



United States Department of the Interior

NATIONAL PARK SERVICE
WASHINGTON, D.C. 20240

IN REPLY REFER TO:

AUG 24 1979

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Memorandum

To: All Regional Directors; Area Director, Alaska Area Office;
Managers, Denver Service Center and Harpers Ferry Center

From: Acting Associate Director, Science and Technology

Subject: Leopold and Allen 1977 bear management review

We recently were reminded of the August 2, 1977 bear management review by Dr. A. Starker Leopold and Dr. Durward L. Allen because of a request from the Justice Department for a copy of the report for use in an upcoming tort claims proceeding. We feel the information contained in the Leopold and Allen report is as valid today as it was two years ago and, since we are not sure that you were sent a copy in 1977, we are sending you a copy now. You may find that some of the concerns raised by the authors will provide valuable guidance as you evaluate existing or proposed management, research, and public information plans for parks that have bear populations.

Richard W. Smith

Enclosure





COLLEGE OF NATURAL RESOURCES
DEPARTMENT OF FORESTRY AND CONSERVATION
DEPARTMENT OF FORESTRY AND RESOURCE MANAGEMENT

BERKELEY, CALIFORNIA 94720

August 30, 1977

Mr. William Whalen, Director
National Park Service
Interior Bldg.
Washington, D. C. 20240

Dear Bill:

I transmit herewith a memorandum entitled "A review of National Park Service bear management programs," prepared by Durward Allen and myself, at the request of Director Everhardt. This document may be considered a contribution from the Advisory Board on National Parks, since Durward and I were acting as a sub-committee of that Board.

I hope that you will have time to consider the recommendations in this report prior to our Board meeting in Texas next month. We might then have a chance to discuss it.

Sincerely,

A handwritten signature in cursive script, appearing to read "A. Starker Leopold".

A. Starker Leopold

ASL:na
cc: D. Allen
D. Schwartz

encl.

August 2, 1977

Memorandum to Director Whalen, National Park Service

From: A. Starker Leopold, National Parks Advisory Board,

Durward L. Allen, Council, National Parks Advisory Board

Re: A review of National Park Service bear management programs.

This responds to a request from Director Everhardt, made last year, that we undertake a review of bear management programs in the National Parks and suggest what further measures might be taken to promote and protect the interests of both the public and the bears. Our available time for this important task was limited. We visited some of the parks with bear populations and contacted personnel within and outside the Service whose knowledge of bears might be helpful. Attendance at the International Bear Conference at Kalispell, Montana, in February and visits with officials from Yellowstone, Glacier, Yosemite, Great Smoky Mountains, and Shenandoah National Parks were particularly instructive. Likewise we learned a great deal from Cliff Martinka and from his report on "Black Bear Management in the National Parks System in 1976."

It should be emphasized that this summary of the bear management outlook brings together a selection of ideas and recommendations most of which originated on scenes of action where competent staff and collaborators are dealing with bear problems. We have distilled some constructive suggestions that merit your attention.

Let us first attempt to paraphrase the bear problem. For approximately ten years the National Park Service has been trying to phase out the feeding of bears in the parks with the hope that they will again become independent, wild-living members of the park fauna. Garbage dumps have

been closed, trash cans bear-proofed, tourists warned against feeding bears or leaving food out, and troublesome bears have been transplanted or if necessary removed from the population. It might be fair to say that in most parks the Service has eliminated 90 percent or more of the opportunity for bears to obtain human food. But sadly, this does not mean that the bear problem is 90 percent solved. On the contrary, the problem continues to plague the National Park Service, in undiminished form in some parks. It is abundantly clear today that bears are too smart and too aggressive to be shunted easily from human contacts and food rewards. A program that will really keep all the bears out in the woods making an honest living has to be specific, incisive, and rigidly enforced -- meaning 100 percent, not 90 percent.

And even if all food contacts are removed, we see distressing signs that some bears -- both grizzly and black -- are losing their fear of people and are developing aggressiveness that is unrelated to the food motive. This is a new and extremely serious turn of events. It is imperative, we feel, that the Service give high priority and devote substantial funding to research and experimental management designed to find ways of keeping bears and people apart.

In addition to needed research there are many points of improvement that can be made in current bear management programs, both in terms of Park Service actions and in public instruction and education. For your convenience we summarize our recommendations at this point. These are discussed at more length in the sections that follow.

