

December 15, 1976

Dear Dad:

I revised the interview with National Wildlife
that you read when I was in Florida. Here's a copy.

Regards,

John

A handwritten signature in cursive script, appearing to read "John", with a long, sweeping underline that extends to the left.

FUTURE OF THE GRIZZLY
(The Grizzly Controversy)

-- Craighead Looks at the Issues --

The future of the grizzly, the king of the American Wilderness, is in doubt. So conservationists nationwide want to help the beleaguered bear.

Unfortunately, they all too frequently receive conflicting and confusing -- at times, even incorrect -- advice on what the real problems are or what should be done about them. Because of this, National Wildlife offers the views of Dr. John J. Craighead who, along with his brother Frank, has studied grizzlies for 18 years. In addition, he has frequented the front line in defense of the grizzly. Unlike some professional people, Craighead hasn't shunned controversy when a resource is threatened. He has publicly addressed the issues. Indeed, he may be the most qualified to discuss them.

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National Wildlife: About six years ago, you were involved in a basic disagreement with the National Park Service over grizzly management in Yellowstone National Park. At that time, you displayed considerable concern for the bear population which was declining under the park's management policies. To be successful, you thought policy had to be based on the scientific facts of bear behavior and population dynamics. Has the management situation improved?

Dr. John J. Craighead: An interagency research group has been established to gather data and determine the status of the population in the Yellowstone ecosystem. But by their own admission this group has not been able to accurately enumerate the population -- either their census methods are inadequate or the population is still declining. Neither situation is acceptable and therefore I must conclude that the population problem is still critical.

NW: What about the population in northwestern Montana?

Craighead: This population appears to be fairly healthy. However, Department did not have any until 1975 the Fish and Game/intensive field investigations. The present status of the population is based largely on two decades of kill records which I consider unreliable data for determining the size and structure of a population inhabiting about four million acres of wilderness. So we really don't

know the condition of the population in northwestern Montana.

NW: Briefly, what are the most serious threats to the grizzly?

Craighead: Habitat encroachment can become a serious problem.

But under the Wilderness Act of 1964, Americans set aside millions of acres of occupied grizzly bear habitat. We also have large areas of suitable habitat with no grizzlies. So I think the grizzly's low reproductive rate -- approximately one cub per adult female every two years -- is the weak link. When the man-caused death rate increases, as it did in the Yellowstone ecosystem, to the point that deaths exceed births, the population declines rapidly.

NW: If the man-caused mortality was exceeding the birth rate, would biologists be able to recognize this in time to prevent a serious decline, perhaps extinction?

Craighead: Man-caused deaths represent only one mortality factor but a major one. In the Yellowstone ecosystem where we've accumulated years of data, the problem was recognized and could still be recognized -- providing managers apply the population analysis we made and use our statistics as a basis of comparison. Accurate and reliable birth and death statistics, alone, could alert them that the population

was in serious condition. Biology rather than politics must be the basis for management.

NW: In the Yellowstone area, hunting of the grizzly bear has been temporarily halted. So there is less man-caused mortality than previously. But in northwest Montana, the grizzly is still hunted on a limited basis. If hunting and illegal kills were having a critical, perhaps irreversible impact on this population by allowing the death rate to exceed the birth rate, would we recognize it in time?

Craighead: It is questionable whether we would know in time. It is very difficult to census the population in these vast forested areas. Relative numbers can be obtained by aerial counts and habitat analysis. These are not precise. It's even difficult to get an accurate mortality rate--the illegal kill is especially difficult to document. Therefore it is quite possible for the death rate to exceed the birth rate for a number of years before this would be detected using current census methods and death statistics and applying the sparse biological data we now have at hand for this northwestern population of grizzlies. On the other hand, this sort of situation was precisely documented in Yellowstone, so we know it can happen.

NW: In specific situations, can grizzly hunting be allowed?

Craighead: Some hunting is an acceptable management goal. Sizeable grizzly bear populations should be hunted for a number of reasons. But the number taken, in northwest Montana for instance, should be kept to a minimum until we have the basic biological knowledge to tell us more precisely what this hunting quota should be. Hunting poses a risk -- if you set the kill too high, the population can decline rapidly. And with the difficulty of measuring legal and illegal kills, we could have a very critical situation without recognizing it. On the other hand, the grizzly's only major enemy is man. With full protection, grizzly numbers could eventually become a problem in reverse. Precisely tailored hunting is the best means of preventing them from overpopulating their wilderness habitat and moving into areas of intensive land use where bear-man encounters and conflict will occur.

