

# Denali National Park and Preserve

## Bear-Human Conflict Management Plan



Revised June 2003  
The Wildlife Team, Denali National Park and Preserve  
Center for Resources, Science, and Learning

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## **BEAR-HUMAN CONFLICT MANAGEMENT PLAN**

### **ACKNOWLEDGEMENTS**

Most of the elements in this plan were originally developed by John Dalle-Molle and Joe Van Horn, with input from Frank Singer, when the original Bear human conflict Management plan was developed and implemented in 1982. Since then many dedicated Wildlife Management Technicians have contributed to implementing this plan. Several people have worked on writing and updating this plan over the years including Ken Stahlnecker, Gordon Olson, Dave Schirokauer, Hilary Boyd, Pat Owen, Ed Vorisek, Jason Ransom and Kahlil Wilson. The success of this program is the result of all the employees of Denali National Park and Preserve being committed to minimizing Bear-human conflict.

### **INTRODUCTION**

Denali National Park and Preserve currently receives over 600,000 person days of visitor use per year in an area with grizzly bear (*Ursus arctos*) densities as high as 32 bears/1000km<sup>2</sup> (Dean 1987, Keay unpublished data). As visitation to Denali continues to increase, so will the potential for impacts to bear populations. Grizzly bears and black bears (*U. americanus*) are unpredictable animals that can seriously threaten human safety (Herrero 1985, 1989a, 1989b). In Denali National Park, many people have the opportunity to observe grizzly bears in their natural environment. In 1989, 95% of park visitors using the visitor transportation system were able to observe grizzly bears along the park road (Machlis 1990). The park provides a valuable opportunity for the public to foster an appreciation and understanding of bears. This appreciation and public support could enhance efforts to conserve threatened bear populations in other areas.

Visitor use in Denali continues to rise. Consequently, the potential for conflict between bears and people is a major concern. Bear-human conflicts result in loss of wild and free ranging bears and could threaten human safety. Bear behavior and ecology is strongly influenced by the motivation to obtain high energy sources of food. The availability of human foods increases as visitor numbers increase. Availability of human food and garbage at campsites, campgrounds, and other areas of human use may attract both black and grizzly bears. Habituation of bears to people by food rewards is the primary factor associated with bear-human conflicts in national parks (Herrero 1985, Herrero and Fleck 1989). Food-conditioned bears may behave aggressively toward people in order to obtain food. Although no human fatalities have occurred in the park and injuries are few, the number of bear-human incidents and encounters is high. In 1996, over 240 bear-human interactions were reported. Incidents involving property damage are an annual occurrence. The factors affecting bear-human conflicts must be actively managed and the effects of Management actions must be investigated. The continued experimental development and adaptive management implementation of a bear-human conflict management program, by professional biologists and highly trained technicians, is essential to visitor safety and resource protection.

The purpose of the Bear-Human Conflict Management Plan (BMP) is to provide general guidelines that minimize bear-human conflict in Denali National Park and Preserve



(DENA). A detailed project statement addressing bear-human conflict management in DENA can be found in the 1998 Resource Management Plan (Appendix A.).

The goals of the BMP are based on policies of the National Park Service (NPS) and legislation specific to DENA. The goals for bear-human conflict management are to: 1. Provide visitor safety by minimizing bear-human conflicts, 2. Minimize the effects of visitation on the distribution, abundance and behavior of black (*Ursus americanus*) and brown (*Ursus arctos*) bear populations by minimizing bear-human conflicts, 3. Ensure opportunities for visitors to observe, understand, and appreciate black and brown bears, as a part of an intact ecosystem, and 4. Achieve these goals with a minimum of intrusive management actions. The implementation of the Bear-Human Conflict Management Program will follow three courses of action and their corresponding program elements: education, removal of unnatural food sources, and management actions in response to bear-human interactions

It is important to recognize that each bear-human incident may involve unique circumstances for which strict adherence to the procedures outlined in this plan are not appropriate. All the management actions outlined in the BMP emphasize starting with the least manipulative method, relative to the situation. All DENA employees involved in bear management actions must maintain lines of communication with any involved parties throughout the response period and ensure that management actions are documented. A bear's reaction to a particular management action must be documented in the Park's Bear Information Management System (BIMS) database. Analysis of these data will allow park managers and researchers to better understand the effects of management actions such as aversive conditioning.

The BMP will evolve in accordance with continued monitoring and evaluation of policies and programs. The Wildlife Biologist and the Wildlife Management Technicians will evaluate the Bear-human Conflict Management Program annually and document successes or inadequacies. An annual review of the program will include input from other members of the Park staff and bear biologists from other agencies. Reviews will evaluate written and verbal information provided to the public, current data gathering systems, and use of signs. In addition, these reviews will evaluate the Park and surrounding area's garbage and food storage and enforcement procedures. They will also consider staff and budgetary necessities for the implementation of the BMP. Any relevant research findings will be evaluated for incorporation into policy and programs. Efforts will be made to develop, review, and incorporate new or more effective aversive conditioning techniques into the bear-human conflict management program. The Wildlife Biologist and the Wildlife Management Technicians will provide annual summaries or progress reports associated with this review. Implementation of this policy will follow four objectives and their corresponding program elements.

## 1. Education

DENA personnel will educate park users and employees about bear behavior, ecology, and the causes and avoidance of bear-human conflicts. Education will



reduce these conflicts through improved individual awareness and compliance with regulations.

## **2. Removal of unnatural food sources**

All unnatural food sources will be made inaccessible to bears.

## **3. Management Actions in Response to Bear-Human Interactions**

When preventative methods of deterring bear-human interactions fail, the level of management action taken will be determined by the nature of the conflict.

## **4. Management Policy Evaluation**

The BMP will evolve through annual evaluations of the entire program.

**Note:** The reader's understanding of this document may be enhanced by looking at the definitions in the glossary. Some of the terminology used below has unique definition when used in the context of this plan.

## **DENALI NATIONAL PARK AND PRESERVE' S MANAGEMENT POLICY**

Preventative management will be the first step toward minimizing bear-human conflicts. Efforts will be focused on identifying and addressing the causes of bear-human conflicts. Park-wide management and education of visitors, businesses, and employees will minimize situations that could precipitate a bear-human conflict.

In circumstances where bears present a threat to visitors despite preventative measures, visitors will be restricted or removed from the area. If this procedure does not resolve the problem, more manipulative management actions such as aversive conditioning, relocation and removal will be initiated.

Bear behavior during bear-human conflicts will be classified as either defensive or threatening. Defensive behavior is considered natural with management responses directed toward the control of human activities. Threatening behavior is considered unacceptable and management responses will be directed towards modifying the bear's behavior. Removal of the bear will be considered as a last resort.

## **CONTENT OF EDUCATION PROGRAM**

Educational efforts will emphasize bear behavior along with techniques for minimizing conflicts with bears. Discussions will also emphasize the importance of the wilderness character of DENA to its natural bear population. Appendix B contains copies of written educational materials available in 2003.



## **Information Distribution for User Groups**

### **Alpenglow**

Printed information for distribution to park users and employees will be centralized in a comprehensive article in the Denali Alpenglow. This article will discuss proper camping and hiking practices in bear country and how to behave should a close encounter with a bear occur. The Assistant Superintendent of Resources, Science, and Learning will approve future revisions of the article.

Park and concession staff will distribute the Alpenglow. Visitors will receive this information at the Visitor Center (VC) and the Science and Learning Center. Copies of the Alpenglow will be available at the following locations:

- Inside the VC and Science and Learning Center. After hours copies will be available outside of both facilities.
- The lobby of Park Headquarters and after hours outside the main door of Headquarters.
- The lobby of the Communications Center.
- The Savage Check Station.
- The concession employee cafeteria at the beginning of each season.
- Eielson Visitor Center.
- The Denali National Park and Preserve Official Web site.
- Copies will be mailed to individuals on request.

The Headquarters Receptionist will maintain copies of the Alpenglow at Headquarters. Concessions staff will get copies to the employee cafeteria. The Interpretive Division will maintain copies at all other sites.

Copies of the Alpenglow will be kept in patrol, wildlife management, and interpretive vehicles for distribution.

### **Bear Encounters Brochure**

The brochure will be available at the VC Information desk, the campground ticket counter in the VC, Savage Check Station, Eielson Visitor Center and at each of the Kantishna lodges. One copy of each translation will be provided to park road bus drivers for reference in their information packets. Patrol Rangers will also have copies of these brochures in their vehicles. This information will be made available in a brochure about bear-human interactions with translations in German, Japanese, French, and Spanish.