Recommendations

- 1) We feel that the present effort to educate the public about department in bear country is grossly inadequate. There should be continuing education programs designed to inform people about bears before they even set out for a park visit (movies, TV, magazine articles), and an even more intensive and effective system of teaching and warning when visitors reach the park. Information systems of every available kind should be utilized.
- 2) Human foods and remains thereof must be made completely unavailable to bears. Systems of garbage disposal, roadside policing, overnight storage of visitors' food stuffs, emptying bear-proof trash cans, and general camp cleanliness will require unrelenting attention. Few of the parks are taking the bear problem this seriously.
- 3) Monitoring and record-keeping systems in the bear parks should be refined and organized to provide day-to-day and even up to the minute information to the Superintendent on the whereabouts and actions of bears and visitors. This would include reports of people/bear confrontations, property damage, personal injury, aberrant behavior of individual bears, and information on numbers and deployment. Only thus will the Superintendent be able to judge an impending dangerous situation and act to head it off.
- 4) In addition to policing (2) and monitoring (3) there will be required personnel to implement bear management actions as needed. Resource Management Biologists, especially trained to handle bears, should be available to implement decisions of the Superintendent on moving or destroying dangerous or troublesome animals. All of these recommendations call for additional specialized personnel.

5) In the long run, perhaps the greatest need is for research in methods of teaching bears to shun people. Somehow, bears have to be convinced that human contacts are best avoided. At present, we are abysmally ignorant of how to transmit that message throughout bear society. Continuing bear troubles will plague the Parks until we achieve some skill in aversive conditioning.

Public Information and Warning Systems

Methods of influencing public attitudes and practices relative to bears and other potentially dangerous wildlife might be categorized as follows:

General films and publications issued at national level.

Handouts and bulletins specific to a park, which can be given to the visitor at the entrance gate.

Warning signs in campgrounds, on trails, and at other appropriate sites.

Locally developed films, slide shows, and interpretative talks.

Personal contacts with individual visitors by ranger personnel on patrol

How useful a general film or animated slide show on bears could be to a particular park is open to some question. However, in view of the national interest and importance of the grizzly as an endangered species and of the black bear as the largest carnivore that will be seen by most of the public, a major effort to reach the average citizen seems to be in order. It could be an important part of the commitment of the National Park Service to outdoor education. Likewise it could counteract to some

extent the common characterization of the bear as a friendly buffoon (Yogi Bear, Teddy Bear, Smoky Bear, Grizzly Adams, etc.)

Thus we recommend that the Park Service develop at one of its centers a highly professional film that will portray for the average individual the habits and character of bears, their place in wilderness, and the environmental management they require. This would include wholesome viewpoints on back-country travel and the responsibilities of people for their own safety in the presence of potentially dangerous animals, and a summary of what the Park Service is doing to preserve wild bears in a wild state. An outstanding film of perhaps 20 minutes would be in demand by many outdoor organizations throughout the country for meetings and other purposes, and it could be shown in the parks. It would also be a convincing notice to the public that the National Park Service is in earnest about meeting its obligations in an important wildlife field.

In the individual parks, a great deal more can be done to educate the visitor about bears. We have examined the warning signs and the handouts given to visitors arriving in many of the parks and find them generally trite, casual and unconvincing. To discourage roadside feeding and careless exposure of food in campgrounds the visitor has to be convinced that bears are dangerous. From the moment he enters the gate this message should be impressed and reiterated. Perhaps there is some concern that scare tactics will spoil the pleasure of a park visit. The pleasure can be spoiled more effectively by an obstreperous bear.

The educational and warning system, in summary, should be the best and most complete possible within the skills and means of the National Park Service. It serves these important purposes:

Protects the people from the bears;
Protects the bears from the people; and
Protects the National Park Service from tort cases
in the event of mishap.

Park Sanitation

Substantial progress has been made in sanitizing those parks with major bear populations. The closing of open-pit garbage dumps is largely completed (Shenandoah closed its last dump in 1976, for example) and bear-proof trash cans have been installed in most parks. But still, slip-ups occur and bears obtain bits of food. A trash can overflows, a back-packer leaves a dirty camp, a touring motorist tosses a left-over sandwich to a bear encountered along the road, or a hiker drops his pack and flees upon meeting a bear on the trail. It takes very few such incidents to turn a wild bear into a beggar and thence ultimately into a bold tyrant who has to be destroyed. When a well-meaning visitor inadvertently or deliberately feeds a bear he is in essence signing that animal's death warrant. For this reason, provisions for maintaining 100 percent compliance with rules about park sanitation and not feeding animals are essential to protect the welfare of the bear as well as the health and property of the visitor.

