulation designating critical habitat... shall be published concurrently with the final publication implementing the determination that the population is endangered” (16 U.S.C., 1531 et seq.). To date, critical habitat has not been required because the original listing predated the critical habitat amendment to the act. This designation will change the section 7 consultation process requiring the consideration of “adverse modification” to critical habitat. The Service also may re-evaluate the recovery zone’s size, sufficiency, and boundaries based on the critical habitat designation. Additionally, uplisting will change the direct take regulation for this population. Currently, nuisance bears can be relocated or destroyed if they constitute a demonstrable but non-immediate threat to human safety or commit significant depredation to lawfully present livestock under section 4(d) of the Act. Such

flexibility is reduced for an endangered population under this section of the Act, but may be allowed in certain instances under section 10(a)(1)(A) of the Act. The impact of this loss of flexibility to the overall well being of the North Cascades population is hard to predict. Other intangible impacts such as increased public awareness also may result from uplisting.

Magnitude:

In the North Cascades recovery zone, grizzly bears face multiple threats. Habitat protection measures in the United States and Canada, largely in the form of motorized access management, are incomplete or lacking. In the North Cascades recovery zone, no standards exist for open or total motorized route densities as occur in all other recovery zones. The recovery zone currently contains a small population (<20 animals) with the last credible sighting occurring in 1996. Adjoining populations in British Columbia may be slightly larger (<25 animals) with credible sightings occurring within the last 3 years. However, there is no evidence of a connection for this population to any other populations in the United States or Canada. Small population size coupled with complete genetic isolation of this population enhances the risk associated with random human caused mortality events or natural mortality events arising from fluctuations in food production, accidental mortality, or unusual weather events. The species exhibits a very low reproductive rate that heightens the effects of excessive mortality through lower ability to replace animals lost in the population. These factors justify the high magnitude threat level.

Imminence:

Small population size and isolation of the population dramatically increases the effects of any form of mortality. The last confirmed sighting of a grizzly bear in North Cascades recovery zone occurred in 1996. A 2001-2002 hair snag inventory of about 1,500 mi<sup>2</sup> (3,800 km<sup>2</sup>) of habitat in British Columbia and Washington (about 11 percent of the recovery zone) detected only one grizzly bear in British Columbia. The North Cascades Grizzly Bear Recovery chapter (Service 1997) stated the need for an EIS to evaluate recovery alternatives including population augmentation. Augmentation may be necessary to recover this population. If the population on the United States side of the border is declining, augmentation to restore the population is likely to become more difficult because a smaller number of bears will be available in the base population of the North Cascades recovery zone. These threats are judged to be imminent in this recovery area. These conditions result in a listing priority number of 3.

## RATIONALE FOR CHANGE IN LISTING PRIORITY NUMBER

YES Have you promptly reviewed all of the information received regarding the species for the purpose of determining whether emergency listing is needed?

Is Emergency Up-Listing Warranted? No emergency poses a significant risk to the well-being of the species. Given the long lifespan of the species, the habitat protections currently in place (wilderness and National Park status), the protections against take associated with section 9 of Act, and the review of Federal actions affecting the species under section 7 of Act already afforded this listed species, Service does not believe that emergency uplisting is warranted at this time. However the small size of this population is of great concern to the Service. Population augmentation may be necessary to achieve recovery. Emergency uplisting would not satisfy that

need.

**DESCRIPTION OF MONITORING:** Through the IGBC and other contacts the Service receives and disseminates information on the status of the species and its habitat. The North Cascades subcommittee for the IGBC has appointed a technical team to inventory and evaluate sightings of bears, sanitation issues, access management mapping, and several other management issues affecting bears in the recovery zone. The Service is represented on this committee and technical team. Through consultation, the Service monitors and regulates Federal activities that may affect grizzly bears or their habitat. The small number of animals, low population density of the species, large annual home ranges, wary nature of the species, dense habitat in which it occurs, and the controversial human aspects of recovering this species requires an active monitoring program.

#### COORDINATION WITH STATES

Indicate which State(s) (within the range of the species) provided information or comments on the species or latest species assessment:

The North Cascades recovery zone lies in north central Washington. The State of Washington provided information on any sightings of bears. The State of Washington participates in the IGBC subcommittee and the technical team.

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APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes, including elevations or removals from candidate status and listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all resubmitted 12-month petition findings, additions, or removal of species from candidate status, and listing priority changes.

Approve: /s/ Richard A. Coleman  
Acting Regional Director, Fish and Wildlife Service

12/5/2005  
Date



Concur: \_\_\_\_\_  
Director, Fish and Wildlife Service

August 23, 2006  
Date

Do not concur: \_\_\_\_\_  
Director, Fish and Wildlife Service

\_\_\_\_\_  
Date

