

CHAPTER II

ALTERNATIVES INCLUDING THE PROPOSED ACTION



INTRODUCTION

This chapter describes the alternatives that were developed to respond to the issues and impacts previously identified in Chapter 1. The proposed action is identified. Summary tables that compare the alternatives and the expected impacts of each alternative are also included.

ALTERNATIVES CONSIDERED IN DETAIL IN THE ENVIRONMENTAL ANALYSIS

Introduction

The Bitterroot Ecosystem (BE) Recovery Plan Chapter - Supplement to the Grizzly Bear Recovery Plan (USFWS 1996) calls for the preparation of an Environmental Impact Statement to evaluate a full range of alternatives for recovery including natural recolonization, and reintroduction of some grizzly bears into the Bitterroot Ecosystem as nonessential experimental under Section 10(j) of the ESA. During early planning, the Fish and Wildlife Service (USFWS) developed three preliminary alternatives to respond to this direction. Based on comments received during public scoping of these alternatives, and under the guidance of NEPA, four alternatives were formulated by the USFWS and were evaluated in the Draft Environmental Impact Statement (DEIS).

In response to public comments on the DEIS provided by agencies, organizations, and private citizens, changes have been made to the proposed action (Alternative 1). This alternative has been selected as the USFWS Preferred Alternative. Further, in response to public comments on the DEIS, the USFWS has included two additional alternatives in the Final Environmental Impact Statement (FEIS). Alternative 1A, "Restoration of Grizzly Bears as a Nonessential Experimental Population with USFWS Management" was one of three preliminary alternatives proposed by USFWS during scoping in 1995. However, in response to public comments received during the 1995 scoping, the USFWS modified the alternative for the DEIS to include a Citizen Management Committee, and it became the proposed action, Alternative 1 (see Chapter 1, "Alternative Scoping"). To be responsive to public comments received on the DEIS, and to provide a broader range of alternatives under NEPA, the USFWS has included the originally scoped alternative in the FEIS as Alternative 1A. Alternative 4A, "Restoration of Grizzly Bears as a Threatened Population with Full Protection of the ESA and USFWS Management" was also added in response to public comments on the DEIS, and to provide a broader range of alternatives for consideration by the USFWS.

Chapter 2 - Alternatives

The proposed action and other alternatives for grizzly bear recovery in the Bitterroot Ecosystem which are considered in detail in this Final Environmental Impact Statement include:

- Alternative 1. Restoration of a Grizzly Bears as a Nonessential Experimental Population with Citizen Management (Proposed Action and Preferred Alternative)
- Alternative 1A. Restoration of Grizzly Bears as a Nonessential Experimental Population with USFWS Management
- Alternative 2. The No Action Alternative - Natural Recovery
- Alternative 3. No Grizzly Bear Alternative
- Alternative 4. Restoration of Grizzly Bears as a Threatened Population with Full Protection of the ESA and Habitat Restoration
- Alternative 4A. Restoration of Grizzly Bears as a Threatened Population with Full Protection of the ESA and USFWS Management

ALTERNATIVE 1. RESTORATION OF GRIZZLY BEARS AS A NONESSENTIAL EXPERIMENTAL POPULATION WITH CITIZEN MANAGEMENT (THE PREFERRED ALTERNATIVE)

Background

The designation "experimental population" had its origin in a 1982 amendment to the Endangered Species Act (ESA), which created Section 10(j). Section 10(j) provided for reintroduction of experimental populations under special regulations. Before that, the USFWS had authority to introduce threatened and endangered species into unoccupied historic range, but attempts to do so were often met with resistance. One reason for that resistance was the USFWS could not assure private landowners, other federal agencies, and state and local governments that the transplanted population would not disrupt future land management options. "Experimental population" designation gives the USFWS more flexibility because such populations can be treated as "a species proposed to be listed" or "threatened" rather than "endangered" (see Appendix 12). Congress provided the amendment to make more reintroductions possible, by allowing more management flexibility, if necessary, where such management is consistent with conservation of the experimental population. If a reintroduced population of grizzly bears is designated "experimental" and "nonessential" (refers to an experimental population whose loss would not likely reduce the survival of the species in the wild) under the ESA amendment, other federal agencies are required only to confer with USFWS on federal activities that are likely to jeopardize the species. Management of a nonessential experimental population can thus be tailored to specific areas and specific local conditions, including meeting concerns of those opposed to reintroduction. The experimental population rule has been successfully used to reintroduce black-footed ferrets to Wyoming, South Dakota, Montana, and Arizona, and gray wolves to Yellowstone National Park and central Idaho.

Restoration of Grizzly Bears as a Nonessential Experimental Population With Citizen Management Alternative.— The purpose of this alternative is to accomplish grizzly bear recovery by restoring grizzly bears designated as a nonessential experimental population to central Idaho and implementing provisions within Section 10(j) of the ESA to conduct special management to address local concerns. A Citizen Management Committee (CMC) would be authorized management implementation responsibility for the Bitterroot grizzly bear experimental population.

Note: Changes to Alternative 1 as a Result of Public Comment.— In response to agency and public comment on the Draft EIS proposal, several changes were made to the Final EIS proposal. None of those changes were significant enough to effect the potential impact of the proposed action (preferred alternative) on human health and safety, source populations of grizzly bears, land-use activities, wildlife populations, public access and recreational use, and economics and the social environment. Changes to the FEIS include the following:

1. Grizzly Bear Exclusion Areas: The following clarifications/additions were made in response to the issue concerning human health and safety. If a grizzly bear enters the Bitterroot Valley exclusion area (including private lands lying within the experimental population area in the Bitterroot Valley,

Chapter 2 - Alternatives

Montana, and outside the Bitterroot Forest boundary south of U.S. Highway 12 to Lost Trail pass), state and federal wildlife management agencies would attempt to capture it and notify the public of its presence, and the public would be updated until the bear is caught. Further, any grizzly bear that occupies inhabited human settlement areas on private land within the experimental population area that in the judgement of the management agencies / Citizen Management Committee (CMC) presents a clear threat to human safety or where there is indication that it may become habituated to humans, may be relocated by management agencies. This is to prevent conflicts and possible bear-human injury or the death of bears, and to promote and enhance public safety.

2. Terms Related to Management of the Experimental Population: In response to the issues of how and where the experimental population of grizzly bears would be managed, several terms in the final rule were clarified and defined, including: “recovery emphasis,” “accommodate,” and “Bitterroot Recovery Area.” A statement was added regarding the potential for consideration of future designated Wilderness areas for inclusion in the Recovery Area.

3. CMC Structure and Function: Several clarifications/changes were made to the CMC structure and function. These changes were in response to the public comment issues of: how the CMC will be selected; need for scientific expertise on the CMC; need for clarification regarding mission, operations, and authority of the CMC; need for further insulation of the CMC from political influence; and need for a process to resolve conflicts between the Secretary and CMC. The clarifications/changes are listed below:

a. Nomination of CMC Members: The Governors of Idaho and Montana would include written documentation of the qualifications of each person they nominate to the Secretary.

b. Scientific Advisors: Two scientific advisors would be appointed by the Secretary to the CMC as non-voting members, to attend all meetings and provide scientific expertise in support of CMC management recommendations.

c. Mission and Operating Guidelines: A Mission Statement and Operating Guidelines for the CMC were added.

d. CMC Authority and Responsibility: Clarification that the CMC would implement the Bitterroot Chapter of the Recovery Plan as consistent with the Final Rule. Also the CMC may make recommendations to land and game management agencies regarding changes to plans and policies, but the final decision on implementation of those recommendations would be made by those agencies, and the requirements of NEPA may apply.

e. Resumption of Management Responsibility by Secretary of Interior: Changes were made to the procedure whereby the Secretary of Interior may resume lead management implementation responsibility from the CMC if he/she determines their decisions are not leading to recovery. The USFWS representative would consider CMC input before making any determination that CMC actions are not leading to recovery. If the USFWS representative on the CMC determines the actions of the CMC are not leading to recovery of the Bitterroot population, the USFWS representative would recommend alternative actions and provide six months for the CMC to accomplish them. If the CMC rejects those alternatives, the Service representative would convene a Scientific Review Panel of three. The USFWS representative would consider the views of all CMC members prior to

making a recommendation on initiating a Scientific Review Panel. The USFWS representative would submit for peer review to the panel those CMC actions or decisions upon which the USFWS representative based his/her decision that CMC actions or decisions are not leading to recovery or are at variance with the Special Rule. The Secretary would select one member of the panel, and the Governors of Idaho and Montana in consultation with the Universities of Idaho and Montana (respectively) are to select one panel member each. The Scientific Review Panel would review issues and make timely recommendations to the CMC as to whether CMC actions are in compliance with the Special Rule. The basis for their recommendations would be adherence of the CMC to the Special Rule. If, after timely review, the CMC rejects the recommendations of the Scientific Review Panel, and the USFWS representative determines the CMC actions are not leading to recovery of the Bitterroot population, he/she would notify the Secretary. The Secretary would consider the panel's recommendations, and if he/she decides to resume lead management responsibility, he/she would seek consultation with the Governors of Idaho and Montana to review with them the reasons for his/her decision, and further attempt to resolve the discrepancies between his/her suggested alternatives and the actions or decisions of the CMC. If the Secretary resumes lead management responsibility, he/she would take appropriate actions to assure there is an adequate regulatory process relating to Department of Interior management of grizzly bears, and would publish a Notice in the Federal Register explaining the rationale for the determination and notify the Governors of Idaho and Montana. The CMC would disband and all requirements identified in the Special Rule regarding the CMC would be nullified.

4. Outreach and Information & Education Program: In response to the issues of human health and safety and grizzly bear mortality, increased emphasis was placed on an aggressive information and education program and outreach activities in local communities in proximity to the Bitterroot Ecosystem.

5. Revision of Recovery Goal: A clarification was added regarding how a refined recovery goal for the Bitterroot experimental population would be calculated. The proposed rule indicates if the CMC refines the recovery goal for the Bitterroot grizzly bear population after grizzly bears are reintroduced and occupy suitable habitats in the experimental population area, the recovery goal would be consistent with the habitat available within the Recovery Area. A clarification was made that additional adjacent areas of public land could be considered when setting the recovery goal if it is shown to be necessary by the best scientific and commercial data available.

6. Use of Livestock Guard Dogs: In response to the issue of effects of grizzly bears on livestock, a clarification was made to the types of harassment methods permitted include the use of livestock guard dogs around livestock.

Summary

The Bitterroot Grizzly Bear Experimental Population Area (experimental population area), which includes most of central Idaho and part of western Montana (Figure 2-1), would be established by the USFWS under authority of Section 10(j) of the ESA. This would include the area bounded by U.S. Highway 93 from its junction with the Bitterroot River near Missoula, Montana, to Challis, Idaho; Idaho Highway 75 from Challis to Stanley, Idaho; Idaho Highway 21 from Stanley to Lowman, Idaho; Idaho Highway 17 from Lowman to Banks, Idaho; Idaho Highway 55 from Banks to New Meadows, Idaho; U.S. Highway 95 from New Meadows to Coeur d'Alene, Idaho; and Interstate 90 from Coeur d'Alene, Idaho, to its junction with the Clark Fork River near St. Regis, Montana; and the Clark Fork River from its junction with Interstate 90 near St. Regis, to its confluence with the Bitterroot River near Missoula, Montana; and the Bitterroot River from its confluence with the Clark Fork River to its junction with U.S. Highway 93, near Missoula, Montana. The experimental population area encompasses approximately 25,140 square miles.

The best scientific evidence available indicates there are no grizzly bears in the experimental population area at this time (USFWS 1996). Ongoing grizzly bear monitoring efforts would continue. The USFWS would designate the Bitterroot Grizzly Bear Recovery Area (recovery area) to consist of the Selway-Bitterroot Wilderness and the Frank Church-River of No Return Wilderness (Figure 2-1). The recovery area contains approximately 5,785 square miles.

Appendix 18 describes an expected time line to commence implementation of this alternative and the associated sanitation efforts to minimize conflicts. The first year of implementation would be a “phase-in” year where sanitation equipment would be installed in key areas, and information and education outreach programs would be initiated. Appendix 22 includes an independent report that lists sites within the BE where sanitation problems exist, and these wildlife attractant sites would be targeted for clean-up.

During the first few months of implementation, a Citizen Management Committee(CMC) would be formed. The CMC would be authorized management implementation responsibility by the Secretary of Interior (in consultation with the governors of Idaho and Montana) for the Bitterroot grizzly bear nonessential experimental population. The CMC would be comprised of local citizens and agency representatives from federal and state agencies and the Nez Perce Tribe. Two scientific advisors would be appointed by the Secretary to the CMC as non-voting members, to attend all meetings and provide scientific expertise in support of CMC management recommendations (Appendix 13). Grizzly bear management would allow for resource extraction activities to continue without formal Section 7 consultation under Section 7(a)(2) of the ESA. The CMC would be responsible for recommending changes in land-use standards and guidelines as necessary for grizzly bear management. Recommendations made by the CMC to land and wildlife management agencies would be subject to review and final decisions on implementation would be made by the responsible agency. All decisions of the CMC including components of its management plans must lead toward recovery of the grizzly bear and minimize social and economic impacts to the extent practicable within the context of the existing recovery goals for the species.

Grizzly bears would be reintroduced into the Selway-Bitterroot Wilderness portion of the recovery area during the second year of implementation. Specific reintroduction sites would be

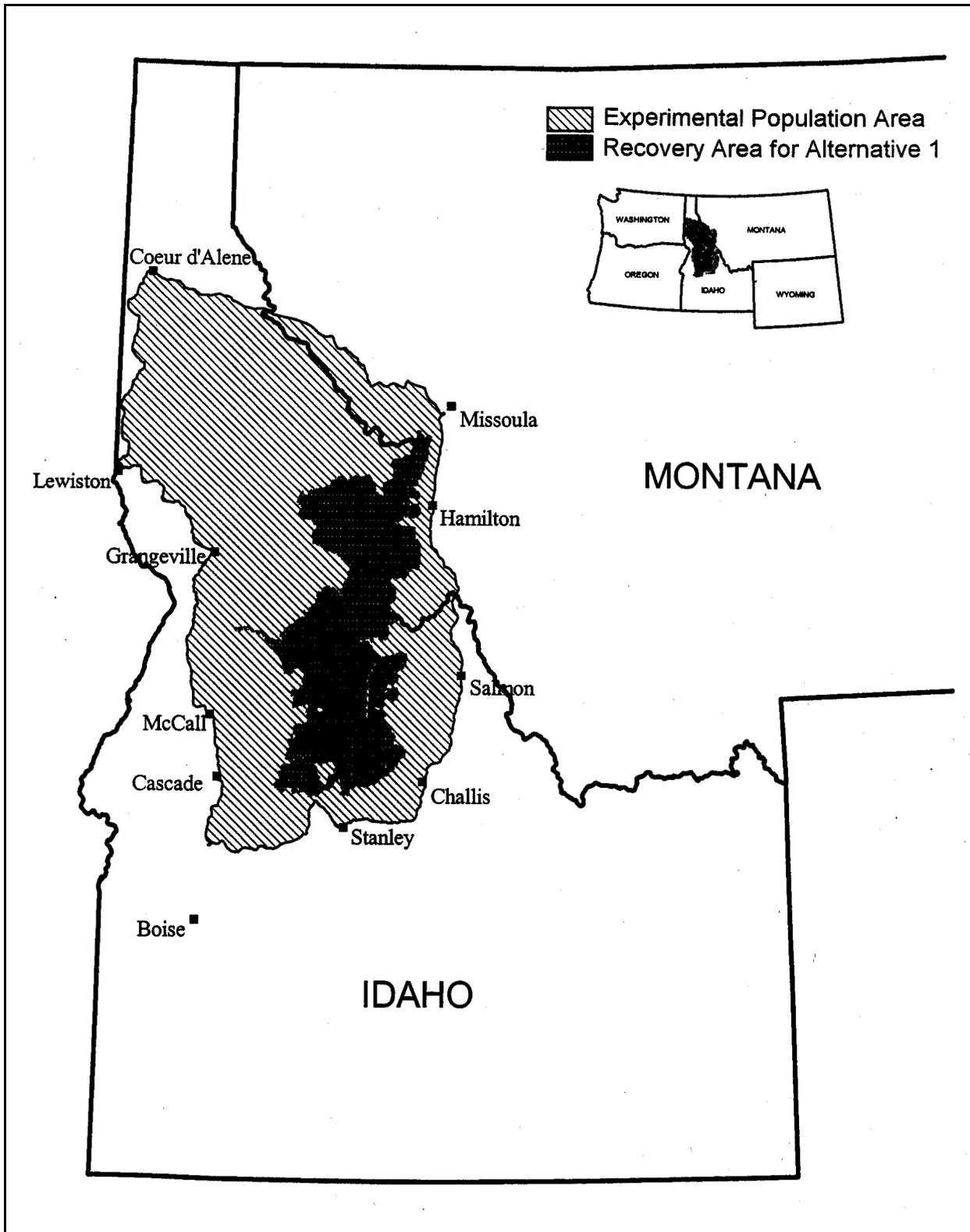


Figure 2-1. Bitterroot Grizzly Bear Experimental Population Area and Recovery Area for Alternative 1 - *Restoration of Grizzly Bears as a Nonessential Experimental Population with Citizen Management.*

Chapter 2 - Alternatives

recommended by the management agencies to the CMC. The recovery area would be identified as the area of recovery emphasis. This means grizzly bear management decisions in the recovery area would favor bear recovery, allowing the area to serve as core habitat for survival, reproduction, and dispersal of the recovering population. Bears moving outside the recovery area would be accommodated through management provisions in a Final Special Rule and through management plans and policies developed by the Citizen Management Committee, unless potential conflicts were significant and could not be corrected. The term “accommodate” means grizzly bears that move outside the recovery area onto public land in the experimental population area would not be disturbed unless they demonstrate a real and imminent threat to human safety or livestock.

People could continue to kill grizzly bears in self-defense or in defense of others, provided that such taking is reported within 24 hours to appropriate authorities. Grizzly bears would be managed according to grizzly bear guidelines except in the case of grizzly bears on private land who are killing livestock and could not be captured by management authorities. In such cases, landowners would be issued a permit by USFWS. Following issuance of a permit by the USFWS, the public would be allowed to harass, through non-injurious means, a grizzly bear attacking livestock (cattle, sheep, horses, and mules) or bees. A livestock owner may be issued a permit to kill a grizzly bear killing or pursuing livestock on private lands if it has not been possible to capture such a bear or deter depredations through agency efforts. If significant conflicts occurred between grizzly bears and livestock within the experimental population area, these could be resolved in favor of the livestock by agencies capturing or eliminating the bear depending on the circumstances. There would be no federal compensation program, but compensation from existing private funding sources would be encouraged. Animal control toxicants lethal to bears are not used on public lands within the recovery and experimental population areas. It is anticipated that ongoing animal damage control activities would not be affected by grizzly bear recovery. Any conflicts or mortalities associated with these activities would result in review by the CMC, and any necessary changes would be recommended by the CMC.

Implementation of this alternative would involve:

The following summary highlights the actions that would be implemented if Alternative 1 (Preferred Alternative) is selected:

-The “*ESA Final Special Rule for Establishment of a Nonessential Experimental Population of Grizzly Bears in the Bitterroot Area of Idaho and Montana*” would be finalized and published in the Federal Register. The Final Rule would be consistent with the changes indicated in this Final EIS. Implementation of actions described in this Final EIS will not occur until after the Special Rule is published in the Federal Register (see Appendix 13).

-The USFWS would designate much of central Idaho and part of western Montana (see description above) as the Bitterroot Grizzly Bear Experimental Population Area for grizzly bear recovery (Figure 2-1).

-The USFWS would designate the Bitterroot Grizzly Bear Recovery Area for recovery emphasis to consist of the Selway-Bitterroot Wilderness and the Frank Church-River of No

Return Wilderness (Figure 2-1). If in the future, new wilderness areas are designated adjacent to the recovery area, the Citizen Management Committee could recommend their addition to the recovery area. This is the area where recovery would be emphasized. The term *recovery emphasis* means grizzly bear management decisions in the recovery area would favor bear recovery so that this area could serve as core habitat for survival, reproduction, and dispersal of the recovering population. The recovery area as defined in the proposed Special Rule and FEIS is different than a recovery zone as defined in the Grizzly Bear Recovery Plan (USFWS 1993, 1996). Bears would only be released in the Selway-Bitterroot Wilderness, unless the Citizen Management Committee determines that reintroduction in the River of No Return Wilderness is appropriate. Specific relocation sites would be recommended by the management agencies to the CMC.

-The USFWS would authorize a 15 member Citizen Management Committee (CMC) to be appointed by the Secretary of Interior in consultation with the governors of Idaho and Montana, and the Nez Perce Tribe. This committee would be authorized management implementation responsibility by the Secretary of Interior, in consultation with the governors of Idaho and Montana, for the Bitterroot grizzly bear nonessential experimental population. All decisions of the CMC must lead to recovery of the grizzly bear in the BE. The Committee must consult with scientists to ensure that scientific information is considered in its decision making.

Members would serve six-year terms and would consist of seven individuals appointed by the Secretary of Interior based on the recommendations of the governor of Idaho, five members appointed by the Secretary of Interior based on recommendations of the Governor of Montana, one member appointed by the Secretary based on the recommendation of the Nez Perce Tribe, one member representing the USDA Forest Service appointed by the Secretary of Agriculture or his/her designee, and one member representing the USFWS appointed by the Secretary of Interior or his/her designee. Members recommended by the Governors of Idaho and Montana would be based on recommendations of interested parties and would include at least one representative each from the appropriate state fish and wildlife agencies. If either governor failed to make recommendations, the Secretary would accept recommendations from interested parties. In their recommendations to the Secretary, the Governors of Idaho and Montana would attach written documentation of the qualifications of those nominated relating to their knowledge of and experience in a variety of natural resource issues and relating to their commitment to collaborative decision making.

The CMC is to consist of a cross-section of interests reflecting a balance of viewpoints, be selected for their diversity of knowledge and experience in natural resource issues, and for their commitment to collaborative decision making. Except for representatives from federal agencies, the CMC would be selected from communities within and adjacent to the recovery and experimental population areas. The CMC would continue until the recovery objectives were met and the Secretary of Interior completed delisting. Management authority would then revert to the state wildlife agencies. The specific duties and responsibilities of the CMC would be described in the Final Special Rule. Specific

Chapter 2 - Alternatives

details on how the CMC would make decisions are not included in this FEIS so as to maintain flexibility for the CMC to establish operational and decision-making processes after they are established.

-Two scientific advisors would be appointed by the Secretary to the CMC as non-voting members to attend all meetings of the CMC and to provide scientific expertise in support of CMC management recommendations. The Secretary would contact the Wildlife Society Chapters in Idaho and Montana and the Universities of Idaho and Montana for nominations of one wildlife scientist from each state, and would appoint them as advisors to the CMC

- CMC Mission Statement: “The mission of the CMC would be to facilitate recovery of the grizzly bear in the Bitterroot Ecosystem by assisting in implementing the Bitterroot Chapter of the Recovery Plan. Regarding the land and wildlife management agencies, the role of the CMC would be to make recommendations to them that the CMC thinks would lead to recovery of the grizzly bear. Decisions on, and implementation of these recommendations is the responsibility of the land and wildlife management agencies.”

-CMC Operating Guidelines: “The Committee would meet a minimum of two times per year and meetings would be open to the public. Additionally, the committee would provide reasonable public notice of meetings, produce and provide written minutes of meetings to interested persons, and involve the public in its decision-making process. This public participation process would allow members of the public and/or special interest groups to have input to Committee decisions and management actions.”

-The CMC would implement the Bitterroot chapter of the Grizzly Bear Recovery Plan (USFWS 1996) as consistent with the “*ESA Final Rule 10(j) Establishment of a Nonessential Experimental Population of Grizzly Bears in the Bitterroot Area of Idaho and Montana.*” The Committee would develop recommendations on existing management plans and policies of land and wildlife management agencies, as necessary, for the management of grizzly bears in the experimental population area. The CMC could make recommendations to land and wildlife management agencies regarding changes to plans and policies, but the final decision on implementation of those recommendations would be made by those agencies. If the CMC recommendations would require significant changes to existing plans and policy, then the requirements of NEPA may apply. All decisions of the CMC must lead to recovery of the grizzly bear in the BE and minimize social and economic impacts to the extent practicable within the context of the existing recovery goals for the species. The CMC would be exempt from FACA (Federal Advisory Committee Act) because they would be implementing an approved recovery plan.

-The Secretary or the USFWS representative would review the plans and efforts of the CMC. If the Secretary determines, through the USFWS representative on the CMC, that the decisions of the CMC, the management plans, or the implementation of those plans are not

leading to the recovery of the grizzly bear within the experimental population area or are not in compliance with the Special Rule, the USFWS representative on the CMC would solicit from the CMC a determination whether the decision, the plan, or implementation of components of the plan are leading to recovery or why it believes it is in compliance with the Special Rule. Notwithstanding a determination by the CMC that a decision, plan, or implementation of a plan is leading to recovery of the grizzly bear within the experimental population area or is in compliance with the Special Rule, the Secretary, who necessarily retains final responsibility and authority for implementation of the Act, may find that the decision, plan, or implementation of a plan is inadequate for recovery or is not in compliance with the Special Rule, and may resume management responsibility.

The USFWS representative would consider CMC input before making any determination that CMC actions are not leading to recovery or why it believes it is in compliance with the Special Rule. In the event that the USFWS representative determines the actions of the CMC are not leading to recovery of the Bitterroot grizzly bear population or are not in compliance with the Special Rule, then the USFWS representative would recommend to the CMC, based on the best scientific and commercial data available, alternative or corrective actions and provide a 6-month time frame in which to accomplish those actions. Should the CMC reject those alternatives, the USFWS representative would convene a Scientific Review Panel of three and the USFWS representative would submit for peer review to the panel those CMC actions or decisions upon which the USFWS representative based his/her decision that the actions or decisions of the CMC are not leading to recovery or are at variance with this Special Rule. The USFWS representative would consider the views of all CMC members prior to making a recommendation on initiating a Scientific Review Panel.

Members of the panel would be professional scientists who have had no involvement with the CMC and would not be employed by Federal agencies responsible for grizzly bear recovery efforts. The Secretary would select one member of the panel, and the Governors of Idaho and Montana in consultation with the Universities of Idaho and Montana (respectively), are to select one panel member each. The Scientific Review Panel would review issues, solicit additional information if necessary, and using the best scientific and commercial data available, make timely recommendations to the CMC as to whether CMC actions, decisions, and/or processes are in compliance with the Special Rule and would lead to recovery of the grizzly bear in the Bitterroot Ecosystem. Examples of CMC actions or lack of actions, decisions, and/or processes that may be evaluated by the Scientific Review Panel include, but are not limited to: sufficiency of public involvement in CMC activities; specific decisions involving sanitation and outreach activities; management of nuisance bears; adequacy of recommendations to land and game management agencies; and adequacy of CMC actions in addressing issues such as excessive human-caused grizzly bear mortality, and other actions that are important in leading to recovery of the grizzly bear in the Bitterroot Ecosystem. The basis for the recommendations of the Scientific Review Panel would be CMC adherence to the Special Rule.