NW: In certain areas -- particularly around Yellowstone Park -- domestic livestock is allowed to graze on public lands which also support grizzlies. This creates a conflict with the livestock industry, causing the death of several grizzlies

each year. Do you favor stopping grazing in these areas?

Craighead: Our research documented this bear-livestock conflict.

On the basis of this I would not favor curtailment or elimination of grazing except where it poses a real threat to the grizzly. In most cases, bear-livestock conflict occurs at the very periphery of the bear's habitat. So it is a question of whether these areas are essential to the survival of the grizzly. Here we need more research -- just how important are these areas to the bear and how essential for grazing and other land uses? Here we need facts not emotion. We know grizzlies kill some stock. Domestic sheep are particularly vulnerable. And, we know grizzlies are being killed by stockmen. But they're also killed by hunters and are eliminated in federal and state control actions. We must weigh the kill by livestock groups against the kill by other groups to get perspective. Kills by livestock owners were not the major cause for the decline of grizzlies in the Yellowstone ecosystem.

NW: During the height of the Yellowstone controversy, the National Academy of Sciences was asked to study the situation. This group of scientists recommended that this grazing be ended. Do you think public land managers should consider this type of recommendation?

Craighead: I certainly do but this recommendation should not be implemented without further study. Many of the other recommendations made by the NAS committee should have been immediately implemented. But very few of them were. The committee strongly urged that the research in and adjacent to Yellowstone Park be administered independently and conducted by both agency and independent researchers, who didn't have strong ties with state or federal agencies. This is extremely important -- in fact, vital to objective research on public land. This recommendation hasn't been implemented.

Yellowstone Park is the first and probably the finest outdoor wildlife laboratory in the world. It should also be the freest laboratory in the world. Right now, it's serving primarily as a wildlife laboratory for a few selected people who belong to agencies that are suspected of seeking the kind of answers the bureaucracies want. To alleviate this fear and to establish credibility, the park should be opened to the entire scientific community for research on sensitive problems. Bear management should be formulated from both independent and federal and state research fundings. We need this to arrive at the truth and truth can be the only objective of science.

NW: Some conservationists are protesting recreational develop-

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ment in or near grizzly habitat -- for example, the proposed Ski Yellowstone resort, just west of Yellowstone Park. Do these large recreational and real estate developments have an adverse impact on the bear population?

Craighead: The development of a really good recreational area is extremely important. Millions of people don't get into the wilderness. But they do hike and ski and observe. They are able to enjoy mass recreation. We're going to need more and more of this. And we're going to get it regardless. So the important thing is to select suitable sites where there will be the least impact and conflict with wilderness, grizzly bears and other wildlife.

This is a situation where you have opposing philosophies. On one side are those who feel the public domain should not be developed for mass recreational use. On the other side are those who feel that certain areas of the public domain should be developed.

Assuming the West Yellowstone site is appropriate, there isn't compelling evidence that much adverse wilderness impact would occur. The Ski Yellowstone area is located on the very periphery of grizzly habitat. It's adjacent to an area already developed for mass recreation and where the trend will continue. It's not prime grizzly bear habitat.

The resort can be managed in a way to minimize the conflict with grizzlies that might come into the area. I personally would recommend centralized development. Emphasis might be placed on cross country skiing and other dispersed types of recreation. I believe development poses a far greater threat to the fisheries resource of the Madison River than to the grizzly.

NW: On September 1, 1975, the U. S. Department of the Interior designated the grizzly south of Canada as a threatened species under the Endangered Species Act of 1973. Some agencies and individuals -- particularly in the western states -- thought the grizzly was not threatened and shouldn't be listed under this act. Do you think the grizzly is threatened?

Craighead: Our population analysis work strongly suggests that the grizzly is threatened and, in some situations endangered. It should be listed as threatened until we have scientific evidence to the contrary.

