Notes – Sept 19, 1972 Bear Mgt. meeting

outline – suggested solution to
Grizzly bear problem

Orig copy – Grizzly Bear & Black Bear Mgt. paper – F.C.C.

– Science Aug 4/72 Advisory Meetings

Letter from Snell to F.C.C. regarding meeting – 1972

X EPA talk – printed in Jan. 1973 – F.C.C (part of ref. 33).

~~Article on~~

Publication For Employees

January 1973

inside EPA

Page 2

Safety Drive Slated for Pesticide Users

Pesticides that don't poison the environment may be very dangerous to the farmer who stores them in his barn and spreads them on his crops.

As EPA's cancellation order made DDT illegal for almost all crop uses after Dec. 31, the Office of Pesticide Programs launched a massive program to assure that farmers will use chemical substitutes safely.

Many of the replacement pesticides are organic phosphate compounds, which can be extremely hazardous to the user, although they degrade rapidly when applied to soil or crops and do not persist in the environment. The greatest danger is from poisoning, through inhalation or through skin contact from accidental spillage.

Aimed at 14 States

In a key portion of the program, called "Project Safeguard," the Department of Agriculture, with financial backing from EPA, will zero in on farmers in 14 southern states with a direct training effort aimed particularly at growers of cotton, soybeans, and peanuts—crops for which DDT was used most heavily in the past.

Working through Agriculture's State Cooperative Extension Services, local farm leaders will be trained as safety aides. They will make face-to-face contact with their farm neighbors and offer advice on the use of the substitute pesticides that will be needed during the 1973 growing season.

EPA is transferring $750,000 to Agriculture for "Project Safeguard," and the Department is contributing $350,000. Both agencies have announced they will make additional funds available as needed, although they hope that a one-year intensive training effort will be sufficient.

The 14 States involved are Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Missouri, Mississippi, North and South Carolina, Oklahoma, Tennessee, Texas, and Virginia. All but two of these are in Regions IV (Atlanta) and VI (Dallas). Each State will have a director-coordinator to oversee the effort in that State. Special attention will be paid to reaching the small farmers—an estimated 170,000 of them—who are not normally in touch with Federal and State extension service workers.

Three-Phase Program

Getting the word to the farmers via "Project Safeguard" is the first of three aspects of EPA's work to make a safe and effective transition from the use of DDT and other environmentally harmful pesticides.

The second aspect is enlisting the cooperation and assistance of the medical profession, hospitals, and local health authorities in dealing with accidental pesticide poisoning. This is the responsibility of the Office of Pesticide Programs' Division of Technical Services, centered at EPA's laboratory in Chamblee, Ga.

The third aspect is publicity through newspapers, TV, and radio to inform people everywhere about pesticide problems and hazards and the effectiveness of safe practices. This is the responsibility of EPA's Public Affairs offices in headquarters and in all Regions.

A hard-hitting safety handbook titled "Don't Poison Your Family, Yourself, or Your Livestock" is being printed for use in "Project Safeguard" and for wide public distribution. The handbook and an instructor's manual are to be sent to regional offices this month.

New methods of pest control that do not involve user hazards are under intensive study in EPA and other government agencies and by outside research groups under EPA grants. These involve biological controls, or crop management techniques, or combinations of both. Such programs are not expected to be ready for practical application during the 1973 growing season.

Technical Seminar Draws Full House

A Technology Transfer Seminar on reducing pollution in the metal finishing industry was held in New York last month for 130 representatives of electroplating factories and state regulatory personnel in Regions I, II, and III.

The demand for the sessions was so great that many applicants had to be turned away, and another seminar for metal finishers will be held in Philadelphia Jan. 30 and 31.

The meetings are aimed at acquainting certain industries, particularly those involving many smaller manufacturers, with the latest developments in environmental control, said Paul Minor of the Office of Research and Monitoring's Technology Transfer program.

Extinction Seen For Yellowstone Grizzlies

Grizzly bears will become extinct in the Yellowstone Park area in another 20 years unless Federal and State wildlife management policies are changed, a biologist told an EPA-sponsored lecture audience in Denver last month.

Dr. Frank C. Craighead Jr. said the actions of the National Park Service in recent years were decimating the population of grizzlies in the Yellowstone ecosystem, the last refuge of the big animals that once dominated the Northwest.

Craighead spoke at the third of a series of monthly lectures sponsored by the Technology Transfer Committee of EPA's Region VIII. Russell W. Fitch is committee chairman. The lectures are designed to expand the environmental awareness of the EPA staff and are open to the public also.

Craighead and his twin brother, John, also a wildlife biologist, have been studying the species, *Ursus horribilis,* for 12 years. Their articles on grizzlies' feeding habits, movements, reproduction, and population changes have been published in scientific journals and popular magazines.

How To Tail a Bear

The brothers' research has involved tagging the animals and using collar-mounted miniature radios to monitor their movements as well as careful tracking, observation, and photography. They have formed the Environmental Research Institute based at Moose, Wyo., and are pursuing their studies outside Yellowstone Park, since the Park Service no longer permits them to work within the park, Craighead said.

Specifically, the Craigheads object to the Park Service's sudden closing of garbage landfills that the grizzlies had come to use as food sources. These closures should have been gradual, Craighead said, to give time for the bears to return slowly to their natural foods.

The sudden closures caused bears in the park—an estimated 250—to seek garbage or other food nearer to campgrounds and inhabited areas, he said. Man-bear encounters increased, sometimes with tragic consequences. Campers have been maimed or killed, and the marauding bears promptly shot.



—National Parks photo

A grizzly bear mother and two cubs roam over Yellowstone grassland.

The Park Service also tries to trap all grizzlies found in peopled areas and take them to remote sections outside of the park, in the hope that they will stay far from the campgrounds and learn to fend for themselves. This tactic seldom works, Craighead said, because the bears soon make their way back, and then they get killed.

Of 19 grizzlies moved outside the park last year all but one are known to have died, he said, and hunting pressure outside park boundaries has further reduced the Yellowstone grizzly population.

'Planted' Food

The Craigheads have demonstrated that grizzlies will congregate around animal carcasses to feed, and they suggest that elk carcasses be "planted" in wilderness areas to entice the bears away from the campgrounds and tourist centers. Park rangers regularly kill many elk to limit the herd size to numbers the range will support.

Carcass planting is one of the brothers' recommendations for improved grizzly management. Others include a moratorium on bear hunting in the Yellowstone ecosystem, reduction of bear deaths caused by predator poisoning programs, and continued improvements in campground sanitation.

In the long run, Craighead said, the Park Service must seek to limit man-bear encounters by managing people rather than bears. And this requires the resumption of independent research within the park.

Craighead concluded his talk with a plea for greater efforts to preserve the Nation's wild and scenic rivers, particularly Clark's Fork of the Yellowstone and the Teton in the West and the Potomac in the East. Rivers need protection as much as forests and wildlife, he said.

EPA Co-Sponsors Atlanta Conference On Urban Noise

An EPA-sponsored Environmental Noise Conference attracted more than 150 persons to Atlanta last month for two days of intensive study on the problems of noise in the urban environment.

Dr. Clifford R. Bragdon of Georgia Institute of Technology, noise consultant to EPA's Office of Noise Abatement and Control, was conference administrator and head of a nine-member faculty for the sessions held Dec. 19 and 20 at the Georgia Tech campus.

The conference was co-sponsored by the University and the Region IV office of the Department of Housing and Urban Development, as well as EPA.

The faculty included Dr. Joan O'Dell, EPA regional counsel; Charles R. Foster and Harvey S. Safeer, Department of Transportation; James H. Botsford, Ralph K. Hillquist, and Richard K. Miller, industrial noise control engineers; Kent C. William, Georgia Tech; and Robert A. Baron, co-chairman of the New York City Council's noise control committee and author of "The Tyranny of Noise."

Continuing education credits were given to conference participants by the University. The sessions covered the physics of sound, measurement procedures and instrumentation, and control applications for transportation, construction, and other industries. Existing Federal, State, and local noise control legislation was discussed, including environmental impact analysis, and the potential role of citizens' groups in noise abatement.

Attendees include public officials and administrators, city planners, architects, consulting engineers, educators, and other interested in noise control problems.

Louisville's 'Ecology Court' Meets Twice Each Week

Every Tuesday and Friday afternoon in Louisville, Ky., Judge Brian Schaeffer presides over "Ecology Court," a special tribunal for hearing cases involving air and water pollution, trash dumping, and other violations of local environmental laws.

Other cities have special courts for police cases, traffic violations, domestic relations, and so on, but Jefferson County (Louisville) is believed to be the first to have an Ecology Court.

It was established a year ago by County Judge L. J. Hollenbach 3rd, who is chief administrative officer of the county as well as head of its judiciary.

The court has heard more than 800 cases in its first year, and only a handful have been dismissed, according to Robert T. Offutt, secretary-treasurer of the Jefferson County Air Pollution Control District, whose complaints are responsible for a sizable portion of the twice-weekly docket.

Judge William H. Walden presided over Ecology Court until three months ago, when he became ill, and Judge Schaeffer was named to replace him.

Fines range from $10 to as high as $500 a day, plus court costs of $19.50, recently raised from $18. The average fine is about $37. Defendants range from householders accused of burning leaves to industrial and commercial establishments. The City of Louisville was fined for faulty operation of an incinerator. Several public schools and the Southern Baptist Theological Seminary have also been fined. About three-fourths of the defendants are industries, who usually "plead guilty and get out of court as quickly and quietly as possible," as one court official put it.

The APC district has five deputized, badge-carrying peace officers who are empowered to make formal complaints hauling accused air polluters to Ecology Court, Offutt said. Other cases come from the county Board of Health, from the police, from the zoning commission (involving improper uses of land), and from private citizens.

Citizens whose complaints lead to convictions may claim rewards of from $10 to $25. Such rewards were authorized when the Ecology Court was established, but so far no one has come forward to collect.

Have other cities followed Louisville's example? Local officials don't know, but they think so. Visitors from "25 or 30 U.S. cities and several foreign countries" have come to watch the court in operation and to talk to local officials about how it is organized, Offutt said.

Don't Forget EPA Scholarship Fund

Payments to EPA officials for speeches or articles should be turned over promptly to the EPA Scholarship Fund, Robert F. McDonald, fund manager, has announced.

Busy officials may forget that the fund exists, or forget to ask that proffered payments be made in the form of voluntary charitable contributions to the fund, that was created to provide a useful outlet for such honoraria and fees. Federal regulations forbid agency officials from accepting for their own benefit any payments for speaking or writing in their official capacities.

The fund supplies scholarships for sons and daughters of EPA employees, in amounts up to $500 per year according to need. Sixteen students have been awarded scholarships for the current school year.

Fund monies are deposited in the EPA Employees Federal Credit Union and are dispersed each summer to scholarship winners chosen by a five-man board of trustees.

Walkers in Philadelphia Relish Exercise, Variety



—Phila. Inquirer, Charles James

EPA Attorney Ann Joseph enjoys her two-mile walk to work each day.

Three young EPA employees in the Region III office in Philadelphia do their bit for the environment by walking to work each day. They were among four pedestrians buttonholed at random by reporter Dominic A. Sama of the Philadelphia Inquirer and interviewed for a feature story last month.

Ann Joseph, 26, an attorney in the office of the regional EPA counsel, told Sama she walks the two miles from her home to her office and lets her sister-in-law in the country use her car on weekdays.

"Walking to work wakes you up and calms you down," she said. It takes half an hour but saves 70 cents in bus fare and provides a lot of window-shopping and people-watching time.

"Just recently I met a girl I haven't seen since my freshman year in college seven years ago. Now we have renewed our friendship. She walks to work too."

Lucille Paris, 28, a secretary in the deputy regional administrator's office, said her mile-long, 20-minute walk is "the best exercise you can get when you're sitting behind a desk all day."

Stopping for Soup

"I will detour my route sometimes for a change in scenery and to stop in my favorite restaurant for some onion soup," she said. "I never take the bus unless the weather is really bad. The tempers are so short on the bus or subway. Everybody is in a hurry."

Some people are afraid of walking the streets, she said, "but if more would walk and get out, the streets would be safer. I've never had any trouble."

Tim Kent, 25, who works in the regional public affairs office, doesn't even have a driver's license and seldom regrets it.

"I walk about a mile, and I take 10 or 12 different routes," Kent said. "I never walk the same way two days in a row."

"Walking is handy. I can pick up my dry cleaning or stop at the grocery store. And sometimes I beat the bus home," he said.

One Drawback

Kent said he misses not having a car only when he's taking a girl out on a date. "Then I take the bus or trolley, but normally I try to find a girl with a car."

About 72,000 people walk to work in Philadelphia, according to the 1970 Census, Sama reported, compared to 274,000 who use public transit and 309,000 who drive. The walkers have their reasons, he wrote: "It's good exercise; it offers the pleasure of window-shopping; the cool, early morning stroll wakes them up; it's cheap; and it avoids the misery of bumper-to-bumper driving, parking, and the uncertainty of the scheduled public transit carriers."

Car Pool Tried to Be Bus Line

The car pool had a dream, but it turned out to be the impossible dream.

When Region II's Water Pollution Branch was moved last spring from Edison, N.J., to the regional office in downtown New York, Daniel Kraft had an inspiration.

Why not get together and buy a small bus or an airport limousine, and ride to work in style, saving money and reducing traffic jams and air pollution?

Out of about 40 people moved, Kraft reasoned, 10 or 15 lived quite close to the place where they used to work, and all were traveling the same route (about 30 miles each way) at the same time each day. They could incorporate themselves, insure the vehicle, and take turns driving. The capital cost, he figured, would be about $200 each if 15 people joined.

Five others in Kraft's car pool —Charles Durfor, Barbara Metzger, Roland Hemmett, and Joanne Brennan—agreed. But there was only one other recruit, and she was soon transferred back to Edison.

Human individualism and legal doubts prevailed. Most people he approached, Kraft said, didn't want to make an investment that they might not be able to "sell" to someone else if they had to drop out. And lawyers advised that the individual driver, as well as the corporation, could be sued if the bus was in an accident.

So Kraft and his co-workers are still just a car pool, albeit a full one; two members who own VWs drive only when someone is sick or on leave.

Great Lakes Cleanup Gets Under Way

International and multi-state efforts to halt pollution of the Great Lakes were outlined by Francis T. Mayo, regional administrator for EPA's Region V, at a recent meeting in Chicago.

A key factor in the Great Lakes cleanup, Mayo told a two-day Technology Transfer Design Seminar attended by 130 engineers from government and industry, is the drastic shift in policy contained in the Federal Water Pollution Control Act Amendments that became law in October.

The new law authorizes control of pollutant discharges wherever they are, he said, rather than basing all controls on the capacity of a river or lake to absorb pollutants.

Keeping It Out

"The philosophy now is no longer 'how much we can put into the water,' but rather 'how much we can keep out of the water.' No longer do we operate on the assumption that a discharger may put whatever he wishes except to the extent regulated. Instead, we start from the opposite end—the very right to discharge at all is conditioned by compliance with requirements.

"Because this requirement will be imposed throughout the Nation, no longer can a discharger threaten to leave a State to avoid pollution control requirements, because wherever he goes he will encounter similar requirements."

States will no longer be subject to "economic blackmail" or forced to choose between "clean water and jobs," Mayo declared.

Application of the new philosophy will take a decade or more, according to stages specified in the law. The first phase, to be attained in three to five years, will require effluent limitations "based upon the best practicable control technology currently available," Mayo said. "In addition, where tighter controls are necessary to protect water quality standards, then tighter controls will be imposed . . . national minimum controls (to be) met everywhere in the Nation."

Goals for the '80s

The second phase is working toward the goal of "best available technology" by 1983, and the national goal of "no discharge" by 1985. "These are goals to be considered in the setting of requirements," Mayo said. "They are to be weighed in the balancing of costs and benefits; they are not themselves requirements."

The upgrading of waste water treatment, and especially the control of nitrogen and phosphorus discharges, are particularly important to protecting the quality of the Great Lakes, that drain the heartlands of the United States and Canada, Mayo said. Both nations are cooperating more closely than ever before, and on many technical and administrative fronts, to carry out and implement the Joint Canadian-U.S. Agreement on the Great Lakes Water Quality signed by President Nixon and Prime Minister Elliot Trudeau last April.

An international board has appointed study groups to investigate and make recommendations on pollution of the "upper lakes," Superior and Huron; dredging practices and regulations; pollution from land drainage; and over-all research coordination.

$2 Million in Grants

EPA has issued five grants totalling nearly $2 million for water pollution control planning and management work by States and cities in the Great Lakes area, Mayo said. These include:

- $227,500 to the Michigan Water Resources commission to help develop a water quality management plan for southeastern Michigan to be completed next month.
- $328,000 to the City of Cleveland for a detailed pollution assessment of rivers and lake waters within a 30-mile radius of the city scheduled for completion in March.
- $275,000 to Pennsylvania's Department of Environmental Resources for a management plan for the Erie, Pa., area; this will also be a vehicle by which construction grants will be funded there by the State and EPA.
- $33,000 to Allen County, Indiana, for a detailed work plan to control pollution of the Maumee River Basin by sediment and agricultural runoff. This may lead to a demonstration project, Mayo said, and also provide "a sociological study . . . of problems encountered in selling water pollution abatement techniques to landowners." The report on the study is due in April.

Spray Irrigation

- $466,000 to the Michigan Water Resources Commission to evaluate the disposal of sewage waste water by spray irrigation on land in Muskegon County, Michigan. This is a five-year program ending in June, 1977.
- $570,000 to East Lansing, Michigan, incorporating construction and research as well as planning and management. A spray irrigation field and four small lakes on the Michigan State University campus will be used to demonstrate tertiary treatment by biological processes, and water recycling. This is a two-year project due to end in October, 1974.

Mayo's talk entitled "New Directions for Clean Water" led off the seminar.

Other EPA speakers included Albert C. Printz, Office of Refuse Act Programs, and Charles H. Swanson, Office of Water Programs.

Inside EPA, published monthly for all employees of the U.S. Environmental Protection Agency, welcomes contributed articles, photos, and letters of general interest.

Such contributions will be printed and credited, but they may be edited to fit space limits.

Van V. Trumbull, editor
Office of Public Affairs
Room W239, EPA
Washington, D.C. 20460

Tel. (202) 755-0883



—photo by Ernest Bucci

Study carrels and periodical racks fill the smaller leg of the L-shaped library. Window wall is at left, open stacks at right, out of picture.

New Headquarters Library To Serve Management Needs

EPA's Headquarters Library was opened this month on the second floor of the Waterside Mall building in southwest Washington.

The library has all-new, birch-veneered furniture: open stacks, study carrels, chairs, tables, and periodical racks. It is carpeted throughout its 11,000 square feet of space. One wall includes floor-to-ceiling windows overlooking the mall plaza to the east.

Sarah M. Thomas, chief of the Library Systems Branch, Management and Organization Division, said the library's collection totals about 45,000 books, periodicals, and microfiche cards, not all of which are yet catalogued.

Nucleus from Crystal Mall

Most of the items have been transferred from the former Water Quality Office library in Crystal Mall, Arlington, Va., so the collection is predominantly concerned with documents on water pollution control.

Miss Thomas said she hopes to correct this imbalance as rapidly as budget and staff limitations permit, and to increase the library's collection in other aspects of environmental protection.

"Our chief aim at the Headquarters Library," she said, "is to serve the headquarters staff, particularly in the areas of environmental law, economics, management, and social impacts."

Scientific and technical aspects of the Agency's work will continue to rely on other EPA libraries, she said. There are 37 EPA libraries altogether, including one in each of the 10 Regional Offices, the four National Environmental Research Centers, and more than a score of specialized collections at satellite laboratories and field stations.

EPA's largest library and central point for scientific and technical information is at NERC-Cincinnati, Miss Thomas said. Through the Cincinnati library, EPA people have access to more than 30 different computerized scientific data files and search services maintained by other government agencies, universities, and private research organizations.

Other, smaller EPA libraries are strong in such areas as radiation, pesticides, toxicology, air pollution, and meteorology. The Headquarters Library is in close touch with all collections in the EPA library system and can refer users with special needs to the center most likely to have the information they want, and arrange for literature searches and interlibrary loans.

Miss Thomas and her staff of four are using a computer terminal, linking the library to the National Institutes of Health in Bethesda, Md., to maintain an instantly available record of all book and journal holdings.

New Ecology Lab Being Established At NERC-Corvallis

A National Ecological Research Laboratory is being established at the National Environmental Research Center in Corvallis, Dr. A. F. Bartsch, NERC-Corvallis director, announced last month.

Dr. Norman Glass will be acting director of the new laboratory.

It will investigate the effects of air pollutants and toxic substances on terrestrial ecosystems—interdependent plant-and-animal communities living on land.

The new laboratory will be the ninth operating unit in the NERC-Corvallis complex and the first to deal with air pollution; research at the eight others—both in Corvallis and in seven other cities throughout the country—centers on water pollution.

Much of the research to be assumed by the new laboratory is now being done at Research Triangle Park. About 25 persons now working there will be moved to Corvallis. The moving of people and equipment is scheduled to be complete by the end of January.

Dr. Bartsch said the National Ecological Research Laboratory would have three branches—for studies in plant ecology, animal ecology, and ecosystems analysis. The latter will integrate data from the first two branches and provide statistical and computer skills needed for the design of experiments, analysis of results, and simulation modeling.

Spanish-Americans Learn To Use Pesticides Safely

Spanish-speaking farm workers in Colorado will be trained in the safe use of pesticides under a program launched last month by the EPA's Region VIII Office in Denver, Regional Administrator John Green has announced.

Training sessions will be held over the next nine months at four farming centers in the State for about 150 workers, Green said.

Textbooks and other materials will be translated into Spanish, and Spanish-speaking instructors and consultants will be used. The Rupert J. Hernandez Research Foundation of Denver will conduct the classes, under a $40,000 contract with EPA.

Another 78 trainees will receive instruction to qualify as State-certified pesticide applicators, equipped to handle pesticides too dangerous for use by farm owners and workers. Such certification could lead to better paying jobs with government agencies or farm cooperatives or as self-employed exterminators.

"Instructions on pesticide containers are usually in English, and Spanish-speaking farm workers may be unaware of the dangers," said Green. "Cautions from English-speaking employers can be misunderstood, resulting in accidents. We are hopeful that this training program will reduce those dangers."

A similar training program under a $23,750 EPA contract, is already under way at El Paso Community College in Colorado Springs. Its aim is to train Spanish-Americans as waste water treatment plant operators. As sewage treatment becomes more widespread and complex, the importance of having well trained operators increases.

The 20 Spanish-speaking trainees in the El Paso College program are also seeking State certification and eligibility for higher job ratings and pay.



EPA Yule Tree Is Made Entirely Of Reusable Stuff

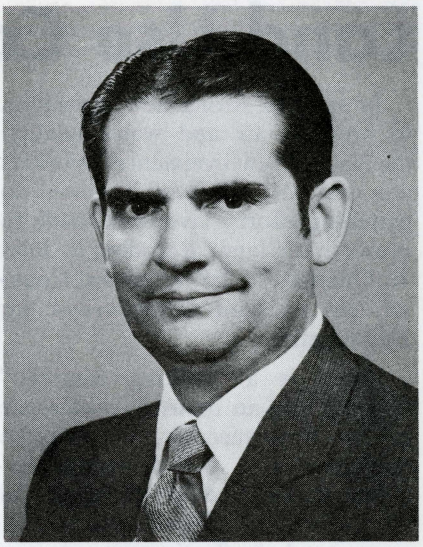
This ecological Christmas tree —made entirely of reusable materials—was created to decorate the Computer Center at the National Environmental Research Center at Corvallis, last month.

The three-foot, wire-and-plastic "tree" was decked with handmade felt versions of the EPA logotype and topped with a circular art nouveau monogram.

Mrs. Jean Fernald, a card punch operator at the computer center, made the tree with some help from her 20-year-old daughter Linda.

Eye on Chattanooga

An EPA aerial photography team from the National Environmental Research Center at Las Vegas, Nev., recently made a reconnaissance survey over the Chattanooga, Tenn., area to evaluate the use of photography and infrared scanning in the recording of industrial waste discharges, drainage patterns, and land use.



Asa B. Foster Jr.

Civil Engineers Elect EPA Official From Region IV

Asa B. Foster Jr., director of Categorical Programs for EPA's Region IV in Atlanta, was recently elected president of the Georgia Section of the American Society of Civil Engineers.

Foster has been in the Federal service for more than 11 years, starting as a staff engineer for the Federal Water Pollution Control Administration.

He is a graduate of Georgia Institute of Technology and is a registered professional engineer in Alabama, Georgia, Tennessee, Kentucky, and North and South Carolina.

Cywin Appointed To RPI Committee

Allen Cywin, director of the Effluent Guidelines Division, Office of Air and Water Programs, has been named to the Trustees' Visiting Committee for the Engineering School at Rensselaer Polytechnic Institute, Troy, N.Y.

Cywin is a civil engineering graduate of RPI in the class of 1948. Before being named to his present post last May, Cywin was with EPA's Office of Research and Monitoring.

Land Use Controls Called Ineffective

In spite of strong new legislation to preserve air and water quality, the Nation's environmental priorities are out of balance because no matching efforts have been made to preserve the land, according to John R. Quarles Jr., EPA General Counsel and assistant administrator for Enforcement.

There is a "striking contrast," Quarles told an industry conference in New York recently, "between the comprehensive, well-developd programs established by Congress (in air and water pollution) and our almost total ineffectiveness at any level of government in dealing with the protection of our land."

"Our shorelines are being gobbled up, our wetlands dredged and filled, our mountain valleys dammed and flooded, our streams drastically altered by channelization, our wilderness areas cut with highways and blotched with development," he said. "All this damage to environmental values and the quality of life results from the lack of effective mechanisms to control development.

Government To Blame

"The culprit is the total institutional structure of . . . government, as well as those who develop the land for industrial, commercial, or residential use.

"The solution of land use and development problems now stands out, I believe, as the number one priority crisis confronting the environmental movement today."

Quarles called the new Coastal Zone Management Act a "partial response" to the problem, but urged passage of broader legislation to help States manage the use of land in many "areas of critical environmental concern."

Quarles was keynote speaker at a one-day conference on "The Environment and Public Policy," sponsored by the Conference Board, a nonprofit organization for research in economics and business management.

EPA's enforcement program will continue and become stiffer as the regulatory framework laid out in the new air and water pollution control laws becomes effective, Quarles told his audience of 300 persons, mostly from industry. He defended the emotionalism and fervor of the environmental movement as rooted in the American traditions of reform and "tough crusading zeal."

Other Changes Cited

The environmental crusade, he said, is one protest movement among many "currents of social and political change that have moved through American society."

"Predominant in recent years has been the long struggle to provide equal opportunity and social justice to blacks and other racial minorities. One also thinks of the continuing drive to achieve equality of status for women. Stretching our memory just a bit, we recall years of controversy before labor achieved elementary rights at the bargaining table."

He also cited economic and political reforms going back through the 19th century to origin of the Nation in a war of revolt.

"In all these cases the existing structure of society was brought under sharp attack," said Quarles. "Long struggle and bitter divisiveness accompanied efforts to correct a weakness or abuse in the . . . institutions of the day. Difficult though the turmoil was for all concerned, however, in the end these protest movements brought improvement to our society and new strength to our country."

Better Method Developed For Measuring Mercury

A new and more accurate method for measuring the amount of mercury in plant and animal tissues has been developed by workers at the National Environmental Research Center at Las Vegas.

The method is accurate and repeatable for amounts less than a microgram (millionth of a gram), according to Dr. Alan Moghissi, head of the Center's Radiological Research Program.

Unique feature of the new technique, he said, is that it is now possible to correct for portions of mercury that may be lost in the process of preparing the sample for measurement by atomic absorption spectrometery.

To measure heavy metals in any biological sample, he explained, the sample is first de-watered and then "digested"—or burned—by exploding it in a sealed stainless steel "bomb" filled with oxygen under pressure. Mercury in the residual ash is then measured by the spectrometer, but great care must be taken to see that no combustion products escape when the "bomb" is opened.

In spite of all precautions, some mercury will be lost, Moghissi said, and the loss can be as high as 90 percent. "With our new method, we don't care how much we lose, we can still measure it."

The key step is the addition of radioactive "tracer" mercury to the sample before placing it in the bomb. The amount of the tracer is measured by a radiation detection instrument before and after the explosion. Then when the spectrometer measures the total mercury left in the ash, the amount lost in the processing can be inferred from the decline in radioactivity.

Erich Bretthauer, principal researcher for the new technique, and Dr. Moghissi are writing a technical paper about it, showing their evidence that the "tracer" mercury mixes completely in the combustion process with the sample's natural mercury.

3

A Briefing on the Grizzly
Bear Situation in Yellowstone
Mammoth-Yellowstone National Park
September 19, 1972
by
Dr. John J. Craighead

Mr. Chairman:

I have been invited to this meeting to present my position on the grizzly bear situation within the Yellowstone ecosystem. I have come prepared to document this position with population data acquired over a 13 year period. As we all know this problem of managing grizzly bears is very complex and there is bound to be difference of opinion. That is why we are here. We must find answers.

Before presenting our data, I would like to present a background of information that I believe is essential to an understanding of why my brother Dr. Frank Craighead, my colleagues, and I, are concerned about the Yellowstone grizzlies. We find it necessary to reiterate why our position is at variance with that of the National Park Service.

The scientific evidence gathered by our research group does not support the Park Service's bear management policies. However, the very essence of the scientific method and of scientific progress is the freedom to disagree. Only with constructive criticism can we find the solution of managing and preserving the grizzly in the Yellowstone environment. We have come by our differences honestly. Our loyalty is to the resource.

I will take time to define the issues and to attempt to put basic differences in perspective.

We began researching grizzlies in 1959 and in the course of the study developed numerous techniques for studying these large carnivores. At the request of the National Park Service, we prepared a management report in 1967. In that report we advocated management policies and a management program based on our research findings and on conclusions supported by nine years of intensive research.

The National Park Service, and its advisory board, however, established management policies and put into action a grizzly bear management program based on hypotheses supported by virtually no research by its biologists of the local problem. I regret that I must take issue with Dr. Leopold's remark this morning that there was a consensus of opinion on the Committee report. With all due respect to Dr. Leopold, on this point, we do not agree.

The hypotheses or assumptions on which present management is based were essentially:

That:

1. Open pit garbage dumps in and outside of Yellowstone National Park could be rapidly phased out with relatively little effect on the grizzly bear population.

2. That most of the grizzlies denied these long established feeding areas would establish themselves in the Yellowstone backcountry and cease to frequent their former haunts.

3. That those grizzlies that did not adjust as anticipated would be dispatched, but it was assumed that the numbers of these would not be great.

This National Park Service grizzly bear management program has now been

in effect for four years.

Our contention five years ago and today is that management of a resource such as the grizzly bear should not be based upon unproven assumptions. It is true that no one could predict exactly what would occur when the new management program went into effect. But, much data existed to show that the basic assumptions were highly questionable.

1959-1971

1. We made our scientific evidence available to the National Park Service in the form of publications, reports and briefings.

2. We have provided the National Park Service with two detailed reports documenting the grizzly bear problem in Yellowstone, and in these reports we made specific recommendations for managing grizzly bears. These recommendations were made on a basis of years of research and at a time when the National Park Service had little scientific expertise in the ecology and management of grizzlies. We recommended that a completely natural population of grizzlies be established by closing the open pit garbage dumps over an 8 to 10 year period or longer. We emphasized the importance of establishing a population of grizzlies that could feed entirely on natural foods.

3. But we especially warned against a rapid phase out of the open pit garbage dumps, especially the Trout Creek dump located in the geographic center of the Park and we advocated continued research by our research team to document what occurred during the phase out. We believed that only by comparing the dump phase out period, with conditions that existed before the phase out, could the success of the

management program be accurately evaluated. We still believe this to be so.

4. In our reports and at numerous meetings we stated that if the open pit dumps were phased out rapidly as the National Park Service indicated it planned to do and I repeat - this action was to be taken on the basis of the unsupported hypotheses:

a. That only a relatively few grizzlies were addicted to feeding in campgrounds and that there existed a relatively large nucleus of back-country grizzlies that had never developed either campground or garbage dump feeding habits. (Our backcountry observations based on thousands of man hours showed little evidence for large backcountry population of grizzlies).

b. That with dumps closed, most of the grizzly bear population would revert to living in the backcountry, their traditional migration to these dump sites would cease, and that the few remaining in developed areas and campgrounds could be disposed of.

Now - if this rationale was accepted as the basis for managing grizzlies, we said in our reports that the following could be expected to occur:

First - There would be a heavy influx of grizzlies into developed areas and campsites both inside and outside the Park where they would cause trouble.

Second - That this would lead to increased mortality of grizzlies and since our data showed that most of the Yellowstone grizzlies had learned over extended periods of time to use the dumps and had established strong habit patterns and traditional migrational movements to these sources of food, these ties and habits developed by a basic reward relationship could not be altered quickly.

Third - The grizzly population would not be able to adjust by occupying the backcountry but instead most of these animals, during the summer period, would still continue to seek food in the areas they had so long frequented. I think Mr. Cole's maps support this.

Fourth - The opportunity for bear-man encounters would increase. This could be partially but not entirely offset by sanitizing tourist areas, closing campgrounds at critical times, increasing ranger patrols and alerting the public to the dangers inherent in the management program. We emphasized the necessity of completely sanitizing campgrounds before closing the dumps.

Fifth - Grizzlies that had frequented the open pit dumps (dumps that had been isolated from the public) would we predicted enter campgrounds and the offspring of females through the basic reward relationship mentioned this morning would learn this habit from their mothers and generations of grizzlies would become conditioned to campgrounds just as in the past they had become conditioned to the open pit dumps. These animals would be more dangerous than those that had frequented the open pit dumps because they would become man-conditioned and they would not be isolated.

Sixth - The disruption caused by the sudden depletion of an important and historic food source would place heavy stress on the population causing:

1. lowered reproduction

2. increased movement - resulting in increased deaths

Both factors would adversely affect the population size as well as grizzly, bear-man relationships. The probability of serious bear-man encounters would increase.

Mr. Chairman, we contend that this is the situation which prevails today. Grizzlies frequenting developed areas and campgrounds continue to be a serious problem, the risk to visitors has not decreased appreciably, and the grizzly population is declining rapidly.

It is this latter problem that I will discuss in detail.

An important question that has been referred to in our briefings this morning and one we must consider is:

What are we talking about in terms of a land area when we discuss the Yellowstone grizzlies? Is it just Yellowstone National Park or is it a larger area?

Are these grizzlies wards of the states adjoining Yellowstone National Park, are they wards of the Federal Government, or are they a joint responsibility? No one has formally addressed themselves to this question.

GRIZZLY BEAR POPULATION ANALYSIS

SLIDE 1

During a 13 year period (1959-1971), we have recorded 209 grizzly bear mortalities within the Yellowstone ecosystem. (approximately 5 million acres) (Yellowstone National Park contains 2,100,000 acres).

The grizzly bear deaths are distributed as shown on the map. The number of marked and unmarked bears killed have been about equal.

We interpret this to show that we are dealing with an ecosystem population not simply a National Park population of grizzly bears.

The geographic distributions of these mortalities of both marked and unmarked grizzlies and the data we have accumulated on natural movement in and out of the park support our hypothesis that most and possibly all grizzly bears within the Yellowstone ecosystem had acquired the habit of visiting the open pit dumps. We have recorded many many natural movements of 50 to 60 airline miles. This traditional habit of grizzlies annually moving to open pit garbage dumps is an important fact, for it relates directly to the dynamics of the population.

Now - how do we analyse the dynamic processes of growth and decline in this population? The most accurate known scientific procedure is to go to computer programing.

We have done this by comparing population data for the pre-management period (1959-1967) against the present period of revised management (1968-1971).

Vital population statistics for these two period have been programed through an IBM 1620 computer. As Dr. Starker Leopold remined us this morning, this requires a great deal of precise data.

We have acquired these data, and this may well be the first time that such vital statistics have been obtained for a living population of large mammals.

The type of computer input data is shown here in the first slide.

SLIDE 3

The results of programing the 1959-1967 data through the computer are illustrated on the slide.

We have a slowly growing grizzly bear population.

The average growth is 1.7 bears per year.

This would appear to be a very small average annual increment, but as you can see the number of grizzlies would increase from about 177 to 261 by the year 2018.

TROUT CREEK

To run a check on the accuracy of our ecosystem projections, we programed vital statistics of age structure, population size, sex ratios, reproduction rate, and longevity for the largest single population unit within the Yellowstone ecosystem - the Trout Creek population (See map). The average population size 116. Sex ratio of cubs, 52% male and 48% females. Reproduction rate .68 The population fluctuated but remained at about the same level to the year 2116 when the runs were terminated.

The conclusion was that this population unit, like the ecosystem population, maintained itself when vital population statistics were projected into the future.

Thus: Prior to the present management program (1959-1967), the grizzly bear population inhabiting the Yellowstone ecosystem was exhibiting a slow growth rate and was not endangered.

The results of programing the 1968-71 data through the computer are shown in the following graphs. This is the period of rapid phase out of the open pit garbage dumps under the new management program.

SLIDE 4

In computer modeling it is more accurate to make a number of runs and average these. Five different computer runs were made using 1968-1971 vital statistics (population size 176) but incorporating excess mortality data. Excess mortality is the increase in mortality for the 1968-1971 period over the 1959-1967 period.

The increased mortality was evenly distributed over all age groups from cubs to 25½ years of age.

These data were used to modify the survivorship rates.

THE GRAPHS SHOW THAT:

The average extermination date for this population is 1998 -- 26 years.

The earliest extermination date is 1988.

The latest extermination date is the year 2000.

It is obvious that these projections show a rapidly declining population.

SLIDE 5

Five computer runs were made using the same data shown in the last graph. (1959-1967 vital statistics) population size 176.

But the increased mortality (1968-1971) over the (1959-1967) period was distributed among adults and sub-adults and male and female. This we believe is a more refined age distribution of deaths.