Chapter 2 - Alternatives

If, after timely review, the CMC rejects the recommendations of the Scientific Review Panel, and the USFWS representative determines the CMC actions are not leading to recovery of the Bitterroot population, he/she would notify the Secretary. The Secretary would consider the panel's recommendations, and if he/she nevertheless decides to resume lead management responsibility, he/she will seek consultation with the Governors of Idaho and Montana to review with them the reasons for his/her decision and further attempt to resolve the discrepancies between the suggested alternatives and the actions or decisions of the CMC. If, after that consultation, the Secretary resumes lead management responsibility, he/she would take appropriate actions to assure there is an adequate regulatory process relating to Department of Interior management of grizzly bears, and would publish a Notice in the Federal Register explaining the rationale for the determination and notify the Governors of Idaho and Montana. The CMC would disband and all requirements identified in the Special Rule regarding the CMC would be nullified. If the Secretary does not resume lead management responsibility, the CMC would continue until the recovery objectives have been met and the Secretary has completed delisting (Figure 2-2).

-Idaho Department of Fish and Game (IDFG) and/or the Nez Perce Tribe, Montana Department of Fish, Wildlife, and Parks (MDFWP), and the USDA Forest Service (USFS), in coordination with the USFWS, would exercise day-to-day management responsibility within the experimental population area while implementing the BE Grizzly Bear Recovery Plan Chapter, the Special Rule, and the policies and plans of the CMC. Day-to-day management responsibility involves handling of nuisance bears, answering questions from the public, managing human foods and garbage to minimize their availability to bears, and other such activities. The USFWS and these cooperating agencies would share management responsibility as per agreements with, and in consideration of, recommendations from the CMC.

-Grizzly bear recovery would be emphasized in the recovery area, but bears moving outside the recovery area would be accommodated through management provisions in the Special Rule and through management plans and policies developed by the CMC, unless potential conflicts were significant and could not be corrected. In this case, the CMC would develop strategies to discourage grizzly bear occupancy in portions of the experimental population area. The term *accommodate* means grizzly bears that move outside the recovery area onto public land in the experimental population area would not be disturbed unless they demonstrate a real and imminent threat to human safety or livestock.

-Unless the CMC determines otherwise, private lands outside the national forest boundary in the Bitterroot Valley (lands outside the Bitterroot Forest boundary south of U.S. Highway 12 to Lost Trail pass) are an area where any human/grizzly conflicts would be considered significant. Grizzly bear occupancy would be discouraged in these areas and grizzly bears would be captured and returned to the recovery area or destroyed depending on the history of each bear. If a grizzly bear enters this exclusion area, state and federal wildlife

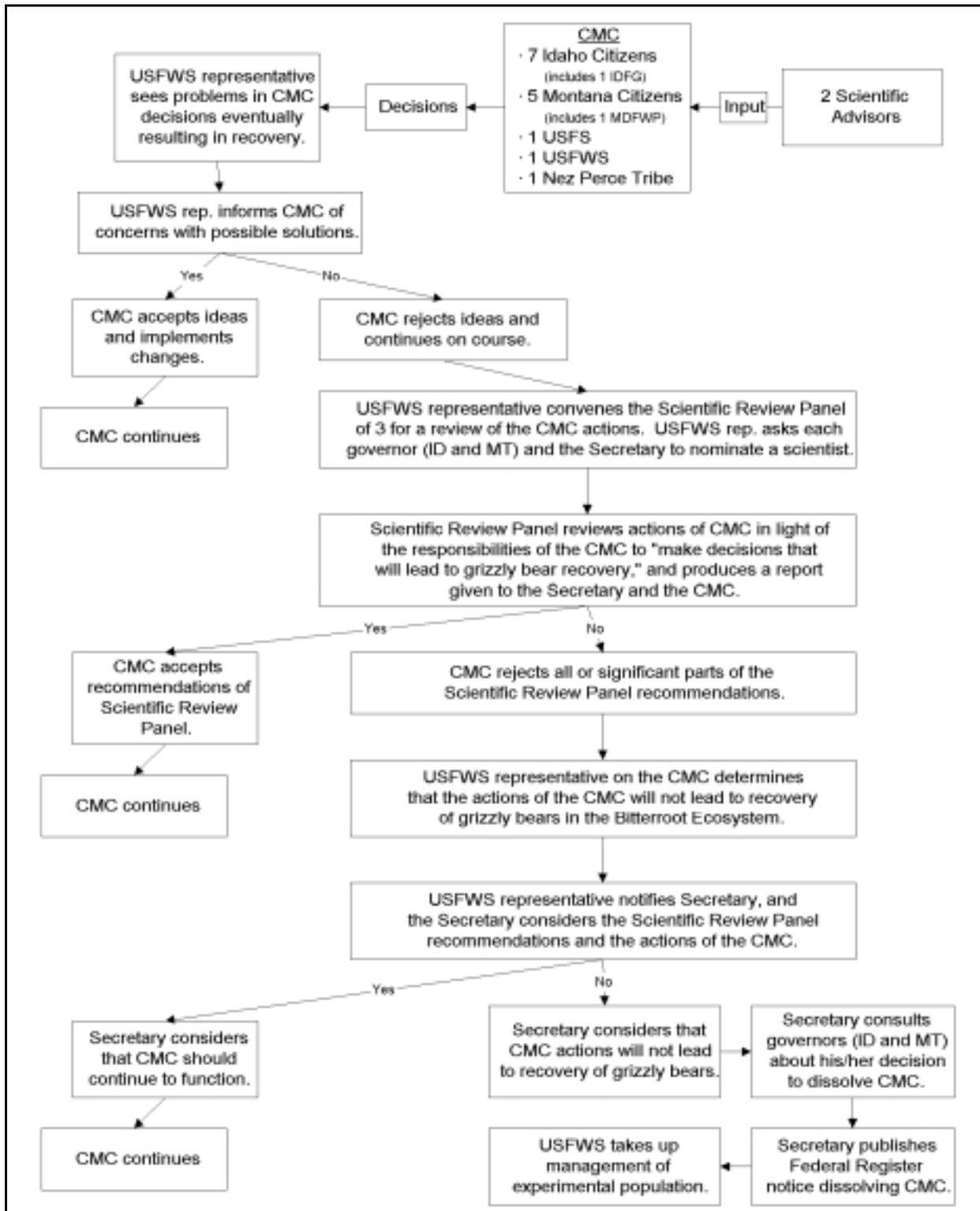


Figure 2-2. Scientific Review Panel process for the Citizen Management Committee (CMC).

Chapter 2 - Alternatives

management agencies would attempt to capture it and notify the public immediately of its presence. The public would be updated until the bear is caught. Further, any grizzly bear that occupies inhabited human settlement areas on private land within the experimental population area that in the judgement of the management agencies/CMC presents a clear threat to human safety or where there is indication that it may become habituated to humans, may be relocated by management agencies. This is to prevent conflicts and possible bear-human injury or the death of bears, and to promote and enhance public safety.

-Grizzly bear management would allow for resource extraction activities to continue without formal ESA Section 7 consultation, because under ESA Section 10(j)(c) nonessential experimental populations are treated under Section 7(a)(2) as “proposed” species, and thus federal agencies are not required to formally consult with USFWS on management actions. Federal agencies are only required to confer with USFWS on activities the agencies believe might jeopardize the existence of the species (see Appendix 12). The CMC would be responsible for recommending changes in land-use standards and guidelines in the BE as necessary for grizzly bear management.

-All ESA Section 9 “takings” provisions under the ESA for the nonessential experimental population of grizzly bears in the BE would be included in the Final Special Rule. People would continue to be allowed to take a grizzly bear in self-defense or defense of others, provided that such taking is reported within 24 hours to appropriate authorities. Livestock owners would be allowed to take a grizzly bear on private lands in the experimental population area to protect livestock actually pursued or being killed on private property, once a permit has been obtained, the response protocol established by the CMC has been satisfied, and efforts by the wildlife agency personnel to capture the depredating bear(s) have been unsuccessful.

-The USFWS would establish a tentative recovery goal of approximately 280 grizzly bears (bears distributed over approximately 5,785 mi² of designated wilderness and adjacent lands) occupying suitable habitat within the wilderness and adjacent lands (USFWS 1996). The CMC could recommend refined interim recovery goals and a final recovery goal for the Bitterroot Chapter of the Recovery Plan, based on the best available science, after grizzly bears were reintroduced and additional information was obtained on their use of the habitat. The recovery goal for the Bitterroot grizzly bear population would be consistent with habitat available within the recovery area. Additional adjacent areas of public land could be considered when setting the recovery goal if it is shown to be necessary by the best scientific and commercial data available. Any revised recovery goals developed by the CMC would require public review and USFWS formal approval as appropriate for any revision of any recovery plan. Grizzly bears outside the recovery area and within the experimental population area would contribute to meeting the recovery goal if there were reasonable certainty of their long-term occupancy in such habitats outside the recovery area.

-The CMC would base its decisions on the best scientific and commercial data available. The CMC would develop a process for obtaining the best biological, social, and economic data, which would include an explicit mechanism for peer-reviewed, scientific articles to be submitted to and considered by the CMC, as well as periodic public meetings (not less than every two years) in which qualified scientists could submit comments to and be questioned by the CMC. The two Scientific Advisors would lead this process. To increase public participation and input in their decision-making process, the CMC could consider holding periodic public hearings, or sponsor public surveys to gather public comments and opinions on management issues and concerns regarding the Bitterroot grizzly bear population.

-A minimum of 25 grizzly bears would be reintroduced into the recovery area over a period of 5 years, until a colony of bears has been established. The status of the recovery project would be reevaluated separately by the CMC and Secretary of Interior at 5-year intervals. Using the best scientific evidence available, and standards and criteria developed by the agencies and the CMC, the CMC would determine if bear reintroduction was successful after a period of at least 10 years. If based on these criteria and recommendations by the CMC, the Secretary after consultation with the CMC, states of Idaho and Montana and their fish and wildlife agencies, and the Nez Perce Tribe, concludes reintroduction has failed to produce a self-sustaining population, no more bears would be reintroduced. Any remaining bears would retain their experimental status. Prior to declaring the experimental reintroduction a failure, the USFWS would conduct an evaluation into the probable cause of the failure. If the causes can be determined, and legal and reasonable measures identified and implemented, the USFWS would consider continuing the recover effort and maintaining the relocated population.

The USFWS, USFS, states of Idaho and Montana, and Nez Perce Tribe in cooperation with the CMC would release a minimum of 25 grizzly bears into the recovery area over a period of 5 years. Procedures would include:

-The first “phase-in” year of implementation before grizzly bears are reintroduced would include an intense sanitation and public education campaign. The sanitation program would include efforts by the USFS, permittees, and private landowners in and around the recovery area. The Survey of Attractant Sites, Selway-Bitterroot Ecosystem (Appendix 22) which was conducted by Brown Bear Resources, Inc. would be utilized as a tool in addressing the areas where sanitation problems exist. Public education efforts would include: presentations at schools in and around the recovery area to teach children about grizzly bears and how to recreate safely in grizzly bear country; presentations to all civic clubs and interested organizations about grizzly bears and how to recreate safely in grizzly bear country; and placing of informative signs at all trail heads in and around the recovery area.

-Necessary federal permits, agreements, and archeological site clearances would be obtained and activities conducted for a scientifically based grizzly bear recovery program.

Chapter 2 - Alternatives

-Subadult grizzly bears of both sexes would be trapped each year for 5 years, from areas in Canada (in cooperation with Canadian authorities) and the United States that presently have healthy populations of grizzly bears living in habitats that are similar to those found in the Bitterroot Ecosystem. Three sources of grizzly bears for the BE have been identified: southeast British Columbia, the Northern Continental Divide Ecosystem (NCDE) population in northwest Montana, and the Yellowstone Ecosystem (YE) population. Under ESA Section 10(j), the Secretary of Interior may authorize the release of any population of an endangered or threatened species outside the current range of such species if the Secretary determines that the release will further the conservation of the species, and the population is wholly separate geographically from nonexperimental populations of the same species (see Appendix 12). The BE is geographically separate from existing grizzly bear populations (see Appendix 25). Specific numbers of bears that could be obtained yearly from potential source populations is unknown at this time, and would be predicated on the yearly achievement of recovery (YE and NCDE) and management (British Columbia) objectives.

-Some undetermined level of mortality is expected among transplanted bears. Every effort would be taken to minimize this, but mortalities are expected to occur. Any transplanted bears that died or were removed as a result of human action could be replaced. Such replacements would be in addition to the original minimum of 25 bears.

-Grizzly bears would be captured and reintroduced at the best time of year to optimize their survival. This would likely occur when grizzly bear food supplies in the BE are optimum.

-Each individual grizzly bear reintroduced would be radio collared and monitored to determine their movements and how they use their habitat, and to keep the public informed of general bear locations and recovery efforts.

For specific information on how a grizzly recovery program would be conducted, please see Appendix 6, "Scientific techniques for reintroduction of grizzly bears." Appendix 18 describes an expected time line to commence implementation of this alternative and the initial implementation-associated sanitation efforts to minimize conflicts.

How would the grizzly bear population respond to this alternative?

Grizzly bear population modeling efforts were recently completed for two interior southern populations for which habitat conditions appear similar to the BE (McLellan 1989, Eberhardt et al. 1994, Knight and Blanchard 1995, Hovey and McLellan 1996). Population growth rates of approximately 4% and 8% were reported for the Yellowstone and the North Fork of the Flathead River in Southeast British Columbia grizzly bear populations, respectively. The 4% growth rate was for the period of 1974-1992. Craighead et al. (1974) calculated a 2% rate of growth for the Yellowstone population for the period of 1959-1967. These three growth rates (2%, 4%, and 8%) were applied to an initial population having 15 female bears to illustrate potential population growth rates and to estimate anticipated time to recovered populations (Figure 2-3). Reproductive rates were

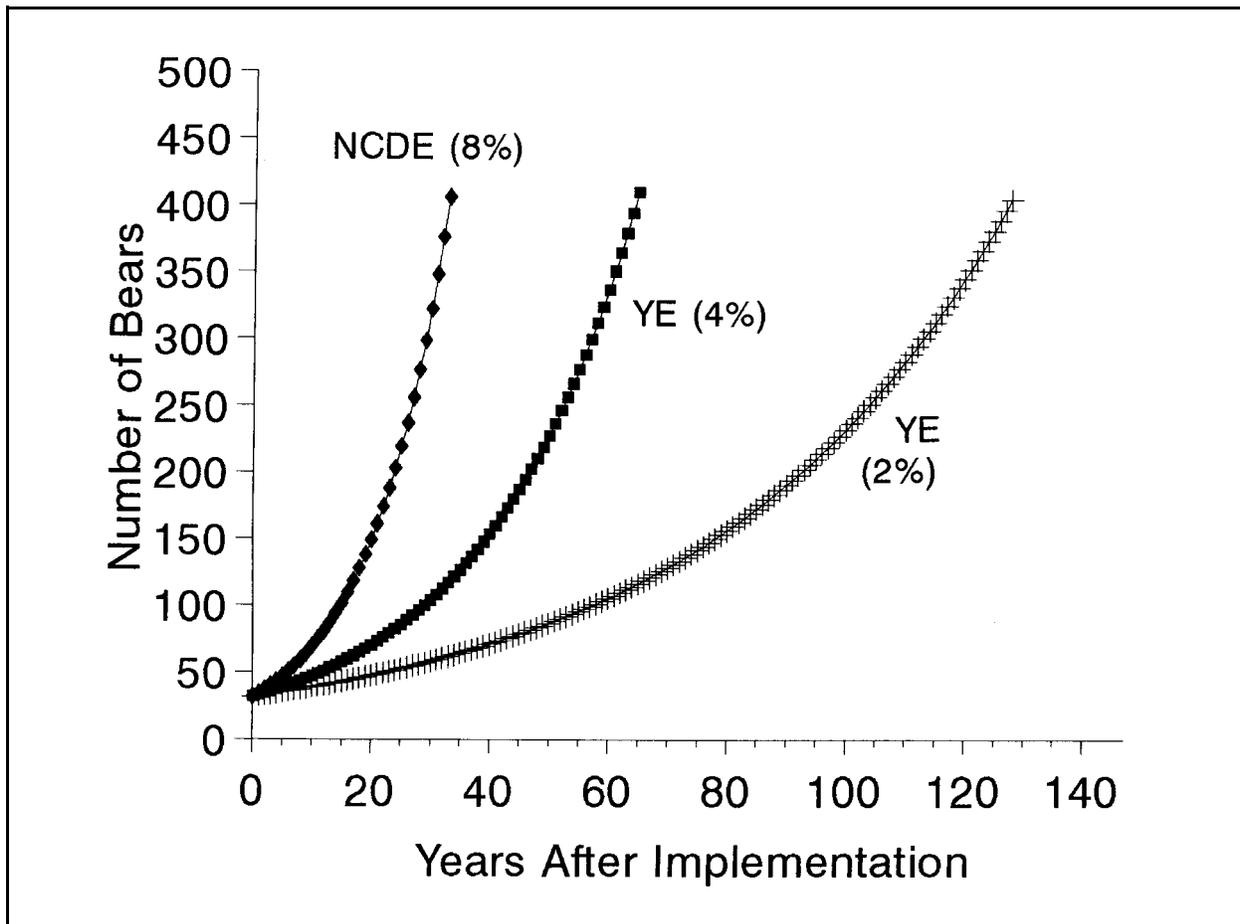


Figure 2-3. Projections of grizzly bear population growth for the Bitterroot Ecosystem following the initial 5-year implementation period. Population growth rates of approximately 2% and 4% were reported for the Yellowstone (YE), and 8% for the North Fork of the Flathead River (in southeast British Columbia) (NFF) grizzly populations. These rates are applied to an initial population having 15 female bears to illustrate potential population growth rates and to estimate anticipated time to recovered populations.

similar between studies, but survival rates were substantially different. Most notably, survival of subadult female bears was higher in the Flathead population and this produced much of the observed difference in growth rates. These scenarios were intended to provide a range of likely population projections following reintroduction, and are presented to depict how bear populations may optimally respond to implementation of this alternative. Bear populations may behave differently than projected, but these two data sets provide the best available information for modeling potential grizzly bear population growth in the BE. These models do not reflect internal population pressures (e.g., competition for food or space) that may reduce the rate of increase through reduced survival and reproduction. These effects could be expected to slow the rate of growth as the population fills the available habitat. These projections are completely dependent upon a majority of transplanted

Chapter 2 - Alternatives

bears remaining within the target area and reproducing at rates similar to bears in the Yellowstone or Flathead populations.

The tentative recovery goal of this alternative is approximately 280 grizzly bears (USFWS 1996). The population projections indicate that bear populations would require at least 110 years at a 2% growth rate, a minimum of 50 years at a 4% growth rate, and at least 30 years at an 8% growth rate to reach the tentative recovery level of approximately 280 bears (Figure 2-3). The USFWS has determined that the 8% growth rate is unrealistic for expected population growth in the BE. Realistically, grizzly bear recovery in the BE could take a minimum of 50 years, and given potential conflicts, could likely take more than 110 years. The three scenarios indicate that improving survivorship of young bears can dramatically affect population growth. If bear mortality can be reduced, recovery would occur decades sooner (Maguire and Servheen 1992).

How does this alternative address the major issues and concerns of the public?

1. What will be the risk to human safety?

To identify actual risk factors, it would be best to compare areas of similar habitat, human population and recreational activities, and grizzly bear densities, both projected for recovery and expected during the implementation phase. The Northern Continental Divide Ecosystem (NCDE), outside of Glacier National Park, has habitats similar to those in the northern portion of the BE, has grizzly bear population densities of about 1 bear per 20-30 square miles (similar to projected recovered grizzly bear densities for the BE), and has human recreation consisting of hiking, fishing, camping, horseback riding, and big game hunting. Glacier National Park annually receives approximately 2-3 million visitors, does not allow hunting, and has grizzly bear population densities estimated at about 1 bear per 8 square miles. The Yellowstone Ecosystem (YE) which is comprised of Yellowstone Park and surrounding National Forests, receives more visitation than Glacier Park and has an increasing grizzly bear population estimated at 1 bear per 30-50 square miles. Consequently, it would be more comparable to estimate risk to human safety based on habitat and bear densities that occur in the NCDE and YE outside of the national parks, because conditions in these areas most closely resemble those that would occur over time in the BE.

Within the NCDE (outside of Glacier National Park) there has been one bear-inflicted human mortality and one injury since 1950. The injury rate in the YE outside of Yellowstone Park has increased over the last two decades and averages about one injury per year outside the Park. Within the YE (outside Yellowstone Park) there have been three grizzly bear-inflicted human mortalities in the last 159 years.

Presently, the human population levels within and surrounding the NCDE and the YE are greater than those in the BE. Because more than 98% of the BE occurs on national forest lands, resident human populations will likely not increase substantially. However, visitation would likely increase over the recovery period, until saturation of recreation use has occurred, or wilderness managers limit use to reduce impacts. Presently, visitation to the Selway-Bitterroot and Frank Church-River of No Return Wilderness Areas is approximately 1% of that occurring in Glacier and Yellowstone

Parks. It is likely that human use of the national forest lands in central Idaho will increase within a few decades, but will likely never reach visitation levels presently occurring in or near Glacier or Yellowstone National Parks.

During the first several decades following reintroduction, the chance of injury caused by grizzly bears would be exceedingly small due to the low density of bears in the area. For instance, in the Cabinet-Yaak (CYE) and Selkirk (SE) ecosystems where there are low density recovering populations of grizzly bears, there have not been any recorded injuries in at least the last 20 years. Similar injury rates would be expected in the Bitterroot Ecosystem until bear and human densities increased beyond those presently occurring in the SE and CYE.

Under this alternative populations are estimated to achieve tentative recovery levels of approximately 280 bears in a minimum of 50 years, and likely more than 110 years. Using human injury rates in the NCDE and YE, and recognizing a net increase in human visitation, projections for human injury, once bears are recovered 50-110+ years in the future, are less than one injury per year and less than one grizzly bear-induced human mortality every few decades.

Under Interagency Grizzly Bear Committee (IGBC) guidelines (IGBC 1986), grizzly bears posing problems to camps, cabins, individuals and stock may be relocated or removed. Humans that act in self-defense or defense of others would be allowed to kill a grizzly bear. In addition, new technologies such as repellants, proper sanitation procedures, aversive conditioning, monitoring, and preemptive management, as well as educating humans how to react during an encounter would reduce chance of injuries. See Appendix 11 for more information on risks to human safety.

2. What kind of land uses will be altered solely for grizzly bears?

The CMC would review any potential impacts to land uses and assure that resource extraction activities would be maintained at levels consistent with grizzly bear recovery. Existing Forest Plan standards and guidelines, as amended, would be deemed adequate pending review by the CMC. It is anticipated that laws and regulations in the BE, in effect at the time of issuance of this FEIS, and governing land management activities would promote grizzly bear recovery.

It is expected that timber harvest is an activity that can be compatible with grizzly bear recovery as long as it meets the standards and guidelines of the USFS Forest Plans. Road density guidelines presently in effect in the Clearwater and Nez Perce National Forest Plans outside the wilderness areas are assumed to be adequate for grizzly bear recovery (see Appendix 10). If this alternative is implemented, the CMC would be tasked with making recommendations for changes to agency management plans. If CMC reviews of existing grizzly bear standards and guidelines utilized by the U.S. Forest Service and other agencies and landowners deem such standards and guidelines inadequate for recovery of grizzly bears in the BE, the Committee may recommend changes to the U.S. Forest Service and other agencies and landowners. The CMC could make recommendations to land and wildlife management agencies regarding changes to plans and policies, but the final decision on implementation of those recommendations would be made by those agencies, and the

Chapter 2 - Alternatives

requirements of NEPA could apply. Such management plans and policies would be in accordance with applicable state and federal laws.

Livestock grazing although presently either not occurring or at very low densities within the recovery area is not expected to be impacted. However, within the experimental boundaries, grazing does occur predominantly in the southern portion of the BE (Figure 3-8, Table 3-13). Consequently, at recovered grizzly population levels and current livestock stocking rates, impacts to livestock would be expected to be similar to levels occurring in portions of the NCDE and the YE. In 50-110+ years (the estimated time to recovery assuming 2-4% growth rates) grizzly bears would likely be present within the southern portion of the BE. Projections indicate that at a grizzly bear population level of 280 bears in the recovery area, yearly livestock losses to depredation by bears could range from 4-8 cattle and 5-44 sheep. Management activities would try to preempt livestock problems. The CMC would try to make all uses compatible with recovery. Based on what is currently known about bear behavior in the NCDE and YE, nuisance bear incidents would likely range between 0 and 74 per year at recovered population levels.

Recreation impacts in the form of permanent trail closures within the wilderness would likely not occur. Temporary closures of trails may occur in response to a dangerous situation that might result in human injury or bear mortality (e.g., grizzly on a carcass in a trail). However, even in Glacier National Park where bear and human densities are greater than would likely ever occur in the BE, less than 5% of the trails are temporarily closed at one time. Trails are rarely closed in the NCDE, outside of the park. In the NCDE where a minimum population of about 325 grizzly bears currently exists, only one trail was closed on national forest lands because of grizzly bears in the last 10 years. In the event trail use restrictions for public safety are necessary in response to a rare instance such as a grizzly bear feeding on a carrion source, such restrictions would be short-term. Policy changes on trail restrictions for human safety would be recommended by the CMC as necessary. Sanitation concerns in the BE would have to be addressed, such that backcountry users properly store food and garbage to reduce potential conflicts with bears (See Appendices 18 and 22).

Mineral extraction would likely not be altered due to grizzly bear concerns in and by themselves. Recommendations would be made by the CMC to reduce potential impacts if the need arises.

Impacts of grizzly bear restoration to big game populations would likely be insignificant. Studies from similar ecosystems with high densities of both bears and ungulates indicate that predation rates range from almost none to low levels of predation. In many locations, animal matter may not constitute a major annual diet item, but may be seasonally vital to bears (Mattson et al. 1991). An expected predation rate of 0.17-0.38% of the ungulate population in the area occupied by bears in the BE could occur. Using Mattson's (1997) estimate of 1.4 or 5.8 ungulates per year for adult female and male bears respectively, a population of 280 bears (USFWS 1996) would be expected to prey upon 504 ungulates per year across the BE. The loss of 504 ungulates to a recovered grizzly bear population would represent approximately eleven hundredths of one percent (0.11%) of estimated pre-harvest populations of ungulates in the PAA. Grizzly bear predation is not expected

to result in measurable or observable changes in ungulate populations. Potential long-term impacts to black bear population dynamics is unclear, but felt to be minimal. Overall impacts of a recovered population of grizzly bears on other wildlife populations are expected to be minimal. It should not be necessary to adjust hunting seasons to compensate for grizzly bear predation on other wildlife.