NW: Under the same act, the Interior Department must declare certain parts of the grizzly's habitat as "critical" -- areas the bear needs to survive. Recently, this has become quite controversial. What are your views on this?

Craighead: The term "critical" is confusing. Essential might be a more appropriate term. In any event, wilderness has

already been tacitly if not specifically defined by Congress as critical habitat under the Wilderness Act of 1964. This is habitat, that except under special provisions of the Wilderness Act, cannot be modified, altered or destroyed.

It is obvious that land, that for centuries has supported and still is supporting grizzly bears, must be habitat that meets all their biological requirements even though we cannot yet scientifically describe all the ecological ramifications of the habitat.

The Endangered Species Act of 1973, prohibits federal agencies from jeopardizing a threatened or endangered species by disturbing or destroying critical habitat. This is a curb on federal authorized and funded actions carried out by federal agencies on the public domain. It does not dictate management practices to the states or to the federal land management agencies. But the potential to do so indirectly is there.

NW: Then how relevant or applicable is the Endangered Species Act and the federal critical habitat rule-making to wilderness, which as you indicate is already protected by law from destructive federal actions except under very special provisions?

Craighead: I suggest that in delineating critical habitat, we

must logically classify as critical all land in wilderness status that currently supports viable grizzly bear populations. This is habitat essential to the bear, it was essential or critical when the Wilderness Act was passed and it is even more critical now. All such wilderness should be designated as critical habitat. Also, wilderness no longer supporting viable grizzly bear populations, yet having the habitat potential to do so, is critical.

The most severe habitat problems associated with the grizzly bear are occurring in occupied habitat not classified as wilderness; and, therefore, subject to land-use conflicts and land-use modifications. Some land in this category has been defined as critical habitat by the Endangered Species Section of the U. S. Fish and Wildlife Service. It is extremely important that before any final delineation of these non-wilderness areas is made, that they be intensively studied economically as well as ecologically; then the present tentative critical habitat boundaries modified on the basis of such studies.

NW: Doesn't this seem to be the intent of Section 7 of the Act?

Craighead: Yes - but there appears to be widespread misunderstanding on this point. Many individuals, groups and agencies

believe the broad critical habitat delineation made by the U.S. Fish and Wildlife Service may be final. They see it as a federal infringement on the rights of the private citizen. I think it will be necessary to minimize these fears and to allay the jurisdictional concerns and conflicts both real and imagined if we want to get on with the job. To accomplish this during the period of study and of final evaluation and delineation of critical habitat within the 13 million acre Fish and Wildlife Service proposal, I suggest:

1) Immediate or "instant" designation of all occupied wilderness or potential wilderness habitat (formerly occupied by grizzlies) as critical habitat. This can be accomplished through an administrative directive.

2) Designate as study areas all non-wilderness delineated as critical in the Fish and Wildlife Service's initial proposal of 13 million acres. Land areas falling in this category could be sub-divided as de-facto wilderness and as intensive land-use areas, and these yet further sub-divided by habitat and land-use or by the extent of present modification or destruction of habitat. These non-wilderness land units would then be added to the "instant" critical habitat only when further study clearly showed that such areas were essential grizzly bear habitat. Dec-

isions for some areas could be rapid, others will require more time.

NW: In other words, since the Fish and Wildlife Service's delineation is highly controversial and since we can't at this time determine scientifically and positively what critical habitat is for all areas you support making a rather broad interpretation until we know for sure?

Craighead: Yes, I favor a broad designation such as I have outlined with wilderness immediately designated as critical and non-wilderness areas to be carefully studied in the future.

NW: Are you presently doing any research on the grizzly bear?

Craighead: Since 1972, we've been mapping and evaluating grizzly bear habitat in Montana's Scapegoat Wilderness using satellite multispectral imagery (remote sensing) and analyzing this with computers. We think we've worked out a method of mapping grizzly habitat in these large ecosystems accurately, very inexpensively, and rather rapidly. If this can in fact be done -- and we hope to know in a few months -- this will be a very important breakthrough in describing essential habitat. It will also help define what habitat is critical and what is not and how habitat is being modified or destroyed.

NW: What is the future use of satellite technology for wildlife?

