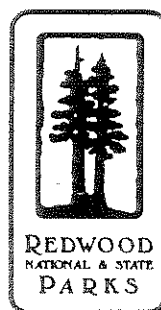


BEAR MANAGEMENT GUIDELINES



REDWOOD NATIONAL AND STATE PARKS

REVISED AUGUST 1997



CALIFORNIA STATE PARKS

BEAR MANAGEMENT GUIDELINES

Redwood National And State Parks
Revised August 1997

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INTRODUCTION

Purpose of Update

These updated guidelines were prepared to address bear management activities in Redwood National and State Parks (RNSP). Most National Park Service (NPS) and California State Park units are managed as a single unit through one superintendent; RNSP is somewhat unique in that it contains three state parks under the jurisdiction of California Department of Parks and Recreation (CDPR) within the legislatively established boundaries of Redwood National Park. An NPS-CDPR Coordination Report (CDPR/NPS, 1994), called for a Memorandum of Understanding (MOU) between the two agencies to jointly manage the parks as RNSP.

The final MOU directs NPS and CDPR to work cooperatively on: "the common protection of all resources contained within the Parks"; "operating procedures and practices that result in efficiencies and cost savings accruing to both partners"; and, "modification of planning efforts to accommodate the participation of both CDPR and NPS". Following this parks-wide MOU, another MOU was prepared between NPS, CDPR, and California Department of Fish and Game (CDFG) specific to black bear-mountain lion management in RNSP. This bear-lion MOU establishes a Wildlife Working Group between the agencies to coordinate the two species' management within the Parks. It also establishes a number of objectives for the multi-agency group, one of which is "Review CDPR and NPS (Redwood National Park) Bear Management Plans for completeness, compatibility, and timeliness and integrate them into a single Parks document". These guidelines meet the objective of one comprehensive document for bear management in the State and National Parks.

In many national and state parks with bear populations, extensive availability of human food sources resulted in increased numbers of bears and altered the bears' natural behavior and foraging habits (Harms 1980, McCullough 1982, Tate and Pelton 1983, Ayers et al. 1986). In Redwood National and State Parks (Figure 1) our focus is to identify problems and take corrective actions to solve these problems.

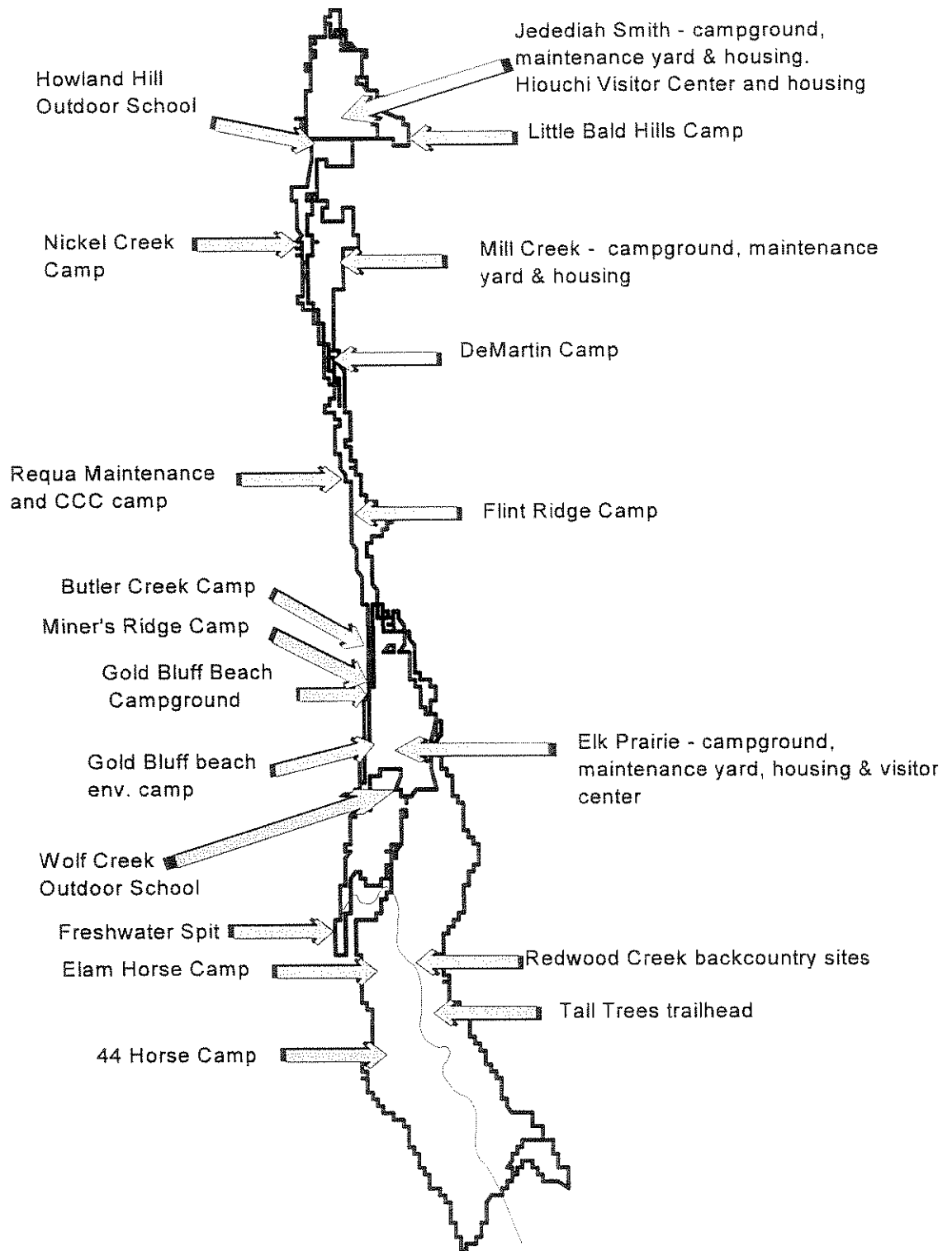


Figure 1. Location of major visitor use sites with bear management needs throughout RNSP

Threats to Black Bears

The coastal redwood forest ecosystem provides excellent black bear habitat because of the temperate climate and highly productive natural food sources (Kelleyhouse 1980). The increasing number of visitors, employees, and contractors using the parks increase the potential for familiarity with and loss of fear of humans, contact with human foods, and rapid development of new skills which enable bears to obtain human food. Resulting behavioral modifications could increase the frequency of bear/human interactions and the risk of personal injury and property damage (McCullough 1982, Gilbert 1989), which can ultimately lead to the destruction of bears.

Habituated bears may also become more vulnerable to mortality from poaching and being struck by cars. Poaching has increased nationwide due to the black market trade in bear parts such as gall bladders, which may sell for thousands of dollars in the far east. Recently, reported black bear carcasses (from automobile strikes) have disappeared from the roadways before a ranger arrived to determine cause of death. The impacts to bear populations from poaching in RNSP are unknown.

