



Environmental Research Institute

HEADQUARTERS
P. O. Box 156
Moose, Wyoming
83012

Officers and Directors

President
Frank C. Craighead, Jr.

Secretary-Treasurer
Samuel Scrivener, Jr.

Frank H. Goodyear
John J. Craighead
Gerald J. Stout
Charles R. Pihl

April 3, 1972

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

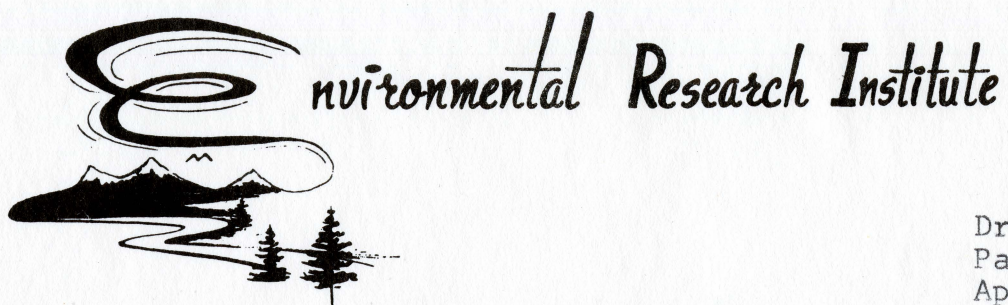
Dear John,

I have gone over the denning manuscript as thoroughly as time permits. I made changes on the photostat copy that Osburn marked and then have transferred these changes to the original manuscript. I suggest that you do the same - make your first changes on the marked copy, and then transfer them to the original in colored ink. When you have done this, please return both manuscripts to me, and I will have the original retyped. Be sure to send both, as I have no other copy. I will go over the manuscript when I return, and send it immediately to Krumholz. If you do not have many changes I will have my secretary go over the final draft with Esther and mail as soon as possible.

You will notice that I followed Louis' suggestions on the illustrations, but I have added one more - the picture of Grizzly No. 65 with four cubs. I felt that there was a need for a good grizzly picture, and this of course was lacking. There are numerous other photographs that we could add, but I imagine due to cost, we had better not do so.

The suggestion that we add a map of Yellowstone is a good one. If you have anything already available, it might be well to include this with the manuscript. Otherwise, I think we will just have to let it go. There are some sections where we could add more material, but I believe that it is now more important to get this manuscript out than to keep trying to add to it.

I would appreciate it if you would have someone get together all the information on carcasses available at the Unit and send copies to me. I would also appreciate it if you could round up all the information, including maps, on the ranges of grizzlies tracked by radio. Once all this material is together, I will try to rough it out and get a manuscript completed this summer. I think it is important to do this now, as I may not have another opportunity for some time. In addition to the range information obtained by radiotracking, I think that we should also add some data on movements and activities of marked animals as well.



Dr. John Craighead
Page Two
April 3, 1972

I expect to leave for Washington on April 8, and probably will not return to Moose much before the end of the month. I will send you a copy of my itinerary when prepared, as you may have to contact me regarding this Science Year article. I just talked to Darlene.

Sincerely,

Frank.

WILDLIFE MONOGRAPHS

A Publication of The Wildlife Society

OFFICE OF THE EDITOR • DEPARTMENT OF BIOLOGY
UNIVERSITY OF LOUISVILLE LOUISVILLE, KENTUCKY 40208

14 October 1971

Dr. William S. Osburn, Jr.
Environmental Sciences Branch
Division of Biology and Medicine
U. S. Atomic Energy Commission
Washington, D. C. 20545

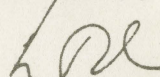
Dear Bill:

I am enclosing a copy of the manuscript by Frank and John Craighead on a rather small part of what I think is a well defined segment of their work with the grizzly bear. I will appreciate it very much if you will tell me whether or not you think it is worthy of publication as a WILDLIFE MONOGRAPH. Also, send me in duplicate your comments on ways and means you suggest the manuscript can be strengthened.

I will appreciate it if you can return this to me within a month or so. I am sorry we did not get a chance to have a longer chat when we were in Oak Ridge. I still look back on the trip to the tundra in back of Boulder.

With very best wishes,

Cordially,



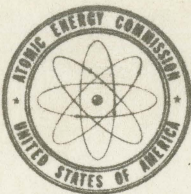
Louis A. Krumholz
Editor

3 Nov 72

Enclosure

Dear Sam — I note that I failed to send duplicate comments, in fact even one set as many are on the enclosed.