Projection of these data shows the years of extermination by comparative runs to be:

1991 - 1993 - 1988 - 1986 - 1997

The average extinction date for the Yellowstone population is 1993 - 21 years.

Our conclusion is that:

> The present National Park management program if continued will very probably exterminate or nearly exterminate the Yellowstone grizzly bear population in about 20-25 years.

PROJECTION OF POPULATION ASSUMPTIONS

NO SLIDE

Now we will make some assumptions based on hard-core data and project these assumptions into the future.

Assumption 1:

Let us assume that the increased deaths, that have characterized the period of new Park management, continue through 1973 and then we return the survivorship rates to the values established for the 1959-1967 period which allowed the population to grow.

Then by the year 2018 the population of grizzly bears average 93 animals.

When run to the year 2045, the average population will still be 93 animals. The population does not recover with this remedial action. This information indicates that the population has already reached a critical level.

ASSUMPTION 2:

Here we assume that the population size is 259 bears (an increase of 1/2 over our census figures. Let us assume that there are a number of backcountry bears that never enter the Park, although all evidence indicates this to be a questionable assumption (176 + 83). Mortality rate does not change.

The computer runs show that the population exterminates in the year 2003. Thus, it took just 10 years to kill the extra 83 bears assumed to be in the population. Under the current management and with the present mortality rate, a population of 259 grizzlies will meet the same fate of the smaller population of animals (176). The only difference is that it will take about 10 years longer to accomplish.

ASSUMPTION 3:

Same as the preceeding one (that is with a population of 259 bears), but with a reproductive rate lowered to 0.66 (the reproductive rate we have established for the period 1968-1971).

The computer runs exterminate the population in the year 1998. This is five years earlier than occurred using the reproductive rate of 0.99. It is only five years longer than the average extermination date of 1993 calculated for the population of 176 grizzlies. Gentlemen, this is what our long and intensive research effort shows is occurring under current management practices. In two years 1971

and 1972, we have recorded 91 grizzly bear deaths from all causes within the Yellowstone ecosystem. The death rate according to our data has been more than double the birth rate. Our conclusion is that this population is in very serious trouble and a change in management practices is strongly indicated.

THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

DEPARTMENT OF GEOSCIENCES
TEL. (602) 884-2442

December 11, 1972

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

Dear Frank:

I am glad to know from your letter of the 6th that you are going to continue to speak out vigorously about the disgraceful manner in which the grizzle bear situation in Yellowstone Park has been handled. I take one little crumb of comfort from the fact that Herzog has been dismissed by President Nixon. I am glad that Nixon does something once in a while that pleases me. Maybe this will began opening the door.

Early in the new year, when we are back from Mexico where Peg and I are going for our Christmas holiday, I shall begin a leisurely visit with my good friend Dr. Emil Haury who is Chairman of the Advisory Committee on National Parks.

Be sure to keep us informed about any plans you may have for coming to Arizona in April. I believe Peg had a letter from Esther indicating that you might go on for a visit to Mexico. Since we live so near we have formed the habit of having at least a brief holiday somewhere in Mexico every winter. This time we are going for the Christmas holiday and will be in Guadalajara. My friends tell me that you really have not seen Mexico until you have seen it at Christmas time. I love Mexico and its people at anytime of the year.

With warm regards and no end of good wishes for a Merry Christmas and a Happy New Year to all the family.

Sincerely yours,

Larry

Laurence M. Gould

LMG:eg

THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

DEPARTMENT OF GEOSCIENCES
TEL. (602) 884-2442

October 10, 1972

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

Dear Frank:

Thank you for your note of the 3rd with the news release about the meeting on September 19th. I do receive the Jackson Hole News.

I have written to Dr. Bevan, Executive Officer of the AAAS telling him what happened about attendance at the meeting on the 19th of September. I have also told him that I am going to talk wtih my colleague Emil Haury who is Chairman of the Advisory Committee and ask him for suggestions as to what I should do next. I am not content to let the matter rest.

John sent me a copy of the statement he made at the meeting which I thought was superb. It may well be that you have stirred the animals enough to get some kind of action started.

With warm regards to all the family.

Sincerely yours,

Laurence M. Gould

LMG:eg

Science Aug. 4, 1972

Advisory Meetings: Confidentiality Dropped, Public Is Invited

On 5 June, President Nixon ordered all federal agencies to open meetings of their advisory bodies—estimated to be 2000 strong—to the public. Executive Order 11671, in one bureaucrat's words, "sent shock waves through the government."

As yet, officials of Washington science agencies agree, the scientific community at large seems unaware of this order, which will probably open most of its advisory meetings to public scrutiny. Gone are the days when scientists could enjoy the security that comes from rendering advice in relative seclusion. One White House official speculates that the days when scientists from both sides of the political fence willingly advised the government may be gone too. "There are a lot of Democratic scientists to whom we go for advice," he said. "Many of them might not want it widely known that they're consorting with a Republican administration. But we would hate to lose their expertise."

In fact, agency heads at this stage do not even know precisely how the Executive order will be implemented. Certainly, meetings of some bodies will remain closed. Study sections at the National Institutes of Health, the advisory groups that approve or reject grant applications, probably will continue to function in private. And it appears likely that those portions of any advisory meeting during which individual research proposals and their funding are being judged will remain safe from the public eye. As for the rest, nobody knows for sure.

The question of opening advisory committee meetings has been around since the passage of the Freedom of Information Act in 1967, but no action has been taken in this particular area until now. However, several bills on the subject have been in the hopper, both in the House and the Senate. There is some speculation about whether these bills will remain viable now. Spokesmen for the Administration are betting against it, claiming that Nixon's order does what the legislation would. However, their opinion is not universally shared.

Congressional staffers who have been working on the various pieces of legislation charge that the Executive order is full of loopholes that legislation could plug. (Some might be challenged by consumer groups, reporters, or others who believe they have been unfairly denied access to a meeting, but such challenges have yet to come.) Under the order as it stands, for example, agency heads "may establish reasonable limitations as to numbers of persons who may attend [advisory meetings] and the nature and extent of their participation, if any, in such meetings." There are, in fact, a number of specific exemptions to the requirement for open meetings, including discussions of various financial matters, trade secrets (a matter of great concern to the Food and Drug Administration), inter- or intra-agency correspondence, personnel files, and others. In addition, the issue of how the public is to be notified of advisory meetings has not been resolved, and congressional aides believe that a portion of a new bill could speak to that problem. Under the Executive order, agency heads are now required to announce their meetings either in the *Federal Register*, a document not widely read by the general public, to put it mildly, or "as appropriate, by publication in local media." At present, agency heads are likely to stick to announcements in the *Federal Register*, although pressures for more generally accessible notification could precipitate a change.

Just what the ultimate effect of this change in policy, which was by no means directed specifically at scientific advisory groups, will be is, of course, anybody's guess. Initially, officials fear that the loss of privacy may deaden scientists' willingness to speak out, but, as one man said, "They may learn to handle this more easily than we might think." The one thing that is certain is that the public will have easier access to the workings of advisory bodies than it ever has before.—B.J.C.

In fact, the changes do not affect all of the research councils. The largest of the five, the Science Research Council, which supports physical science, is not affected at all. Its budget (£55.7 million in 1971–1972) remains unchanged. The smallest, the Social Science Research Council (£4.1 million), also remains unscathed. The net result is that the total research council budget will be cut from £115 million to £95 million by progressive stages and that much of the money taken away with one hand will be given back with the other. To American scientists, accustomed to much more violent shifts in the science budget, this must seem like easy street.

Adopting another of Rothschild's recommendations, the white paper announces that the departments will be setting up scientific organizations of their own, under a new post of Chief Scientist. The first of these appointments, in the DHSS, is expected to be announced soon. The idea is to strengthen the departments' scientific expertise, which has been allowed to wither away as the research councils monopolized the research budgets. The British scientist has paid for his independence with a signal lack of influence in Whitehall. If the changes do anything to reverse this, they will have achieved something.

The government is also talking (as all governments do) about improving the flow of scientists in and out of public service, from industry into universities and vice versa. This desirable end has been frustrated in the past by difficulties such as the nontransferability of pension schemes and by a natural suspicion of the outsiders. Jellicoe announced that a high-level "task force" (which presumably differs from a committee in name only) was being assembled under the chairmanship of Herman Bondi "to make recommendations and see that they are carried out." "I personally attach great importance to this task," Jellicoe said.

Although the changes have been justified in the name of public participation in policy-making, that participation will have to be expressed through the departments, not always as responsive as they might be to public feeling. The concept of a top-level science policy committee with lay as well as scientific members has apparently been considered but rejected. The science budget will be distributed by a new council (replacing the existing Council for Scientific Policy), on which all of the in-

Death Rate Argued Of Yellowstone Grizzlies

YELLOWSTONE NATIONAL PARK, Wyo. (UPI)—A western naturalist and authority on grizzly bears said Tuesday the giant mammals could be extinct in Yellowstone before the end of the century.

Frank Craighead of Jackson, Wyo., president of the Environmental Research Institute, said the death rate of grizzlies exceeds their birth and incoming migration rates in the nation's largest and oldest national park.

He told a meeting of experts studying the problem that the bear may no longer exist in the region by 1993.

During the past four years, Craighead said, more than 120 bears have died in Yellowstone, most of them killed by man.

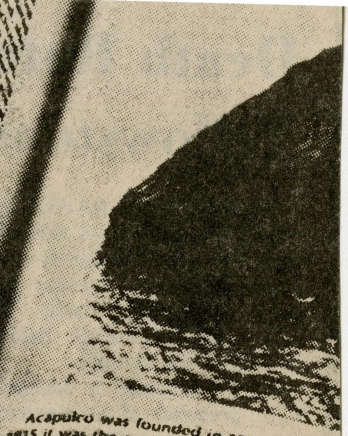
Craighead's prediction at a meeting on grizzly bear management called by Assistant Interior Secretary Nathaniel Reed was challenged by a spokesman for the National Park Service (NPS).

Starker Leopold, an NPS representative, said there was no evidence of such a high mortality rate. He said only 52 grizzly bears deaths occurred since 1967, not including natural deaths.

Fewer bears have been sighted recently, the spokesman said, because of a successful program to move the animals from campgrounds back into their natural habitat.

Craighead disagreed, saying the bears were simply not there. He also criticized the way bears were removed to wilder regions, saying it should have been done at a gradual rate to let the animals adjust.

Logan, Utah, Wednesday, September 20, 1972 The H



Acapulco was founded in 1550. From 156
1815 it was the major port on the west coas
Mexico for Spanish trade with the Philipp
Islands and the Far East. The importance of
port declined after Mexico attained indepen
ence in 1821. Pop. (1968 est.) 75,000.

ACARINA or **ACARIDA**, order of arachnic
(see ARACHNIDA) with the cephalothorax an
abdomen united, including the mites and ticks
They are found both on land and in water, and
are generally parasitic on animals or plants,
some causing skin diseases and galls. The mouth
parts are adapted for sucking or biting. The
cheese mite, the sugar mite, the itch mite, the
common harvest bug, the frequent parasite on
the human nose (*Acarus folliculorum*), the

tember 20, 1972

TENO RONCALIO
THE STATE OF WYOMING

1314 LONGWORTH BUILDING
(202) 225-2311

COMMITTEES:
INTERIOR AND INSULAR AFFAIRS
PUBLIC WORKS

Congress of the United States
House of Representatives
Washington, D.C. 20515

December 26, 1972

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

Dear Frank,

Thanks for your letter of the 14th, which only arrived today and for your holiday greetings. Have you ever heard of such a cold winter? It was at least 10 below for several days in Cheyenne right before Ceil and I left.

I am also grateful to you for the research materials on the grizzly situation. I will keep them at hand.

With warmest regards.

Yours

Teno

TR:kk

THIS STATIONERY PRINTED ON PAPER MADE WITH RECYCLED FIBERS

Rough

Suggested Solution To Bear Problem

1. Obtain and analyze bear/grizzly kill & control data within Park during 1972.
2. Provide supplementary sources of food (carcasses), away from campgrounds, ~~& carcasses, dumps~~. thus again saving grizzlies.
3. Continued campground sanitation
4. Action to decrease incidence of troublesome bears
   a. Trapping & transplanting of incorrigible or incorrigible
   b. Destruction of dangerous bears
5. Resumption of independent research within Yellowstone Natl Park
6. Reduction of mortalities in ecosystem beyond park borders.
   a. Moratorium on hunting of grizzlies ~~within~~ within the Yellowstone ecosystem
   b. Take steps to reduce grizzly mortalities due to predator control action
7. Research & experiments to test possibility of reestablishing a grizzly bear population in areas where they have been eliminated.
8. Revised concept of managing people to limit bear-man encounters. declines of bears

Grizzly Bear and Black Bear Management
Yellowstone National Park-1972 Bear Management Meeting

my brother Dr. John Craighead and I

"In July of 1967, we mimeographed and distributed a report on Management of Bears in Yellowstone National Park." Prior to this date, the Park Service personnel had approximately a year to review the manuscript. In this interval they did not make or suggest any changes. This report was prepared with the knowledge that the Park Service planned to eliminate the earth-filled dumps and substitute ~~xxxhx these with~~ incinerators. ~~Because~~ The long-established earth-filled dumps had ~~established the zoning of~~ tended to zone grizzly bears from campgrounds and from areas of vistor concentration. We further felt that it was essential to phase these dumps out slowly or substitute other food sources if the closing of the dumps was not to act as a very disruptive force. ~~In our report toward the end of our 1967 report, we stated:~~ Accordingly at the end we recommended:

> Because phasing out of refuse dumps will disperse the grizzlies by destroying an attractive if not essential food source, the transition from pits to incinerators must proceed gradually, enabling the grizzlies to develop new feeding habits as well as altered social behavior and movement patterns. If the transition is slow, and follows a recommended procedure, it is possible that no severe changes in population level, distribution, or behavior will result. If, on the contrary, the phasing-out operation is abrupt, and a carefully planned procedure is not followed, the result most certainly will be increased grizzly incidents in campgrounds, accelerated dispersal of bears to areas outside the park, and greater concentrations of grizzlies at the public dumps in Gardiner and West Yellowstone, where food will still be available but where adequate protection will not. The net result could be tragic personal injury, costly damages, and a drastic reduction in number of grizzlies."

We also stated that, "as we have already stressed it is important in the ~~fxtxxx~~ future management of the grizzly bear in Yellowstone to keep the ~~bxxxx~~ base population concentrated within the Park. Since removal of garbage ~~xx~~ as a food source will disperse the bears, this must be countered by other means. One practical solution may be the utilization of surplus elk and bison as supplementary food for the grizzlies until they have adjusted to the change. Some of the elk and bison now annually trapped for transplanting could be butchered frozen and stored. These carcasses properly distributed during the spring and summer would hold the grizzlies in the Hayden Valley and prevent wide ~~xxxxxxxxxx~~ dispersal during the phasing-out period. Another approach would be to have surplus elk and bison periodically shot by Park personnel from early spring through summer, a few at a time. These carcasses would be left as food for grizzlies. ~~Txxxxxxxxxxxx~~

all of our research efforts on rehabilitation, movement, ecology and behavior on which this conclusion + supporting recommendation is based. About 200 grizzlies, most of which concentrated in Yellowstone during the summer months but many of which dispersed far beyond the Park boundary.

The ~~control~~ use of bear proof garbage cans and efforts to sanitize campgrounds are essential ~~ones~~ practices in bear management

~~factors have led to build up in elk population.~~ Elk populations These have at times been reduced in ~~the fall~~ early winter and in some cases animals taken for research purposes periodically through the summer. There seems to be no ~~valid~~ reason why ~~the~~ surplus elk can not be used to feed ~~xxx~~ an indiginous grizzly bear population, at least until

One aspect of ~~The attempt at~~ managing the black bear has been to warn ~~the~~ tourists not to feed them. The black bear populations along the highways ~~have gone down~~ decreased from ~~only a few bears to as~~ to only a few at present. many as 30 or 40 in previous years. This has been a great disappointment to many tourists. There has been no ~~indication~~ reason that visiting tourists have not been feeding black bears as often and as regularly when seen, as in the past. The statement that these bears have moved into the interior as wild bears foraging on their own just can not be verified by the facts. It seems quite probable that black bears as in the past have been heavily controlled, that this control has been greatly stepped up in the last 5 years, and that the black bear population has not dispersed but has been reduced. Black bears can and do cause a considerable amount of damage yet they are perhaps the main attraction in Yellowstone National Park. A ~~remedy for existing~~ solution to managing black bears so that visitors can see them would be to ~~make~~ construct turn-offs with parking areas at ~~atrategic~~ strategic sites and ~~permit~~ have rangers ~~to feed these~~ ~~xx~~ bears ~~in these areas~~ so that tourists could see and photograph them. Such a procedure would ~~largely solve~~ help the black bears ~~problem along the~~ highways, thus reducing traffic jams & still satisfying visitors.

There ~~are~~ is no indication that the present grizzly bear management program in Yellowstone is resulting in a ~~xxxxxxx~~ dispersion of grizzlies not only ~~in~~ within Yellowstone but beyond its borders. ~~Here~~ grizzlies ~~are being seen~~ in spring and summer in various sections of Teton National Forest and the Jackson Hole country. Also there appears to be more grizzlies moving into areas of Idaho bordering Yellowstone. ~~In xxxx the first of these areas the~~ grizzlies will be and are being quickly eliminated through hunting. ~~xx~~ In Idaho they are being killed by sheepmen and predator control officers. I believe that it is safe to say that the present policy is not only causing greater loss of grizzlies in Yellowstone, through direct control meaures, but it is also tending to eliminate those animals that either in the past or currently have dispersed beyond the borders. Many grizzlies move to areas outside of Yellowstone to hibernate but then moved back into this protected area early in spring before they could be hunted. They likewise often moved out only late in fall ~~xxxxx~~ when hunting due to snow conditions had become difficult.

There are indications that some grizzlies are being illegally taken as trophies by those who feel that there is not much time left in which to get one. There is also undoubtedly a loss of grizzlies from ranchers ~~xx~~, both cattlemen and sheepmen, that are not recorded. In summary the present situation in regard to the grizzly bear population is quite alarming. It is possible that already the population has been reduced to a point where it may very well ~~have trouble~~ be incapable of recovering. It may fade into oblivion as grizzlies have done elsewhere throughout the West. There is no data or scientific evidence suggesting that a grizzly bear population can be reestablished with transplants.

With the change in Park administration, began in 1968, under Anderson, and with Glen Cole as biologist, our research work and recommendations were completely ignored. During the nine years of our research (1959-67) and prior to the enactment of the Park Service's present program of bear management, control averaged 4.1 grizzlies per year. During 3 years of revised management, control averaged 12.3 grizzlies per year. In 1970, 22 grizzlies were eliminated from Yellowstone population in control measures. Twenty-one met death from other causes. In 1971, the total mortality inside and outside Yellowstone was 45 grizzlies making the known mortality for the 2 year period 88 grizzlies.

The incidence of bears in campgrounds and problems with bears in campgrounds greatly increased with the closing of the dumps. Grizzlies moved from Trout Creek and the Old Faithful area to West Yellowstone, and in 1971 19 were trapped just outside the Park. These were transported to areas outside the Park and eventually about 14 of these were killed. During the same two year period approximately 42 cubs were born. This indicates a mortality nearly twice as great as the birth rate. However the situation is even more grim than this. Information that we compiled during our study indicated that almost as many grizzlies die from unknown causes as from recorded causes. Our mortality figures are thus a minimum for this population. In 1972 we have so far been unable to obtain information from the the bear management logs for 1972. However to date we have recorded at least 17 grizzly bear mortalities and believe that the total for 1972 will be at least as high as that for each of the two previous years. The picture of the situation in Yellowstone emerges as one of bears dispersing from the dump areas of concentration to the campgrounds with greatly increased bear activity in the campgrounds. This in turn has led to increasing control which is seriously threatening the grizzly bear population. Added to this was the mauling and killing of Harry C. Walker in the summer of 1972. Thus the increased incidents of bears in campgrounds, the need for stepped up control of grizzlies, and the fatal mauling of a Yellowstone visitor all have come about as predicted in our 1967 report.

If the grizzly is not to be completely eliminated from the Yellowstone and surrounding areas, if Park visitors are not to be in danger of mauling, then a reassesment of the management program and some drastic changes seem to be in order.

Actually the management of the grizzly and the black bear in Yellowstone National Park is a relatively simple matter. In the past grizzlies have been concentrated and kept away from visitors during the period of greatest visitor use. This can still readily be done by putting out supplemental food for the grizzlies in selected areas. We would still, as previously, recommend that carcasses of animals be used to draw and hold the grizzlies in selected areas. In experiments of this kind we have attracted as many as 24 grizzlies to a single carcass and we have moved them from distances as far as 18 miles. In view of the fact that Yellowstone Park is not a complete ecosystem as far as elk are concerned and thus over-populations of elk which have resulted from a decrease in environmental resistance factors

An ultimate goal should be to obtain a relatively wild population of both black bear and grizzlies while recognizing that bear and man have always been closely associated. An insurmountable barrier cannot be drawn between them.

Notes

Cates

Grizzly Bear and Black Bear Management
Yellowstone National Park (~~1972~~ Bear Management Meeting, Sept. 19, 1972)

Frank C. Craighead Jr.

In July of 1967, my brother Dr. John Craighead and I mimeographed and distributed a report on "Management of Bears in Yellowstone National Park." Prior to this date, Park Service personnel had approximately a year to review the manuscript. In this interval they did not make or suggest any changes. This report was prepared with the knowledge that the Park Service planned to eliminate the earth-filled dumps and substitute incinerators. The long-established earth-filled dumps had tended to zone grizzly bears from campgrounds and from areas of visitor concentration. We therefore felt that it was essential to phase these dumps out slowly or substitute other food sources if the closing of the dumps was not to act as a very disruptive force. ~~Accordingly at the end of our 1967 report, we recommended:~~ ~~All of~~ Our research data on population dynamics, movement, activity and behavior supported this conclusion. Systematic censusing (324 censuses totalling 11,340 hours) revealed an average population of 174 ~~about 200~~ grizzlies most of which concentrated in Yellowstone during the summer months but many of which dispersed far beyond the Park boundaries in fall and spring. Accordingly at the end of our 1967 report, we recommended:

Insert

We also stated ~~that~~ "As we have already stressed it is important in the future management of the grizzly bear in Yellowstone to keep the base population concentrated within the Park. Since removal of garbage as a food source will disperse the bears,

indent

this must be countered by other means. One practical solution may be the utilization of surplus elk and bison as supplementary food for the grizzlies until they have adjusted to the change. Some of the elk and bison now annually trapped for transplanting could be butchered frozen and stored. These carcasses properly distributed during the spring and summer would hold the grizzlies in the Hayden Valley area and prevent wide dispersal during the phasing-out period. Another approach would be to have surplus elk and bison periodically shot by Park personnel from early spring through summer, a few at a time. These carcasses would be left as food for grizzlies.

Our research work and recommendations were completely ignored, with the change in Park administration, beginning in 1968 under Superintendant Jack Anderson, with Glen Cole as biologist. This was their perrogative, but we were also hampered and prevented from gathering additional information vital to evaluating the changing grizzly bear situation. During the nine years of our research (1959-1967) and prior to the enactment of the Park Service's present program of bear management, control averaged 4.1 grizzlies per year. During 3 years of revised management, control averaged 12.3 grizzlies per year. In 1970, 22 grizzlies were eliminated from the Yellowstone population in control measures. Twenty-one met death from other causes--a total of 43. In 1971, the total known mortality inside and outside Yellowstone was 45 grizzlies making the known mortality for the 2 year period 88 grizzlies.

The incidence of bears in campgrounds and problems with bears in campgrounds greatly increased with the closing of the dumps. Grizzlies moved from Trout Creek and the Old Faithful area to West Yellowstone. In 1971, 19 were trapped at West Yellowstone just outside the Park. These were transported and released to areas beyond the Park borders. Eventually 14 of these were killed. In addition to the recorded by the park service as the total grizzly bear mortality in Yellowstone National Park during 1971, During the same two year period, with a known mortality of 88 grizzlies, approximately 42 cubs were born. This indicates a mortality nearly twice as great as the birth rate. However the situation is even grimmer, ~~than this.~~ Information that we compiled during our study indicated that almost as many grizzlies die from unknown causes as from recorded causes. Our mortality figures are thus

These should be made available under the 1967 Freedom of Information Act.

a minimum for this population. In 1972 we have been unable to obtain information from the Park Service bear management logs ~~for 1972~~. Nevertheless, to date we have recorded 17 grizzly bear mortalities and believe that the total for 1972 will be at least as high as that for each of the two previous years.

The developing picture of the Yellowstone situation emerges as one of bears dispersing from the dump areas of concentration to campgrounds with greatly increased bear activity. This in turn has led to ~~bear-activity.~~ increasing control which is seriously threatening the grizzly bear population. The culmination of this was the mauling and killing of Harry C. Walker in the summer of 1972. Thus the increased incidence of bears in campgrounds, the need for stepped-up control (killing) of grizzlies, and the fatal mauling of a Yellowstone visitor all have come about as predicted in our 1967 report.

If the grizzly is not to be completely eliminated from Yellowstone and surrounding areas, if Park visitors are to be reasonably safe from mauling, then a reassessment of the present management program and some immediate changes seem to be in order.

The management of both the grizzly and the black bear in Yellowstone National Park is not a complicated nor difficult matter. An ultimate goal should be to obtain a relatively wild population of both black bear and grizzlies while recognizing that bear and man have always been closely associated. An inseparable barrier cannot be drawn between them. In the past grizzlies have been concentrated and kept away from visitors during the period of greatest visitor use. This can still readily be achieved by putting out supplemental food for the grizzlies in selected areas. We would still, as previously, recommend that carcasses of animals be used to draw and hold the grizzlies in isolated locations. In experiments of this kind we have attracted as many as 24 grizzlies to a single carcass and we have drawn them from distances as far as 18 miles. Yellowstone Park is not a complete ecosystem as far as elk are concerned and thus over-populations of elk have resulted due to lowering of environmental resistance factors such as human harvesting and natural predation. Elk populations have been periodically reduced by rangers (shooting) and in some cases animals have been taken for research purposes throughout the summer. There seems to be no valid reason why surplus elk cannot be used to feed an indigenous grizzly bear population, at least until such time as the bears can adjust to changes in food supply and distribution caused by abrupt closing of dumps.

The use of bear-proof garbage cans and efforts to sanitize campgrounds are essential practices in bear management. This procedure may be expected to eventually reduce the number of bears entering campgrounds.

another aspect of managing the black bear has been warning tourist not to feed them, less effective ~~to warn tourist not to feed them~~. The black bear populations along the highways have declined from as many as 30 or 40 in previous years, to only a few at present. This has been a great disappointment to many tourists. There has been no visual indication that visiting ~~tourists~~ have not been feeding black bears as often and as regularly, when seen, as in the past. The statement that these bears have moved into the interior as wild bears foraging on their own just cannot be verified by the facts.

It seems quite probable that black bears ~~as in the past~~ have currently been heavily controlled, ~~that this control has been greatly stepped up~~ particularly in the last 5 years, and that the black bear population has not dispersed to the back country but has been drastically reduced. Black bears can and do cause a considerable amount of damage yet they are perhaps the main attraction in Yellowstone National Park. A solution to maintain black bears so that visitors can see them would be to construct turn-offs with parking areas at strategic sites. Here rangers could be permitted to feed the bears so that tourists could see and photograph them. Such a procedure would keep the black bears off the highways, thus reducing traffic jams and still satisfying ~~visitors~~ spectators.

There are indications that the present grizzly bear management program in Yellowstone is resulting in a dispersion of grizzlies not only within Yellowstone but beyond its borders. Recent observations of grizzlies in spring and summer in various sections of Teton National Forest and the Jackson Hole country appear to be increasing. Also there are ~~appears to be more~~ more grizzlies observed in areas of Idaho bordering Yellowstone. Outside of the Park, grizzlies will be and are being quickly eliminated through

hunting, or, as in Idaho, they are being killed by sheepmen and predator control officers.

I believe that it is safe to say that the present Park Service management policy is not only causing greater loss of grizzlies in Yellowstone through direct control measures, but it is also tending to eliminate those animals that either in the past or currently have dispersed beyond the borders. Our research revealed that many grizzlies moved into Yellowstone ~~this protected area~~ early in spring before they could be hunted. They likewise often moved out only late in fall when hunting, due to snow conditions, had become difficult. This movement is demonstrating, thus making the grizzly more vulnerable.

There are indications that some grizzlies are being illegally taken as trophies by those who feel that there is not much time left in which to get one. There is also undoubtedly a loss of grizzlies from ranchers, both cattlemen and sheepmen, that are not recorded. In summary, the present situation in regard to the grizzly bear population is quite alarming. It is possible that already the population has been reduced to a point where it may very well be incapable of recovery. It may fade into oblivion as grizzles have done elsewhere throughout the West. There is no data or scientific evidence suggesting that a grizzly bear population can be reestablished with transplants. Under present management there is no need ~~that it should~~ of such an eventuality.

Question

Leopold on agreement to original mgt. plan

Cole on cash of groceries at camp (on ground)

B Cub mortality — cubs killed of dumps

Discussion & Conclusions

Hypothesis testing

Reduce ungulates,

✓ Establish grizzly bear pop. at natural carrying capacity level.

Young bears emmigrate out to find home ranges

Tells you when Yellowstone pop. is in balance with carrying capacity.

1 bear to 10–17 square miles

$$20\overline{)3000} \quad 150$$

20

100

100

Sept. 19, 1972
Talk

CBC

Program begins 1970 — pop. of bears in Yellowstone Park
Pop. within Yellowstone
Pop. outside of Yellowstone
Bears have home ranges that overlap borders

1 bear to 10 to 17 square miles
Infra-red scanning — census technic

Injuries — 1960 36
No injuries — 1971
Two injuries — 1972

3 fatalities in 100 years Y.N.P.
1906, 1916, 1972

✓

Glen *

Encountered grizzly on cash of his groceries left on ground. Did Glen die camp?

Monitoring
Seeing more bears in wild than in developed areas
Same bear many times?
Reduced # of control action in 71 & 72 — No. of times bears are captured, transplanted or controlled.
No. of bears handled has declined
No. of successful transplants has increased
1972 — one out of 4 bears returning

Bears now dealing with are not as dangerous as those previously handled.
Earlier bears charged more often

Control actions in developed areas 1971 & 1972 decreases over 1969 & 1970 1971 – 39 controls
1972 – 26 controls

Control in Undeveloped Areas
1 – bear killed Walker
1 – overdose of drug
17 with 2 yearlings

1972 – 5 of 8 bears killed by drugs

141 control actions
94 different bears in dev. areas

1970 – 20 (8 zoo, 12 destroyed)

1970 – 6 – bear bolt

1972 – 9 – 8 / 1 / 9

13 removed by control program in 1971 – Mont.

Total 1970 1971 1972
20 19 11

combined removal

at least 250 grizzlies

3 bears hit by vehicles

Pop. & Reprod.

1959-66 –

1972 – 31 females 1.9 cubs/female
2 cubs + 2 yearlings/female

THE WHITE HOUSE

National Park Centennial Year

By the President of the United States of America

A Proclamation

In John Colter's saga of adventure, we find the genesis of an idea which was to change man from nature's ancient adversary to its friend and preserver. In 1806, this guide and trapper for Lewis and Clark left the expedition on its return journey and set off on a series of exploits that brought him, alone and on foot, into an unknown wilderness of majestic splendor. He carried back tales which prompted scoffing disbelief, then awe, and finally an unending cavalcade to the headwaters of the Yellowstone River. Years later, on March 1, 1872, in an Act signed by President Grant, Colter's discovery was established as the first national park for the people of the Nation and of the world.

A century has come and gone, and in that time the National Park System has grown to include 280 areas embracing the most magnificent examples of America's natural and historical heritage. In every time and season, our parks give of their joys and beauties. They have enriched the citizens of this land beyond measure, and have inspired more than 100 nations to set aside over 1,200 national parks and reserves. Truly, "one touch of nature makes the whole world kin." And this past year, through the Legacy of the Parks, we have embarked on a new era of bringing parks to the people with the opening of vast new tracts of wilderness and recreation land, a fitting close to the first 100 years of our National Park System and a proper beginning for the next 100 years.

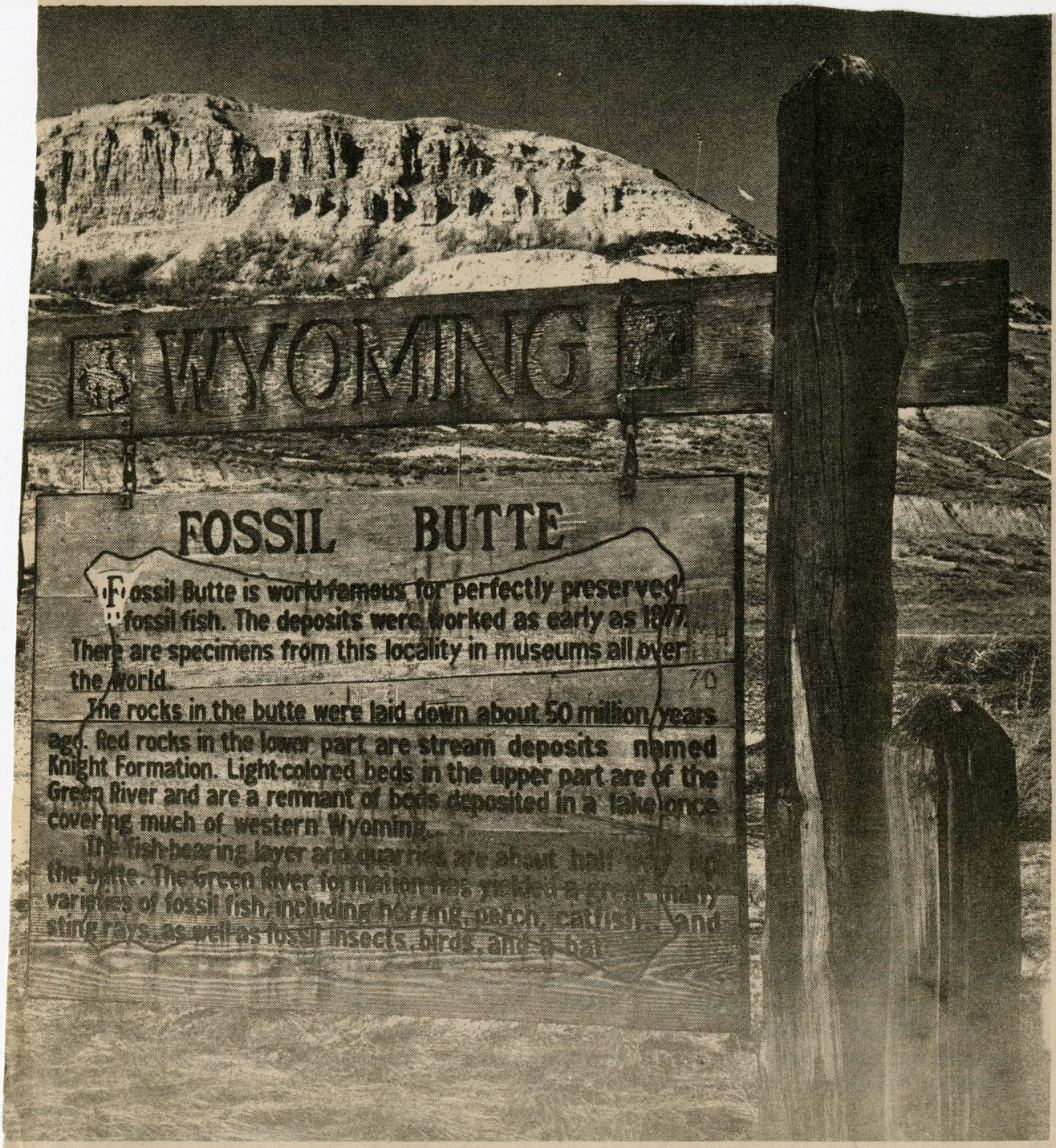
As directed by the Congress in a joint resolution of July 10, 1970 (84 Stat. 427), the Secretary of the Interior has requested me to issue a proclamation designating the year 1972 as National Park Centennial Year in recognition of the establishment in 1872 of Yellowstone National Park, the world's first national park.

NOW, THEREFORE, I, RICHARD NIXON, President of the United States of America, do hereby designate the year 1972 as National Parks Centennial Year.

I urge appropriate Federal, State, and local government officials to cooperate in the observance of that year with activities that will not only honor the past, but will provide a focus for understanding the increasing importance of the National Park System in the lives of all Americans, establish an atmosphere of cooperation among private citizens and local, State, and Federal governments regarding the national park concept, and encourage our citizens and our friends beyond our borders to participate in Centennial activities

IN WITNESS WHEREOF, I have hereunto set my hand this 5th day of January in the year of our Lord nineteen hundred seventy-two and of the Independence of the United States of America the one hundred ninety-sixth.

/s/ RICHARD NIXON


WYOMING
FOSSIL BUTTE
Fossil Butte is world-famous for perfectly preserved fossil fish. The deposits were worked as early as 1877. There are specimens from this locality in museums all over the world.
The rocks in the butte were laid down about 50 million years ago. Red rocks in the lower part are stream deposits named Knight Formation. Light-colored beds in the upper part are of the Green River and are a remnant of beds deposited in a lake once covering much of western Wyoming.
The fish-bearing layer and quarries are about half way up the butte. The Green River formation has yielded
varieties of fossil fish, including herring, perch, catfish
sting rays, as well as fossil insects, birds, and a bat

start

p 11

A Briefing on the Grizzly
Bear Situation in Yellowstone
Mammoth-Yellowstone National Park
September 19, 1972
by
Dr. John J. Craighead

Mr. Chairman:

I have been invited to this meeting to present my position on the grizzly bear situation within the Yellowstone ecosystem. I have come prepared to document this position with population data acquired over a 13 year period. As we all know this problem of managing grizzly bears is very complex and there is bound to be differences of opinion. That is why we are here. We must find answers.

