23 September 1972

Mr. Jack K. Anderson, Superintendant
Yellowstone National Park,
WYOMING - 82190

Dear Jack,

Near the close of the Bear Management Meeting, September 19, 1972, Doctor Starker Leopold informed me that I could look over the bear logs. It was then late in the afternoon and I had another appointment so was unable to do so. I would, however, like to take advantage of this offer and peruse the logs when I return from Washington, D. C. I am leaving on a trip east September 23. I'll contact you at a later date.

Sincerely,

Frank Craighead

September 6, 1972

Mr. Jack Anderson, Superintendent
Yellowstone National Park
Mammoth, Wyoming

Dear Jack,

I am planning to attend the Bear Conference being held at Mammoth September 19th. Before coming to this meeting I would like to acquaint myself with present conditions in the Park. In order to do this it would be very helpful and informative for me to be able to read over the district logs on bear activities and control. I would like to review the logs for Lake, Canyon and Old Faithful for the year 1972.

I therefore wish to formally request that these logs be made available for my persual prior to the September 19 meeting. As time is short I would appreciate receiving your permission as soon as possible. Thank you.

Sincerely,

Frank C. Craighead Jr.

copy: Nathaniel Reed
Assist. Secretary of Interior

FCC,Jr/mh

August 10, 1970

Mr. Jack K. Anderson
Superintendent
Yellowstone National Park,
Wyoming 83020

Dear Mr. Anderson:

We were very disappointed to learn from Mr. Everhardt that you rejected our request to extract the fourth premolar of the sow captured at Grant Village on Saturday , August 1, 1970. The purpose of this request was to determine the age of a sow of unusual value to our study and to management. Since we were unable to contact you directly, we have prepared this memo to advise you of the significance of the data we were prevented from obtaining.

This specific request was made for two reasons:

1) Sow no. 8 was marked as an adult in 1959. This means the sow is probably the oldest marked female in the Yellowstone population. It was important to have determined the age of this old female in order to learn more about the longevity of the grizzly, a subject about which little is known.

2) Since the sow had a cub of the year, an age determined by counting cementum layers would have provided extremely valuable information on the age at which the females continue to produce offspring. This type of information is essential to understanding the reproductive potential of grizzly populations as well as to predicting future population increments of an endangered species.

Jack, a primary reason for continuing research in Yellowstone is to provide the National Park Service with information necessary for effective management of the grizzly.

We feel the data pertinent to management and to the survival of the grizzly lost by releasing the sow without obtaining her age should have been carefully weighed against the remote possibility that extraction of a premolar may cause aggressive behavior.

As we stated in an earlier memo, we have found no evidence to indicate that tooth extractions have caused any adverse change in grizzly behavior.

If you have any questions concerning this memo or the technique of extracting teeth from captured grizzlies, we will be happy to meet with you at your convenience.

Sincerely,

Frank C. Craighead, Jr.
Co-project Leader

Jay Sumner
Bureau of Sport Fisheries and Wildlife
Research assistant to Dr. John J. Craighead

FCC,Jr:JS/pjf
cc: Mr. Glen Cole
Dr. John J. Craighead

March 3, 1970

Mr. Jack Anderson
Superintendent
Yellowstone National Park,
Wyoming 83020

Dear Jack:

Recently, Verne Huser, gave me a copy of his article, "The Yellowstone Grizzly Situation" and asked me to comment on it. I understand that he also sent you a copy and asked you to comment as well.

Some months ago when Verne indicated that he was planning to write this, I tried to discourage him from doing so. I still feel that nothing is to be gained by publishing an article of this kind even though Verne has made an attempt to get the facts and although the article is well written. Much of the information is based on newspaper articles and quotes, most of which are incorrect.

I am taking the position with Verne that it will not be beneficial to the existing grizzly bear situation to publish this; particularly at this time. I think that perhaps later when the actual situation is clear, he might well write an interesting and informative article. I hope that this will be your reaction to publishing this article too. At any rate, I wanted you to know that we have not and are not encouraging Verne to publish this material.