In portions of Montana where hunting for big game species overlaps with grizzly bear habitat, there has been no need to change hunting seasons due to grizzly bear recovery programs. Any restrictions on black bear hunters or other hunting opportunities to reduce the likelihood of mistaken identity kills or to address other potential conflicts could be recommended by the CMC, but would have to be acceptable and implemented by the IDFG and MDFWP.

3. How much will implementation cost?

The present cost estimate for capturing a minimum of 25 grizzly bears, transplanting bears to the central Idaho recovery area, and monitoring and management of the grizzly bears over a 5-year period of reintroductions is \$283,632 annually. The CMC would meet about 4-6 times annually during the early period of the project and less frequently later. CMC travel expenses and associated costs would amount to an estimated \$15,000 dollars per year. An additional \$5,000 would be required for the Science Advisors to the CMC. In addition to costs involved in the transplanting, monitoring, and management of bears, there is also a cost associated with sanitation, information and education, and law enforcement activities conducted by the USFS within the recovery area. This cost would be approximately \$150,000 annually. Total annual cost for the 5-year reintroduction period would be approximately \$433,632/year, and total 5-year implementation cost would be approximately \$2,168,160 (Appendix 7). Annual costs for monitoring and citizen management would be approximately \$193,000 for each year beyond the 5-year reintroduction period. The USFWS should be evaluate costs of recovery on an ongoing basis. The CMC would also be responsible for evaluating management costs and requesting additional funding to meet monitoring and management needs as required. See the economic analysis for Alternative 1 (Chapter 4) for an assessment of costs other than those associated with implementation.

4. How does this alternative address linkage zones?

Restoration of grizzly bears in the Bitterroot Ecosystem will increase concern about the possible linkage between existing areas with grizzly bears and the BE. The USFWS intends to complete a linkage zone analysis that will detail the possible linkage areas between the existing ecosystems, and between the BE and existing ecosystems. The linkage zone analysis is a Geographic Information System (GIS) computer modeling effort that looks at the levels of human impact and activity in the intervening areas between ecosystems and identifies the best linkage areas based on this human activity. This linkage zone analysis is a separate Grizzly Bear Recovery Plan Task and will be completed regardless of which FEIS alternative is selected for the BE. Maintenance of linkage zones is maintenance of the opportunity for grizzly bears and other wildlife species to move between the existing large blocks of public lands in order to maintain demographic and genetic health. A key factor in the maintenance of such linkage zones is the high-speed highways between these areas and how accommodations can and will be made to allow large animals such as bears the opportunity to cross these highways. In the long-term, the opportunity for bears to move between these ecosystems

Chapter 2 - Alternatives

will improve the health of these populations. In the near term, restoration of a grizzly bear population in the BE will require placement of bears rather than waiting for eventual dispersal into this area, which may never occur, due to the limited number of movements of bears outside of existing range to date. Data from more than 550 different radio-collared grizzly bears since 1975 shows no movement between any grizzly bear ecosystems.

Under Alternative 1, grizzly bears outside the recovery area but within the experimental population area boundaries would be accommodated or discouraged depending on conflict potential. Linkage zones to the BE would have to be considered from management of other ecosystems, because for reintroduction purposes, the nonessential experimental population designation under Section 10(j) of the ESA requires that the recovery area be totally separate from other grizzly bear populations.

5. Are habitat quality and size of the recovery area sufficient for recovery?

The recovery area is approximately 5,785 square miles. This is smaller than either the NCDE or the YE, but larger than the Selkirk or the Cabinet-Yaak ecosystems. However, the roadless, wilderness, and contiguous national forest lands within the recovery area, and adjacent public lands is approximately 15,000 square miles. Together these areas are of sufficient size to allow for grizzly bear recovery. The experimental population area boundary encompasses approximately 25,140 square miles.

Appendix 21B contains the results of a study contracted by the USFWS to an independent scientist in 1998 to estimate the number of grizzly bears that can be expected to be supported by the habitat in Bitterroot Ecosystem. The report, "The Application of Resource Selection Function Analysis to Estimate the Number of Grizzly Bears that Could be Supported by Habitats in the Bitterroot Ecosystem" (Appendix 21B), analyses the suitability of habitats in the Frank Church-River of No Return and Selway-Bitterroot Wilderness areas, and non-wilderness public lands to the north, and through modeling produces an estimate of the number of grizzly bears that can be expected to be supported by the habitat in these areas. The report estimates that at full carrying capacity, between 234-247 grizzly bears could be expected to live in the Selway-Bitterroot and the Frank Church-River of No Return Wilderness areas, and an additional 74 grizzly bears could be expected to live in the public lands north of the Selway-Bitterroot Wilderness in the upper North Fork of the Clearwater River drainage in Idaho. It is estimated that it would take at least 80-100 years for the population to reach this full carrying capacity number if 25 bears were reintroduced.

Habitat quality has been studied extensively. A number of different studies have been conducted within the BE that have direct applicability to the potential for grizzly bear recovery (see Appendix 3). Habitat quality varies throughout the experimental population area, and likewise throughout the recovery area. At one time grizzly bears were present in high densities throughout the BE. Salmon and whitebark pine (*Pinus albicaulis*), two important grizzly bear foods, were common during the peak of grizzly bear populations. Salmon have been virtually eliminated along the Clearwater drainage due to dams that have blocked their migration. Whitebark pine has been reduced to about 20%-40% of its historical abundance in the BE, and now is most prevalent in the southern half of

the ecosystem. This species is expected to decline to approximately 5-10% of its historic abundance level before increasing again (Keene and Arno 1996).

However, studies indicate that a great variety of preferred grizzly bear foods are present in the ecosystem. A wide variety of all season foods are present including good quantities of several key berry species, forbs and grasses, as well as historically high levels of ungulates to provide carrion during the fall and spring months. Food habits of black bears are quite similar to those of grizzly bears. Healthy populations of black bears live within the primary analysis area (PAA, see Figure 3-1), and annual hunter harvest totals about 1,000. Grizzly bears relocated to the BE would likely come from areas where neither salmon nor whitebark pine are plentiful. A recovered population of 280 grizzly bears should be able to find sufficient high quality forage within and adjacent to the recovery area. Although bear densities may not recover to their historical levels during the peak of the salmon and whitebark pine era, the population should achieve densities similar to those found in other interior ecosystems where those food sources are not present. The key to recovery in the BE would likely be due to effective management including limitation of human-caused mortality rather than quantity or quality of habitat.

A recent vegetation-based inventory and analysis of grizzly bear habitat in the Bitterroot Ecosystem was completed by the Craighead Wildlife-Wildlands Institute. Appendix 21D, "Synopsis of Portions of, and Excerpts from the Report, 'Abundance and Spatial Distribution of Grizzly Plant-Food Groups in the Salmon-Selway Ecosystem: A Preliminary Analysis and Report' (Hogg, Weaver, and Craighead et al. 1999)" presents detailed habitat maps showing the distribution and abundance of major grizzly bear foods. The USFWS examined the Hogg, Weaver, Craighead et al. (1999) data and selected whitebark pine nuts and several berry producing shrubs for quantification because they provide a major contribution to annual energy demands for bears (Interagency Grizzly Bear Committee 1987). In summary, results of Hogg, Weaver, Craighead et al. (1999) indicate bear foods in the form of berries generally decline moving from north to south through the Bitterroot area. Significant berry distribution occurs north of the Selway-Bitterroot Wilderness area in the North Fork of the Clearwater River drainage and throughout much of the Lochsa and Selway River drainages. Berry-producing species generally decline to the south, particularly species of huckleberry other than grouse whortleberry. Grouse whortleberry could potentially provide a significant seasonal food source in some years. Whitebark pine and associated nut crops tend to follow the opposite pattern with greater distributions south of the Salmon River and a general decline through the northern portions of the Bitterroot Ecosystem. For further information, see Chapter 3 "*Current Research on Grizzly Bear Habitat Suitability in the Bitterroot Ecosystem,*" and Appendix 21D. See Chapter 3, "Habitat Suitability" section and Appendix 21 for more information.

6. *How will grizzly bears and their habitat be managed?*

Under this alternative, the Citizen Management Committee would be authorized management implementation responsibility by the Secretary of Interior, in consultation with the governors of Idaho and Montana and the Nez Perce Tribe, for the Bitterroot grizzly bear experimental population. The CMC would implement the Bitterroot Chapter of the Grizzly Bear Recovery Plan (USFWS

Chapter 2 - Alternatives

1996). The CMC would develop management plans and policies, as necessary, for the management of grizzly bears in the experimental population area. Specific details on how the CMC would make decisions are not included in the FEIS, so as to maintain flexibility for the CMC to establish operational and decision-making processes once they are formed. IDFG and/or the Nez Perce Tribe, MDFWP, and USFS in consultation with the USFWS would exercise day-to-day management responsibility within the experimental population area in accordance with the Final Special Rule and the BE Recovery Plan Chapter (USFWS 1996).

Habitat would continue to be managed by the land management agencies. The USFS would still conduct its management under the guidelines of the respective Forest Plans and applicable environmental laws. State land managers and private land owners would not lose any of their management authority. The CMC would only make recommendations to these agencies.

Grizzly bears would be restored as a nonessential experimental population under Section 10(j) of the ESA, which would allow increased management flexibility. Experimental populations must be designated either "essential" or "nonessential" (Appendix 12). "Essential" refers to a reintroduced population whose loss would be likely to reduce the likelihood of the survival of the species in the wild. Essential populations receive the full protection of Section 7 of the ESA, meaning that federal agencies must formally consult with the USFWS on actions that may affect the species. "Nonessential" refers to an experimental population whose loss would not be likely to appreciably reduce the likelihood of the survival of the species in the wild. Because nonessential populations are treated under Section 7 as "proposed species", federal agencies must only confer with the USFWS on activities that the agencies believe might jeopardize the species.

7. Where will grizzly bears be obtained, reintroduced, and recovered?

Grizzly bears obtained for reintroduction purposes would likely originate in the U. S. and Canada where current grizzly bear populations are healthy enough to sustain removal of a few bears per year over a 5-year period. Only bears with no history of conflict with humans and livestock, and most likely subadults, would be reintroduced. Grizzly bears determined to be "nuisance" under IGBC Nuisance Bear Guidelines would not be reintroduced to the BE. The donor population should come from habitat as similar as possible to that found in the BE. Three sources of bears for the BE have been identified: southeast British Columbia, the Northern Continental Divide Ecosystem (NCDE) in northwest Montana, and the Yellowstone Ecosystem (YE) population.

No female bears would be removed from YE or NCDE recovery zones or from within the buffer area 10 miles outside the recovery zone boundaries. No bears would be removed from either U.S. ecosystem if such removal would exceed mortality limits. If the NCDE or YE populations exceed existing mortality limits in any year, then the placement of grizzly bears to the BE from these ecosystems would be suspended for the following year. This would not preclude the movement of bears from Canada. However, as 5 bears may not be available from Canada in a given year, this may extend the time period for reintroduction. Further, the actual capture of the necessary bears is dependent upon access to areas with such bears, and significant effort by capture crews. Capture of

desired bears is not assured, even with intensive effort. It may require more than 5 years to obtain the desired minimum of 25 bears to initiate a new population in the BE. This should be made clear to the public and to cooperating agencies at the outset.

There would be no significant detrimental effects to the health of source populations because mortality limits in the Grizzly Bear Recovery Plan (USFWS 1993) and British Columbia grizzly bear management criteria (B.C. Min. Environ., Lands, and Parks 1995) would be met during implementation of this alternative. Further, since no bears would be removed from the YE or NCDE if the mortality limits would be exceeded, and no female bears would be removed from within the recovery zone or within 10 miles of the recovery zone boundary of either ecosystem, then the effects on recovery of any removals of bears from the NCDE or YE would be nonexistent.

Grizzly bears would be reintroduced into the Selway-Bitterroot Wilderness Area. Reintroduction sites that have high quality bear habitat and low likelihood of human encounters would be identified. Bears would be placed close enough to each other to create a “colony” or population of bears, providing a basis from which to expand in numbers. Appendix 18 describes the expected time line and tentative geographic areas proposed to commence implementation of this alternative.

The recovery area includes both the Selway-Bitterroot Wilderness and the Frank Church-River of No Return Wilderness. This is the area where bear recovery would be emphasized. This means grizzly bear management decisions in the recovery area would favor bear recovery so that this area could serve as core habitat for survival, reproduction, and dispersal of the recovering population. However, much of the experimental population area has high-quality bear habitat with low likelihood of conflicts between grizzly bears and humans. Therefore, bears that move outside the recovery area onto public land in the experimental area would be accommodated and would not be moved unless they demonstrate a real and imminent threat to human safety or livestock, and such threats could not otherwise be minimized. Bears found outside the recovery area but within the experimental population area boundaries would be counted as part of the recovery goal, if there was reasonable certainty for their long-term occupancy of such areas outside the recovery area. Bears found outside the experimental population area boundaries are a fully threatened species, not experimental bears.

Unless the CMC determines otherwise, private lands outside the national forest boundary in the Bitterroot Valley (private lands lying within the experimental population area and outside the Bitterroot Forest boundary south of U.S. Highway 12 to Lost Trail Pass) would be an area where any human/grizzly bear conflicts would be considered significant. Grizzly bear occupancy would be discouraged in these areas and grizzly bears would be captured, destroyed, or returned to the recovery area. Further, any grizzly bear that occupies inhabited human settlement areas on private land within the experimental population area that in the judgement of the management agencies/CMC presents a clear threat to human safety or where there is indication that it may become habituated to humans, could be relocated by management agencies in cooperation with the landowner if a suitable relocation site is available. This is to prevent conflicts and possible bear-human injury or the death of bears, and to promote and enhance public safety.

ALTERNATIVE 1A. RESTORATION OF GRIZZLY BEARS AS A NONESSENTIAL EXPERIMENTAL POPULATION WITH USFWS MANAGEMENT

Background

The designation "experimental population" had its origin in a 1982 amendment to the Endangered Species Act (ESA), which created Section 10(j). Section 10(j) provided for reintroduction of experimental populations under special regulations. Before that, the USFWS had authority to introduce threatened and endangered species into unoccupied historic range, but attempts to do so were often met with resistance. One reason for that resistance was the USFWS could not assure private landowners, other federal agencies, and state and local governments that the transplanted population would not disrupt future land management options. "Experimental population" designation gives the USFWS more flexibility because such populations can be treated as "a species proposed to be listed" or "threatened" rather than "endangered" (see Appendix 12). Congress provided the amendment to make more reintroductions possible, by allowing more management flexibility, if necessary, where such management is consistent with conservation of the experimental population. If a reintroduced population of grizzly bears is designated "experimental" and "nonessential" (refers to an experimental population whose loss would not likely reduce the survival of the species in the wild) under the ESA amendment, other federal agencies are required only to confer with USFWS on federal activities that are likely to jeopardize the species. Management of a nonessential experimental population can thus be tailored to specific areas and specific local conditions, including meeting concerns of those opposed to reintroduction. The experimental population rule has been successfully used to reintroduce black-footed ferrets to Wyoming, South Dakota, Montana, and Arizona, and gray wolves to Yellowstone National Park and central Idaho.

Restoration of Grizzly Bears as a Nonessential Experimental Population with USFWS Management Alternative.—The purpose of this alternative is to accomplish grizzly bear recovery by restoring grizzly bears designated as a nonessential experimental population to central Idaho and implementing provisions within Section 10(j) of the ESA to conduct special management to address local concerns. The USFWS would have management of the Bitterroot grizzly bear experimental population. The states and tribes would be encouraged to implement the Special Rules for grizzly bear management under cooperative agreement with the USFWS.

Summary

The Bitterroot Grizzly Bear Experimental Population Area (experimental population area), which includes most of central Idaho and part of western Montana (Figure 2-4), would be established by the USFWS under authority of Section 10(j) of the ESA. This would include the area bounded by U.S. Highway 93 from its junction with the Bitterroot River near Missoula, Montana, to Challis, Idaho; Idaho Highway 75 from Challis to Stanley, Idaho; Idaho Highway 21 from Stanley to Lowman, Idaho; Idaho Highway 17 from Lowman to Banks, Idaho; Idaho Highway 55 from Banks to New Meadows, Idaho; U.S. Highway 95 from New Meadows to Coeur d'Alene, Idaho; and Interstate 90 from Coeur d'Alene, Idaho, to its junction with the Clark Fork River near St. Regis, Montana; and the Clark Fork River from its junction with Interstate 90 near St. Regis, to its confluence with the Bitterroot River near Missoula, Montana; and the Bitterroot River from its

confluence with the Clark Fork River to its junction with U.S. Highway 93, near Missoula, Montana. The experimental population area encompasses approximately 25,140 square miles (Figure 2-4). The USFWS would not designate a recovery area.

The best scientific evidence available indicates there are no grizzly bears in the experimental population area at this time (USFWS 1996). Ongoing grizzly bear monitoring efforts would continue. The first year of implementation would be a “phase-in” year where sanitation equipment would be installed in key areas, and information and education outreach programs would be initiated. Grizzly bears would be restored into the Selway-Bitterroot Wilderness portion of the experimental population area during the second year of implementation. Specific reintroduction sites would be recommended by the management agencies to the USFWS. Experimental grizzly bears moving outside the experimental population area would be captured and placed back inside the experimental area.

Grizzly bear management would allow for resource extraction activities to continue without formal Section 7 consultation under Section 7(a)(2) of the ESA. The USFWS would be responsible for recommending changes in land-use standards and guidelines as necessary for grizzly bear management. People could continue to kill grizzly bears in self-defense or in defense of others, provided that such taking is reported within 24 hours to appropriate authorities. Following issuance of a permit by the USFWS, the public would be allowed to harass, through non-injurious means, a grizzly bear attacking livestock (cattle, sheep, horses, and mules) or bees. A livestock owner may be issued a permit to kill a grizzly bear killing or pursuing livestock on private lands if it has not been possible to capture such a bear or deter depredations through agency efforts. If significant conflicts occurred between grizzly bears and livestock within the experimental population area, these could be resolved in favor of the livestock by agencies capturing or eliminating the bear depending on the circumstances. There would be no federal compensation program, but compensation from existing private funding sources would be encouraged. Animal control toxicants lethal to bears are not used on public lands within the recovery and experimental population areas. It is anticipated that ongoing animal damage control activities would not be affected by grizzly bear recovery. Any conflicts or mortalities associated with these activities would result in review by the USFWS and any necessary changes would be recommended by the USFWS.

Implementation of this alternative would involve:

The following summary highlights the actions that would be implemented if Alternative 1A is selected:

-The USFWS would develop a nonessential experimental population rule (Special Rule) under Section 10(j) of the ESA, and publish it in the Federal Register.

-The USFWS would designate much of central Idaho and part of western Montana (see description above) as the Bitterroot Grizzly Bear Experimental Population Area for grizzly bear restoration (Figure 2-4). Bears would only be released in the Selway-Bitterroot Wilderness, unless the USFWS determines that release in the River of No Return Wilderness is appropriate. Specific relocation sites would be recommended by the management agencies to the USFWS.

-The USFWS would implement the Bitterroot chapter of the Grizzly Bear Recovery Plan (USFWS 1996). The USFWS would develop management plans and policies, as necessary, for management of grizzly bears in the experimental population area.

-The Idaho Department of Fish and Game (IDFG) and/or the Nez Perce Tribe, Montana Department of Fish, Wildlife, and Parks (MDFWP), and the USDA Forest Service (USFS), in cooperation with the USFWS, would exercise day-to-day management responsibility within the experimental population area while implementing the BE Grizzly Bear Recovery Plan Chapter. Day-to-day management responsibility involves handling of nuisance bears, answering questions from the public, managing human foods and garbage to minimize their availability to bears, and other such activities.

-Grizzly bear recovery would be emphasized in designated wilderness areas, but bears moving outside wilderness areas into the experimental population area would be managed through provisions in a Special Rule and through management plans and policies developed by the USFWS, unless potential conflicts were significant and could not be corrected, in which case the USFWS would develop strategies to discourage grizzly bear occupancy in portions of the experimental population area.

-Private lands outside the national forest boundary in the Bitterroot Valley (lands outside the Bitterroot Forest boundary south of U.S. Highway 12 to Lost Trail pass) are an area where any human/grizzly conflicts would be considered significant. Grizzly bear occupancy would be discouraged in these areas and grizzly bears would be captured and returned to the recovery area or destroyed depending on the history of each individual bear. If a grizzly bear enters the exclusion area, state and federal wildlife management agencies would attempt to capture it and notify the public immediately of its presence. The public would be updated until the bear is caught. Further, any grizzly bear that occupies inhabited human settlement areas on private land within the experimental population area that in the judgement of the management agencies presents a clear threat to human safety or where there is indication that it may become habituated to humans, may be relocated by management agencies. This is to prevent conflicts and possible bear-human injury or the death of bears, and to promote and enhance public safety.

-Grizzly bear management would allow for resource extraction activities to continue without formal Section 7 consultation, because under ESA Section 10(j)(c) nonessential experimental populations are treated under Section 7(a)(2) as “proposed” species, and thus federal agencies are not required to formally consult with USFWS on management actions. Federal agencies are only required to confer with USFWS on activities the agencies believe might jeopardize the existence of the species (see Appendix 12).

-All Section 9 “takings” provisions under the ESA for the nonessential experimental population of grizzly bears in the BE would be included in a Special Rule. The USFWS would be responsible for recommending changes in land-use standards and guidelines in the

Chapter 2 - Alternatives

BE as necessary for grizzly bear management. People would continue to be allowed to take a grizzly bear in self-defense or defense of others, provided that such taking is reported within 24 hours to appropriate authorities. Livestock owners would be allowed to take a grizzly bear once a permit has been obtained, the response protocol established by the USFWS has been satisfied, and efforts by the wildlife agency personnel to capture depredating bears have been unsuccessful.

-The USFWS would establish a tentative recovery goal of approximately 280 grizzly bears occupying suitable habitat within the wilderness and adjacent lands (USFWS 1996). The USFWS could recommend a refined recovery goal based on scientific information once grizzly bears were reintroduced and additional information was obtained on their use of the habitat. The recovery goal for the Bitterroot grizzly bear population would be consistent with habitat available within the wilderness and adjacent lands within the experimental population area and the best scientific and commercial data available. Any revised recovery goals developed by the USFWS would require public review appropriate for the revision of a recovery plan.

-A minimum of 25 grizzly bears would be reintroduced into the Selway-Bitterroot Wilderness portion of the experimental population area over a period of 5 years, until a colony of bears is established.

The USFWS, USFS, states of Idaho and Montana, and Nez Perce Tribe would release a minimum of 25 grizzly bears into the experimental population area over a period of 5 years. Procedures would include:

-The first “phase-in” year of implementation before grizzly bears are reintroduced would include an intense sanitation and public education campaign. The sanitation program would include efforts by the USFS, permittees, and private landowners in and around the experimental population area. The Survey of Attractant Sites, Selway-Bitterroot Ecosystem (Appendix 22) which was conducted by Brown Bear Resources, Inc. would be utilized as a tool in addressing the areas where sanitation problems exist. Public education efforts would include: presentations at schools in and around the experimental population area to teach children about grizzly bears and how to recreate safely in grizzly bear country; presentations to all civic clubs and interested organizations about grizzly bears and how to recreate safely in grizzly bear country; and placing of informative signs at all trail heads in and around the experimental population area.

-Necessary federal permits, agreements, and archeological site clearances would be obtained and activities conducted for a scientifically based grizzly bear reintroduction program.

-Subadult grizzly bears of both sexes would be trapped each year for 5 years, from areas in Canada (in cooperation with Canadian authorities) and the United States that presently have healthy populations of grizzly bears living in habitats that are similar to those found in the

Bitterroot Ecosystem. Three sources of grizzly bears for the BE have been identified: southeast British Columbia, the Northern Continental Divide Ecosystem (NCDE) population in northwest Montana, and the Yellowstone Ecosystem (YE) population. Under ESA Section 10(j), the Secretary of Interior may authorize the release of any population of an endangered or threatened species outside the current range of such species if the Secretary determines that the release will further the conservation of the species, and the population is wholly separate geographically from nonexperimental populations of the same species (see Appendix 12). Specific numbers of bears that could be obtained yearly from potential source populations is unknown at this time, and would be predicated on the yearly achievement of recovery (YE and NCDE) and management (British Columbia) objectives.

-Some undetermined level of mortality is expected among transplanted bears. Every effort would be taken to minimize this, but mortalities are expected to occur. Any transplanted bears that died or were removed as a result of human action could be replaced. Such replacements would be in addition to the original minimum of 25 bears.

-Grizzly bears would be captured and reintroduced at the best time of year to optimize their survival. This would likely occur when grizzly bear food supplies in the BE are optimum.

-Each individual grizzly bear reintroduced would be radio collared and monitored to determine their movements and how they use their habitat, and to keep the public informed of general bear locations and recovery efforts.

For specific information on how a grizzly recovery program would be conducted, please see Appendix 6, "Scientific techniques for reintroduction of grizzly bears".

How would the grizzly bear population respond to this alternative?

Grizzly bear population modeling efforts were recently completed for two interior southern populations for which habitat conditions appear similar to the BE (McLellan 1989, Eberhardt et al. 1994, Knight and Blanchard 1995, Hovey and McLellan 1996). Population growth rates of approximately 4% and 8% were reported for the Yellowstone and the North Fork of the Flathead River in Southeast British Columbia grizzly bear populations, respectively. The 4% growth rate was for the period of 1974-1992. Craighead et al. (1974) calculated a 2% rate of growth for the Yellowstone population for the period of 1959-1967. These three growth rates (2%, 4%, and 8%) were applied to an initial population having 15 female bears to illustrate potential population growth rates and to estimate anticipated time to recovered populations (Figure 2-3). Reproductive rates were similar between studies, but survival rates were substantially different. Most notably, survival of subadult female bears was higher in the Flathead population and this produced much of the observed difference in growth rates. These scenarios were intended to provide a range of likely population projections following reintroduction, and are presented to depict how bear populations may optimally respond to implementation of this alternative. Bear populations may behave differently than projected, but these two data sets provide the best available information for modeling potential grizzly bear population growth in the BE. These models do not reflect internal population pressures

Chapter 2 - Alternatives

(e.g., competition for food or space) that may reduce the rate of increase through reduced survival and reproduction. These effects could be expected to slow the rate of growth as the population fills the available habitat. These projections are completely dependent upon a majority of transplanted bears remaining within the target area and reproducing at rates similar to bears in the Yellowstone or Flathead populations.

The tentative recovery goal of this alternative is approximately 280 grizzly bears (USFWS 1996). The population projections indicate that bear populations would require at least 110 years at a 2% growth rate, a minimum of 50 years at a 4% growth rate, and at least 30 years at an 8% growth rate to reach the tentative recovery level of approximately 280 bears (Figure 2-3). The USFWS has determined that the 8% growth rate is unrealistic for expected population growth in the BE. Realistically, grizzly bear recovery in the BE could take a minimum of 50 years, and given potential conflicts, could likely take more than 110 years. The three scenarios indicate that improving survivorship of young bears can dramatically affect population growth. If bear mortality can be reduced, recovery would occur decades sooner (Maguire and Servheen 1992).