Before presenting our data, I would like to present a background of information that I believe is essential to an understanding of why my brother Dr. Frank Craighead, my colleagues, and I, are concerned about the Yellowstone grizzlies. We find it necessary to reiterate why our position is at variance with that of the National Park Service.

The scientific evidence gathered by our research group does not support the Park Service's bear management policies. However, the very essence of the scientific method and of scientific progress is the freedom to disagree. Only with constructive criticism can we find the solution of managing and preserving the grizzly in the Yellowstone environment. We have come by our differences honestly. Our loyalty is to the resource.

I will take time to define the issues and to attempt to put basic differences in perspective.

We began researching grizzlies in 1959 and in the course of the study developed numerous techniques for studying these large carnivores. At the request of the National Park Service, we prepared a management report in 1967. In that report we advocated management policies and a management program based on our research findings and on conclusions supported by nine years of intensive research.

The National Park Service, and its advisory board, however, established management policies and put into action a grizzly bear management program based on hypotheses supported by virtually no research by its biologists of the local problem. I regret that I must take issue with Dr. Leopold's remark this morning that there was a consensus of opinion on the Committee report. With all due respect to Dr. Leopold, on this point, we do not agree.

The hypotheses or assumptions on which present management is based were essentially:

That:

1. Open pit garbage dumps in and outside of Yellowstone National Park could be rapidly phased out with relatively little effect on the grizzly bear population.

2. That most of the grizzlies denied these long established feeding areas would establish themselves in the Yellowstone backcountry and cease to frequent their former haunts.

3. That those grizzlies that did not adjust as anticipated would be dispatched, but it was assumed that the numbers of these would not be great.

This National Park Service grizzly bear management program has now been

in effect for four years.

Our contention five years ago and today is that management of a resource such as the grizzly bear should not be based upon unproven assumptions. It is true that no one could predict exactly what would occur when the new management program went into effect. But, much data existed to show that the basic assumptions were highly questionable.

1959-1971

1. We made our scientific evidence available to the National Park Service in the form of publications, reports and briefings.

2. We have provided the National Park Service with two detailed reports documenting the grizzly bear problem in Yellowstone, and in these reports we made specific recommendations for managing grizzly bears. These recommendations were made on a basis of years of research and at a time when the National Park Service had little scientific expertise in the ecology and management of grizzlies. We recommended that a completely natural population of grizzlies be established by closing the open pit garbage dumps over an 8 to 10 year period or longer. We emphasized the importance of establishing a population of grizzlies that could feed entirely on natural foods.

3. <u>But</u> we especially warned against a rapid phase out of the open pit garbage dumps, especially the Trout Creek dump located in the geographic center of the Park and we advocated continued research by our research team to document what occurred during the phase out. We believed that only by comparing the dump phase out period, with conditions that existed before the phase out, could the success of the

management program be accurately evaluated. We still believe this to be so.

4. In our reports and at numerous meetings we stated that if the open pit dumps were phased out rapidly as the National Park Service indicated it planned to do and I repeat - this action was to be taken on the basis of the unsupported hypotheses:

a. That only a relatively few grizzlies were addicted to feeding in campgrounds and that there existed a relatively large nucleus of back-country grizzlies that had never developed either campground or garbage dump feeding habits. (Our backcountry observations based on thousands of man hours showed little evidence for large backcountry population of grizzlies).

b. That with dumps closed, most of the grizzly bear population would revert to living in the backcountry, their traditional migration to these dump sites would cease, and that the few remaining in developed areas and campgrounds could be disposed of.

Now - if this rationale was accepted as the basis for managing grizzlies, we said in our reports that the following could be expected to occur:

First - There would be a heavy influx of grizzlies into developed areas and campsites both inside and outside the Park where they would cause trouble.

Second - That this would lead to increased mortality of grizzlies and since our data showed that most of the Yellowstone grizzlies had learned over extended periods of time to use the dumps and had established strong habit patterns and traditional migrational movements to these sources of food, these ties and habits developed by a basic reward relationship could not be altered quickly.

Third - The grizzly population would not be able to adjust by occupying the backcountry but instead most of these animals, during the summer period, would still continue to seek food in the areas they had so long frequented. I think Mr. Cole's maps support this.

Fourth - The opportunity for bear-man encounters would increase. This could be partially but not entirely offset by sanitizing tourist areas, closing campgrounds at critical times, increasing ranger patrols and alerting the public to the dangers inherent in the management program. We emphasized the necessity of completely sanitizing campgrounds before closing the dumps.

Fifth - Grizzlies that had frequented the open pit dumps (dumps that had been isolated from the public) would we predicted enter campgrounds and the offspring of females through the basic reward relationship mentioned this morning would learn this habit from their mothers and generations of grizzlies would become conditioned to campgrounds just as in the past they had become conditioned to the open pit dumps. These animals would be more dangerous than those that had frequented the open pit dumps because they would become man-conditioned and they would not be isolated.

Sixth - The disruption caused by the sudden depletion of an important and historic food source would place heavy stress on the population causing:

1. lowered reproduction

2. increased movement - resulting in increased deaths

Both factors would adversely affect the population size as well as grizzly, bear-man relationships. The probability of serious bear-man encounters would increase.

Mr. Chairman, we contend that this is the situation which prevails today. Grizzlies frequenting developed areas and campgrounds continue to be a serious problem, the risk to visitors has not decreased appreciably, and the grizzly population is declining rapidly.

It is this latter problem that I will discuss in detail.

An important question that has been referred to in our briefings this morning and one we must consider is:

> What are we talking about in terms of a land area when we discuss the Yellowstone grizzlies? Is it just Yellowstone National Park or is it a larger area?

Are these grizzlies wards of the states adjoining Yellowstone National Park, are they wards of the Federal Government, or are they a joint responsibility? No one has formally addressed themselves to this question.

GRIZZLY BEAR POPULATION ANALYSIS

SLIDE 1

During a 13 year period (1959-1971), we have recorded 209 grizzly bear mortalities within the Yellowstone ecosystem. (approximately 5 million acres) (Yellowstone National Park contains 2,100,000 acres).

The grizzly bear deaths are distributed as shown on the map. The number of marked and unmarked bears killed have been about equal.

We interpret this to show that we are dealing with an ecosystem population not simply a National Park population of grizzly bears.

The geographic distributions of these mortalities of both marked and unmarked grizzlies and the data we have accumulated on natural movement in and out of the park support our hypothesis that most and possibly all grizzly bears within the Yellowstone ecosystem had acquired the habit of visiting the open pit dumps. We have recorded many many natural movements of 50 to 60 airline miles. This traditional habit of grizzlies annually moving to open pit garbage dumps is an important fact, for it relates directly to the dynamics of the population.

Now - how do we analyse the dynamic processes of growth and decline in this population? The most accurate known scientific procedure is to go to computer programing.

We have done this by comparing population data for the pre-management period (1959-1967) against the present period of revised management (1968-1971).

Vital population statistics for these two period have been programed through an IBM 1620 computer. As Dr. Starker Leopold remined us this morning, this requires a great deal of precise data.

We have acquired these data, and this may well be the first time that such vital statistics have been obtained for a living population of large mammals.

The type of computer input data is shown here in the first slide.

SLIDE 3

The results of programing the 1959-1967 data through the computer are illustrated on the slide.

We have a slowly growing grizzly bear population.

The average growth is 1.7 bears per year.

This would appear to be a very small average annual increment, but as you can see the number of grizzlies would increase from about 177 to 261 by the year 2018.

TROUT CREEK

To run a check on the accuracy of our ecosystem projections, we programed vital statistics of age structure, population size, sex ratios, reproduction rate, and longevity for the largest single population unit within the Yellowstone ecosystem - the Trout Creek population (See map). The average population size 116. Sex ratio of cubs, 52% male and 48% females. Reproduction rate .68 The population fluctuated but remained at about the same level to the year 2116 when the runs were terminated.

The conclusion was that this population unit, like the ecosystem population, maintained itself when vital population statistics were projected into the future.

Thus: Prior to the present management program (1959-1967), the grizzly bear population inhabiting the Yellowstone ecosystem was exhibiting a slow growth rate and was not endangered.

The results of programing the 1968-71 data through the computer are shown in the following graphs. This is the period of rapid phase out of the open pit garbage dumps under the new management program.

SLIDE 4

In computer modeling it is more accurate to make a number of runs and average these. Five different computer runs were made using 1968-1971 vital statistics (population size 176) but incorporating excess mortality data. Excess mortality is the increase in mortality for the 1968-1971 period over the 1959-1967 period.

The increased mortality was evenly distributed over all age groups from cubs to 25½ years of age.

These data were used to modify the survivorship rates.

THE GRAPHS SHOW THAT:

The average extermination date for this population is 1998 -- 26 years.

The earliest extermination date is 1988.

The latest extermination date is the year 2000.

It is obvious that these projections show a rapidly declining population.

SLIDE 5

Five computer runs were made using the same data shown in the last graph. (1959-1967 vital statistics) population size 176.

But the increased mortality (1968-1971) over the (1959-1967) period was distributed among adults and sub-adults and male and female. This we believe is a more refined age distribution of deaths.

Projection of these data shows the years of extermination by comparative runs to be:

1991 - 1993 - 1988 - 1986 - 1997

The average extinction date for the Yellowstone population is 1993 - 21 years.

Our conclusion is that:

> The present National Park management program if continued will very probably exterminate or nearly exterminate the Yellowstone grizzly bear population in about 20-25 years.

PROJECTION OF POPULATION ASSUMPTIONS

NO SLIDE

Now we will make some assumptions based on hard-core data and project these assumptions into the future.

Assumption 1:

Let us assume that the increased deaths, that have characterized the period of new Park management, continue through 1973 and then we return the survivorship rates to the values established for the 1959-1967 period which allowed the population to grow.

Then by the year 2018 the population of grizzly bears average 93 animals.

When run to the year 2045, the average population will still be 93 animals. The population does not recover with this remedial action. This information indicates that the population has already reached a critical level.

ASSUMPTION 2:

Here we assume that the population size is 259 bears (an increase of 1/2 over our census figures. Let us assume that there are a number of backcountry bears that never enter the Park, although all evidence indicates this to be a questionable assumption (176 + 83). Mortality rate does not change.

The computer runs show that the population exterminates in the year 2003. Thus, it took just 10 years to kill the extra 83 bears assumed to be in the population. Under the current management and with the present mortality rate, a population of 259 grizzlies will meet the same fate of the smaller population of animals (176). The only difference is that it will take about 10 years longer to accomplish.

ASSUMPTION 3:

Same as the preceeding one (that is with a population of 259 bears), but with a reproductive rate lowered to 0.66 (the reproductive rate we have established for the period 1968-1971).

The computer runs exterminate the population in the year 1998. This is five years earlier than occurred using the reproductive rate of 0.99. It is only five years longer than the average extermination date of 1993 calculated for the population of 176 grizzlies. Gentlemen, this is what our long and intensive research effort shows is occurring under current management practices. In two years 1971

Inter Agency Grizzly Bear Team

Interagency Meeting Jan. 16, 17, 1975

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

February 28, 1975

Dr. Laurence M. Gould
Department of Geology
University of Arizona
Tucson, Arizona 85721

Dear Larry:

In order to attempt to resolve the Yellowstone grizzly bear problem and to formulate a research program, a grizzly bear steering committee was formed well over a year ago largely at the instigation of Nat Reed (I believe). The major objectives of the steering committee are to:

1. Determine the status and trend of the grizzly bear population.

2. Study the use of habitats by bears, and the relationship of land management activities to the welfare of the bear population.

The outline which has been presented completely duplicates the work that we did in Yellowstone; in fact, the outline is almost identical to one that we prepared 15 years ago. No where in the outline is there any recognition of what we have done or the fact that much of the information they are proposing to obtain at the cost of $84,000 of tax payer money for 1975 alone has already been gathered and much of it analyzed.

It is obvious that this research is primarily aimed at justification of the Park Service's untenable position. There is no doubt that there is need for additional research in Yellowstone, but it should be aimed largely at perfecting the population model which we developed from the biological parameters we measured. This would involve:

1. Determining annual reproductive rate.

2. Obtaining accurate sex and age mortality records.

3. Determining the general movements of grizzly bears outside of Yellowstone National Park.

I strongly object to what is involved in the establishment of this steering committee and their research approach. Those in power have

willfully and intentionally prevented either Frank or me from participating on a committee whose purpose should be to guide research and management so as to protect the grizzly bear. This complete disregard for research already accomplished is completely alien to the scientific method. We both know why this is being done, but somehow we need to point out that politicians, administrators, and politicallyoriented biologists are ignoring the fundamental concepts of the scientific community in order to develop a research program free of any criticism and which can be readily channeled to obtain preconceived results. It should be necessary for this committee to consult both Frank and me and to shape their interagency study in such a way that it does not duplicate our efforts and waste the tax payers money.

A possible argument that we are involved in the controversy and, therefore, can not be objective is invalid in view of the fact that they have included as members of the committee those who represented the Park Service's position. All of the others have had either very little or no experience with grizzly bears.

Larry, I think what disturbs me most is that some members of this committee and their organizations know the truth of what has occurred in Yellowstone and apparently are willing to compromise principles to such an extent that they not only tolerate this kind of a committee but are willing to go along with a decision that non governmental members should not be included and that the chairman should hold the position as Chief Scientist of the National Park Service. You must remember that this is not a National Park Service research program but an interagency research program involving all of the organizations listed under the steering committee.

Kindest personal regards.

John

John J. Craighead, Leader
Mont. Coop. Wildl. Res. Unit

JJC:gs
Encl: Ltr from Jonkel, 2/13/75, summary report of 1/5/75, list of attendees, ltr from Sudia of 1/31/75, meetin g of the Interagency grizzly bear study steering committee of 1/16 & 17/75

Intra-campus MEMORANDUM February 13, 1975

UNIVERSITY OF MONTANA

School of Forestry

TO: Dr. John Craighead, Leader, Montana Co-operative Wildlife Research Unit

FROM: Dr. Charles Jonkel

RE: Attached papers

Dear John:

Attached is a copy of the minutes of the Billings meeting of the Interagency Grizzly Bear Committee, November 7, 1974. I was surprised that you had not received a copy from Dr. Sudio.

I am also returning your copy of the paper Of Bears and Man. Thank you very much for your comments and ideas; I think it is a much better paper now. I included most of your suggestions, but not all of them. You can easily see from my penciled notes and the new draft how I changed the manuscript. I sincerely hope that it will shed a bit more light on the management (i.e., preservation) of bears in North America.

Sincerely,

C. Jonkel

P.S. do you have any comments on the Kalispell minutes, resolutions, + statement of position?

C.

for your info
-C.
STATE OF MONTANA
FISH & GAME DEPT.

SUMMARY REPORT

The Interagency Grizzly Bear Committee met in Billings, Montana on November 7, 1974 (see attendance list attached). The Committee took action on the following items:

(1) Messrs. White and Woodgerd stated that an amendment to the existing agreement would be needed to add members to the Committee. Committee concensus was that no additional committee members were needed, however at this time.

(Jim White - moved — carried unanimously
(Wes Woodgerd - second

(2) The objectives of the study team, prepared in priority order, will then be forwarded to the Chairman who will integrate all such efforts to establish overall objectives.

(Wes Woodgerd - moved — carried
(Bob Salter - second

(3) The next meeting of the Interagency Grizzly Bear Committee will be held in Bozeman, Montana.

(Jim White - moved — carried
(Bob Salter - second

(4) The next meeting of the Interagency Grizzly Bear Committee will be held between January 6-17, 1975, the specific date and time to be arranged.

(Ralph Clawitter - moved — carried
(Bob Salter - second

(5) The Interagency grizzly bear study team will take cognizance of the National Academy of Sciences "Report of Committee on the Yellowstone Grizzlies" in the preparation of their study objectives and work plans and will carefully consider all recommendations for research made by the National Academy of Sciences Study Committee in the formulation of recommendations to the Steering Committee.

(Wes Woodgerd - moved — carried
(Ralph Clawitter - second

(6) The Interagency Grizzly Bear Committee moved to recommend to the Secretary of the Interior; Be it resolved: To recommend to the Secretary of the Interior that the Grizzly Bear not be classified as endangered or threatened until such time as research carried out by the study team or other research organization indicate its necessity.

(Jim White - moved
(Ralph Clawitter - second

Carried

yes { White, Salter, Clawitter, Woodgerd

no . Hester

LIST OF ATTENDEES

Dr. F. Eugene Hester, Associate Director, Research, FWS
Wesley Woodgerd, Director, Montana Fish and Game
James White, Director, Wyoming Game and Fish Commission
Ralph Klawitter, Intermountain Station, U.S. Forest Service
(represented Dr. Dixie Smith)
Joseph E. Townsend, U.S. Fish and Wildlife Service
Bob Salter, Idaho Fish and Game Commission
(represented Mr. Greenley)
Dr. Richard Knight, Research Biologist, Yellowstone National Park
Burt Rounds, U.S. Fish and Wildlife Service, Billings, Montana
Rex Corsi, Wyoming Fish and Game Commission
Gene Allen, Montana Fish and Game Commission
Ken Greer, Montana Fish and Game Commission
Larry Roop, Wyoming Fish and Game Commission
Bob Ballou, U.S. Fish and Wildlife Service, Billings, Montana
Dr. Theodore W. Sudia, Chief Scientist, National Park Service
Ms. Linda Van Keuren, Science Program Specialist, National Park Service

United States Department of the Interior

NATIONAL PARK SERVICE
WASHINGTON, D.C. 20240

RECEIVED
FEB 3 1975
STATE OF MONTANA
FISH & GAME DEPT.

IN REPLY REFER TO:

N1427-DS

JAN 31 1975

John T.
for your info
T.

Mr. Wesley Woodgerd
Director, Montana Fish and Game
Department
Mitchell Building
Helena, Montana 59601

Dear Mr. Woodgerd:

Enclosed are the minutes of the Grizzly Bear Study Steering Committee meeting of January 16 and 17, 1975. Also, you will find the revised Study Team Objectives and Workplan for the 1975-76 field season.

Sincerely yours,

Theodore W. Sudia
Chief Scientist

Enclosure

CONSERVE AMERICA'S ENERGY

Save Energy and You Serve America!

MEETING OF THE INTERAGENCY GRIZZLY BEAR STUDY
STEERING COMMITTEE, BOZEMAN, MONTANA - January 16, 17, 1975

The Addition of Non-Governmental Members to the Committee

Dr. Sudia summarized the Solicitor's opinion;

(1) It would be an improper and unauthorized delegation of authority to share the Committee's decisionmaking authorities with non-governmental members.

(2) The NAS recommendation could best be implemented by the creation of an advisory committee.

The committee members agreed that an advisory committee was not desirable. Dr. Sudia mentioned that consultant's services could be obtained when needed.

Committee Organization and Structure

Dr. Sudia discussed his role as Chairman and a member of the committee. Since he is the representative of the National Park Service, he could not follow the Parlimentary procedure which denies the chairman of a committee equal powers. Instead, Jeffersonian procedures would be used which allows the chairman to debate and vote as an equal member of the committee. The committee members offered no objection to this.

Study Team Objectives

Dick Knight went through the objectives point by point with questions and discussion from the committee. Some subjects included in discussion were:

(1) Insertions and changes made in the objectives. (The objectives as amended are attached.)

(2) Ken Greer explained the method of aging bears by extracting a pre-molar.

(3) Hopefully M-99 will cause bears to be sufficiently incognizant that they won't associate the experience with humans and therefore are less likely to become more dangerous because of the handling.

(4) Dr. Sudia asked if there was a standard protocol when an autopsy is carried out in regard to standarization of information if more than one person carries out the autopsy.

Ken Greer explained his system of information gathering. He said that manpower was such that an exhaustive study could not be made of each animal but that the information gotten suited the team's purposes.

(5) The fish spawning runs as related to bears were discussed. Brought into this was the question of radio collaring in Yellowstone Park to ascertain the movements of bears during the spawning runs.

(6) Fire effects on bears; post fire effects more important to bears than the fire itself.

(7) Objectives and priorities will be reviewed annually prior to adoption of next year's work plan.

Joseph Greenley moved that the committee adopt the objectives and priorities as revised. Eugene Hester seconded the motion. The motion was carried unanimously.

Grizzly Bear Research Workplan - 1975-76

Dick Knight read through the team's workplan and answered questions asked by committee members:

(1) The concept of the Yellowstone National Park and adjacent areas was discussed and it was noted that the workplan refers only to the Yellowstone NP and adjacent areas.

(2) The limitations on flying time brought about by adverse weather and limitations on aerial censusing because of vegetation cover was also discussed.

Joseph Greenley moved that the workplan for 1975-76 be adopted. Rex Corsi seconded the motion. The motion was carried unanimously.

Funding for the Remainder of FY 1975 and FY 1976

Dick Knight went over his proposed funding for the remainder of FY 1975 which totaled approximately $84,000.

Eugene Hester reported that approximately $50,000 would be available for the remainder of FY 1975 from the Fish and Wildlife Service.

Dr. Sudia asked Dick Knight if he could work with that amount of money. Dick Knight said he could make adjustments that would bring it down to about $52,000. He stated this would mean it would take longer to achieve some of the goals of the team but it could be done.

Ralph Klawitter said the Forest Service could put in $2,000 in the form of increased support for Joe Basile.

It was decided that Mr. Knight should revise his budget to bring it into line with funds available.

Dr. Sudia suggested that the team get an information specialist as a consultant to determine the best way to organize the team's data.

The meeting adjourned at 5:30 p.m.

January 17, 1975

The meeting started at 9:00 a.m. Dr. Sudia and the members of the committee commended the research team for doing an outstanding job in preparing the objectives and workplan.

The date for the next meeting was left open.

The meeting adjourned at 9:20 a.m. An informal demonstration of the field equipment followed.

The time-lapse camera system was explained and one of the resultant super 8 films was seen. The 16 mm movie camera used in aerial censusing and its resultant film were shown. Various radio collars and a receiver were shown and advantages and disadvantages discussed.

LIST OF ATTENDEES

*Gene Allen (Representing Wesley Woodgerd)	Montana Fish and Game Department
Joe Basile	U.S. Forest Service (Bozeman)
*Rex Corsi (Representing James White)	Wyoming Game and Fish Department
LeRoy Ellig	Montana Fish and Game Department
*Joseph Greenley	Idaho Fish and Game Department
Ken Greer	Montana Fish and Game Department
*Eugene Hester	U.S. Fish and Wildlife Service
Steve Judd	U.S. Fish and Wildlife Service (Bozeman)
Kate Kendall	National Park Service
*Ralph Klawitter (Representing Dixie Smith)	U.S. Forest Service
Dick Knight	National Park Service (Bozeman)
L. Jack Lyon	U.S. Forest Service
Fred Nolke	U.S. Fish and Wildlife Service
Lloyd E. Oldenburg	Idaho Fish and Game Department
Larry Roop	Wyoming Fish and Game Department
*Theodore W. Sudia	National Park Service

* Steering Committee

OUTLINE OF OBJECTIVES

GRIZZLY BEAR STUDY TEAM

APPROVED BY STEERING COMMITTEE, BOZEMAN, MT
JANUARY 16-17, 1975

Problem: The current data base necessary to manage grizzly bear in the Yellowstone system is incomplete.

Major Objectives for Study (Steering Committee):

1. The status and trend of the grizzly bear population.
2. The use of habitats by bears, and the relationship of land management activities to the welfare of the bear population.

Within stated objectives, the following factors will be investigated. The study outline includes a priority rating of (1) to (5) as follows:

1. Primary emphasis or effort; procedures contributing toward these objectives will be carried out on a first priority basis.

2. Secondary emphasis or effort as permitted by primary emphasis.

3. Minimal effort, monitoring or acceptance of opportunitiest to collect data.

4. Insufficient knowledge to schedule at this time or dependent upon events that are now unscheduled.

5. Would duplicate efforts of other studies or would better be accomplished in other areas.

These objectives and priorities will be reviewed annually prior to the formulation of next year's work plan.

I. Population(s) considerations

Population is here referred to in the standard sense of a group of individuals of one species. In this study, it refers to the group of bears that occupy the Yellowstone system. The term system has been adopted in preference to ecosystem since biological implications and complexities in an area this size, where the research is being conducted, does not lend itself to a simple designation of ecosystem. The (s) merely notes that there may be several populations separated geographically, genetically, or behaviorally.

A. Distribution (1)

1. Geographical (1)
2. Seasonal (2)

Distribution refers to the actual areas within the Yellowstone system occupied by grizzly bears during some season of the year. Both distribution and geographical distribution are given a priority of 1 since it is fundamental to know where bears are before they can be studied. Seasonal distribution is a refinement on geographical distribution, although its importance cannot be investigated until a data base on geographical distribution has been laid, it has accordingly been given a priority rating of 2.

B. Population segments (3)

This refers to determining if there is one continuous grizzly bear population in the Yellowstone system or if there are more than one semi-autonomous populations making up the total population. This is given a priority 3 rating since its evaluation depends upon basic information on distribution and cannot be investigated until there is some data to indicate that there are population segments.

C. Population trends (1)

This is to document population fluctuations or stability over time. This is given a priority of 1 since it directly reflects the status of grizzly bear populations and primary effort will go to determine this information throughout the course of the study.

1. Densities (3)

Densities refer to the number of bears per unit area in defined segments of the system. Determination of densities necessarily depends upon the definition of some segments and some knowledge of the population of bears within these segments. This is given a priority of 3 since background data is required but will probably be revised upward in the priority category as the study progresses.

2. Parameter estimates (1)

These are statistically defined estimates of numbers, sex and age structure of the entire population projected from the sample data base. This is essential to the determination of population status and trends and is therefore given a priority rating of 1.

a. Structure -- sex, age (1)

This refers to ratios of the sexes in the various age groups in a population. It also determines the current reproductive status and capabilities of populations and indicates what may be expected in the future. This is essential in estimating population parameter, thus is given a priority rating of 1.

b. Recruitment (1)

Recruitment rate can be defined as the number or percentage of individuals attaining breeding age each year or the number or percentage of animals reaching an age where they are definitely making a significant contribution to the population. Age of recruitment usually is specific as to species and often to different populations within a species. In this study, we will use the later definition with the age of contribution to be defined by further research and determined from sex and age structure information.

Natality is difficult if not impossible to determine from most large mammal populations. (For instance, determining a birth rate for bears would involve breaking into the dens of all known single bears during February of each year with resultant population loss of cubs due to the disturbance factor.) More useful information as far as population consequences are concerned is recruitment rate.

Natality is used in the standard ecological sense of births. It is usually used as natality rate or birth rate. It is included here because someone would question its absence.

c. Mortality (1)

Mortality refers to death. It is usually used as a mortality rate or death rate, i.e. percentage of animals in the population dying in a year. Other than natality and/or recruitment, it is the other major factor affecting population trends.

In this study, mortality will be divided into two groups: natural and man-caused. Man-caused mortality can be determined through monitoring and reporting systems, while natural mortality will be estimated from death rates of instrumented animals and other indicators. When the mortality rate exceeds recruitment rate as defined under Recruitment, a population decline is indicated, with the opposite indicating an increasing population.

Since mortality is of such importance to population trends, intense effort will be put forth to determine all causes of mortality; therefore we have assigned a priority of 1.

D. Behavior-Social Interactions (2)

This refers to the grizzly bear's use of the space available to him in relation to other members of the bear population, other species, and to man-caused influences. This is possibly of high importance to the bear population but since it requires considerable background information, we can only assign it a priority 2.

1. Movements (1)

Movements here will include all seasonal and geographic movements that a bear will make in the course of a year. Since this has a direct bearing on geographic distribution and interpretation of population information was well as habitat requirements listed below, we have assigned this a priority of 1.

a. Home range (1)

Home range is the actual area that a bear uses during the course of a year, providing that essentially the same area is used in subsequent years, excluding dispersal as defined later. This also includes possible migration routes between areas of seasonal use.

Home ranges are the building blocks of a population and as such (when ascertained) are available to aid in determining population numbers and habitat requirements, hence we have assigned this a priority of 1.

b. Dispersal (2)

Biologically, dispersal is of two types: within and out of the system. Although dispersal is of importance in understanding population trends, it is difficult to design a study to measure the dispersal of animals without a widespread tagging program. Therefore, we will presently accept opportunities to collect data from animals instrumented for other purposes and give this a priority of 2.

1. Natural dispersal is that dispersal due to biological population pressures and as such will be studied on an opportunistic basis at the present. Therefore, a priority of 3 is assigned.

2. Artificial dispersal is that due to the actual transplanting of bears such as complaint or depredation animals.

Induced dispersals are those movements brought on by any form of man-caused encroachments on grizzly bear habitats.

The factors relating to artificial or induced dispersal are more predictable than those relating to natural dispersal and are more easily worked into a study design. Therefore, this is rated priority 2.

2. Spatial Relationships (4)

Spatial relationships refer to intra-specific interactions within a population. This includes such possible relationships as territories, moving territories or individual distances but these situations may or may not occur within the repertoir of bear behavior and are therefore assigned a priority of 4.

E. Physical Characteristics and Condition (Wildlife Lab) (1)

These factors include all quanitative physical characteristics measured in the field or in the laboratory. This includes autopsying dead bears for such things as amount of fat deposition by season, internal or external parasite burdens, presence or absence of disease, all of which relate directly to potential mortality.

An efficient laboratory support system is integral to the operation of any biological data collection program, thus this rates a priority 1.

II. Habitat

Habitat is used here as in the standard definition, i.e. the place where an animal lives. Axiomatically, this infers that habitat contains all the requirements for a species to live and reproduce. This inference also includes the concept of habitat quality which recognizes that habitats vary in the densities of animals they can support.

A. Resource Inventory (2)

This is the measurement and documentation of obvious characteristics within the Yellowstone system which could affect grizzly bear distribution and abundance. This includes physical characters such as topography and geology, biological characters such as flora and

fauna, and cultural characters such as man's activities and developments. This is primarily a compilation of existing knowledge which will become applicable to the grizzly bear only as we gain more knowledge of his requirements and behavior patterns. Since this is primarily compilation and documentation and its application depends upon information yet to be gathered, we have given a priority of 2.

B. Habitat Requirements (1)

These are the requirements necessary within the concept of habitat to support a grizzly bear population. For the purposes of this study, they are broken down into the following categories: nutritive requirements as expressed by food and water, special requirements as expressed by denning sites and general requirements as expressed by cover and isolation. Since habitat is fundamental to a population, the requirements of the grizzly with respect to habitat are assigned priority 1.

C. Habitat Rating (4)

Using information obtained under IIA and B, segments of the habitat will be rated with respect to current and potential bear densities. Since this requires information still to be obtained, we have initially assigned it a priority of 4.

D. Land-Use Impacts (1)

These are measurements of the impacts on the grizzly bear by human activities listed as self-explanatory sub-topics below:

1. Timber management (1)

Since the final act in timber management is usually harvest involving major physical alteration of the habitat, and such programs are active within the Yellowstone system, we have assigned a priority of 1.

2. Livestock management (1)

Livestock management as practiced within the Yellowstone system has resulted in casualties to both grizzly bears and livestock. Due to the need to better define both the biological and social problems concerned, we have only assigned this a priority rating of 2 at this time.

3. Wildlife and fishery management (2)

Manipulation of other wildlife species may affect the grizzly bear directly or indirectly. The major areas of investigation available within the Yellowstone system at this time are: regulation of fishing pressure on cutthroat trout on Yellowstone

Lake, and effects of past ungulate reductions on the Northern Yellowstone winter range. Since importance of these resources has not been definitely defined with respect to the grizzly bear, we have given this a priority of 2.

4. Fire management (3)

5. Mining (3)

6. Roading (3)

Investigation of these factors will require data gathered before and after the fact. Since we have no knowledge of future activities regarding these factors, data gathering must be on an opportunistic basis and is hence assigned a priority 3.

7. Non-Recreational Development (4)

8. Agriculture (4)

The Team has no knowledge of activities of this type to be scheduled within the Yellowstone system in the near future. Therefore, we have assigned a priority of 4.

9. Recreation impacts (2)

10. Weather modification (5)

There are more man-bear contacts each year within Glacier Park than in the Yellowstone system and since there are active weather modification operations in progress in northwestern Montana, the Team believes that investigations would be more successfully carried out in that area. We have given these factors a priority of 5.

APPROVED BY STEERING COMMITTEE
BOZEMAN, MONTANA, 1/16/75

GRIZZLY BEAR RESEARCH

WORK PLAN 1975 - 76

STUDY NO. I. The investigation of grizzly bear distribution and population trends in the Yellowstone system.

JOB NO. 1. Establish grizzly bear distribution within the Yellowstone system.

PROCEDURE 1. Collect, verify and record observations from all sources. A monitoring system will be developed which will enlist the cooperation of local residents and other agency personnel in the field. Observations from these sources will be recorded and verified as far as possible by Team members and other agency personnel of known reliability. Primary responsibility for carrying out this procedure will rest with Basile.

PROCEDURE 2. Gather qualitative and quanitative data on occurrence of grizzly bear in selected portions of the Yellowstone system. Efforts will be aimed at portions of the system where grizzly bear occurrence is suspected but not documented. Two reconnaissance teams will systematically search for and record all signs of grizzly bear use. Reconnaissance teams will also set out baits covered by time lapse camera systems. Team members with primary responsibility for carrying out this procedure are Roop, Judd and Knight.

PROCEDURE 3. Incorporate data from bears instrumented under Study No. II.

Relocations of instrumented bear will be used to supplement information on distribution.

Team members with primary responsibility for carrying out this procedure are Basile, Knight, Roop and Judd.

JOB NO. 2. Gather data applicable to determine population paramaters and trends.

PROCEDURE 1. Make systematic aerial observations to locate and classify bears. Fixed-wing flights will be made over open portions of the study area three times a week. Bears observed will be classified and photographed for age structure information and estimates of minimum population numbers.

Team member primarily responsible for carrying out this procedure is Knight.

PROCEDURE 2. Incorporate field observation data on bears from Job 1. All data from Job 1 will be evaluated for accuracy and selected data will be used to estimate numbers and recruitment.

Team members with primary responsibility for carrying out this procedure are Basile, Judd, Roop and Knight.

JOB NO. 3. Measure physical characteristics and mortality.

PROCEDURE 1. Obtain and verify all reports of grizzly bear mortality. Reports of mortality from all sources will be collected and verified as quickly as possible.

Team member primarily responsible for this is Greer.

PROCEDURE 2. Process all obtainable bear carcasses, whole or partial, under established laboratory procedures. All carcasses and/or parts will be weighed, measured, and cataloged. Reproductive tracts saved for breeding information, gastro-intestinal tract saved for parasite examination, skeletons cleaned and examined for past injuries, teeth sectioned and examined for age information.

Team member primarily responsible for carrying out this procedure is Greer.

JOB NO. 4. Assemble all data from Jobs 1, 2 and 3 to estimate population parameters for the entire system. All team members will meet at the end of the field season to review all data, compile it, and make estimates of population parameters.

No logistic support required.

STUDY NO. II. Investigation of requirements and use of habitats by grizzly bear within the Yellowstone system.

JOB NO. 1. Locate and delineate habitat used by grizzly bears.

PROCEDURE 1. Trap, instrument and release bears in areas selected on basis of impending habitat changes. One area where a logging sale is scheduled and one area where recreational development is planned have been selected. One other area where logging is planned will be selected. Areas are selected on the basis that:

1. Physical changes in the habitat are planned.
2. Bears are known to inhabit them.

Using standard trapping and immobilizing techniques, up to three bears will be processed in each selected area. Each bear trapped will be fitted with a radio collar and ear tag and then released.

Team members with primary responsibility for carrying out this procedure are Judd, Roop, Knight and Greer. Temporary personnel will be used as required.

PROCEDURE 2. Trap, instrument and release bears in selected areas where some background information exists on a known bear population.

Up to eight areas have been or will be selected where bears will be processed as in Procedure 1. Areas are selected on the basis that:

1. Bears are known to inhabit the area.
2. The area is representative of types of habitat that appear to be significant within the study area.
3. Priorities are given to areas where other management activities may have an influence on the grizzly bear.

Team members with primary responsibility for carrying out this procedure are as in Procedure 1.

PROCEDURE 3. Monitor the activities and range of instrumented bears. Instrumented bears will be radio-tracked primarily from fixed wing aircraft. Tracking flights will be made three times each week or as flying conditions permit. Aerial tracking will be supplemented by ground tracking as opportunity permits. In addition to locations, information will be recorded on food habits, denning activities, habitat preferences, breeding activities and responses to outside influences.

Team members primarily responsible for carrying out this procedure will be Judd and Roop with Knight assisting with aerial tracking as needed and Greer assisting with ground tracking as opportunity permits. Temporary personnel will be used when possible.

PROCEDURE 4. Determine areas of grizzly bear use through observations made in other portions of the study area. Observations of grizzly bears and sign of grizzly bear use by Team personnel will be compiled to supplement radio-tracking data and to help determine areas of future intensive effort.

Team members primarily responsible for carrying out this procedure will be Basile and Knight.

JOB NO. 2. Measure quantitatively and qualitatively the habitat used by grizzly bears.

PROCEDURE 1. Begin vegetative and faunal site analysis on areas where grizzly bear seasonal and/or home ranges have been previously delineated and are now being studied. Two-man teams will delineate plant communities on aerial photographs. List plant species and estimate percent canopy cover for each as a measure of abundance. Each plant community will be designated according to its climax habitat type. Faunal estimates will be made for each plant community using procedures to be determined after consultation with experts in the field. Data on vegetation and fauna along with topographic features will be recorded and plotted for each grizzly bear home range.

Team members with primary responsibility for carrying out this procedure are Basile and Roop using temporary personnel as required.

PROCEDURE 2. Do vegetative and faunal site analysis on selected areas where logging sales are scheduled. This is principally the same as Procedure 1 except that it will center around the area to be logged and measurements will be redone after logging is completed. Basile and Roop using temporary personnel as required.