## **Bulletin Boards**

Information about safety in bear country, directions to bear proof storage facilities in campgrounds, and proper food and garbage handling procedures will be included in bulletin board displays. Information will be displayed as soon as areas open for the season. The Interpretive Division is responsible for posting of displays and their maintenance throughout the season. It may be necessary to post emergency messages relating to bears. The Wildlife Biologist should be informed in these instances. Copies of all signs and notices are shown in Appendix B.

## **Signs Explaining Food Storage Regulations and Closures**

Signs reminding campers about proper food and garbage handling practices will be affixed to all campground picnic tables. The Wildlife Management Technicians will be responsible for ordering, installing, and replacing all wildlife related signs.

Signs will be posted at all trailheads in the Riley Creek, VC, Science and Learning Center, Headquarters area and at Savage Campground, from approximately 20 May to 20 June, warning the public that bears may be in the area hunting moose calves. Maps of sign locations will be made each season to facilitate removal.

'Keep Wildlife Wild' signs with general rules about not feeding or approaching wildlife will be posted on all garbage receptacles, in restrooms, and other appropriate locations.

## **Interpretive Activities**

The Wildlife Management Technicians and other wildlife staff will provide training sessions for the interpretive staff on bear behavior and ecology at the beginning of each season. All public programs will include a message about the potential for bear-human conflict while visiting DENA and personal practices that can minimize conflict potential. Introductory remarks at guided walks will include the group's actions should they encounter a bear. Interpreters will emphasize proper food and garbage handling during all patrols through campgrounds. The Chief of Interpretation will assure that this information is conveyed to the public during these contacts.

If a bear-related closure prevents an interpreter from conducting a scheduled program, a few minutes will be spent discussing the closure and ways to minimize bear-human conflicts.

## **Information for Campground Users**

When campers receive a permit they will be given a copy of the Alpenglow and directed to the section dealing with bear human safety. They will be informed not to leave food or garbage unattended at any time and that their food should be stored in cars or food lockers when unattended. Park staff should always be alert for improperly stored food. Unattended food will be moved to the food storage lockers. Unattended garbage will be disposed of appropriately. Park staff will inform the Wildlife Technicians or a Patrol Ranger of food



storage problems. Campers without vehicles will be informed of the location of bear proof lockers in the campgrounds. Protection Rangers and/or the Wildlife Management Technicians will give verbal warnings about food/garbage storage at the campgrounds when a specific campground is having bear problems. Commissioned Rangers may issue citations when necessary or appropriate.

### **Information for Backcountry Users**

All parties obtaining a backcountry permit will receive verbal, written, and video information about food storage and traveling in bear habitat. A slide program about hiking and camping in bear country will be available at the VC backcountry desk area for visitors speaking French, German, or Japanese. The Backcountry Desk Rangers will distribute bear resistant food containers (BRFCs) to backpackers. The visitor signature on the back of the permit will document personal contact with a Backcountry Desk Ranger. A copy of this permit can be found in Appendix C. The Backcountry Sub-District Ranger is responsible for this program element.

### **Information for other Park Users and Neighbors**

Other park users including subsistence users, mining operators, business license holders, concession operations, contractors, holders of special use permits, private land owners within DENA, and adjacent land owners all have the potential to impact the parks wildlife by inappropriate food and garbage handling practices. The Wildlife Management Technicians and/or Rangers will inform these groups of the Park's policy regarding bear-human conflicts. Emphasis will be placed on the methods and advantages of preventative measures.

These groups/individuals will be encouraged to bear-proof their garbage and food handling systems. Appropriate State and Federal laws will be enforced in cooperation with the State. Specific language of all relevant regulations can be found in Appendix D.

Information and requirements for bear proof food and garbage handling will be included in all permits, licenses, contracts, and plans of operations issued to these groups. A notice discussing these points as well as relevant bear activity updates will be maintained in public places such as the Denali Park Post Office and mailed to more inaccessible individuals and communities. Cooperative efforts of Park employees from all divisions will ensure the inclusion of these requirements in appropriate agreements. For specific individual responsibilities see Appendix E.

## **TRAINING**

### **NPS Employees-General**

All NPS employees will attend a training session concerning bear-human conflict that is part of the annual general orientation provided every May. Other bear safety training sessions will be available for employees who are unable to attend the general orientation. The session will cover the information presented in the Alpenglow article as well as information



necessary for living, working, and recreating in bear country. It will also emphasize the importance of minimizing bear-human conflicts within the Park. The Wildlife Management Technicians are responsible for arranging and presenting these training sessions. **It is the responsibility of supervisors to ensure time is provided for their employees to attend.**

It is the responsibility of each employee to be alert for situations such as broken garbage storage equipment, poor food storage, bears around developed areas, and other problems that could lead to bear-human conflicts. These problems must be reported immediately to a Wildlife Management Technician either directly or through the Comm. Center. Employees who have infrequent contacts with the public will be instructed at minimum to direct visitors to the Alpenglow, bulletin boards, Visitor Centers, or Ranger Activities and Interpretive staff when questioned about bears. It is also the responsibility of all employees to place people who have been involved in a bear encounter and/or incident (see the glossary for definitions) in contact with the Wildlife Management Technicians.

### **NPS, and Contracted Employees with Visitor Contact Duties**

The Interpretive, Dispatch, Ranger, and Concession staff that frequently engage in visitor contact will receive additional training on reporting procedures for bear-human interactions, interpreting the park's bear-human conflict policies and programs to visitors, and basic bear biology and behavior. The Chief Ranger, Chief of Interpretation, and Chief of Concessions will ensure that this training is incorporated into annual employee orientation and training sessions. The Wildlife Management Technicians will conduct these sessions.

### **NPS Employees Responding to Bear-Human Incidents**

Wildlife Management Technicians responsible for responding to bear-human incidents will receive intensive training in reporting and interview procedures, incident scene investigation, incident response scenarios and procedures, temporary and emergency wildlife closure procedures, firearms handling, and use of deterrent and aversive conditioning devices. The Wildlife Biologist and/or returning Wildlife Management Technicians will provide this training.

### **Researchers and Contractors**

All researchers and contractors working in DENA will be required to obtain training in bear-human conflict avoidance and information necessary for living and working in bear country. Training sessions will be tailored to the experience level of the group and their potential exposure to bears. The Wildlife Management Technicians will present these sessions. The Park liaison to each of these groups will ensure that the necessary training is arranged. Researchers must sign written bear safety precautions and guidelines when their research permit is issued (Appendix P).

### **Concession Employees**

All concession employees will be provided with information about living, working and recreating in bear country. Informational meetings will be held at various times to cover the



information presented in the Alpenglow. These meetings will also include requests for employee reports concerning bear interactions and situations throughout the park that could result in bear-human conflicts. The Park will emphasize that individual actions, such as proper use of food storage and garbage disposal systems, can make a difference in preventing conflicts with bears.

The Alpenglow article and a memo summarizing the topics covered in these meetings will be posted at the employees' cafeteria, Visitor Transportation System (VTS) bus office and other concessions that desire to participate. The Wildlife Management Technicians will arrange and conduct these meetings.

### **Bus Drivers**

Annual bus driver training will cover the driver's responsibility to minimize bear-human conflicts. Drivers will be instructed to use the Alpenglow article as the basis for any bear information given to the public. Any bear related closures should also be included in their initial message to the public. Bus drivers will be reminded that visitors are not allowed to leave a bus within ½ mile of a bear. Drivers should direct people involved in an interaction with a bear(s) to the Wildlife Management Technicians, Law enforcement Rangers, or NPS staff at the Visitor Center. The Visitor Transportation System Coordinator will arrange these training sessions that are conducted by the Wildlife Management Technicians.

### **Documentation**

All training sessions will be documented and reported in the Annual Wildlife Management Report in order to monitor the time invested, number of people and groups receiving training, and effectiveness of the training.

## **REMOVAL OF UNNATURAL FOOD SOURCES**

### **Regulations**

#### **NPS Food Handling Regulations**

Title 36 of the Code of Federal Regulations (CFR) 2.10(d) is the primary regulation authorizing the Superintendent to specify food-handling requirements within DENA (Appendix D).