How does this alternative address the major issues and concerns of the public?

1. What will be the risk to human safety?

To identify actual risk factors, it would be best to compare areas of similar habitat, human population and recreational activities, and grizzly bear densities, both projected for recovery and expected during the implementation phase. The Northern Continental Divide Ecosystem (NCDE), outside of Glacier National Park, has habitats similar to those in the northern portion of the BE, has grizzly bear population densities of about 1 bear per 20-30 square miles (similar to projected recovered grizzly bear densities for the BE), and has human recreation consisting of hiking, fishing, camping, horseback riding, and big game hunting. Glacier National Park annually receives approximately 2-3 million visitors, does not allow hunting, and has grizzly bear population densities estimated at about 1 bear per 8 square miles. The Yellowstone Ecosystem (YE) which is comprised of Yellowstone Park and surrounding National Forests, receives more visitation than Glacier Park and has an increasing grizzly bear population estimated at 1 bear per 30-50 square miles. Consequently, it would be more comparable to estimate risk to human safety based on habitat and bear densities that occur in the NCDE and YE outside of the national parks, because conditions in these areas most closely resemble those that would occur over time in the BE.

Within the NCDE (outside of Glacier National Park) there has been one bear-inflicted human mortality and one injury since 1950. The injury rate in the YE outside of Yellowstone Park has increased over the last two decades and averages about one injury per year outside the Park. Within the YE (outside Yellowstone Park) there have been three grizzly bear-inflicted human mortalities in the last 159 years.

Presently, the human population levels within and surrounding the NCDE and the YE are greater than those in the BE. Because more than 98% of the BE occurs on national forest lands, resident human populations will likely not increase substantially. However, visitation would likely increase over the recovery period, until saturation of recreation use has occurred, or wilderness managers

limit use to reduce impacts. Presently, visitation to the Selway-Bitterroot and Frank Church-River of No Return Wilderness Areas is approximately 1% of that occurring in Glacier and Yellowstone Parks. It is likely that human use of the national forest lands in central Idaho will increase within a few decades, but will likely never reach visitation levels presently occurring in or near Glacier or Yellowstone National Parks.

During the first several decades following reintroduction, the chance of injury caused by grizzly bears would be exceedingly small due to the low density of bears in the area. For instance, in the Cabinet-Yaak (CYE) and Selkirk (SE) ecosystems where there are low density recovering populations of grizzly bears, there have not been any recorded injuries in at least the last 20 years. Similar injury rates would be expected in the Bitterroot Ecosystem until bear and human densities increased beyond those presently occurring in the SE and CYE.

Under this alternative populations are estimated to achieve tentative recovery levels of approximately 280 bears in a minimum of 50 years, and likely more than 110 years. Using human injury rates in the NCDE and YE, and recognizing a net increase in human visitation, projections for human injury, once bears are recovered 50-110+ years in the future, are less than one injury per year and less than one grizzly bear-induced human mortality every few decades.

Under Interagency Grizzly Bear Committee (IGBC) guidelines (IGBC 1986), grizzly bears posing problems to camps, cabins, individuals and stock may be relocated or removed. Humans that act in self-defense or defense of others would be allowed to kill a grizzly bear. In addition, new technologies such as repellants, proper sanitation procedures, aversive conditioning, monitoring, and preemptive management, as well as educating humans how to react during an encounter would reduce chance of injuries. See Appendix 11 for more information on risks to human safety.

2. What kind of land uses will be altered solely for grizzly bears?

The USFWS would review any potential impacts to land uses and assure that resource extraction activities would be maintained at levels consistent with grizzly bear recovery. Existing Forest Plan standards and guidelines in the BE, as amended, would be deemed adequate pending review by the USFWS. It is anticipated that laws and regulations, in effect at the time of issuance of the FEIS, and governing land management activities would promote grizzly bear recovery.

It is expected that timber harvest is an activity that can be compatible with grizzly bear recovery as long as it meets the standards and guidelines of the USFS Forest Plans. Road density guidelines presently in effect in the Clearwater and Nez Perce National Forest Plans outside the wilderness areas are assumed to be adequate for grizzly bear recovery (see Appendix 10). If this alternative is implemented, a Special Rule would govern recommended changes to Forest Plan standards and guidelines as per direction of the USFWS. Changes to the Forest Plans should have to be reviewed by the USFWS and agency biologists to determine potential impacts.

Livestock grazing although presently either not occurring or at very low densities within the Selway Bitterroot and Frank Church Wilderness Areas is not expected to be impacted. However, within the

Chapter 2 - Alternatives

experimental boundaries, grazing does occur predominantly in the southern portion of the BE (Figure 3-8, Table 3-13). Consequently, at recovered grizzly population levels and current livestock stocking rates, impacts to livestock would be expected to be similar to levels occurring in portions of the NCDE and the YE. In 50-110+ years (the estimated time to recovery assuming 2-4% growth rates) grizzly bears would likely be present within the southern portion of the BE. Projections indicate that at a grizzly bear population level of 280 bears in the experimental population area, yearly livestock losses to depredation by bears could range from 4-8 cattle and 5-44 sheep. Management activities would try to preempt livestock problems. The USFWS would try to make all uses compatible with recovery. Based on what is currently known about bear behavior in the NCDE and YE, nuisance bear incidents would likely range between 0 and 74 per year at recovered population levels.

Recreation impacts in the form of permanent trail closures within the wilderness would likely not occur. Temporary closures of trails may occur in response to a dangerous situation that might result in human injury or bear mortality (e.g., grizzly on a carcass in a trail). However, even in Glacier National Park where bear and human densities are greater than would likely ever occur in the BE, less than 5% of the trails are temporarily closed at one time. Trails are rarely closed in the NCDE, outside of the park. In the NCDE where a minimum population of about 325 grizzly bears currently exists, only one trail was closed on national forest lands because of grizzly bears in the last 10 years. In the event trail use restrictions for public safety are necessary in response to a rare instance such as a grizzly bear feeding on a carrion source, such restrictions would be short-term. Policy changes on trail restrictions for human safety would be recommended by the USFWS as necessary. Sanitation concerns in the BE would have to be addressed, such that backcountry users properly store food and garbage to reduce potential conflicts with bears (See Appendix 18).

Mineral extraction would likely not be altered due to grizzly bear concerns in and by themselves. Recommendations would be made by the USFWS to reduce potential impacts if the need arises.

Impacts of grizzly bear restoration to big game populations would likely be insignificant. Studies from similar ecosystems with high densities of both bears and ungulates indicate that predation rates range from almost none to low levels of predation. In many locations, animal matter may not constitute a major annual diet item, but may be seasonally vital to bears (Mattson et al. 1991). An expected predation rate of 0.17-0.38% of the ungulate population in the area occupied by bears in the BE could occur. Using Mattson's (In press) estimate of 1.4 or 5.8 ungulates per year for adult female and male bears respectively, a population of 280 bears (USFWS 1996) would be expected to prey upon 504 ungulates per year across the BE. The loss of 504 ungulates to a recovered grizzly bear population would represent approximately eleven hundredths of one percent (0.11%) of estimated pre-harvest populations of ungulates in the PAA. Grizzly bear predation is not expected to result in measurable or observable changes in ungulate populations. Potential long-term impacts to black bear population dynamics is unclear, but felt to be minimal. Overall impacts of a recovered population of grizzly bears on other wildlife populations are expected to be minimal. It should not be necessary to adjust hunting seasons to compensate for grizzly bear predation on other wildlife. In portions of Montana where hunting for big game species overlaps with grizzly bear habitat, there has been no need to change hunting seasons due to grizzly bear recovery programs. Any restrictions

on black bear hunters or other hunting opportunities to reduce the likelihood of mistaken identity kills or to address other potential conflicts could be recommended by the CMC, but would have to be acceptable and implemented by the IDFG and MDFWP.

3. How much will implementation cost?

The present cost estimate for capturing a minimum of 25 grizzly bears, transplanting bears to the central Idaho recovery area, and monitoring and management of the grizzly bears over a 5-year period of reintroductions is \$263,632 annually. In addition to costs involved in the transplanting, monitoring, and management of bears, there is also a cost associated with sanitation, information and education, and law enforcement activities conducted by the USFS within the recovery area. This cost would be approximately \$150,000 annually. Total annual cost for the 5-year reintroduction period would be approximately \$413,632, and total 5-year implementation cost would be approximately \$2,068,160 (Appendix 7). Annual costs for monitoring and management would be approximately \$173,000 for each year beyond the 5-year reintroduction period. See the economic analysis for Alternative 1 (Chapter 4) for an assessment of costs other than those associated with implementation.

4. How does this alternative address linkage zones?

Restoration of grizzly bears in the Bitterroot Ecosystem will increase concern about the possible linkage between existing areas with grizzly bears and the BE. The USFWS intends to complete a linkage zone analysis that will detail the possible linkage areas between the existing ecosystems, and between the BE and existing ecosystems. The linkage zone analysis is a Geographic Information System (GIS) computer modeling effort that looks at the levels of human impact and activity in the intervening areas between ecosystems and identifies the best linkage areas based on this human activity. This linkage zone analysis is a separate Grizzly Bear Recovery Plan Task and will be completed regardless of which FEIS alternative is selected for the BE. Maintenance of linkage zones is maintenance of the opportunity for grizzly bears and other wildlife species to move between the existing large blocks of public lands in order to maintain demographic and genetic health. A key factor in the maintenance of such linkage zones in the high-speed highways between these areas and how accommodations can and will be made to allow large animals such as bears the opportunity to cross these highways. In the long-term, the opportunity for bears to move between these ecosystems will improve the health of these populations. In the near term, restoration of a grizzly bear population in the BE will require placement of bears rather than waiting for eventual dispersal into this area, due to the limited number of movements of bears outside of existing range to date. Data from more than 550 different radio-collared grizzly bears since 1975 shows no movement between any grizzly bear ecosystems.

Grizzly bears outside the recovery area but within the experimental population area boundaries would be accommodated or discouraged depending on conflict potential. Linkage zones to the BE would have to be considered from management of other ecosystems, because for reintroduction purposes, the nonessential experimental population designation under Section 10(j) of the ESA requires that the recovery area be totally separate from other grizzly bear populations.

Chapter 2 - Alternatives

5. Are habitat quality and size of the recovery area sufficient for recovery?

The experimental population area boundary encompasses approximately 25,140 square miles. The roadless, wilderness, and contiguous national forest lands within the experimental population area, is approximately 15,000 square miles. Both of these areas are larger than the NCDE, YE, Selkirk or the Cabinet-Yaak ecosystems. Thus, the experimental population area is of sufficient size to allow for grizzly bear recovery.

Appendix 21B contains the results of a study contracted by the USFWS to an independent scientist in 1998 to estimate the number of grizzly bears that can be expected to be supported by the habitat in Bitterroot Ecosystem. The report, "The Application of Resource Selection Function Analysis to Estimate the Number of Grizzly Bears that Could be Supported by Habitats in the Bitterroot Ecosystem" (Appendix 21B), analyses the suitability of habitats in the Frank Church-River of No Return and Selway-Bitterroot Wilderness areas, and non-wilderness public lands to the north, and through modeling produces an estimate of the number of grizzly bears that can be expected to be supported by the habitat in these areas. The report estimates that at full carrying capacity, between 234-247 grizzly bears could be expected to live in the Selway-Bitterroot and the Frank Church-River of No Return Wilderness areas, and an additional 74 grizzly bears could be expected to live in the public lands north of the Selway-Bitterroot Wilderness in the upper North Fork of the Clearwater River drainage in Idaho. It is estimated that it would take at least 80-100 years for the population to reach this full carrying capacity number if 25 bears were reintroduced.

Habitat quality has been studied extensively. A number of different studies have been conducted within the BE that have direct applicability to the potential for grizzly bear recovery (see Appendix 3). Habitat quality varies throughout the experimental population area, and likewise throughout the recovery area. At one time grizzly bears were present in high densities throughout the BE. Salmon and whitebark pine (*Pinus albicaulis*), two important grizzly bear foods, were common during the peak of grizzly bear populations. Salmon have been virtually eliminated along the Clearwater drainage due to dams that have blocked their migration. Whitebark pine has been reduced to about 20%-40% of its historical abundance in the BE, and now is most prevalent in the southern half of the ecosystem. This species is expected to decline to approximately 5-10% of its historic abundance level before increasing again (Keene and Arno 1996).

However, studies indicate that a great variety of preferred grizzly bear foods are present in the ecosystem. A wide variety of all season foods are present including good quantities of several key berry species, forbs and grasses, as well as historically high levels of ungulates to provide carrion during the fall and spring months. Food habits of black bears are quite similar to those of grizzly bears. Healthy populations of black bears live within the primary analysis area (PAA, see Figure 3-1), and annual hunter harvest totals about 1,000. Grizzly bears relocated to the BE would likely come from areas where neither salmon nor whitebark pine are plentiful. A recovered population of 280 grizzly bears should be able to find sufficient high quality forage within and adjacent to the recovery area. Although bear densities may not recover to their historical levels during the peak of the salmon and whitebark pine era, the population should achieve densities similar to those found in other interior ecosystems where those food sources are not present. The key to recovery in the BE

would likely be due to effective management including limitation of human-caused mortality rather than quantity or quality of habitat.

A recent vegetation-based inventory and analysis of grizzly bear habitat in the Bitterroot Ecosystem was completed by the Craighead Wildlife-Wildlands Institute. Appendix 21D, “Synopsis of Portions of, and Excerpts from the Report, ‘*Abundance and Spatial Distribution of Grizzly Plant-Food Groups in the Salmon-Selway Ecosystem: A Preliminary Analysis and Report*’ (Hogg, Weaver, and Craighead et al. 1999)” presents detailed habitat maps showing the distribution and abundance of major grizzly bear foods. The USFWS examined the Hogg, Weaver, Craighead et al. (1999) data and selected whitebark pine nuts and several berry producing shrubs for quantification because they provide a major contribution to annual energy demands for bears (Interagency Grizzly Bear Committee 1987). In summary, results of Hogg, Weaver, Craighead et al. (1999) indicate bear foods in the form of berries generally decline moving from north to south through the Bitterroot area. Significant berry distribution occurs north of the Selway-Bitterroot Wilderness area in the North Fork of the Clearwater River drainage and throughout much of the Lochsa and Selway River drainages. Berry-producing species generally decline to the south, particularly species of huckleberry other than grouse whortleberry. Grouse whortleberry could potentially provide a significant seasonal food source in some years. Whitebark pine and associated nut crops tend to follow the opposite pattern with greater distributions south of the Salmon River and a general decline through the northern portions of the Bitterroot Ecosystem. For further information, see Chapter 3 “*Current Research on Grizzly Bear Habitat Suitability in the Bitterroot Ecosystem,*” and Appendix 21D. See Chapter 3, “Habitat Suitability” section and Appendix 21 for more information.

6. *How will grizzly bears and their habitat be managed?*

The purpose of this alternative is to accomplish grizzly bear recovery by restoring grizzly bears designated as a nonessential experimental population to central Idaho and implementing provisions within Section 10(j) of the ESA to conduct special management to address local concerns. The USFWS would manage the Bitterroot grizzly bear experimental population. The USFWS would implement the Bitterroot Chapter of the Grizzly Bear Recovery Plan (USFWS 1996). The USFWS would develop management plans and policies, as necessary, for the management of grizzly bears in the experimental population area. IDFG and/or the Nez Perce Tribe, MDFWP, and USFS in cooperation with the USFWS would exercise day-to-day management responsibility within the experimental population area under cooperative agreement with the USFWS and in accordance with a Special Rule and the BE Recovery Plan Chapter (USFWS 1996).

Habitat would continue to be managed by the land management agencies. The USFS would still conduct its management under the guidelines of the respective Forest Plans and applicable environmental laws. State land managers and private land owners would not lose any of their management authority. The USFWS would only make recommendations to these agencies.

Grizzly bears would be restored as a nonessential experimental population under Section 10(j) of the ESA, which would allow increased management flexibility. Experimental populations must be designated either "essential" or "nonessential" (Appendix 12). "Essential" refers to a reintroduced

Chapter 2 - Alternatives

population whose loss would be likely to reduce the likelihood of the survival of the species in the wild. Essential populations receive the full protection of Section 7 of the ESA, meaning that federal agencies must formally consult with the USFWS on actions that may affect the species. "Nonessential" refers to an experimental population whose loss would not be likely to appreciably reduce the likelihood of the survival of the species in the wild. Because nonessential populations are treated under Section 7 as "proposed species", federal agencies must only confer with the USFWS on activities that the agencies believe might jeopardize the species.

7. Where will grizzly bears be obtained, reintroduced, and recovered?

Grizzly bears obtained for reintroduction purposes would likely originate in the U. S. and Canada where current grizzly bear populations are healthy enough to sustain removal of a few bears per year over a 5-year period. Only bears with no history of conflict with humans and livestock, and most likely subadults, would be reintroduced. Grizzly bears determined to be "nuisance" under IGBC Nuisance Bear Guidelines would not be reintroduced to the BE. The donor population should come from habitat as similar as possible to that found in the BE. Three sources of bears for the BE have been identified: southeast British Columbia, the Northern Continental Divide Ecosystem (NCDE) in northwest Montana, and the Yellowstone Ecosystem (YE) population.

No female bears would be removed from YE or NCDE recovery zones or from within the buffer area 10 miles outside the recovery zone boundaries. No bears would be removed from either U.S. ecosystem if such removal would exceed mortality limits. If the NCDE or YE populations exceed existing mortality limits in any year, then the placement of grizzly bears to the BE from these ecosystems would be suspended for the following year. This would not preclude the movement of bears from Canada. However, as 5 bears may not be available from Canada in a given year, this may extend the time period for reintroduction. Further, the actual capture of the necessary bears is dependent upon access to areas with such bears, and significant effort by capture crews. Capture of desired bears is not assured, even with intensive effort. It may require more than 5 years to obtain the desired minimum of 25 bears to initiate a new population in the BE. This should be made clear to the public and to cooperating agencies at the outset.

There would be no significant detrimental effects to the health of source populations because mortality limits in the Grizzly Bear Recovery Plan (USFWS 1993) and British Columbia grizzly bear management criteria (B.C. Min. Environ., Lands, and Parks 1995) would be met during implementation of this alternative. Further, since no bears would be removed from the YE or NCDE if the mortality limits would be exceeded, and no female bears would be removed from within the recovery zone or within 10 miles of the recovery zone boundary of either ecosystem, then the effects on recovery of any removals of bears from the NCDE or YE would be nonexistent.

Grizzly bears would be restored into the Selway-Bitterroot Wilderness Area. Reintroduction sites that have high quality bear habitat and low likelihood of human encounters would be identified. Bears would be placed close enough to each other to create a "colony" or population of bears, providing a basis from which to expand in numbers. Appendix 18 describes the expected time line and tentative geographic areas proposed to commence implementation of this alternative.

Much of the experimental population area has high-quality bear habitat with low likelihood of conflicts between grizzly bears and humans. Grizzly bear recovery would be emphasized on public lands throughout the experimental population area as long as bears did not pose a threat to human safety and such threats could not otherwise be minimized. All grizzly bears within the experimental population area would be counted as part of the recovery goal. Bears found outside the experimental population area boundaries are a fully threatened species, not experimental bears. Private lands outside the national forest boundary in the Bitterroot Valley (private lands lying within the experimental population area and outside the Bitterroot Forest boundary south of U.S. Highway 12 to Lost Trail Pass) would be an area where any human/grizzly bear conflicts would be considered significant. Grizzly bear occupancy would be discouraged in these areas and grizzly bears would be captured, destroyed, or returned to other suitable habitat in the experimental population area.

ALTERNATIVE 2. THE NO ACTION ALTERNATIVE — NATURAL RECOVERY

Background

The BE is unique among the six established grizzly bear recovery areas in the United States in that the best scientific evidence available indicates there are no grizzly bears in the BE at this time. There is only a remote likelihood that recovery of grizzly bears in the BE would occur through natural recolonization because grizzly bears do not readily disperse and colonize distant, disjunct areas (USFWS 1993, 1996). There are two other recovery areas that are occupied by recovering populations of grizzly bears that might serve as sources of bears to naturally recolonize the BE through expansion of their current ranges. These ecosystems include the Cabinet-Yaak (CYE), and Northern Continental Divide (NCDE) ecosystems (Figure 2-5). This alternative would allow for natural recolonization of the BE by grizzly bears from these other recovery zones. The goal would be to recover grizzly bears in the BE. Following grizzly recovery, grizzly bears would be removed from ESA protection and the states of Idaho and Montana would continue to manage bears.

The No Action Alternative - Natural Recovery.—The purpose of this alternative is to allow grizzly bears to expand from their current range in north Idaho and northwestern Montana southward into central Idaho and western Montana, and to recolonize the BE. The ultimate goal is natural recovery of grizzly bears in the BE.

Summary

Grizzly bears would be allowed to expand their current range in north Idaho and northwestern Montana southward into central Idaho and western Montana. The likelihood of recovery of grizzly bears in the BE through natural recolonization appears remote because grizzly bears do not move far to colonize distant, disjunct areas. The nearest grizzly bear population to the BE is approximately 40 miles away in the Cabinet Mountains of northwest Montana. Data from more than 550 different radio-collared grizzly bears since 1975 shows no movement by grizzly bears between any ecosystems. Given existing information, it is unlikely that such movement would occur into the BE from an area currently occupied by grizzly bears.

If grizzly bears did disperse, they would be protected as a threatened species under the Endangered Species Act wherever they occurred. Because grizzly bears would be fully protected as threatened under the ESA, Section 7(a)(2) would apply upon documentation of the presence of a grizzly bear in the BE, and all federal actions within the recovery zone would be subject to Section 7 consultation with the USFWS. The IGBC nuisance grizzly bear management guidelines (IGBC 1986) would be implemented to address conflicts that occur between grizzly bears and humans. The USFWS would manage all aspects of grizzly bear recovery. It is unknown (but not likely) whether this alternative would result in recovery of grizzly bears in the BE. It was the opinion of the Bitterroot Ecosystem Technical Committee that recovery of grizzly bears in the BE through recolonization is considered a remote possibility because of lack of movement or dispersal by grizzly bears in the northern Rocky Mountains (USFWS 1996).

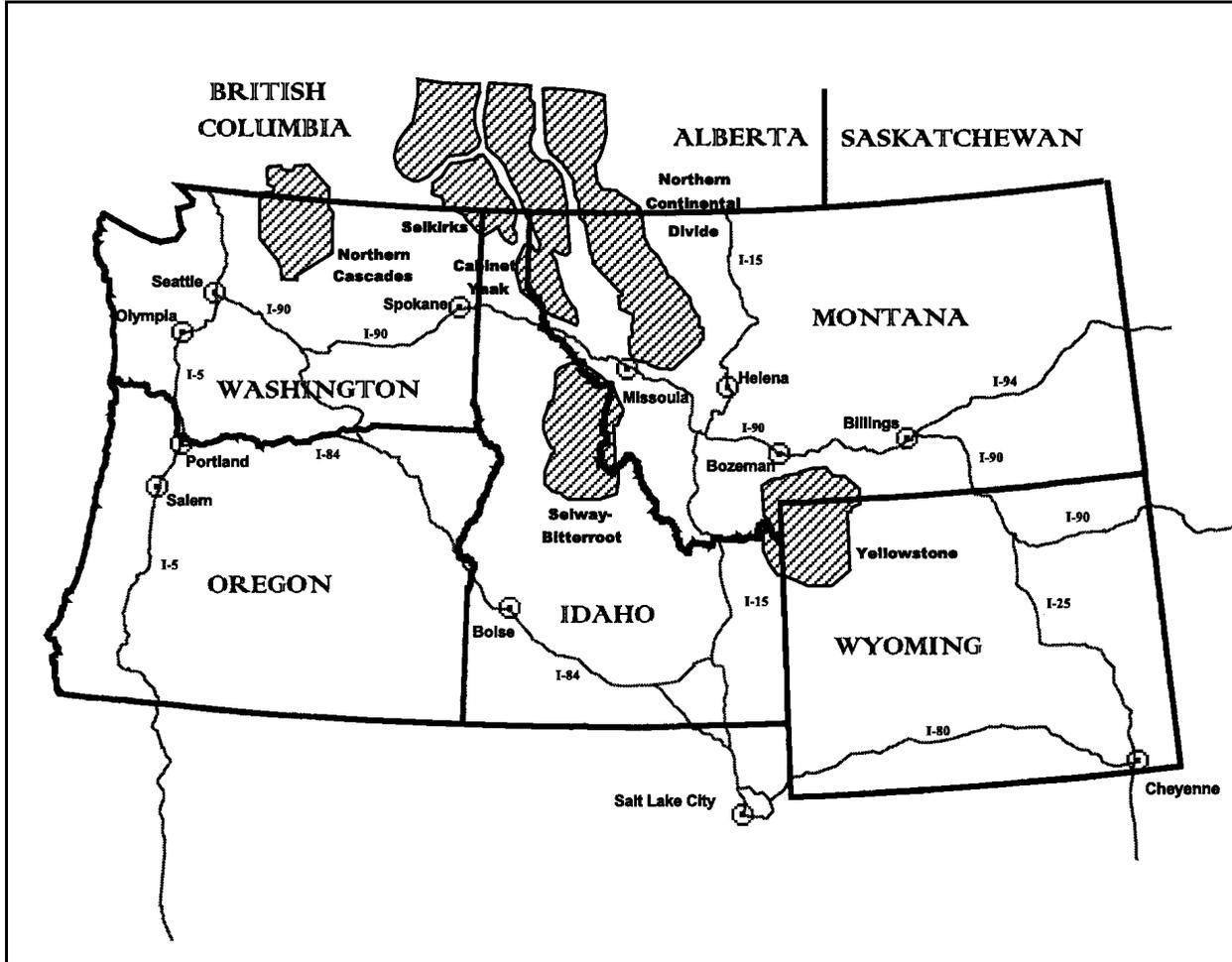


Figure 2-5. Grizzly bear ecosystems in the northern Rocky Mountains (Grizzly Bear Recovery Plan, USFWS 1993).

Implementing this alternative would involve:

The following summary highlights the actions that would be implemented if Alternative 2 is selected:

- The USFWS would designate the Bitterroot Grizzly Bear Recovery Zone as delineated in Figure 2-6, and consistent with the 5,500 square mile Bitterroot Grizzly Bear Evaluation Area (BEA) as defined in the Bitterroot Ecosystem Recovery Plan Chapter - Supplement to the Grizzly Bear Recovery Plan (USFWS 1993, 1996) (Appendix 14).

- The USFWS would establish a tentative long-term recovery goal (USFWS 1996) of approximately 280 grizzly bears (bears distributed over 5,500 square miles of designated wilderness and adjacent lands) within the recovery zone (Figure 2-6).