PROCEDURE 3. Analyze the ecology of selected habitat features believed to be seasonally important to grizzly bears. Under this procedure, selected studies will be carried out on:

1. Whitebark pine cone production
2. Cutthroat spawning runs
3. Huckleberry production
4. Recreational impacts

Team members with primary responsibility for carrying out this procedure are Basile and Knight using temporary personnel and contracts as required.

PROCEDURE 4. Monitor food habits through scat analysis. Feeding site analysis will be made when opportunity exists. All personnel in the field will collect grizzly bear scats as encountered. Scats will be sent to the Wildlife Laboratory at Bozeman for separation and identification. One graduate student project on food habits related to specific habitat types will be supported by the Team. Greer will be primarily responsible for carrying out this procedure.

STUDY NO. III. Project coordination and data compilation.

JOB NO. 1. Coordination of communications and compilation of data.

All information coming into the Team headquarters will be compiled, filed and distributed to all Team members. Selected information will be sent to appropriate managing agencies as it is compiled.

Bear Mgt. Meeting
Sept. 6th, 1969
Leopold Report

Letter to Hewes
Letter to White
Garbage records
Letters regarding changes in report
Frank's letter to White
Cahalane's paper
John's memos to Loveless
My notes regarding Anderson's policy of no marking
1961 Bear Mgt. policy

1961

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

May 31, 1961

Memorandum

To: District Managers

From: Superintendent

Subject: Bear Management Policy and Guideline

FO-15-60, dated July 6, 1960, sets forth all aspects of the bear management policy in the National Parks. It stresses the fact that visitors are entitled to see bears in the wild and not as they feed in garbage cans or at the traffic hazard "bear jams" along the scenic Park roads. In addition, we have an obligation to provide reasonable protection for the public against injury and property damage and the responsibility to make every effort to keep the bear as natural as possible for his own welfare. Also, we face the very real and continuing threat of tort claims if the Service is negligent in meeting its responsibility.

This policy statement supersedes Circular No. 4, dated April 30, 1958, and the Chief Ranger's memorandum of August 17, 1960, which implemented action here in Yellowstone on FO-15-60. A copy of the memorandum is attached for ready reference. Familiarize yourself with its details.

Also attached is a summary by area of last year's bear incidents and action taken. Records of all bear incidents, actions and recommendations should be carefully recorded on forms provided.

We must continue to warn trail travelers about the danger involved in grizzly country.

This memorandum and its attachments will remain in effect until the contents are incorporated in the Yellowstone Operating Procedure.

Lemuel A. Garrison
Superintendent

Attachments

BEAR

I. Where possible, remove causes of bear concentrations:

A. Provide for frequent garbage pickup.

B. Continue efforts to develop bear-proof garbage cans.

C. Experiment with bear repellents.

D. Maintain roadside bear warning signs.

E. Have literature and signs in campgrounds dealing with bear dangers and hints for food storage.

II. Visitor Education and Enforcement Action:

A. Maintain positive signs at each entrance station and on entrance roads warning visitors that bears are dangerous and destructive and that regulations are enforced.

B. Retain the dangerous animal warning on face of Park broadside.

C. Continue use of bear handout to visitors at entrances and in campgrounds.

D. Continue bear warning messages at appropriate contact opportunities.

E. Positive action and followup.

(1) All violations of the feeding regulations will be handled in a firm but tactful, courteous and dignified manner through direct contact with the violator.

(2) A written warning will be issued to each violator contacted. The regular violation warning form (No. 10-33) will be used with a report of the number of warnings forwarded monthly to the Biologist's office on the regular monthly statistical report.

(3) A written warning will suffice for the Park visitor on the first offense, except in aggravated cases such as failure to cooperate by ceasing to feed or molest bear.

(4) A second warning to a Park visitor will result in mandatory court action.

(5) Employees working in the Park, either for the Government or the concessioners, will be oriented on the bear problem and the enforcement action to be taken on violations at the time they report for work. Thereafter court action will be mandatory when employees are found disregarding the regulations.

(6) Action must be taken at bear jams to alleviate traffic congestion. Warnings or violation notices are in order.

(7) Absolute enforcement of exclusion of public from dumps and other places of grizzly concentration.

III. Bear Control Action:

A. Mark and remove bears from roadsides and campgrounds as they appear in early summer, filling all requests from public parks and zoos as soon as possible.

1. By live trapping.

2. By use of drugs.

B. Destroy all bears which:

1. Return to roadsides or campgrounds after being marked and moved out.

2. When unable to handle the situation quickly any other way.

The use of drugs is preferable to shooting, especially in populous or roadside areas.

IV. Responsibility for bear control. Direct responsibility for control will rest with the Sub-District Ranger. The District Ranger, District Manager and the Park Management Biologist will necessarily review bear incident reports to insure that Sub-District Rangers are assuming this responsibility by taking effective action. This responsibility and authority should not be delegated beyond permanent personnel who have specific training in bear management.

C

O

P

Y

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
Washington 25, D.C.

In reply refer to: N16-RAF

July 6, 1960

FO-15-60

Memorandum

To: Washington Office and All Field Offices

From: Acting Director Tolson

Subject: National Park Service Bear Management Program and Guidelines

The attached statement relates to the management of bears in areas administered by the National Park Service.

Before the procedures were approved, comments were requested from all parks which have to manage a bear population. All suggestions were given careful consideration and many of them were adopted. The uniform and strict application of this program is aimed at a reduction in the number of personal injuries and the amount of property damage caused by bears as well as to re-establish them in a natural wild state.

This memorandum and its attachment will remain in effect until the contents are incorporated in the Wildlife Management Handbook.

/s/

Hillory A. Tolson
Acting Director

Attachment

C

O

P

Y

NATIONAL PARK SERVICE
BEAR MANAGEMENT PROGRAM AND GUIDELINES

C
O
P
Y

The black bear is native to much of the United States, and several areas of the National Park System have well-established populations. Grizzlies occur in a limited number of parks and monuments in appreciable numbers. Embodied within the Organic Act of 1916 is a fundamental objective to conserve the wildlife and provide for its enjoyment by future generations unimpaired. Through this Act, the Service has the responsibility to manage all native wildlife in a manner that will leave the animals in normal numbers and in a natural condition. Originally the bears were self-reliant, but through inadequate management techniques over a period of years many have lost these desirable traits. We are now confronted with the problem of re-establishing a wholly wild population.

Because of a variety of man-made causes, the bear in certain areas has become a nuisance animal. This condition is one of long standing. To obtain relief from this troublesome situation, serious consideration shall be given to a prompt and lasting solution. We must remember that the park visitor is entitled to the experience of viewing this animal in the wild and not as it feeds in garbage cans or at the traffic hazard "bear jams" along the scenic park roads. In addition, we have an obligation to provide reasonable protection for the public against personal injury and property damage and for the welfare of the bears. Also, there exists the very real question of tort claims being filed if the Service is negligent in meeting its reponsibility.

Wildlife Policy

> "The animals indigenous to the parks shall be protected, restored if practicable, and their welfare in a natural wild state perpetuated. Their management shall consist only of measures conforming with the basic laws and which are essential to the maintenance of population and their natural environments in a healthy condition ."

The above is the basic wildlife policy as stated in the Administrative Manual. However, some species, under certain conditions, must be subjected to exacting management procedures. The black bear is an example which now requires strict management to restore and maintain wild behavior characteristics thus assuring its welfare and compatible area occupation with man.

C
O
P
Y

C O P Y

The plan of action for parks already grappling with visitor injuries, bear feeding, and bear damage to public and private property must be approached differently from that required for areas where the problem is only beginning or nonexistent. Parks with the more serious problems are expected to adopt precise, drastic, and corrective management plans.

We must strive to establish and retain over-all conditions whereby bears will be presented to the public in normal numbers and without artificialities. This, in some parks, will require positive and aggressive measures in the beginning. Once the "spoiled" bears are removed and those practices or conditions that cause the "spoiling" have been eliminated, we will then have a situation where a wild population in keeping with the original and fundamental concept of parks can be maintained. However, even with all these precautions, a few bears may still develop wrong habits and a continuing program for removal of such animals will be required. We must strive for pleasant and safe joint occupation of the National Parks and Monuments by man and bear. Continued prevention of the development of bad habits must be carried out.

It is stressed that the visitors are entitled to see park wildlife in its natural habitat and in numbers compatible with normal food supplies and cover. Unavoidably, some of the original features of the habitat may have been altered, but in no park or monument have these changes been severe enough to require a bear population to depend on artificial feeding to survive. The excessive and unnatural bear populations concentrated along the park roads and in the campgrounds are not a proper display of wild animals for the visitor.

In areas where personal injuries or property damages occur each year, positive management programs must be adopted which will eliminate or satisfactorily reduce such incidents. In the parks that have a population of bears which as yet has not developed troublesome behavior patterns, management will consist of practices deisnged to prevent the development of nuisance characteristics or tendencies.

The following guidelines, diligently applies, will bring about a satisfactory solution to the "bear problem."

Management Guidelines

1. Remove all garbage promptly and regularly in such a way and at such times that bears will not depend on it as an easy

C O P Y

and customary source of food. The begging habit must not be encouraged through poor housekeeping on the part of the Service. Collection of garbage from use areas in the evening to prevent feeding opportunities for the bears during the night is one means of reducing the bear problem.

2. Many incidents resulting from bear feeding may stem from lack of information on the part of the visitor. All reasonable means should be used to inform, caution, and restrain the visiting public, and all employees in the park.

3. The feeding of bears by employees, or any other acts by employees that tend to encourage bears to aggressively frequent any specific area shall not be tolerated. All employees shall be informed of this policy and positive enforcement measures shall be taken in the event an employee violates the bear feeding regulation.

4. Revitalize warning signs and literature. Stress the problems at all visitor contact sites. Give visitors instructions in the proper storage of food to reduce temptation to the bears. Warnings, instructions, and general information on the bear situation can be printed on such things as menus, match folders, store receipts, and garbage cans. Instructions to the visitors can be placed on picnic and campground tables. This campaign should be directed as guidelines of behavior for the visitor and not as a "scare program" that will reduce park visits and visitor enjoyment.

5. Remove potentially hazardous bears, and habitual beggars, and those that damage property in search of food. Live trapping is a well-established method; however, recent developments point with favor toward the use of immobilizing drugs fired from a dart gun. Animals that return and continue their troublesome habits after having been hauled away one time must be dealt with promptly and effectively. Prompt and effective action shall be taken to prevent the development of a "bear problem" in areas that have the potential hazard.

6. Remove by shooting those known and identifiable rogue bears that cannot be transplanted promptly and efficiently by trapping or by drugs. Superintendents, at their discretion, can authorize park rangers to destroy an individual bear in any emergency or after a verified report of a personal injury. This does not

COPY

authorize the indiscriminate destruction of the "good" as well as the "bad" bears of the park. Every effort must be made to determine the identity of the offending bear or bears and action directed against them only. Humane treatment is essential. If a female bear with young cubs must be destroyed, proper disposition or care of the cubs shall be accomplished.

7. When a bear is to be removed by shooting, it should be done discreetly and with as little public attention as possible. We must realize, however, that such a positive approach to the problem will cause some visitor reaction that may or may not be friendly. When circumstances dictate that shooting be done publicly, a sound explanation for such action must be given.

8. When possible, eliminate troublesome bears prior to arrival of peak visitor loads. Such programs may also be accomplished immediately following season of greatest use.

9. Based on established policy, rules and regulations have been promulgated and they should be enforced vigorously as an aid in discouraging bear feeding by park visitors. The decision as to whether the offender should be cautioned or given a violation notice (Form 10-46) will depend on the circumstances surrounding the incident. In particular, the offender's prior knowledge of the hazards and regulations should be considered. To habitually tolerate infractions of the rule that prohibits feeding is a disservice to both the animals and the visitors. Lax enforcement will also lead to an increased number of incidents, injuries, and tort claims. Every visitor observed feeding bears should be contacted immediately and be informed of the dangers involved and of the regulations prohibiting bear feeding. A notice may be issued directing the individual to report to the district ranger or the chief ranger to explain his actions. This procedure shall not prohibit the repeating or flagrant violator from being cited to appear before the United States Commissioner. Final decision as to the type of action to be taken should be based on the principles prescribed in the National Park Service Law Enforcement Handbook.

10. Patrol cars should be equipped with loud speakers, preferably the hand-held megaphone type. This equipment can be effective in breaking up "bear jams" and warning people in the vicinity of bears to refrain from feeding them and suggesting that withdrawal be made to a safe location.

11. A refuse container unit (W.O.D.C.--P.G. 9064) has been approved by the Director, but this unit is designed only to

prevent tipping. Each area with an existing or potential "bear problem" should devote time and thought to the development of a satisfactory bearproof garbage container. The experimental use of sheet metal enclosures or buildings with positive self-closing and locking doors should be considered for garbage can storage in campgrounds. Perhaps as many as 15 or more campsites could be served by one structure if properly located. Such facilities if well planned would be less objectionable than a series of garbage cans subject to being tipped over and the contents scattered.

C O P Y

C O P Y

Received Nov. 14, 1969

A Bear Management Policy and Program for Yellowstone National Park

A report to the Director by the Natural Sciences Advisory Committee of the National Park Service, as a result of a meeting in Yellowstone National Park, September 6 and 7, 1969.

A. Starker Leopold, Chairman
Stanley A. Cain
Charles E. Olmsted

PREAMBLE

Yellowstone has an estimated population of about 250 grizzly and 500 black bears. Management goals, consonant with the administrative policies of the National Park Service, may be summarized as follows:

1. To maintain populations of grizzly and black bears at levels that are sustainable under natural conditions as part of the native fauna of the Park.
2. To plan the development and use of the Park so as to minimize conflicts and unpleasant or dangerous incidents with bears.
3. To encourage bears to lead their natural lives with minimum interference by humans.

The present meeting was called because, in fact, the above goals of bear management have not been fully met. A long history of dumping garbage and refuse in open pits has attracted many grizzly bears and substantially altered their natural wild habits. Inadequate trash cans in earlier years became habitual sources of food for both grizzly and black bears, and this in turn led to the bears learning to raid food sources in camps and automobiles. Roadside feeding of black bears by visitors, while against Park regulations, has persisted to the extent that many individual bears have become confirmed panhandlers. Personal injuries and cases of property damage are occurring

with such frequency that a number of bears have had to be destroyed. The problem has assumed critical significance -- legal, political, and otherwise. The National Park Service must act decisively to correct this state of affairs. The report which follows suggests a possible sequence of management steps to begin rehabilitating the bears to a wild, natural existence.

This Advisory Committee does not pretend specific competence in judging the ethology and psychology of bears. However, we had the advantage of published and verbal testimony of experienced park administrators and bear biologists including the following Consultants for our Yellowstone meeting: John and Frank Craighead, Albert Erickson, and Frederick C. Dean. The recommendations here presented were distilled from the collective testimony of all who contributed to the meeting.

PROCEDURES

1. Garbage disposal

The ultimate objective agreed upon by all participants, is the incineration or sanitary disposal of trash and garbage in a manner that will completely isolate this food source from bears. Ideally all refuse should be hauled out of Yellowstone National Park for incineration and burial. Future plans for such a program of disposal are being considered now.

But in the meantime, there is disagreement as to the sequence of steps leading to the elimination of garbage from availability to grizzlies. One view is to cut off all garbage quickly, forcing the bears to turn immediately to natural foods. The opposite contention is to phase out garbage feeding over a period of time, "weaning" the bears gradually. The issue hinges on which of these procedures will result in the least number of bears going into camp grounds. Unfortunately, prognosticating how garbage-fed grizzlies will respond to deprivation depends on judgement

rather than data. Much is known about the habits of garbage bears and of wild-living bears, but little is known about the process of transition. In any event, the transition must be made, and everything possible done to protect both park visitors and the population of bears during the process.

Practical budgetary limitations have precluded immediate elimination of garbage. But a start has been made in sorting refuse at Trout Creek Dump and incinerating combustibles. This has led to a modest decrease in grizzly use, with a corresponding increase in bear visitations to Rabbit Creek Dump. There has been an apparent increase in grizzly visitations to camp grounds in the central portion of Yellowstone and increased control of troublesome bears (killing as well as trapping). When Trout Creek dump is completely closed, how will the grizzlies respond? And what will transpire when the other dumps are closed as well?

On the assumption that one reaction of some of the bears will be to gravitate into camp grounds, we suggest the following list of camp ground protection practices.

2. Camp ground protection practices

a. Intensified sanitation. - All trash cans at campgrounds and along roads are now bear-proofed. But there should be increased emphasis on maintaining clean camping areas. Every known procedure and device should be employed to eliminate all smells or materials that might attract bears.

b. Public education and patrol - Much emphasis should be added to the information campaign about camp sanitation and security. Road signs, printed hand-outs, verbal instruction at campfire programs, and enforcement of camp ground regulations should be intensified to assure maximum cooperation of the public. Campers require repeated admonitions to store food in plastic containers, locked in their automobiles.

c. Patrol. - Trained and equipped night patrolmen in automobiles should be assigned to all campgrounds where bear troubles are imminent. Their function would be to urge and enforce sanitation procedures, to detect the presence of bears in campgrounds, to discourage them in every possible way short of inciting anger, and to radio for help if a bear requires removal by drug or other means.

d. Scare devices. - The Park Service should be testing every possible device to keep bears away from campgrounds -- sonics, lights, mace or other gases, repellent odors, etc. These tests should not be conducted at a campground but rather at some isolated point with bait of some kind (carrion, for example).

e. Bear fencing. - Experimental fencing should be tested to seek a bear proof combination. Link fence enclosed with parallel electric wires -- one high, one low -- might be a combination to try. Such drift fence placed across areas where bears gain access to campgrounds might deflect the bear traffic. Funnel exit gates should be provided to permit bears to leave the enclosed area if they should happen to get inside.

f. Carrion feeding. - As a substitute for garbage, carrion might be placed to draw bears away from campgrounds. Dropped by helicopter in outlying districts, the carcasses of surplus beasts (emaciated park ungulates, slaughter house surpluses, etc.) may help reduce the concentration of grizzlies around areas occupied by people, particularly during the transition period of closing the dumps.

g. Closing campgrounds. - If necessary, campgrounds situated in the vicinity of garbage dumps could be closed during the transition period.

h. Relocation of campgrounds. - On a longer scale, the location of all campgrounds should be re-examined to see if some may be poorly located

from the standpoint of bear visitation. Even long after the garbage problem is resolved, some camp areas may naturally attract passing bears. These had best be moved.

3. Study of bear reaction to garbage removal

To guide the development of the bear management program, each succeeding step should be studied concurrently to note reaction of the bears. Investigations should concentrate particularly on the following:

a. Movements of bears already marked or instrumented. Many bears around Trout Creek Dump have been captured and marked. Response of these individuals to elimination of garbage will suggest what problems may arise as other garbage sources are removed.

b. Recording numbers and density of bears at all dumps as food sources are pinched off.

c. Monitoring human contacts with grizzlies, both threatening and casual, at camp grounds and elsewhere during this transition.

It is to be emphasized that these studies are merely adjuncts to an active management program and are no substitute for continuing, long-term research on the grizzly (mentioned later).

4. Dealing with troublesome bears

Despite all precautions, safeguards, and discouragements, some bears will doubtless persist in visiting campgrounds. Initial treatment of these animals is trapping and transplanting. If this procedure fails, and the individual animals prove to be a continuing threat to human lives or property they may have to be destroyed.

a. Transplanting bears. - When a troublesome bear is transplanted, every possible effort should be made to make the initial transplant succeed. If the first release is in wild but hospitable terrain, far from human

habitation, the animal may be successfully acclimated, particularly a young animal. In the past, many trapped bears have been released at convenient points near roads or border stations, where they quickly gravitate back to camp searching. Helicopter transport, though costly, may be one effective way to assure successful transplantation.

b. Destroying incorrigible bears. - In the past ten years, the Yellowstone Park Administration has felt obligated to destroy about 30 black bears and 4 grizzly bears per year. If present plans succeed in eliminating the linkage between bears and human sources of food, this program may drop ultimately almost to zero. But in the transition period the Park should be prepared to eliminate bears that prove to be incorrigible and dangerous to human life. Hopefully, the number will be few and hopefully the men making decisions will take the right animals at the right time and will spare individuals that are capable of rehabilitation. The bodies of such animals as killed should be fully utilized for scientific purposes.

These steps are fully in accord with administrative policies which state that animal control, when necessary shall be undertaken as follows: (1) live-trapping for transplanting elsewhere; (2) scientific research specimens; and (3) direct reduction by National Park Service personnel.

5. Continuing research

During the past 11 years, the grizzly population of Yellowstone has been under continuous study by John and Frank Craighead. Several publications have appeared on the technique of radiotracking and one paper on reproductive biology, but the bulk of the data on grizzly biology accumulated in this study is unpublished and unavailable for the use of public agencies administering grizzly populations. Early publication is urged.

Additional studies have been undertaken in more recent years of both grizzly and black bears in the northern Rocky Mountain region. These investigations should be supported and extended. For example, surveys of the grizzly populations in Wyoming and Montana outside of the national parks should be undertaken jointly by interested state and federal agencies. All possible data should be derived from bears killed during legal hunting seasons. Studies of bear/human contacts undertaken in Glacier and Yellowstone Parks should be continued and extended. A successful future management program of wild bears will call for all the information that can be assembled.

6. Financing the bear program

The emergency program of bear management suggested here cannot be funded out of regular appropriations for Yellowstone Park. Garbage elimination, manpower, helicopter rental, automobile patrol, and experimental materials for fencing or repelling bears will call for a special supplementary budget from the National Park Service. We urge the Director to seek emergency funds for this purpose and to implement plans now for the period of bear emergence from winter quarters in the spring of 1970. An estimate of costs should be obtained from the Superintendent of Yellowstone National Park.

Attending September 6 meeting in Yellowstone

Natural Sciences Advisory Committee

Dr. A. Starker Leopold (Chairman), University of California
Dr. Stanley A. Cain, University of Michigan
Dr. Charles E. Olmsted, University of Chicago
Mr. Sigurd Olson, Ely, Minnesota (absent)

Special Consultants

Dr. Frank C. Craighead, Jr., Moose, Wyoming
Dr. John J. Craighead, University of Montana
Dr. Frederick C. Dean, University of Alaska
Dr. Albert Erickson, University of Minnesota

State Univ. of New York

National Park Service Personnel

Mr. George B. Hartzog, Jr., Director, WASO
Mr. Harthon L. Bill, Deputy Director, WASO
Dr. Robert M. Linn, Chief Scientist, WASO
Mr. Neil J. Reid, Wildlife Management Specialist, WASO
Mr. Lowell Sumner, Consultant-Collaborator, WASO
Mr. Jack K. Anderson, Superintendent, Yellowstone
Mr. Glen F. Cole, Supv. Research Biologist, Yellowstone
Dr. Douglas B. Houston, Research Biologist, Grand Teton
Mr. William J. Barmore, Research Biologist, Yellowstone
Miss Margaret M. Meagher, Research Biologist, Yellowstone
Mr. Richard G. Prasil, Management Biologist, Alaska Field Office

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

December 4, 1969

Dr. A. Starker Leopold
Museum of Vertebrate Zoology
University of California
Berkeley, California 94720

Dear Starker:

I have received the Natural Sciences Advisory Committee's report, A Bear Management Policy and Program for Yellowstone National Park. In view of the information and publications and reports made available to your committee by Dr. Frank C. Craighead and myself, I suggest the following changes be made prior to distribution of your report:

> The statement under Continuing Research at the bottom of page 6, second sentence, is incorrect and misleading, both with regard to the number of publications on our work and the statement that: "but the bulk of the data on grizzly biology accumulated in this study is unpublished and unavailable for the use of public agencies administering grizzly populations". I suggest that your committee alter this sentence to read as follows:
>
> "A number of publications and numerous reports, including a 113-page report, Management of Bears in Yellowstone National Park, have been made available to the National Park Service and other agencies administering grizzly populations. Much data on grizzly bear biology accumulated in this study are as yet unpublished due to the long term nature of the research. Early publication is urged."

Starker, Frank and I can document this statement fully and will do so at your request. The statement in your report is, as I have indicated, incorrect and serves no useful purpose.

Sincerely,

John Craighead

John Craighead

JC:rd
Copies: Dr. Frank C. Craighead
Dr. Charles M. Loveless
Dr. Robert M. Linn

Comments On Starker Leopold's Bear Management Policy Report for Yellowstone National Park

Dear Starker:

I received a copy of "A Bear Management Policy and Program for Yellowstone National Park" on November 14, 1969, a day or so after it had been utilized by the newspapers and considerably later than its release to various individuals and agencies. John and I attended the meeting as consultants yet as the authors of the report, "Management of Bears in Yellowstone National Park (1967)" based on eight (8) years of research, we were not asked to review your report before distribution. In view of this I feel some comments are in order.

In your report you mention that the Committee had the advantage of published and verbal testimony of experienced Park Administrators and bear biologists including John and Frank Craighead. Yet out of a great deal of material presented, only that conforming with pre-established ideas of the situation were utilized. Our eight (8) year research on the population dynamics of Yellowstone Park grizzly bears including 324 censuses totalling 11,340 hours revealed an average population of 174 grizzlies, yet you give the figure of 250 grizzlies in your lead sentence. It seems you should give a reference or authority for this figure. On page 2 the report also states, "Unfortunately, prognosticating how garbage-fed grizzlies will respond to deprivation depends on judgement rather than data. Much is known about the habits of garbage bears and of wild-living bears, but little is known about the process of transition". This statement is incorrect to the extent that it does not reflect the scientific data presented to you and the Committee. A considerable quantity

of material
including graphs showing the effect of deprivation of garbage on the girzzly bears' movement and concentration at garbage sites was presented at the meeting. The effect of deprivation of garbage has been studied for two years and the effect of varying quantities of garbage on grizzly bear ecology studied for a good many years. This material was made available to you. # The report also states, "On the assumption that one reaction of some of the bears will be to gravitate into campgrounds, we suggest the following list of campground protection practices". I believe that the data provided at the meeting revealed that this was not an assumption but a reality. On page 4 under f. Carrion feeding - your report states that, "carcasses may help reduce the concentration of grizzlies around areas occupied by people, particularly during the transition period of closing the dumps" The research data supplied to the Committee by Drs. John and Frank Craighead clearly indicated that experimentation with carcasses had been effectively used to draw grizzlies away from areas occupied by people, thus and should be considered as a management technique. # In section 3, Study of bear reaction to garbage removal, both suggestions a. and b. were made by the consultants in a bear management report made available to the Committee and these investigations have been in practice for a number of years. If a true picture of the situation was desired and also to conform to scientific procedure and ethics, I feel this should have definitely been mentioned in your report. # Under number 4 - b. Dealing with troublesome bears, you mention, "In the past ten years, the Yellowstone Park Administration has felt obligated to destroy about 30 black bears and 4 grizzly bears

THESE UNDERSCORED REPORT REFERENCES SHOULD BE THE SAME THROUGHOUT YOUR REPLY.

per year". I do not think that these are accurate figures on the number of bears destroyed. A reference as to the authenticity of this statement would be highly desirable. Under number 5, Continuing research, I feel that you have completely misrepresented the situation that was carefully explained to you and have used this opportunity to indirectly and unfairly reprimand the consultants for not providing public agencies with the results of our studies. The report states, "Several publications have appeared on the technique of radiotracking and one paper on reproductive biology, but the bulk of the data on grizzly biology accumulated in this study is unpublished and unavailable for the use of public agencies administering grizzly populations". You and your Committee were supplied with a list of published and pending papers and reports. There are four published papers on the technique and results of radiotracking grizzlies and numerous progress reports on the ecology of the grizzly. As chairman of this committee you had access to the comprehensive grizzly bear management report put out by Frank and John Craighead. The Yellowstone Park administration as well as others in the National Park Service had copies of this report and it had been made available to them at least two years in advance of the meeting. The Fish and Game Commissions of the three states (Idaho, Montana, and Wyoming) had copies of this report as did also the Forest Service and Fish and Wildlife Service and other interested public agencies. This statement is thus completely untrue and misleading. Worse yet is that you knew this statement to be incorrect yet included it in a report distributed to many people in the scientific community. A still more glaring bias bordering on personal discrimination was the lack of reference to the publication, "Grizzly Bear Management in Yellowstone National Park." It seems almost unbelievable and

certainly contrary to scientific ethics that a Committee Chairman would be aware of and utilize the contents of a paper so relevant to the report and not make mention of this fact. There is very little material in your report that was not first put forward in the management report mentioned. # On page 7, there is the statement, "A successful future management program of wild bears will call for all the information that can be assembled". Such a statement assumes that there are two types of bears (wild and those that are not wild). In the case of grizzly bears, this assumption is not borne out by the facts or by the material presented to the Committee. The actual situation is that the grizzly bears have two behavior patterns, one when they are at dumps and in the vicinity of man and his works and another when they are in the wild and away from man. Most of Yellowstone's grizzlies visit dumps and compgrounds thus there is but a single population exhibiting different behavior patterns depending on whether they are in the vicinity of man or far removed. To assume there are two distinct ones could be disasterous.

On a basis of the forgoing comments, I feel that your report needs revision and most certainly should not be circulated until striking errors are corrected.

Frank Craighead

Phoned Starker regarding these comments

February 4, 1970

Mr. James B. White
Director
State Game and Fish Commission
Cheyenne, Wyoming 82001

Dear Jim:

At your suggestion, I am writing you some comments on the Bear Management Policy and Program for Yellowstone National Park (Leopold Report).

John and I are in general agreement with the National Park Service management goals (1, 2 and 3) as stated on the first page of the management program. We disagree, however, with some sections, both as to correctness of content and to desirability regarding management procedure. In addition, we were not pleased with the way the material we presented was used in the report nor with the way the report was distributed. In my opinion a report of this kind that lent heavily on the findings and testimony of consultants including John and myself (unpaid) should have been sent to us for review and revision before being distributed. The manner in which the report was written and circulated utilized my name and John's to give support to a program that we had no chance to review and with which we were not in complete agreement.

John and I took exception to a statement in PROCEDURES (5) Continuing Research, page 6. The report completely misrepresented the situation and was used as an opportunity by the Park Service to indirectly and unfairly reprimand the consultants (John and myself) for not providing public agencies with the results of our studies. The report stated, "Several publications have appeared on the technique of radiotracking and one paper on reproductive biology, but the bulk of the data on grizzly biology accumulated in this study is unpublished and unavailable for the use of public agencies administering grizzly populations". The committee was supplied with copies of published papers and a list of published and pending papers and reports. The Park Service had been supplied with numerous progress reports. They had access to our 113 page comprehensive grizzly bear management report and

the Yellowstone Park Administration as well as others in the National Park Service had copies of this report and it had been made available to them at least two years in advance of the meeting.

The Fish and Game Commissions of the three states (Idaho, Montana, and Wyoming) had copies of this report as did the Forest Service and the Fish and Wildlife Service and other interested public agencies.

This statement is completely untrue and misleading, but it was included in the report and distributed to many people in the political and scientific communities before we ever received a copy of the report. In the report, there was also no reference to the publication, "Grizzly Bear Management in Yellowstone National Park". It is certainly contrary to scientific ethics for a Committee to be aware of and utilize the contents of a paper so pertinent to the report and not cite it as a reference. There is very little material in the Leopold Report that was not first put forward in the Management Report mentioned.

I telephoned A. Starker Leopold concerning this particular section of the report and John wrote him a letter. The result was a rewrite of this particular section, Continuing Research. However, considerable harm had been done before this correction was made. Dr. Linn, Chief Scientist, National Park Service, would not go along with making this change until he was instructed to do so by Dr. Leopold.

The report mentions that the Committee had the advantage of published and verbal testimony of experienced park administrators and bear biologists including John and Frank Craighead. Yet, out of a great deal of material presented, only that conforming with pre-established ideas of the situation were utilized. Our eight year research on the population dynamics of Yellowstone Park grizzly bears including 324 censuses totaling 11,340 hours revealed an average population of 174 grizzlies, yet the report gives the figure of 250 grizzlies. If this figure is to be used, it seems that some reference or authority for this figure should be cited.

On page 2 of the report, it states, "Unfortunately, prognosticating how garbage-fed grizzlies will respond to deprivation depends on judgement rather than data. Much is known about the habits of garbage bears and of wild-living bears, but little is known about the process of transition". This statement is incorrect to the extent that it does not reflect the scientific data presented to the Committee. A considerable quantity of material including graphs showing the effect of deprivation of garbage on the grizzly bears movement and concentration at garbage sites was presented at the

meeting. The effect of deprivation of garbage has been studied for two years and the effect of varying quantities of garbage on grizzly bear movement for a good many years.

The report also states, "On the assumption that one reaction of some of the bears will be to gravitate into campgrounds, we suggest the following list of campground protection practices". The data provided at the meeting revealed that this was not an assumption, but a reality. Bears were shown to have moved from the dump areas into campgrounds.

On page 4 (f) Carrion feeding, the report states that, "carcasses may help reduce the concentration of grizzlies around areas occupied by people, particularly during the transition period of closing the dumps". The research data supplied to the Committee by Dr's John and Frank Craighead clearly indicated that carcasses had been effectively used experimentally to draw grizzlies away from areas occupied by people and thus should be considered as a management technique.

Under section 4 (b) Destroying incorrigible bears, the report mentions, "In the past ten years, the Yellowstone Park Administration has felt obligated to destroy about 30 black bears and 4 grizzly bears per year". I do not think that these are accurate figures on the number of bears destroyed. A reference as to the authenticity of this statement would be highly desirable.

On page 7, there is a statement, "A successful future management program of wild bears will call for all the information that can be assembled". Such a statement assumes that there are two types of bears (wild and those that are not wild). In the case of grizzly bears, this assumption is not borne out by the facts or by the material presented to the Committee. The actual situation is that the grizzly bears have two behavior patterns - one when they are at dumps and in the vicinity of man and his works and another when they are in the wild and away from man. Most of Yellowstone's grizzlies visit dumps and campgrounds. Thus, there is but a single population exhibiting different behavior patterns depending on whether they are in the vicinity of man or far removed. To assume that there are two distinct ones and control accordingly would be disasterous, particularly if the Park Service recommendation for protection and management prepared in April of 1969 is followed. The recommendation is, "Recognize that bears which have become habitual users of artificial food sources, campgrounds and other developed areas can be progressively replaced by other animals that would not learn to habitually use such foods".

Jim, these are some of my criticisms of the Leopold Report. There are a number of indications that this report was probably roughed-out by Park Service personnel and edited and approved by Leopold. Leopold certainly made no effort to correct errors and inconsistencies, some of which he knew existed. I believe that the purpose of the report was to still public clamoring and to infer that the report was one in which there was a consensus of agreement among all those present including the consultants or specialists on bear ecology. I know that Dr. Erickson felt the same way about this report as did John and myself. The other purpose of the report, I feel, was to obtain appropriations for bear control in Yellowstone National Park. In general, I was disappointed at the way the meeting at Mammouth was conducted, particularly in view of the promises that were made to us before attending. I was also disappointed in the way the report was prepared and released without any opportunity by the principal contributors of information to review the report. I was also disappointed at the close of the meeting when Dr. Leopold asked Superintendent Anderson what he would do differently in bear management in Yellowstone Park if he had all the money he needed for bear management. Jack's reply was that we would just keep on doing the same thing that we are now doing.

I have given you as honest and as objective an opinion of this report as I can and I would appreciate it if you would treat it confidentially. Thank you.

Sincerely,

Frank C. Craighead, Jr.

FCC,Jr/pjf

Herrero

Frank

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

December 15, 1969

Dr. Stephen Herrero
Environmental Sciences Center
The University of Calgary
Calgary 44, Alberta, Canada

Dear Steve:

I have carefully read your paper, "Human Injury Inflicted by Grizzly Bears", and I have a number of specific suggestions to make. I think it is important to inform the public on this subject; I am not so sure that it is a subject for scientific analysis. I am concerned about the validity of some of the information that you have used; opinion seems to outweigh fact.

As you know, the Park Service records are not the best in the world, and in our dealings with both Cole and Martinka, our research team has been greatly disturbed with their manipulation of both records and findings and their lack of professional ethics. I cannot honestly criticize your paper without criticizing some of your sources of information. I assume, therefore, that this letter will be treated as confidential with respect to the personalities involved. I am being candid about Cole and Martinka because I think you should know my views in order to properly evaluate my comments and your data.

We know that Park biologists have manipulated both the control-kill records in Yellowstone and the campground capture records during the past two years in order to support their management program. They have deliberately misrepresented our program and research efforts. We also know that Cole has deliberately misrepresented the garbage situation at Trout Creek. An honest assessment of this is essential to understanding the present bear problems in Yellowstone. We have kept accurate records on the amount of garbage that has been dumped there in the last two years, and our figures do not even closely agree with the figures Cole is using. We know they have made no "on the ground" measurements. There are many other incidents that I could give you, but my intent here is only to let you know that I place very little faith in either the data or the scientific integrity of Cole and Martinka. I recognize this is a strong statement, but I can thoroughly back it with evidence.

Cole's threat of getting us out of Yellowstone

I challenged Cole on the Glacier report documenting the deaths of two girls. This report was Cole's responsibility, and he admitted that it was a "whitewash" job but that it was necessary to protect the Park Service from litigation, and furthermore he indicated that if Frank and I didn't support the N.P.S. report publicly, we would be harassed in our work in Yellowstone.

Now with regard to some of the detailed suggestions --

On page 3, I would tend to question Riegelhuth's statement of the minimum spacial needs for maintaining a grizzly bear population. I would be inclined to delete the 1000 figure and simply say "large wilderness areas are necessary". Also, on page 3, I would question the ratio of backcountry hikers to injuries inflicted by grizzly bears. The question that comes to mind is what is a backcountry hiker, and does the figure of 142,000 backcountry hikers for 1967-68 represent those that have actually gotten 10 to 15 miles from a major developed area or road, or is it simply the number that have registered in campgrounds or who have possibly taken short excursions?