#### **State Regulations and Their Interpretation**

Upon receipt of a complaint concerning a problem bear, Alaska department of Fish and Game (ADF&G) generally requires the food and garbage of the residence, camp, or business be completely bear proof before any action is taken (Appendix D). In areas with a history of bear problems, an inspection of food and garbage handling of area residents can be conducted by an ADF&G representative if a complaint is received from a neighbor. The State's definition of "bear proof" is based on the proven effectiveness or ineffectiveness of



the system and not specific construction guidelines. If a bear is obtaining food or garbage, the current system is not "bear proof" and must be modified.

Businesses and other public operations must be inspected and obtain permits from the Alaska Division of Environmental Health as required by 18 AAC Chapter 60 (Appendix D). This regulation requires garbage to be handled in a manner that is not attracting or accessible to animals. Heavy, securely covered containers are required in areas where bear problems have occurred. This regulation provides only limited guidelines for defining what is bear proof. However, if problems occur, the storage practice must be changed or the permit can be revoked and fines levied.

## **NPS and Concessions Operations**

### **Food and Garbage Handling by Visitors**

The bear proof food lockers located in all campgrounds, along with other methods described in 36 CFR 2.10(d), are approved food storage methods. Campground users must store all unattended food in bear proof food lockers or hard sided vehicles.

All backcountry users will store food in BRFCs when overnight hiking in all backcountry units except 22 and 23, where their use is impractical. More details can be found in Appendix F.

### **NPS and Concessions Waste Disposal Facilities and Procedures**

All National Park Service and concession outdoor waste disposal systems must be bear proof. The concessionaire's contract requires the use of bear proof food and garbage handling procedures. The Concession Division staff will ensure compliance with this contract and ensure that the concessionaire provides, uses, and maintains bear proof systems at the food court, employee cafeteria, and employee residential area. The concessionaire is required to instruct employees to keep dumpsters and recycle containers covered and fastened closed at all times except when garbage and recyclable waste are actually being placed in the containers. There can be no garbage or recyclable waste stacked by the containers at any time. Excess garbage and recyclable waste must be securely bagged and stored inside a closed, hard-sided building until space in the containers is available.

All contract reviewers will ensure bear-proof food storage, preparation, and garbage handling requirements are included in any contracts and that these requirements are followed by the contractor.

All trash containers which are not bear proof, whether located at employee residences, offices, food services, stores, or other facilities will be kept indoors. Ranger staff and Wildlife Management Technicians will enforce waste disposal regulations.

The Chief of Maintenance will ensure that DENA's waste disposal systems are bear-proof and maintained. From 15 May - 15 September, refuse containers in visitor use areas will be



checked daily, and emptied when half full or sooner if there is a strong odor present. Plastic liners will be used in all garbage cans and containers will be cleaned as needed. Containers at C-Camp and the permanent housing area will be checked and emptied in the same manner three times per week. Employees collecting garbage will report any repairs that are necessary to maintain containers in a bear proof condition. It is the responsibility of the Buildings and Utilities Supervisor to see that these situations are immediately corrected. The Buildings and Utilities Supervisor will ensure that all garbage collection vehicles in which garbage is stored overnight will be bear proof or parked inside.

In Talkeetna, the Ranger staff will maintain bear resistant garbage receptacles, and acquire new ones when necessary, at the Mountaineering Contact Station and NPS housing area. The local contractor, Talkeetna Refuse, collects trash.

All remote seasonal work camps will maintain wildlife resistant food and garbage storage facilities. The camp-lead is responsible for acquiring, maintaining, and insuring the use of these storage facilities. The Wildlife Management Technicians will insure the camp manager has the appropriate resources and understand the importance of using them correctly. The Wildlife Biologist will also provide an electric fence for remote work camps when requested or if and when the bear situation warrants it.

The park's waste transfer area, east of Highway #3 at milepost 234, will be maintained in a bear proof manner. The chain link fence surrounding the compound will be maintained in a condition that prevents entry by bears. The main entrance gate will be fastened shut at all times, and the doors on the transfer chute will be closed. The Buildings and Utilities Supervisor will maintain these systems in good working order, immediately repairing any damage or malfunctions. It is the responsibility of anyone using the storage area to report needed repairs to the Buildings and Utilities Supervisor and collect any garbage not in a bear proof container, in the area.

All campgrounds, picnic areas, park roads, residence areas, backcountry units, or other areas of visitor concentrations will be maintained in a litter-free condition. It is the responsibility of the Chief of Maintenance to provide regular litter patrols of frontcountry areas. It is the responsibility of the Chief of Ranger Activities to ensure backcountry areas remain free of litter. It is expected that all DENA employees will contribute to maintaining a litter free environment. The Eielson caretaker will regularly patrol near the Visitor Center, picking up litter in areas frequented by visitors. Cooking grease in cabins and campgrounds will be disposed of in the nearest bear proof garbage cans with plastic liners.

The kennels manager will ensure that dog food is not left outside unattended. Likewise, pet owners in the NPS housing area will not leave food outside for their pets.

### **Enforcement**

The prevention, identification and correction of improper food and garbage handling procedures are a major part of Ranger Activities Division and Wildlife Management Technician's patrols. Campgrounds will be patrolled each evening to inform visitors of proper food and garbage handling procedures. Unattended food or garbage will be disposed



of or impounded and appropriate warnings or citations issued. Unattended food may be placed in the campground's food storage locker and a warning left at the campsite informing the visitor why it was removed and where to recover it.

Rangers are responsible for correcting emergency sanitation problems such as overflowing garbage cans or litter. Rangers will be alert for malfunctioning or poorly maintained bear proof facilities such as garbage can tops that are ajar, storage lockers left open, or dirty garbage cans that are the source of odors.

National Park Service and concession residence areas will be patrolled by Law Enforcement Rangers daily to ensure that food or garbage is not left out on porches or picnic areas. All concession garbage facilities will be checked once during the day and once after 11 p.m. to ensure that dumpster lids are closed and fastened and no garbage or litter is accumulating around the disposal areas. Rangers should be alert for improper disposal of kitchen wastewater and oils around the hotel and employee residence area. East District Ranger staff and the Wildlife Management Technicians will conduct foot patrols of the VC and Science and Learning Center, train station, and Riley Creek area.

The park's waste transfer facility, east of Highway #3 at mile post 234, will be patrolled weekly, to insure that the gate is locked and doors on the garbage transfer chute are closed.

Any non-compliance will be documented and appropriate warnings or citations will be issued. Violations involving the concession operation will be reported to the Concession Specialist for immediate correction. Non-compliance with NPS operations will be routed through the Assistant Superintendent of Resources, Science, and Learning to the responsible division or supervisor for immediate correction.

### **Mining Operations**

Mining Permits for claims within DENA require that all garbage and refuse be removed from the claim area or burned daily. The Wonder Lake Rangers and the Wildlife Management Technicians, under current CFR regulations, will enforce the policy of bear proof food storage and garbage handling. State regulations are used in the area of the New Park and Preserve. These regulations, however, must be enforced by the State because the NPS has only proprietary jurisdiction over New Park and Preserve lands.

Storage of food and garbage on claims must be in securely covered steel or heavy wood containers, an elevated cache or inside a closed, hard-sided building. Enforcement of State and Federal regulations will ensure proper food and garbage handling practices on claims. State assistance with enforcement will be requested, if appropriate.

Unpatented mining claims within DENA will be inspected opportunistically during the summer for food and garbage handling practices. Improperly stored, or unattended food and garbage will be removed and disposed of by Wildlife Management Technicians or Wonder Lake Rangers.



### **Business License Holders, Special Use Permits, and Concession Contracts**

State regulations require bear proof handling of food and garbage by these user groups. All garbage generated by these users must be removed from DENA. The Concession Specialist, District Rangers and Wildlife Management Technicians will work to change unacceptable practices through education, warnings and enforcement of appropriate regulations.

### **Private Land within New Park and Preserve or Close Neighbors**

National Park Service does not have jurisdiction over food and garbage handling practices outside the boundaries of the Park. Efforts to create safe environments for both bears and humans in neighboring communities will be pursued through cooperative arrangements with groups like the Denali Foundation, which runs the Bear Essentials program. Wildlife Management Technicians will offer advise to local businesses and residents regarding food and garbage handling practices whenever possible.