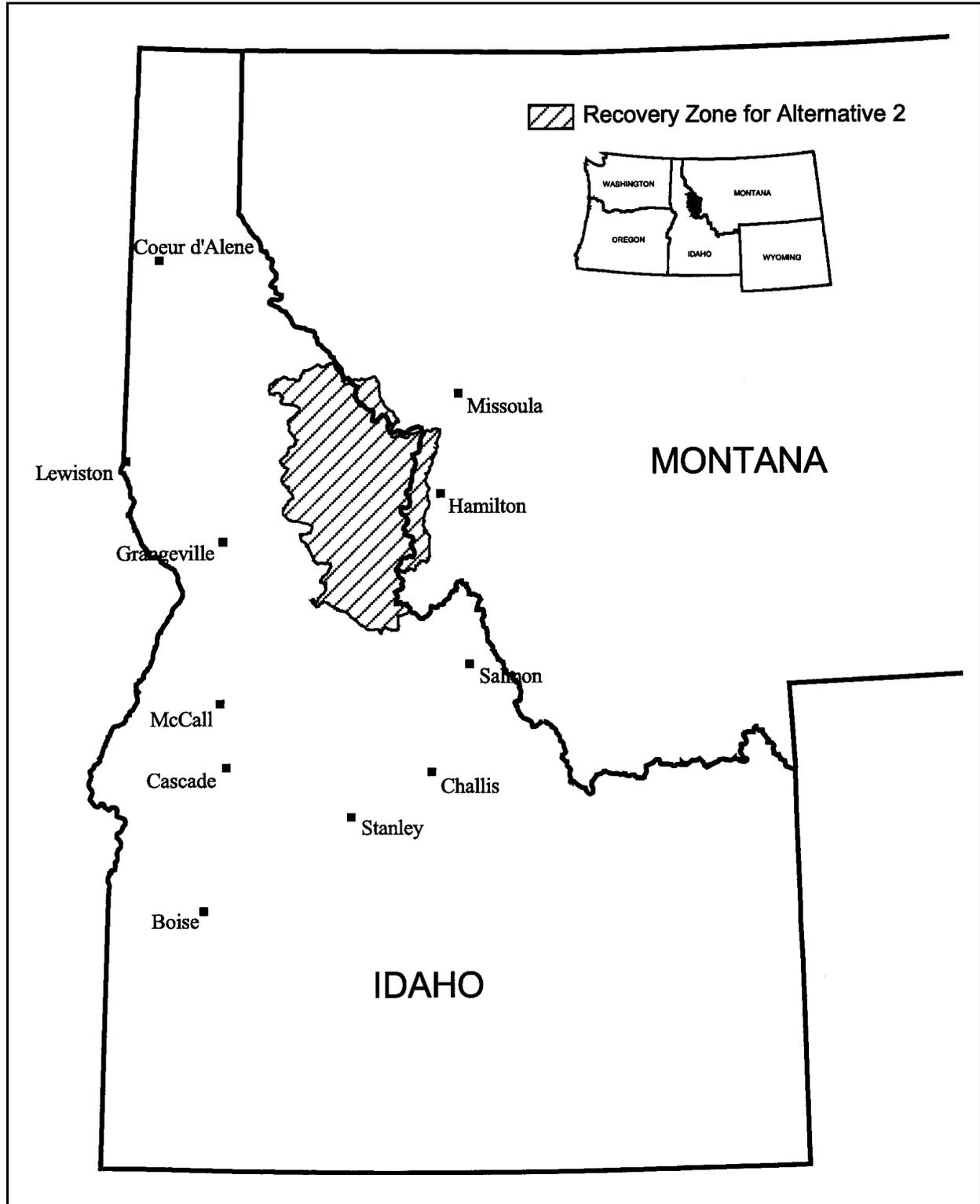


Figure 2-6. The Bitterroot Grizzly Bear Recovery Zone for Alternative 2 - *The No Action Alternative - Natural Recovery.*

-Upon documentation of grizzly bear(s) in the BE, the USFWS would conduct an extensive and objective public education and information program to inform the public about grizzly bears and their management under the ESA.

-The USFWS would continue to evaluate reported sightings of grizzly bears in the BE to determine their presence. The USFWS would also coordinate a monitoring program within the recovery zone to determine the status of recolonization.

-The national forests within the recovery zone would continue to manage habitat to meet or exceed their existing Forest Plan standards for big game habitat management. ESA Section 7(a)(2) would apply upon documentation of grizzly bear presence in the BE, and all federal actions within the recovery zone would be subject to Section 7 consultation with the USFWS.

-Upon documentation of grizzly bear(s) in the BE, the USFWS would evaluate the adequacy of land-use restrictions to protect suitable grizzly bear habitat within the Bitterroot recovery zone and within potential linkage zones to other occupied recovery zones. The USFWS would use the existing evaluation of adjacent wilderness areas to consider them as additions to the recovery zone (to include the portion of the Frank Church-River of No Return Wilderness south of the Salmon River).

-The USFWS, in cooperation with IDFG and MDFWP would apply the IGBC nuisance grizzly bear management guidelines (Appendix 15) to grizzly bears in conflict with humans or domestic animals.

-Land-use restrictions could be implemented when necessary if illegal killing threatens grizzly bear recovery.

How would the grizzly bear population respond to this alternative?

This alternative would allow for the natural recolonization of the BE by grizzly bears. The nearest grizzly bear ecosystem to the BE is the Cabinet/Yaak Ecosystem (CYE) to the north. Continuous bear habitat between the BE and CYE is fragmented by two areas of human occupation and development. The Clark Fork River valley is the southern border of the CYE. It contains three hydroelectric reservoir systems and several communities including Plains, Thompson Falls, Trout Creek, and Noxon, Montana, and Clark Fork, Idaho. The valley also contains Montana Highway 200 and a railroad line. Interstate 90 and the communities of St. Regis, Montana, and Mullan and Wallace, Idaho lie further to the south of the Clark Fork River valley.

Grizzly bear sightings from and adjacent to the CYE have indicated some limited grizzly bear use of areas south of the Clark Fork River (Kasworm and Servheen 1995). Since 1980 there have been less than 20 credible reports of grizzly bears between the Clark Fork River valley and Interstate 90 to the south. None of these sightings have involved females with young. In 1984 and 1985, a radio-

Chapter 2 - Alternatives

collared male grizzly bear from the Cabinet Mountains moved south of the Clark Fork River and spent the months of September and October in this area, and then moved north back to the CYE.

The likelihood of grizzly bear recolonization of the BE would be dependent upon several factors including; population levels and pressures within the CYE, impediments to movement south of the CYE, and survival prospects of bears inhabiting the area between the CYE and the BE. Population levels in the Cabinet Mountains portion of the CYE were estimated to be 15 or fewer grizzly bears (Kasworm and Manley 1988). This population was augmented with four subadult female grizzly bears during the period 1990-1994 (Servheen et al. 1995, Kasworm et al. In prep.). An analysis of linkage zones for habitat suitability and potential impediments to bear movement is being conducted by the USFWS as directed by the Grizzly Bear Recovery Plan (USFWS 1993), and is not part of this EIS process. This analysis will determine if linkage zones among grizzly bear ecosystems could occur and where those zones might exist. The areas between the Bitterroot and all other ecosystems are being analyzed as part of this linkage zone analysis.

It is difficult to predict whether natural recolonization of the BE by grizzly bears could occur, and the associated time frame of such possible recolonization. Survival prospects for bears that would move within the area between the CYE and BE are difficult to predict, as is the direction of range expansion when population pressures warrant. For instance, if a subadult female were to move a long distance away from her mother before setting up a home range, the immigration process could develop within 10 years. However, female grizzly bears typically expand their range through occupancy of areas adjacent to their mother's home range (IGBC 1987, Knight et al. 1984). The maximum life range size of an adult female grizzly bear in the CYE is 330 square miles (Kasworm and Servheen 1995). The diameter of this area (when it is converted to a circle) is 20 miles. Adult female bears typically breed at age five and produce their first litter at age six. Given an optimistic generation time of 6 years, a 20 mile diameter home range size, and a series of adjacent home ranges moving directly toward the BE, one could expect it would take a minimum of 24 years for reproducing populations of bears from the CYE to expand to the Selway-Bitterroot Wilderness, which is 80 miles away. However, under expected conditions, this process could take at least 50 years. Once reproducing populations of grizzly bears reached the BE, it would conservatively require an additional 50-110+ years to reach the recovered level of 280 bears (see Figure 2-3). Thus, estimated time to recover grizzly bears in the BE under this alternative is at least 100-160 years.

How does this alternative address the major issues and concerns of the public?

1. What will be the risk to human safety?

Under this alternative, there is only a remote likelihood that recovery of grizzly bears in the BE would occur through natural recolonization because grizzly bears do not readily colonize distant, disjunct areas such as the BE. Therefore this alternative would not cause any risk to human health and safety until it was determined that grizzly bears were actually moving from other occupied ecosystems and expanding their ranges into the BE. If this did occur, there would be an increased risk to human safety commensurate with the number of bears that move over time. During the first several decades following establishment of a breeding population of grizzly bears, chance of injury caused by bears would be exceedingly small due to the low density of bears in the area. Under this

alternative, populations are estimated to achieve recovery levels of approximately 280 bears in a minimum of 100-160 years. Using human injury rates in the NCDE and YE, and recognizing a net increase in human visitation, projections for human injury, once bears are recovered a minimum of 100-160 years in the future, are less than one injury per year and less than one grizzly bear-induced human mortality every few decades.

2. What kind of land-uses will be altered solely for grizzly bears?

If grizzly bears naturally recolonized the BE, they would be protected under the ESA as a threatened species, and all federal activities that may affect grizzly bears would require Section 7 consultation with the USFWS. Because grizzly bears would be fully protected as threatened under the ESA, Section 7(a)(2) requirements would be triggered upon documented presence of grizzly bears in the BE, and all federal actions within the recovery zone would be subject to Section 7 consultation with the USFWS. To date, there have been few land-use restrictions recommended to protect suitable grizzly bear habitat within the recovery zone for this alternative. This could change if grizzly bears are documented in the BE, which would trigger Section 7 consultation requirements under the ESA. Upon documentation of the presence of grizzly bears, this no action alternative could alter existing and ongoing land-use activities (including timber harvest and minerals extraction activities) solely for grizzly bears. If the USFWS determines that current habitat management is not adequate to maintain suitable grizzly bear habitat, or that linkage zone restrictions are necessary to promote grizzly bear recolonization of the recovery zone, then recommendations could be made to alter land-use activities within these areas.

Impacts to land-use activities were analyzed under a “worst-case” scenario. For consistency with other FEIS alternatives, the Alternative 2 impacts to land-use activities were analyzed for a recovered population of 280 grizzly bears. Under this alternative grizzly bears would recolonize the area from other ecosystems. This process was estimated to require at least 50 years before grizzly bears might reach the area via range expansion from the CYE which is approximately 80 miles north. Once breeding populations were established it would conservatively require an additional 50-110+ years to reach the recovered level of 280 bears. During the first few decades following establishment of a breeding population in the BE few bears would be present, however, impacts to land-use activities are likely to occur. These impacts would not be fully realized until grizzly bears naturally recolonized the BE and the population reached recovery levels. If this occurred, it would be 100-160 years in the future.

It is expected that timber harvest is an activity that can be compatible with grizzly bear recovery, however all timber sale activities would be subject to Section 7 consultation if grizzly bears were documented in the BE, and could be affected based on such consultation. It is likely that grizzly bear habitat management would restrict to some degree timber harvests on currently roaded areas within the recovery area (Tom Wittinger, pers. comm. 1996). Based on the best available data (Tom Wittinger, Flathead Forest, pers. comm. 1996), it is estimated that reductions in timber harvest on affected national forest lands within the PAA would be between 8.3 and 39.7 million board feet per year over the next decade if Alternative 2 was implemented as proposed (Table 4-10). Impacts to timber harvest could be less based on current land-use restrictions in Idaho that do not occur in

Chapter 2 - Alternatives

Montana on the Flathead Forest (i.e. Pacfish, etc.). The large variation between the high and low estimates reflect the divergence between the planned Allowable Sale Quantity (ASQ) of timber from Forests in the PAA and the actual harvest volume which has occurred in recent years (see Table 3-11). Mineral extraction could be altered due to grizzly bear concerns in and by themselves.

If recolonization and recovery (280 bears) would occur within the recovery zone, yearly livestock losses to depredation by bears could range from 1-3 cattle and 1-6 sheep. Based on what is currently known about bear behavior in the NCDE and YE, nuisance bear incidents would likely range between 0 and 74 per year at recovered population levels. However, conflicts should be reduced in the future because much more would be known about proper sanitation and avoiding many of the potential conflicts between bears and humans. The IGBC nuisance grizzly bear management guidelines (Appendix 15) would be implemented by the USFWS in cooperation with state agencies to control grizzly bears in conflict with humans or domestic animals. If illegal killing or legal taking (control) of grizzly bears appears to be preventing recovery, then land-use restrictions could be implemented.

Under this alternative, there are no proposed changes in hunting seasons. If grizzly bears recovered naturally in the BE, then it is predicted that 280 grizzly bears would kill 504 ungulates per year. Interactions with other predators and the compensatory nature of some predation may affect the total loss of ungulates to predators, but at this rate only 0.11% of the pre-harvest ungulate population would be preyed upon by a recovered bear population. Overall impacts of a recovered population of grizzly bears on other wildlife populations are expected to be minimal. It should not be necessary to adjust hunting seasons to compensate for grizzly bear predation on other wildlife. Restrictions on black bear hunters or other hunting opportunities to reduce the likelihood of mistaken identity kills or to address other potential conflicts could, however, be recommended.

There could be impacts to public access and recreational use under this alternative if grizzly bears naturally recolonize the BE. If natural recovery occurred, then some people would avoid recreating in the recovery zone as a result of grizzly bear presence and other people would increase their recreation in the area because of it. The vast majority of recreationists and resource area users would continue to use the recovery zone with little change in their trip frequency or length. Over time, recreation and visitor use of the PAA would continue to increase. Upon the documentation of grizzly bears in the BE, Section 7 consultation with the USFWS would be triggered and could result in impacts to public access in the form of road and trail closures. Also, if ongoing USFWS research determines that linkage zones are necessary for recovery, and that changes in habitat management within the identified zones are necessary, then USFWS would recommend appropriate management actions.

3. How much will implementation cost?

Since this alternative relies on natural recolonization to recover grizzly bears in the BE, there would be no cost associated with reintroduction of bears. Costs for ongoing monitoring and management activities would be approximately \$140,000 per year (Appendix 7).

4. How does this alternative address linkage zones?

This alternative does not delineate linkage zones or change existing and ongoing management activities on federally managed lands. Per direction of the Grizzly Bear Recovery Plan, the USFWS is currently leading a 5-year process to assess the linkage potential between the various ecosystems identified for grizzly bear recovery. The linkage zone analysis is a Geographic Information System (GIS) computer modeling effort that looks at the levels of human impact and activity in the intervening areas between ecosystems and identifies the best linkage areas based on this human activity. This linkage zone analysis is a separate Grizzly Bear Recovery Plan Task and will be completed regardless of which FEIS alternative is selected for the BE. Maintenance of linkage zones is maintenance of the opportunity for grizzly bears and other wildlife species to move between the existing large blocks of public lands in order to maintain demographic and genetic health.

Under this alternative, USFWS would continue to coordinate research studies to determine the need for and location of linkage zones, and to identify specific habitat management guidelines necessary to maintain suitable habitat within linkage zones. If research determines that linkage zones are necessary for recovery, and that changes in habitat management within the identified zones are necessary, then the USFWS would recommend appropriate management actions.

5. Are habitat quality and size of the recovery zone sufficient for recovery?

The recovery zone is approximately 5,500 square miles. This is smaller than either the NCDE or the YE, but larger than the Selkirk or the Cabinet-Yaak ecosystems. This area is of sufficient size to allow for grizzly bear recovery (Servheen et al. 1991).

Appendix 21B contains the results of a study contracted by the USFWS to an independent scientist in 1998 to estimate the number of grizzly bears that can be expected to be supported by the habitat in Bitterroot Ecosystem. The report, "The Application of Resource Selection Function Analysis to Estimate the Number of Grizzly Bears that Could be Supported by Habitats in the Bitterroot Ecosystem" (Appendix 21B), analyses the suitability of habitats in the Frank Church-River of No Return and Selway-Bitterroot Wilderness areas, and non-wilderness public lands to the north, and through modeling produces an estimate of the number of grizzly bears that can be expected to be supported by the habitat in these areas. The report estimates that at full carrying capacity, between 234-247 grizzly bears could be expected to live in the Selway-Bitterroot and the Frank Church-River of No Return Wilderness areas, and an additional 74 grizzly bears could be expected to live in the public lands north of the Selway-Bitterroot Wilderness in the upper North Fork of the Clearwater River drainage in Idaho. Thus, the estimated carrying capacity of the recovery zone in this alternative is 189 bears.

For grizzly bears to naturally repopulate the BE they must gradually extend their range south from the CYE and SE to the BE, which is 40 miles south at the closest point. If this occurred, grizzly bears would also inhabit the area between the two ecosystems as a result of their southern range extension. Since grizzly bears would necessarily inhabit the area between the two ecosystems (40+miles long by an undetermined width) if they naturally recovered in the BE, the recovery goal

Chapter 2 - Alternatives

of 280 is appropriate. The recovery goal would be comprised of approximately 189 bears within the recovery zone and the remainder inhabiting the area between the CYE/SE and BE.

Habitat quality has been studied extensively. A number of different studies have been conducted within the BE that have direct applicability to the potential for grizzly bear recovery (see Appendix 3). Habitat quality varies throughout the recovery zone. At one time grizzly bears were present in high densities throughout the BE. Salmon and whitebark pine, two important grizzly bear foods, were common during the peak of grizzly bear populations. Salmon have been virtually eliminated along the Clearwater drainage due to dams that have blocked their migration. Whitebark pine has been reduced to about 20%-40% of its historical abundance in the BE, and now is most prevalent in the southern half of the ecosystem. This species is expected to decline to approximately 5-10% of its historic abundance level before increasing again (Keene and Arno 1996).

However, studies indicate that a great variety of preferred grizzly bear foods are present in the ecosystem. A wide variety of all season foods are present including good quantities of several key berry species, forbs and grasses, as well as historically high levels of ungulates to provide carrion during the fall and spring months. Food habits of black bears are quite similar to those of grizzly bears. Healthy populations of black bears live within the PAA, and annual hunter harvest totals about 1,000. A recovered population of grizzly bears should be able to find sufficient high quality forage within the recovery zone. Although bear densities may not recover to their historical levels during the peak of the salmon and whitebark pine era, the population should achieve densities similar to those found in other interior ecosystems where those food sources are not present. The key to recovery in the BE would likely be due to effective management including limitation of human-caused mortality rather than quantity or quality of habitat

A recent vegetation-based inventory and analysis of grizzly bear habitat in the Bitterroot Ecosystem was completed by the Craighead Wildlife-Wildlands Institute. Appendix 21D, "Synopsis of Portions of, and Excerpts from the Report, 'Abundance and Spatial Distribution of Grizzly Plant-Food Groups in the Salmon-Selway Ecosystem: A Preliminary Analysis and Report' (Hogg, Weaver, and Craighead et al. 1999)" presents detailed habitat maps showing the distribution and abundance of major grizzly bear foods. The USFWS examined the Hogg, Weaver, Craighead et al. (1999) data and selected whitebark pine nuts and several berry producing shrubs for quantification because they provide a major contribution to annual energy demands for bears (Interagency Grizzly Bear Committee 1987). In summary, results of Hogg, Weaver, Craighead et al. (1999) indicate bear foods in the form of berries generally decline moving from north to south through the Bitterroot area. Significant berry distribution occurs north of the Selway-Bitterroot Wilderness area in the North Fork of the Clearwater River drainage and throughout much of the Lochsa and Selway River drainages. Berry-producing species generally decline to the south, particularly species of huckleberry other than grouse whortleberry. Grouse whortleberry could potentially provide a significant seasonal food source in some years. Whitebark pine and associated nut crops tend to follow the opposite pattern with greater distributions south of the Salmon River and a general decline through the northern portions of the Bitterroot Ecosystem. For further information, see Chapter 3 "*Current*

Research on Grizzly Bear Habitat Suitability in the Bitterroot Ecosystem,” and Appendix 21D. See Chapter 3, “Habitat Suitability” section and Appendix 21 for more information.

6. How will grizzly bears and their habitat be managed?

Under this alternative, primary grizzly bear management responsibility would reside within the USFWS and include active participation by federal land management agencies, the states of Idaho and Montana, and the Nez Perce Tribe. An interagency committee of managers (similar to other grizzly bear recovery zones) would be responsible for management decisions. Habitat would continue to be managed by the land management agencies through their appropriate management plans.

Nuisance bears would be controlled following direction contained in the IGBC nuisance grizzly bear management guidelines (Appendix 15). Response to human or livestock/grizzly bear conflicts must occur within 24 hours of notification of USFWS or state fish and wildlife management agency. Grizzly bears could not be harassed or harmed by the public, except to protect human life or safety.

7. Where will grizzly bears be obtained, reintroduced, and recovered?

This alternative proposes to recover grizzly bears in the BE through natural recolonization. Grizzly bears would not be reintroduced under this alternative. Grizzly bears would be recovered within the designated Bitterroot Grizzly Bear Recovery Zone as delineated in Figure 2-6. This area is consistent with the 5,500 sq. mi. Bitterroot Grizzly Bear Evaluation Area as defined in the BE Recovery Plan Chapter (USFWS 1996).

ALTERNATIVE 3. THE NO GRIZZLY BEAR ALTERNATIVE

Background

The federal government is mandated to recover threatened and endangered species under the Endangered Species Act. Species listed under the ESA are entitled to special protection and federal agencies are required to make efforts to recover them to the point where they can be removed from the list of protected species. In 1975, grizzly bears in the conterminous United States (the lower 48) were officially listed as threatened under the ESA. The BE was designated as a recovery area because it historically supported a population of grizzly bears, was suspected to contain grizzly bears at the time of their listing, and provided suitable habitat to recover the species. The ESA requires the USFWS to develop recovery plans that detail the efforts necessary to recover listed species. The USFWS developed a recovery plan for the BE in 1996 (Appendix 14). This alternative proposes not to recover grizzly bears in the BE. Under this alternative, the ESA would have to be changed, and 50CFR17.40 that requires protection of threatened species outside of recovery areas would also have to be changed to allow removal and taking of grizzly bears within the BE (to allow elimination of bears if they naturally recolonized the BE in the future). References to the BE would have to be removed from the Grizzly Bear Recovery Plan. State laws that protect grizzly bears in the BE of Idaho and Montana would have to be changed. These changes to federal and state law are beyond the scope of this document. The National Environmental Policy Act requires that an Environmental Impact Statement should consider an adequate range of alternatives that are responsive to public concerns. Public scoping indicated support for the “No Grizzly Bear Alternative”, and thus it is included for detailed analysis in this DEIS so that the effects of grizzly bear recovery can be accurately compared to the situation of not having grizzly bears in the BE.

No Grizzly Bear Alternative.—The purpose of this alternative is to prevent grizzly bears from naturally re-establishing in Bitterroot Ecosystem.

Summary

Changes to the ESA proposed under this alternative would require intensive lobbying, changes in public attitudes, and years to implement. Actions of this magnitude would cost millions of dollars. Congress would need to pass legislation to remove grizzly bears in central Idaho and portions of western Montana from the list of threatened species. The USFWS would stop all funding and management activity toward bear research, education, and management in central Idaho. Furthermore, the states of Idaho and Montana would remove grizzly bears from the protection of state law within the BE (central Idaho and west-central Montana). Unregulated killing by the public and extirpation or removal by agencies would likely prevent any possible grizzly bear recovery in this area.

Implementing this alternative would involve:

The following summary highlights the actions that would be implemented if Alternative 3 is selected:

-Federal legislation would be passed to remove grizzly bears from the list of threatened species in the BE.

-State legislation would be passed to remove grizzly bears from protection of Idaho and Montana state law in the BE.

-Agencies and the public would be allowed to kill grizzly bears at any time within the BE without restriction. This would prevent any natural recovery of bears.

How would the grizzly bear population respond to this alternative?

Without legal protection from human persecution, lone grizzly bears may occasionally be reported and killed throughout the BE. Grizzly bear population recovery would not occur in this area. Grizzly bear populations in other ecosystems within the conterminous United States would be negatively impacted by the overall smaller total number of bears. Failure to establish a population would reduce the overall numbers of potential grizzly bears south of Canada and decrease the survival potential of this species south of Canada. The Yellowstone Ecosystem would become increasingly isolated and possibly subject to genetic or demographic problems due to this isolation.

How does this alternative address the major issues and concerns of the public?

1. What will be the risk to human safety?

Risk of injury from grizzly bears would be virtually nonexistent. The risk of grizzly bear-associated injury during wilderness travel would remain virtually unchanged from that existing today. Fear associated with the risk of encountering bears would be reduced due to the assumption that grizzly bears would not be present.

2. What kind of land-uses will be altered solely for grizzly bears?

This alternative would not result in any changes to current land-uses.

3. How much will implementation cost?

Costs associated with this alternative include staff salary and travel expenses necessary to develop required legislation to change existing laws and regulations. The total cost to implement this alternative is estimated at a minimum of 2 million dollars (Appendix 7), although the legal, public involvement, and political costs of changing the ESA could easily exceed this estimate. Grizzly bears would be so uncommon that additional expenditures for occasional removal would not be significant.

Chapter 2 - Alternatives

4. How does this alternative address linkage zones?

Linkage zones would not be delineated and would be discouraged under this alternative. Grizzly bear movement through the BE would be prevented.

5. Is habitat quality and size of the recovery zone sufficient for recovery?

Habitat quality for grizzly bears is not an issue under this alternative. The recovery zone would not exist.

6. How will grizzly bears and their habitat be managed?

Grizzly bears occurring in the BE would be moved or destroyed. Habitat would not be managed specifically for grizzly bears.

7. Where will grizzly bears be obtained, reintroduced, and recovered?

Grizzly bears would not be reintroduced or recovered under this alternative.

ALTERNATIVE 4. RESTORATION OF GRIZZLY BEARS AS A THREATENED POPULATION WITH FULL PROTECTION OF THE ESA AND HABITAT RESTORATION

Background

Grizzly bears would be reintroduced into the BE without an experimental population rule and would be fully protected by all provisions of the Endangered Species Act as a “threatened” species until recovery was achieved. The experimental population provisions of Section 10(j) of the ESA would not be used. Bears would be restored and recovered in the northern Rocky Mountains under measures similar to protection given in other ecosystems such as the Yellowstone, Northern Continental Divide, Selkirk, or Cabinet-Yaak Ecosystems and would be listed as threatened under the ESA. Grizzly bear recovery would be the responsibility of the USFWS, with active participation of other federal agencies, states, and the Nez Perce Tribe. A Scientific Committee would be established to carry out additional research, implement reintroduction of bears, and monitor results of the program. Reintroduction of bears would occur within the Selway-Bitterroot Wilderness or roadless areas north of the Lochsa River. Management situation boundaries would be mapped and guidelines would be applied as in other recovery areas. Ninety-eight percent of the Bitterroot Grizzly Bear Recovery Zone (21,645 square miles) that would be established under this alternative is federal land and the majority is wilderness or roadless (Figure 2-7). Land-use restrictions such as reduction in the number of open roads as well as the elimination of new roads and logging on lands currently roadless would be implemented. Habitat for bears may also be enhanced by purchase or easement. This proposal would designate three restoration areas. One of these would be a Corridor Special Management Area between the proposed Bitterroot Recovery Zone and the Cabinet Mountains within which numerous roads would be closed and reclaimed. Grizzly bears that attack livestock would be managed under the Interagency Grizzly Bear Committee (IGBC 1986) nuisance grizzly bear management guidelines (Appendix 15). No federal or state compensation would be available. Private compensation might be obtained, if existing programs were to expand. Sanitation and food storage regulations would be implemented within the recovery zone. The State of Idaho would be requested to eliminate the use of dogs and bait for hunting black bears within the area designated for release.