In the last paragraph of page 3 where you discuss Moment's views on grizzly bears, I think it would be well to point out that it would be impossible to eliminate grizzly bears from either Glacier or Yellowstone National Parks without also eliminating them from all of the adjoining forest areas. This is obviously both impractical and undesirable. Our movement data show that the Yellowstone grizzly population is by no means confined to Yellowstone National Park. Many marked animals have been shot or observed miles outside of the Yellowstone boundaries.

On page 4, first paragraph, where you state "The defenders of the grizzly stress the need for improved management and greater understanding of the ecology of the species. . .", you indicate that responsible park personnel and other scientists have begun to implement this goal. Both Frank and I contend that the management practices now being carried out in Yellowstone National Park are not based on scientific data but on administrative apprehension, and that the current practices will reduce the grizzly population to very low levels and possibly could reduce the population to a critical level. The present Park management is based on two false premises made by Cole and presumably Superintendent Anderson:

1. That there are two distinct populations of grizzlies -- those that feed on garbage and are therefore believed to be dangerously man-conditioned and those that reside in the backcountry and are so-called "wild" grizzlies;

2. That by drastically and rapidly reducing garbage at Trout Creek and other disposal areas grizzlies feeding on garbage will be forced to turn to "natural" foods and will eventually adjust to "wild" conditions or they will be eliminated.

Data gathered over the past 11 years strongly refute these two hypotheses as practical management guides.

The Yellowstone Park administration has insisted on pursuing these goals in spite of overwhelming data presented in reports, conversations, and meetings with us showing that this is not a wise course and that it cannot

be supported by the findings of our study. This type of management will quickly and eventually funnel a large portion of the grizzly population into campgrounds where they become a problem and are destroyed. With this type of management it is conceivable that the Yellowstone grizzly population could be reduced to critical levels. Last year the control-kill was double that of the average for the past ten years. We have urged a slow phasing out of garbage dumps accompanied by a detailed study of the movement of marked bears in response to this change. The Park administration has rejected this and taken very deliberate steps to prevent our research group from scientifically recording the changes that have occurred.

On page 5, 3rd paragraph, with regard to visitor density as it relates to grizzly bear attacks, you have indicated there are many other variables other than visitor density that could determine the number of personal injuries or bear-man contacts. Our evaluation of this situation in Yellowstone did not show a high correlation with Park visitation. There may be one, but if so, it appears to be masked by the effect of zoning. If I were you I would be inclined to delete this information for lack of good supporting evidence.

I think the portion of your paper relating human activities associated with attacks is the strongest part of your paper and constitutes the most unique contribution. However, there are some statements to which I would have to take exception and which I suggest you consider altering or deleting prior to publication.

> First, on page 6, your statement "grizzly sow with cubs are known to defend areas where they and their families feed and live" -- observations we have made in Yellowstone both in developed areas and in the backcountry lend absolutely no support to the statement that grizzlies are territorial. Thousands of hours of radiotracking have, on the contrary, shown that grizzlies are highly social animals that may defend food sources for a time but will eventually permit communal feeding, that the females do not even defend their dens against certain other females, and that there is no evidence to support the defense of an area. We have come to this conclusion from over 13,000 observations of individually color-marked animals throughout the Park and from thousands of man-hours of radiotracking grizzlies in the backcountry. I have questioned Cole on Martinka's so-called "defense reaction", and he has not been able to provide any reputable scientific supporting data. I think you would be sticking your neck way out to rely on Martinka's contention that grizzlies are territorial.
>
> The second paragraph of page 6 seems to imply that because grizzly cubs can't climb to avoid potential danger the sow will stand her ground and defend them. Actually, young grizzly cubs can climb trees quite readily and do so in critical situations. However,

since young grizzly cubs can run at a very rapid rate, both they and the sow usually avoid danger by fleeing unless they have been suddenly startled at very close range. I don't believe the female grizzly's tendency to attack on occasion has any relation to the fact that the cubs may not readily climb trees. I believe it has much more to do with the distance at which the sow is startled or feels threatened. I think the major difference between defense and attack behavior of black bears and grizzlies is more readily explained by the fact that the grizzly as a species, whether male or female, is a far more aggressive animal than the black bear.

With regard to the speed of grizzlies, page 7: we have timed grizzly bears over measured distances and know that they can run 30 miles per hour, but I wonder what authority you have for the statement on page 7. To my knowledge there have been very few accurate calculations of the speed of grizzly bears.

Reference page 8, first paragraph -- "The human food association of Yellowstone's grizzlies probably contributes very significantly to the high injury rate" -- Steve, this statement certainly needs a great deal of qualification. Our studies show that grizzly bears that feed at garbage dumps that are infrequently visited by people are not normally conditioned by human scent. Under such conditions the grizzly in Yellowstone does not associate its feeding activity directly with human beings. There appears to be little or no association with humans at the feeding areas that could condition a grizzly to lose its normal fear of man and that this might be correlated with high injury rate to humans. It may condition the grizzly to seek this type of food, or for that matter, any type of food, elsewhere when deprived abruptly of such a food source, but this practice does not in itself make a grizzly appreciably "less wild".

Our data show that grizzlies in Yellowstone can be broadly divided into two types: those that feed at the large garbage disposal areas during part of the year, and those that occasionally or habitually visit camp grounds in developed areas. The number of truly backcountry grizzlies are very few if any.

We have found that grizzlies in Yellowstone have two basic behavior patterns -- one when they are at dumps and in the developed areas, and another when they are in regions away from man. Most of Yellowstone grizzlies visit garbage dumps and some visit campgrounds. Thus there is but a single population exhibiting different behavior patterns depending on whether they are in the vicinity of man or far removed. We have not found a high injury rate associated simply with bears that feed at garbage disposal areas. There is a high injury rate associated with bears that habitually frequent campgrounds and particularly a high rate with grizzlies that frequent developed areas and feed in a situation where they directly associate food with man. This is the situation that has occurred frequently in Glacier. In

High injury rate

Food assoc.

In these cases the bear becomes conditioned to feeding in the presence of humans and in some cases they actually accept food directly from human beings. This situation is entirely different from one where the bears feed in isolated disposal areas or even feed in disposal areas where human beings may occasionally be present in vehicles. It is a mistake to lump the two situations since the conditioning of the bear to human beings is quite different in the two situations.

The statement in the second paragraph on page 8 -- that humans injured while sleeping or camping were usually victims of bears that had fed on human garbage or food -- is, I think, misleading and would be very difficult to support scientifically. I think it would be much more accurate to say that humans injured while sleeping or camping were usually victims of grizzly bears that had been conditioned by feeding or being fed in the presence of human beings. This is exactly what has occurred in Glacier, and this applies also to those attacks that we have thoroughly documented in Yellowstone. In other words, it is not the fact that grizzlies feed on garbage that makes them potentially hazardous, but feeding in campgrounds or being fed at chalets or feeding under situations where there is a very close and direct relation to the presence of human beings is what conditions the bear to humans and makes him a potential hazard. I am not attempting to justify the retention of isolated garbage dumps for grizzlies; eventual Park sanitation is a must. However, I will contend that grizzlies feeding at these sites are normally not conditioned to lose their respect for humans. For every observation to the contrary, I could site hundreds that indicate otherwise.

In the last paragraph on page 8, the important point is that in every incident in Glacier the offending bear was known to have fed on garbage and was highly suspect of having done this in the presence of human beings. Thus the bear had learned to associate the presence of human beings with the attainment of food. This creates an extremely dangerous bear. The Park Service biologists and those that investigated the Glacier killings knew this to be true and yet deliberately deleted it from their reports. This fact, however, is something that the public should know, and it is something that the administrators must face up to. Anyone with any first-hand knowledge of the Glacier situation can confirm this. Olsen did so very forcefully in his Sports Illustrated article.

A little further on you state that the only instance of a grizzly partly devouring a human in a national park was attributed to a bear in Glacier known to have fed on garbage. Steve, I think it would be much more accurate to state that it was attributed to a bear in Glacier known to have been fed nightly (or that probably had been fed nightly) at a challet in the close proximity of human beings. The point again is that it is not garbage feeding per se, but under what conditions the bear feeds on the garbage or handouts.

On page 9, second paragraph, reference to grizzlies charging: Grizzly bears frequently charge one another without contact to establish dominance. We have

observed this many, many times. They may exhibit the same behavior in relation to a human being, particularly if they have sighted the human being but have not scented him. It is difficult to speculate on the course of action we should follow when threatened by a grizzly. However, I think you are safe in stating that it is unwise to run or retreat hurriedly. In such a situation, if the human can move slowly so that his scent is carried to the bear before the animal has approached too closely, it will normally cease the bluffing tactics and retreat.

Last paragraph, page 9, where you state "Some grizzlies, especially sows with cubs, may charge immediately if a human is sensed nearby, and terminate the charge with contact", you referred to this as a "defense reaction". Are you not referring to the action of a bear within a "critical defense distance"? A grizzly feels threatened when it suddenly encounters a human being at a close distance. This distance varies with individual bears in different circumstances, but the behavior of the bear is predictable. It will attack when threatened within its critical defense distance. When this occurs it is then a defense reaction, and there is evidence that it is automatic, not voluntary, on the part of the bear.

On page 10, first paragraph, I would again question the statement about the bear attacking because it has learned to associate human odor with food or garbage. This may occasionally occur, but the important point as I see it is that the grizzlies that become "nuisance" bears have learned to associate food and feeding with the presence of human beings, not simply with food that contains the human odor. I am not sure that it would be possible to demonstrate that a bear feeding on bacon or fish, cantalope, butter, or other goodies that have strong odors, smells human odor with the food, and then associates the food with the human odor and thereby loses its innate fear of humans. The human odor may be completely masked out in this type of situation.

Third paragraph, page 10, you refer to playing dead, stating that this appears to be an effective way of warding off a fatal grizzly attack. There is evidence that seems to support this, and I think there is behavioral data to suggest it is probably valid. When a human being assumes a submissive posture (lying motionless) the bear reacts to this as it would to the submissive behavior on the part of another bear. This makes sense to me. Steve, you seem to infer that the defense reaction is an aim or voluntary reaction of the bear to stop a disturbance. I question that the defense reaction is anything but an involuntary behavior pattern that is triggered when a bear feels threatened, and this generally occurs within certain measureable distances.

With reference to page 11, the major omission by the National Park Service, and it is a serious one, is the failure to mention in their report that the grizzly had in all probability been conditioned by being fed in the presence of humans.

With regard to page 13, if you wish to elaborate on our work, you might state something as follows:

> The Craigheads and their colleagues have individually color-marked 256 grizzlies and handled 524 during an 11-year period of study. They have made 48 instrumentations of grizzlies with radios, tracking these animals in the back country for a total of over 29,000 hours. Several grizzlies have been instrumented for two or more consecutive years, and one animal was instrumented for 9 consecutive years. Over an 11-year period, they have determined home and seasonal ranges, centers of activity, and they have radiotracked 12 grizzly bears to their winter dens. They have made over 13,000 observations of individually marked grizzlies both in developed areas and in the backcountry. In the course of this study the research personnel have hiked a total of approximately 162,000 miles and have many times approached to within 100 feet of instrumented bears in the backcountry and also made close approaches in the vicinity of their winter dens. Yet no member of the research team has ever been injured by a grizzly during the 11-year study period. This suggests that knowledge of the grizzly's habits can lead to better management and increased visitor safety.

Steve, you may not agree with all my comments or with even a few of them. You are treating a subject where scientific data is generally weak or lacking, and I believe you should handle it very carefully or you may only confuse the picture rather than clarifying it. Frank and I are planning to publish our management paper in BioScience in the near future, and we hope to document some of the questions you have posed. Others will remain a matter of conjecture until more data are available. Management is an art, not a science, even when based on scientific facts. At present there is absolutely no common ground of agreement between the present Park Service management program and the one that we have recommended following eleven years of research. Therefore, my comments in some instances may be unintentionally biased. Nevertheless, I think that your paper as it now stands would do very little to solve the problem or to enhance your scientific status. I would be more than willing to work and discuss this further with you should you decide to publish. I do think that the information on number of attacks and under what conditions they occurred is your most valuable contribution. Much of the other information is too speculative or too weakly documented to constitute a solid scientific contribution.

Steve, I want to be helpful, and I will be glad to give you any further assistance or advice. I would like to see you cut the paper down to information you can thoroughly document and support.

Very sincerely,

John

John Craighead

JC:rd

7-11-69 Bill Armstrong* & IC Trout Cr. garbage

Amount dumped

first of June	100	bags / day
mid-June	150	" / "
last 3 days of June	180-207	" / "
presently	200	" / "

Times dumped per day: Once (I)
Amount edible: cut number of bags in half.

Separation process for Trout Cr.: seasonal employees separate the garbage — fairly inefficient

Trout Cr. garbage source: Canyon eating facilities, Fishing Bridge cafeteria, Lake lodge & Hotel, Canyon hospital (± 3 sacks paper & bottles).

Incineration: Burns refuse from Y.P. cabins;
Campgrounds: Pelican Cr., Canyon, Bridge Bay, Fishing Bridge.

* Head of Maintenance this district.

Relative Amounts of Available Garbage
Trout Creek Dump
1969

N.P.S. EST.

Date	Estimated Number of Cans (bags)	Dimensions of Garbage Pile	Remarks
6/14	14 (COUNT)	100 12' x 2' x 6"-12"	—
7/11	132 (COUNT)	— 200	MOST SACKS 2/3 FULL - SOME ONLY 1/2, SOME FULL - ALL SACKS CONTAINED GARBAGE - SOME UP TO 90% - SACKS ALSO CONTAINED CANS — GARBAGE NO LONGER BEING SEPARATED (PICTURES TAKEN)
7/12	140-160 (EST)	200 —	MOST SACKS 2/3 - 3/4 FULL
7/13	170 (COUNT)	— 200	SMALL TRUCK 1) 16 BAGS FROM CAMPGROUNDS ALMOST ALL PAPER 2) SCRAP FROM ROADS RISE GARBAGE TRUCK 154 BAGS + SOME BURNED MATERIAL (PICTURES TAKEN)
7/14	156 (COUNT)	— 200	REGULAR GARBAGE TRUCK TOTAL BAGS - 136 BREAKDOWN: 12 - ALL PAPER 6 - 1/2 FULL GARBAGE 118 - 2/3 - FULL OF GARBAGE + SOME CANS & PAPER SPECIAL SMALL TRUCK 6 CANS OF PAPER 14 SACKS OF PAPER 4 BAGS GARBAGE & PAPER (PICTURES TAKEN)
7/16	125-145 (EST.)	200	

DATE	ESTIMATED NUMBER OF CANS (BAGS)	DIMENSIONS OF GARBAGE PILE	REMARKS
7/18	—	200 —	INCINERATOR BROKEN DOWN
8/1	—	200+ 20' x 19' x 2½' + ANOTHER PILE ⅓ THIS SIZE	LARGEST AMOUNT DUMPED THIS SUMMER
8/6	140-160 (EST)	200 13' x 13' x 1½'	—
8/11	130-150 (EST)	200 10½' x 14' x 1½'	MOST BAGS ½ FULL OF FOODSTUFFS, OTHERS - ALL PAPER CANS

UNIVERSITY OF CALIFORNIA, BERKELEY

BERKELEY • DAVIS • IRVINE • LOS ANGELES • RIVERSIDE • SAN DIEGO • SAN FRANCISCO

SANTA BARBARA • SANTA CRUZ

SCHOOL OF FORESTRY AND CONSERVATION
WILDLIFE-FISHERIES

BERKELEY, CALIFORNIA 94720

December 10, 1969

Dr. John Craighead
University of Montana
Coop. Wildlife Res. Unit.
Missoula, Montana

Dear John:

I accept your suggested modification of the memorandum summarizing our bear meeting at Yellowstone, and have requested Bob Linn to make this change in the report. Other than that, I hope you concur in the general thrust of the recommendations regarding management.

Best regards,

Sincerely,

A. Starker Leopold

ASL:na
cc: R. Linn
F. Craighead

Reprinted from the March 1938 Planning and Civic Comment.

National Park Service Bear Problem

By VICTOR H. CAHALANE, National Park Service

UNTIL the late 1920's bears in the national parks were seldom seen except at the few points where garbage dumps provided the lure of food. These glimpses of the animals were so popular with tourists that feeding at designated platforms was made a feature in several parks. Bears increased in numbers and, as a result of the growing familiarity between animals and humans, the highlight of the average tourist's visit to a national park was to feed a bear by the roadside. Thus developed the hold-up bear who, no longer being satisfied with gifts, went after food concealed in cars, tents, and cabins, or even seized it from the hands of reluctant donors. The hundreds of cases of resulting human injuries and of property damage, causing fear of more serious future consequences, have forced the National Park Service to make a careful study of the situation.

The primary consideration throughout most of a bear's waking moments is food. The supply determines the animal's whereabouts, his daily schedule and many of his habits. Carefully accumulated statistics on "bear problem" cases in Yellowstone National Park during the past seven years clearly demonstrate that "bear trouble" is "human trouble." Feeding an animal along the roadside induces him to abandon the natural mode of living to take up instead a life of racketeering. Constant close association with people causes the bear to lose the fear that is the basis of respect. It is a logical consequence that he will attack people and tear open locked automobiles and cabins to satisfy his new appetites.

The National Park Service is now taking various steps to remedy this situation. The most important is the new Service-wide regulation forbidding all feeding of park bears by tourists. This has been tested in Sequoia National Park for several years with the result that there has been a minimum of bear damage. The Service is furnishing, as rapidly as possible, bear-proof food containers and garbage receptacles in all the camp grounds. Individual bears that become too dangerous and persist in vandalism are trapped and deported from areas frequented by people. If such animals return, they are regretfully shot. Electrically charged wire fences are used to repel bears from sources of food where the public will not be endangered. These are inexpensive and entirely satisfactory in frightening away the bears, but unfortunately this method is not safe for general application.

The success of these steps depends finally and almost entirely upon the concerted action of the visiting public. When the public observes the Service regulation:

"Feeding of Bears is Prohibited,"

the normal relationship between bears and humans will be restored. Then bears will be bears and not racketeers.

December 10, 1969

Dr. Robert Linn
U.S. Dept. of the Interior
National Park Service
Washingtnn, D. C. 20240

Dear Bob:

I concur in John Craighead's suggested modification of our memorandum on the September bear meeting. Will you have that page retyped so that all copies to be distributed in the future will carry the corrected text. Thanks.

Sincerely,

A. Starker Leopold

ASL:na
cc: J. Craighead
F. Craighead

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

December 5, 1969

Dr. Charles M. Loveless
Bureau of Sport Fisheries and Wildlife
777 14th Street N.W.
Washington, D.C. 20005

Dear Charlie:

I am enclosing a copy of a letter that I wrote to Starker Leopold and a copy of his committee's report on the bear management policy and program for Yellowstone National Park. I will not take the time to try to bring you up to date on this situation in Yellowstone, but would welcome the opportunity to discuss it with you sometime at your convenience. I think all I need to indicate here is that there has been disagreement with regard to both research and management of bears in Yellowstone National Park. The Natural Sciences Advisory Committee met to try to resolve these differences and to suggest a program.

Both Frank and I felt very optimistic following the meeting. However, we were both very disappointed in the report. We were particularly disturbed about the remark relating to our distribution of information and about the fact that a report written specifically for the Park Service on the management of bears, which has been in the possession of the Park Service for two years and which essentially served as a basis for the Leopold Report, was not even mentioned in this committee's report.

As you will see, I have suggested to Starker that he make a change in the report before distributing it further. Unfortunately, the report was released to the members of the Wyoming congressional delegation as well as to the press prior to any review by the consultants or other agencies vitally interested and concerned with the management of grizzly bears. It is my personal feeling that if the advisory committee's report goes out in its present form it will do more harm than good, and I am particularly hopeful that Starker will make at least the one change that my brother and I feel is imperative.

Sincerely,

John

John Craighead

JC:rd
Enclosures
Copy: Dr. Frank Craighead

FILE
LINN

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

Memorandum

TO : Chief, Division of Wildlife Research DATE: October 16, 1969

FROM : Leader, Montana Cooperative Wildlife Research Unit

SUBJECT: Meeting with the Natural Sciences Advisory Committee to the National Park Service

On September 6 and 7, my colleagues and I met with the Natural Sciences Advisory Committee in Yellowstone National Park to discuss the development of a bear management policy and program for the National Park Service. The meeting was, I think, a very constructive one and I have been informed that Dr. Leopold will very soon have a report available as a result of this meeting.

Following the meeting I had a series of talks with Dr. Linn, chief scientist for the National Park Service, and we were able to clear up most of the questions that Mr. Linn had posed concerning the bear management report that we had submitted to the National Park Service in July, 1967.

Apparently some of the misunderstanding regarding this report was due to the fact that Mr. Linn responded in writing to the report without first contacting me in order to clarify some questions that he had concerning the research. Also, apparently my response to Mr. Linn's letter of May 21, 1968, was never forwarded to him and he was unaware of my reply to his comments.

I told Mr. Linn that Dr. Frank Craighead and I wished to publish the management report and that we would be very happy to consult closely with him on the publication and that in any event we would submit the final draft to him for review prior to publication. I also discussed this matter with Dr. Starker Leopold and he felt strongly that the report should be published and stated that his committee would be happy to review the manuscript prior to publication. Unfortunately I have been too busy to put my time on the editing of this manuscript but hope to get at it in the near future.

I would appreciate your conveying to John Gottschalk that the situation in Yellowstone was greatly clarified by the meeting of the Natural Sciences Advisory Committee and that if we proceed with plans to publish the management report we will not only submit it for review to Bob Linn and to the Natural Sciences Advisory Committee, but also a copy will come to you to be forwarded through channels to Mr. Gottschalk.

John Craighead

John Craighead

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

NOTES

Bear Management Meeting
September 6, 1969

Prior to this September 6, 1969 meeting, Superintendent Jack Anderson had insisted that no more animals in the Park could be tagged, and that tags would gradually be removed from those that had been marked. He said that this was being done in preparation for the Centennial, and he told John and me that this was a decision that had been made by the Science Advisory Committee. Both John and I were concerned about this decision as it meant that it would be impossible for us to continue our work on grizzly bears, black bear, and elk. It also meant that much valuable data that could be gathered by us and by the Park from instrumented grizzlies and from collared elk, would be unobtainable.

During the course of the September 6th meeting, I was sitting beside Dr. Stanley Cain, a member of the Advisory group. I asked him why it was, and on what basis the Committee had made the decision, to prohibit further marking of animals in Yellowstone National Park. Dr. Cain was surprised at this question, and said that he knew nothing at all about it. I told him that this was now Park policy and that Anderson had told us that the decision had been made by the Science Advisory Committee.

Later in the meeting Cain posed the question to Anderson, asking what this was all about? Anderson appeared a bit confused and flustered by the question, but then said that this was a decision that he had made himself.

It was obvious that Anderson had been lying to us, but that when the direct question was posed by Cain he could do nothing but admit that it was his decision.

It is this deceitfulness on the part of Anderson, as well as others, that makes it difficult and almost impossible to work with them.

Frank Craighead

September 24, 1969

Interior Department - National Park Service
18th and C Streets, N. W., Room 3045
Accounting Operations Section
Washington, D. C. 20240

Gentlemen:

We received this purchase order to take care of expenses for Dr. Craighead relative to the meeting held at Mammouth in Yellowstone National Park on September 6.

Would you please send us the necessary forms or state procedure in billing for these expenses.

Thank you.

Sincerely,

(Mrs.) Phyllis J. Farrell
Administrative Assistant

PJF

Enclosure (copy of form)

FORM 10-131
(APRIL 1964)

PURCHASE ORDER

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
National Capital Region
Washington, D. C. 20242

(ISSUING OFFICE)

REQUISITION NO.: 152

THIS NUMBER MUST APPEAR ON ALL PACKAGES AND PAPERS RELATING TO THIS ORDER

DATE OF ORDER: August 22, 1969

ORDER NUMBER: 9-900-LO-0148

ACCOUNTING CLASSIFICATION
121A-0161

1401033

VENDOR'S NAME AND ADDRESS
Environmental Research Institute
P. O. Box 156
Moose, Wyoming 83012
ATTN: Dr. Frank C. Craighead, Jr.

SHIP TO: (Consignee and Address;)
U. S. Department of the Interior
National Park Service
Office of Natural Science Studies
18th and C Streets, N. W. - Room 1226
Washington, D. C. 20240

CONTRACT NO.	DISCOUNT TERMS	SHIP VIA
Open Market	-	

DELIVERY: F.O.B. SHIPPING POINT	TIME FOR DELIVERY	GOVT. B/L NO.
Destination	SOON AS POSSIBLE	

ITEM NO.	ARTICLES OR SERVICES	QUANTITY ORDERED	UNIT	UNIT PRICE	AMOUNT
	Professional assistance of Dr. Frank C. Craighead, Jr., in the development of a grizzly bear management program for the National Park Service.	FOR THE JOB....			$85.00
	Following consultation with appropriate Service officials and other professionals in the field of wildlife management, a summary report of professional opinion regarding the policies, programs and techniques of grizzly bear management in the National Park Service is required.				
	Per your agreement with Dr. Linn of this office.				
				TOTAL	$85.00

NOTE TO VENDOR: SUBMIT INVOICES IN ACCORDANCE WITH INSTRUCTIONS ON REVERSE SIDE HEREOF AND FORWARD TO ADDRESS SHOWN FOR ISSUING OFFICE UNLESS OTHER ADDRESS SHOWN BELOW:

Interior Dept., National Park Service
18th and C Streets, N. W., Room 3046,
Accounting Operations Section,
Washington, D. C. 20240

SIGNATURE: Lucille B. Peacock

NAME AND TITLE
Lucille B. Peacock
PURCHASING OFFICER

1. ORIGINAL ORDER

CONDITIONS

COVENANT AGAINST CONTINGENT FEES.—The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty the Government shall have the right to annul this contract without liability or in its discretion to deduct from the contract price or consideration the full amount of such commission, percentage, brokerage, or contingent fee.

OFFICIALS NOT TO BENEFIT.—No member of or delegate to Congress, or resident commissioner, shall be admitted any share or part of this contract, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

CONVICT LABOR.—In connection with the performance of work under this contract, the Contractor agrees not to employ any person undergoing sentence of imprisonment at hard labor.

BUY-AMERICAN ACT.—The Contractor agrees that there will be delivered under this contract only such unmanufactured articles, materials and supplies, hereinafter referred to in this clause as "supplies", as have been mined or produced in the United States and only such manufactured supplies as have been manufactured in the United States substantially all from supplies mined, produced, or manufactured in the United States. Provided, however, that the exemptions and exceptions from the foregoing, established by or under the "Buy-American Act" (41 U.S. Code 10 a-d), shall apply.

DISCOUNTS.—In connection with any discount offered, time will be computed from date of delivery of the supplies to carrier when delivery and acceptance are at point of origin, or from date of delivery at destination or port of embarkation when delivery and acceptance are at either of those points, or from date correct invoice or voucher is received in the office specified by the Government if the latter date is later than the date of delivery.

INSPECTION.—Except as may be otherwise provided in this contract, final inspection and acceptance will be made at destination. Supplies rejected at destination for nonconformance with specifications shall be removed by the Contractor at his expense promptly after notice of rejection.

WORK HOURS ACT OF 1962.—"This contract, to the extent that it is of a character specified in the Work Hours Act of 1962 (Public Law 87–581, 76 Stat. 357–360) and is not covered by the Walsh-Healey Public Contracts Act (41 U.S.C. 35–45), is subject to the following provisions and to all other provisions and exceptions of said Work Hours Act of 1962.

"(a) No contractor or subcontractor contracting for any part of the contract work shall require or permit any laborer or mechanic to be employed on such work in excess of eight hours in any calendar day or in excess of forty hours in any workweek unless such laborer or mechanic received compensation at a rate not less than one and one-half times his basic rate of pay for all hours worked in excess of eight hours in any calendar day or in excess of forty hours in such workweek, whichever is the greater number of overtime hours.

"(b) In the event of any violation of the provisions of paragraph (a), the contractor and any subcontractor responsible for such violation shall be liable to any affected employee for his unpaid wages. In addition, such contractor or subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed, with respect to each individual laborer or mechanic employed in violation of the provisions of paragraph (a), in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of eight hours or in excess of forty hours in a workweek without payment of the required overtime wages.

"(c) The Contracting Officer may withhold, or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor, the full amount of wages required by this contract and such sums as may administratively be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for liquidated damages as provided in paragraph (b)."

FEDERAL, STATE AND LOCAL TAXES.—Except as may be otherwise provided in this contract, the contract price includes all applicable Federal taxes in effect on the date of this contract but does not include any State or local sales, use, or other tax directly applicable to the completed supplies or services covered by this contract nor any other tax from which the Contractor or this transaction is exempt. Upon request of the Contractor, the Government shall furnish a tax exemption certificate or similar evidence of exemption with respect to any such tax not included in the contract price pursuant to this clause. For the purpose of this clause, the term "date of this contract" means the date of the contractor's quotation or, if no quotation, the date of this purchase order.

VENDOR'S BILLING INSTRUCTIONS

Vendor's invoices shall be submitted in the ORIGINAL only and shall contain the following information: Contract or proposal number (if any), order number, and item numbers, description of supplies or services, sizes, quantities, unit prices and extended totals. Bill of Lading number and weight of shipment will be shown for shipments made on Government bills of lading. If prepaid parcel post charges are billed, the gross weight and shipping point must be shown.

West Yellowstone Meeting
January 15-16, 1970

Info on menstrual cycle as related to bear attacks
Dr Seppel (MD).

GRIZZLY BEAR MANAGEMENT MEETING

Enclosure 7

January 15-16, 1970

West Yellowstone, Montana

PARTICIPANTS:

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

Mr. Jay S. Sumner
Montana Cooperative Wildlife
Research Unit
University of Montana
Missoula, Montana 59801

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

Dr. William H. Sippel
1417 South Fifth
Bozeman, Montana 59715

Mr. Edwin Zaidlicz
State Director
Bureau of Land Management
316 North 26th Street
Billings, Montana 59101

Mr. Don McIntosh
Bureau of Land Management
316 North 26th Street
Billings, Montana 59101

Mr. Larry Mullen
U. S. Forest Service
Cody, Wyoming 82414

Dr. Charles M. Loveless
Bureau of Sport Fisheries & Wildlife
513 Matomic Building
1717 H Street Northwest
Washington, D. C. 20006

Mr. Mike Gaufin
Wildlife Management
U. S. Forest Service
Federal Office Building
324 25th Street
Ogden, Utah 84401

Mr. John R. Woodworth, Director
Idaho Fish & Game Department
P. O. Box 25
Boise, Idaho 83707

Mr. Roger Williams
Chief, Game Division
Idaho Fish & Game Department
P. O. Box 25
Boise, Idaho 83707

Mr. Roger Bumstead
Wildlife Management Branch
U. S. Forest Service
Missoula, Montana 59801

Mr. Allan L. Lovaas
National Park Service
Rapid City, South Dakota 57701

Mr. Harold J. Estey
National Park Service
Yellowstone Park, Wyoming 82190

Mr. Jack Booth
U. S. Forest Service
Cody, Wyoming 82414

Mr. Jack Lavin
U. S. Forest Service
Cody, Wyoming 82414

Superintendent
Glacier National Park
East Glacier, Montana 59936

Mr. LeRoy R. Brown
National Park Service
1709 Jackson
Omaha, Nebraska 68100

Mr. Pete Greene
Wildlife Management
U. S. Forest Service
Federal Center - Bldg. 85
Denver, Colorado 80225

Mr. Paul Weingart, Supervisor
Gallatin National Forest
U. S. Forest Service
Bozeman, Montana 59715

Mr. Harry R. Woodward, Director
Div. of Game, Fish and Parks
Colorado Dept. of Natural Resources
6060 Broadway
Denver, Colorado 80216

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

Mr. Clifford J. Martinka, Biologist
National Park Service
Glacier National Park
East Glacier, Montana 59936

Mr. Glen F. Cole
Research Biologist
Yellowstone National Park
YNP, Wyoming 82190

Mr. LeRoy Ellig
District Supervisor
Montana Fish & Game Dept.
Bozeman, Montana 59715

Mr. Joe Egan
District Game Manager
Montana Fish & Game Dept.
Bozeman, Montana 59715

Game Management Division
Montana Fish & Game Dept.
Helena, Montana 59601

Mr. Ken Greer
Research Biologist
Montana Fish & Game Dept.
Fish & Game Building, M.S.U.
Bozeman, Montana 59715

Mr. Thomas Mussehl, Chief
Research Section
Montana Fish & Game Dept.
Fish & Game Building, MSU
Bozeman, Montana 59715

Mr. Harry Barker, Jr., Commissioner
Wyoming Game and Fish Commission
P. O. Box 127
Moose, Wyoming 83012

Mr. Frank Evans
Panorama Ranch - Star Route
Columbia Falls, Montana 59912

Mr. Jim White, Commissioner
Wyoming Game and Fish Dept.
P. O. Box 1589
Cheyenne, Wyoming 82001

Dr. Robert M. Linn
Chief Scientist
National Park Service
Washington, D. C. 20240

Mr. Frank H. Dunkle, Director
Montana Fish & Game Dept.
Helena, Montana 59601

GRIZZLY BEAR MANAGEMENT MEETING

January 15-16, 1970

West Yellowstone, Montana

PARTICIPANTS:

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

Mr. Jay S. Sumner
Montana Cooperative Wildlife
Research Unit
University of Montana
Missoula, Montana 59801

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

Dr. William H. Sippel
1417 South Fifth
Bozeman, Montana 59715

Mr. Edwin Zaidlicz
State Director
Bureau of Land Management
316 North 26th Street
Billings, Montana 59101

Mr. Don McIntosh
Bureau of Land Management
316 North 26th Street
Billings, Montana 59101

Mr. Larry Mullen
U. S. Forest Service
Cody, Wyoming 82414

Dr. Charles M. Loveless
Bureau of Sport Fisheries & Wildlife
513 Matomic Building
1717 H Street Northwest
Washington, D. C. 20006

Mr. Mike Gaufin
Wildlife Management
U. S. Forest Service
Federal Office Building
324 25th Street
Ogden, Utah 84401

Mr. John R. Woodworth, Director
Idaho Fish & Game Department
P. O. Box 25
Boise, Idaho 83707

Mr. Roger Williams
Chief, Game Division
Idaho Fish & Game Department
P. O. Box 25
Boise, Idaho 83707

Mr. Roger Bumstead
Wildlife Management Branch
U. S. Forest Service
Missoula, Montana 59801

Mr. Allan L. Lovaas
National Park Service
Rapid City, South Dakota 57701

Mr. Harold J. Estey
National Park Service
Yellowstone Park, Wyoming 82190

Mr. Jack Booth
U. S. Forest Service
Cody, Wyoming 82414

Mr. Jack Lavin
U. S. Forest Service
Cody, Wyoming 82414

Mr. William J. Briggle
Superintendent
Glacier National Park
East Glacier, Montana 59936

Mr. LeRoy R. Brown
National Park Service
1709 Jackson
Omaha, Nebraska 68100

Mr. Pete Greene
Wildlife Management
U. S. Forest Service
Federal Center - Bldg. 85
Denver, Colorado 80225

Mr. Paul Weingart, Supervisor
Gallatin National Forest
U. S. Forest Service
Bozeman, Montana 59715

Mr. Harry R. Woodward, Director
Div. of Game, Fish and Parks
Colorado Dept. of Natural Resources
6060 Broadway
Denver, Colorado 80216

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

Mr. Clifford J. Martinka, Biologist
National Park Service
Glacier National Park
East Glacier, Montana 59936

Mr. Glen F. Cole
Research Biologist
Yellowstone National Park
YNP, Wyoming 82190

Mr. LeRoy Ellig
District Supervisor
Montana Fish & Game Dept.
Bozeman, Montana 59715

Mr. Joe Egan
District Game Manager
Montana Fish & Game Dept.
Bozeman, Montana 59715

Mr. Wynn Freeman, Chief
Game Management Division
Montana Fish & Game Dept.
Helena, Montana 59601

Mr. Ken Greer
Research Biologist
Montana Fish & Game Dept.
Fish & Game Building, M.S.U.
Bozeman, Montana 59715

Mr. Thomas Mussehl, Chief
Research Section
Montana Fish & Game Dept.
Fish & Game Building, MSU
Bozeman, Montana 59715

Mr. Harry Barker, Jr., Commissioner
Wyoming Game and Fish Commission
P. O. Box 127
Moose, Wyoming 83012

Mr. Frank Evans
Panorama Ranch - Star Route
Columbia Falls, Montana 59912

Mr. Jim White, Commissioner
Wyoming Game and Fish Dept.
P. O. Box 1589
Cheyenne, Wyoming 82001

Dr. Robert M. Linn
Chief Scientist
National Park Service
Washington, D. C. 20240

Mr. Frank H. Dunkle, Director
Montana Fish & Game Dept.
Helena, Montana 59601

The Montana Standard

ütte-Anaconda 94th Year—No. 170 Good Morning It's Saturday, January 17, 1970 ★ ★ 10 Cents

Wildlife chief sounds warning about future of grizzly bear

WEST YELLOWSTONE (AP) -- The president of the International Association of Game, Fish and Conservation Commissions called Friday for immediate action to save the nation's remaining grizzly bear population from extinction.

"Something has to be done immediately or grizzly bears will become extinct," said Harry Woodwerd, who is director of the Colorado Game, Fish and Parks Department.

"Grizzlies are an endangered species and it's a gross error to think they are not," he said. Woodwerd criticized an Interior Department decision last year to remove the animals from the "endangered species" list.

"No one was consulted on the decision and I don't know where they got their information," Woodwerd said.

He noted that when a species is put on the list a great deal of special attention is given to its continued well-being, in research and special management techniques.

Woodwerd said there is an acute need "to attract some attention to the needs of the grizzly. We must ensure the future of current populations," he said.

Woodwerd appointed Dick Woodworth, director of the Idaho Fish and Game Department, as chairman of a special committee to make a study of the bear population. He asked the committee to submit recommendations during the association's annual meeting in New York City Sept. 17-18.

Also appointed to the committee were Frank Dunkle, Montana Fish and Game Department director, and Jim White, director of the Wyoming Fish and Game Department.