Providing education and requesting assistance from State officials are the only methods of assuring compliance on private lands. Rangers and Wildlife Management Technicians will check for problems on these properties to the extent they are permitted access. State officers will be contacted if necessary improvements in food and garbage handling cannot be made through friendly agreements and education. If necessary the Wildlife Biologist and Chief Ranger will contact the Department of Environmental Conservation to determine if local businesses are in possession of appropriate permits under and/or is in compliance with Alaska Sate Regulations 18 AAC 60. The text of this State Statue is available at (<http://www.state.ak.us/local/akpages/ENV.CONSERV/title18/title18.htm#60>) or in appendix D. **18 AAC 60.010** states “(a) A person may not store accumulated solid waste in a manner that causes (1) a litter violation under 18 AAC 64.015, (2) the attraction or access of domestic animals, wildlife, or disease vectors”.

### **Subsistence Users**

The sanitation conditions around subsistence users' cabins and camps in DENA are controlled by the CFR and State regulations discussed previously (Appendix D). All contacts with these users will emphasize the need for bear proof storage of food and garbage. Whenever possible, Rangers will check cabins and camps for conditions that may attract bears.

Permit stipulations, outlining approved methods of bear proof handling of food and garbage and its removal, will be used to manage the activities of subsistence users. Notification of the intent to enforce regulations will be maintained in public places such as the Denali Park Post Office and mailed to more inaccessible individuals and communities. The Wildlife Biologist, Wildlife Management Technicians, and Subsistence Specialist are responsible for the distribution of this information.

## **MANAGEMENT ACTIONS: RESPONSE TO BEAR-HUMAN INTERACTIONS**



This program element is organized into four sections: 1. Reporting Procedures, 2. Criteria for Determining Bear Behavior, 3. Management Actions, and 4. Field Guidelines

The procedures outlined in this section are intended to provide guidance only. It is recognized that each bear-human incident may involve unique circumstances for which strict adherence to the procedures outlined in this plan is not appropriate. It is important for those involved in management actions to maintain dialog throughout the response period and ensure that management actions are documented.

## **Reporting Procedures**

### **Receiving Initial Reports**

It is the responsibility of all NPS employees, bus drivers, and concession employees to direct people who have had an interaction with a bear to Interpretation, Law Enforcement, or Center for Resources, Science, and Learning staff. Staff should follow interviewing guidelines and fill out a BIMS form as described in Appendix G. The Communications Center should be notified if the bear-human interaction requires further action. Wildlife Management Technicians or Ranger staff will conduct further interviews and investigations.

### **Notification**

The person receiving the initial report will notify other parties based on the following guidelines once the general type of report is determined.

- (A) General Observation
  - Route BIMS form to Wildlife Management Technicians (Appendix G).
- (B) Bear within close proximity of developed area and other serious situations
  - Inform other staff or visitor center staff if in area of VC.
  - Inform visitors or residents in the area.
  - Inform Communication Center.
  - Inform Wildlife Management Technicians
  - Route BIMS forms to District Ranger and Wildlife Management Technicians (Appendix G).
- (C) If the incident requires an immediate action, the Communication Center will inform District Ranger, Supervisory Wildlife Biologist, Wildlife Management Technicians, Chief Ranger, and the Assistant Superintendent of Resources, Science, and Learning and the Superintendent's Office.



**Documentation**

See Appendix G for forms and use guidelines necessary for documenting interactions, management actions, and biological information.

**Criteria for Determining Management Actions**

**The procedures outlined in this section are intended to provide guidance only.**

Definitions of acceptable and unacceptable bear behavior can be found in the glossary and are summarized in the table below. These management actions emphasize the use of the least manipulative method first. Every situation is likely to be different, and there is no one size fits all solution to complex wildlife behavior management. The bear’s reaction to a particular management action must be documented.

Behavior Category	Human-Bear Interactions	Management Response
<b>FORAGING</b>		
Mistaken Prey	Human behaving like bear prey, or bear attacks in brush.	None
<b>DEFENSIVE</b>		
Intolerant	Bear leaves the area as soon as it becomes aware of people.	None
Dominance	Bear challenges intruder of its personal space by approaching, charging or body language displays.	None
Surprise	Close, unexpected encounter; bear reacts, then leaves once person is no longer considered a threat.	None
Provoked	Person intentionally approaches close or harasses bear. Bear responds then leaves immediately.	None
<b>HABITUATED</b>		
Curious	Bear shows inquisitiveness one time to identify a scent or object, then moves away.	None
Tolerant	Bears in areas also used by people; tolerates people nearby but ignores them and their facilities.	Monitor
Conditioned	Repeat interest in people or their facilities; if allowed to continue, likely to result in obtaining unnatural food or reoccurring approaches towards people or facilities.	Aversive Condition Relocate Remove
Rewarded	Bear has obtained unnatural foods.	Aversive Condition Relocate Remove
<b>AGGRESSIVE</b>		
Threat	Made repeated offensive charges or caused injury.	Destroy
Predation	Kills and/or consumes victim.	Destroy



## Management Actions

### 1. Investigation

Any field action will be preceded by an interview with the people involved. The interview should follow questions outlined in the BIMS form and interview guidelines in Appendix G, emphasizing a detailed account of physical setting, location and actions/reactions. If the bear is still in the area, the investigator should try to identify the bear. If it appears that further management actions will be needed, the bear should be kept in view, without provoking further interactions, until the Wildlife Management Technicians arrive.

### 2. Response Procedures

A quick response, within 12 hours, is essential to the success of management actions. Overall effectiveness will likely increase if the initial team responding to the situation is capable of performing the full range of management options and is prepared to stay in the area for several days.

The preferred team is composed of two Wildlife Management Technicians, a third member of the resource preservation staff, or a Law Enforcement Ranger. Members of this team **must** be qualified with a shotgun. A person qualified in wildlife immobilization may also be needed. The team will be equipped to perform a full range of management actions including immobilization, marking, aversive conditioning, and a camp test (tests the bears behavior before/after aversive conditioning).

#### Response to a backcountry incident:

- 1) Initial report and interview taken by field staff.
- 2) Field staff contacts Communication Center.
- 3) Communication Center contacts Wildlife Technicians.
- 4) Meeting point arranged for team and helicopter, if available.
- 5) Team members get gear and proceed to pick up point.
- 6) Consider fixed-wing aircraft support to help search incident area.
- 7) If possible one team member interviews victim. Consider taking victim to site if further clarification is needed.
- 8) Team goes to site and conducts preliminary search of area with aerial support if available and necessary.
- 9) If necessary, remove victim's equipment from the area.



The team will take the appropriate actions outlined under Field Guidelines section of this document and will be prepared to spend at least two days in the area.

**Driving a bear away from a populated area:**

- (1) Survey the area. Determine the number and age classes of bears involved.
- (2) Keep visitors out of the area and in a safe location.
- (3) If the bear(s) has not left the area, use the least disruptive techniques first. Make sure the bear has an escape route. Yelling, waving arms, or throwing rocks from a distance is generally sufficient. Give the bear time to react and proceed slowly. The objective is to remove the bear from the area and not cause a confrontation that might result in a charge.
- (4) If these techniques fail after repeated attempts, an NPS employee who has completed all necessary firearm and aversive round training may use cracker rounds or other non-lethal rounds to attempt to drive the bear away from the immediate area. Continued hazing of the bear after it leaves the area is not warranted.

An alternative team led by an individual experienced in investigating bear incidents will go to the site if a preferred team is not available. The primary objective for this team is to retrieve any abandoned equipment and complete the initial phase of the investigation. This team may take no other management actions. A qualified individual may carry a shotgun.

**3. Monitoring**

Controlling problems with passive, preventative actions is the first step in any management action. This option must be exhausted before more aggressive management actions are taken. Monitoring a situation requires at least one employee remain on the scene until the situation is resolved.

When monitoring a situation:

- (1) Determine the number of bears, age of bears, location of people, bear behavior, and direction of their travel.
- (2) Inform people in the affected area of the situation.
- (3) Continually patrol the area and remove easily obtainable sources of human food. Check visitor food storage for loose garbage or open garbage cans.



- (4) Control movements of people and keep them away from the bear(s). Give them a ride past the bear or get them into a visitor center or back in buses or cars.
- (5) Keep the bear in view, especially if further management action may be required.

#### **4. Closures**

Specific procedures for establishing a temporary or emergency closure are given in Appendix H.

The establishment of a closure enables the removal of people from a potentially hazardous situation such as a carcass, berry patch, or the area of a recent incident. Closures may also allow a bear a chance to move to a remote part of the park before it has a second opportunity to come in contact with people.

