

Oral History Number: 054-001

Interviewee: John J. Craighead

Interviewer: unknown

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Interviewer: My guest today is Dr. John J Craighead, leader of the Montana Cooperative Research Unit, and professor of zoology and forestry here at the University of Montana. Dr. Craighead was recently awarded a federal grant for the purpose of preparing a monograph on the ecology of the grizzly bear in Yellowstone National Park. Dr. Craighead, what will the grant enable you and your associates to do?

John Craighead: Well, this grant is very welcome. It will enable my brother [Frank] and I and our associates to write scientific papers and monographs on 15 years of intensive research that we conducted in Yellowstone Park from 1959 through 1970 and up to the present time. We'll be consolidating our data and getting out scientific papers on the population dynamics of grizzly bears, on the range in movements, what their spatial requirements are, on their food habits and predation, how they interact with other forms of wildlife. We'll be doing work on the physiology and the growth and development of grizzly bears. We took measurements and weights over a period of years. And also we'll be writing on the interaction of grizzly bears with human beings, especially in areas like Yellowstone where you have high density visitor use in the summer time. So it'll enable us really to consolidate 15 years of effort and get it out to the scientific community.

I: As you mentioned, you have been studying the grizzlies in Yellowstone since 1959. Could you just recount for us some of the results of your effort to date?

JC: Well, when we began this study, there was no information on how to immobilize grizzly bears, how to handle them, how to mark them. So we developed techniques for studying grizzly bears. In the course of the study, we handled over 600 bears. We individually color marked 167 animals and released them back into the population so that we could reabsorb them, and we made thousands of observations of these. And then also we developed a radio tracking system with the help of engineers—the first of its kind—which opened up a whole new field of study on the grizzly bear. And with these techniques we learned a great deal about the size of the population in Yellowstone, the age structure, the reproductive rate, how fast they reproduce, the death rate. We learned a lot about the food habits. For example, perhaps one of the more important things we learned by marking and following female grizzly bears for year after year: that they have a very low reproductive rate. It's a little over half a cub per adult female per year. And this indicated to us, of course, that the grizzly bear could not stand heavy mortality. Because when you have a low reproductive rate and a high death rate, then your population is going to decline, and this is exactly what did happen in Yellowstone, which alerted us and alerted the management agencies to the critical need to manage grizzlies much more carefully than we had been doing.

I: On the basis of a tremendous amount of information that you have been able to gather, in your opinion, at this point, what do you think should or should not be done in order to properly manage the grizzly bear in the contiguous 48 states?

JC: Well, it's a pretty big order, but there are probably not over 7- or 800 grizzlies in the contiguous 48 states. It was estimated one time that there were in the neighborhood of a million bears. It was estimated that in California, for example, that there were 10,000 grizzlies and they became extinct in 1924. So one of the obvious things is that, in view of the low reproductive rate, that we do have to keep the death rate down and this can be done by closely regulating the hunting, by keeping very close record of illegal kills and control kills, and this has to be done in Montana, Wyoming, and Idaho, in the in the states where we still have grizzly bears. We have three large ecosystems where we still have grizzlies, in the contiguous 48 states. The Yellowstone one of about 5 million acres, the Selway-Bitterroot, nearly one and a half million, and then Bob Marshall-Scapegoat Wilderness of over three and a half million acres. The population declined 45 percent in the Yellowstone ecosystem in the last six or seven years due to faulty management of the population there. It's doubtful whether there are any bears, or at best only a few grizzlies left in the Selway-Bitterroot, where they were once fairly abundant. And the exact status in the Bob Marshall-Scapegoat is unknown. There needs to be more work done there. But we have to do some very precise managing of the populations. The other thing is, of course, to preserve the habitat. And this was done with the creation of the National Wilderness System—that was in 1964. These are administered by the Forest Service and we're going to be able to protect these. We should also protect the habitat adjoining these large wilderness areas as much as possible, with the other land uses that will occur in these areas. One way would be to, after logging, after intensive operations, to close those areas adjoining the wilderness to grizzly bear hunting for a period of time, until we see what effect the logging has had on the grizzly bears. We need to know more about their food habits, just what constitutes grizzly bear habitat. And in connection with that, we got a grant recently from the National Aeronautics and Space Administration.

I: I was going to ask you about that. You received a 15,000 dollar grant from them, along with another grant from the National Geographic Society and grants from several other organizations to continue your studies of the grizzly bear habitat by using satellite technology. Now, how is this going to work?

JC: Well, we think there are tremendous potential in using the satellite technology, spin-off from the space program. At the present time, NASA has two Earth Resources Technology Satellites in orbit, and these satellites photographed the earth from a distance of about 500 miles. Together they completely photograph the earth every nine days. So that they're saying that there isn't any place in the world that NASA hasn't been. But using the digital tapes that we get from the satellite, and using some advanced computer technology that's been developed by General Electric in their Image 100, we can take the imagery that we get from the satellite, select an area, like say the Scapegoat Wilderness area in Montana, and this is photographed on four color bands, and by going in and getting what we call ground truth data, and then telling

the computer what this data is, the computer displays the map, a visual map on a TV screen. It computes the acreage of each major type, whether it's coniferous forests, or alpine tundra, or Rockies talus slopes, and then we know the foods that grow in these areas, that are available to grizzlies. And so, with the combination the ground truth and this very high altitude multispectral photography, we should be able to map these large ecosystems of 34 million acres, and do it very rapidly and very inexpensively once we worked out the basic technique. And that's what we will be working on, largely, this summer.

I: Quite a venture. I'm sure sorry we don't have more time. I want to wish you the best of luck as you continue some very important work, and thank you for being on with me today.

JC: Well, thank you very much. It was a pleasure.

[End of Interview]