I would also like to take this opportunity to let you know that the lines quoted on page 2 were taken from the Jackson Hole Guide. This was not published with my consent or approval. I gave Tom Hough some background information on the grizzly bear situation, but told him that it was definitely not for publication and he agreed to treat it confidentially just for his own enlightenment. Your Park people also supplied him with data at the same time. According to Tom, this was published by mistake when he was away on a business trip.

Sincerely,

Frank C. Craighead, Jr.

FCC,Jr/pjs

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
Yellowstone National Park, Wyoming 82190

IN REPLY REFER TO:

N22

August 5, 1969

Mr. Frank C. Craighead, Jr.

Moose, Wyoming 83012

Dear Frank:

Subsequent to our meeting, I wrote to Dr. John Craighead regarding satellite tracking experiments. Enclosed is a copy of the letter. I regret that the letter was not directed to you, but inasmuch as John signed the most recent contract with the park, we have been directing our correspondence to him.

We have given this matter a great deal of thought; and as we expressed in our letter to John, we feel this experiment could be better conducted at the refuge.

Sincerely yours,

Jack K. Anderson
Superintendent

Enclosure

July 31, 1969

Mr. Jack K. Anderson
Superintendent, Yellowstone National Park
Yellowstone National Park, Wyoming 82190

Dear Jack:

On April 17, I wrote you a letter briefly describing a satellite tracking experiment with NASA and the Smithsonian Institution. At this time I requested permission to instrument an elk with a radio that would be tracked by satellite. Having received no reply from you by the time we met at Mammouth in early July, I brought up the subject and asked if you had given consideration to this request. You indicated that you would do so, but to date, I have still not received an acknowledgment of my letter nor a reply to my later request.

Both John and I indicated, it would be highly desirable to instrument this elk in Yellowstone where we have conducted biotelemetry research with elk over the last five years. It would also facilitate the research to instrument this elk in Yellowstone because it would permit us to readily remove the collar should there be any malfunctioning of the electronic equipment. Our minimum requirements were only that we instrument this animal for a period of several weeks in order to check out the equipment before putting it on a migratory animal, preferably one wintering in the Jackson Hole country. Our time schedules on this satellite work are not too flexible and it is important for us to plan quite far in advance. I would greatly appreciate it if you could answer my letter of April 17 and let me know whether your Yellowstone administration can cooperate with us in this unusual scientific endeavor or whether we must go elsewhere to conduct this research. Thank you.

Sincerely,

Frank C. Craighead, Jr.

FCC,Jr/p

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

Yellowstone National Park, Wyoming 82190

IN REPLY REFER TO:
N22

July 17, 1969

Dr. John J. Craighead
Montana Cooperative Wildlife Research Unit
University of Montana
Missoula, Montana 59801

Dear John:

After considerable deliberation I do not feel that we can make an exception to the situation where roadside wildlife that is seen and photographed by thousands of visitors daily is not to be conspicuously marked unless it is essential to their proper management or protection.

The Firehole, Gibbon and Madison River elk herd has unique scenic and scientific values as a naturally regulated ungulate population. Our researchers have been intensively studying this herd to document its habits, population dynamics and ecology. We have avoided using conspicuous markers because it does not seem essential to documenting their limited seasonal movements and because the animals are so readily visible to park visitors. We are frankly apprehensive that the use of conspicuous markers on these elk could lead to restrictions on the use of markers as a research tool.

As stated in my letter, I would be willing to assist in making arrangements for using elk on the National Elk Refuge as experimental animals to test radio equipment. A fenced-in elk group as well as a free-ranging herd is present in summer and six to nine thousand animals winter on the area. Another alternative could be the Yellowstone elk which winter in the Duck Creek area. These could be easily marked in winter but would not be too visible to summer visitors.