In the backcountry, boundaries for closures will usually be the boundaries of the backcountry unit where the incident occurred. The adjacent unit should be closed if the incident occurred on or near the unit boundary. Boundaries may also be constructed to encompass only the hazardous area and the common access points. Initial and subsequent patrols of closures are required in order to remove people from the area, to prevent entry by other visitors, and to determine if the closure is still required.

Criteria for establishing and opening closures are provided under Field Guidelines (pg. 25). The duration and type of closure is dependent on the circumstance that caused it and the effectiveness of management actions. Certain circumstances may only warrant a partial closure as long as it minimizes further bear-human interactions.

#### **5. Patrols, Tests and Subsequent Management Actions**

##### **(1) Patrols to Clear and Enforce Closures**

Rangers will conduct patrols to remove people from a newly established closure and to prevent entry into the area.

##### **(2) Patrols to Identify Bears with Unacceptable Behavior Patterns**

Patrols will be conducted in response to specific incidents. The decision to initiate a patrol will be made by the Wildlife Biologist and the Wildlife Management Technicians. They will be conducted by the Wildlife Management Technicians and can include another qualified individual.



The purpose of patrols will be to determine the behavior patterns of potential problem bears. Behavior patterns observed during a patrol will determine the appropriate management action.

The team may make decisions in the field based on information they collect and the general guidelines in this plan. Management actions should be conducted in controlled areas and with close crowd control where appropriate. Explanations of the management actions being conducted should be provided to park visitors if personnel are available. When possible, the Wildlife Management Technicians should contact the Wildlife Biologist before more extensive or aggressive management actions are taken.

A bear's behavior may be classified as **conditioned** if it returns after two attempts to scare it off during a test. Further evidence can include an obvious interest and familiarity with unnatural food sources. If there is uncertainty, the animal should be classified as **tolerant** until more tests clarify the animal's behavior. If a Bear demonstrates **threatening** behavior, immediate actions should be taken as outlined in the Field Guidelines.

### **Specific Management Procedures:**

#### ***1) Bears frequenting developed areas:***

The incident area will be patrolled frequently by both Wildlife Management Technicians and Law enforcement Rangers, with patrols concentrated during the same time frames each day that the bear was observed. Personnel who are not qualified to take further management actions such as marking, aversive conditioning, or capture, may be used to monitor situations or on patrols. They will keep any bear in sight that exhibits the behavior of the animal involved in the incident. Their responsibility is to monitor the situation, and notify the Communication Center or the Wildlife Management Technicians so more qualified personnel can respond. Prior to and during these patrols, the area should be checked and cleared of unsecured, anthropogenic food so that any bear that enters the area will not obtain rewards. No food or garbage will be used as bait. Bears entering the area will be monitored. This procedure is useful in the identification of conditioned behavior.

#### ***2) Bears demonstrating food conditioning to backcountry camps.***

Wildlife Management Technicians will set up a camp in the area where the incident occurred as soon as possible (within 12 hours of the incident). Typical behavior of a camping party will be followed; preparing meals at typical times, using standard backpacker's food, storing food in sealed plastic bags in BRFCs, etc. However, they will remain in their tent as much as possible, especially if there is a bear near the area. If possible, a third person at a vantage point will maintain radio contact with people in



the tent while watching for approaching bears. Bears entering the area will be monitored. The camp should be maintained for two to five days depending on the bear's response. If a bear, exhibiting the type of behavior described during the incident is observed, appropriate procedures will be taken, as outlined in Field Guidelines.

**3) *Bears that approach, threaten or follow people:***

Wildlife Management Technicians will enter the area and approach bear(s) until the bears are definitely aware of the team. The team should maintain a safe distance from the bear. The team's objective is to determine if threatening behavior is present, without eliciting a normal defense or dominance-related reaction. Approaches of less than 50 meters should not be necessary in backcountry situations. Closer approaches may be necessary in the frontcountry. The team will remain in an identifiable position for ten minutes. No actions will be taken if the bear shows no reaction or it moves off. If approached by the bear the team will attempt to mark the animal. The marked bear can then be subjected to aversive conditioning trials and further management action as outlined below and in the Field Guidelines section of this document.

In frontcountry situations the team will try to scare the bear out of the area by yelling and throwing rocks. The team will also attempt to scare the bear away from any anthropogenic food sources using the same techniques. Cracker shells and rubber slugs will not be used in frontcountry settings unless the area is clear of people.

Typically, at least two attempts to scare the bear away will be made before categorizing the bear's behavior. If the bear persists in approaching, following, or remaining in the area, further action may be taken as outlined below and in the Field Guidelines.

The team cannot use bait of any kind.

## **6. Firearm Use for Management Actions**

12 gauge shotguns with slugs will be the primary back-up weapons for any marking, capture, aversive conditioning, or destruction actions. The individual with the capture gun may also carry a large caliber pistol (.44 or larger). Only employees who have participated in a park approved firearms training session, conducted by a certified firearms instructor, which specifically covers the use of firearms in wildlife management situations (Appendix I), may participate in these operations. The Wildlife Biologist will select individuals for this training as needed.

Team members will discuss backup procedures prior to all management action. Situations will vary, but generally the first three rounds loaded into the shotgun magazine (they will be the last three fired) should be lead slugs. The last two



rounds loaded, one in the magazine and one in the chamber, will depend on the type of action planned. One or both could be plastic slugs or cracker rounds for aversive conditioning, or slugs for strictly back-up situations.

## **7. Marking**

Bears may be marked as part of approved research projects or resource management actions. At the present time only bears selected for aversive conditioning management or relocation will be marked for management purposes. The selection of the animals and how they will be marked will be made by the Supervisory Wildlife Biologist based on the Field Guidelines of this plan. Only animals with a demonstrated history of unacceptable behavior will be marked for management purposes.

Radio collaring, and ear tagging are the preferred methods for marking and require approval by the Supervisory Wildlife Biologist. Other techniques, such as pit tagging, dye, paint or streamer marking may be approved on a case-by-case basis by the Wildlife Biologist. The individual marking the bear may carry an additional sidearm (.44 Cal minimum) for protection. Team members will also provide shotgun back up. Marking attempts will be terminated if the bear's behavior indicates a high potential for a charge or injury to the bear. Bear capture will follow the protocols outlined in Appendix J.

Any bear that must be handled will have a numbered tag placed in each ear. Management actions involving translocation or aversive conditioning require radio collaring for monitoring bear movements, and the effectiveness of aversive conditioning.

## **8. Immobilization**

### **(1) General Authorizations for Capture Equipment and Immobilizing Drugs.**

The use of capture equipment and immobilizing drugs will be restricted to employees with specialized training and experience in animal restraint techniques and equipment, and who have been specifically assigned to bear immobilizing actions (Appendix I). Decisions concerning the individuals receiving this authorization and training will be made by the Supervisory Wildlife Biologist.

### **(2) Capture and Care.**

Bears will be captured or immobilized (Appendix J) only for approved research or resource management actions. At present, management-related immobilization is limited to marking or radio collaring bears for aversive conditioning tests, translocations, removal, or destruction. The decision to capture a bear, and the method of capture will be made by the Assistant



Superintendent of Resources, Science, and Learning and the Wildlife Biologist. The Superintendent is informed in all cases. However, immobilization for removal or eventual destruction requires the approval of the Superintendent.

Bears may be captured by use of drug injecting dart, or culvert or barrel type trap. The dart technique is preferred because it is the most discriminating method. Traps may be used when circumstances indicate a high probability of capturing a specific animal that has an established behavioral pattern. Darting attempts will be terminated when there is a high potential for injury to the animal. Repeated attempts and different strategies will be tried before the immobilization option is completely abandoned, especially for bears which must be destroyed if capture attempts fail. In most cases, dart capture operations will be conducted from the air with the use of a helicopter and support fixed-wing aircraft. In rare circumstances a dart capture may be initiated from the ground. In these cases, aerial support will be provided to monitor bear movements and actions. Ground based darting attempts will be terminated when the bear behavior indicates there is a high potential for a charge.

It is the responsibility of the person leading the capture operation to ensure that all participants are aware of the exact plan of action and their responsibilities for the capture attempt.

Personnel who have been trained on trap use will make all trap sets. Traps will be placed at the edge of developed areas and explicitly signed to warn visitors of them. When possible, traps will be baited with food found naturally in the area. Traps will be set in the evening, when fewer visitors are in the area, and will be locked closed again in the morning. Any trap set will be accompanied by extra patrols by the Wildlife Management Technicians to inform people of the problem in the area and to check food and garbage.