Restoration of Grizzly Bears as a Threatened Population with Full Protection of the ESA and Habitat Restoration Alternative.—The purpose of this alternative is to use reintroduction and extensive habitat protection and enhancement to promote natural recovery of grizzly bears in the BE.

NOTE: Scope of This Document

This document covers the actions of the U.S. Fish and Wildlife Service and cooperating agencies in evaluating alternatives to recover the grizzly bear in the BE of Idaho and Montana. The actions evaluated in this alternative involve the listed grizzly bear and relate to actions involving grizzly bears and the management of these grizzly bears. Actions involving allocation of public resources such as timber, mining, road building, or grazing on National Forest lands and State lands are not implementable through a Record of Decision signed by the USFWS. Decision documents involving allocation of these resources on National Forest and State lands are the legal responsibility of the USDA Forest Service, and the states of Idaho and Montana, through appropriate Forest and State planning processes.

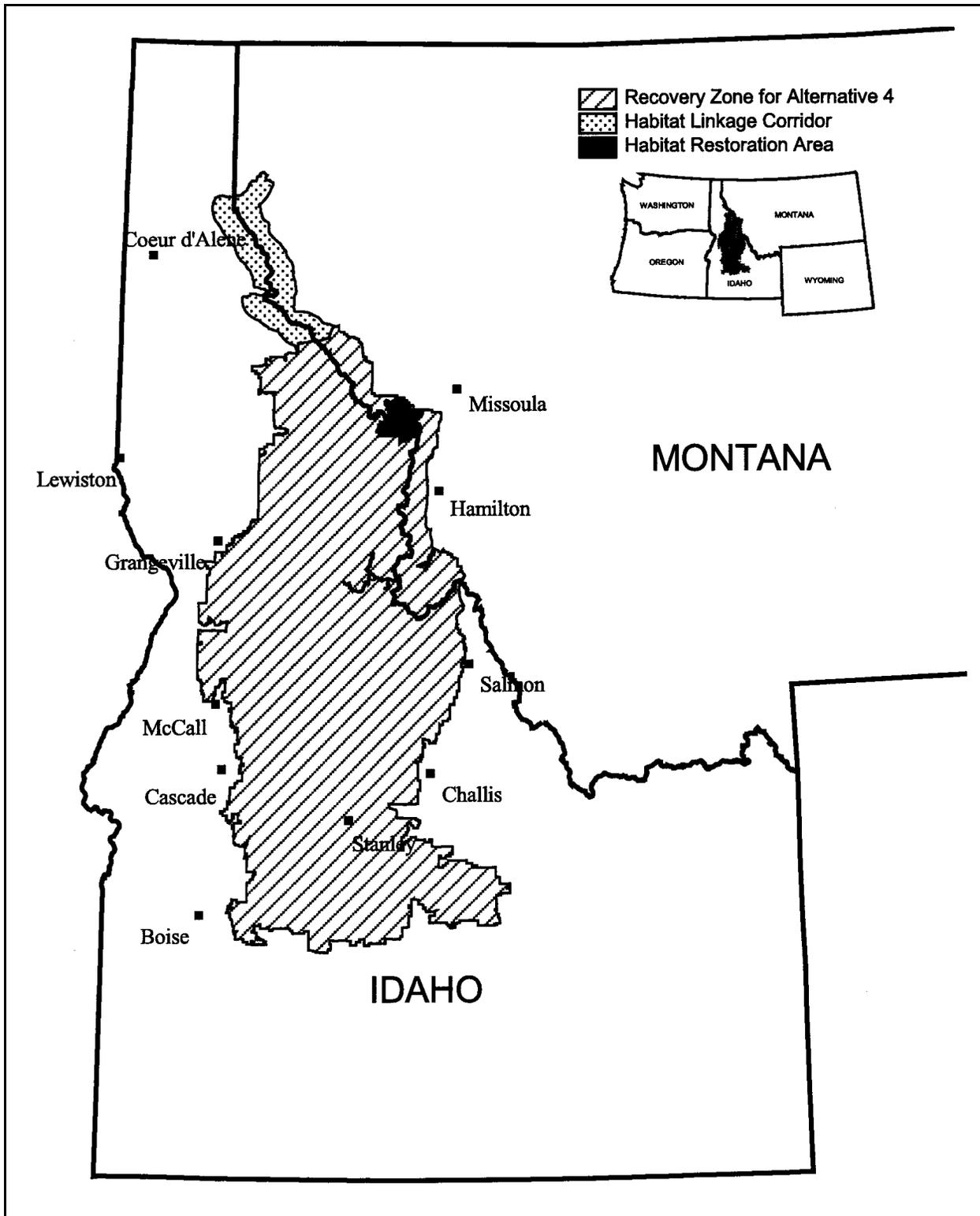


Figure 2-7. Bitterroot Grizzly Bear Recovery Zone and habitat linkage corridor for Alternative 4 - Restoration of Grizzly Bears as a Threatened Population with Full Protection of the ESA and Habitat Restoration.

Summary

Of importance is the fact that the principal laws that govern land management on federal lands would have to be changed for the USFWS to implement this alternative. Primary grizzly bear management responsibility would reside with the USFWS and include active participation by the states and the Nez Perce Tribe. A ten member Scientific Committee would be appointed by the Secretary of Interior in cooperation with the National Academy of Sciences to define needs for additional research, develop strategies for reintroduction of bears, and monitor results of the program.

Grizzly bears would be reintroduced into the Selway-Bitterroot Wilderness and roadless areas north of the Lochsa River through methods determined by the Scientific Committee. They would be fully listed as threatened with all the protections under the ESA (including Section 7(a)(2)), and all federal actions within the recovery zone would be subject to ESA Section 7 consultation with the USFWS. Management Situation designation would reflect a high priority for recovery on all federal lands within the 21,645 square mile recovery zone. Grizzly bear populations would take a minimum of 65 years, and likely more than 125 years to recover to a population of 300-500 individuals.

No logging or road building would be permitted on roadless lands within the recovery zone. The Magruder Road would be reclaimed and converted to a pack trail from Magruder crossing 23 miles west to Sabe Saddle. The Hells Half Acre Mountain Road would be reclaimed over the entire eight mile length. The Lolo Restoration Area (219 square miles) and a Corridor Special Management Area (1,380 square miles) would be designated for road density reduction through reclamation. Road densities on roaded lands within the Restoration Area and the Corridor Special Management Area would be reduced to an average of no more than 0.25 miles per square mile.

Interagency Grizzly Bear Committee (IGBC) nuisance grizzly bear management guidelines (IGBC 1986) would be applied to bears killing livestock. The Scientific Committee would review and modify these guidelines if necessary. If losses occurred on nearby private lands, bears would be moved. Agency response to reported livestock losses from grizzly bears must occur rapidly. Grizzly bears could be killed in defense of life, but not in defense of property. Use of toxicants lethal to bears on public lands within the recovery zone and areas used by bears would be subject to Section 7 consultation and could be prohibited by existing ADC policy and EPA labeling instructions.

Backcountry users would be required to make food, garbage, and livestock feed unavailable to grizzly bears. Front country campgrounds would install bear resistant garbage containers as soon as possible. An intensive education campaign regarding food storage and garbage handling would be instituted for all residents and visitors. A request for elimination of hunting of black bears with dogs and bait within the wilderness areas designated for reintroduction of grizzly bears would be made to the State of Idaho. The Scientific Committee would recommend whether this ban would need to be extended if conditions warrant. Intensive hunter education efforts regarding bear identification and recreation in grizzly bear habitat would be undertaken.

Implementing this alternative would involve:

The following summary highlights the actions that would be implemented if Alternative 4 is selected:

Chapter 2 - Alternatives

-Of importance is the fact that the principal laws that govern land management on federal lands would have to be changed for the USFWS to implement this alternative.

-The USFWS would designate the Bitterroot Grizzly Bear Recovery Zone along boundaries described in Figure 2-7. The Recovery Zone would include all of the Selway-Bitterroot, Frank Church-River of No Return, Sawtooth, and Gospel Hump Wilderness Areas, surrounding inventoried roadless lands, and other National Forest lands comprising approximately 21,645 square miles. The area is located on portions of the Clearwater, Bitterroot, Lolo, Panhandle, Payette, Boise, Sawtooth, Challis, and Salmon National Forests. Specifically, the northern boundary of the recovery zone would be the northern boundary of the Mallard-Larkins inventoried roadless area on the Clearwater and Panhandle National Forests and the northern boundary of the Sheep Mountain inventoried roadless area on the Lolo National Forest. The western boundary of the recovery zone would be the western boundary of the Clearwater National Forest; the westernmost boundaries of the Nez Perce and Payette National Forests west of U.S. Highway 95 and Idaho Highway 55; the westernmost boundaries of the Boise National Forest east of Idaho Highway 55. The southern boundary of the recovery zone would be the southern boundaries of the Boise, Sawtooth, and Challis National Forests north of U.S. Highway 20. The eastern boundary of the recovery zone would be the eastern boundaries of the Challis and Salmon National Forests west of U.S. Highway 93; the Bitterroot National Forest west of Lost Trail Pass northwest to Trapper Peak; the eastern boundary of the Selway-Bitterroot Wilderness Area to Lolo Peak and to include Lost Horse and Blodgett Canyons out to the mouth; the Lolo National Forest from Lolo Peak northwest to Garden Point; from Garden Point northwest to Rivulet Peak; from Rivulet Peak northwest to Sunrise Point; from Sunrise Point northwest to Blacktail Mountain.

-The USFWS would establish proactive interagency grizzly bear recovery programs in the BE (similar to those existing in other ecosystems) to conduct monitoring, research, education, and information programs.

-A Scientific Committee would be established to define needs for additional research, develop strategies for reintroduction of bears, and monitor results of the program.

-A recovery goal of between 300-500 (average of 400) grizzly bears (bears distributed over 21,645 square miles of designated wilderness, non-wilderness, and private land) would be established within the recovery zone. The Scientific Committee could recommend a refined recovery goal once grizzly bears are reintroduced and information is obtained on their use of the habitat.

-The USFWS would reintroduce a minimum of 25 bears over a period of five years into the Selway-Bitterroot Wilderness and roadless areas north of the Lochsa River following recommendations of the Scientific Committee. Subadult grizzly bears of both sexes would

be trapped, each year for 5 years, from areas in Canada (in cooperation with Canadian authorities) and the United States that presently have healthy populations of grizzly bears living in habitats that are similar to those found in the Bitterroot Ecosystem. Three sources of grizzly bears for the BE have been identified: southeast British Columbia, the Northern Continental Divide Ecosystem (NCDE) population in northwest Montana, and the Yellowstone Ecosystem (YE) population. The specific number of bears that could be obtained yearly from the potential source populations is unknown at this time. Bears would be reintroduced at the best time of year to optimize their survival. Reintroduced bears would be radio collared and monitored to determine their movements and how they use their habitat, and to keep the public informed of general bear locations and recovery efforts.

-Some undetermined level of mortality is expected among the transplanted bears. Every effort would be taken to minimize this, but mortalities are expected to occur. Any transplanted bears that died or were removed as a result of human action could be replaced. Such replacements would be in addition to the original minimum of 25 bears.

-Within the recovery zone (Figure 2-7), the USFS and Bureau of Land Management (BLM) in cooperation with USFWS would: not approve logging or road building within roadless areas; use road closures and road reclamation to reduce road densities to no more than 0.25 miles per square mile within the recovery zone, habitat restoration areas and habitat linkage corridors; designate management situations as per the Interagency Grizzly Bear Guidelines (IGBC 1986); and implement sanitation programs to assist recovery of grizzly bears.

-USFWS, in cooperation with other federal agencies, the states, the Nez Perce Tribe, and private groups would use federal funding to enhance grizzly bear habitat through acquisitions or easements.

-USFWS, in cooperation with IDFG and MDFWP would apply the IGBC (1986) nuisance grizzly bear management guidelines (Appendix 15) to grizzly bears in conflict with humans or domestic animals.

-IDFG in cooperation with the USFWS would be requested to eliminate the use of dogs and bait for black bear hunting within the area designated for release of reintroduced bears.

How would the grizzly bear population respond to this alternative?

Grizzly bear population modeling efforts were recently completed for two interior southern populations for which habitat conditions appear similar to the BE (McLellan 1989, Eberhardt et al. 1994, Knight and Blanchard 1995, Hovey and McLellan 1996). Population growth rates of approximately 4% and 8% were reported for the Yellowstone and the North Fork of the Flathead River in Southeast British Columbia grizzly bear populations, respectively. The 4% growth rate was for the period of 1974-1992. Craighead et al. (1974) calculated a 2% rate of growth for the Yellowstone population for the period of 1959-1967. These three growth rates (2%, 4%, and 8%)

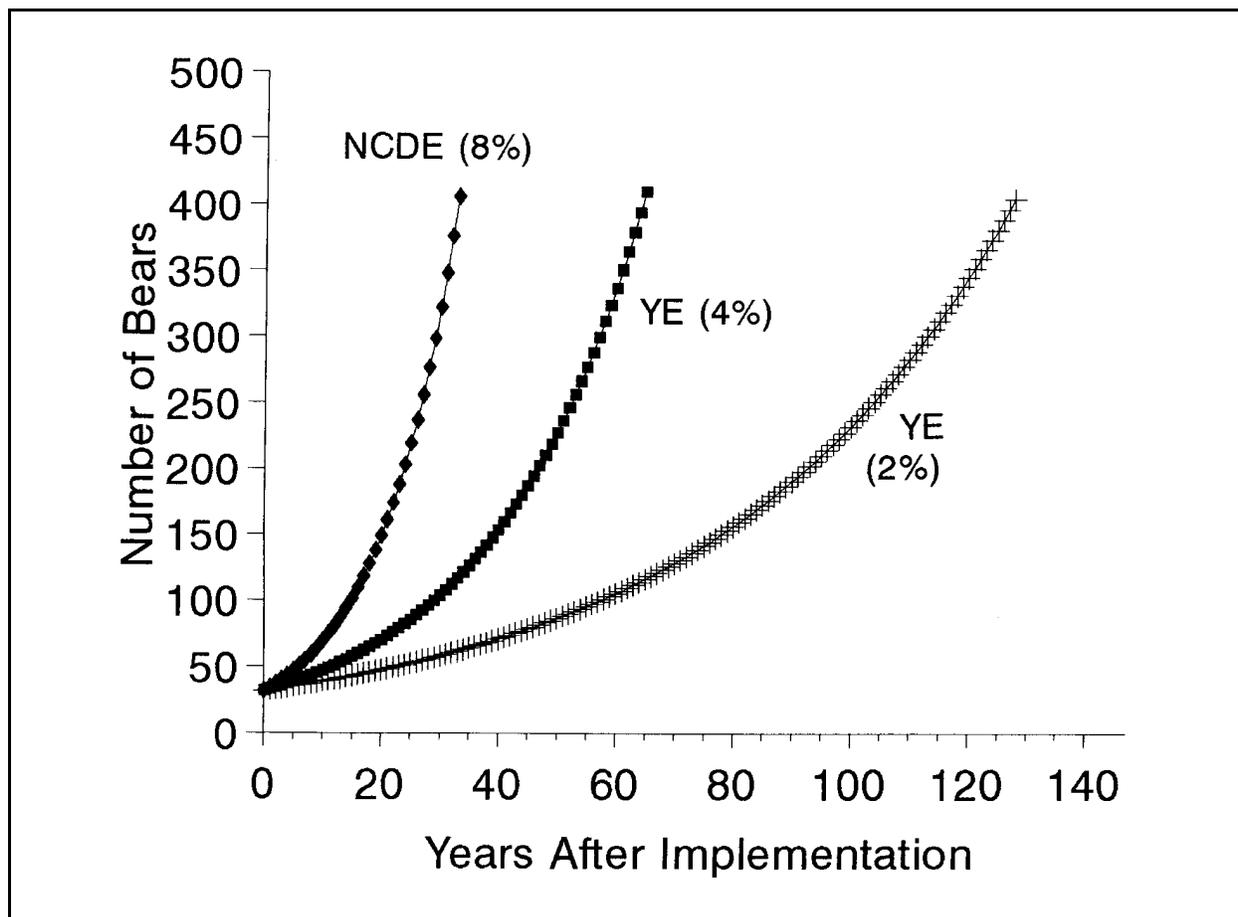


Figure 2-8. Projections of grizzly bear population growth for the Bitterroot Ecosystem following the initial 5-year implementation period. Population growth rates of approximately 2% and 4% were reported for the Yellowstone (YE), and 8% for the North Fork of the Flathead River (in southeast British Columbia) (NFF) grizzly populations. These rates are applied to an initial population having 15 female bears to illustrate potential population growth rates and to estimate anticipated time to recovered populations.

were applied to an initial population having 15 female bears to illustrate potential population growth rates and to estimate anticipated time to recovered populations (Figure 2-8). Reproductive rates were similar between studies, but survival rates were substantially different. Most notably, survival of subadult female bears was higher in the Flathead population and this produced much of the observed difference in growth rates. These scenarios were intended to provide a range of likely population projections following reintroduction, and are presented to depict how bear populations may optimally respond to implementation of this alternative. Bear populations may behave differently than projected, but these two data sets provide the best available information for modeling potential grizzly bear population growth in the BE. These models do not reflect internal population pressures (e.g., competition for food or space) that may reduce the rate of increase through reduced survival

and reproduction. These effects could be expected to slow the rate of growth as the population fills the available habitat. These projections are completely dependent upon a majority of transplanted bears remaining within the target area and reproducing at rates similar to bears in the Yellowstone or Flathead populations.

The recovery goal of this alternative is approximately 300-500 (mid-point of 400 bears) grizzly bears (bears distributed over 21,645 square miles of wilderness, non-wilderness, and private land). The population projections indicate that bear populations would require at least 125 years at a 2% growth rate, a minimum of 65-70 years at a 4% growth rate, and at least 35 years at an 8% growth rate to reach the recovery goal of approximately 300-500 bears (Figure 2-8). The USFWS has determined that the 8% growth rate is unrealistic for expected population growth in the BE. Realistically, under this alternative, grizzly bear recovery in the BE could take a minimum of 65-70 years, and given expected conditions and conflicts, could likely take more than 125 years. The three scenarios indicate that improving survivorship of young bears can dramatically affect population growth. If bear mortality can be reduced, recovery would occur decades sooner (Maguire and Servheen 1992).

How does this alternative address the major issues and concerns of the public?

1. What will be the risk to human safety?

Impacts on human health and safety from implementation of this alternative would be similar to those described for Alternative 1. The BE grizzly bear population would be managed as a threatened population with full protection of the ESA under this alternative.

During the first several decades following reintroduction, the chance of injury caused by grizzly bears would be exceedingly small due to the low density of bears in the area. For instance, in the Cabinet-Yaak and Selkirk ecosystems where there are low density recovering populations of grizzly bears, there have not been any recorded injuries in at least the last 20 years. Under this alternative populations are estimated to achieve recovery levels of approximately 400 bears in a minimum of 65 years, and likely more than 125 years. Using human injury rates in the NCDE and YE, and recognizing a net increase in human visitation, projections for human injury, once bears are recovered 65-125+ years in the future, are less than one injury per year and less than one grizzly bear-induced human mortality every few decades.

Under Interagency Grizzly Bear Committee (IGBC) guidelines (IGBC 1986), grizzly bears posing problems to camps, cabins, individuals and stock may be relocated or removed. Humans that act in self-defense or defense of others would continue to be allowed to kill a grizzly bear. In addition, new technologies such as repellants, proper sanitation procedures, aversive conditioning, monitoring, and preemptive management, as well as educating humans how to react during an encounter would reduce chance of injuries. See Appendix 11 for more information on risks to human safety.

2. What kind of land-uses will be altered solely for grizzly bears?

Because grizzly bears would be listed as a fully protected threatened species, all federal actions within the recovery zone would be subject to ESA Section 7 consultation with the USFWS. Road

Chapter 2 - Alternatives

building and timber harvest would not be allowed on federal lands within the recovery zone that are presently roadless. Additionally, it is likely that grizzly bear habitat management would restrict to some degree timber harvests on currently roaded areas within the recovery zone (Tom Wittinger, pers. comm. 1996). Based on the best available data (Tom Wittinger, Flathead Forest, pers. comm. 1996), it is estimated that reductions in timber harvest on national forest lands within the PAA would be between 40 and 194 million board feet per year over the next decade if Alternative 4 grizzly bear recovery were implemented as proposed (see Table 4-16). Impacts to timber harvest could be less based on current land-use restrictions in Idaho that do not occur in Montana on the Flathead Forest (i.e. Pacfish, etc.). The large variation between the high and low estimates reflect the divergence between the planned Allowable Sale Quantity (ASQ) of timber from Forests in the PAA and the actual harvest volume which has occurred in recent years (see Table 3-11).

Within the Lolo Restoration Area and Special Corridor Management Areas, road densities would be reduced to an average of no more than 0.25 miles per square mile. This would require closure and reclamation of about 3500 miles of roads. The Magruder Road would be reclaimed and converted to a pack trail from Magruder crossing 23 miles west to Sabe Saddle. The Hells Half Acre Mountain Road would be reclaimed over the entire eight mile length. USFS Forest Plans and BLM Area Management Plans would require amendments or revisions to implement these standards.

Livestock grazing presently occurs at very low densities within the recovery zone and is not expected to be impacted by the implementation of this alternative. Grazing occurs predominantly in the southern portion of the BE (Figure 3-8, Table 3-13). Consequently, at recovered grizzly population levels and current livestock stocking rates, impacts to livestock would be expected to be similar to levels occurring in portions of the NCDE and the YE. In 65-125+ years grizzly bears would likely be present within the southern portion of the BE. Projections indicate that at a grizzly bear population level of 400 bears in the recovery zone, yearly livestock losses to depredation from bears could range from 12-27 cattle and 41-355 sheep. Management activities would try to preempt livestock problems. The Scientific Committee would evaluate areas with recurring incidents and recommend solutions to aid in recovery.

Recreation impacts in the form of permanent trail closures within the wilderness would likely not occur. Temporary closures of trails may occur in response to a dangerous situation that might result in human injury or bear mortality (e.g., grizzly on a carcass in a trail). However, even in Glacier National Park where grizzly bear and human densities are greater than would likely ever occur in the BE, less than 5% of the trails are temporarily closed at one time. Trails are rarely closed in the NCDE outside of the park. In the NCDE where a minimum population of about 325 grizzly bears currently exists, only one trail was closed on national forest lands because of grizzly bears in the last 10 years. Sanitation concerns in the BE must be addressed, such that backcountry users properly store food and garbage to reduce potential conflicts with bears. Under this alternative, backcountry users would be required to make food, garbage and livestock feed unavailable to bears. This would necessitate hanging foods and garbage or placing it in containers to make it unavailable to bears. Front country campgrounds would install bear resistant garbage containers as soon as possible. An

intensive education campaign regarding food storage and garbage handling would be instituted for all residents and visitors. Based on what is currently known about bear behavior in the NCDE and YE, nuisance bear incidents would likely range between 0 and 105 per year at recovered population levels.

Mineral extraction could be altered due to grizzly bear concerns in and by themselves. Recommendations may be made by the Scientific Committee to reduce potential impacts if the need arises.

Impacts of grizzly bear reintroduction to big game populations would likely be insignificant. Studies from similar ecosystems with high densities of both bears and ungulates indicate that predation rates range from almost none to low levels of predation. Based on the current population of big game animals in the central Idaho analysis area (260,000 post-harvest), impacts of between 1-400 grizzly bears over a 50 year period whose diets consist of 90% vegetable matter, would likely not be measurable. In many locations, animal matter may not constitute a major annual diet item, but may be seasonally vital to bears (Mattson et al. 1991). An expected predation rate of 0.3-0.54% of the ungulate population in the area occupied by bears in the BE could occur. Using Mattson's (1997) estimate of 1.4 or 5.8 ungulates per year for adult female and male bears respectively, a population of 400 bears would be expected to prey upon 720 ungulates per year across the BE. The loss of 720 ungulates to a recovered grizzly bear population would represent approximately 0.15% of estimated pre-harvest populations of ungulates in the PAA. Grizzly bear predation is not expected to result in measurable or observable changes in ungulate populations. Potential long-term impacts to black bear population dynamics is unclear, but felt to be minimal. Overall impacts of a recovered population of grizzly bears on other wildlife populations are expected to be minimal. It should not be necessary to adjust hunting seasons to compensate for grizzly bear predation on other wildlife. Any restrictions on black bear hunters or other hunting opportunities to reduce the likelihood of mistaken identity kills or to address other potential conflicts could be recommended by the Scientific Committee, but would have to be acceptable and implemented by the IDFG and MDFWP. Under this alternative, there is a proposal to eliminate baiting and hound hunting of black bears within the Selway-Bitterroot Wilderness, Lochsa drainage, and upper North Fork of the Clearwater drainage. These hunting techniques would be eliminated if authorized by the Idaho Fish and Game Commission.

3. How much will implementation cost?

The present cost estimate for capturing a minimum of 25 grizzly bears, transplanting bears to the central Idaho recovery area, and monitoring and management of the grizzly bears over a 5-year period of reintroductions is 278,632 annually. The Scientific Committee would meet about 4-6 times annually during the early period of the project and less frequently later. Travel expenses and associated costs would amount to an estimated \$15,000 dollars per year. In addition to costs involved in the transplanting, monitoring, and management of bears, there is also a cost associated with sanitation, information and education, and law enforcement activities conducted by the USFS within the recovery area. This cost would be approximately \$150,000 annually. Total annual cost for the 5-year reintroduction period would be approximately 428,632/year, and total 5-year

Chapter 2 - Alternatives

implementation cost would be approximately 2,143,160 (Appendix 7). Annual costs for monitoring and management would be approximately 188,000 for each year beyond the 5-year reintroduction period. Additional funding for the road reclamation work would be by Congressional appropriation. See the economic analysis for Alternative 4 (Chapter 4), for an assessment of costs other than those associated with implementation.