Woodwerd said the last verified kill of a grizzly bear in Colorado was in 1947.

"We may not have a single grizzly in the entire state," he said. "It may be too late for us now, but we can try to preserve the populations elsewhere."

Woodwerd said there is a distinct possibility the American grizzly bear, now found almost solely in Montana, Wyoming and parts of Idaho, is on the point of extinction.

Earlier, during a four-state meeting to discuss the situation, Dunkle suggested an immediate study of the feasibility of transporting grizzlies from the West Yellowstone area to a remote region along the Montana-Idaho border -- a distance of around 300 miles.

He specifically mentioned the Selway - Bitterroot Wilderness area of western Montana.

Dunkle said continued problems from bears moving out of Yellowstone National Park to feed on non-wilderness food supplies near West Yellowstone can be expected.

"There is no problem now—they're hibernating," he said. "But, as an administrator, I'd just once like to get something done before the problem occurs."

Frank Craighead, who with his brother John has studied grizzlies in Yellowstone for 11 years, told the 30-person gathering that there were more grizzlies roaming near the town of West Yellowstone last fall than ever before.

Officials estimate there are at least 175 grizzlies but no more than 200 in a 5,000-square-mile area in and around the park.

Dunkle Wants Bears Moved From Park

WEST YELLOWSTONE (AP) — Frank Dunkle, director of the Montana Fish and Game Department, proposed today an immediate study of moving grizzly bears out of the West Yellowstone area before a serious problem arises.

Dunkle suggested that Fish and Game officials from Montana and Idaho discuss with federal agencies the possibility of moving the animals to the Selway-Bitterroot area along the western border of Montana.

The suggestion arose during a bear-management discussion seminar in West Yellowstone. Attending the meeting were about 30 persons representing Colorado, Idaho, Wyoming and Montana.

Dr. Frank Craighead, an authority on grizzly bears, said wherever there is easily available food "the bears are going to get in trouble."

He referred specifically to a city dump on Forest Service property near West Yellowstone.

The dump is a gathering place from spring through fall for grizzlies — now in hibernation — in Yellowstone National Park. Tourists come to the dump by the hundreds to watch the bears eat.

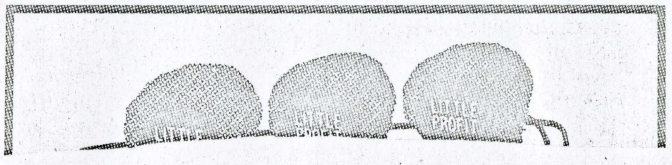
There were more grizzlies roaming the immediate area of this city of 600 last fall than ever before.

"We're faced with a problem here," Dunkle said. "I suggest we begin immediately trying to determine what can be done before something happens."

Craighead, who along with his brother, John, has conducted an 11-year study of grizzlies said the methods of trapping and transplanting are well developed. The question now, he said, is exactly where problem animals should be placed.

He said grizzlies have a "homing instinct" and probably would have to be moved long distances from the non-wilderness food supplies they now depend on.

The meeting, called by Dunkle to discuss the future of the endangered species, ended at noon.



STATE OF MONTANA



DEPARTMENT OF

FISH AND GAME

Helena, Montana
December 22, 1969

TO: Grizzly Bear Management Meeting Participants

FROM: Frank H. Dunkle, State Fish and Game Director

SUBJECT: Final Plans for Conference

The dates for this meeting are definitely set for January 15 and 16, 1970.

The meeting will be held at the Executive Motel in West Yellowstone, and a block of rooms have been reserved for participants. Rates are $14.00 for a single room and $16.00 for a double. Please let me know what kind of accommodations you prefer.

The nearest airport facility is at Bozeman. If any of you plan to arrive by plane, please let me know your expected time of arrival and I will make arrangements for someone to meet you.

An agenda is attached.

Frank

FHD:ss
Attachment

GRIZZLY BEAR MANAGEMENT MEETING

JANUARY 15 - 16, 1970

WEST YELLOWSTONE, MONTANA

A G E N D A

JANUARY 15:

10:00 - 12:00	Presentation by Drs. John and Frank Craighead
1:00 - 3:00	States' discussion - grizzly bear management policies
3:30 - 5:00	Discussion by agencies - National Park Service; Forest Service; Bureau of Sport Fisheries and Wildlife

JANUARY 16:

9:00 - 12:00	General discussion - grizzly transplanting policies
1:00 - 5:00	Concluding discussion - general

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

March 20, 1970

Dear Frank,

I am sorry that I caught that damn virus while at West Yellowstone and was unable to visit with you longer. When I reached Livingston, I faded from the world for two solid days. The only consolation about the whole affair is missing my national guard meeting. I am feeling much better but still feel the effects of the virus.

The Bureau of Land Management project sounds like it would be an extremely interesting couple of months. However, I will be graduating on April 21(hopefully) and have been planning for some time to visit Jerry in Columbia during the month of May. I will return on May 30 and spend two weeks at the National Guard summer camp. Apparently my appointment with the Bureau of Sport Fisheries and Wildlife has or will go through and I will be working for you and John again this summer. I am not sure what the plans are for the grizzly project this summer, but I suppose I will probably be working in this area in some capacity.

Frank, I am very interested in working with you and John in the near future. My past years with you have been the most valuable years of my life in terms of both education and enjoyment of the work. I have especially enjoyed my relationship with you, John, and your families. I hope that I may continue to work in some capacity with

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

you in the years to come. I am especially interested in the Grizzly study with the Wyoming Forest Service, any raptor research you may become envolved in, and in helping E. R. I. ~~grxw~~ grow in any way.

I am anxious to talk with you about future plans. I hope to see you before I leave for Columbia and if not, soon after I return.

Please find enclosed the notes from the West Yellowstone Grizzly Management Conference. The notes are pretty general; I hope they are detailed enough to give you some needed information.

Sincerely,

Jay

Jay Sumner

December 8, 1969

Frank H. Dunkle
State Fish and Game Director
State of Montana
Department of Fish and Game
Helena, Montana 59601

Dear Frank:

I have had to delay replying to your letter suggesting a meeting in Yellowstone National Park on January 15 and 16, 1970 to discuss grizzly bear problems. I had a conflict with this date that had to be resolved before I could write.

I am delighted that you are making arrangements for this meeting and I certainly look forward to attending and to presenting some of our findings on the grizzly bear ecology and recommendations on management within the Park. I will look forward to hearing from you when the dates are finally firmed up.

Sincerely,

Frank C. Craighead, Jr.

FCC,Jr/pjf
cc: Dr. John J. Craighead

STATE OF MONTANA

DEPARTMENT OF FISH AND GAME

Helena, Montana
November 20, 1969

Mr. James B. White
Mr. John R. Woodworth
Mr. Harry R. Woodward
Dr. Robert M. Linn
Mr. Jack K. Anderson
Dr. Frank C. Craighead
Dr. John J. Craighead

Gentlemen:

Grizzly bear have been a rather important subject to the four states and to Yellowstone National Park. I would like to suggest a meeting in West Yellowstone on January 15 and 16, 1970, to discuss grizzly bear problems in our states.

Drs. John and Frank Craighead have been asked to prepare a rundown of their grizzly bear studies and management recommendations. At this same meeting, perhaps the Park Service could present its findings and recommendations for bear management within the Park.

If these dates suit each of you, I will make the arrangements for a meeting place in West Yellowstone.

I'll look forward to hearing from you.

Sincerely,

Frank

FRANK H. DUNKLE
STATE FISH AND GAME DIRECTOR

FHD:ss

cc: Mr. Wynn Freeman

11-24-69 COPY TO AL. HULSTRUNK

Grizzly Bear Management Meeting - 1970

Mr. James B. White, Director
Wyoming Game and Fish Dept.
P. O. Box 1589
Cheyenne, Wyoming 82001

Mr. John R. Woodworth, Director
Idaho Fish and Game Department
P. O. Box 25
Boise, Idaho 83707

Mr. Harry R. Woodward, Director
Div. of Game, Fish and Parks
Colorado Dept. of Natural Resources
6060 Broadway
Denver, Colorado 80216

Dr. Robert M. Linn
Chief Scientist
National Park Service
Washington, D. C. 20240

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

Dr. Frank C. Craighead
Moose
Wyoming 83012

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

Table II

GRIZZLY BEAR RANGES

DETERMINED BY RADIO TRACKING

1963-64-65

Year	Bear No.	Bearings Used in Determining Range	Number of Plotted Fixes	Area of Ranges in Square Miles	Remarks
1963	40	140	32	8	Lone five-year old female
	150	227	35	27	Sow with cubs
	75	145	21	36	Sow with yearlings
	7	256	32	106	Sow with yearlings.
	76	129	21	168	Lone five-year-old male
1964	6	49	11	12	Lone five-year-old female
	14	58	5	12	Large adult male
	34	151	26	13	Sow with yearlings
	40	106	27	15	Sow with cubs
	158	98	14	22	Yearling (family of sow and three yearlings)
		Bearings and Fixes			
1965	40	65		20*	Sow with yearling. Lone sow (pregnant)
	188	24			Weaned yearling male
	202	141		27*	Weaned yearling male
	194	31			Two-year-old male

* approximate area, subject to alteration

Jan, 15 & 16
1970
West Yellowstone

Grizzly Bear Mgt. Meeting

John ~~Ecology~~ Grizzly Bear Population ~~Statistics~~ Dynamics
Relations to Mgt.

Frank Grizzly bear ~~Ecology~~ Ecological information
relative to Mgt.

~~Dr~~ Movement

Annual concentrations & dispersal
Movement outside Park boundaries
Radiotracking # 170
Home Ranges — territorialty
Seasonal Ranges

Foraging Habits — artificial Food sources — Grizz population
Carcasses — scavenging
Carcasses — baits to move grizzlies
Plant Foods — berries, roots, tubers, spring growth
Baits — Hunting grizzlies

Habitat Preference
Veg. types
Day Bears

Man Bear Relationships

John Yellowstone
Management Recommendations → Status Frank
Discussion of Advisory Board Mgt. Recommendations

Future Research
Jim Will discuss — Satellite

List of bears shot or observed outside of Parks
one killed by Slim Lawrence.
Area of # 4a's range 1968

(Dick)
Richard Weeks

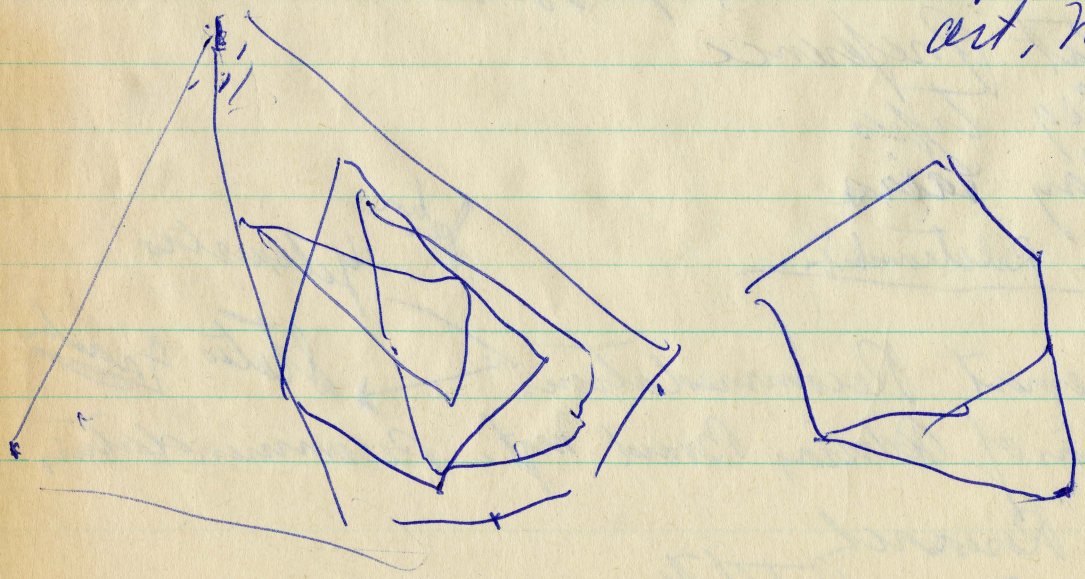
For. Ser. Jer.
Study of For. Joint use of range cattle & elk.
Back on 25th.
See me on 27th (Tues) morning.

Bring to West

John – Through 20

Stock market – longest bear market since World War II
entrusted over long term stuff
Growth Stock

Defenders of Wildlife
Act. Nov. Dec. 1969



Meeting Sept. 6 & 7, 1969

LEOPOLD REPORT

Dr. Frank C. Craighead, Jr.

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
WASHINGTON, D.C. 20240

IN REPLY REFER TO:

Natural Sciences Advisory Committee
Meeting
September 6 and 7, 1969

Preliminary Agenda

Saturday, September 6

9:00 a.m. - Special Committee meeting with Drs. Frank C. Craighead, Jr. and John J. Craighead

10:30 a.m. - The continuing development of a bear management policy and program for the Service.

Introductory discussion.

12:00 noon - Lunch

1:00 p.m. - Bear Management Policy & Program (con.)

Natural bear populations

Bear-human contacts

Wilderness

Campgrounds and other developed areas.

5:00 p.m. - Dinner

8:00 p.m. - Evening meeting to continue discussion, if needed.

Sunday, September 7

9:30 a.m. - Work session of Committee: Wrap-up of bear management program recommendations to Director.

12:00 noon - Lunch

1:00 p.m. - Other business

3:00 p.m. - Close of meeting.

Attending (Preliminary List)

Natural Sciences Advisory Committee

Dr. A. Starker Leopold (Chairman), University of California
Dr. Stanley A. Cain, University of Michigan
Dr. Charles E. Olmsted, University of Chicago
Mr. Sigurd Olson, Ely, Minnesota (cannot attend)

Special Consultants

Dr. Frank C. Craighead, Jr., Moose, Wyoming
Dr. John J. Craighead, University of Montana
Dr. Frederick C. Dean, University of Alaska
Dr. Albert Erickson, University of Minnesota

National Park Service Personnel

Mr. George B. Hartzog, Jr., Director, WASO
Mr. Harthon L. Bill, Deputy Director, WASO
Dr. Robert M. Linn, Chief Scientist, WASO
Mr. Neil J. Reid, Wildlife Management Specialist, WASO
Mr. Lowell Sumner, Consultant-Collaborator, WASO
Mr. Jack K. Anderson, Superintendent, Yellowstone
Mr. Glen F. Cole, Supv. Research Biologist, Yellowstone
Mr. Clifford J. Martinka, Research Biologist, Glacier
Dr. Douglas B. Houston, Research Biologist, Grand Teton
Mr. William J. Barmore, Research Biologist, Yellowstone
Miss Margaret M. Meagher, Research Biologist, Yellowstone

BEAR MANAGEMENT DISCUSSION
Natural Sciences Advisory Committee Meeting
September 6-7, 1969

I. Management Objectives and/or Policies - Alternatives

1. Page 3 - Management report - optimum population management

Leopold Report page 9

Manipulate food - control zones

2. Minimum population to reduce possibility of bear-man contacts

Manipulate population - control kill

3. Ecosystem and tri-state management

Yellowstone not a self-regulatory ecological unit

Harvest overflow

4. Should manage to maintain optimum population level of a threatened species.

5. Man must be accepted as an integral part of bear ecology.

II. Major Management Suggestions (Craighead Report)

1. Slow phasing out of dumps with careful study of effects on grizzlies.

Page 6 Leopold Report

2. Close coordination between N.P.S. bear management program and our bear research project. Continued research.

3. Increase in management effort

a. Personnel

b. Equipment

c. Funds

d. Training

4. Integrated program with surrounding states and U.S. Forest Service

III. Management Theories Invalid - Not Based on Research

1. Back country vs. non - back country bears - False

2. Dumps must be eliminated or discontinued abruptly *

3. Grizzlies naturally regulated in Yellowstone **

4. Elimination of one bear makes room for another ***

5. Other agencies will not assume management responsibilities ****

Home ranges - range data

Map 1

Annual and seasonal movements

Map 2

Territoriality - Social Hierarchy

Map 3

*See Page 3
**See Page 6
***See Page 6
****See Page 7

Movement to kills

Map 4 and Map 5 (Jay)

Back country censuses vs. concentration site censuses

Graph 1 - 2

Probably "no such thing" as back-country grizzly

a. Early history - Lewis and Clark - Indian

b. Storer and Tevis - California grizzly

c. Karluck Lake, Alaska

d. Brooks Range

e. Polar Bear - Churchill

f. Forest Service cabin - Bob Marshall

Proposal to conclusively determine number of grizzlies utilizing back country in August

*2. Dumps must be eliminated abruptly - False

Population and distribution changes under present management policy

Note: effected ranges of min. of 21 marked grizzlies.

1. Grizzly bears observed - 1959-1969

Graphs No. 3, No. 4, No. 5, No. 6

Chart 4 averages/month

	June	July	August
1960-67	18	12	5
1968	20	17	14

2. Increased campground use by grizzlies

   Graphs No. 7 and No. 8

3. Decrease in Trout Creek population level - increase other areas

   1969 - 8 marked grizzlies have moved to Rabbit Creek.
   3 marked grizzlies to West Yellowsto

   Graph No. 5

Relationship of Marked Grizzlies that visit Campgrounds

1. Grizzlies initially captured and marked in campgrounds and recaptured ithe.

   Graph No. 9

2. Grizzlies captured and marked elsewhere and recaptured in campground

   Graph No. 9

3. Marked grizzlies captured in campgrounds - 1968

   Graph No. 10

General Behavior and Movement Patterns of Bears Visiting Campgrounds

1. Itinerant bears - spring and fall

   Maps No. 1 and No. 2

2. Resident bears - home ranges - 202

   Map No. 6

3. Productive females

Graph No. 11

Only 112 visited once and was killed

Note- Table — percent visitation at Trout Creek

General Behavior and Movement Patterns of Non-Campground Bears

1. Home ranges #40 and #187

Maps Nos. 7 and 8

2. Centers of Activity #40 - 1968

Map 9

3. Twenty-four hour activity patterns

Graphs No. 12 and No. 13

Comparison of Beahvior and Movement of Campground and Non-Campground Bears

Map No. 10

Availability of Food at Trout Creek

1. 1959-1966 - General discussion

2. 1967 and 1968 - General discussion - Notes

3. 1969 - Table 1

4. Use of Natural Foods - Dependence on dumps

a. Plant

b. Animal -

c. Major food categories

d. By seasons

e. Use of radios as for studying food habits of grizzlies

Zoning - in Park

Due to dumps

Concentrate bear during visitor period

**3. Grizzlies are naturally regulated within Yellowstone - False

a. Causes of mortality - Management Report

b. Must be intelligent control inside and outside of park

***4. Elimination of one bear makes room for another - False

a. Biological basis of Social hierarchies

b. Population adjusted by <u>movement</u>

Map No. 1

c. Not necessary to justify control-kill in order to make room for <u>other</u> bears

---

Page 5 Leopold Report

d. No scientific evidence of overpopulation of grizzlies in Yellowstone.

****5. Other agencies will not assume management responsibilities - False

a. Letters and correspondence

IV. Basic Biological Data having Management Implication

1. Population size and structure

Management Report - Page 46

2. Reproductive Biology

Graphs No. 11, No. 14, No. 15, and No. 16

3. Mortality Ratio

a. Management report

b. Control kill in Yellowstone

Graph No. 17

1909-1968 By ten-year Periods

V. Need for Continued Research and an Intensive Management Effort Based on Research - Present Situation

1. Threatened species

2. Increased opportunity for bear-man contact (visitor increase)

3. Yellowstone National Park Administration reaction to our report.

(What are natural ecosystem relationships?)

a. Rejected all major suggestions (Linn's letter)

b. Stepped up campaign to hamstring research effort and force us out of Park

c. Did not substantially increase management effort in Yellowstone

d. Initiated grizzly bear research in both Glacier and Yellowstone with no consultation with our research team.

e. Duplication of effort and confusion of objectives.

f. Refused to cooperate in an integrated effort.

g. Has steadfastly pursued a policy of curtailing our research effort.

M E M O R A N D U M

Friday afternoon, August 15, 1969, I had two long conversations with Dr. Linn, Chief Scientist, National Park Service. He agreed to broaden the scope of the subject of the September 6 meeting to - Grizzly Bear Management and Research.

He said that those that would be attending were: Three members of the Natural Sciences Advisory Board - Starker Leopold, Stan Cain, and Charles Olmstead. Another group of special consultants included - Frank C. Craighead, Jr., John J. Craighead, Fred Dean and Al Erickson. In addition to these - George Hartzog or Spud Bill of the National Park Service. Also, Dr. Linn, Jim Read, Lowell Sumner, Doug Huston, MARY Mars, Jack Anderson, Glen Cole, and Clifford Martinka, Research Biologist from Glacier National Park would be in attendance.

Linn also agreed that a recording of the entire meeting would be made so that everything that was discussed would be a part of the official record. He had not originally intended to do this.

Linn's office number in Washington is 202-343-2138. He will be back in his office on August 29. He said he had no objection if I would telephone Leopold and discuss the problems with him prior to the meeting. Starker Leopold is at Berkeley and his number is 415-642-2549. John has also been talking to Linn by phone and John and I have been discussing the subject between ourselves. It is of interest and quite significant that upon questioning, Linn said that Glen Cole had written the comments regarding our Grizzly Bear Management Report and that John's reply was channeled through the Fish and Wildlife Service and was

never received by Dr. Linn. Both of these facts are relevant to the whole troubled situation that presently exists.

F. Bradshaw

From my field notes

On November 25, 1969 I phoned Dr. Leopold and told him we were disturbed by his reprimand on furnishing information to managing agencies, and also for lack of reference to our report.

A Bear Management Policy and Program for Yellowstone National Park

A report to the Director by the Natural Sciences Advisory Committee of the National Park Service, as a result of a meeting in Yellowstone National Park, September 6 and 7, 1969.

A. Starker Leopold, Chairman
Stanley A. Cain
Charles E. Olmsted

PREAMBLE

Yellowstone has an estimated population of about 250 grizzly and 500 black bears. Management goals, consonant with the administrative policies of the National Park Service, may be summarized as follows:

1. To maintain populations of grizzly and black bears at levels that are sustainable under natural conditions as part of the native fauna of the Park.
2. To plan the development and use of the Park so as to minimize conflicts and unpleasant or dangerous incidents with bears.
3. To encourage bears to lead their natural lives with minimum interference by humans.

The present meeting was called because, in fact, the above goals of bear management have not been fully met. A long history of dumping garbage and refuse in open pits has attracted many grizzly bears and substantially altered their natural wild habits. Inadequate trash cans in earlier years became habitual sources of food for both grizzly and black bears, and this in turn led to the bears learning to raid food sources in camps and automobiles. Roadside feeding of black bears by visitors, while against Park regulations, has persisted to the extent that many individual bears have become confirmed panhandlers. Personal injuries and cases of property damage are occurring

with such frequency that a number of bears have had to be destroyed. The problem has assumed critical significance -- legal, political, and otherwise. The National Park Service must act decisively to correct this state of affairs. The report which follows suggests a possible sequence of management steps to begin rehabilitating the bears to a wild, natural existence.

This Advisory Committee does not pretend specific competence in judging the ethology and psychology of bears. However, we had the advantage of published and verbal testimony of experienced park administrators and bear biologists including the following Consultants for our Yellowstone meeting: John and Frank Craighead, Albert Erickson, and Frederick C. Dean. The recommendations here presented were distilled from the collective testimony of all who contributed to the meeting.

PROCEDURES

1. Garbage disposal

The ultimate objective agreed upon by all participants, is the incineration or sanitary disposal of trash and garbage in a manner that will completely isolate this food source from bears. Ideally all refuse should be hauled out of Yellowstone National Park for incineration and burial. Future plans for such a program of disposal are being considered now.

But in the meantime, there is disagreement as to the sequence of steps leading to the elimination of garbage from availability to grizzlies. One view is to cut off all garbage quickly, forcing the bears to turn immediately to natural foods. The opposite contention is to phase out garbage feeding over a period of time, "weaning" the bears gradually. The issue hinges on which of these procedures will result in the least number of bears going into camp grounds. Unfortunately, prognosticating how garbage-fed grizzlies will respond to deprivation depends on judgement

rather than data. Much is known about the habits of garbage bears and of wild-living bears, but little is known about the process of transition. In any event, the transition must be made, and everything possible done to protect both park visitors and the population of bears during the process.

Practical budgetary limitations have precluded immediate elimination of garbage. But a start has been made in sorting refuse at Trout Creek Dump and incinerating combustibles. This has led to a modest decrease in grizzly use, with a corresponding increase in bear visitations to Rabbit Creek Dump. There has been an apparent increase in grizzly visitations to camp grounds in the central portion of Yellowstone and increased control of troublesome bears (killing as well as trapping)). When Trout Creek dump is completely closed, how will the grizzlies respond? And what will transpire when the other dumps are closed as well??

On the assumption that one reaction of some of the bears will be to gravitate into camp grounds, we suggest the following list of camp ground protection practices.

2. Camp ground protection practices

a. Intensified sanitation. - All trash cans at campgrounds and along roads are now bear-proofed. But there should be increased emphasis on maintaining clean camping areas. Every known procedure and device should be employed to eliminate all smells or materials that might attract bears.

b. Public education and patrol - Much emphasis should be added to the information campaign about camp sanitation and security. Road signs, printed hand-outs, verbal instruction at campfire programs, and enforcement of camp ground regulations should be intensified to assure maximum cooperation of the public. Campers require repeated admonitions to store food in plastic containers, locked in their automobiles.

c. Patrol. - Trained and equipped night patrolmen in automobiles should be assigned to all campgrounds where bear troubles are imminent. Their function would be to urge and enforce sanitation procedures, to detect the presence of bears in campgrounds, to discourage them in every possible way short of inciting anger, and to radio for help if a bear requires removal by drug or other means.

d. Scare devices. - The Park Service should be testing every possible device to keep bears away from campgrounds -- sonics, lights, mace or other gases, repellent odors, etc. These tests should not be conducted at a campground but rather at some isolated point with bait of some kind (carrion, for example).

e. Bear fencing. - Experimental fencing should be tested to seek a bear proof combination. Link fence enclosed with parallel electric wires -- one high, one low -- might be a combination to try. Such drift fence placed across areas where bears gain access to campgrounds might deflect the bear traffic. Funnel exit gates should be provided to permit bears to leave the enclosed area if they should happen to get inside.

f. Carrion feeding. - As a substitute for garbage, carrion might be placed to draw bears away from campgrounds. Dropped by helicopter in outlying districts, the carcasses of surplus beasts (emaciated park ungulates, slaughter house surpluses, etc.) may help reduce the concentration of grizzlies around areas occupied by people, particularly during the transition period of closing the dumps.

g. Closing campgrounds. - If necessary, campgrounds situated in the vicinity of garbage dumps could be closed during the transition period.

h. Relocation of campgrounds. - On a longer scale, the location of all campgrounds should be re-examined to see if some may be poorly located

from the standpoint of bear visitation. Even long after the garbage problem is resolved, some camp areas may naturally attract passing bears. These had best be moved.

3. Study of bear reaction to garbage removal

To guide the development of the bear management program, each succeeding step should be studied concurrently to note reaction of the bears. Investigations should concentrate particularly on the following:

a. Movements of bears already marked or instrumented. Many bears around Trout Creek Dump have been captured and marked. Response of these individuals to elimination of garbage will suggest what problems may arise as other garbage sources are removed.

b. Recording numbers and density of bears at all dumps as food sources are pinched off.

c. Monitoring human contacts with grizzlies, both threatening and casual, at camp grounds and elsewhere during this transition.

It is to be emphasized that these studies are merely adjuncts to an active management program and are no substitute for continuing, long-term research on the grizzly (mentioned later).

4. Dealing with troublesome bears

Despite all precautions, safeguards, and discouragements, some bears will doubtless persist in visiting campgrounds. Initial treatment of these animals is trapping and transplanting. If this procedure fails, and the individual animals prove to be a continuing threat to human lives or property they may have to be destroyed.

a. Transplanting bears. - When a troublesome bear is transplanted, every possible effort should be made to make the initial transplant succeed. If the first release is in wild but hospitable terrain, far from human

habitation, the animal may be successfully acclimated, particularly a young animal. In the past, many trapped bears have been released at convenient points near roads or border stations, where they quickly gravitate back to camp searching. Helicopter transport, though costly, may be one effective way to assure successful transplantation.

b. Destroying incorrigible bears. - In the past ten years, the Yellowstone Park Administration has felt obligated to destroy about 30 black bears and 4 grizzly bears per year. If present plans succeed in eliminating the linkage between bears and human sources of food, this program may drop ultimately almost to zero. But in the transition period the Park should be prepared to eliminate bears that prove to be incorrigible and dangerous to human life. Hopefully, the number will be few and hopefully the men making decisions will take the right animals at the right time and will spare individuals that are capable of rehabilitation. The bodies of such animals as killed should be fully utilized for scientific purposes.

These steps are fully in accord with administrative policies which state that animal control, when necessary shall be undertaken as follows: (1) live-trapping for transplanting elsewhere; (2) scientific research specimens; and (3) direct reduction by National Park Service personnel.

5. Continuing Research

During the past 11 years, the grizzly population of Yellowstone has been under continuous study by John and Frank Craighead. A number of publications and reports, including a 113-page report, Management of Bears in Yellowstone National Park, have been made available to the National Park Service and other agencies administering grizzly populations. Much data on grizzly bear biology accumulated in this study are as yet unpublished due to the long-term nature of the research. Early publication is urged.

Additional studies have been undertaken in more recent years of both grizzly and black bears in the northern Rocky Mountain region. These investigations should be supported and extended. For example, surveys of the grizzly populations in Wyoming and Montana outside of the national parks should be undertaken jointly by interested state and federal agencies. All possible data should be derived from bears killed during legal hunting seasons. Studies of bear/human contacts undertaken in Glacier and Yellowstone Parks should be continued and extended. A successful future management program of wild bears will call for all the information that can be assembled.

6. Financing the bear program

The emergency program of bear management suggested here cannot be funded out of regular appropriations for Yellowstone Park. Garbage elimination, manpower, helicopter rental, automobile patrol, and experimental materials for fencing or repelling bears will call for a special supplementary budget from the National Park Service. We urge the Director to seek emergency funds for this purpose and to implement plans now for the period of bear emergence from winter quarters in the spring of 1970. An estimate of costs should be obtained from the Superintendent of Yellowstone National Park.

Attending September 6 meeting in Yellowstone

Natural Sciences Advisory Committee

Dr. A. Starker Leopold (Chairman), University of California
Dr. Stanley A. Cain, University of Michigan
Dr. Charles E. Olmsted, University of Chicago
Mr. Sigurd Olson, Ely, Minnesota (absent)

Special Consultants

Dr. Frank C. Craighead, Jr., Moose, Wyoming
Dr. John J. Craighead, University of Montana
Dr. Frederick C. Dean, University of Alaska
Dr. Albert Erickson, University of Minnesota

National Park Service Personnel

Mr. George B. Hartzog, Jr., Director, WASO
Mr. Harthon L. Bill, Deputy Director, WASO
Dr. Robert M. Linn, Chief Scientist, WASO
Mr. Neil J. Reid, Wildlife Management Specialist, WASO
Mr. Lowell Sumner, Consultant-Collaborator, WASO
Mr. Jack K. Anderson, Superintendent, Yellowstone
Mr. Glen F. Cole, Supv. Research Biologist, Yellowstone
Dr. Douglas B. Houston, Research Biologist, Grand Teton
Mr. William J. Barmore, Research Biologist, Yellowstone
Miss Margaret M. Meagher, Research Biologist, Yellowstone
Mr. Richard G. Prasil, Management Biologist, Alaska Field Office

habitation, the animal may be successfully acclimated, particularly a young animal. In the past, many trapped bears have been released at convenient points near roads or border stations, where they quickly gravitate back to camp searching. Helicopter transport, though costly, may be one effective way to assure successful transplantation.

b. Destroying incorrigible bears. - In the past ten years, the Yellowstone Park Administration has felt obligated to destroy about 30 black bears and 4 grizzly bears per year. If present plans succeed in eliminating the linkage between bears and human sources of food, this program may drop ultimately almost to zero. But in the transition period the Park should be prepared to eliminate bears that prove to be incorrigible and dangerous to human life. Hopefully, the number will be few and hopefully the men making decisions will take the right animals at the right time and will spare individuals that are capable of rehabilitation. The bodies of such animals as killed should be fully utilized for scientific purposes.

These steps are fully in accord with administrative policies which state that animal control, when necessary shall be undertaken as follows: (1) live-trapping for transplanting elsewhere; (2) scientific research specimens; and (3) direct reduction by National Park Service personnel.

5. Continuing Research

During the past 11 years, the grizzly population of Yellowstone has been under continuous study by John and Frank Craighead. A number of publications and reports, including a 113-page report, Management of Bears in Yellowstone National Park, have been made available to the National Park Service and other agencies administering grizzly populations. Much data on grizzly bear biology accumulated in this study are as yet unpublished due to the long-term nature of the research. Early publication is urged.

John will you & Frank
Send me your Comments
on The Bear Management
Policy by The Leopold
Committee — Also on Glacier Study

James B. White
Director Wyo Game & Fish
Box 1589.
Cheyenne Wyo. 82001

Thank you —

John

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

December 4, 1969

Dr. Al Erickson
James Ford Bell Museum of Natural History
University of Minnesota
Minneapolis, Minnesota 55455

Dear Al:

I am enclosing a copy of a letter that I am sending to Starker. As I mentioned to you over the phone, Frank and I were not at all satisfied with the Leopold Report. I am sending you a few of the comments that Frank made in very rough form. I generally agree with his comments and have a few others as well. Neither of us intend to make any comments on the report at this time, and probably will not do so at all if Starker is willing to take the suggestion that I have made in the letter which I have enclosed. If he does not make this change, however, Frank and I will draw up a paper severely criticizing the entire report, and we would be more than happy to do this jointly with you if you care to get involved or feel that you are in general agreement with our criticisms.

I thought you might like to know that I talked for a full hour with Robert Linn and got absolutely nowhere. I concluded (this is confidential) that Starker had probably given Linn the responsibility of writing the report but had failed to provide him with all of the material that we had presented to the committee during the first part of the meeting. Whether this was done intentionally or unintentionally I don't know. However, it really doesn't matter since Linn strongly defended the report and stated his reason for not mentioning our report, "Management of Bears in Yellowstone National Park", as being that he didn't agree with our conclusions. He also stated that he was opposed to independent researchers interpreting their own data as to how a Park resource should be managed, so it seemed I touched the really sensitive spot, and that is that the Park Service apparently is very much opposed to individuals outside the system proposing specific management suggestions for a resource which they feel is their responsibility.

I think that the request that I have made to Starker will clearly show whether Starker and Linn are together in their thinking or whether Starker actually made the mistake of allowing Linn to prepare the report. I

forgot to ask Linn for a copy of your report, but will do so in writing. However, if you should find a copy, send it on, because Linn may not comply with my request.

Will keep you posted on how things develop. Kindest personal regards.

Sincerely,

John

John Craighead

JC:rd

Copy: Dr. Frank Craighead

Enclosures

FILE LINN

United States Department of the Interior

NATIONAL PARK SERVICE
WASHINGTON, D.C. 20240

IN REPLY REFER TO:

October 13, 1969

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

Dear John:

Several weeks ago when I visited you and Frank at your home in Jackson Hole, we discussed the advisability of publishing the data that you have accumulated regarding the grizzly. I have awaited the arrival of the Advisory Committee's report regarding the bear management program before writing to you as I said I would; the report has just been received and copies will be sent out to all those who participated at the Yellowstone meeting as soon as we get it duplicated. In the meantime, one recommendation of the report, referring to your and Frank's research, states "Early publication is urged."

The major consideration, it seems to me, is to publish the data and your interpretation of that data, resulting from your many years of research. The data is of value only as it is available for use. I would suggest any reputable scientific journal that would put the information most directly into the hands of those most concerned, such as The Journal of Wildlife Management, or Journal of Mammalogy.

Turning again to the publication of "management recommendations," I can only reiterate my initial concerns, which were that recommendations follow logically from the data presented. Additionally, management recommendations must reflect the policies that have been established in regard to whatever it is that's being managed. The National Park Service policies have been compiled into a booklet, "Administrative Policies," for each area type: natural, historical, and recreational. On my recent visit with you I left a copy of the natural area policies booklet, and under separate cover I am, in addition, sending you the complete set of three. I would urge you to read the entire natural area policies booklet, because I believe it gives a very reasonable explanation of the sources and purposes of such policies. Recommendations that are offered to an agency should fall within the parameters set by policies, because if they do not fall within such parameters, the administrators of the organization will find it difficult or impossible to accept the recommendations. (This is not to say that policies can never be changed; but, policies usually change slowly and the

major policy-formulating body of the U. S. Government is, of course, Congress--not bureau administrators.) Another aspect of "management recommendations" is that they should be submitted first to the agency or administrators involved so that reactions can be ascertained prior to publication. Such agency or administrator may very well have insights that could be of value to the author in avoiding unnecessary conflict with the agency, or even embarrassment with the scientific community if the recommendation is derived from scientific research.

In summary, I urge that publication of your data, and conclusions drawn from them, proceed as rapidly as possible. Management recommendations must be clearly documented by data, insofar as this is possible, and must also be consonant with policies within which the National Park Service is constrained to operate. (Recommendations outside of policy confines would constitute policy rather than management recommendations.) Reactions by the National Park Service to recommendations should be obtained prior to publication for the benefit of all parties involved.

I will look forward to seeing your work published and will assist in whatever way possible toward that end. My personal regards to you and Frank.