Animals held in traps will be moved to a site away from public use areas. Visits to a captive animal will be restricted to employees specifically designated by the Wildlife Biologist as caretakers for the animal. Bears will not be held longer than 24 hours unless extraordinary circumstances, effecting the translocation or release occur. The Wildlife Biologist and the Wildlife Management Technicians are responsible for the care of animals in these situations. Bears in traps requiring immobilization will be drugged with a blow gun dart or a jab stick/syringe system. Only employees absolutely necessary to this operation will be present. General health and plane of anesthesia of immobilized animals will be monitored. Bears should be kept cool and eyes covered. Whenever practical, one person will stay with the bear during the entire drugging, handling, and translocation process in order to provide continuity in monitoring response to drugs and provide care to the animal. When possible, biological and drug reaction



data will be collected from all animals using a standardized field data form (Appendix B). When possible, the bear will be monitored until it has recovered from a safe vantage point.

The immobilizing agent currently selected for bear management purposes is Telazol, a non-narcotic, non-barbiturate, injectable anesthetic agent. Telazol is a rapid-acting combination of tiletamine and zolazepam. Telazol is mixed with sterile water to form a 250mg/ml solution (Appendix J).

## 9. Hazing and Aversive Conditioning of Bears

Hazing and aversive conditioning are the primary management actions directed towards bears that display tolerant, conditioned, or rewarded behavior. These techniques range from yelling and waving arms to the use of plastic slugs, cracker shells, or capsicum spray. All use of hazing and aversive conditioning techniques on a bear require complete documentation.

### General Procedure:

- a) Assess the situation. Does it warrant action or will it resolve itself acceptably given time and monitoring? How many bears are there? What is their species and age class? Define your objective. Have as many facts as possible before initiating aversive conditioning.
- b) Remove spectators from the area before initiating any actions. Provide interpretation if possible. Always provide the bear an escape route.
- c) Apply techniques in a progressive manner, use the minimum tool that will safely accomplish your objective. In general, yelling, loud noises, and rock throwing, should precede uses of cracker rounds or Capsicum-based sprays. If these techniques fail, rubber or plastic bullets may be used.

The success of cracker rounds, rubber or plastic slugs, beanbag rounds, and capsicum-based sprays may vary with individual bears. The Wildlife Biologist must clear all operations involving these techniques. Only properly trained individuals can use these techniques.

Aversive Tool	Effective Range
Pepper Spray	1 to 5 yards
12 ga Bean Bag	5 to 20 yards
12 ga Fiochi Rubber Baton	15 to 30 yards
12 ga BD-100 Rubber Slug	20 to 30 yards
12 ga Cracker Shell	Explodes at about 80 yards
Shock Collar	Variable up to 300 yards
Electric Tent	Animal must contact the tent



- d) Mark the bear (i.e. paint gun) for positive identification for future management actions.
- e) Interpret reasons for actions to any visitors who view the events.
- f) An electrified tent (E-tent) is a tent covered with electric fence wire. This experimental aversive conditioning tool could be deployed in either the backcountry or the frontcountry when tents are the attractant.
- g) Aversive conditioning must be conducted several times, often over several days. If these attempts fail, management actions may be escalated. In frontcountry situations, managers will consider accelerating the response and bears may be marked and relocated immediately.
- h) Based on the specific incident, the bear may be captured, released on site and aversively conditioned at the capture location.

#### **Limitations and Guidelines for use of Cracker Shells:**

- Cracker Shells are not always effective. Bears quickly learn to ignore them after repeated use.
- Their use is limited to open areas.
- Cracker shells traveled 80 yards.
- Be aware of the threat of fire if used in dry forest or brush.
- Place explosive between you and the bear. An explosion behind the animal may scare it towards you.
- Remember there is the potential to injure or kill a bear if they are hit with cracker rounds.

#### **Limitations and Guidelines for use of rubber or plastic bullets:**

- There is the potential to injure or kill a bear with a misplaced shot at distances of 35 meters or less for plastic slugs, 10 meters for bean bags. Slug placement in the rump or shoulder area will minimize potential for injury.
- Accuracy and effectiveness diminishes beyond distances of 45 meters for slugs, 30 meters for beanbags.



## 10. Translocations

### Within the Park.

A decision to translocate a bear generally may be warranted if:

- (1) In frontcountry situations, a bear displays rewarded behavior, capture and release on-site has not worked or;
- (2) In backcountry situations, at least three sessions of aversive conditioning have failed to alter a bear's demonstrated, unacceptable behavior or keep it from the area or;
- (3) A bear has possibly been involved in a non-defensive or anthropogenic food related injury or fatality but identification of the animal or behavior is uncertain.

Please note, these are only guidelines. It is recognized that each situation may involve unique circumstances for which strict adherence to the procedures outlined above is not appropriate. It is, therefore, important for those involved in translocating bears to ensure that all management actions are well documented. The decision to translocate an animal will be made by the Superintendent in consultation with the Assistant Superintendent of Resources, Science, and Learning, the Supervisory Wildlife Biologist, the Wildlife Biologist, and the Wildlife Management Technicians.

The Supervisory Wildlife Biologist will be responsible for selecting a release site in the Park or Preserve. Site selection will be based on maximum distance from capture site, areas of human use, acceptable habitat, location of previous translocations, and transport limitations. Family groups of spring cubs or yearlings will be translocated as a unit. Other age classes may be separated. Translocated animals will be radio collared and monitored to determine survival and movements. A helicopter will generally be required to meet translocation criteria. Two translocation attempts will be made before considering destruction.

### Outside of the Park.

In most cases, efforts will be made to give a bear, designated for destruction, to a zoo or other approved public use or research facility before it is destroyed. Any facility obtaining a bear from Denali National Park must meet National Zoological Society accreditation standards, be a non-profit institution, have a USDA exhibitor's permit, and, in the case of grizzly bears, hold a permit from the U.S. Fish and Wildlife Service to display grizzlies. See Appendix M for procedures on placing a bear in a zoo or sending bear parts to research facilities.



## 11. Destruction

On lands within the boundaries of Denali National Park and Preserve, a bear can be killed if it presents a critical and immediate threat to human safety and after all other means of deterrence have been exhausted.

**The decision to destroy a bear may be made if it meets the following criteria:**

- (1) Attempts of aversive conditioning and translocations have failed. The bear has been translocated twice and has returned, the previous unacceptable behavior pattern still exists, and another home (zoo, research facility etc.) for the bear cannot be found. Or,
- (2) Repeated capture attempts of an animal designated for translocation has been unsuccessful. Or,
- (3) An animal is positively responsible for an injury or fatality resulting from a non-defensive or unprovoked attack. Or,
- (4) An animal has sustained a seemingly fatal, human-caused injury (gunshot, broken bones due to vehicle collision, etc.). And,
- (5) Wildlife Managers, with consensus from the Superintendent, determine that it is in the best interest of the bear(s) and the natural systems involved to forego translocation efforts and another home (zoo, research facility etc.) for the bear cannot be found.

A committee, comprised of the Superintendent, Wildlife Biologist, Assistant Superintendent of Resources, Science, and Learning, Chief Ranger, and individuals invited to the committee by a designated member, will review the records of bears which are candidates for destruction and discuss management alternatives. The committee will ensure the fulfillment of all actions specified in this plan. The Wildlife Biologist will present the committee's recommendations to the Superintendent in writing. If the committee recommends destruction, the Superintendent will be advised verbally as soon as possible, followed by a written recommendation. Except in emergency situations involving a critical and immediate hazard to human safety, the final decision to destroy a bear will be made by the Superintendent.

The destruction of a bear is contingent upon a positive identification of the bear. Sows with cubs will be destroyed if they meet the above criteria. The Wildlife Biologist will decide if spring cubs accompanying the sow will remain in the wild if they cannot be placed in a public zoo or other facility.