Sincerely yours,

Superintendent

James B. White

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
Yellowstone National Park, Wyoming 82190

IN REPLY REFER TO:
N22

April 7, 1969

Dr. John J. Craighead
Leader
Montana Cooperative Wildlife Research Unit
University of Montana
Missoula, Montana 59801

Dear John:

Because the memorandum of understanding covering your work on the grizzly expires June 30, 1969, we have prepared a similar document to cover the two years which your January 14, 1969, investigator's report indicated was necessary to complete the study.

You will note the format and considerations in the document are essentially the same as before with the exception that we have put in management objectives that relate specifically to Yellowstone's purpose as a natural area. The establishment of buffer zones around Yellowstone, which seems to lead to an emphasis on managing the grizzly to provide trophy hunting, is more in the province of other agencies that are not signatory to the document.

The conspicuous marking of park wildlife seems to have reached the point where it detracts from the scenic and esthetic values obtained from viewing wildlife. We have restricted our own biologists, as well as other investigators, from conspicuously marking wild animals. I am asking your compliance on grizzly bears other than those already marked and absolutely essential to your study.

To help the park in our attempts to have as few conspicuously marked animals as possible by our 1972 centennial, we would appreciate your removing conspicuous markers from bears to the greatest extent possible.

In reviewing the documents for the project titled "Radiotracking and Biotelemetry Studies of Western Big Game Mammals in Yellowstone National Park," we were somewhat embarrassed that it was not called to your attention that the "big game" emphasis would be more appropriate where wildlife was being managed for sport hunting. Since the study

centers around objectives of developing radiotracking systems and does require the conspicuous marking of animals, we wonder if it requires the park environment.

We realize our wildlife which is relatively unafraid of humans affords an unusual opportunity to immobilize and mark animals at will, but these are also animals that will be seen and photographed by thousands of visitors each year. I would suggest that this study be transferred to the National Elk Refuge at Jackson and would be willing to assist in getting any necessary arrangements.

Sincerely yours,

Jack K. Anderson
Superintendent

Enclosure

cc:
Dr. Starker Leopold
Dr. Robert M. Linn
Mr. Fred Fagergren

April 17, 1969

Mr. John Anderson
Superintendent
Yellowstone National Park
Yellowstone Park, Wyoming 83020

Dear Jack:

On May 27, 1966, a meeting was held at the Smithsonian Museum, Washington, D. C. to explore the possibilities of utilizing a Nimbus B satellite for tracking and locating free-roaming animals. At this meeting, I gave a paper suggesting that initial experiments might be carried out on migratory elk or caribou or on more stationary animals such as a hibernating bear where data such as body temperature or heart rate could be beamed up to the orbiting satellite.

In November of 1968, my brother, Dr. John J. Craighead, Leader of the Montana Cooperative Wildlife Research Unit at the University of Montana, and I were approached by representatives of the Smithsonian Institution and NASA to see if we would be interested in cooperating in an experiment to instrument an elk with a radio-package that could be interrogated by a satellite in polar orbit. We worked up a research proposal for NASA in collaboration with Dr. Helmut K. Buechner and Mr. Charles E. Cote and agreed to conduct preliminary work even though funds had not been appropriated by NASA. Some funds for this early stage of the research were provided by the Bureau of Sport Fisheries, and Wildlife.

In order to take advantage of a Nimbus B satellite that was to be launched in April, 1969, we conducted some preliminary investigations to determine the type of harnass needed for attaching a 7-8 pound radio-package to an elk, and what arrangement and configuration could be devised for the type of equipment already developed. This equipment was not specifically designed for use on animals.

We agreed to act as co-investigator's in the work and to handle the field aspects of the tracking experiment. In this project, my brother is representing the U.S. Bureau of Sport Fisheries and Wildlife and I am representing the State University of New York and the Environmental Research Institute located at Moose, Wyoming.

Although publicity has recently been given to this project by NASA Public Relations people, it is not yet a firm project and there is considerable preliminary work to be carried out before an elk can be instrumented. For this reason, no land or wildlife managing agencies have been officially approached to date.