4. How does this alternative address linkage zones?

Restoration of grizzly bears in the Bitterroot Ecosystem will increase concern about the possible linkage between existing areas with grizzly bears and the BE. The USFWS intends to complete a linkage zone analysis that will detail the possible linkage areas between the existing ecosystems, and between the BE and existing ecosystems. The linkage zone analysis is a Geographic Information System (GIS) computer modeling effort that looks at the levels of human impact and activity in the intervening areas between ecosystems and identifies the best linkage areas based on this human activity. This linkage zone analysis is a separate Grizzly Bear Recovery Plan Task and will be completed regardless of which FEIS alternative is selected for the BE. Maintenance of linkage zones is maintenance of the opportunity for grizzly bears and other wildlife species to move between the existing large blocks of public lands in order to maintain demographic and genetic health.

This alternative identifies a Corridor Special Management Area that links the north end of the proposed Bitterroot Grizzly Bear Recovery Zone to the south end of the Cabinet-Yaak Ecosystem. Within this area, road densities would be reduced to allow a resident, but likely lower density population of grizzly bears to exist. Reproduction by these bears with immigration and emigration would provide genetic and demographic linkage between the two ecosystems. Additional management actions, such as standards for maintenance of cover, may be specified by the Scientific Committee.

5. Are habitat quality and size of the recovery zone sufficient for recovery?

The recovery zone is 21,645 square miles and is larger than either the NCDE or the YE at approximately 9,500 square miles each. The roadless and wilderness lands are approximately 15,845 square miles. This area is of sufficient size to allow for grizzly bear recovery.

Habitat quality has been studied extensively. A number of different studies have been conducted within the BE that have direct applicability to the potential for grizzly bear recovery (see Appendix 3). Habitat quality varies throughout the recovery zone. At one time grizzly bears were present in high densities throughout the BE. Salmon and whitebark pine, two important grizzly bear foods, were common during the peak of grizzly bear populations. Salmon have been virtually eliminated along the Clearwater drainage due to dams that block their migration. Whitebark pine has been reduced to about 20-40% of its historical abundance in the BE, and now is most prevalent in the southern half of the ecosystem. The species is expected to decline to approximately 5-10% of its historic abundance level before increasing again (Keene and Arno 1996).

However, studies indicate that a great variety of preferred grizzly bear foods are present in the ecosystem. A wide variety of all season foods are present including good quantities of several key

berry species, forbs and grasses, as well as historically high levels of ungulates to provide carrion during the fall and spring months. Food habits of black bears are quite similar to those of grizzly bears. Healthy populations of black bears live within the PAA, and annual hunter harvest totals about 1,000. Grizzly bears relocated to the BE would likely come from areas where neither salmon nor whitebark pine are plentiful. A recovered population of 300-500 grizzly bears should find sufficient high quality forage within the recovery zone. Although bear densities may not recover to their historical levels during the peak of the salmon and whitebark pine era, the population should achieve densities similar to those found in other interior ecosystems where those food sources are not present. The key to recovery in the BE would likely be due to effective management including limitation of human-caused mortality rather than quantity or quality of habitat.

A recent vegetation-based inventory and analysis of grizzly bear habitat in the Bitterroot Ecosystem was completed by the Craighead Wildlife-Wildlands Institute. Appendix 21D, “Synopsis of Portions of, and Excerpts from the Report, ‘*Abundance and Spatial Distribution of Grizzly Plant-Food Groups in the Salmon-Selway Ecosystem: A Preliminary Analysis and Report*’ (Hogg, Weaver, and Craighead et al. 1999)” presents detailed habitat maps showing the distribution and abundance of major grizzly bear foods. The USFWS examined the Hogg, Weaver, Craighead et al. (1999) data and selected whitebark pine nuts and several berry producing shrubs for quantification because they provide a major contribution to annual energy demands for bears (Interagency Grizzly Bear Committee 1987). In summary, results of Hogg, Weaver, Craighead et al. (1999) indicate bear foods in the form of berries generally decline moving from north to south through the Bitterroot area. Significant berry distribution occurs north of the Selway-Bitterroot Wilderness area in the North Fork of the Clearwater River drainage and throughout much of the Lochsa and Selway River drainages. Berry-producing species generally decline to the south, particularly species of huckleberry other than grouse whortleberry. Grouse whortleberry could potentially provide a significant seasonal food source in some years. Whitebark pine and associated nut crops tend to follow the opposite pattern with greater distributions south of the Salmon River and a general decline through the northern portions of the Bitterroot Ecosystem. For further information, see Chapter 3 “*Current Research on Grizzly Bear Habitat Suitability in the Bitterroot Ecosystem,*” and Appendix 21D. See Chapter 3, “Habitat Suitability” section and Appendix 21 for more information.

6. How will grizzly bears and their habitat be managed?

Primary grizzly bear management responsibility would reside within the USFWS and include active participation by federal land management agencies, the states of Idaho and Montana, and the Nez Perce Tribe. An interagency committee of managers (similar to other grizzly bear recovery areas) would be responsible for management decisions. A ten-member Scientific Committee would be appointed by the Secretary of Interior in cooperation with the National Academy of Sciences to recommend procedures for additional research, reintroduction of bears, and monitoring results of the program. The Scientific Committee would advise the Management Committee on other issues as directed. Habitat would still be managed by the land management agencies through management plans, but those plans may require amendments or changes to implement this alternative.

Chapter 2 - Alternatives

Nuisance bears would be controlled following the IGBC (1986) nuisance grizzly bear management guidelines (Appendix 15). Response to human or livestock/grizzly bear conflicts must occur rapidly after notification of USFWS or state fish and wildlife management agency. Grizzly bears could not be harassed or harmed by the public, except to protect human life or safety.

7. Where will grizzly bears be obtained, reintroduced, and recovered?

Grizzly bears obtained for reintroduction purposes would likely originate in the U. S. and Canada where current grizzly bear populations are healthy enough to sustain removal of a few bears per year over a 5-year period, but plans for this effort would be developed by the Scientific Committee. Only bears with no history of conflict with humans and livestock, and most likely subadults, would be reintroduced. Grizzly bears determined to be “nuisance” under IGBC Nuisance Bear Guidelines would not be reintroduced to the BE. The donor population should come from habitat as similar as possible to that found in the BE. Three sources of bears for the BE have been identified: southeast British Columbia, the Northern Continental Divide Ecosystem (NCDE) in northwest Montana, and the Yellowstone Ecosystem (YE) population.

No bears would be removed from either U.S. ecosystem if such removal would exceed mortality limits. If the NCDE or YE populations exceed existing mortality limits in any year, then the placement of grizzly bears to the BE from these ecosystems would be suspended for the following year. This would not preclude the movement of bears from Canada. However, as 5 bears may not be available from Canada in a given year, this may extend the time period for reintroduction. Further, the actual capture of the necessary bears is dependent upon access to areas with such bears, and significant effort by capture crews. Capture of desired bears is not assured, even with intensive effort. It may require more than 5 years to obtain the desired minimum of 25 bears to initiate a new population in the BE. This should be made clear to the public and cooperating agencies at the outset.

There would be no significant detrimental effects to the health of source populations because mortality limits in the Grizzly Bear Recovery Plan (USFWS 1993) and British Columbia grizzly bear management criteria (B.C. Min. Environ., Lands, and Parks 1995) would be met during implementation of this alternative. Further, since no bears would be removed from the YE or NCDE if the mortality limits would be exceeded, and no female bears would be removed from within the recovery zone or within 10 miles of the recovery zone boundary of either ecosystem, then the effects on recovery of any removals of bears from the NCDE or YE would be nonexistent.

The British Columbia government may have representation on both the Scientific and Management committees. Release sites would be within the Selway-Bitterroot Wilderness or roadless areas north of the Lochsa River.

The recovery zone totals 21,645 square miles and is 98.1% federal land, 0.3 % state lands (Idaho and Montana), and 1.6% private land (Figure 2-7). The federal lands are 30% Wilderness and 43% roadless areas. The Scientific Committee would extend the habitat mapping and evaluation effort that has already been conducted in the northern portion of the recovery zone (Davis and Butterfield 1991). This analysis would be used for adjustment of recovery zone boundaries or linkage zone designation.

ALTERNATIVE 4A. RESTORATION OF GRIZZLY BEARS AS A THREATENED POPULATION WITH FULL PROTECTION OF THE ESA AND USFWS MANAGEMENT

Background

Grizzly bears would be reintroduced into the BE without an experimental population rule and would be fully protected by all provisions of the Endangered Species Act as a “threatened” species until recovery was achieved. The experimental population provisions of Section 10(j) of the ESA would not be used. Bears would be restored and recovered in the northern Rocky Mountains under measures similar to protection given in other ecosystems such as the Yellowstone, Northern Continental Divide, Selkirk, or Cabinet-Yaak Ecosystems and would be listed as threatened under the ESA. Grizzly bear recovery would be the responsibility of the USFWS, with active participation of other federal agencies, states, and the Nez Perce Tribe. A Scientific Advisory Committee would be established to provide objective recommendations on research needs, implement reintroduction of bears, and monitor results of the program. Reintroduction of bears would occur within the Selway-Bitterroot Wilderness. Management situation boundaries would be mapped and guidelines would be applied as in other recovery areas. Ninety-eight percent of the Bitterroot Grizzly Bear Recovery Zone (21,645 square miles) that would be established under this alternative is federal land and the majority is wilderness or roadless (Figure 2-9). Grizzly bears that attack livestock would be managed under the Interagency Grizzly Bear Committee (IGBC 1986) nuisance grizzly bear management guidelines (Appendix 15). No federal or state compensation would be available. Private compensation might be obtained, if existing programs were to expand. Sanitation and food storage regulations would be implemented within the recovery zone. The State of Idaho would be requested to eliminate the use of dogs and bait for hunting black bears within the area designated for release.

Reintroduction of Grizzly Bears as a Threatened Population with Full Protection of the ESA and USFWS Management.—The purpose of this alternative is to achieve recovery through reintroduction, with the USFWS managing all aspects of recovery of the population. Other federal and state agencies and the Nez Perce Tribe would assist the USFWS with management activities. The grizzly bear would have full status as a threatened species under the provisions of the ESA.

Summary

Primary grizzly bear management responsibility would reside with the USFWS and include active participation by the states and the Nez Perce Tribe. A ten member Scientific Advisory Committee would be appointed by the Secretary of Interior in cooperation with the National Academy of Sciences to make recommendations regarding research needs and strategies for reintroduction of bears, and to monitor results of the program.

Grizzly bears would be reintroduced into the Selway-Bitterroot Wilderness through methods developed in cooperation with the Scientific Advisory Committee and the USFWS. Reintroduced bears would be fully listed as threatened with all the protections under the ESA (including Section 7(a)(2)), and all federal actions within the recovery zone would be subject to ESA Section 7 consultation with the USFWS. Management Situation designation would reflect a high priority for recovery on all federal lands within the 21,645 square mile recovery zone.

Chapter 2 - Alternatives

Grizzly bear populations would take a minimum of 65 years, and likely more than 125 years to recover to a population of 300-500 individuals. Interagency Grizzly Bear Committee (IGBC) nuisance grizzly bear management guidelines (IGBC 1986) would be applied to bears killing livestock. If losses occurred on nearby private lands, bears would be moved. Agency response to reported livestock losses from grizzly bears must occur rapidly. Grizzly bears could be killed in defense of life, but not in defense of property. Use of toxicants lethal to bears on public lands within the recovery zone and areas used by bears would be subject to Section 7 consultation and could be prohibited by existing ADC policy and EPA labeling instructions.

Backcountry users would be required to make food, garbage, and livestock feed unavailable to grizzly bears. Front country campgrounds would install bear resistant garbage containers as soon as possible. An intensive education campaign regarding food storage and garbage handling would be instituted for all residents and visitors. Appendix 22 includes an independent report that lists sites within the BE where sanitation problems exist, and these wildlife attractant sites would be targeted for clean-up. A request for elimination of hunting of black bears with dogs and bait within the wilderness areas designated for reintroduction of grizzly bears would be made to the State of Idaho. The Scientific Advisory Committee would evaluate whether this ban would need to be extended if conditions warrant. Intensive hunter education efforts regarding bear identification and recreation in grizzly bear habitat would be undertaken.

Implementing this alternative would involve:

The following summary highlights the actions that would be implemented if Alternative 4A is selected:

-The USFWS would designate the Bitterroot Grizzly Bear Recovery Zone along boundaries described in Figure 2-9. The Recovery Zone would include all of the Selway-Bitterroot, Frank Church-River of No Return, Sawtooth, and Gospel Hump Wilderness Areas, surrounding inventoried roadless lands, and other National Forest lands comprising approximately 21,645 square miles. The area is located on portions of the Clearwater, Bitterroot, Lolo, Panhandle, Payette, Boise, Sawtooth, Challis, and Salmon National Forests. Specifically, the northern boundary of the recovery zone would be the northern boundary of the Mallard-Larkins inventoried roadless area on the Clearwater and Panhandle National Forests and the northern boundary of the Sheep Mountain inventoried roadless area on the Lolo National Forest. The western boundary of the recovery zone would be the western boundary of the Clearwater National Forest; the westernmost boundaries of the Nez Perce and Payette National Forests west of U.S. Highway 95 and Idaho Highway 55; the westernmost boundaries of the Boise National Forest east of Idaho Highway 55. The southern boundary of the recovery zone would be the southern boundaries of the Boise, Sawtooth, and Challis National Forests north of U.S. Highway 20. The eastern boundary of the recovery zone would be the eastern boundaries of the Challis and Salmon National Forests west of U.S. Highway 93; the Bitterroot National Forest west of Lost Trail Pass northwest

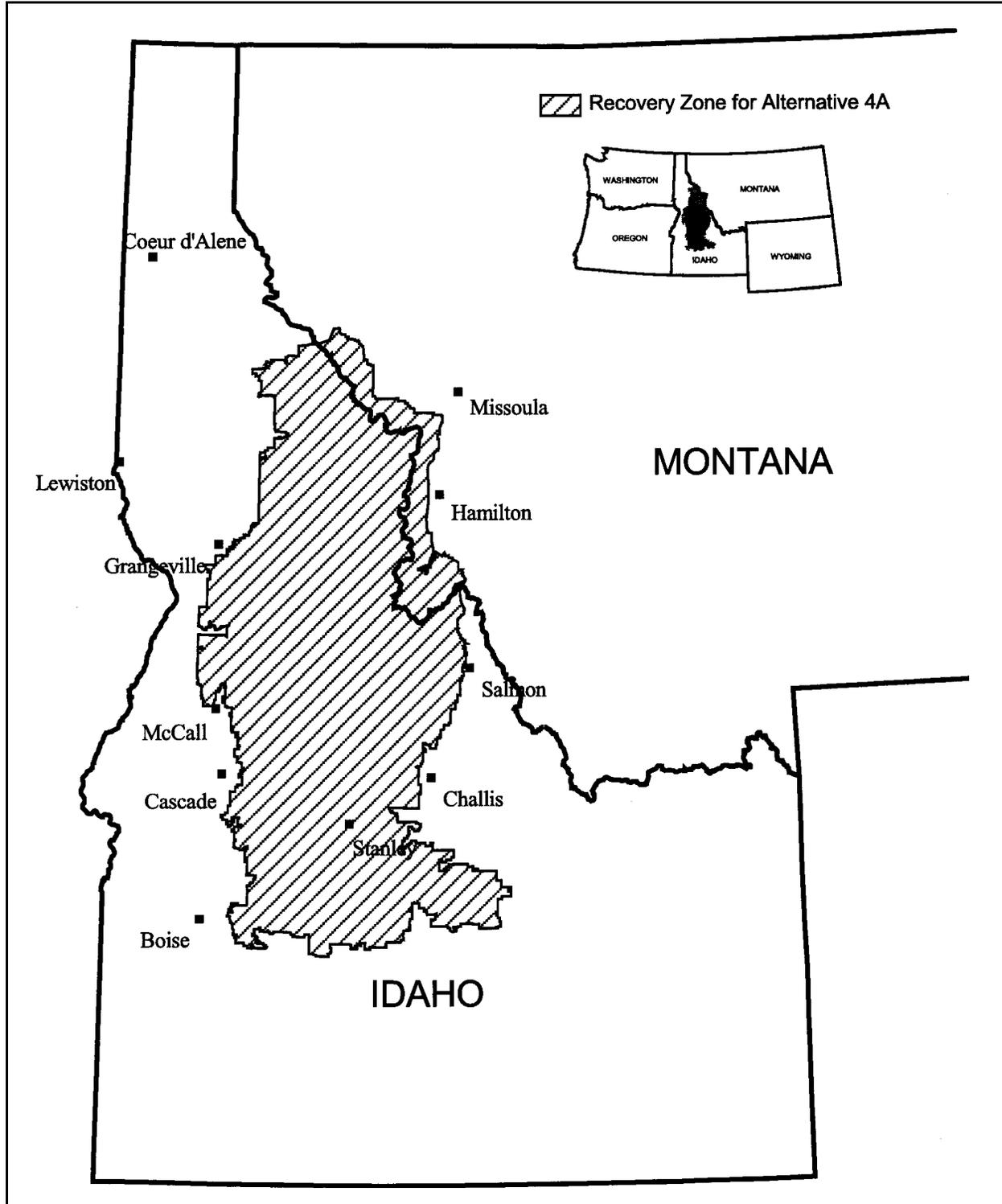


Figure 2-9. Bitterroot Grizzly Bear Recovery Zone for Alternative 4A - *Restoration of Grizzly Bears as a Threatened Population with Full Protection of the ESA and USFWS Management.*

Chapter 2 - Alternatives

to Trapper Peak; the eastern boundary of the Selway-Bitterroot Wilderness Area to Lolo Peak and to include Lost Horse and Blodgett Canyons out to the mouth; the Lolo National Forest from Lolo Peak northwest to Garden Point; from Garden Point northwest to Rivulet Peak; from Rivulet Peak northwest to Sunrise Point; from Sunrise Point northwest to Blacktail Mountain.

-The USFWS would establish proactive interagency grizzly bear recovery programs in the BE (similar to those in other ecosystems) to conduct monitoring, research, education, and information programs.

-A Scientific Advisory Committee would be established to provide input on research needs, strategies for reintroduction of bears, and monitoring program results.

-A recovery goal of between 300-500 (average of 400) grizzly bears (bears distributed over 21,645 square miles of designated wilderness, non-wilderness, and private land) would be established within the recovery zone. The Scientific Advisory Committee could recommend a refined recovery goal once grizzly bears are reintroduced and information is obtained on their use of the habitat.

-The USFWS would reintroduce a minimum of 25 bears over a period of five years into the Selway-Bitterroot Wilderness following procedures established from recommendations of the Scientific Advisory Committee. Subadult grizzly bears of both sexes would be trapped, each year for 5 years, from areas in Canada (in cooperation with Canadian authorities) and the United States that presently have healthy populations of grizzly bears living in habitats that are similar to those found in the Bitterroot Ecosystem. Three sources of grizzly bears for the BE have been identified: southeast British Columbia, the Northern Continental Divide Ecosystem (NCDE) population in northwest Montana, and the Yellowstone Ecosystem (YE) population. The specific number of bears that could be obtained yearly from the potential source populations is unknown at this time. Bears would be reintroduced at the best time of year to optimize their survival. Reintroduced bears would be radio collared and monitored to determine their movements and how they use their habitat, and to keep the public informed of general bear locations and recovery efforts.

-Some undetermined level of mortality is expected among the transplanted bears. Every effort would be taken to minimize this, but mortalities are expected to occur. Any transplanted bears that died or were removed as a result of human action could be replaced. Such replacements would be in addition to the original minimum of 25 bears.

-Within the recovery zone (Figure 2-9), the USFS and Bureau of Land Management (BLM) in cooperation with USFWS would designate management situations as per the Interagency Grizzly Bear Guidelines (IGBC 1986); and implement sanitation programs to assist recovery of grizzly bears.

-USFWS, in cooperation with other federal agencies, the states, the Nez Perce Tribe, and private groups would use federal funding to enhance grizzly bear habitat through acquisitions or easements.

-USFWS, in cooperation with IDFG and MDFWP would apply the IGBC (1986) nuisance grizzly bear management guidelines (Appendix 15) to grizzly bears in conflict with humans or domestic animals.

-USFWS could evaluate the need to eliminate the use of dogs and bait for black bear hunting within the area designated for release of reintroduced bears. These hunting techniques could be eliminated if authorized by the IDFG and Idaho Fish and Game Commission.

How would the grizzly bear population respond to this alternative?

Grizzly bear population modeling efforts were recently completed for two interior southern populations for which habitat conditions appear similar to the BE (McLellan 1989, Eberhardt et al. 1994, Knight and Blanchard 1995, Hovey and McLellan 1996). Population growth rates of approximately 4% and 8% were reported for the Yellowstone and the North Fork of the Flathead River in Southeast British Columbia grizzly bear populations, respectively. The 4% growth rate was for the period of 1974-1992. Craighead et al. (1974) calculated a 2% rate of growth for the Yellowstone population for the period of 1959-1967. These three growth rates (2%, 4%, and 8%) were applied to an initial population having 15 female bears to illustrate potential population growth rates and to estimate anticipated time to recovered populations (Figure 2-8). Reproductive rates were similar between studies, but survival rates were substantially different. Most notably, survival of subadult female bears was higher in the Flathead population and this produced much of the observed difference in growth rates. These scenarios were intended to provide a range of likely population projections following reintroduction, and are presented to depict how bear populations may optimally respond to implementation of this alternative. Bear populations may behave differently than projected, but these two data sets provide the best available information for modeling potential grizzly bear population growth in the BE. These models do not reflect internal population pressures (e.g., competition for food or space) that may reduce the rate of increase through reduced survival and reproduction. These effects could be expected to slow the growth rate as the population fills the available habitat. These projections are completely dependent upon a majority of transplanted bears remaining within the target area and reproducing at rates similar to bears in the Yellowstone or Flathead populations.

The recovery goal of this alternative is approximately 300-500 (mid-point of 400 bears) grizzly bears (bears distributed over 21,645 square miles of wilderness, non-wilderness, and private land). The population projections indicate that bear populations would require at least 125 years at a 2% growth rate, a minimum of 65-70 years at a 4% growth rate, and at least 35 years at an 8% growth rate to reach the recovery goal of approximately 300-500 bears (Figure 2-8). The USFWS has determined that the 8% growth rate is unrealistic for expected population growth in the BE. Realistically, under this alternative, grizzly bear recovery in the BE could take a minimum of 65-70 years, and given

Chapter 2 - Alternatives

expected conditions and conflicts, could likely take more than 125 years. The three scenarios indicate that improving survivorship of young bears can dramatically affect population growth. If bear mortality can be reduced, recovery would occur decades sooner (Maguire and Servheen 1992).

How does this alternative address the major issues and concerns of the public?

1. What will be the risk to human safety?

Impacts on human health and safety from implementation of this alternative would be similar to those described for Alternative 1. The BE grizzly bear population would be managed as a threatened population with full protection of the ESA under this alternative.

During the first several decades following reintroduction, the chance of injury caused by grizzly bears would be exceedingly small due to the low density of bears in the area. For instance, in the Cabinet-Yaak and Selkirk ecosystems where there are low density recovering populations of grizzly bears, there have not been any recorded injuries in at least the last 20 years. Under this alternative populations are estimated to achieve recovery levels of approximately 400 bears in a minimum of 65 years, and likely more than 125 years. Using human injury rates in the NCDE and YE, and recognizing a net increase in human visitation, projections for human injury, once bears are recovered 65-125+ years in the future, are less than one injury per year and less than one grizzly bear-induced human mortality every few decades.

Humans that act in self-defense or defense of others would continue to be allowed to kill a grizzly bear. In addition, new technologies such as repellants, proper sanitation procedures, aversive conditioning, monitoring, and preemptive management, as well as educating humans how to react during an encounter would reduce chance of injuries. See Appendix 11 for more information on risks to human safety.

2. What kind of land-uses will be altered solely for grizzly bears?

Because grizzly bears would be listed as a fully protected threatened species, all federal actions within the recovery zone would be subject to ESA Section 7 consultation with the USFWS. Additionally, it is likely that grizzly bear habitat management would restrict to some degree timber harvests on currently roaded areas within the recovery zone (Tom Wittinger, pers. comm. 1996). Based on the best available data (Tom Wittinger, Flathead Forest, pers. comm. 1996), it is estimated that reductions in timber harvest on national forest lands within the PAA would be between 32 and 76 million board feet per year over the next decade if Alternative 4A grizzly bear recovery were implemented as proposed (see Table 4-18). Impacts to timber harvest could be less based on current land-use restrictions in Idaho that do not occur in Montana on the Flathead Forest (i.e. Pacfish, etc.). The large variation between the high and low estimates reflect the divergence between the planned Allowable Sale Quantity (ASQ) of timber from Forests in the PAA and the actual harvest volume which has occurred in recent years (see Table 3-11).

Livestock grazing presently occurs at very low densities within the recovery zone and is not expected to be impacted by the implementation of this alternative. Grazing occurs predominantly in the

southern portion of the BE (Figure 3-8, Table 3-13). Consequently, at recovered grizzly population levels and current livestock stocking rates, impacts to livestock would be expected to be similar to levels occurring in portions of the NCDE and the YE. In 65-125+ years grizzly bears would likely be present within the southern portion of the BE. Projections indicate that at a grizzly bear population level of 400 bears in the recovery zone, yearly livestock losses to depredation from bears could range from 12-27 cattle and 41-355 sheep. Management activities would try to preempt livestock problems. The Scientific Committee would evaluate areas with recurring incidents and recommend solutions to aid in recovery.

Recreation impacts in the form of permanent trail closures within the wilderness would likely not occur. Temporary closures of trails may occur in response to a dangerous situation that might result in human injury or bear mortality (e.g., grizzly on a carcass in a trail). However, even in Glacier National Park where grizzly bear and human densities are greater than would likely ever occur in the BE, less than 5% of the trails are temporarily closed at one time. Trails are rarely closed in the NCDE outside of the park. In the NCDE where a minimum population of about 325 grizzly bears currently exists, only one trail was closed on national forest lands because of grizzly bears in the last 10 years. Sanitation concerns in the BE must be addressed, such that backcountry users properly store food and garbage to reduce potential conflicts with bears. Under this alternative, backcountry users would be required to make food, garbage and livestock feed unavailable to bears. This would necessitate hanging foods and garbage or placing it in containers to make it unavailable to bears. Front country campgrounds would install bear resistant garbage containers as soon as possible. An intensive education campaign regarding food storage and garbage handling would be instituted for all residents and visitors. Based on what is currently known about bear behavior in the NCDE and YE, nuisance bear incidents would likely range between 0 and 105 per year at recovered population levels.

Mineral extraction could be altered due to grizzly bear concerns in and by themselves. Recommendations may be made by the USFWS to reduce potential impacts if the need arises.