Developed areas within and adjacent to the parks already have people and bears in close proximity, and bear/human conflicts have occurred. Bears have become habituated to humans and their food, causing property damage and concern for human safety; two habituated bears were euthanized at Prairie Creek Redwoods State Park in 1989 and two in 1990. The highest priority areas are: developed campgrounds, backcountry campgrounds, outdoor schools, and park housing areas.

A major emphasis of these Bear Management Guidelines is to reduce the number and severity of negative bear/human interactions within the park and adjacent areas and protect black bear populations. RNSP will manage bears in conjunction with human management. Both visitors and park staff share the responsibility for preventing black bear problems. Relocation of problem bears is not currently a viable option due to the lack of suitable relocation sites in RNSP. Relocation has been used in other National Parks at considerable expense; return rate depended on factors such as age and sex of the bear, distance relocated, and physiographic boundaries between capture and release sites (Beeman and Pelton 1976, Rutherglen and Herbison 1977, McArthur 1981, Rogers 1986, Fies et al. 1987). In addition to bears that returned, many others were killed by resident bears, poached, legally harvested or taken on depredation permits. Relocated bears that survived and remained in the release area appear to be the exception rather than the rule (H. Werner, personal communication).

Suitable relocation sites within RNSP are lacking due to the long, narrow configuration of the park and proximity to population centers. Other government agencies and private landowners are unwilling to accept relocated problem bears because of the liability risk. Therefore, unless specifically requested by California Department of Fish and Game (CDFG), bears captured within Redwood National Park will not be relocated outside park boundaries. If so requested by CDFG, the captured animal would be turned over to Fish and Game for their disposal. Bears captured beyond park boundaries by others will not be released within the park.

Life History

The black bear is primarily found in forested habitats, and does not utilize areas very far from forested cover (Jonkel and Cowan, 1971; Lindzey and Meslow, 1977; Schroeder and Hofstra, 1982). Lindzey and Meslow (1977) noted that older forest stands (greater than 40 years after timber harvest), are used less than proportionally available. Young and Beecham (1983), observed that 82% of all radio locations of bears were in forested stands with understories between 25 and 100 years old. Schroeder and Hofstra (1982) found that radio marked bears in a RNSP study used a combination of old growth and cutover forested lands.

Generally, adult males use home ranges that are three to eight times larger than adult females (Jonkel and Cowan, 1971; Lindzey and Meslow, 1987); females with cubs utilize the smallest home ranges, followed by females without cubs. Female reproductive rate has not been quantified for RNSP. However, other studies have noted reproduction is proportional to the availability of high quality food (Jonkel and Cowan, 1971; Lindzey and Meslow, 1977; Rogers, 1987). Reproductive rate in RNSP is expected to be relatively high, due to the moderate climate and long growing season.

Black bears in the old-growth coastal redwood forests feed on natural foods primarily in relation to their seasonal abundance. The late winter is the only time of year when food may be limiting resource for bears in RNSP (Schroeder and Hofstra, 1982). During this time, the inner bark layer of redwood and Douglas fir trees, or cambium, is also fed on by bears (Schroeder and Hofstra, 1982; Morris et al. 1994), sometimes killing the tree as the bear girdles it to obtain this food source high in natural sugars. In the early spring (April), when bears emerge from their dens, emergent vegetation such as grasses, forbs (flowers), and wetland plants are utilized (CDFG, 1990). Habitats such as wet meadows and riparian areas (streamsides) are important sources of these foods. Occasionally, bears will take advantage of animal carcasses, such as winter-killed elk and deer, and calves/fawns succumbing to inclement weather or poor nutrition (C. Jonkel, pers. com.). As

summer begins, bears utilize the high-quality protein sources available to them in the form of the "social insects". Bears will tear apart rotting logs to get at ant and termite colonies, and will raid the nests of ground-nesting wasps.

In the past, when salmon and steelhead trout runs were at their peak (before habitat changes negatively impacted watersheds), bears undoubtedly relied heavily on this important food source, arriving at prime spawning areas to intercept the migrating fish in the shallows, and then feeding on the carcasses after spawning was completed. In late summer, the many berry species in the parks begin to ripen and are fed on heavily by black bears. This is the time when bears need to take advantage of high quality foods that can be ingested in great quantities, to build up fat reserves for the winter hibernation period. As berries start to disappear, the "mast crop", of acorns from the many oak species become an important late season food source before denning. They are eaten on the trees and after they have fallen to the ground. In nature, these food supplies can vary greatly from year to year, affecting the bears intake of calories, and forcing them to wander greater areas in search of food. Bears in the parks will utilize human foods at any time of the year, although this seems to occur with greater frequency when natural foods are in shorter supply. **Young bears, during their first couple of years after they have left the care of their mother, tend to be most susceptible to human food habituation.**

MANAGEMENT OBJECTIVES

Objectives of the Bear Management Guidelines include:

- Maintaining the natural integrity, distribution, abundance, and behavior of the endemic black bear population.
- Providing for park visitor safety through planned park development and use which avoids conflicts and dangerous bear incidents.
- Providing opportunities for visitors to understand and appreciate the black bear in its natural habitat.

To achieve these management objectives, a program consisting of seven key elements designed to prevent human/bear conflicts will be implemented. The seven elements of this program are:

- A. Public Involvement and Education
- B. Employee Involvement and Education
- C. Removal of Human Food Sources
- D. Enforcement of Regulations Re: Feeding of Wild Animals and Food Storage
- E. Management of Human/Bear Interactions
- F. Management of Problem Bears
- G. Research

These guidelines will be reviewed annually and revised as new research and monitoring information becomes available.

RESPONSIBILITIES

General Organization of Bear Management Duties

An effective bear management program can be accomplished by informing employees, park visitors and adjacent land owners of appropriate food and garbage storage practices, and reacting proactively to any sign of an animal becoming habituated to human related food items. This strategy requires some responsibility by all employees.

The Fish and Wildlife branch will be responsible for insuring that recommendations developed in the bear management guideline are implemented. A "Bear Action Panel" to coordinate bear management actions (trash & signing needs) will be composed of representatives from all divisions and encompass both state and federal employees. The following list of positions will be included on the panel. The wildlife biologist will be responsible for maintaining and revising the bear management guidelines and facilitating coordination between divisions.

Supervisory Ecologist	State Parks Liaison (Ecologist)
Fish and Wildlife Biologist	NPS Operations Supervisor (Ranger)
Wildlife Biologist	CDPR Chief Ranger
Interpreter (State and Federal)	Facility Manager (State and Federal)
California Dept. of Fish & Game rep.	Support staff member (maintenance)

This group will meet at least once per year to coordinate actions and review guidelines developed for bear management in RNSP. If problems arise, such as a bear incident or a misinterpretation of the guideline, the panel will make recommendations to the Bear Management Evaluation Team (BMET), as well as representatives from the Bear/Lion working group established under the interagency MOU.

The BMET will be composed of Division Chiefs of Protection , Maintenance, Interpretation, Administration, Research and Resources Management, and the Fish and Wildlife Branch Chief. This group will be responsible for funding, endorsement of the guidelines, and resolving conflicts.