Progress has now been made to the point that it appears feasible to instrument an elk late in the summer or fall of 1969. If this project is funded, I and collaborators would like to conduct this work with the consent and cooperation of the following organizations - Wyoming Game and Fish Commission, Yellowstone National Park, the National Elk Refuge, Grand Teton National Park and Teton National Forest.

Just where the elk will be instrumented will depend on a number of factors including season of year. We would plan to keep State and Federal Agencies fully informed of our activities and would greatly appreciate cooperation, help and permission to do the work when and where needed.

Thank you.

Sincerely,

Frank C. Craighead, Jr.

FCC,Jr/pjf

June 5, 1968

Mr. John Anderson, Superintendent
Yellowstone National Park
Yellowstone Park, Wyoming 83020

Dear Mr. Anderson:

Frank and I plan to open the laboratory at Canyon on or about June 10th. We will have a number of graduate students and some undergraduates working with us this summer. As soon as I get to Yellowstone, I will make a list of all personnel, indicating those who will need to work in Trout Creek.

It was my hope that I could open the laboratory June 1st but this was not feasible. However, I have requested that Harry Reynolds, III, make some observations of breeding behavior for me at Trout Creek between June 1st and June 15th. I hope there will be no problem is his getting access to Trout Creek.

I am looking forward to a very productive summer and hope that in spite of busy schedules for both of us that we can get together for a few visits.

Sincerely,

John J. Craighead,
Leader

JJC:AB

MONTANA COOPERATIVE WILDLIFE RESEARCH UNIT

UNIVERSITY OF MONTANA
MONTANA FISH AND GAME COMMISSION
WILDLIFE MANAGEMENT INSTITUTE
FISH AND WILDLIFE SERVICE, UNITED STATES DEPARTMENT OF THE INTERIOR

UNIVERSITY OF MONTANA

MISSOULA, MONTANA 59801

September 20, 1968

Mr. Jack K. Anderson, Superintendent
Yellowstone National Park
Yellowstone Park, Wyoming 83020

Dear Jack:

This is to inform you of the arrangements we have made to house our research operation during October and November when our present laboratory will be dismantled.

We have arranged to hire two 50-foot trailers which will be placed in the trailer area at Canyon. The trailers will cost us $1,100 and since this was not budgeted in our research program in the Park, it has taxed our resources to take care of it.

We are still in need of a small trailer in order to give us adequate working and living space. I wonder if the Park Service could assist us by providing the trailer space and facilities free of charge and by providing us with a 28-foot trailer which is now located at Canyon. If this could also be furnished us free of charge, it would greatly facilitate our being able to carry out our research objectives this fall.

I plan to return to Yellowstone in a few days and hope that something can be resolved on this request one way or another by that time. Our people are currently moving all of our research equipment from the present laboratory to the trailers and to a storage area in West Yellowstone. Hopefully, we will be completely moved and back in operation by the last of September.

Sincerely,

John J. Craighead,
Unit Leader

JJC:AB

February 15, 1968

Mr. John Anderson, Superintendent
Yellowstone National Park
Yellowstone Park, Wyoming 83020

Dear Jack:

Frank and I spent the last week of January and the first few days of February at the Atmospheric Science Research Center at Old Faithful. We have attended these sessions for the past five years and have found them extremely stimulating and rewarding.

This winter we went prepared to test some biotelemetry equipment and if possible to instrument an elk in order to gather movement and behavioral data. I think you are aware of the fact that we have immobilized and instrumented a number of elk in the Old Faithful area under our AEC contract and our Memorandum of Understanding between the Montana Cooperative Wildlife Research Unit and Yellowstone National Park.

We had a little bad luck and lost an elk that we immobilized. This happened to be a bull elk which we had captured and marked in previous winters. We immobilized the animal with the drug Sernylan. We obtained optimum immobilization and accomplished the instrumenting. However, the animal bloated before we could get it to its feet. We attempted to hold the bull in an upright position which prevents bloating and which had been extremely effective in the past on cow elk. The bull, however, became very dangerous as he came out of the drug and Frank and Dr. Erickson were both struck by the elk's antlers. Rather than risk possible injury under the isolated conditions that prevail in Old Faithful in winter, we let the elk on its side anticipating a slow recovery but fully expecting him to survive. The bull did not survive the night and we reported the death to Glen Henderson, the local ranger.