Craighead: I see a great future. The time is coming when we will be able to track and monitor instrumented grizzly bears and other wildlife using satellite systems. We'll be able to track bears through specific habitat types that have been mapped using multispectral imagery. This will show bear movements and use of habitat. And this can all be computerized, so we'll have our fingers on the problem.

We'll know daily and seasonally how these bears move and how much time they spend in certain types of habitat. We'll be able to tell if anything happens to one of these instrumented animals. This will help biologists to more accurately measure mortality and estimate bear numbers.

If we take advantage of this type of research information, we can have extremely precise management. Unfortunately, management usually lags far behind research. This has been a problem in the field of wildlife management as long as I've been associated with it. Political decisions and actions tend to confuse and jeopardize the application of research results for effective management. Until we can rely more on research and less on political and bureaucratic decisions, we're still going to have our problems in spite of the tremendous development of data-

gathering and analyzing technology.

NW: There is some concern that forest fire suppression over the past few decades has adversely affected grizzly habitat. Do you share this concern?

Craighead: No. We need more information on fire ecology, as it relates to important grizzly food sources before we can conclude that we should allow more burning to provide better grizzly habitat.

Some people think this is the reason we've lost (or are losing) the grizzly in the Selway-Bitterroot (a large wilderness area on the Idaho-Montana border). But I don't hold with this theory. There seems to be far more evidence for overshooting an animal with a low reproductive rate. There's no good evidence right now that this wilderness area isn't suitable grizzly habitat. After we finish our work in the Bob Marshall-Scapegoat wilderness areas, we want to compare habitat in the Selway-Bitterroot with habitat in these areas that presently support grizzlies and see if there is a significant difference. This will be done using satellite technology.

NW: The West has millions of acres of wild lands that historically supported grizzly bears but where the bear no longer

exists. Do you favor trying to re-establish grizzly populations in some of these remote areas?

Craighead: Personally, I think we should look at the potential habitat and seriously approach the problem of how we might reintroduce grizzlies. There is urgent need to map and describe potential habitat. This would serve as a basis for land use planning and for deciding whether reintroduction of grizzlies would be feasible. Satellite mapping technology will speed up the process. Reintroduction may be essential in the future to preserve the species. However, we must also seriously consider the desirability of reintroduction - the pros and cons.

If we can get more precise biological management in the Yellowstone ecosystem and northwestern Montana, then I think the grizzly will be reasonably safe for the foreseeable future. I am talking about very precise management, population and habitat monitoring based on many years of research.

But if we don't get this (perhaps even if we do), we should look to these other areas. The Selway-Bitterroot is one of the larger land units that could be considered.

I would first favor some kind of interagency-sponsored project to determine if grizzly bears can be re-established. The technology is there. But we still don't know if we can

take grizzly bears from one ecosystem and put them in another and have them stay there and reproduce. They have a very strong homing instinct. They have to adjust to new terrain - a new environment. And we don't know how many bears or what age classes we would initially have to put into an area. It could take 25 or more to form a viable population.

If this research and the preliminary habitat mapping indicate such re-establishment is practicable, then the local people should be involved in the final decision. Maybe they won't want grizzly bears. As long as grizzlies were flourishing in two other ecosystems, I think re-establishment could be a highly controversial subject -- introducing a potentially dangerous animal back into areas where recreation is escalating.

NW: On September 23, 1976, a young woman was fatally mauled by a grizzly in Montana's Glacier National Park. Earlier that year, two other persons were killed -- one in Alaska and another in Canada, and two were seriously mauled in Yellowstone. What do you advise people when they ask you how dangerous the grizzly is?

Craighead: Grizzlies are aggressive. Individual animals can be unpredictable, but in general, grizzlies tend to avoid people, retreating when they get the human scent.

But there are situations where the grizzly becomes conditioned to man. This occurs when they can get food in the presence of humans. Then they tend to lose their fear of man. This has occurred rather frequently in National Parks. Such animals may go for years without causing trouble. But potentially, the man-conditioned grizzly is extremely dangerous. A number of these types have developed -- especially within our national parks because of feeding in campgrounds and at chalets and construction camps.

People can practically forget any real threat from the grizzly in remote wilderness areas. There the probability of getting mauled by a grizzly is about like getting struck by lightening. But visitors must be extremely cautious about sleeping out in campgrounds within the national parks or at heavily used national forest campgrounds.