-
- ▶ Resolve operational problems with garbage management and food storage structures.
 - ▶ Ensure educational media (site bulletins, bulletin board presentations, home page, campfire programs, and informational signs) are appropriate and available to employees and visitors.
 - ▶ Develop recommendation and priorities for funding of trash cans, dumpsters and sign materials.

➡➡➡➡➡➡ Bear Panel

- ▶ Review and endorse management guidelines.
- ▶ Ensure funding requests are prioritized within park budget.
- ▶ Resolve conflicts with how individual work units interpret and implement the bear management guidelines.

➡➡➡➡➡➡ Bear Management
Evaluation Team

-
- ▶ Approve area closures
 - ▶ Recommendation to superintendents to destroy a problem bear.
 - ▶ Resolve bear/human incidents

➡➡➡➡➡➡ Cooperative Effort
between Chief of RM&S
and Chief VS&RP or
CDPR Chief Ranger

- ▶ Approve Bear Management Guidelines.
- ▶ Ensure that bear management guidelines are incorporated into park operations where necessary and appropriate for preservation of a naturally reproducing bear population and the safety of employees and visitors.
- ▶ Final approval for RNSP to destroy a bear that has become a liability to the safety of visitors and employees.

➡➡➡➡➡➡ Superintendents

Division Chiefs are responsible for ensuring that all employees understand their delegated responsibilities as described in the Bear Management Guidelines. Successful implementation requires interdivisional cooperation. Major responsibilities for implementing and enforcing program elements are outlined below.

- A. Public Involvement and Education Interpretation
Maintenance
Administration
Resource Management & Science Division (RM&SD)
Visitor Services & Resource Protection (VS&RP)
- B. Employee Involvement and Education Administration Interpretation
RM&SD
Maintenance
VS&RP
Administration
- C. Removal of Human Food Sources Maintenance
VS&RP
RM&SD
Interpretation
- D. Enforcement of Regulations VS&RP
- E. Management of Human/Bear Interactions VS&RP
RM&SD
Interpretation
- F. Management of Problem Bears VS&RP
RM&SD
- G. Research RM&SD
Scientists from other agencies/Universities
- H. Reporting Observations All Employees

GENERAL PROCEDURES

A. Public Involvement and Education

The objective of this program element is to educate park visitors that they are in "Bear Country". This information will focus on human/bear relationships in RNSP, the causes of human/bear conflicts, and how visitors can help alleviate problems through their personal actions and compliance with park regulations. The ultimate goal is a well-informed park visitor.

1. A "Bear Country" brochure explaining bear problems, their causes, what visitors can do to alleviate them, park regulations, violation penalties, and bear management objectives is available at all facilities. The brochure will be available for visitors at all visitor contact stations. Verbal information and a brochure about camping in bear country will be provided to all visitors acquiring backcountry camping permits; the brochure may be consolidated with other backcountry literature to avoid duplication and decrease the amount of reading material given to visitors. Backcountry users will be encouraged to acquire and use bear-proof food containers. Visitor guides and handout material will provide bear safety information. Bear safety information will be included in participant guidelines at outdoor schools, such as teachers guides.

2. Pertinent bear information will be placed at the entrance to major visitor use areas. These signs will remind visitors that they are entering bear habitat containing potentially dangerous wildlife. Information signing will have a consistent message, although some locations will have additional site-specific information (e.g., Wolf Creek Outdoor School, CCC dorms at Requa, etc.). Where possible, the information will include area specific information (i.e. trails, wildlife observation cards, camping regulations, etc.) as part of a planned exhibit and on separate signs to increase visibility. For purposes of bear management, signs are classified as six different types (see Appendix 1, all except types 3&4): (1) picnic table notices (one for camping areas and the other for day-use areas) informing visitors to properly store and dispose of food and garbage; (2) stickers for backcountry food lockers (one for hike-in camps, the other for horse camps) informing visitors to store all food, utensils, horse feed, etc. in lockers; (3) a kiosk bulletin (the "Bear Country" pamphlet) which has information on bear biology, food and garbage storage, and backcountry food storage; (4) large entrance sign "You are entering bear country" at major use sites (campgrounds, etc.); (5) a sticker placed on dumpsters informing visitors of the need to use the lockbar; (6) a pack out trash sign.

3. Comprehensive articles, as well as brief notices about bears, will be placed in visitor guides.

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4. All requests received by mail for general visitor information about the park will include bear information.
 5. Interpretive activities will include information about bears. For example, some programs should include significant information about black bears, their ecology, biology, behavior, and the problems of habituation to human food. Warmup activities at programs should include bear safety information as part of the mandatory safety message.
 6. Handouts, posters, videos, exhibits and signs regarding bears will be developed that specifically apply to RNSP.
 7. Include a short black bear natural history section as well as ways to keep bears wild on the Redwood National and State Parks' home page on the Internet.

B. Employee Involvement and Education

1. All supervisors will be responsible for orienting new employees (including volunteers, prison crews, and CDF crews) to the bear management guidelines. The personnel office will provide orientation materials, a summary of these guidelines and expectations of living and working in bear country. CCC employees will receive bear information as part of their orientation program.
2. All COR's and Special Use Permit administrators will orient contractors and concessionaires to the bear management guidelines. Provisions on compliance with, and penalties for violation of park bear regulations will be included in all new contracts or added as an addendum to existing contracts when applicable.
3. VS&RP will be responsible for assessing property damage or personal injury losses/liabilities, and will process tort claims pertaining to the same.
4. Fish & Wildlife staff will present bear awareness training at seasonal orientation. Crew leaders (trail crews, CCC, etc.) should be cognizant of food storage and garbage handling procedures, and should routinely inspect their operations to insure clean surroundings.
5. Any employee who witnesses a violation by visitors, contractors or concessionaires will ensure that the violators understand park bear regulations and suggested precautions. The employee will contact the VS&RP promptly so that they can follow-up to insure compliance. If a dead bear is found, employees will notify appropriate ranger staff and the Fish & Wildlife staff as soon as possible, so that an attempt to determine the cause of death can be made.

C. Removal of Human Food Sources

The objective of this program element is the total elimination of human food sources for the black bear. A combination of wildlife-proofing food and garbage storage containers, routine inspection and replacement to insure proper functioning of equipment, and a well planned garbage pick-up schedule will accomplish this.