We recommend a service-wide review of plans and programs of sanitizing bear parks and of implementing pertinent rules and regulations. As Martinka states in his 1976 report on managing black bears in the parks, the management plans and associated regulations are effective only to the level that they are implemented. He emphasizes the "...need for greater

attention to visitor management, including food control and distribution restrictions." Trapping and moving troublesome bears, or even destroying them, does nothing to solve the bear problem. Prevention is the only ultimate solution.

Monitoring Systems

In Martinka's report on black bear management on six parks, he rated the information system acceptable in one, marginal in a second, and deficient in four. Of the two grizzly parks in Montana, we would rank the information systems deficient in both. A graduate student from California attempted to analyze visitor/grizzly contacts and interactions in Glacier and was severely handicapped for lack of adequate records. If the Superintendent of Glacier had been fully apprised of the actions of the grizzly that killed the Mahoney girl in September, 1976, he surely would have ordered the bear destroyed before the death of the girl, rather than afterward. Good monitoring would easily and accurately have anticipated that incident.

In every park with a record of bear problems a biologically trained staff member should be responsible for keeping files and providing the Superintendent with current information on bear actions, incidents, and management requirements. According to need, this may be a full-time activity, or it could be combined with other appropriate responsibilities in some parks. It is evident that in major bear parks a new staff position that might be called Wildlife Management Biologist should be established to assist the resources management supervisor under the Chief Ranger. This staff member should be coordinating all bear-management information and problems, and be in close touch with research workers on the one hand and management personnel and the interpretation staff on

the other. Especially in parks like Great Smokies and Shenandoah the addition of a well-trained biologist to the resources management group is urgently needed. The position would also provide technical supervision to (usually seasonal) back-country personnel adequate to patrol trails and campgrounds and improve the present extremely poor level of reporting and record keeping on bear incidents. This work is accessory to more personalized visitor contacts and a better warning system relative to bear regulations and dangers.

Management Actions

Bear problems are going to occur despite the most conscientious efforts to avoid them. On each bear park there should be specific provision for taking management action as needed and a trained staff to do it. In too many parks bear problems are handled on an impromptu basis, with untrained personnel and no pre-conceived game plan. Parks with large bear populations might have pre-season training sessions for staff and seasonal help, as they now have "fire schools." Martinka emphasizes the need for a written plan of management to guide action programs.

Park Service policy dictates that troublesome bears be trapped and moved to isolated areas where hopefully they may resume an independent life. Only when an animal proves to be incorrigible should it be removed from the population. By and large we endorse this concept. Yet there remains a broad spectrum of judgement as to when a bear is declared incorrigible. Repeated transplanting of bothersome bears is expensive and may result in merely transplanting and amplifying a problem rather than solving it. A few years ago in Yosemite, for example, persistent complaints

by some protectionists against killing bears - even the worst offenders - caused the Park to transplant many animals that should have been eliminated. Subsequent development of a firm and effective management plan offers future hope of ultimate solution. But merely transplanting bears is a palliative that soothes the bureaucratic conscience but does little to eliminate the basic problem.

Trapping and marking bears for biological and management studies can properly be done, under a permit from the Superintendent, by research people in the parks. But transplanting nuisance bears or killing bears that are habitual trouble-makers should be done by specially trained members of the ranger staff. Research personnel should be given the opportunity to cooperate and to gather data on trapped animals, but they should not have primary responsibility for management actions. In 1977 this change is being made at Great Smokies, where all trapping had been done formerly by collaborators from the University of Tennessee.

It is important that responsible personnel in bear parks subscribe to the idea that these animals are a wilderness resource that must be preserved in a wild state. Thus the aim is to mitigate the need to destroy or relocate bears because their habitat has been invaded by large numbers of people. In Great Smokies and Shenandoah, bear problems occur most commonly in large back-country campgrounds. It would seem that a scattering of campers in small groups reduces bear problems. Where it is necessary to remove a "repeater" bear, who is a threat to hikers and campers, the practice has been to turn these animals over to the state; they are commonly liberated in areas open to hunting. Where bear habitat well removed from the park is not available, transplanting becomes a vain and costly expedient. The bear might better be destroyed and used for whatever research information can be gained from it.