I want to express regret that an animal was lost in our experiments but did want you to know that this is the first elk we have lost in many that we have handled and immobilized.

Frank and I have had a very busy winter but we are looking forward to seeing you in June. It would be nice if all of us could get together for a few hours of fly fishing.

Kindest personal regards,

John J. Craighead

JJC:AB

MONTANA COOPERATIVE WILDLIFE RESEARCH UNIT

UNIVERSITY OF MONTANA
MONTANA FISH AND GAME COMMISSION
WILDLIFE MANAGEMENT INSTITUTE
FISH AND WILDLIFE SERVICE, UNITED STATES DEPARTMENT OF THE INTERIOR

UNIVERSITY OF MONTANA

MISSOULA, MONTANA 59801

April 14, 1969

Mr. Jack K. Anderson
Superintendent, Yellowstone National Park
Yellowstone National Park, Wyoming 82190

Dear Jack:

Your letter of April 7 with the new memorandum of understanding for our grizzly bear research work is at hand. I concur with the changes you have made in the agreement and am returning the signed document.

We have students committed to the grizzly bear study through the summer of 1970 and we will terminate the project at the end of the two-year expiration date when we have fulfilled this academic commitment. As you suggested in your letter, we will transfer our studies of elk, black bear, and other large mammals to areas outside of Yellowstone where individualized marking and use of radios will not conflict with scenic and aesthetic values. It is my hope that some specialized research requiring a national park environment, such as the satellite tracking project I discussed with you by phone, could be arranged, at least in part, within Yellowstone -- this, of course, provided the time, place, and number of animals involved would not conflict with centennial objectives.

In closing out our research in Yellowstone, I would like to comment on our marking of Park wildlife. I believe the nature of this undertaking, which originated during Superintendent Garrison's tenure, has not been fully understood. During the last four years we inconspicuously color-marked eight and instrumented seven of the interior herd of 600 or 700 elk. At no time were more than two animals wearing radio collars, and usually only one.

From the 1,507 elk of the Northern herd conspicuously color-marked over a five-year period by Park rangers and by our staff at the request of Mr. Garrison, over 4,000 individual observations have been made. The possibility exists for many more observations having scientific value and management implications. As you know these elk winter in the Lamar Valley and summer in remote areas of the Park. We observed less than one-tenth of one percent of them from the roads, and I am sure that few tourists saw these marked animals.

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Two hundred and fifty-six grizzly bears have been individually marked, but at no time has the number bearing markers in any given year exceeded one hundred. These animals are seldom viewed by Park visitors. During the ten-year study our research team has logged over 12,000 hours viewing these marked grizzlies. However, except in late spring (before visitors arrive) and except for the occasional grizzly that visits a campground during the day, we have seen few marked grizzlies in areas of the Park where their markers would have detracted from visitors' enjoyment of the natural beauty of Yellowstone.

Other researchers conspicuously marked black bears along the roads, but at no time have we had more than two black bears ear-tagged and never more than two instrumented with radios during any one year. Perhaps I am overly concerned about the de-emphasis in animal marking because the cost in time and effort has been so tremendous and the rewards so fruitful. I respectfully suggest that you try to retain as many markers as possible consistent with Park objectives. Much can yet be learned by your staff from sightings of these animals. Unless we hear from you to the contrary, we shall cooperate fully in removing markers from recaptured animals.