### **Destruction and disposal procedures.**

- (1) When possible, bears identified for destruction will be chemically immobilized and shot in the head with a 12-gauge slug or large caliber pistol to ensure a quick death. A bear will only be shot while free roaming in cases where its presence is an immediate threat to human safety.
- (2) Except in emergency situations, bears will not be destroyed within sight of visitors.
- (3) All identifying tags and radio transmitters will be removed and returned to the Wildlife Management Technicians.
- (4) Parts from bears killed may be used for research or interpretive programs in accordance with the appropriate guidelines covering natural history collections. Parts will not be retained by any interest for personal purposes or monetary gain. Collection and guidelines are available in Appendix R.
- (5) When these outlets are unavailable, destroyed bears will be returned to the ecosystem in locations far enough from roads, trails, and developed areas to minimize human interaction with scavengers or buried in the fenced garbage holding area along Highway 3. Disposal locations will be approved by the Wildlife Biologist. Necessary area closures will be established where carcasses have been left in the backcountry until the carcass is consumed.
- (6) Alaska Department of Fish and Game will be notified of any destruction in the park additions or preserve. A Defense of Life and Property form will be completed. The skull and hide will be collected (Appendix K) for sealing purposes and will be turned over to the state unless prior disposal arrangements have been made.

### **Injury or Fatality**

This section outlines response to any bear-human interaction that results in human injury or death. All persons involved must recognize the high media profile of such an occurrence and conduct themselves and the transfer of information accordingly.

#### **If a bear attack is reported to you:**

**1. Immediately begin a comprehensive log.**

**2. Maintain direct contact with the individual reporting the incident and obtain:**

Name

Phone number



Location  
Location of incident  
Time of incident  
Number of people involved  
Number of people injured  
Extent of injuries and property damage  
All people accounted for? Y/N  
Number of bears involved  
Last known location of bears  
Distinguishing characteristics of bear(s)

**3. Immediately contact the following:**

Communications Center: (907) 683-9555  
The Communications Center can assist with further contacts.  
Medical assistance (if necessary): (907) 683-9555  
Wildlife Management Technicians: (907) 683-9574  
East-District Ranger: (907) 683-9527  
West-District Ranger: (907) 683-9525

**4. As soon as immediate contacts have been made notify the:**

Wildlife Biologist: (907) 683-9577  
Assistant Superintendent of Resources, Science, and Learning (907) 683-9572  
Chief Ranger: (907) 683-9521  
Public Information Officer: (907) 683-9583  
Superintendent: (907) 683-9581

**5. Designate an Incident Commander from the list of individuals contacted.**

**Responsibilities**

**Incident Commander**

1. Call medical assistance or place it on standby, as required.
2. Appoint 3-5 member Initial Response Team trained to deal with medical emergencies, bear management, and scene investigation, comprised of the following:
  - Wildlife Management Technician(s)
  - Park Ranger(s)
  - Translator (if required)
3. Establish a **Field Leader**. This individual may be part of the Initial Response Team. If not part of the Initial Response Team, he/she will assume command of the field operation upon arrival on the scene.



4. Initiate closure procedures.
5. Maintain a written record of the entire incident and response.
6. Ensure that each team member maintains a written record of his/her activities.
7. Activate Public Information Officer.
8. Keep the Superintendent, Assistant Superintendent of Resources, Science, and Learning, and Chief Ranger apprised of the status of the incident and response.

### **Field Leader**

1. Evaluate available information.
2. Secure and evacuate all nonessential personnel from the area to insure safety.
3. Ensure the complete closure of the area.
4. Maintain communications with Incident Commander.
5. Establish teams to deal with a) Medical Emergency, b) Bear Management, c) Scene Investigation if necessary. Appoint Team Leaders as appropriate.

### **Bear Management Team Leader (Wildlife Biologist)**

Implement the following procedures based on the following circumstances:

#### **1. If injury/fatality occurred as a result of Curious, Mistaken Prey, Dominance, Surprise, Provoked, or unknown behaviors:**

- Separate bear and people. Monitor the situation and keep the bear in view.
- Provide information on how incident could have been avoided.
- Document all actions.

#### **A. Bear remaining in the immediate area of the incident, **identification positive**:**

- Continue to observe animal for three days and close areas that it enters to prevent further contact with people.
- Conduct patrols to verify the bear is an unusual threat to people or if incident was unique.
- If test patrol determines the bear's behavior is **Conditioned, Rewarded**, or a **Threat**, destroy the bear.



- B. Bear not in area or its identification is uncertain.
  - Initiate closures in areas where it is suspected the bear may have moved to.
  - Conduct patrols to identify the bear involved in the incident.
  - If the bear is positively identified, follow the procedures outlined in A.
- 2. **Non-defensive, unprovoked attack aimed at securing anthropogenic food. Tolerant, Conditioned, Rewarded, or Threat behavior is positively present:**
  - A. **Bear still in immediate area of incident, behavior and identification positive:**
    - Destroy.
    - If there is doubt about the positive identification or behavior of the bear, relocate. Consider genetic techniques to positively identify the bear.
  - B. **Bear not in area:**
    - Initiate patrol procedures.
    - Open area when situation resolved or when five days of patrols have been conducted without contacting a bear with unacceptable behavior.
  - C. **Bear in situation A or B was relocated:**
    - If bear originally contacted was relocated, continue test patrols for an additional three days and nights after the relocation to determine if the correct animal was moved.
    - If another animal is contacted during these additional patrols then see 1B.
    - If no bear is contacted exhibiting Tolerant, Conditioned, Rewarded, or Threat behavior after this additional patrol period, open the closure.

### **Scene Investigation Team Leader**

#### **1. Ensure victim is interviewed:**

- Take measurements, photographs, and sketches of wounds.
- Examine victim's clothing for hairs, punctures, and tears.
- Remain in contact with medical personnel attending to the victim and obtain details.
- Collect samples of blood, hair and tissue from bear for future DNA analysis.



- Determine the level of bear safety information received by the victim before the incident occurred.

## **2. Incident site investigation.**

- If approaching scene by helicopter, avoid landing at incident site, which could disturb evidence.
- Ensure tracks and other sign is not disturbed by people walking around at the scene.
- Take measurements and photographs of bear foot prints at the scene. Note unusual marks and make a plaster cast of prints.
- Take measurements and photographs of injuries, especially with visible bite and claw marks. Note the location of the injuries on the victim's body.
- Photograph, measure, and record all data.
- Note surrounding vegetation and growth stage.
- Identify likely directions of the bear's approach and departure.
- Identify landmarks for location from air search.
- Investigate and note all natural and human food sources.
- Map trails, paths, day beds, rubbing trees, and footprints.
- Collect scats for DNA analysis.
- If the suspect bear carcass is available, secure a cloth bag over the head and each foot of the bear. Use paper if cloth is not available. Avoid plastic.
- Deposit the bear carcass to an available cooler as soon as possible.
- Bag any material from scene for examining for tooth and claw marks and recovery of bear fur and possible bear blood. VERY IMPORTANT - transport dead bear and evidence from victims in separate vehicles. NOTE - Bloody material should be air-dried at room temperature. If it cannot be air-dried then it should be kept frozen.
- Collect the victim's clothing in a bag for identification of blood and bear fur. A cloth bag is preferred, but plastic is acceptable if clothing is dry. If the clothing is wet, air dry at room temperature.

## **3. Interview the general public who use the area or have recently been in the area and may have observed bear activity.**

### **Communications Center**

1. Assist by performing call-out emergency response personnel.



2. Monitor and record radio communications between Incident Command and the Initial Response Team.
3. Process closure notices.
4. Keep Superintendent informed.

#### **Public Information Officer**

1. Responds to requests for information from the news media.
2. May appoint one park spokesperson who is directly involved with the operation to provide press statements.
3. Prepares written news releases.

In the case of human fatalities, a Board of Review will be convened, consisting of the Superintendent, Regional Director's representative, and two non-NPS bear experts (from state, Federal agencies, universities, etc.)

In the case of bear deaths resulting from management actions, a panel consisting of at least one Park representative, Regional Director's representative, and two non-NPS bear management experts will convene to review the circumstances surrounding the death. The review will assist the park in evaluating current bear management procedures and developing bear management program direction.

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## GLOSSARY

**Aversive conditioning:** A tool used by managers designed to modify undesirable behavior of permanently marked (e.g. ear tagged, radio-collared) bears.

**Backcountry:** Areas greater than 400 meters from developed areas and greater than 200 meters from the park road. The preservation of natural processes is the overriding management objective in backcountry areas.

**Charge:** Charges are direct and purposeful, involving running or loping to within 10 meters of a human. They often incorporate aggressive signals including huffing, chomping, short hops, and/or bouncing.

**Conditioned Behavior:** The recurrence of harmless, close encounters between humans and bears that may eventually cause bears to lose their fear of humans. This is especially true for young bears whose behavior patterns are still developing.