1. Maintenance Standards

- All campgrounds, picnic areas, park roads, and other areas where visitors concentrate will be maintained litter free.
- Existing non-bear-proof garbage cans and food storage lockers in bear use areas will be modified or replaced with bear-proof cans by priority location. Sites were prioritized based on four criteria: visitor use; trash volume; bear observations in or adjacent to the site; and proximity to streamside corridors which tend to receive high use by bears. All new developments will be planned with bear proof containers. Damaged or inoperative cans will be promptly repaired or replaced.
- The California Conservation Corps (CCC) camp at Requa is administered under a Special Use Permit (SUP) issued by RNSP. Proper food and garbage storage is identified under additional terms of the permit. The CCC District Director is responsible for the camp complying with all terms and conditions of the permit. The permit is issued by the Superintendents of RNSP; their representative responsible for on site compliance is the Chief Ranger or his/her field patrol rangers. The Fish & Wildlife Branch will coordinate directly with the CCC in camp supervisor to identify and correct food and garbage storage problems. If the CCC personnel are uncooperative or fail to implement reasonable and prudent recommendations, the F&WL branch will communicate directly with the District Director or recommend to the Chief of Visitor Services and Resource Protection an appropriate course of action. An example could be a letter to the District Director from the management team or superintendents to resolve a conflict. A citation for violation of the code of federal regulations may be issued if warranted.
- All backcountry employee/contractor/concessionaire camps will have bear-proof food storage and garbage containers or keep food items locked in hard sided vehicles. The employees, contractors and concessionaires will be responsible for using the containers properly and removing garbage on a regular basis.

2. Food Storage Regulations

- Numerous state and federal regulations exist and will be judiciously enforced to assure the protection of the public and park's wildlife populations. See Appendix 2&3. CFR = Code of Federal Regulations; CCR = California Code of Regulations.
 - (1) Title 36 CFR, Section 2.2 (a)(2), prohibiting the feeding of wildlife.
 - (2) Title 36 CFR, Section 2.10(d), concerning storage of food.
 - (3) Title XIV, sec. 251.3 CCR, prohibits the feeding of big game mammals.
 - (4) Title XIV, sec. 4305 (b), CCR, prohibits feeding of wildlife where posted.
 - (5) Title XIV, sec. 4323(b), CCR, food and garbage must be stored in areas not accessible to bears, such as food storage lockers, "vehicles incapable of being opened by wild animals", and bear-proof trash containers.
- Additional food storage guidelines will be developed as needed to ensure proper bear-proof protection of human foods. A method for dealing with food storage violations at the Outdoor Schools is attached (see Appendix 4).

3. Use of Special Devices

- Special devices (e.g., cables, steel lockers, bear poles) will be provided at designated sites for storage of human food and garbage. They will be installed and maintained by the Maintenance Division.
- Information on use of bear-proof food containers and the "counter-balance" method of hanging food will be provided to back-country users in written and verbal form.

D. Enforcement of Regulations

The objective of this program element is to ensure visitor cooperation in eliminating and preventing bear/human conflicts through enforcement of park regulations relating to bears, as well as assure adequate protection of our black bear population. In addition the previous state and federal regulations pertaining to food storage, Title 36 CFR 2.2(a)(1) prohibits "taking" of wildlife (and wildlife parts from dead animals).

Rangers of the Visitor Services and Resource Protection Group (NPS) and California Dept. Of Parks & Recreation (CDPR) will patrol developed areas including campgrounds as well as backcountry areas to assure compliance with resource protection regulations including food storage regulations. Additionally, patrols will be conducted within the parks during the state's bear hunting seasons to protect bears from poaching. Law enforcement actions taken in any particular situation will depend upon the level of enforcement required for the given situation. These range from verbal warnings, to citations and arrest. Currently, maximum penalties are \$100 for feeding wildlife and \$50 for improper food storage or improper refuse disposal. This schedule of fines is subject to increase periodically as determined by the Northern California U. S. District Court. Illegal taking of wildlife may result in subjects being arrested, and requires a mandatory appearance in the U. S. Magistrate Judge's Court.

E. Management of Human/Bear Interactions

The objective of this program element is to apply corrective action to prevent human/bear interactions from escalating into more serious problems.

1. Notification of Potential Conflicts

- RNSP employees will promptly notify the Chief of the Fish and Wildlife Branch (or CDPR's Northern Communications Center at 916-988-9830, if Chief is unavailable), by phone or radio of all situations with high human/bear conflict potential. CDPR Communications Center will be provided with the home phone numbers of Fish & Wildlife Branch personnel. Employees will fill out a wildlife observation form (see Appendix 5); VS&RP and CDPR patrol rangers should be notified if an actual human/bear interaction occurs. Such situations include but are not limited to the following:
 - (1) a bear searching for garbage and/or human food.
 - (2) a bear frequenting a campground or picnic area.
 - (3) a bear consistently using a berry patch near a popular trail.
 - (4) a bear that acts aggressively towards humans.
 - (5) a bear that appears unusually tame.
- The Fish and Wildlife Branch will investigate the situation and recommend corrective action (e.g., removal of obtainable sources of human food, posting warning signs for visitors, patrols by rangers, area closure) to the appropriate park division or Superintendent(s) for implementation. The corrective action should be carried out as quickly as possible, since time is critical when a potentially dangerous situation could develop.

2. Response to Incidents

- RNSP employees receiving information of, or witnessing a bear/human interaction, shall immediately notify a ranger (by radio or phone), as occasionally these situations are a public safety matter. After verbally notifying rangers, the employee receiving the information from a visitor should remain with the visitor until the responding ranger arrives. The responding ranger should obtain the information needed to assess the situation: name, address, phone numbers, exact location of the bear incident, and details about the bear's physical appearance from the reporting party. All situations determined to have risks involving human or bear safety will require corrective actions, which should be coordinated with the Fish and Wildlife Branch.

3. Closures

- If a bear has caused extensive property damage or exhibits aggressive behavior, the area affected will be closed. The area will remain closed until the threat to public safety has been removed. The RM&S Division Chief and supervisory CDPR and/or NPS Rangers have the ultimate authority to designate closure areas.
- The supervisory Rangers (NPS or CDPR) and Division Chief of RM&S will recommend whether to reopen an area following consultation with the Fish and Wildlife Branch Chief.

F. Management of Problem Bears

The objective of this program element is to prevent additional property loss and/or personal injury by problem bears. Bear management actions include developing a dossier on problem bears, aversive conditioning, and the control of dangerous or destructive bears.

1. Developing a Dossier

- All RNSP employees and volunteers will document all human/bear interactions immediately after the interaction. Employees are also responsible for documenting incidents when reported to them by visitors. Date, time location, names and addresses of all involved, description of the bear and the incident should be recorded. Employees are to promptly submit the pertinent information directly to the Fish and Wildlife Branch Chief. The

Fish and Wildlife Branch will then place the information in a dossier and attempt to identify the offending bear. The dossier then provides a "history" of incidents for the individual bear(s) that will be used to determine the most appropriate action if the bear incidents escalate. The Chiefs of RM&S and VS&RP will coordinate in recommending appropriate actions after one confirmed incident of a threat to public safety. Property damage (if human negligence was not responsible) will be a factor when considering actions to influence the bears' behavior.

- When possible, personal injury and property damage will be photographed. The VS&RP will investigate incidents involving property damage and/or personal injury using a Case Incident Report (Form 10-343) and forward copies of these reports to the Fish and Wildlife Branch Chief within 24 hours. These forms are used on Federal land within RNSP; if injury/property damage occurs on state land within RNSP, a "Public Safety Report" (Form DPR-385) is used.