NW: Can grizzly and man co-exist in the National Parks?

Craighead: Yes. If the bears are properly managed and understood and if a major consideration is to provide the grizzly with a habitat where man has second priority, then they can co-exist. But in areas where there is intensive recreational use and thus groceries and garbage that attract

always
grizzlies, you're/going to have some kind of problem.

NW: What would you recommend to park managers to make these
intensively used recreation areas safer?

Craighead: They should: (1) have a fairly good idea of how many
have
animals they/, where they're distributed, and how they
move; (2) sanitize all campgrounds; (3) keep extremely ac-
on the numbers of bears entering campgrounds and make these
curate records/annually available for review and analysis; records
(4) recognize that man-conditioned bears are especially
dangerous. The public should be immediately informed
and warned of dangerous bears when visitors and bears are
sharing the same area; (5) understand that the grizzly is
aggressive and, even under the best conditions, some in-
cidents will be inevitable and that we must accept this;
and (6) call on all available expertise when incidents
do occur. On this last point, we must demand good unbiased
analysis of cause and effect to get at the truth and help
prevent future attacks.

NW: In recent years, all maulings have been in the national
parks where the grizzly can't be hunted and not in the
nonpark grizzly habitat where, in some cases, hunting is
allowed. Is this because hunting keeps the grizzly wary
of man?

Craighead: This may have some bearing on it. Hunting keeps them wary of man but more importantly it tends to eliminate man-conditioned potentially dangerous grizzlies that move out of Glacier and Yellowstone National Parks into areas where they can be hunted. However, I don't think hunting is the crux of the matter.

Our Yellowstone studies showed that many bears inhabiting the park in the summer moved outside in the fall where they were hunted, yet they remained problems animals they returned to when / the park. The reason there are fewer bear-man conflicts outside the parks is that you don't have the same attractions for grizzlies. The grizzly learns to exploit available sources of food. They are extremely intelligent animals. So it hasn't taken them very long to learn that they can get tasty food rather easily in campgrounds -- even though a high level of sanitation is practiced. These bears, by living in close proximity to man become conditioned to man, lose their natural fear, and can become dangerous. I can not overemphasize this point.

In the wilderness outside the parks, a few outfitters and hikers camp far apart. They frequently move their camps. Here, the bear hasn't learned to systematically use this isolated type of camping as a source of food but there

are some indications they are beginning to do so in the Teton Wilderness Area. At the present time, a visitor can spend all summer in the Bob Marshall Wilderness and be fortunate to see a grizzly or two at a distance -- let alone have them in camp.

NW: In summary, what course of action would you recommend for people wanting to work for the preservation and proper management of the grizzly?

Craighead: People should encourage opening the national parks to independent investigators. Park administrators need all the objective expertise they can muster. People should urge public airing of critical problems. They should be alert when in grizzly country and should understand the behavior, habits and population dynamics of the grizzly bear.

P The public should recognize that most of the problems we have with managing wildlife lies with the various agencies that have responsibilities to manage and protect it. There is considerable jockeying for power and position among state agencies responsible for managing wildlife and federal agencies responsible for managing threatened and endangered species and the habitat for such species. These bureau-

cracies must work together for an overall program responsive to the best interests of the grizzly instead of responsive to protecting the power and special interests of their own bureaucracy.

NW: I understand you will soon be retiring from the Montana Cooperative Wildlife Research Unit. Can we expect you to remain active in efforts to preserve and correctly manage the grizzly?

Craighead: I expect to be every bit as active as I've been in the past and also to be involved in other resource and environmental problems. For example, I've set up a nonprofit fund through the University of Montana which will be dedicated to continuing both research and education on the grizzly bear.

Since 1952, Dr. John J. Craighead has worked for the U. S. Fish and Wildlife Service as leader of the Montana Cooperative Wildlife Research Unit at the University of Montana. He and his brother, Dr. Frank Craighead, Jr., have researched environmental problems wildlife and / for more than 40 years with an emphasis on grizzlies, birds of prey, and river preservation. They for studying large mammals pioneered the use of biotelemetry/and satellite mapping of habitat. Along with his brother, Frank, he has authored four books and nearly 100 magazine articles and technical publications. He plans to retire from federal service early in 1977.