Impacts of grizzly bear reintroduction to big game populations would likely be insignificant. Studies from similar ecosystems with high densities of both bears and ungulates indicate that predation rates range from almost none to low levels of predation. Based on the current population of big game animals in the central Idaho analysis area (260,000 post-harvest), impacts of between 1-400 grizzly bears over a 50 year period whose diets consist of 90% vegetable matter, would likely not be measurable. In many locations, animal matter may not constitute a major annual diet item, but may be seasonally vital to bears (Mattson et al. 1991). An expected predation rate of 0.3-0.54% of the ungulate population in the area occupied by bears in the BE could occur. Using Mattson's (1997) estimate of 1.4 or 5.8 ungulates per year for adult female and male bears respectively, a population of 400 bears would be expected to prey upon 720 ungulates per year across the BE. The loss of 720 ungulates to a recovered grizzly bear population would represent approximately 0.15% of estimated pre-harvest populations of ungulates in the PAA. Grizzly bear predation is not expected to result in measurable or observable changes in ungulate populations. Potential long-term impacts to black

Chapter 2 - Alternatives

bear population dynamics is unclear, but felt to be minimal. Overall impacts of a recovered population of grizzly bears on other wildlife populations are expected to be minimal. It should not be necessary to adjust hunting seasons to compensate for grizzly bear predation on other wildlife. Any restrictions on black bear hunters or other hunting opportunities to reduce the likelihood of mistaken identity kills or to address other potential conflicts could be recommended by the USFWS, but would have to be acceptable and implemented by the IDFG and MDFWP. Under this alternative, the USFWS could evaluate the need to eliminate baiting and hound hunting of black bears within the Selway-Bitterroot Wilderness, Lochsa drainage, and upper North Fork of the Clearwater drainage. These hunting techniques could be eliminated if authorized by the Idaho Fish and Game Commission.

3. How much will implementation cost?

The present cost estimate for capturing a minimum of 25 grizzly bears, transplanting bears to the central Idaho recovery area, and monitoring and management of the grizzly bears over a 5-year period of reintroductions is \$278,632 annually. The Scientific Advisory Committee would meet about 4-6 times annually during the early period of the project and less frequently later. Travel expenses and associated costs would amount to an estimated \$15,000 dollars per year. In addition to costs involved in the transplanting, monitoring, and management of bears, there is also a cost associated with sanitation, information and education, and law enforcement activities conducted by the USFS within the recovery area. This cost would be approximately \$150,000 annually. Total annual cost for the 5-year reintroduction period would be approximately \$428,632/year, and total 5-year implementation cost would be approximately \$2,143,160 (Appendix 7). Annual costs for monitoring and management would be approximately \$188,000 for each year beyond the 5-year reintroduction period. See the economic analysis for Alternative 4A (Chapter 4) for an assessment of costs other than those associated with implementation.

4. How does this alternative address linkage zones?

Restoration of grizzly bears in the Bitterroot Ecosystem will increase concern about the possible linkage between existing areas with grizzly bears and the BE. The USFWS intends to complete a linkage zone analysis that will detail the possible linkage areas between the existing ecosystems, and between the BE and existing ecosystems. The linkage zone analysis is a Geographic Information System (GIS) computer modeling effort that looks at the levels of human impact and activity in the intervening areas between ecosystems and identifies the best linkage areas based on this human activity. This linkage zone analysis is a separate Grizzly Bear Recovery Plan Task and will be completed regardless of which FEIS alternative is selected for the BE. Maintenance of linkage zones is maintenance of the opportunity for grizzly bears and other wildlife species to move between the existing large blocks of public lands in order to maintain demographic and genetic health. A key factor in the maintenance of such linkage zones in the high-speed highways between these areas and how accommodations can and will be made to allow large animals such as bears the opportunity to cross these highways. In the long-term, the opportunity for bears to move between these ecosystems will improve the health of these populations. In the near term, restoration of a grizzly bear population in the BE will require placement of bears rather than waiting for eventual dispersal into

this area, due to the limited number of movements of bears outside of existing range to date. Data from more than 550 different radio-collared grizzly bears since 1975 shows no movement between any grizzly bear ecosystems.

Under this alternative, USFWS would continue to coordinate research studies to determine the need for and location of linkage zones, and to identify specific habitat management guidelines necessary to maintain suitable habitat within linkage zones. If research determines that linkage zones are necessary for recovery, and that changes in habitat management within the identified zones are necessary, then the USFWS would recommend appropriate management actions.

5. Are habitat quality and size of the recovery zone sufficient for recovery?

The recovery zone is 21,645 square miles and is larger than either the NCDE or the YE at approximately 9,500 square miles each. The roadless and wilderness lands are approximately 15,845 square miles. This area is of sufficient size to allow for grizzly bear recovery.

Habitat quality has been studied extensively. A number of different studies have been conducted within the BE that have direct applicability to the potential for grizzly bear recovery (see Appendix 3). Appendix 21 contains results from current research studies on habitat capability of the BE to support grizzly bears. Habitat quality varies throughout the recovery zone. At one time grizzly bears were present in high densities throughout the BE. Salmon and whitebark pine, two important grizzly bear foods, were common during the peak of grizzly bear populations. Salmon have been virtually eliminated along the Clearwater drainage due to dams that block their migration. Whitebark pine has been reduced to about 20-40% of its historical abundance in the BE, and now is most prevalent in the southern half of the ecosystem. The species is expected to decline to approximately 5-10% of its historic abundance level before increasing again (Keene and Arno 1996).

However, studies indicate that a great variety of preferred grizzly bear foods are present in the ecosystem. A wide variety of all season foods are present including good quantities of several key berry species, forbs and grasses, as well as historically high levels of ungulates to provide carrion during the fall and spring months. Food habits of black bears are quite similar to those of grizzly bears. Healthy populations of black bears live within the PAA, and annual hunter harvest totals about 1,000. Grizzly bears relocated to the BE would likely come from areas where neither salmon nor whitebark pine are plentiful. A recovered population of 300-500 grizzly bears should find sufficient high quality forage within the recovery zone. Although bear densities may not recover to their historical levels during the peak of the salmon and whitebark pine era, the population should achieve densities similar to those found in other interior ecosystems where those food sources are not present. The key to recovery in the BE would likely be due to effective management including limitation of human-caused mortality rather than quantity or quality of habitat.

6. How will grizzly bears and their habitat be managed?

Primary grizzly bear management responsibility would reside within the USFWS and include active participation by federal land management agencies, the states of Idaho and Montana, and the Nez

Chapter 2 - Alternatives

Perce Tribe. An interagency committee of managers (similar to other grizzly bear recovery areas) would be responsible for management decisions. A ten-member Scientific Advisory Committee would be appointed by the Secretary of Interior in cooperation with the National Academy of Sciences to recommend procedures for additional research, reintroduction of bears, and monitoring results of the program. The Scientific Advisory Committee would advise the USFWS and interagency management committee on other issues as directed. Habitat would still be managed by the land management agencies through management plans.

Nuisance bears would be controlled following the IGBC (1986) nuisance grizzly bear management guidelines (Appendix 15). Response to human or livestock/grizzly bear conflicts must occur rapidly after notification of USFWS or state fish and wildlife management agency. Grizzly bears could not be harassed or harmed by the public, except to protect human life or safety.

7. Where will grizzly bears be obtained, reintroduced, and recovered?

Grizzly bears obtained for reintroduction purposes would likely originate in the U. S. and Canada where current grizzly bear populations are healthy enough to sustain removal of a few bears per year over a 5-year period, but plans for this effort would be developed in cooperation with the Scientific Advisory Committee. Only bears with no history of conflict with humans and livestock, and most likely subadults, would be reintroduced. Grizzly bears determined to be “nuisance” under IGBC Nuisance Bear Guidelines would not be reintroduced to the BE. The donor population should come from habitat as similar as possible to that found in the BE. Three sources of bears for the BE have been identified: southeast British Columbia, the Northern Continental Divide Ecosystem (NCDE) in northwest Montana, and the Yellowstone Ecosystem (YE) population.

No female bears would be removed from YE or NCDE recovery zones or from within the buffer area 10 miles outside the recovery zone boundaries. No bears would be removed from either U.S. ecosystem if such removal would exceed mortality limits. If the NCDE or YE populations exceed existing mortality limits in any year, then the placement of grizzly bears to the BE from these ecosystems would be suspended for the following year. This would not preclude the movement of bears from Canada. However, as 5 bears may not be available from Canada in a given year, this may extend the time period for reintroduction. Further, the actual capture of the necessary bears is dependent upon access to areas with such bears, and significant effort by capture crews. Capture of desired bears is not assured, even with intensive effort. It may require more than 5 years to obtain the desired minimum of 25 bears to initiate a new population in the BE. This should be made clear to the public and to cooperating agencies at the outset.

There would be no significant detrimental effects to the health of source populations because mortality limits in the Grizzly Bear Recovery Plan (USFWS 1993) and British Columbia grizzly bear management criteria (B.C. Min. Environ., Lands, and Parks 1995) would be met during implementation of this alternative. Further, since no bears would be removed from the YE or NCDE if the mortality limits would be exceeded, and no female bears would be removed from within the

recovery zone or within 10 miles of the recovery zone boundary of either ecosystem, then the effects on recovery of any removals of bears from the NCDE or YE would be nonexistent.

The British Columbia government may have representation on both the Scientific Advisory and interagency management committees. Release sites would be within the Selway-Bitterroot Wilderness.

The recovery zone totals 21,645 square miles and is 98.1% federal land, 0.3 % state lands (Idaho and Montana), and 1.6% private land (Figure 2-9). The federal lands are 30% Wilderness and 43% roadless areas. The Scientific Advisory Committee would extend the habitat mapping and evaluation effort that has already been conducted in the northern portion of the recovery zone (Davis and Butterfield 1991). This analysis would be the basis for any adjustment of recovery zone boundaries or linkage zone designation.

Summary of Alternatives

A SUMMARY AND COMPARISON OF THE IMPACTS OF THESE ALTERNATIVES AND IDENTIFICATION OF THE FISH AND WILDLIFE SERVICE PREFERRED ALTERNATIVE

This section briefly describes the six alternatives that were considered in detail and compares them in terms of how well each one meets the recovery goal of the USFWS and the public concerns that were identified during scoping. Table 2-1 summarizes the six alternatives and the expected actions associated with them. Figure 2-10 compares the proposed Bitterroot Grizzly Bear Recovery Area for Alternative 1 with the proposed Bitterroot Grizzly Bear Recovery Zones for Alternatives 1A, 2, 4, and 4A. Table 2-2 summarizes the general impact of implementation of each alternative on big game resources, hunter harvest, domestic animals, land-use restrictions, visitor use, and economics. For a more detailed analysis of the alternatives and associated effects, please see Chapter 4, Environmental Consequences.

Alternative 1, Restoration of a Grizzly Bears as a Nonessential Experimental Population with Citizen Management (the proposed action) has been identified as the preferred alternative by the USFWS because it best meets the purpose and need (Chapter 1), and the criteria used to evaluate and compare the alternatives (Chapter 4). The USFWS believes that this alternative would be the most efficient and likely to result in the recovery of grizzly bears in the Bitterroot Ecosystem.

Alternative 1A, Restoration of Grizzly Bears as a Nonessential Experimental Population with USFWS Management was not selected as the preferred alternative because the USFWS chooses to maximize the probability of success by involving citizens in the management of the restored population. Alternative 2, The No Action Alternative - Natural Recovery was not selected as the preferred alternative because it is very unlikely that grizzly bears could be restored in the Bitterroot Ecosystem through natural recovery as prescribed under this alternative. Alternative 3, the No Grizzly Bear Alternative was not selected as the preferred alternative because it does not fulfill the purpose of the FEIS. Alternative 4, Restoration of Grizzly Bears as a Threatened Population with Full Protection of the ESA and Habitat Restoration, was not selected as the preferred alternative because the management actions proposed by Alternative 4 are beyond what is necessary to fulfill the purpose of the FEIS. The road management plan to obliterate a large number of roads to achieve a road density of 0.25 mi./sq.mi., and the elimination of timber harvest in all roadless areas under this alternative are not necessary actions to achieve grizzly bear recovery, and thus decrease the efficiency with which this alternative could achieve recovery in the Bitterroot Ecosystem. Alternative 4A, Restoration of Grizzly Bears as a Threatened Population with Full Protection of the ESA and USFWS Management, was not selected as the preferred alternative because it is unlikely that grizzly bear restoration in the Bitterroot Ecosystem would succeed without local citizen involvement in grizzly bear management.

Table 2-1. Alternatives and Expected Actions Associated with Them.

Expected Actions	What is the risk to human safety?	Land-uses altered solely for grizzly bears?	Cost estimate for implementation? ^a	How are linkage zones addressed?	Are habitat quality/size sufficient for recovery?	How would grizzly bears and their habitat be managed?	Where would grizzly bears be obtained and recovered?	Legislation needed to implement?
Alternative 1 - Restoration of Grizzly Bears as a Nonessential Experimental Population with Citizen Management (Proposed Action)								
Alternative 1 - Restoration of Grizzly Bears as a Nonessential Experimental Population with Citizen Management (Proposed Action)	Minimal before recovery. At recovered grizzly popn. levels, less than 1 injury per year and less than 1 human mortality every few decades.	None expected. To be determined by the Citizen Management Committee (CMC), if need for land-use restrictions arises.	Reintroduction phase (first 5 years) = \$2,168,160 Annual monitoring and management thereafter = \$193,000 per year.	No linkage zones designated.	Yes	IDFG/MDFWP in consultation with USFWS and the Nez Perce Tribe would manage and implement rules, policies, plans of CMC. Current land management agencies would continue to manage habitat.	Bitterroot Grizzly Bear Recovery Area (Figure 2-1) = 5,785 square miles. Bears likely moved from existing popns. in U.S. and Canada and released into Selway-Bitterroot Wilderness.	Publish Special Rule in Federal Register to establish nonessential experimental population.
Alternative 1A - Restoration of Grizzly Bears as a Nonessential Experimental Population with USFWS Management.								
Alternative 1A - Restoration of Grizzly Bears as a Nonessential Experimental Population with USFWS Management.	Minimal before recovery. At recovered grizzly popn. levels, less than 1 injury per year and less than 1 human mortality every few decades.	None expected. To be determined by the USFWS if need for land-use restrictions arises.	Reintroduction phase (first 5 years) = \$2,068,160 Annual monitoring and management thereafter = \$173,000 per year.	No linkage zones designated.	Yes	Federal (USFWS) with active participation by IDFG, MDFWP and the Nez Perce Tribe. Current land management agencies would continue to manage habitat.	Bitterroot Grizzly Bear Experimental Area (Figure 2-4) = 25,140 square miles. Bears likely moved from existing popns. in U.S. and Canada and released into Selway-Bitterroot Wilderness.	Publish Special Rule in Federal Register to establish nonessential experimental population.
Alternative 2 - The No Action Alternative - Natural Recovery								
Alternative 2 - The No Action Alternative - Natural Recovery	No risk unless bears move from other ecosystems to occupy the BE. Minimal risk until recovery, then same as Alt. 1.	Few expected. To be determined by USFWS, if illegal killing, research, or ESA Section 7 consultation warrants. Triggered on grizzly bear presence in BE.	Annual cost of monitoring and management for natural recovery = \$140,000 per year.	No linkage zones designated.	Yes	Federal (USFWS) would have authority for grizzly bear recovery. Current land management agencies would continue to manage habitat.	Bitterroot Grizzly Bear Recovery Zone (Figure 2-6) = 5,500 square miles. No bears would be moved or released. Bears allowed to naturally recolonize from other existing populations.	None
Alternative 3 - No Grizzly Bear								
Alternative 3 - No Grizzly Bear	Nonexistent.	None for grizzly bears.	Minimum total cost to develop legislation = \$2,000,000.	No linkage zones designated.	N/A	No agency management for recovery of grizzly bears.	Nowhere	Modify state (MT & ID) and federal laws. Change ESA.
Alternative 4 - Restoration of Grizzly Bears as a Threatened Population with Full Protection of the ESA and Habitat Restoration								
Alternative 4 - Restoration of Grizzly Bears as a Threatened Population with Full Protection of the ESA and Habitat Restoration	Minimal before recovery. At recovered grizzly bear population levels, less than 1 injury per year and less than 1 human mortality every few decades.	No timber harvest or road construct. in roadless areas of recovery zone. Road densities reduced to <0.25 mi/sq.mi. in recovery zone. Other restrictions per Science Committee recommendation, and ESA Section 7 consultation.	Reintroduction phase (first 5 years) = \$2,143,160 Annual monitoring and management thereafter = \$188,000 per year.	Linkage zone designated between Bitterroot Ecosystem and Cabinet-Yaak Ecosystem.	Yes	Federal (USFWS) with active participation by IDFG, MDFWP and the Nez Perce Tribe, and in consultation with Scientific Committee. Current land management agencies would continue to manage habitat.	Bitterroot Grizzly Bear Recovery Zone (Figure 2-7) = 21,645 square miles. Bears likely moved from existing populations in U.S. and Canada and released into Selway-Bitterroot Wilderness or roadless areas north of Lochsa River.	Laws that govern land management agencies on federal lands will have to be changed for USFWS to implement this alternative.
Alternative 4A - Restoration of Grizzly Bears as a Threatened Popn. with Full Protection of the ESA and USFWS Management.								
Alternative 4A - Restoration of Grizzly Bears as a Threatened Popn. with Full Protection of the ESA and USFWS Management.	Minimal before recovery. At recovered grizzly bear population levels, less than 1 injury per year and less than 1 human mortality every few decades.	To be determined by USFWS, if illegal killing, research, or ESA Section 7 consultation warrants.	Reintroduction phase (first 5 years) = \$2,143,160 Annual monitoring and management thereafter = \$188,000 per year.	No linkage zones designated.	Yes	Federal (USFWS) with active participation by IDFG, MDFWP and the Nez Perce Tribe. Current land management agencies would continue to manage habitat.	Bitterroot Grizzly Bear Recovery Zone (Figure 2-9) = 21,645 square miles. Bears likely moved from existing populations in U.S. and Canada and released into Selway-Bitterroot Wilderness.	None

^a See Appendix 7 for further explanation of cost estimates.

Summary of Alternatives

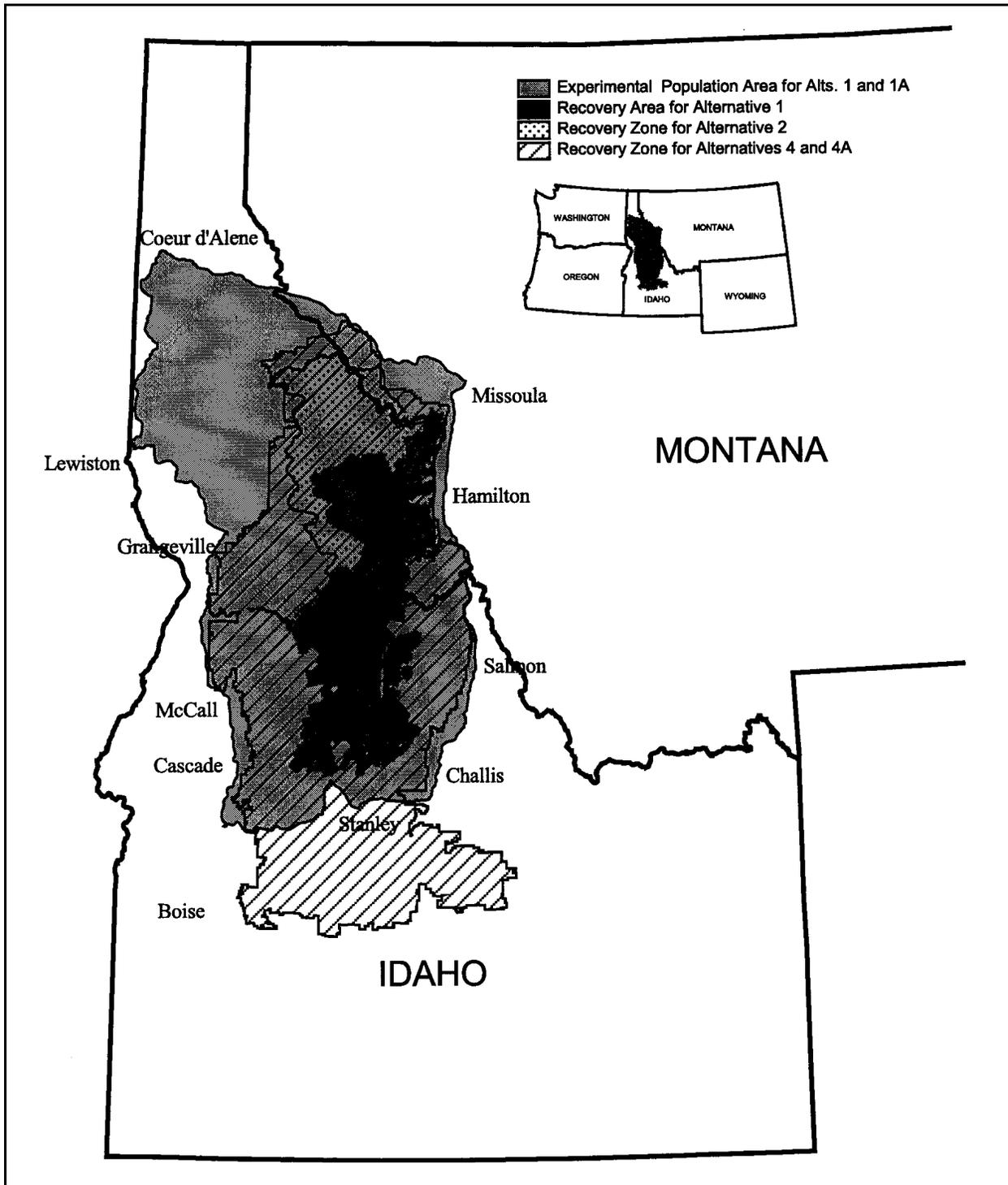


Figure 2-10. Comparison of the Bitterroot Grizzly Bear Recovery Area for Alternative 1, Experimental Area for 1A, and Bitterroot Grizzly Bear Recovery Zones for Alternatives 2, 4, and 4A.

Table 2-2. Expected Impacts of a Recovered Grizzly Bear Population by Alternative.

IMPACT ALTERNATIVES	Impact on human health and safety	Impact on source grizzly bear populations	Impact on land-use activities to include: timber harvest, domestic livestock, and minerals extraction	Impact on wildlife populations	Impact on public access and recreational use	Social Impacts	Economic Impacts
	Alternative 1 - Restoration of Grizzly Bears as a Nonesential Experimental Population with Citizen Management	Minimal risk of injury before recovery (50-110+ years). At recovery (280 bears) less than 1 injury per year, and less than 1 mortality every few decades.	Removal of bears from source populations would adhere to all management guides to protect source popn. health. Thus no impact to source popn. health.	No expected impacts to timber harvest or mining. At recovered population level (280 bears), 4-8 cattle and 5-44 sheep lost per year. Nuisance incidents = 0-74 per year.	Minimal impacts to wildlife. At recovered population levels, 280 bears would kill approximately 504 ungulates per year.	No road/trail closures expected. Changes to hunting seasons could occur due to possible conflicts.	Hardship due to nuisance incidents and sanitation requirements. Mixed impact due to knowledge of grizzly presence. Positive impact to Native American culture by recovering grizzlies.
Alternative 1A - Restoration of Grizzly Bears as a Nonesential Experimental Population with USEFWS Management.	Minimal risk of injury before recovery (50-110+ years). At recovery (280 bears) less than 1 injury per year, and less than 1 mortality every few decades.	Removal of bears from source populations would adhere to all management guides to protect source popn. health. Thus no impact to source popn. health.	No expected impacts to timber harvest or mining. At recovered population level (280 bears), 4-8 cattle and 5-44 sheep lost per year. Nuisance incidents = 0-74 per year.	Minimal impacts to wildlife. At recovered population levels, 280 bears would kill approximately 504 ungulates per year.	No road/trail closures expected. Changes to hunting seasons could occur due to possible conflicts.	Hardship due to nuisance incidents and sanitation requirements. Mixed impact due to knowledge of grizzly presence. Positive impact to Native American culture by recovering grizzlies.	Livestock loss: \$2,720-\$8,568/yr. Grizzly existence value: \$40.5-\$60.6 million per year. Reintroduction cost: \$413,632/year for first 5 yrs. Management cost: \$173,000 per year after first 5 yrs.
Alternative 2 - The No Action Alternative - Natural Recovery	If bears recolonize, risk minimal until recovery (150+ years), then same as Alternative 1.	Bears would not be relocated under Alternative 2. No impact.	If bears recolonize, Section 7 consultation could reduce timber harvest and mining. At recovery (280) bears, 1-3 cattle & 1-6 sheep lost per yr. Nuisance incidents = 0-74/yr.	If recolonization occurs, minimal impact until recovery, then same as Alternative 1.	If bears recolonize, possible road/trail closures due to Section 7. Hunting season changes could occur also.	If recolonization occurs, then same as Alternative 1. Also negative impact of jobs lost to local communities.	If bears recolonize, possible loss of 55-264 timber jobs. No existence value. Management cost until recovery = \$140,000/ year.
Alternative 3 - No Grizzly Bear	No impact.	Bears would not be relocated under Alt. 3. No impact.	No impact.	No impact.	No impact.	No impact to local communities. Negative impact to Native Americans	Total cost of \$2 million over several years to change federal and state laws.
Alternative 4 - Restoration of Grizzly Bears as a Threatened Population with Full Protection of the ESA and Habitat Restoration	Same as Alternative 1, except time to recovery is minimum 65-70 years, and likely more than 125 years.	Same as Alternative 1. Thus no impact to source population health.	ESA Section 7 consultation required. No road building or timber harvest on USFS roadless areas. Timber harvest & mining reduced. At 400 bears, 12-27 cattle & 41-355 sheep lost / yr. Nuisance incidents = 0-105 per year.	Minimal impacts to wildlife. At recovered population levels, 400 bears would kill approximately 720 ungulates per year.	Closure and reclamation of 3500 miles of roads. Other closures likely due to Sectn. 7. Hunting season changes, especially black bear.	Same as Alternative 1. Additional negative impact of lost jobs to local communities.	Hunting loss: \$288,700/yr. Livestock loss: \$10,552-\$47,915/year. Jobs lost: 117-1,136. Existence value: \$40.5-\$60.6 million/year. Reintrod. cost: \$428,632/yr. Mgmt. cost: \$188,000/year after first 5 yrs
Alternative 4A - Restoration of Grizzly Bears as a Threatened Population with Full Protection of the ESA and USFWS Management	Same as Alternative 1, except time to recovery is minimum 65-70 years, and likely more than 125 years.	Same as Alternative 1. Thus no impact to source population health.	Sectn. 7 consultation could reduce timber harvest and mining. At population of 400 bears, 12-27 cattle & 41-355 sheep lost per year. Nuisance incidents = 0-105 per year.	Minimal impacts to wildlife. At recovered population levels, 400 bears would kill approximately 720 ungulates per year.	Possible road/trail closures due to Section 7. Hunting season changes could occur also.	Hardship due to nuisance incidents and sanitation reqs. Mixed impact due to knowledge of grizzly presence. Positive impact to Native American culture by recovering grizzlies.	Livestock loss: \$10,552-\$47,915/year. Jobs lost: 215-504. Existence value: \$40.5-\$60.6 million/year. Reintroduction cost: \$428,632/year for first 5 years. Management cost: \$188,000/year after first 5 years.

^a See Appendix 7 for further explanation of cost estimates.