2. Aversive Conditioning

- The objective of aversive conditioning is to reinforce a bear's natural fear of humans and by association, human possessions. Aversive conditioning ranges from shouting and waving arms to the use of a pain-inflicting or noxious agent. Generally, these actions will be initiated with the simplest and least manipulative method (noise).
- General procedures to be followed during any aversive conditioning:
 - (1) The employee should assess the situation and determine if it demands action or will resolve itself acceptably given a little time and monitoring. Objectives should be defined and facts gathered before provoking a confrontation.
 - (2) The bear should always be given an escape route. Spectators should be removed from the area before initiating any action.
 - (3) The employee should accurately record data on identifying marks of the animal, actions, reactions, etc.
 - (4) Park employees should explain the reasons for their actions to any bystanders.
 - (5) Visitors should be encouraged to use loud noises to discourage bears and

enlisting park employees to employ further techniques.

● Specific Techniques

(1) Making loud noises such as horn blasts, clapping hands, yelling, using whistles are all acceptable techniques and may be used initially by any person if it can be conducted without endangering themselves or others.

(2) Park employees may throw small rocks to discourage bears from entering or remaining in developed areas if there is no risk of injuring people or property and there is little risk of hitting the bear in the face (e.g., distant target, bear facing projectile). Other, more sophisticated techniques in which physical impact and pain is inflicted on the animal will only be implemented by trained park employees.

(3) A conditioning agent, i.e. "Counter Assault" (Rogers 1984) may be used as an aversive technique by personnel trained in its use if the previously described techniques are ineffective or cannot be conducted safely. Lead personnel at Requa CCC camp, outdoor schools, and drive-in campgrounds (the sites with known or potential bear problems) will have pepper spray issued to them by their supervisor since law enforcement or resource personnel often arrive long after the bear has left. All employees issued spray canisters will have proper training in its use.

WHO MAY USE AVERSIVE CONDITIONING:	TECHNIQUES:				
	loud noise	wave arms	throw rocks at bear	pepper spray	rubber bullets
Park visitors	X	X			
Park employee	X	X	X		
Trained park employee	X	X	X	X	X

3. Bear Capture (dangerous or destructive bears)

- Only bears which cause injuries and/or property damage, exhibit unusual tameness, frequent roads and other developed areas, beg, stop cars, threaten or wait for handouts, frequently enter occupied campsites, or aggressively and forcibly take or search for food will be targeted for capture, tagging, release, and monitoring.
- All employees that are assigned duties involving use of firearms will maintain a certification as identified in NPS 44, chapter 3 (Management of Firearms and Ammunition). One member of the Fish and Wildlife branch will be designated by the superintendent to be the park practitioner and maintain the appropriate permits with the Drug Enforcement Administration. The park practitioner will be responsible for maintaining the inventory of immobilization chemicals and authorizing employees to administer appropriate drugs in wildlife capture operations (see Appendix 6).
- No captures will be attempted unless an offending bear is thought to be in the area.
- The culvert trap will be the primary capture device used near developed areas. However, other devices and methods may be used if considered safe and more feasible. Foot snares and free-range darting will be used in developed or high visitor use areas only if culvert traps are ineffective. Traps must be checked at least three times daily: early morning, mid-day, and evening. Bait used will approximate food found in the wild as much as possible; spoiled fruit, cat food and mackerel without cans are acceptable, but hot dogs, bacon, etc. are not.
- Signs clearly warning people to stay away must be posted around the perimeter of a set trap. Flagging tape should be placed as a barrier around the perimeter as well. Campgrounds or public areas may be temporarily closed.
- Procurement, storage, and use of bear immobilizing drugs will be in accordance with Federal regulations and park policy. Immobilizing drugs will be administered via syringe and jab stick, or Palmer "CapChur" pistol, or equivalent equipment. Immediately following drug injection, the bear will be continuously monitored for respiratory complications, convulsions, excessive body temperature, dehydration, and damage to eyes. The animal will remain under observation at the release site until it is up and moves off on its own power. See Appendix 7 for the bear capture form.

4. Monitoring

- The purpose of monitoring is to verify that the tagged bear is actually the individual causing the problems. This will ensure that only bears that are habitually causing property damage or threatening human safety are removed. For identification, an obvious blaze or paint marking may be substituted for capture and tagging of the animal.
- Monitoring of tagged animals will follow the reporting requirements of the section on developing a dossier. All recorded observations of tagged bears will be forwarded to the Fish and Wildlife Branch Chief (or available rangers) within 24 hours of the observation.
- Wildlife observation report forms (Appendix 5) will be made available at visitor information stations and trailheads to encourage visitors to report wildlife sightings and incidents. The RM&SD, with the assistance of the Interpretive Division and VS&RP, is responsible for card availability and collection. All incidents that occur in the State Parks will be recorded on the Wildlife-Human Interaction Form DPR 385A (Appendix 8).
- All bear management actions will be summarized and recorded by the Fish and Wildlife Branch.

5. Decision Criteria for Euthanization of Problem Bears

Only bears having a documented history of offenses indicating a high probability of inflicting human injury or causing extensive property damage will be recommended for euthanasia. The decision to destroy a bear will be based on the accumulated information in an individual bear's dossier. The recommendation to destroy a bear will be made by the Fish and Wildlife Branch Chief, the NPS Operations Supervisor (formerly District Ranger), Chief Rangers of NPS and/or CDPR, and the Chief of the RM&SD. A representative from California Dept. Of Fish & Game will be notified. In emergency situations involving a critical and immediate hazard to human safety, the recommendation to destroy a bear may be made by the Fish and Wildlife Branch Chief and the supervisory operations Ranger (and CDPR lead rangers). The decision to destroy a bear must be approved by the Superintendents, and will be guided by the following criteria in the dossier. Bears that are a threat to human safety/property will be identified through accumulated evidence of personal injury and/or exhibiting extreme aggressiveness. Behavior characteristics include the following:

-
- Chasing people to obtain food carried by them.
 - Advancing while snarling, huffing, laying back ears, or baring teeth. Cannot be turned back by shouting, throwing objects, etc. Movement towards humans is unprovoked.
 - Mauling occupied or unoccupied sleeping bags.
 - Making physical contact with humans that is unprovoked (the bear was not forced into protecting itself or its young) or intentional despite having avenues of escape.
 - Entering (or attempting to enter) cars, motorhomes, trailers, tents, and dwellings occupied by humans.
 - Other behavior that results in a serious threat to human safety. Bears that exhibit injury, trauma or diseases that may be transmittable to humans may also be candidates for removal.

If damage to property occurs over three consecutive days or on four separate days (day = 24 hour period) within one week, then the bear's pattern/mode of depredation will be considered when evaluating whether the animal is a threat to humans. For example, vehicle/tent break-ins (aggressive bear) versus damage to food supplies and equipment left out in the open (human negligence). The time, frequency, and magnitude of depredation, as well as determining with certainty that an individual bear is causing the damage (as opposed to numerous bears) are important factors.