I can't remember when I've let something slip as badly as I have this review. I apologize again to you & to Frank & John for so long delay. It's hard to make it difficult for me to criticize researches being slow getting material into print when I've been a major villain. Please give me a collect call if I can be of further help. Sincerely, LAK



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

March 6, 1972

Dr. Louis A. Krumholz
Department of Biology
University of Louisville
Louisville, Kentucky 40208

Dear Louie:

I apologize for the inexcusably long delay in evaluating and returning the Craighead Grizzly manuscript. However I hope the following comments will be helpful to you.

sent letter → I read through the manuscript very rapidly immediately after receiving it. I found it fascinating. However I had an uneasy feeling about several aspects. First I felt that I had read most of this before. Perhaps it was because most of this information was in their AEC progress reports. I believe though that Jean George published a lot of the substance of this manuscript in the Reader's Digest. Some scientists take a dim view of this procedure of release to the general public before one's colleagues get an opportunity to evaluate. Another general area was that evidence and supposition was so interwoven I could not separate them. Perhaps it would be helpful if the authors were a little more careful so the reader would know what behavior had supporting data and what did not. Regardless of the above I find that through months of reading I still recall the entire manuscript very clearly. And as this is a desirable aim in science, to write so people can understand and remember, perhaps the author's style should not be altered.

As to specifics I suggest:

- ✓ 1. Can the authors cite the source of Lewis and Clark's information concerning the Grizzly bears--first line of the introduction?
- ✓ 2. They make a good case for the importance of hibernation.
- ✓ 3. Page 5 - recheck statement concerning evidence that bears can react rapidly when winter sleep is interrupted. How about the interaction of drugs and hibernation? Are they more or less effective?

during hibernation less drug is required to produce immobilization than when bears are active.

difficult to prove

March 6, 1972

*John
Cove*

- ✓ 4. In discussion of the environmental conditions under which bears enter dens (during snow storms) do the investigators have other data such as light, temperature, etc. which might or might not be pertinent?
5. How about dormancy breaking triggers? Do the authors have information such as depletion of fat reserves which might help trigger wake up?
- ✓ 6. Page 26. If bear #101 abandoned dens in 2 consecutive years how do we know that Craighead activities were not responsible for bears denning in very isolated areas?
- John ✓
2. altered time* 7. Page 33. They state pregnant females may routinely use fine, soft materials for beds. In the table I only saw this once. Is this statement supportable by additional data?
- John →
Schematic* 8. Check figures 10 and 11. Are these drawings to scale or are they schematic?
— but generally to scale
9. Did the authors locate many used dens in any particular area?

I'll mark other suggestions on the manuscript. I've got another must assignment and I will get this out today!

Regardless of comments I recommend publication. It is only a short time until we the public must face up to a problem, exemplified by the Grizzlies. We can't always have our cake and eat it too. If we want Grizzlies we must be prepared to accept some possible cost (or hazard) in having them. However through "natural history" research such as this may allow park management to keep the bears and reduce their "deleterious" impact.

I realize this review is quite clumsy but again hopeful it will be useful.

Sincerely,

William S. Osburn, Jr./pas

William S. Osburn, Jr.
Ecologist
Environmental Sciences Branch
Division of Biology and Medicine

OKLAHOMA COOPERATIVE WILDLIFE RESEARCH UNIT

OKLAHOMA STATE UNIVERSITY
404 LIFE SCIENCES WEST
STILLWATER, OKLAHOMA 74074

COOPERATING AGENCIES:

OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION
OKLAHOMA STATE UNIVERSITY
WILDLIFE MANAGEMENT INSTITUTE
BUREAU OF SPORT FISHERIES AND WILDLIFE,
U. S. DEPARTMENT OF THE INTERIOR

October 29, 1971

Dr. Louis A. Krumholz, Editor
Wildlife Monographs
Department of Biology
University of Louisville
Louisville, Kentucky 40208

Dear Lou:

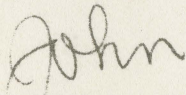
Enclosed is the manuscript on grizzly bears and my comments, which are listed mainly on a separate note. In general it is well-written, informative, and appropriate as a monograph. I would leave in all photographs.

One thing bothers me: did the Craigheads specifically request that I examine the manuscript? I am wondering if it was intended that Peter Morrison do this job, but I got it by mistake! Peter (no relative to me) has worked with bear hibernation. Nine or ten years ago he kept black bears in walk-in freezers at the University of Wisconsin.

I know both John and Frank, especially John, and would not feel it too unlikely that they would name me to review the manuscript. Peter Morrison just seems more logical for the task. Perhaps it's simply a matter of you choosing me; in which case, I am flattered and grateful for your trust in me.

If I can be helpful further, please don't hesitate to ask.