Sincerely,

Robert M. Linn
Chief Scientist

Separate cover:
"Administrative Policies"

FILE
LINN

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

October 16, 1969

Dr. Frank Craighead
Box 156
Moose, Wyoming 83012

Dear Frank:

Apparently the Leopold Report is out. I will be anxious to see what recommendations they came up with. Judging from Bob Linn's letter, a copy of which is enclosed, it must have been quite faborable to us. It looks to me as if this letter from Linn is just a way of trying to protect himself for the record. In view of all of the talks and discussions with him, I can see no other justification for this type of letter. Apparently he is a man who is very concerned about his job security. It would have been much better had he phoned us and discussed this in a personal way as he said he would rather than write such an asinine letter. It certainly is way out of line to suggest where we should publish the manuscript, and also he infers that we have and still may make recommendations that would be outside of basic Park Service policy.

I have written Tom Baskett simply to let him know that things went well with the committee meeting, and I guess we won't know how well until we actually see the report. I would like your comments on Linn's letter.

Do you think it would be better for me to write a letter for the record which, essentially, this sort of communication requires, or simply to phone him and let him know that this is not the way we would like to have to work in the future.

Regards,

John

JC:rd

Enclosures

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

December 5, 1969

Dr. Robert M. Linn
Deputy Chief Scientist
National Park Service
Interior Building
Washington, D.C. 20240

Dear Bob:

I have written Starker commenting on that portion of the committee report which I felt was incorrect and have suggested a change. There are many other aspects of the report that I am not happy with, but I will not comment on these unless circumstances force me to do so.

I would appreciate receiving a copy of Dr. Erickson's and Dr. Dean's report on the Yellowstone meeting. Dr. Erickson has indicated that he would like me to have a copy, and though I have not yet been able to contact Fred Dean, I feel sure that he would have no objection either.

Yours very truly,

John Craighead

John Craighead

JC:rd

Copy: Dr. Frank Craighead

Enclosure

December 10, 1969

Dr. Robert Linn
U.S. Dept. of the Interior
National Park Service
Washington, D. C. 20240

Dear Bob:

I concur in John Craighead's suggested modification of our memorandum on the September bear meeting. Will you have that page retyped so that all copies to be distributed in the future will carry the corrected text. Thanks.

Sincerely,

A. Starker Leopold

ASL:na
cc: J. Craighead
√ F. Craighead

December 10, 1969

Dr. John Craighead
University of Montana
Coop. Wildlife Res. Unit.
Missoula, Montana

Dear John:

I accept your suggested modification of the memorandum summarizing our bear meeting at Yellowstone, and have requested Bob Linn to make this change in the report. Other than that, I hope you concur in the general thrust of the recommendations regarding management.

Best regards,

Sincerely,

A. Starker Leopold

ASL:na
cc: R. Linn
F. Craighead

Mr. James B. White
Director
State Game & Fish Commission
Cheyenne, Wyoming 82001

Dear Jim:

At your suggestion, I am writing you some comments on the Bear Management Policy and Program for Yellowstone National Park (Leopold Report).

John and I are in general agreement with the National Park Service management goals (1,2 and 3) as stated on the first page of the management program. We disagree, however, with some sections, both as to correctness of content and to desirability regarding management procedure. In addition, we were not pleased with the way the material we presented was used in the report nor with the way the report was distributed. Insert A

In PROCEDURES (5) Continuing Research - page 6, John and I took exception to the statment. The report was used as an opportunity by the Park Service to indirectly and unfairly reprimand the consultants (John and myself) for not providing public agencies with the results of our studies. The report stated, "Several publications have appeared on the technique of radiotracking and one paper on reproductive biology, but the bulk of the data on grizzly biology accumulated in this study is unpublished and unavailable for the use of public agencies administering grizzly populations". The committee was

copies of published papers and

supplied with a list of published and pending papers and reports. ~~There were four published papers on the technique and results of radiotracking of grizzlies, 113 page report on, Bear Management, and one publication as well as numerous progress reports on the ecology of the grizzly.~~ ~~The Committee~~ Key had access to our ~~the~~ 113 page comprehensive grizzly bear management report and the Yellowstone Park Administration as well as others in the National Park Service had copies of this report and it had been made available to them at least two years in advance of the meeting.

Dr. Cook denied that there was any unpublished and numerous progress reports.

The Fish and Game Commissions of the three states (Idaho, Montana, and Wyoming) had copies of this report as did the Forest Service and the Fish and Wildlife Service and other interested public agencies.

This statement is completely untrue and misleading, but it was included in the report and distributed to many people in the political and scientific communities before we ever received a copy of the report. In the report, there was also ~~a complete lack of~~ no reference to the publication, "Grizzly Bear Management in Yellowstone National Park". It is certainly contrary to scientific ethics for a Committee to be aware of and utilize the contents of a paper so ~~relative~~ pertinent to the report and not ~~make mention of this fact~~ cite ~~to~~ it as a reference. There is very little material in the ~~Bear Management~~ Leopold Report that was not first put forward in the Management Report mentioned.

I telephoned A. Starker Leopold concerning this particular section of the report and John wrote him a letter. The result was a rewrite of this particular section, Continuing Research. However, considerable ~~amount of~~ harm had been done before this correction was made. Dr. Linn, Chief Scientist, National Park Service, would not go along with making this change until he was instructed to do

so by Dr. Leopold.

Insert A

~~I personally feel that~~ In my opinion a report of this kind that lent heavily on the findings and testimony of consultants, ~~including~~ (unpaid) John and myself, should have been sent to us for reviewed and revised in before being distributed. ~~I feel that~~ the manner in which the report was written and circulated, ~~it~~ utilized my name and John's to give support to a ~~report~~ program that we had not ~~had a~~ chance to review and with ~~in~~ which we were not in complete agreement, ~~with.~~

~~In the report, the Committee mentions that the advantage~~

The report mentions that the Committee had the advantage of published and verbal testimony of experienced Park Administrators and bear biologists including John and Frank Craighead. Yet, out of a great deal of material presented, only that conforming with preestablished ideas of the situation were utilized. Our eight year research on the population dynamics of Yellowstone Park grizzly bears including 324 censuses totaling 11,340 hours revealed ~~XXXX~~ and average population of 174 grizzlies, yet the report gives the figure of 250 grizzlies. If this figure is to be used, it seems that some reference ~~for~~ or authority for this figure should be cited.

On page 2 of the report, it states, "Unfortunately, prognosticating how garbage-fed grizzlies will respond to deprivation depends on judgement rather than data. Much is know about the habits of garbage bears and of wild-living bears, but little is known about the process of transition". This statement is incorrect to the extent that it does not reflect the scientific data presented to the Committee. A considerable quantity of material including graphs showing the effect of deprivation of garbage on ~~the grizzlies~~ the grizzly bears' movement and concentration at garbage sites was presented at the meeting.

The effect of deprivation of garbage has been studied for two years and the effect of varying quantities of garbage on grizzly bear movement for a good many years.

The report also states, "On the assumption that one reaction of some of the bears will be to gravitate into campgrounds, we suggest the following list of campground protection practices". The data provided at the meeting revealed that this was not an assumption, but a reality. Bears were shown to have moved from the dump areas into campgrounds.

On page 4 (f) Carrion feeding, the report states that, "carcasses may help reduce the concentration of grizzlies around areas occupied by people, particularly during the transition period of closing the dumps". The research data supplied to the Committee by Dr's John and Frank Craighead clearly indicated that experimentation of carcasses had been effectively used experimentally to draw grizzlies away from areas occupied by people and thus should be considered as a management technique.

In section 3, Study of bear reaction to garbage removal, both suggestions (a and b) were made by the consultants in a bear management report made available to the Committee and these investigations have been in practice for a number of years.

Under section 4 (b) Destroying incorrigible bears, the report mentions, "In the past ten years, the Yellowstone Park Administration has felt obligated to destroy about 30 black bears and 4 grizzly bears per year". I do not think that these are accurate figures on the number of bears destroyed. A reference as to the authenticity of this statement would be highly desirable.

Under section 5, Continuing research, I feel that the report completely misrepresented the situation that was carefully explained to the Committee and used this opportunity to indirectly and unfairly repremand the consults for not providing public agencies with the results of our studies.

On page 7, there is a statement, "A successful future management program of wild bears will call for all the information that can be assembled". Such a statement assumes that there are two types of bears (wild and those that are not wild). In the case of grizzly bears, this assumption is not borne out by the facts or by the material presented to the Committee. The actual situation is that the grizzly bears have two behavior patterns. One when they are at the dumps and in the vicinity of man and his works and another when they are in the wild and away from man. Most of Yellowstone's grizzlies visit dumps and campgrounds. Thus, there is but a single population exhibiting different behavior patterns depending on whether they are in the vicinity of man or far removed. To assume that there are two distinct ones and control accordingly would be disasterous, particularly if the Park Service recommendation for protection and management prepared in April of 1969 is followed. The recommendation which is, "Recognize that bears that have become habitual users of artificial food sourses, campgrounds and other developed areas can be progressively replaced by other animals that would not learn to habitually use such foods".

Jim, these are some of my criticisms of the Leopold report. There are a number of indications that this report was probably roughed-out by the Park Service personnel and edited and approved by Leopold. Leopold certainly made no effort to correct errors and inconsistencies, some of which he knew existed. I believe that the purpose of the report was to still public clamoring

and to infer that the report was one in which there was a consensus of agreement among all those present including the consultants or specialists on bear ecology. I know that Dr. Erickson felt ~~much~~ the same way about this report as did John and myself. The other purpose of the report, I feel, was to obtain appropriations ~~raise appropriated funds~~ for bear control in Yellowstone National Park. In general I was disappointed at the way the meeting at Mammouth was conducted, particularly in view of the promises that were made to us before attending. I was also disappointed in that the report was prepared and released without any opportunity by the principal contributors of information to review the report. I was also disappointed at the close of the meeting when Dr. Leopold asked Superintendent Anderson what he would do differently in bear management in Yellowstone Park if he had all the money he needed for bear management. Jack's reply was that we would just keep on doing the same thing that we are now doing.

I have given you as honest and objective an opinion of this report as I can and I would appreciate it if you would treat it confidentially.

Thank you.

Sept. 19, 1972 Meeting

A. Briefing On The Grizzly

Bear Situation in Yellowstone — Sept. 19/72 — J. J. Craighead

Notes for Meeting by F. C. C. re Grizzly Bear & Black Bear Mgt. in Y.N.P. (not presented)

Abstract

A Briefing on the Grizzly

Bear Situation in Yellowstone

Mammoth-Yellowstone National Park

September 19, 1972

by

Dr. John J. Craighead

Mr. Chairman:

I have been invited to this meeting to present my position on the grizzly bear situation within the Yellowstone ecosystem. I have come prepared to document this position with population data acquired over a 13 year period.

The scientific evidence gathered by our research group does not support the Park Service's bear management program. This program advocated by its science advisory board is based on hypothesis supported by virtually no research by Park biologists of the local problem.

Our contention when this program went into effect five years ago and our contention today is that management of the grizzly bear should not be based on unproven assumptions.

These assumptions were:

1. That open pit garbage dumps in and outside of Yellowstone National Park could be rapidly phased out with relatively little effect on the grizzly bear population.

2. That most of the grizzlies denied these traditional feeding areas would establish themselves in the Yellowstone backcountry and cease to frequent their former haunts.

3. That those grizzlies that did not adjust as anticipated would be dispatched, but it was assumed that the numbers of these would not be great.

At that time, following 9 years of intensive research, we recommended that a completely natural population of grizzlies be established but that this be accomplished by closing the open pit garbage dumps over an 8 to 10 year period or longer; and we emphasized the importance of establishing a population of grizzlies that could feed entirely on natural foods. We showed how this could be accomplished. We advocated continued research by our research team to document what occurred during the period of closing the dumps, because we believed that only by comparing the dump phase out period with conditions that existed before the phase out, could the success of the management program be accurately evaluated. We still believe this to be so.

We provided the National Park Service with two detailed reports documenting the grizzly bear problem in Yellowstone, and in these reports we made specific recommendations for managing grizzly bears. These recommendations were made on a basis of years of research and at a time when the National Park Service had little scientific expertise in the ecology and management of grizzlies. Our data show that the rapid closure of the open pit dumps has placed the grizzly bear population under great stress. As predicted, grizzlies moved into campgrounds and developed areas where they continue to be a serious problem. The risk of injury or death to visitors has not decreased appreciably, and the grizzly population is decreasing rapidly. The latter is occurring because of a greatly elevated death rate and a lowered reproductive rate. This situation pertains throughout the

5 million acre Yellowstone ecosystem (2,100,000 acres National Park and 2,900,000 acres National Forest). Management of the Yellowstone grizzly bear population is, therefore, a responsibility of the states adjoining Yellowstone National Park as well as a responsibility of the Federal government.

For thirteen years our research team has studied the dynamic processes of growth and decline in the population. We have applied computer programing, the most accurate scientific method known to analyze these data. We have done this by comparing population data for the pre-management period (1959-1967) against the present period of revised management (1968-1971).

When vital statistics of age structure, sex ratios, reproductive rate, and longevity were programed through an I.B.M. 1620 computer for the pre-management period (1959-1967) the survivorship rates obtained showed that at that time there existed a slowly growing grizzly bear population. The average growth of the population was 1.7 bears per year. This would appear to be a very small average annual increase in the population, but computer projections showed that the number of grizzlies would increase from about 177 to 261 by the year 2018.

Thus: Prior to the present management program (1959-1967), the grizzly bear population inhabiting the Yellowstone ecosystem was exhibiting a slow growth rate and was not endangered.

The results of programing the 1968-1971 data (this is the period of rapid phase out of the open pit garbage dumps under the new

management program) through the computer showed a rapidly declining population with an average extinction date of 1993 or 21 years.

Our conclusion is that the present National Park Service management program, if continued, will very probably exterminate or nearly exterminate the Yellowstone grizzly bear population in 20 to 25 years. This is not at all unrealistic if you consider that in two years only (1970 & 1971) we have recorded 91 grizzly bear deaths from all causes within the Yellowstone ecosystem. The death rate, according to our data, has been more than double the birth rate. The situation for 1972 appears to be no better. Computer runs indicate that if remedial action were taken at once, it would still be questionable whether this population can recover. The grizzly bear population in the Yellowstone ecosystem has already reached a critical level. This population is in very serious trouble and a change in management practices is indicated.

(3)

A Briefing on the Grizzly
Bear Situation in Yellowstone
Mammoth-Yellowstone National Park
September 19, 1972
by
Dr. John J. Craighead

Mr. Chairman:

I have been invited to this meeting to present my position on the grizzly bear situation within the Yellowstone ecosystem. I have come prepared to document this position with population data acquired over a 13 year period. As we all know this problem of managing grizzly bears is very complex and there is bound to be difference of opinion. That is why we are here. We must find answers.

Before presenting our data, I would like to present a background of information that I believe is essential to an understanding of why my brother Dr. Frank Craighead, my colleagues, and I, are concerned about the Yellowstone grizzlies. We find it necessary to reiterate why our position is at variance with that of the National Park Service.

The scientific evidence gathered by our research group does not support the Park Service's bear management policies. However, the very essence of the scientific method and of scientific progress is the freedom to disagree. Only with constructive criticism can we find the solution of managing and preserving the grizzly in the Yellowstone environment. We have come by our differences honestly. Our loyalty is to the resource.

I will take time to define the issues and to attempt to put basic differences in perspective.

We began researching grizzlies in 1959 and in the course of the study developed numerous techniques for studying these large carnivores. At the request of the National Park Service, we prepared a management report in 1967. In that report we advocated management policies and a management program based on our research findings and on conclusions supported by nine years of intensive research.

The National Park Service, and its advisory board, however, established management policies and put into action a grizzly bear management program based on hypotheses supported by virtually no research by its biologists of the local problem. I regret that I must take issue with Dr. Leopold's remark this morning that there was a consensus of opinion on the Committee report. With all due respect to Dr. Leopold, on this point, we do not agree.

The hypotheses or assumptions on which present management is based were essentially:

That:

1. Open pit garbage dumps in and outside of Yellowstone National Park could be rapidly phased out with relatively little effect on the grizzly bear population.

2. That most of the grizzlies denied these long established feeding areas would establish themselves in the Yellowstone backcountry and cease to frequent their former haunts.

3. That those grizzlies that did not adjust as anticipated would be dispatched, but it was assumed that the numbers of these would not be great.

This National Park Service grizzly bear management program has now been

in effect for four years.

Our contention five years ago and today is that management of a resource such as the grizzly bear should not be based upon unproven assumptions. It is true that no one could predict exactly what would occur when the new management program went into effect. But, much data existed to show that the basic assumptions were highly questionable.

1959-1971

1. We made our scientific evidence available to the National Park Service in the form of publications, reports and briefings.

2. We have provided the National Park Service with two detailed reports documenting the grizzly bear problem in Yellowstone, and in these reports we made specific recommendations for managing grizzly bears. These recommendations were made on a basis of years of research and at a time when the National Park Service had little scientific expertise in the ecology and management of grizzlies. We recommended that a completely natural population of grizzlies be established by closing the open pit garbage dumps over an 8 to 10 year period or longer. We emphasized the importance of establishing a population of grizzlies that could feed entirely on natural foods.

3. But we especially warned against a rapid phase out of the open pit garbage dumps, especially the Trout Creek dump located in the geographic center of the Park and we advocated continued research by our research team to document what occurred during the phase out. We believed that only by comparing the dump phase out period, with conditions that existed before the phase out, could the success of the

management program be accurately evaluated. We still believe this to be so.

4. In our reports and at numerous meetings we stated that if the open pit dumps were phased out rapidly as the National Park Service indicated it planned to do and I repeat - this action was to be taken on the basis of the unsupported hypotheses:

a. That only a relatively few grizzlies were addicted to feeding in campgrounds and that there existed a relatively large nucleus of back-country grizzlies that had never developed either campground or garbage dump feeding habits. (Our backcountry observations based on thousands of man hours showed little evidence for large backcountry population of grizzlies).

b. That with dumps closed, most of the grizzly bear population would revert to living in the backcountry, their traditional migration to these dump sites would cease, and that the few remaining in developed areas and campgrounds could be disposed of.

Now - if this rationale was accepted as the basis for managing grizzlies, we said in our reports that the following could be expected to occur:

First - There would be a heavy influx of grizzlies into developed areas and campsites both inside and outside the Park where they would cause trouble.

Second - That this would lead to increased mortality of grizzlies and since our data showed that most of the Yellowstone grizzlies had learned over extended periods of time to use the dumps and had established strong habit patterns and traditional migrational movements to these sources of food, these ties and habits developed by a basic reward relationship could not be altered quickly.

Third - The grizzly population would not be able to adjust by occupying the backcountry but instead most of these animals, during the summer period, would still continue to seek food in the areas they had so long frequented. I think Mr. Cole's maps support this.

Fourth - The opportunity for bear-man encounters would increase. This could be partially but not entirely offset by sanitizing tourist areas, closing campgrounds at critical times, increasing ranger patrols and alerting the public to the dangers inherent in the management program. We emphasized the necessity of completely sanitizing campgrounds before closing the dumps.

Fifth - Grizzlies that had frequented the open pit dumps (dumps that had been isolated from the public) would we predicted enter campgrounds and the offspring of females through the basic reward relationship mentioned this morning would learn this habit from their mothers and generations of grizzlies would become conditioned to campgrounds just as in the past they had become conditioned to the open pit dumps. These animals would be more dangerous than those that had frequented the open pit dumps because they would become man-conditioned and they would not be isolated.

Sixth - The disruption caused by the sudden depletion of an important and historic food source would place heavy stress on the population causing:

1. lowered reproduction

2. increased movement - resulting in increased deaths

Both factors would adversely affect the population size as well as grizzly, bear-man relationships. The probability of serious bear-man encounters would increase.

Mr. Chairman, we contend that this is the situation which prevails today. Grizzlies frequenting developed areas and campgrounds continue to be a serious problem, the risk to visitors has not decreased appreciably, and the grizzly population is declining rapidly.

It is this latter problem that I will discuss in detail.

An important question that has been referred to in our briefings this morning and one we must consider is:

What are we talking about in terms of a land area when we discuss the Yellowstone grizzlies? Is it just Yellowstone National Park or is it a larger area?

Are these grizzlies wards of the states adjoining Yellowstone National Park, are they wards of the Federal Government, or are they a joint responsibility? No one has formally addressed themselves to this question.

GRIZZLY BEAR POPULATION ANALYSIS

SLIDE 1

During a 13 year period (1959-1971), we have recorded 209 grizzly bear mortalities within the Yellowstone ecosystem. (approximately 5 million acres) (Yellowstone National Park contains 2,100,000 acres).

The grizzly bear deaths are distributed as shown on the map. The number of marked and unmarked bears killed have been about equal.

We interpret this to show that we are dealing with an ecosystem population not simply a National Park population of grizzly bears.

The geographic distributions of these mortalities of both marked and unmarked grizzlies and the data we have accumulated on natural movement in and out of the park support our hypothesis that most and possibly all grizzly bears within the Yellowstone ecosystem had acquired the habit of visiting the open pit dumps. We have recorded many many natural movements of 50 to 60 airline miles. This traditional habit of grizzlies annually moving to open pit garbage dumps is an important fact, for it relates directly to the dynamics of the population.

Now - how do we analyse the dynamic processes of growth and decline in this population? The most accurate known scientific procedure is to go to computer programing.

We have done this by comparing population data for the pre-management period (1959-1967) against the present period of revised management (1968-1971).

Vital population statistics for these two period have been programed through an IBM 1620 computer. As Dr. Starker Leopold remined us this morning, this requires a great deal of precise data.

We have acquired these data, and this may well be the first time that such vital statistics have been obtained for a living population of large mammals.

The type of computer input data is shown here in the first slide.

SLIDE 3

The results of programing the 1959-1967 data through the computer are illustrated on the slide.

We have a slowly growing grizzly bear population.

The average growth is 1.7 bears per year.

This would appear to be a very small average annual increment, but as you can see the number of grizzlies would increase from about 177 to 261 by the year 2018.

TROUT CREEK

To run a check on the accuracy of our ecosystem projections, we programed vital statistics of age structure, population size, sex ratios, reproduction rate, and longevity for the largest single population unit within the Yellowstone ecosystem - the Trout Creek population (See map). The average population size 116. Sex ratio of cubs, 52% male and 48% females. Reproduction rate .68 The population fluctuated but remained at about the same level to the year 2116 when the runs were terminated.

The conclusion was that this population unit, like the ecosystem population, maintained itself when vital population statistics were projected into the future.

Thus: Prior to the present management program (1959-1967), the grizzly bear population inhabiting the Yellowstone ecosystem was exhibiting a slow growth rate and was not endangered.

The results of programing the 1968-71 data through the computer are shown in the following graphs. This is the period of rapid phase out of the open pit garbage dumps under the new management program.

SLIDE 4

In computer modeling it is more accurate to make a number of runs and average these. Five different computer runs were made using 1968-1971 vital statistics (population size 176) but incorporating excess mortality data. Excess mortality is the increase in mortality for the 1968-1971 period over the 1959-1967 period.

The increased mortality was evenly distributed over all age groups from cubs to 25½ years of age.

These data were used to modify the survivorship rates.

THE GRAPHS SHOW THAT:

The average extermination date for this population is 1998 -- 26 years.

The earliest extermination date is 1988.

The latest extermination date is the year 2000.

It is obvious that these projections show a rapidly declining population.

SLIDE 5

Five computer runs were made using the same data shown in the last graph. (1959-1967 vital statistics) population size 176.

But the increased mortality (1968-1971) over the (1959-1967) period was distributed among adults and sub-adults and male and female. This we believe is a more refined age distribution of deaths.

Projection of these data shows the years of extermination by comparative runs to be:

1991 - 1993 - 1988 - 1986 - 1997

The average extinction date for the Yellowstone population is 1993 - 21 years.

Our conclusion is that:

> The present National Park management program if continued will very probably exterminate or nearly exterminate the Yellowstone grizzly bear population in about 20-25 years.

PROJECTION OF POPULATION ASSUMPTIONS

NO SLIDE

Now we will make some assumptions based on hard-core data and project these assumptions into the future.

Assumption 1:

Let us assume that the increased deaths, that have characterized the period of new Park management, continue through 1973 and then we return the survivorship rates to the values established for the 1959-1967 period which allowed the population to grow.

Then by the year 2018 the population of grizzly bears average 93 animals.

When run to the year 2045, the average population will still be 93 animals. The population does not recover with this remedial action. This information indicates that the population has already reached a critical level.

ASSUMPTION 2:

Here we assume that the population size is 259 bears (an increase of 1/2 over our census figures. Let us assume that there are a number of backcountry bears that never enter the Park, although all evidence indicates this to be a questionable assumption (176 + 83). Mortality rate does not change.

The computer runs show that the population exterminates in the year 2003. Thus, it took just 10 years to kill the extra 83 bears assumed to be in the population. Under the current management and with the present mortality rate, a population of 259 grizzlies will meet the same fate of the smaller population of animals (176). The only difference is that it will take about 10 years longer to accomplish.

ASSUMPTION 3:

Same as the preceeding one (that is with a population of 259 bears), but with a reproductive rate lowered to 0.66 (the reproductive rate we have established for the period 1968-1971).

The computer runs exterminate the population in the year 1998. This is five years earlier than occurred using the reproductive rate of 0.99. It is only five years longer than the average extermination date of 1993 calculated for the population of 176 grizzlies. Gentlemen, this is what our long and intensive research effort shows is occurring under current management practices. In two years 1971

and 1972, we have recorded 91 grizzly bear deaths from all causes within the Yellowstone ecosystem. The death rate according to our data has been more than double the birth rate. Our conclusion is that this population is in very serious trouble and a change in management practices is strongly indicated.

short p 11
original

A Briefing on the Grizzly
Bear Situation in Yellowstone
Mammoth-Yellowstone National Park
September 19, 1972
by
Dr. John J. Craighead

Mr. Chairman:

I have been invited to this meeting to present my position on the grizzly bear situation within the Yellowstone ecosystem. I have come prepared to document this position with population data acquired over a 13 year period. As we all know this problem of managing grizzly bears is very complex and there is bound to be difference of opinion. That is why we are here. We must find answers.

Before presenting our data, I would like to present a background of information that I believe is essential to an understanding of why my brother Dr. Frank Craighead, my colleagues, and I, are concerned about the Yellowstone grizzlies. We find it necessary to reiterate why our position is at variance with that of the National Park Service.

The scientific evidence gathered by our research group does not support the Park Service's bear management policies. However, the very essence of the scientific method and of scientific progress is the freedom to disagree. Only with constructive criticism can we find the solution of managing and preserving the grizzly in the Yellowstone environment. We have come by our differences honestly. Our loyalty is to the resource.

I will take time to define the issues and to attempt to put basic differences in perspective.

We began researching grizzlies in 1959 and in the course of the study developed numerous techniques for studying these large carnivores. At the request of the National Park Service, we prepared a management report in 1967. In that report we advocated management policies and a management program based on our research findings and on conclusions supported by nine years of intensive research.

The National Park Service, and its advisory board, however, established management policies and put into action a grizzly bear management program based on hypotheses supported by virtually no research by its biologists of the local problem. I regret that I must take issue with Dr. Leopold's remark this morning that there was a consensus of opinion on the Committee report. With all due respect to Dr. Leopold, on this point, we do not agree.

The hypotheses or assumptions on which present management is based were essentially:

That:

1. Open pit garbage dumps in and outside of Yellowstone National Park could be rapidly phased out with relatively little effect on the grizzly bear population.

2. That most of the grizzlies denied these long established feeding areas would establish themselves in the Yellowstone backcountry and cease to frequent their former haunts.

3. That those grizzlies that did not adjust as anticipated would be dispatched, but it was assumed that the numbers of these would not be great.

This National Park Service grizzly bear management program has now been

in effect for four years.

Our contention five years ago and today is that management of a resource such as the grizzly bear should not be based upon unproven assumptions. It is true that no one could predict exactly what would occur when the new management program went into effect. But, much data existed to show that the basic assumptions were highly questionable.

1959-1971

1. We made our scientific evidence available to the National Park Service in the form of publications, reports and briefings.

2. We have provided the National Park Service with two detailed reports documenting the grizzly bear problem in Yellowstone, and in these reports we made specific recommendations for managing grizzly bears. These recommendations were made on a basis of years of research and at a time when the National Park Service had little scientific expertise in the ecology and management of grizzlies. We recommended that a completely natural population of grizzlies be established by closing the open pit garbage dumps over an 8 to 10 year period or longer. We emphasized the importance of establishing a population of grizzlies that could feed entirely on natural foods.

3. <u>But</u> we especially warned against a rapid phase out of the open pit garbage dumps, especially the Trout Creek dump located in the geographic center of the Park and we advocated continued research by our research team to document what occurred during the phase out. We believed that only by comparing the dump phase out period, with conditions that existed before the phase out, could the success of the

management program be accurately evaluated. We still believe this to be so.

4. In our reports and at numerous meetings we stated that if the open pit dumps were phased out rapidly as the National Park Service indicated it planned to do and I repeat - this action was to be taken on the basis of the unsupported hypotheses:

a. That only a relatively few grizzlies were addicted to feeding in campgrounds and that there existed a relatively large nucleus of back-country grizzlies that had never developed either campground or garbage dump feeding habits. (Our backcountry observations based on thousands of man hours showed little evidence for large backcountry population of grizzlies).

b. That with dumps closed, most of the grizzly bear population would revert to living in the backcountry, their traditional migration to these dump sites would cease, and that the few remaining in developed areas and campgrounds could be disposed of.

Now - if this rationale was accepted as the basis for managing grizzlies, we said in our reports that the following could be expected to occur:

First - There would be a heavy influx of grizzlies into developed areas and campsites both inside and outside the Park where they would cause trouble.

Second - That this would lead to increased mortality of grizzlies and since our data showed that most of the Yellowstone grizzlies had learned over extended periods of time to use the dumps and had established strong habit patterns and traditional migrational movements to these sources of food, these ties and habits developed by a basic reward relationship could not be altered quickly.

Third - The grizzly population would not be able to adjust by occupying the backcountry but instead most of these animals, during the summer period, would still continue to seek food in the areas they had so long frequented. I think Mr. Cole's maps support this.

Fourth - The opportunity for bear-man encounters would increase. This could be partially but not entirely offset by sanitizing tourist areas, closing campgrounds at critical times, increasing ranger patrols and alerting the public to the dangers inherent in the management program. We emphasized the necessity of completely sanitizing campgrounds before closing the dumps.

Fifth - Grizzlies that had frequented the open pit dumps (dumps that had been isolated from the public) would we predicted enter campgrounds and the offspring of females through the basic reward relationship mentioned this morning would learn this habit from their mothers and generations of grizzlies would become conditioned to campgrounds just as in the past they had become conditioned to the open pit dumps. These animals would be more dangerous than those that had frequented the open pit dumps because they would become man-conditioned and they would not be isolated.

Sixth - The disruption caused by the sudden depletion of an important and historic food source would place heavy stress on the population causing:

1. lowered reproduction

2. increased movement - resulting in increased deaths

Both factors would adversely affect the population size as well as grizzly, bear-man relationships. The probability of serious bear-man encounters would increase.

Mr. Chairman, we contend that this is the situation which prevails today. Grizzlies frequenting developed areas and campgrounds continue to be a serious problem, the risk to visitors has not decreased appreciably, and the grizzly population is declining rapidly.

It is this latter problem that I will discuss in detail.

An important question that has been referred to in our briefings this morning and one we must consider is:

What are we talking about in terms of a land area when we discuss the Yellowstone grizzlies? Is it just Yellowstone National Park or is it a larger area?

Are these grizzlies wards of the states adjoining Yellowstone National Park, are they wards of the Federal Government, or are they a joint responsibility? No one has formally addressed themselves to this question.

GRIZZLY BEAR POPULATION ANALYSIS

SLIDE 1

During a 13 year period (1959-1971), we have recorded 209 grizzly bear mortalities within the Yellowstone ecosystem. (approximately 5 million acres) (Yellowstone National Park contains 2,100,000 acres).

The grizzly bear deaths are distributed as shown on the map. The number of marked and unmarked bears killed have been about equal.

We interpret this to show that we are dealing with an ecosystem population not simply a National Park population of grizzly bears.

The geographic distributions of these mortalities of both marked and unmarked grizzlies and the data we have accumulated on natural movement in and out of the park support our hypothesis that most and possibly all grizzly bears within the Yellowstone ecosystem had acquired the habit of visiting the open pit dumps. We have recorded many many natural movements of 50 to 60 airline miles. This traditional habit of grizzlies annually moving to open pit garbage dumps is an important fact, for it relates directly to the dynamics of the population.

Now - how do we analyse the dynamic processes of growth and decline in this population? The most accurate known scientific procedure is to go to computer programing.

We have done this by comparing population data for the pre-management period (1959-1967) against the present period of revised management (1968-1971).

The conclusion was that this population unit, like the ecosystem population, maintained itself when vital population statistics were projected into the future.

Thus: Prior to the present management program (1959-1967), the grizzly bear population inhabiting the Yellowstone ecosystem was exhibiting a slow growth rate and was not endangered.

The results of programing the 1968-71 data through the computer are shown in the following graphs. This is the period of rapid phase out of the open pit garbage dumps under the new management program.

SLIDE 4

In computer modeling it is more accurate to make a number of runs and average these. Five different computer runs were made using 1968-1971 vital statistics (population size 176) but incorporating excess mortality data. Excess mortality is the increase in mortality for the 1968-1971 period over the 1959-1967 period.

The increased mortality was evenly distributed over all age groups from cubs to 25½ years of age.

These data were used to modify the survivorship rates.

THE GRAPHS SHOW THAT:

The average extermination date for this population is 1998 -- 26 years.

The earliest extermination date is 1988.

The latest extermination date is the year 2000.

It is obvious that these projections show a rapidly declining population.

SLIDE 5

Five computer runs were made using the same data shown in the last graph. (1959-1967 vital statistics) population size 176.

But the increased mortality (1968-1971) over the (1959-1967) period was distributed among adults and sub-adults and male and female. This we believe is a more refined age distribution of deaths.

Projection of these data shows the years of extermination by comparative runs to be:

1991 - 1993 - 1988 - 1986 - 1997

The average extinction date for the Yellowstone population is 1993 - 21 years.

Our conclusion is that:

> The present National Park management program if continued will very probably exterminate or nearly exterminate the Yellowstone grizzly bear population in about 20-25 years.

PROJECTION OF POPULATION ASSUMPTIONS

NO SLIDE

Now we will make some assumptions based on hard-core data and project these assumptions into the future.

Assumption 1:

Let us assume that the increased deaths, that have characterized the period of new Park management, continue through 1973 and then we return the survivorship rates to the values established for the 1959-1967 period which allowed the population to grow.

Then by the year 2018 the population of grizzly bears average 93 animals.

When run to the year 2045, the average population will still be 93 animals. The population does not recover with this remedial action. This information indicates that the population has already reached a critical level.

ASSUMPTION 2:

Here we assume that the population size is 259 bears (an increase of 1/2 over our census figures. Let us assume that there are a number of backcountry bears that never enter the Park, although all evidence indicates this to be a questionable assumption (176 + 83). Mortality rate does not change.

The computer runs show that the population exterminates in the year 2003. Thus, it took just 10 years to kill the extra 83 bears assumed to be in the population. Under the current management and with the present mortality rate, a population of 259 grizzlies will meet the same fate of the smaller population of animals (176). The only difference is that it will take about 10 years longer to accomplish.

ASSUMPTION 3:

Same as the preceeding one (that is with a population of 259 bears), but with a reproductive rate lowered to 0.66 (the reproductive rate we have established for the period 1968-1971).

The computer runs exterminate the population in the year 1998. This is five years earlier than occurred using the reproductive rate of 0.99. It is only five years longer than the average extermination date of 1993 calculated for the population of 176 grizzlies. Gentlemen, this is what our long and intensive research effort shows is occurring under current management practices. In two years 1971

and 1972, we have recorded 91 grizzly bear deaths from all causes within the Yellowstone ecosystem. The death rate according to our data has been more than double the birth rate. Our conclusion is that this population is in very serious trouble and a change in management practices is strongly indicated.

and 1972, we have recorded 91 grizzly bear deaths from all causes within the Yellowstone ecosystem. The death rate according to our data has been more than double the birth rate. Our conclusion is that this population is in very serious trouble and a change in management practices is strongly indicated.

(40)

A Briefing on the Grizzly
Bear Situation in Yellowstone
Mammoth-Yellowstone National Park
September 19, 1972
by
Dr. John J. Craighead

Mr. Chairman:

I have been invited to this meeting to present my position on the grizzly bear situation within the Yellowstone ecosystem. I have come prepared to document this position with population data acquired over a 13 year period. As we all know this problem of managing grizzly bears is very complex and there is bound to be difference of opinion. That is why we are here. We must find answers.

Before presenting our data, I would like to present a background of information that I believe is essential to an understanding of why my brother Dr. Frank Craighead, my colleagues, and I, are concerned about the Yellowstone grizzlies. We find it necessary to reiterate why our position is at variance with that of the National Park Service.

The scientific evidence gathered by our research group does not support the Park Service's bear management policies. However, the very essence of the scientific method and of scientific progress is the freedom to disagree. Only with constructive criticism can we find the solution of managing and preserving the grizzly in the Yellowstone environment. We have come by our differences honestly. Our loyalty is to the resource.

I will take time to define the issues and to attempt to put basic differences in perspective.

We began researching grizzlies in 1959 and in the course of the study developed numerous techniques for studying these large carnivores. At the request of the National Park Service, we prepared a management report in 1967. In that report we advocated management policies and a management program based on our research findings and on conclusions supported by nine years of intensive research.

The National Park Service, and its advisory board, however, established management policies and put into action a grizzly bear management program based on hypotheses supported by virtually no research by its biologists of the local problem. I regret that I must take issue with Dr. Leopold's remark this morning that there was a consensus of opinion on the Committee report. With all due respect to Dr. Leopold, on this point, we do not agree.

The hypotheses or assumptions on which present management is based were essentially:

That:

1. Open pit garbage dumps in and outside of Yellowstone National Park could be rapidly phased out with relatively little effect on the grizzly bear population.

2. That most of the grizzlies denied these long established feeding areas would establish themselves in the Yellowstone backcountry and cease to frequent their former haunts.