In large bear parks, campgrounds and hiking trails should be kept out of the prime bear habitats to the greatest extent possible. The closing (permanently or temporarily) or relocation of camping areas, or the enforcement of use restrictions (such as hard-sided campers) should receive high priority in park operations. These actions should be planned on an annual basis as problem areas are identified by research or by the record of bear incidents.

Research

Superintendents in parks with bear populations are much in need of habitat surveys that reliably identify and map seasonal use areas according to quality and such habits as breeding, feeding, and denning. This information will naturally accompany studies, which must be site-specific to different parks and regions, on the environmental resources required by bears. In view of long standing deficiencies in bear management information, ecological and population studies should be part of a continuing research effort in every park where bears are important. Research and management personnel from different parks should be brought together periodically, and there should be a routine exchange of information via annual reports, publications, and meetings such as the recent bear conference in Kalispell.

We have found Superintendents of bear parks to be keenly knowledgeable and concerned about their bear management problems. They are obviously stretching the capacities of their staffs and other resources to cover as many problems as possible. They know that more research is needed to answer urgent management questions. Many requests for funding

such research have been submitted or are in preparation. We recommend that a greater effort in this field should have high priority in allocating research budget increases to the National Park Service. If this seems to take for granted an expansion of the research program, that is indeed our feeling about it. We so recommended in a memorandum dated July 12, 1977.

For example, it was almost incredible for us to learn that the principal bear study program in the Southeast has been in progress at Great Smokies for the past seven years without any direct funding by the National Park Service. This work by personnel of the University of Tennessee has been under a contract by the park natural history association, who raised money for it. It has been partially funded by McIntyre-Stennis funds (Forest Service) made available through the University Agricultural Experiment Station. We firmly believe in the use of such sources for research funding in the parks. But where urgent management questions are involved, concerning public safety and the management of park resources, we think that a funding equity direct from the office of the Regional Chief Scientist should be helping to support such projects in the parks.

In addition to continuing research on the ecology and natural history of bears, we see a pressing need for study of bear behavior, with a view to possible aversive conditioning to people. As noted at the outset of this report, bears in a number of situations are showing less timidity and more and more outright aggressiveness toward people -- a trend which we find very worrisome indeed. If such a trend is allowed to continue there might arise serious question about people and bears sharing

some parklands. To date, the National Park Service has not entered this important field of study. A small beginning was planned for 1977 in Yellowstone, but the investigator, Dr. Barrie Gilbert, was mauled by a grizzly before the study was even underway. No event could more forcibly have emphasized the need for research on bear behavior in relation to people and the desirability of seeking ways to modify bear attitudes and action patterns. Above everything else in this report, we urge that substantial funds be allocated for initiating behavioral studies and management experiments in aversive conditioning. This line of research should be initiated in 1978 in the Alaska parks, Yellowstone, Glacier, and selected black bear parks. Failure to do so would, it seems to us, expose the Service to charges of negligence and legal liability subsequent to future bear mishaps. As a corollary study it might be well to initiate a legal appraisal of NPS responsibility and liability toward the increasing number of unsophisticated people coming to share the parks with the bears.

Funding

Virtually all of the suggestions that we have made in this memorandum will cost money. Martinka in his report on black bear management offers an annual estimate (Table 4) of \$368,000, of which \$125,000 is specified for research and the rest for management personnel and information/public relations systems.

We are not in a position to comment intelligently on this estimate although generally it seems to us quite modest, especially if grizzly problems are added to the black bear problems. Perhaps \$500,000 would

be closer to a realistic goal, with most of the additional funding devoted to a stepped up research effort.

Summary

Despite considerable progress in closing garbage dumps, sanitizing campgrounds, and regulating public behavior in relation to bears, it would appear that progress in bear management is far from satisfactory. We seem to have grossly underestimated the problem. In the past 10 years grizzlies have killed more people in the parks than in the previous century (back to the founding of Yellowstone). Black bears continue to be an unmitigated nuisance in at least a dozen areas.

We have been discussing grizzly and black bears together as though they presented the same set of problems. Indeed, many aspects of management are identical. But we feel the need for a quantum leap in perception of the grizzly as a dangerous animal. Where human life is at stake, the Service will have to apply much more rigorous standards of management of bears and of people in Yellowstone and Glacier than in other parks. This enormous distinction in responsibility is not clearly manifest in present administrative procedures or research priorities.

The task ahead is enormous. We hope that you as incoming Director will acknowledge the seriousness of the problem and the need for decisive action in solving it.