Sincerely yours,



John A. Morrison
Unit Leader

JAM.gdw
Enclosures

WILDLIFE MONOGRAPHS

A Publication of The Wildlife Society

OFFICE OF THE EDITOR • DEPARTMENT OF BIOLOGY
UNIVERSITY OF LOUISVILLE LOUISVILLE, KENTUCKY 40208

8 March 1972

Dr. Frank C. Craighead, Jr.
Environmental Research Institute
P. O. Box 156
Moose, Wyoming 83012

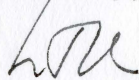
Dear Frank:

At long last I received the manuscript back from Bill Osburn and I am enclosing it along with the original for your use. In addition I am enclosing a copy of John Morrison's comments.

There are several suggestions I have to make. I think your Figure 1 should be the frontispiece and your suggestion that the picture of the two putting instrumentation on the grizzly would be suitable replacement as Figure 1. The material you suggested for a sponsorship page in your letter of 2 February is fine. I will see to it that it is included. It will be helpful if you will have Tables 1, 2, and 3 put on separate pages and I think all you have to do is cut up your present page 15 and attach each table to an individual page. Also, I think each figure should be on a separate page. I have retained all the figures here to prevent their getting lost in the mail. Actually all you need to do is to type up a list of figure legends, double spaced, so that I send that material on to the printer. All figure legends that you send me can be on the same page, if possible. If you can return this to me within a reasonable time I am sure we can have it printed and distributed within about 6 months. I am looking forward to seeing you and John in Mexico.

With very best wishes,

Cordially,



Louis A. Krumholz
Editor

SV

Comments on "Grizzly Bear Prehibernation and
Denning Activities as Determined by Radiotracking"

✓ Page 1, lines 18-19: add to sentence thusly: "... it was necessary to develop and employ a radiotracking and locating system (____, ____) to study its activities.

9 Page 1, lines 19-21: The data gathered constitute more than one facet.

✓ Page 2, line 13: The previous paragraph discussed an event of 1963; in designating the year in which radio tracking began (1961) it seems a better follow-up of the preceding paragraph to begin this one by saying: "We began developing and testing radiotracking equipment in 1961,".

Page 2, line 3: This is not a good usage of the word "like".

✓ Page 5, lines 9-16: Were the temperatures obtained via radio? If so, I am surprised that telemetry was apparently not employed to monitor other physiological conditions in various kinds of activities as did Van Citter with sensors implanted in East African baboons. He monitored heart rate, rate of blood flow, blood pressure, temperature and other phenomena in instrumented free-ranging baboons while observing their routine activities and social interactions with others in their group. This technique should provide more detailed evidence for the bear's hibernating metabolism.

✓ Page 6, lines 16-18: The statements here repeat others beginning on line 13 of page 4.

*Worth
considering*

Page 8, "Study Area": A good map should be included showing principal orientative features of Yellowstone Park plus the names of all places of significance given in the article.

*Not time
for this*

✓ Page 10, "Methods": Unless there is a specific reason for not doing so (patents, etc.) I would recommend that the design of transmitters be given in detail, or if they are described elsewhere, a citation of the reference should be given. This would be more useful than explaining how the collars were placed on bear necks. *reference - see reference - also page 10*

*I agree
city J. Vany*

Page 16, line 15: Should not 1/4 and 1/3 be spelled out: one-fourth, one-third?

✓ Page 17, line 22: The reader might wonder if the ridge is 200 feet high or 200 feet long.

✓ Page 23, lines 10-12: The sentence concerning four dens is written poorly.

✓ Page 23, lines 16-17: This is an example of a disconcerting sentence structure involving a parenthetical or interjected clause. This structure is used too frequently and it interferes with a smooth flow of language.

✓ Page 29, lines 4-7: I can't see how Fig. 7 is related to this statement.

✓ Page 39, line 2: "Forest duff..." sentence is unclear. Was duff brought in to cover the soil or was it scraped away to expose soil?

✓ Page 39, line 17; p. 40, line 7; p. 43, section title: Is it prehibernation or pre-hibernation?

✓ Page 40, line 15: Hayden Valley and other key geographical locations should be indicated on a map of the park.

✓ Page 40, 1st paragraph, last sentence: Is this speculative or is there good evidence for this? Some examples would be helpful. *ref.*

✓ Page 43: "Pre-hibernation Movement and Behavior" should not the pre-hibernation behavior described on p. 40 be included under this heading instead of under "Relation of Den Site to Home Range"? *No change*

✓ Page 42, line 1: "outtraveled" is not a clearly meaningful word. Quantitative evidence to illustrate the fall pre-hibernation dispersion would be helpful. Was radiotelemetry the source of evidence? It would be interesting to contrast these movements more definitively with other kinds of movements.

you did not answer this. Is a good question
✓ Page 48, line 3: The "... change in light ...", is this a change in day-length or a qualitative change in the prevailing light conditions?