Jack, I would like to take this opportunity of expressing my appreciation and that of Dr. Frank C. Craighead to you and former superintendents, John McLaughlin and Lon Garrison, for making it possible to scientifically study problems relating to the ecology and management of elk and black and grizzly bears within Yellowstone. At the risk of appearing immodest, I think I can say that the techniques of color marking, immobilizing, handling, radiotracking, and data gathering that we, our colleagues, and our students developed or perfected in the course of ten years of research effort in the Park are now being widely applied in other national parks throughout the world. The basic information we have obtained on the large mammals of Yellowstone will, I am sure, prove invaluable to the Yellowstone Administration in the future. Without the help and cooperation of your organization and without the sanctuary the Park affords (valuable marked and known-age animals are not rapidly lost to hunters) the extensive, long-range population studies we have been conducting would not have been feasible.

Funding our research in the Park has been a difficult job. Considerably over a million dollars of direct and indirect financing has been involved since 1959. It is my sincere hope that the results in terms of new knowledge and applied management will have justified the expenditure of time, money and effort. I am quite convinced that, in spite of the sanctuary afforded the grizzly within Yellowstone, ultimately this remnant

population must be cooperatively managed in the Yellowstone area by your service, the U.S. Forest Service, and by the Montana and Wyoming Fish and Game Departments. We suggested this in our management report. There is ample precedence for such cooperative effort. Management of both the Northern and Southern elk herds has been greatly refined by such cooperation. I mention this, not to belabor a point, but to convey to you that these other agencies are very much interested in an ecosystem management approach.

In the years ahead Frank and I, our students, and colleagues plan to publish the results of our research. As in the past, appropriate manuscripts will be submitted to your staff for review prior to publication, and reprints of all publications will be sent to the Park Service. In order that the Service may have a record of our publishing plans and in order that inquiries can be made concerning the progress of publication, I am attaching a list of major manuscripts completed, those in progress, and portions of the research as well as popular treatments already published. The long period of continuous field work has precluded earlier publication of much of our data. If for any reason these pending publications do not come to your attention, please notify me, and I will make reprints available.

I am looking forward to seeing you in June to discuss details of our summer's work.

Sincerely,

John Craighead

John Craighead

JC:rd

Copies: Dr. Starker Leopold
Dr. Robert M. Linn
Mr. Fred Fagergren
Dr. F. C. Craighead
Dr. Vincent Schaefer
Mr. Frank Dunkle
Dr. Tom Baskett

Enclosure

# United States Department of the Interior

NATIONAL PARK SERVICE

Yellowstone National Park, Wyoming 82190

IN REPLY REFER TO:

August 13, 1970

N22

Dr. John J. Craighead
Leader, Montana Cooperative Wildlife
Research Unit
University of Montana
Missoula, Montana 59801

Dear Dr. Craighead:

You are correct in stating one of the purposes of Yellowstone National Park is for scientific study. The other purposes are to preserve natural environments and native biota for their scenic, educational, or cultural values to park visitors. Research is encouraged when it requires the park environment and does not reduce esthetic or scientific values. This is, of course, illustrated by twenty-one different non-National Park Service researchers who are working in the park, and the thirty-three scientific collecting permits that were issued this year.

Another measure of the amount and importance of outside research performed in this park is what appears in print. During the year, twenty-two professional publications resulting directly from research in Yellowstone were accessioned into the park research library. These ranged from reprints of articles from various technical journals to several different PhD theses.

We are impressed that Yellowstone has one of, if not the most vigorous, research programs--both National Park Service and academic--existing in the National Park System today.

As I have mentioned previously, we must have some very compelling management problems to resort to the conspicuous marking of park wildlife. Our operational use of a small metal ear tag to determine if transplanted problem bears return to campgrounds is hardly the same as marking over 200 grizzly bears and numerous other animals with colored ear streamers and collars to follow their movements.

Admittedly this was once a standard approach, but after 12 years of such marking we have asked our own and other cooperating researchers to consider alternatives in their studies. This is being undertaken in cooperation with scientists from the University of Wyoming.

For your particular needs to test radiotelemetry equipment, John Gottschalk has informed me that he was considering some of the wildlife areas under the jurisdiction of the Bureau of Sport Fisheries and Wildlife. He assured me there were a number of alternatives which could be available to you.

Sincerely yours,

Jack K. Anderson
Superintendent