**Container Test:** Early in the bear-human management program, container test forms were distributed to determine how frequently bears would have obtained food had it been in plastic bags rather than in bear resistant food containers (BRFCs). These forms are no longer used, but whenever bears attempt to break into BRFCs, whether the situation is classified as an incident, encounter, or observation, it is noted as a Container Test. The dependability of BRFCs continues to be monitored.

**Curious Behavior:** Bears sometimes approach humans in an attempt to identify a scent or an object. Generally, they leave the area once they have come close enough to catch a human scent or sound. Some bears will remain in the area, but appear to ignore people and return to other activities. These interactions are considered to be a natural reaction and no management actions will be directed toward the bear.

**Documentation:** All bear-human interactions, wolf monitoring, and management actions will be carefully documented with field notes, BIMS Forms, or Case Incident Forms.

**Dominance Behavior:** Interactions of this type occur between bears as they establish dominance hierarchies. When people, intentional or unintentional, approach a bear it may provoke a similar response. In this case the bear responds to the human presence with aggressive posturing or a bluff charge. The aggressive response of bears on kills is also a manifestation of this dominance interaction behavior. This interaction is an acceptable, natural behavior and no action is taken against the bear. If anthropogenic food has been obtained, see **Rewarded**.

**Encounter:** Any interaction of close proximity (less than 50 meters) between bears and humans during which the bear exhibits a behavior that identifies that it was aware of the human presence (e.g. altering its course to avoid humans, standing on its hind



legs observing humans, etc.). Encounters include all cases of bears advancing on humans that do not result in a charge, property damage, or physical contact. This includes instances when a bear is driven off, or when the bear showed indifference to humans in close proximity.

Encounters include:

- When a human surprises a bear in a low visibility area and the bear remains calm.
- Indirect and hesitant approaches in distances less than 10 meters from a human.
- If humans attempt to scare a bear away and it leaves without making contact or remains lingering.
- Cases when bears damage property that is considered part of their normal environment such as road signs, culverts, picnic tables, scratching on cabins. Similarly, it is an encounter if a bear touches, sniffs, or plays with a Bear Resistant Food Container (BRFC) or other gear. Chewing on empty plastic bags, etc. out of curiosity does not constitute property damage and are also considered encounters.
- Bears periodically interact with vehicles along the park road. It is an encounter if a bear swings on a bus side-view mirror, bites on a bumper, or looks in a window. However, if damage occurs as a result of this interaction it is considered an **Incident**.

**Food Conditioned:** A bear that has obtained anthropogenic food may perceive human beings and their facilities as sources of food. This association of human scent and equipment with food could encourage a general curiosity about people in other non-camp situations. This behavior pattern is unacceptable. Bears that exhibit them will be subjected to aversive conditioning. Also called **Rewarded Behavior**.

**Frontcountry:** includes all developed areas such as campgrounds, residence areas, Science and Learning Center, visitor centers, and a zone of 300 meters around them. A 400-meter wide corridor centered along the park road and the general area enclosing the hotel, Riley Creek Campground, and the train station are also considered frontcountry. Maintained trails are considered frontcountry for the bear-human interaction analysis portion of this plan.

**Habituated:** A bear that is indifferent to a stimuli or event due to repeated exposure. For example, a bear that does not respond to buses because it lives along the road corridor.

**Hazing:** A management action directed at bears that are not permanently marked (this includes animals marked with paint pellets) when it is necessary to quickly deter them from problem areas or when radio collaring is logistically impossible.



**Incident:** Any interaction during which a bear makes minimal physical contact with a human that does not result in injury (e.g. walking on a human in a tent, touching a human with a paw). Incidents include any damage or loss of property or food and any charge at a human that results in contact. It is also considered an incident when a human is forced to take extreme evasive action (climbing a tree, playing dead, firing Counter Assault, etc.) in response to a bear, regardless if the action seems justified.

Incidents generally include interactions in which bears exhibit unusual behavior and require a response that includes a **Management Action**. The bear's behavior is the most important component in determining the appropriate management action.

Incidents include:

- Instances when a bear purposely walks to within 1-2 meters of a human or makes multiple approaches within 10 meters of humans making noise.
- When a human surprises a bear in a low visibility area and the bear exhibits signs of excitement within 10 meters of the human.
- For distances greater than 10 meters it is only an incident if the bear makes a secondary charge to within 10 meters or if extreme aggressive behavior is exhibited.
- When a bear touches a tent with humans inside or lingers near it showing interest.
- When a bear approaches a camp in which humans have been active for a prolonged time, it is an incident, particularly if the bear exhibits more interest in the humans than their gear.
- Any damage to camping gear is classified as property damage.
- Instances of bears attempting to break into cabins to obtain food or damaging structures.
- Bears periodically interact with vehicles along the park road. If a bear causes damage to a vehicle.

**Injury:** Any instance when a bear makes physical contact with a human and an injury results. This also includes cases when a human is injured escaping from a bear.

**Interaction:** Includes encounters and incidents but does not include sightings.

**Investigating:** All incidents involving bears and humans will be investigated when possible, as soon as Park Rangers or Wildlife Personnel can arrive on scene. Due to the nature of many backcountry incidents, information may be days old and site visits impractical. In such cases an attempt should be made to get a thorough report from parties involved.



**Management Action:** Any technique used to modify a bear's behavior including aversive conditioning, hazing, relocation, and destruction. Historically this has included area closures.

**Marking:** Bears will be marked to accurately identify them for monitoring and evaluation of behavior changes during hazing or aversive conditioning attempts. The least invasive marking technique is by paint ball. Paint used is oil-based and normally wears off within two weeks. Radio collaring and ear tagging is more invasive and will be used only for food rewarded, destructive, or aggressive animals.

**Mistaken Prey Behavior:** Charges and injuries have occurred when people were between a bear and prey, or were mistakenly perceived as natural prey by bears. This behavior has occurred during moose calving season when humans, moose and bears are in areas of limited visibility such as forest and shrubs. A mauling may result if the human behavior continues to elicit a predatory response (i.e., running). These interactions can be considered the result of confusion; management actions may not always be necessary.

**Monitoring:** Monitoring is accomplished through regular campground visits and patrols, road patrols, den site observations to observe bear behavior, reviewing BIMS forms and radio tracking when possible.

**Predatory Behavior:** A bear stalks a human as prey. This behavior is unacceptable. Identification of this behavior requires the destruction of the bear.

**Provoked Behavior:** Approaches by humans to within 50 meters, continued approaches, or following a bear, may constitute harassment and could provoke several of the interactions previously discussed.

Management actions may be directed toward the bear, but is not required since its reaction is regarded as natural, defensive behavior. Law enforcement action may be directed toward the people involved.

**Removal:** Destruction of a bear.

**Rewarded Behavior:** A bear that has obtained anthropogenic food may perceive human beings and their facilities as sources of food. This association of human scent and equipment with food could encourage a general curiosity about people in other non-camp situations. This behavior pattern are unacceptable. Bears that exhibit them will be subjected to aversive conditioning. Also called **Food Conditioned**.

**Sightings:** A bear is seen by people but is never aware of their presence.

**Surprise Behavior:** A bear suddenly confronted by a human may try to escape but if an escape route is unavailable, it may charge. These charges do not typically result in physical contact, however severe injuries are possible if the person tries to run



Female bears are particularly protective of their young and are more likely to view a person as a threat and charge when suddenly encountered at close range. This is considered defensive behavior and no action is taken.

**Threat Behavior:** Aggressive behavior that is not defensive, provoked, or a result of confusion. The bear involved reacts with bluff charges or threatening postures and vocalizations to human attempts to scare it off. Animals exhibiting this behavior are considered dangerous because of their predisposition to react violently during interactions.

This type of incident and behavior has not occurred in Denali. Bears suspected of this behavior would be tested using the procedure outlined in the Field Guidelines. Positive identification of this behavior may call for destruction.

**Tolerant Behavior:** A bear that is indifferent to human presence. This behavior is considered acceptable in isolated encounters as long as it does not involve a regular pattern of subsequent approaches. An animal may be naturally tolerant. If due to repeated exposure to people, a bear becomes indifferent to humans it is considered habituated.

If it is apparent that the bear is beginning to linger around people or facilities the behavior may be unacceptable and the bear should receive hazing and/or aversive conditioning.

**Waste:** Discarded food and drink, garbage, litter, recyclable materials that may contain remnants of food or drink, or other decomposable material that might have odors attractive to animals.