6. Destroying Bears

- Bears designated for destruction will be trapped, immobilized, and then euthanized with approved drugs. In some cases the Superintendent's decision for removal may state that the destruction of the animal is best accomplished with a firearm. Designated park staff will be responsible for shooting animals.
- Bears that have been destroyed will be disposed of in accordance with applicable agreements, laws, and regulations. Except for interpretive, scientific purposes, and law enforcement, no parts may be removed from a dead bear unless a formal written request has previously been approved by the Superintendent.

-
- In most instances RM&SD will dispose of dead bears in remote locations of the park where they are unlikely to be encountered by visitors. Bears euthanized with drugs will be buried or given to appropriate institutions for educational or research purposes. Burial must be carried out to insure that the carcass will not be scavenged, as the euthanasia drugs could prove hazardous to animals feeding on the carcass.

G. Research

The following research objectives were established to increase knowledge of bear distribution, population dynamics, behavior, ecology of human/bear interrelationships, and to evaluate management programs affecting black bears in RNSP. The first two objectives are of primary importance to the current bear management program:

- Evaluation of key elements in the human/bear management program and their effectiveness.
- Determination of the effectiveness of modifying bear behavior through aversive conditioning (non-lethal deterrents such as cracker shells, plastic slugs, cayenne spray, etc.). A literature review as well as communication with other parks that carry out aversive conditioning is recommended for adding to knowledge of these techniques.

Remaining objectives will be pursued if outside funding sources become available:

- Determination of seasonal and annual distribution patterns and movements.
- Determination of habitat requirements including natural food preferences and ratings of importance of habitat types by forage quality and quantity.
- Determination of population dynamics including productivity, survival, and mortality rates.
- Application of a sampling technique that will provide realistic population estimate or density estimates of bears in a given area.
- Evaluation of relationship to humans including the effects of humans upon bear numbers, distribution, movements, and food habits.

SPECIAL PROVISIONS

The following items are listed to underscore specific sections of the plan.

1. The seasonal visitor guide/newspaper must contain bear management information. Fish & Wildlife staff will coordinate with Interpretive staff each time the visitor guide is being updated.
2. The plan calls for an annual review. Revisions will be made when necessary. The BMET shall provide its review comments and recommendations to the Superintendent(s) by December 1 of each year, if bear incidents warrant.
3. The importance of public information and education should be emphasized. Interpretive programs, displays and information brochures shall be assessed annually by the Chief of Interpretation with assistance from the wildlife staff and modified accordingly. Attention will be given to developing new programs and brochures as needed.
4. Observation/Incident Reporting: past reluctance or procrastination in completing observation/incident reports by employees should be discouraged by supervisors. Under no circumstances should an employee fail to comply with incident reporting requirements.
5. Update backcountry permit with additional bear management information specific to backcountry camping/food storage.

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APPENDICES

HUMAN FOOD & GARBAGE CAN KILL BEARS !

Food attractants are the main cause of bear - human conflicts. Bears that learn to depend on human food eventually become aggressive and often have to be killed. Make sure your food, food storage containers, garbage, and other odorous items are properly stored as required by law.

After meals, before leaving camp or sleeping, check to be sure you have a bear - proof campsite :



All food, ice chests, thermoses, dirty dishes, and cooking utensils must be stored in a bear-proof container or out of view in a closed vehicle or building.



Treat odorous products such as soap, toothpaste, deodorant, suntan lotion, and perfumes in the same manner as food.

PLEASE DO NOT FEED WILDLIFE



REDWOOD NATIONAL & STATE PARKS

You are in Bear Country!

HUMAN FOOD & GARBAGE CAN KILL BEARS



Help keep bears wild! Place all trash in dumpsters or bear-proof cans.



If trash cans or dumpsters are not available, please clean up the area and take your trash with you to dispose of properly in another location.



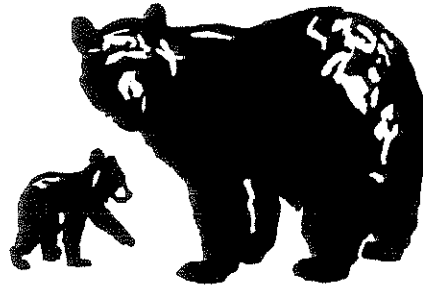
**PLEASE DO NOT
FEED WILDLIFE**



REDWOOD NATIONAL & STATE PARKS

YOU ARE IN BEAR COUNTRY!!

HUMAN FOOD
AND GARBAGE
CAN KILL BEARS



Always store food, cooking utensils, soap, shampoos, toothpaste, and other odorous items in bear-proof locker.



Temporarily store trash in locker, **then pack it out!**



Store all horse feed (grain, pellets, etc.) in locker.



REDWOOD NATIONAL & STATE PARKS

YOU ARE IN BEAR COUNTRY!!

**HUMAN FOOD
AND GARBAGE
CAN KILL BEARS**



Always store food, cooking utensils, soap, shampoos, toothpaste, and other odorous items in bear-proof locker.



Temporarily store trash in locker, **then pack it out!**



REDWOOD NATIONAL & STATE PARKS

YOU ARE IN BEAR COUNTRY!



This dumpster was specifically
designed for use in bear country.

Bears and other wildlife:



are attracted to odors of food and garbage
around dumpsters.

- PLACE TRASH INTO DUMPSTER AND
CLOSE LID
- LIFT BAR AND LATCH WITH CLASP, PIN,
OR OTHER DEVICE
- DO NOT LEAVE TRASH ON OR OUTSIDE
DUMPSTER



REDWOOD NATIONAL & STATE PARKS



Appendix 1, Type 6. Bear management signing: pack out trash sign

36CFR 2.2(a)(2) The feeding, touching, teasing, frightening or intentional disturbing of wildlife nesting, breeding or other activities is prohibited.

36CFR 2.10(d) Food Storage. The superintendent may designate all or a portion of a park area where food, lawfully taken fish or wildlife, garbage, and equipment used to cook or store food must be kept sealed in a vehicle, or in a camping unit that is constructed of solid, non-pliable material, or suspended at least 10 feet above the ground and 4 feet horizontally from a post, tree trunk, or other object, or shall be stored as otherwise designated. Violation of this restriction is prohibited. This restriction does not apply to food that is being transported, consumed, or prepared for consumption.

Title XIV sec. 251.3 Prohibition against feeding big game mammals. No person shall knowingly feed big game mammals, as defined in sec. 350 of the regulations. Persons who fail to cease feeding big game mammals within seven (7) days of receiving official notice by a Department of Fish and Game Regional Manager, through certified mail, shall be in violation of this section. (Big game being defined as deer, elk, pronghorn antelope, wild pig, black bear, and Nelson bighorn sheep).

Title XIV sec. 4305 (b) Feeding of wildlife. In units or portions thereof where posted in accordance with Section 4301 (I), no person shall feed any wildlife or feral animal listed on such posting.

Title XIV sec. 4323 (b) Food and garbage storage. In units or portions thereof where posted in accordance with Section 4301 (I), no person shall store food, lawfully taken fish or wildlife, garbage or equipment with food residue, other than in the sealed compartment of a vehicle incapable of being opened by wild animals, in a food storage unit designated by the Department, in accordance with posted instructions, or, in areas where bears are a problem, suspended at least ten (10) feet above any material that would support the weight of a bear and separated horizontally by at least four (4) feet from any post, tree trunk, or other object. This restriction does not apply to food that is actively being carried, consumed, or prepared for human consumption or pets.