✓ Page 49, lines 3-7: A female weaning and leaving her cubs might come into estrus early, but might not the female adopting them be delayed from returning to estrus and thereby offsetting any gain in productivity? *see no change*

✓ Page 50, line 15: Does "higher" mean in elevation or in evolutionary development?

✓ Page 50, line 2: What is a "sitting-fetal" posture? Define this. *No need to*

✓ Page 51, line 19: The word "friction" is a poor term in comparison to "aggression" or "hostility". *Not in this case - aggression. Better*

✓ Page 52, line 4: Did the people climb the trees and use their radios, or did the bears climb trees then run away?

✓ In general, too many sentences or phrases begin with "however" or "thus", and interjected or parenthetical clauses set off by commas are too numerous and hinder a smooth flow of communication to the reader.

✓ It would be helpful to describe pre-hibernation behavior in greater detail and to make a clearer depiction about the temporal relationship of the pre-hibernation lethargy to other pre-hibernation behavior.

The manuscript should be made more complete in the appropriate monograph format: credit page for the financial donors, contents, etc.

April 3, 1972

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

Dear John,

I have gone over the denning manuscript as thoroughly as time permits. I made changes on the photostat copy that Osburn marked and then have transferred these changes to the original manuscript. I suggest that you do the same - make your first changes on the marked copy, and then transfer them to the original in colored ink. When you have done this, please return both manuscripts to me, and I will have the original retyped. Be sure to send both, as I have no other copy. I will go over the manuscript when I return, and send it immediately to Krumholz. If you do not have many changes I will have my secretary go over the final draft with Esther and mail as soon as possible.

You will notice that I followed Louis' suggestions on the illustrations, but I have added one more - the picture of Grizzly No. 65 with four cubs. I felt that there was a need for a good grizzly picture, and this of course was lacking. There are numerous other photographs that we could add, but I imagine due to cost, we had better not do so.

The suggestion that we add a map of Yellowstone is a good one. If you have anything already available, it might be well to include this with the manuscript. Otherwise, I think we will just have to let it go. There are some sections where we could add more material, but I believe that it is now more important to get this manuscript out than to keep trying to add to it.

I would appreciate it if you would have someone get together all the information on carcasses available at the Unit and send copies to me. I would also appreciate it if you could round up all the information, including maps, on the ranges of grizzlies tracked by radio. Once all this material is together, I will try to rough ~~out~~ it out and get a manuscript completed this summer. I think it is important to do this now, as I may not have another opportunity for some time. In addition to the range information obtained by radiotracking, I think that we should also add some data on movements and activities of marked animals as well.

Dr. John Craighead
Page Two
April 3, 1972

I expect to leave for Washington on April 8, and probably will not return to Moose much before the end of the month. I will send you a copy of my itinerary when prepared, as you may have to contact me regarding this Science Year article. I justttalked to Darlene.

Sincerely,

Frank.

April 3, 1972

Dr. William S. Osburn, Jr.
Ecologist
Environmental Sciences Branch
Division of Biology and Medicine
U. S. Atomic Energy Commission
Washington, D. C. 20545

Dear Bill,

I appreciate the comments and suggestions that you made in reviewing our manuscript on grizzly bear denning. I think that all of these have tended to improve the manuscript.

The material that you referred to as having been published by Jean George in the Reader's Digest was primarily information on the bear's tendency to move to dens during storms and to all more or less enter their dens at the same time. Mention of this was also made in a Geographic article, and the Reader's Digest picked it up here. I attempted to discourage publication of the Digest article, but when this did not seem possible, I offered to edit the final version of the manuscript. As you know, the Digest tends to make definite and all-encompassing statements. I found it impossible to get the editors to adequately qualify some of the statements that were made. Also, writers take the attitude that anything that is published or even in report form is public knowledge and therefore they can go ahead and use it. I don't agree but it is difficult to oppose.

In my work over the years, I have attempted to put out technical papers and follow this with popular articles and even, on some occasions, television films. I firmly believe that a scientist has an obligation not only to see that his results are disseminated to other scientists, but to see that they reach the public as well. This is necessary, not only for continued support of many types of research, but also because the public needs to understand many technical subjects if the people are to make the proper decisions in the political area where they at least have the influence of one vote.

More and more, we are dependent upon science for guidance in the decision-making process affecting our modern world. Yet there seems to be an increasing distrust of the scientist and his objectives. This of course is due largely to the fact that the application of scientific knowledge has not always been in the best interest of society.

Dr. William S. Osburn, Jr.
Page Two
April 3, 1972

I hope that all is going well with you in your work, and if you should get out this way, please be sure to stop by for a visit. I appreciate the time that you put on this manuscript, taken from a busy schedule, Thank you.

Sincerely,

Frank Craighead