Food Storage Violations

1) List of food and garbage storage violations identified as **serious in nature** and that warrant actions including contact with the group leader and letters to group leaders and their supervisors:

- Leaving food or garbage unattended while available to bears (bags of garbage left out next to garbage cans, on the porch of a building or in the back of an open pickup truck).
- Feeding or baiting bears.

Included here would be situations where users inappropriately let a bear get into food or garbage with out attempting to chase it away. Remember animal behavior tells the wildlife manager how habituated the individual animal has become.

2) List of food and garbage storage violations identified as **minor problems** but that warrant contact with group leader. Determine whether the orientation was poorly presented or the groups just need multiple notices of food storage awareness. Adjust accordingly:

- Small food, garbage and toiletry items left lying around the campus; i.e., something that could be quantified as a handful, like candy wrappers or crumbs.
- Leaving kitchen/lodge door unlatched while away from the campus (especially with food and garbage stored inside the building). Building unsecured.

Notes to consider....

- Food stored in a building is considered properly stored away from wildlife. However, improperly securing the building would be considered a food storage violation.
- One incident alone should not justify removal of users (except direct feeding of bears, raccoons, skunks, chipmunks, jays, ravens etc.)

WILDLIFE OBSERVATION REPORT

Species_____

Observer_____

Date_____ Time_____

Observation Type: Sight_____ Track_____

Other_____

Age of Sign_____

Number & Description_____

Identification_____

Activity_____

Location & Terrain_____

Vegetation_____

Weather Conditions_____

Remarks_____

(remarks may be continued on back)

Redwood National Park
WILDLIFE OBSERVATION/INCIDENT CARD
 KEEP WILD ANIMALS WILD-DO NOT FEED THEM

☐ bear	Date_____ Time_____
☐ elk (# with antlers__)	Location (be specific)_____
☐ mountain lion	_____
☐ otter	_____
☐ coyote	Number adults_____
☐ bobcat	Number juveniles_____
☐ osprey	Condition: healthy ☐
☐ eagle	sick/injured ☐
☐ black-shouldered kite	dead ☐
☐ spotted owl	Distinguishing colors/marks_____
☐ peregrine falcon	_____
☐ marbled murrelet	ID collar yes ☐ color_____
☐ salmon (species_____)	no ☐ location_____
☐ other: specify_____	ID tag yes ☐ color_____
	no ☐ location_____

Observed behavior_____

Remarks_____

Observer name/address_____

GUIDELINES FOR USE OF WILDLIFE CAPTURE USING CHEMICAL IMMOBILIZATION EQUIPMENT AND SUPPLIES

REDWOOD NATIONAL AND STATE PARK August 1997

The purpose of this guideline is to identify the necessary training and experience to lead wildlife capture operations within Redwood National and State Parks (RNSP). Use of chemical immobilization techniques to capture wildlife is common throughout the world. The method involves risk to both the employee administering the drugs and the animal chosen for the treatment. Guidelines have been established in NPS-44 and NPS-77 to ensure all capture operations undertaken by NPS personnel are performed in a professional manner and the risks to the animals are minimized.

The Superintendent will designate a "park practitioner" who will be responsible for acquisition, security, and administration of immobilization drugs. The storage of drugs, licensing of the park practitioner and recording of capture operations will be in accordance with Drug Enforcement Administration guidelines. The practitioner will meet the qualifications as outlined in 36 CFR (see 21 CFR for additional information). The training requirements for the park practitioner are:

- 1) Eight hours of classroom training in drug physiology, wildlife response to chemical restraint, safety precautions in managing a capture attempt, and emergency procedures to protect humans and animals involved with a capture attempt.
- 2) Sixteen hours of on-the-job training in the preparation of equipment and setup of the capture scene, administration of drugs to immobilize animals and recovery behavior and patterns of animals under the influence of chemical restraints.

All personnel assigned duties that use chemical restraint methods to capture wildlife will be authorized to do so under the direction of the park practitioner and the Chief of the Fish and Wildlife Branch. The park practitioner will be responsible for maintaining a core group of employees capable of carrying out chemical restraint operations. The practitioner will provide training for capture team members to maintain their skills in wildlife handling techniques. In order for personnel other than the park practitioner to supervise a capture operation they must attain the following training:

- 1) Four hours of classroom instruction in drug physiology, wildlife response to drugs, and wildlife management policies and procedures.
- 2) Four hours of training in capture techniques, equipment, drug use and storage requirements, and emergency procedures in cases of accidental human exposure to immobilization drugs.

3) Sixteen hours of on-the-job training in preparation of darts, administration of drugs, and response to drugs.

4) All personnel must perform an equipment refresher once per year to maintain proficiency in use, care and maintenance of rifles, darts, syringe sticks, blow guns and snares. Individuals must exhibit an 80% proficiency with the rifles by hitting an 8 inch circle at 15 and 25 yards. The same proficiency must be demonstrated for the pistol at 10 yards.

5) A standard firearms safety training course (NRA or equivalent 8 hour course) presented by a certified instructor.

The person supervising a capture operation may select individuals who have not completed the above training to assist by assigning them duties other than loading of darts and firing of the projectors (rifle, pistol or blow gun). Prior to setting up the capture attempt all persons involved in the attempt will be briefed on the layout of the methods, safety precautions, expected response of the animal and emergency responses needed in cases where standard procedures are interrupted.

All loaded darts are dangerous. In order to minimize exposure to non-target species (including humans), a search will be conducted to recover all darts that fail to hit the intended target.

RNSP BEAR IMMOBILIZATION DATA

DATE _____ TIME _____ BIOLOGIST(S) _____
 AGE _____ WEIGHT(estimated) _____ WEIGHT(actual) _____ SEX (M/F) _____
 LOCATION OF CAPTURE: _____

INJECTION TIME	METHOD*	DRUG	CONCEN- TRATION	DOSE	INJECTION SITE **
_____	_____	_____	_____ mg/ml	_____ mg	_____
_____	_____	_____	_____ mg/ml	_____ mg	_____
_____	_____	_____	_____ mg/ml	_____ mg	_____
_____	_____	_____	_____ mg/ml	_____ mg	_____
_____	_____	_____	_____ mg/ml	_____ mg	_____
_____	_____	_____	_____ mg/ml	_____ mg	_____

* blowgun, rifle, pistol, syringe

**right, left, shoulder, hip, back, other (describe)

REACTIONS:	ACTUAL CLOCK TIME	TIME SINCE INJECTION	DESCRIBE REACTION(S) TO DRUGS
FIRST EFFECTS	_____	_____	_____
ANIMAL DOWN	_____	_____	_____
HEAD UP	_____	_____	_____
STANDING	_____	_____	_____
RELEASED	_____	_____	_____

PHYSIOLOGY:

TIME	_____	_____	_____	_____	_____	_____
TEMPERATURE (T)	_____	_____	_____	_____	_____	_____
PULSE (P)	_____	_____	_____	_____	_____	_____
RESPIRATION (R)	_____	_____	_____	_____	_____	_____

BLOOD TAKEN? YES NO HAIR SAMPLE? YES NO PHOTO? YES NO
 COMPLICATIONS? YES NO DESCRIBE _____

WAS THIS IMMOBILIZATION SATISFACTORY? YES NO
 SUGGESTIONS/MODIFICATIONS: _____

NOTES:

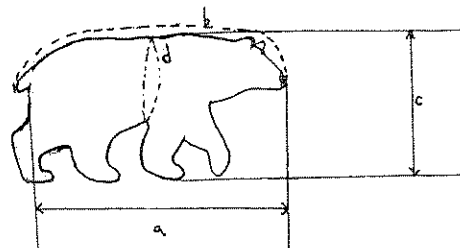
USE BACK OF FORM TO DESCRIBE PHYSICAL FEATURES OF THE ANIMAL.

EAR TAG? YES NO # _____ LEFT # _____ RIGHT
 RADIO COLLAR? YES NO # _____
 PARASITES? _____
 BLAZE? YES NO LOCATION _____
 OTHER MARKINGS, SCARS ETC. _____

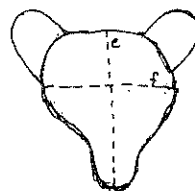
MEASUREMENTS

UNITS: INCHES/CENTIMETERS (circle)
 (centimeters preferred)

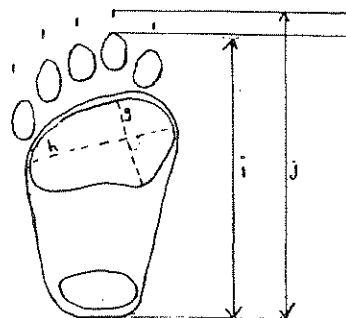
a TOTAL LENGTH _____
 b TOTAL CONTOUR _____
 c HEIGHT AT SHOULDERS _____
 d GIRTH AT CHEST _____



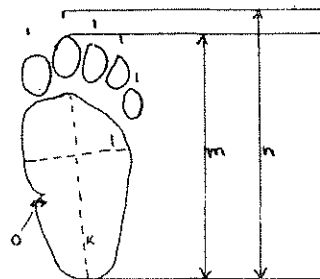
e HEAD LENGTH _____
 f HEAD WIDTH _____



FRONT PAW
 g PAD LENGTH _____
 h PAD WIDTH _____
 i LENGTH TO TOE _____
 j LENGTH TO CLAW _____



REAR PAW
 k PAD LENGTH _____
 l PAD WIDTH _____
 m LENGTH TO TOE _____
 n LENGTH TO CLAW _____
 o CLEFT LENGTH _____



PUBLIC SAFETY REPORT SUPPLEMENTAL - NATURAL HAZARDS

WILDFIRES

Lic. No. of DPR Vehicle Dispatched	Personnel Dispatched	Time
		:
		:
		:

SIZE OF FIRE UPON ARRIVAL (sq. ft. or acres)	WEATHER CONDITIONS			Source of Data
	Temperature ° F	Humidity %	Wind Speed mph	

IGNITION SOURCE				
☐ Lightning	☐ Camping	☐ Playing With Fire	☐ Electrical Power	☐ Railroad
☐ Incendiary (crime)	☐ Smoking	☐ Equipment Use/Vehicle	☐ Debris Burning/Prescribed Burn	☐ Miscellaneous/Unknown

DATE FIRE CONTROLLED / /	TIME FIRE CONTROLLED :	TOTAL AREA BURNED-DPR LANDS ONLY (Attach map or use DPR 386)	DAMAGE TO STRUCTURE(S) ☐ Yes ☐ No
-----------------------------	---------------------------	--	---

EVAUATION ☐ Yes ☐ No	DPR PERSON HOURS EXPENDED	NAME OF FIRE (obtain from Incident Commander)	INCIDENT COMMANDER (Give name and organization)
--	---------------------------	---	---

WILDLIFE-HUMAN INTERACTION

ANIMAL TYPE	ANIMAL AGE ☐ Adult ☐ Juvenile ☐ Unknown	ANIMAL COLOR	CUBS PRESENT ☐ Yes ☐ No
ANIMAL MARKINGS		TAG/COLLAR DESCRIPTION/ID NO.	

EXACT LOCATION OF INTERACTION (attach map or use DPR 386)	DISTANCE FROM ANIMAL	NO. PERS. IN GROUP	NO. PERS. UNDER 5 FT. TALL
---	----------------------	--------------------	----------------------------

VISITOR ACTIVITY (check one box)	ANIMAL ACTIVITY (check one box)	VISITOR ACTION (check one or more boxes)	ANIMAL RESPONSE (check all appropriate boxes)
☐ Camping ☐ Hiking ☐ Biking ☐ Equestrian ☐ Preparing Food ☐ Eating ☐ Jogging ☐ Sleeping ☐ Photography ☐ Other:	☐ Passing Through ☐ Feeding ☐ Looking for Food ☐ Investigating ☐ Hunting ☐ Following ☐ Stalking ☐ Resting ☐ Sitting ☐ Standing ☐ Other:	☐ Remained Still ☐ Backed Away ☐ Made Loud Noises ☐ Threw Objects ☐ Quietly Left Area ☐ Ran Away ☐ Struck with Object ☐ Approached ☐ Picked up Children ☐ Raised/Waved Arms ☐ Other:	☐ Flight ☐ Ignored People ☐ Watched ☐ Stood Ground ☐ Threatened People ☐ Followed ☐ Chased/Charged ☐ Laid Ears Back ☐ Snarled ☐ Bared Teeth ☐ Attacked

PROPERTY DAMAGE/INJURY (check all appropriate boxes)		FOOD	
☐ Injury ☐ No Injury or Damage ☐ Vehicle	☐ Trailer ☐ Tent ☐ Ice Chest	☐ No Food Present ☐ Not Disturbed ☐ Animal Defended	☐ Properly Stored ☐ Improperly Stored/Visible ☐ Garbage
AMOUNT OF PROPERTY DAMAGE \$		ATTRACTANT OTHER THAN FOOD	
DOMESTIC ANIMAL TYPE		LOCATION OF FOOD/ATTRACTANT	

REPORT RELIABILITY ☐ Knowledgeable Individual ☐ Verified Evidence	☐ Probable ☐ Unknown	CATEGORY (see DOM Chapter 1900) ☐ Sighting ☐ Recurring Sighting	☐ Encounter (animal shows no fear/no interest in humans) ☐ Incident (visitor feels safety threatened) ☐ Attack
---	---	---	---

INITIAL MANAGEMENT ACTION (e.g., tracked animal, posted signs, closed area, etc.)

PREPARERS AND CONSULTANTS

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Rick Wallen, Fish and Wildlife Biologist

Consultation and coordination

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Corky Farley, District Supervisor, NPS

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Jeff Bomke, Buildings and Utilities Foreman, CDPR

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