3. That those grizzlies that did not adjust as anticipated would be dispatched, but it was assumed that the numbers of these would not be great.

This National Park Service grizzly bear management has now been

in effect for four years.

Our contention five years ago and today is that management of a resource such as the grizzly bear should not be based upon unproven assumptions. It is true that no one could predict exactly what would occur when the new management program went into effect. But, much data existed to show that the basic assumptions were highly questionable.

1959-1971

1. We made our scientific evidence available to the National Park Service in the form of publications, reports and briefings.

2. We have provided the National Park Service with two detailed reports documenting the grizzly bear problem in Yellowstone, and in these reports we made specific recommendations for managing grizzly bears. These recommendations were made on a basis of years of research and at a time when the National Park Service had little scientific expertise in the ecology and management of grizzlies. We recommended that a completely natural population of grizzlies be established by closing the open pit garbage dumps over an 8 to 10 year period or longer. We emphasized the importance of establishing a population of grizzlies that could feed entirely on natural foods.

3. <u>But</u> we especially warned against a rapid phase out of the open pit garbage dumps, especially the Trout Creek dump located in the geographic center of the Park and we advocated continued research by our research team to document what occurred during the phase out. We believed that only by comparing the dump phase out period, with conditions that existed before the phase out, could the success of the

management program be accurately evaluated. We still believe this to be so.

4. In our reports and at numerous meetings we stated that if the open pit dumps were phased out rapidly as the National Park Service indicated it planned to do and I repeat - this action was to be taken on the basis of the unsupported hypotheses:

a. That only a relatively few grizzlies were addicted to feeding in campgrounds and that there existed a relatively large nucleus of back-country grizzlies that had never developed either campground or garbage dump feeding habits. (Our backcountry observations based on thousands of man hours showed little evidence for large backcountry population of grizzlies).

b. That with dumps closed, most of the grizzly bear population would revert to living in the backcountry, their traditional migration to these dump sites would cease, and that the few remaining in developed areas and campgrounds could be disposed of.

Now - if this rationale was accepted as the basis for managing grizzlies, we said in our reports that the following could be expected to occur:

First - There would be a heavy influx of grizzlies into developed areas and campsites both inside and outside the Park where they would cause trouble.

Second - That this would lead to increased mortality of grizzlies and since our data showed that most of the Yellowstone grizzlies had learned over extended periods of time to use the dumps and had established strong habit patterns and traditional migrational movements to these sources of food, these ties and habits developed by a basic reward relationship could not be altered quickly.

Third - The grizzly population would not be able to adjust by occupying the backcountry but instead most of these animals, during the summer period, would still continue to seek food in the areas they had so long frequented. I think Mr. Cole's maps support this.

Fourth - The opportunity for bear-man encounters would increase. This could be partially but not entirely offset by sanitizing tourist areas, closing campgrounds at critical times, increasing ranger patrols and alerting the public to the dangers inherent in the management program. We emphasized the necessity of completely sanitizing campgrounds before closing the dumps.

Fifth - Grizzlies that had frequented the open pit dumps (dumps that had been isolated from the public) would we predicted enter campgrounds and the offspring of females through the basic reward relationship mentioned this morning would learn this habit from their mothers and generations of grizzlies would become conditioned to campgrounds just as in the past they had become conditioned to the open pit dumps. These animals would be more dangerous than those that had frequented the open pit dumps because they would become man-conditioned and they would not be isolated.

Sixth - The disruption caused by the sudden depletion of an important and historic food source would place heavy stress on the population causing:

1. lowered reproduction

2. increased movement - resulting in increased deaths

Both factors would adversely affect the population size as well as grizzly, bear-man relationships. The probability of serious bear-man encounters would increase.

Mr. Chairman, we contend that this is the situation which prevails today. Grizzlies frequenting developed areas and campgrounds continue to be a serious problem, the risk to visitors has not decreased appreciably, and the grizzly population is declining rapidly.

It is this latter problem that I will discuss in detail.

An important question that has been referred to in our briefings this morning and one we must consider is:

What are we talking about in terms of a land area when we discuss the Yellowstone grizzlies? Is it just Yellowstone National Park or is it a larger area?

Are these grizzlies wards of the states adjoining Yellowstone National Park, are they wards of the Federal Government, or are they a joint responsibility? No one has formally addressed themselves to this question.

GRIZZLY BEAR POPULATION ANALYSIS

SLIDE 1

During a 13 year period (1959-1971), we have recorded 209 grizzly bear mortalities within the Yellowstone ecosystem. (approximately 5 million acres) (Yellowstone National Park contains 2,100,000 acres).

The grizzly bear deaths are distributed as shown on the map. The number of marked and unmarked bears killed have been about equal.

We interpret this to show that we are dealing with an ecosystem population not simply a National Park population of grizzly bears.

The geographic distributions of these mortalities of both marked and unmarked grizzlies and the data we have accumulated on natural movement in and out of the park support our hypothesis that most and possibly all grizzly bears within the Yellowstone ecosystem had acquired the habit of visiting the open pit dumps. We have recorded many many natural movements of 50 to 60 airline miles. This traditional habit of grizzlies annually moving to open pit garbage dumps is an important fact, for it relates directly to the dynamics of the population.

Now - how do we analyse the dynamic processes of growth and decline in this population? The most accurate known scientific procedure is to go to computer programing.

We have done this by comparing population data for the pre-management period (1959-1967) against the present period of revised management (1968-1971).

SLIDE 2

Vital population statistics for these two period have been programed through an IBM 1620 computer. As Dr. Starker Leopold remined us this morning, this requires a great deal of precise data.

We have acquired these data, and this may well be the first time that such vital statistics have been obtained for a living population of large mammals.

The type of computer input data is shown here in the first slide.

SLIDE 3

The results of programing the 1959-1967 data through the computer are illustrated on the slide.

We have a slowly growing grizzly bear population.

The average growth is 1.7 bears per year.

This would appear to be a very small average annual increment, but as you can see the number of grizzlies would increase from about 177 to 261 by the year 2018.

TROUT CREEK

To run a check on the accuracy of our ecosystem projections, we programed vital statistics of age structure, population size, sex ratios, reproduction rate, and longevity for the largest single population unit within the Yellowstone ecosystem - the Trout Creek population (See map). The average population size 116. Sex ratio of cubs, 52% male and 48% females. Reproduction rate .68 The population fluctuated but remained at about the same level to the year 2116 when the runs were terminated.

The conclusion was that this population unit, like the ecosystem population, maintained itself when vital population statistics were projected into the future.

Thus: Prior to the present management program (1959-1967), the grizzly bear population inhabiting the Yellowstone ecosystem was exhibiting a slow growth rate and was not endangered.

The results of programing the 1968-71 data through the computer are shown in the following graphs. This is the period of rapid phase out of the open pit garbage dumps under the new management program.

SLIDE 4

In computer modeling it is more accurate to make a number of runs and average these. Five different computer runs were made using 1968-1971 vital statistics (population size 176) but incorporating excess mortality data. Excess mortality is the increase in mortality for the 1968-1971 period over the 1959-1967 period.

The increased mortality was evenly distributed over all age groups from cubs to 25½ years of age.

These data were used to modify the survivorship rates.

THE GRAPHS SHOW THAT:

The average extermination date for this population is 1998 -- 26 years.

The earliest extermination date is 1988.

The latest extermination date is the year 2000.

It is obvious that these projections show a rapidly declining population.

SLIDE 5

Five computer runs were made using the same data shown in the last graph. (1959-1967 vital statistics) population size 176.

But the increased mortality (1968-1971) over the (1959-1967) period was distributed among adults and sub-adults and male and female. This we believe is a more refined age distribution of deaths.

Projection of these data shows the years of extermination by comparative runs to be:

1991 - 1993 - 1988 - 1986 - 1997

The average extinction date for the Yellowstone population is 1993 - 21 years.

Our conclusion is that:

> The present National Park management program if continued will very probably exterminate or nearly exterminate the Yellowstone grizzly bear population in about 20-25 years.

PROJECTION OF POPULATION ASSUMPTIONS

NO SLIDE

Now we will make some assumptions based on hard-core data and project these assumptions into the future.

Assumption 1:

Let us assume that the increased deaths, that have characterized the period of new Park management, continue through 1973 and then we return the survivorship rates to the values established for the 1959-1967 period which allowed the population to grow.

Then by the year 2018 the population of grizzly bears average 93 animals.

When run to the year 2045, the average population will still be 93 animals. The population does not recover with this remedial action. This information indicates that the population has already reached a critical level.

ASSUMPTION 2:

Here we assume that the population size is 259 bears (an increase of 1/2 over our census figures. Let us assume that there are a number of backcountry bears that never enter the Park, although all evidence indicates this to be a questionable assumption (176 + 83). Mortality rate does not change.

The computer runs show that the population exterminates in the year 2003. Thus, it took just 10 years to kill the extra 83 bears assumed to be in the population. Under the current management and with the present mortality rate, a population of 259 grizzlies will meet the same fate of the smaller population of animals (176). The only difference is that it will take about 10 years longer to accomplish.

ASSUMPTION 3:

Same as the preceeding one (that is with a population of 259 bears), but with a reproductive rate lowered to 0.66 (the reproductive rate we have established for the period 1968-1971).

The computer runs exterminate the population in the year 1998. This is five years earlier than occurred using the reproductive rate of 0.99. It is only five years longer than the average extermination date of 1993 calculated for the population of 176 grizzlies. Gentlemen, this is what our long and intensive research effort shows is occurring under current management practices. In two years 1971

and 1972, we have recorded 91 grizzly bear deaths from all causes within the Yellowstone ecosystem. The death rate according to our data has been more than double the birth rate. Our conclusion is that this population is in very serious trouble and a change in management practices is strongly indicated.

Meetings — Grizzly Bear July 7, 1970
Mack's Inn, Id, Bozeman, Mont.

CONCERNING THE FIRST MEETING OF THE SPECIAL GRIZZLY BEAR COMMITTEE
OF THE INTERNATIONAL ASSOCIATION OF GAME, FISH AND
CONSERVATION COMMISSIONERS

Date of Meeting: July 7, 1970

(This was changed from July 1 which was not a suitable date.)

Place: Mack's Inn Resort ph 538-9931
Mack's Inn, Idaho 83433

Committee Members: (Appointed by Harry R. Woodward, President, International Association)

John R. Woodworth, Chairman
Frank H. Dunkle
James B. White

Other Participants:

From Forest Service:

Roger Bumstead, Northern Region, Missoula
Mike Gaufin, Intermountain Region, Ogden
A.F.C. Greene, Rocky Mountain Region, Denver
Jack Lavin, Supervisor, Shoshone National Forest

From National Park Service:

Representatives from Yellowstone, Grand Teton and Glacier National Parks have been invited but individuals' names were not available when this was written.

Preliminary Agenda:

1. A March 6, 1970 letter from Edward A. Hummel, Assistant Director of the National Park Service, to Harry Woodward, President, International Association of Game, Fish and Conservation Commissioners, invited suggestions which could be used in developing grizzly bear management programs beneficial to the parks and concerned States. I believe that the Special Grizzly Bear Committee, appointed by Woodward, should formulate such suggestions which can eventually be delivered to the National Park Service. I am, therefore, requesting that formulating these suggestions become a primary item of business at the July 7 meeting of the Committee.

2. Committee members and representatives of other agencies should bring information to this meeting concerning these three items:

   1. The status of the grizzly, including all available inventory and kill figures.

   2. The needs for specific research programs on grizzly bears.

   3. Any other pertinent information related to the assignment of our Committee.

3. It seems desirable that the Committee prepare a resolution regarding grizzly bear management to be submitted to the Western Association for action at its mid-July meeting. Since there is a deadline for resolutions to the Western, I will appreciate your advance suggestions for this resolution not later than May 21, 1970.

John R. Woodworth
Chairman

NOTE: Be sure you have the new date -- July 7, 1970

Reservations: Please return the enclosed reservation form for representatives from your agency.



DON SAMUELSON, Governor
COMMISSION
ROBERT G. KALB, Sandpoint
PAUL C. KEETON, Lewiston
JOHN EATON, Cascade
R. J. HOLMES, Twin Falls
GLENN STANGER, Idaho Falls

IDAHO FISH AND GAME DEPARTMENT

JOHN R. WOODWORTH, Director

POST OFFICE BOX 25
600 SOUTH WALNUT STREET
BOISE, IDAHO 83707

June 2, 1970

Dr. Frank Craighead
P.O. Box 156
Moose, Wyoming 83012

Dear Frank:

The enclosed information concerning the first meeting of the Special Grizzly Bear Committee on July 7, is self-explanatory. I certainly hope that you can be in attendance.

Sincerely,

IDAHO FISH AND GAME DEPARTMENT

John R. Woodworth

John R. Woodworth
Director

Enclosures

7-6-70 OK ARRIVE ON 6TH
7-7-70 WILL NOT STAY
RESERVATIONS HAVE BEEN MADE

IDAHO FISH AND GAME DEPARTMENT
A/C 208-344-8471

Frank Craighead

Notes concerning the July 7, 1970 meeting of the Special Grizzly Bear Committee of the International Association at Macks Inn, Idaho.

These notes do not repeat all of the discussion which took place at Macks Inn. Instead, we attempted to cover the main points, with enough of the related discussion to enable the participants to recall the main thread of this interesting session. Please let us know if you find glaring errors or inaccurate statements in these notes. -- JRW

Status of Grizzly Bears, Including Population and Harvest

By combining the information given by several agencies at this meeting, it appears that there are about 800 grizzly bears in the West today, including 400 in the national parks.

Only Montana and Wyoming have had recent hunting seasons on the grizzly. Montana hunters took about 32 grizzlies in 1969 and probably several more grizzlies were killed on complaints. Wyoming hunters took two grizzlies in a spring season in 1970 and the unsuccessful permittees will be permitted to hunt again during a fall season in 1970. Wyoming had closed seasons in 1968 and 1969, but hunted grizzly bears for several years prior to 1968.

An average of about two grizzlies per year have been destroyed in Glacier National Park from 1960 through 1969. In Yellowstone National Park the kill averaged about three per year for about forty years, but it has been near four per year in the past ten years. According to Glen Cole, the long-term record shows that 60 of 64 grizzly bear incidents took place in and around developed areas. Only four incidents occurred away from human concentration areas, and these four involved sows with cubs.

Criteria Needed to Determine Suitability of Individual Bears for Transplanting

John Craighead suggested that a feasibility experiment be conducted to learn whether or not a transplant program is workable. He urged that the best possible bears be used

for this experiment, both from the scientific and public relations standpoints. The consensus seemed to be that a sow with cubs would be ideal transplant stock. In considering the area used by individual bears, Craighead reminded the group that old males tend to move further than other bears.

Robert Tully raised the question of how to handle problem bears which were not acceptable to the States for transplant stock. Jim White mentioned the possibility that hunters might take such bears if they were released in areas open to grizzly hunting. Jack Anderson said that it might be possible to move such bears out of the Park, if States wish to accept them, but he emphasized that hunters could not be authorized to kill bears within National Parks under any conditions.

Glen Cole mentioned that he had reservations regarding the size of the proposed transplant site in northern Idaho.

Research Needs

The discussion of research needs revolved largely around follow-up studies of grizzly bear transplants and inventory, evaluation, and analysis of grizzly bear habitat information.

Maurice Hornocker outlined his ideas concerning instrumentation and follow-up of any grizzly bear transplants which may be made in Idaho. There was general agreement among the States that transplanted bear should be instrumented. John Craighead pointed out that instrumented bears not only give information on the area used, but also make it possible to relocate the bear if trouble develops.

Jim White would like to have transplanted bears monitored even if they are brought into Indian reservations. (Glen Cole had mentioned earlier that there was some interest in transplanting Yellowstone Park grizzly bears to the Wind River Indian Reservation in Wyoming.)

In order to fully appraise potential for transplanting grizzly bears, it will be necessary that a complete inventory of grizzly bear habitat be made. An analysis of this

habitat inventory information will, in turn, be useful in evaluating those areas where grizzly bears have long been absent but in which there seems to be some potential for success with transplants. John Craighead pointed out that both food and space are involved in appraising grizzly bear habitat. Wynn Freeman noted that areas now occupied by grizzly bears do not have livestock grazing. Ed Bucknall said that grizzly bear habitat information is available from the Missouri Basin Offices of Harrell Mosbaugh in Billings, Montana. Bob Tracy of Targhee National Forest said that his office could use bear habitat information in connection with the West Slope Teton Study which is now in progress.

Jim White suggested that the Special Grizzly Bear Committee could assign analysis of existing data and that a team effort is needed. He suggested a Technical Committee to do the overall analysis job, cooperatively funded by participating States. Jack Lavin added that public input should be obtained and that the Committee should "...lay it on the line to the public." The importance of the cooperating agencies being completely honest with each other was stressed in this discussion.

Funds

Dick Woodworth asked for ideas concerning funding in relation to the overall study. Wynn Freeman commented that States could inventory their own habitat and Pete Greene added that the Forest Service could cooperate in this undertaking.

Roger Bumstead suggested that Chairman Woodworth contact Ev Doman, new Chief of Wildlife for the Forest Service, regarding wildlife funds. Forest Service funds for wildlife work have been inadequate in recent years. Pete Greene and several others stressed that Congress needs to know that these funds are needed.

Sub-Committee Appointed

Chairman Dick Woodworth appointed the following persons to a sub-committee to prepare grizzly bear habitat information:

Glen F. Cole, National Park Service
John Craighead, Montana Cooperative Wildlife Research Unit
Roger Bumstead, Forest Service
Jack Lavin, Forest Service
Ken Winters, Wyoming Game and Fish Department
Ray Rogers, Idaho Fish and Game Department
Ken Greer, Montana Fish and Game Department

The tentative assignment for the sub-committee follows:

1. Inventory habitat

2. Analyze habitat information

3. Establish criteria for evaluating habitat

4. Establish guidelines for habitat management to permit only such other uses of an area as are compatible with maintenance of a grizzly bear population.

Note: After the above is done, any agency may evaluate its potential habitat, but this step is not the job of the sub-committee.

Ideas and Suggestions to National Park Service

Cooperating agencies were urged to make suggestions to the National Park Service concerning the grizzly bear program. Yellowstone Park Superintendent Jack Anderson related that operations in Yellowstone National Park concerning grizzly bears had been developed after the Leopold-Cain-Olmsted policy program of November 19, 1969. He said this was approved "up and down the line" including John Gottschalk.

John Craighead reviewed graphs which showed activities of marked bears before and after the closing of the Rabbit Creek dump in Yellowstone.

Legal Problems

Pete Greene pointed out that the Regional Forester must approve any grizzly bear introductions which may be made on National Forests.

The consensus seemed to be that each State had its own methods and procedures and that handling of grizzly bear matters within a State was largely up to the State involved. Wynn Freeman suggested that any State releasing grizzly bears should let adjoining States

know when the release was made and when the instrumented bears get near State lines.

Resolutions

A draft of a proposed Western Association resolution was read and discussed, with suggestions for broadening and improving this resolution.

Closing Garbage Dumps

There was much interest in the program in Yellowstone National Park in connection with phasing out the garbage dumps. Jack Anderson said the Rabbit Creek dump was the only one which had been closed this year and that it was too early to tell the total relationship of this closure to activity in the Old Faithful area and bear trapping in the Park this year. John Craighead reiterated that his data indicates that a rapid phase-out of garbage dumps is almost certain to be troublesome. Glen Cole indicated that control records for long periods do not necessarily parallel those for marked bears. Chairman Woodworth emphasized that it will be necessary to combine all available information so that the entire problem related to garbage dump phase-outs can be considered objectively.

Publicity

Pete Greene mentioned that the Special Grizzly Bear Committee should coordinate publicity concerning criteria for transplant bears and the entire transplanting program. He also mentioned that a grizzly bear symposium is scheduled at Indiana University for August 24 in connection with the American Institute of Biological Sciences. He feared that unfortunate publicity might be attached to this symposium. John Craighead will be in attendance there.

Jack Anderson explained the exchange of information which precedes release of information from Yellowstone Park which is likely to affect adjacent Fish and Game Departments. He also said that publicity is needed from the state of Idaho as "..a

pulse of the people" and this should be cross-checked with the National Park Service concerning procedure. Frank Evans said that publicity concerning grizzly bears around Glacier National Park has usually been adverse and harmful to grizzly bears as a species. Roger Bumstead pointed out that the Kaniksu National Forest should be coordinated with the Idaho Fish and Game Department on the publicity concerning grizzly bear releases.

Wolves

Jack Anderson and Glen Cole clarified the status of wolves in Yellowstone National Park. Wolves are now present in Yellowstone National Park and none have been introduced by the Park Service. A research note concerning wolves in Yellowstone National Park is available and it has been taken to such organizations as the Montana Woolgrowers, etc.

Invitation to Committee

Jack Anderson invited Chairman Woodworth and the Special Grizzly Bear Committee of the International Association to Yellowstone National Park to discuss problems on the ground later.

Adjournment

Chairman Woodworth expressed thanks and appreciation to the various participants in the meeting and the session was adjourned at 2:20 p.m.

ATTENDANCE ROSTER FOR MEETING OF SPECIAL GRIZZLY BEAR COMMITTEE
AT MACK'S INN, IDAHO ON JULY 7, 1970

Name	Agency	Address or Location
Jim White	Wyoming Game and Fish	Cheyenne, Wyoming
Howard W. Robinson	Wyoming Game and Fish	Cheyenne, Wyoming
Roger Bumstead	U.S.F.S., Region One	Missoula, Montana
A.F.C. Greene	U.S.F.S., Region Two	Denver, Colorado
Emil Kulhanek	U.S.F.S. Kaniksu N.F.	Sandpoint, Idaho
Bob Tracy	U.S.F.S. Targhee N.F.	St. Anthony, Idaho
Jack Lavin	Shoshone N.F.	Cody, Wyoming
Glen F. Cole	N.P.S., Washington Embassy	Mammoth, Wyoming
LeRoy R. Brown	Midwest Regional Office, N.P.S.	Omaha, Nebraska
Frank J. Betts	Grand Teton N.P.	Moose, Wyoming
Wynn Freeman	Montana Fish and Game	Helena, Montana
Joe Egan	Montana Fish and Game	Helena, Montana
Ken Greer	Montana Fish and Game	Bozeman, Montana
Roger M. Williams	Idaho Fish and Game	Boise, Idaho
Walter L. Bodie	Idaho Fish and Game	Swan Valley, Idaho
Bill Gorgen	Idaho Fish and Game	Driggs, Idaho
Ray Rogers	Idaho Fish and Game	Coeur d'Alene, Idaho
Errol Nielson	Idaho Fish and Game	Boise, Idaho
Levi L. Mohler	Idaho Fish and Game	Boise, Idaho
John R. Woodworth	Idaho Fish and Game	Boise, Idaho
Jack K. Anderson	Yellowstone National Park	Wyoming
Edmund J. Bucknall	Yellowstone National Park	Wyoming
H. Frank Evans	Student-Not agency connected	Star Route, Columbia Falls, Montana
Maurice Hornocker	Idaho Coop. Wildlife Res. Unit	Univ. of Idaho, Moscow
Elwood Bizeau	Idaho Coop. Wildlife Res. Unit	Univ. of Idaho, Moscow
John J. Craighead	Montana Coop. Wildlife Res. Unit	Missoula, Montana
Robert J. Tully	Colorado Div. of Game, Fish & Parks	Denver, Colorado

March 29, 1972
Grizzly Bear Meeting

GRIZZLY BEAR MEETING MINUTES

Morning Session

Introduction - Weingart: Program is for coordination with Fish and Game and Park Service on relocating grizzly bear. Sanitary landfill made this necessary. Did not want to destroy bear but give them a chance to make it in backcountry. Did not have an I&E program because we did not want the same thing to happen as did in Idaho, but were slow in getting out just what we were doing. Will try to avoid that this year. R.O. would like to discuss broader base on transplanting bears. We will look at possible sites, problems, and opportunities this morning.

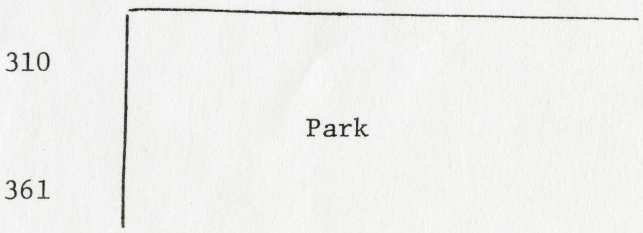
Bumstead: Need more public attention to situation of grizzly. Should try to formulate some plan as to how, where, and when to go with grizzly. Possibility of transplanting bears was written to all Forest Supervisors in Montana. Time we did something in a positive and firm manner. Hope we can put something together here today as far as managing grizzly and habitat.

Brown: We must have a place to put the bear. There may be a habitat change and we might have to put some somewhere else. We have to know once and for all where we can put them.

Hoskins: Had artificial feeding program for bears around West Yellowstone for years. Led to oversupply of grizzlies in area. Federal law changes made it imperative to go to landfill operation. Decided to fence landfill and shut grizzly off from dump. This decision made after deliberation by Park Service, Forest Service and others. If you just try to wean the bear you have not accomplished anything. The bear is still on the garbage. Have been successful in keeping the bear from garbage dump. Problem bears were trapped and transplanted.

Greer: Twenty-three trappings of 19 animals - 10 males, 9 females. One animal from the Park - dispatched after identity known. One returned to Park and was transplanted across to Wyoming border. Seventeen actual transplants. One died on arrival at transplant site. Two were presumed killed by sheepmen. One killed by camper. One returned to West Yellowstone and was killed by a hunter. Two were legally killed by hunters. Two killed illegally by hunters. Four returned to West Yellowstone and were dispatched. Total 13. One animal returned to Fishing Bridge and put into Grayling Creek area by Park Service. Three we don't know anything about. One adult female. The four that returned were two females, six and 17 years, and two males, seven and 16 years.

Fall 1971 Hunter Kill: 313 316



Area 316 - 3 tags but no transplants - tagged in Yellowstone Park
2 no tags
2 transplants

7

Area 310 - 1

Area 313 - 1

Transplant site #5 high risk area because too close to area they were taken from. Wanted to put animals as far away from Park as possible. Weather and accessibility had something to do with the choice. The one sheep herder cited for killing a grizzly was found not guilty.

Craighead (John): Will probably see grizzlies more now. Maybe get more from Park transplant and not necessarily Fish and Game transplants. North boundary been popular area for grizzlies.

Had team in West Yellowstone last summer headed by Jay Sumner. Was apparent lack of success in transplant programs. We have to recognize that we are dealing with ecosystem of Yellowstone National Park and all adjacent Forests. Exchange of grizzly bears from YNP to Forests. Everything has to be on a cooperative basis.

Natural movement of grizzlies showed great deal of movement between dumps. The transplant is one solution but we need to know more. Bears were concentrated in YNP during summer around dumps.

Need to find out two things: 1. What effect is disruption of bear having on their population? 2. What is effect of bear-man relation?

Study (performed by Craigheads several years ago) showed bears are not in backcountry in summer. A study in the Shoshone Forest (done same time as Craigheads) showed very few bears in summer. Practically all bears of ecosystem concentrated in YNP around dumps in summer. Shoshone got more bears in fall.

Sightings in spring before movement into YNP were more frequent also. Bears killed around Park have often had tags from in Park. Movement map shows concentration to and from Trout Creek.

Maps and studies show tremendous homing instincts in bear. Have to know a lot more about homing instincts before we are successful with transplants. Instinct affected by age, sex, and mothers with cubs.

Chart: Showed birth rate and mortality rate for grizzly for past several years. Recent disruption has caused drop in cubs being born. Craigheads hypothesized disruption would cause more mortality. This has happened.

This is direct mortality. There is also a certain amount of indirect mortality where you do not actually have the bear in hand but know it is happening because of calculations. Have calculated an average annual indirect mortality rate. Stress in relation to productivity has been even greater than expected. So is mortality. This will decline but don't expect it to decline right away. Will still be high next year. Will need to investigate methods of transplanting. Work definitely needs to be done. Should we transplant within their present ecosystem or should we go like to Bob Marshall.

Sumner: Lot more bears in West Yellowstone that are never captured and are causing trouble now. Ken Sears did an excellent job of transplanting. People were causing problems, too. It's not just the bears. There is still a problem because there are still bears in West Yellowstone.

Foss: Seems more bears are coming into West Yellowstone now than in past because of closing of dumps. Very few bears moved from West Yellowstone to National Forest but to Yellowstone National Park.

Craigheads' Plan for Phasing Out Dumps:

X Gardiner

(2) X West Yellowstone (3) X Trout Creek

(1) X Rabbit Creek

Supplement closing of Trout Creek with elk. Would put out supplemental food to bears to concentrate them in desirable areas during phaseout. Could keep bears out of campgrounds.

Possible Transplant Sites:

Kootenai: Cabinet Mountains, same site as proposed in 1967. Cabinet Mountains already has small population of grizzly bears. Small area and as bears are prone to move, will no doubt be problems in campgrounds.

Flathead: Not possible to sanction transplants at this time without further study of potential area. Bob Marshall Wilderness partially on this Forest. There is a population of grizzlies in the North Fork on the Flathead.

(Brown - Fish and Game not too concerned about grizzly in this area because there is so much protection for them from Canada down through Montana and no protection in the Cabinet Mountains, yet there is a bear population there.)

Deerlodge: Tobacco Roots would be only possibility - rather small and not a wilderness. A few there in last few years.

Beaverhead: Don't think there is a possibility in Tobacco Roots but would be willing to study. Lot of activity from mining and roads. Anaconda-Pintlar might be a possibility. Area 319 (Fleecer-High Rye) might also be possibility but it is very small, even smaller than Tobacco Roots.

Helena: Head of Lander's Fork country in Lincoln Backcountry. Would like younger, family-type animals, preferably pair. Lincoln Backcountry does have a small population.

(Craighead (John) - Great majority of bears in YNP ecosystem are not dependent solely on garbage. Some could not be transplanted but the majority of them could be successful. Grizzly is a carnivore but will eat anything. Will not need garbage if other things are available.)

Gallatin: Should be basically the same as last year. Sites 1 and 2 should be best since they are further from old home.

(Have to consider two things when dealing with transplants: 1. Survival. 2. Little conflict as possible with people. We have to have justification for whatever we do.)

Lewis and Clark: Did not feel they had any suitable sites on Jefferson section. Grizzlies in Rocky Mountain portion of Forest. Opposed to transplanting on Rocky Mountain portion because of already existing population and proposed studies. So no proposed sites at this time.

(Craighead (John) - Grizzly can be either social or solitary, will form hierarchy for food source in social situation. Don't have territoriality. Can overlap one another. If you put grizzly in area with others it could function as solitary animal or could join group. You would have the problem of carrying capacity of the land. There are three large ecosystems in Montana capable of supporting grizzlies - Yellowstone, Bob Marshall, and the Bitterroot portion of the Selway-Bitterroot. Grizzlies need open areas rather than timber. Need variety of food sources such as carrion, berries, grasses.)

Custer: Would hope that public would be involved and impact would be studied before taking any grizzlies but they are receptive to idea. Don't have any good habitat for them on the Custer as far as the Forest Service feels. Beartooth Plateau only area that has any possibilities at all.

Action: We are not going to have any less public animosity because we actually had very little last year. Biggest problem is political aspect. Should put the grizzlies where we have the habitat whether or not they are going into another area. You can either kill the grizzly or transplant him and try to learn more about him. You either try to solve problems or do away with them. You are going to have repercussions either way.

Bumstead to contact Idaho Fish and Game. Weckworth to meet with Kootenai,

Kaniksu, and Helena National Forests April 4 to decide whether or not they actually want any grizzlies. Brown to contact Flathead.

Need to determine if public hearing needed. This should be done by April 15.

Bozeman
M

GRIZZLY BEAR MEETING
March 29, 1972
Afternoon Session Attendance

Name	Organization	Location
Wynn G. Freeman	Montana Fish and Game	Helena
Jim Mitchell	" " " "	Great Falls
Leonard Hendzel	Gallatin National Forest	Bozeman
Rich Wonacott	Wildlife Services	Lewistown
Bob Cron	Gallatin National Forest	Squaw Creek
Ralph Meyer	" " "	Livingston
Arnold Foss	Montana Fish and Game	Bozeman
Hank Greitl	Beaverhead National Forest	Dillon
Paul Hoskins	Gallatin National Forest	West Yellowstone
Donald W. Nelson	Beaverhead National Forest	Dillon
Glen F. Cole	National Park Service	Yellowstone Nat. Park
LeRoy Ellig	Montana Fish and Game	Bozeman
Ken Weyers	Custer National Forest	Billings
Ralph Holman	The 33 Ranch - T.S.O.	McLeod
John Inman	Gallatin National Forest	Big Timber
Mike Tanascu	Gallatin National Forest	Gardiner
Lee Culbertson	Gallatin National Forest	Bozeman
Roger L. Evans	Lewis and Clark National Forest	Great Falls
Jim Cole	Deerlodge National Forest	Butte
Paul Weingart	Gallatin National Forest	Bozeman
Joe Egan	Montana Fish and Game	Helena
Don L. Brown	Montana Fish and Game	Helena
John Craighead	Wildlife Research Unit, U. of M.	Missoula
Jay Sumner	" " " "	Missoula
Ken Greer	Montana Fish and Game	Bozeman
Roger Bumstead	Regional Office, Forest Service	Missoula
Frank Craighead		Moose, Wyoming
Buck Compton	Montana Fish and Game	Billings

March 29, 1972
Grizzly Bear Meeting

GRIZZLY BEAR MEETING MINUTES

Afternoon Session

Introduction - Hendzel: Purpose to get ideas of people on how to manage bear. Program to look over what happened last year and see what can be done this year.

Hoskins: Because of laws the garbage was put into sanitary landfill in West Yellowstone. Landfill fenced from grizzlies. Forty-seven grizzlies frequented old dump. Grizzlies have not penetrated fence of landfill. Problem bears were trapped on a cooperative basis with the Fish and Game last summer. Some people of West Yellowstone support the trapping/transplanting program and others do not. Some people are enticing bears into town by feeding them.

Meyer: If we eliminate people problem how long would bear be able to live and maintain himself on type of food he gets in Park?

Hoskins: They could exist just like they would normally.

Cole: You get some things happening you don't in wild, like maybe bears killing bears, but garbage is a supplement to diet.

Holman: Will feeding of bears in West Yellowstone stop or will it continue? Will we always be plagued by problem grizzlies?

Hoskins: Unauthorized feeding will be discouraged. Think it will be phased out.

Cole: Bears taken to Mammoth and immobilized and marked. Then taken by helicopter to transplant site and given antidote to bring them back. When they were transplanting bears in Park, two out of three would return. But you can't get them very far away in Park. Fifty transplants in 1970, 60% stayed in wild. Thirty-three transplants last year, 80% stayed in wild. Only three bears rehandled last year.

Park Service is dealing with basic reward reinforced behavior with food for grizzlies. Also dealing with prior experience. Increased success probably due to selective removal of bears having prior experience with transplant. Older bears dispatched when they came back from transplants. Made an effort in Park to have bear-proof garbage cans and education programs for visitors not to leave out food. Reduced incentive for bears to repeat visits because of food. Transplant apparently sufficient to discourage

homing instincts and capabilities of older bears. Research Note #3 contains bear program for Park. There is background information contained in a bio-science article. Both are obtainable from Park. Progress and results of program of last few years also written up in a paper.

Holman: How many problem bears in Park currently?

Cole: Much smaller than what we started with. When we started in 1970 we had 70 control actions. In 1968 we had 59 actions; in 1969, 57 actions; and in 1971 we had 39 actions.

Holman: Do you think program will control problem in Park?

Cole: Yes. Feel need to control will progressively decline. Seems wild, free-ranging grizzly not too hard to deal with but when he becomes dependent on us for food troubles start.

Craighead (John): Their study got different results than Cole. They feel even young bears have a great homing instinct.

Holman: Lived in Boulder area a long time and hunted there nearly every season since I've been there. They do have grizzlies every year that come close to camp. Man should expect some confrontation because man is a visitor in the bear's domain. Park bears are a people problem. Feel transplant program will suffice and eventually problem will phase out. Getting more of an elk population on Boulder and Stillwater so this will tend to make bear want to stay. Transplant program has increased interest in getting grizzly bear permits by out-of-staters. Have had some property destruction in area attributed to grizzly bear. This is something you should expect in backcountry. Does not seem to stop people from coming in area to sight-see, hunt, build cabins, etc. There are some Boulder residents who feel transplanting should not go on because of potential danger. I feel the element of risk is not that great. Transplanting program is a good program and badly needed - all for having it done in Boulder area. Not wanting this for personal gain because I'm primarily a construction contractor and take in only a few hunting parties a year and do not even advertise grizzly hunting. We go primarily for elk. Sheepmen would naturally defend sheep from grizzly. Grizzly will generally be blamed for loss of sheep, which may not be so. Sometimes sheepherders jump to conclusions about grizzly bear predation. They should realize the element of risk involved when taking sheep into grizzly country, even though the sheepherders have a right to go into backcountry, too.

Wanacott: If there are any livestock losses they will be checked to see if they were grizzly or what. Not too clear as to what direction predator control will take. All poisons have been banned. Have not used poison in past for grizzly.

Transplant Possibilities: Might be some possibilities in Wyoming.

Gallatin District: Could transplant grizzly there if: 1) Let people know what is happening - those people in surrounding area. 2) If Ranger can know when animal goes in and where he is put. Would favor Hilgards.

Livingston District: Don't see any totally new areas. Maybe northward extension of Site #1. Would echo Bob Cron's comments.

Hebgen Lake District: No disagreements with Site #1. Site #2 is a heavy recreation area. Think we need more consideration on this one. Need public involvement.

Custer Forest: Do have habitat but most of it has high recreation use. Position is that we don't have any areas, at least until public involvement takes place.

Gardiner District: Would like to strike #4 because of heavy concentration in packer camps, fishermen, and sheep bands. Country at head of Slough Creek recommended since no sheep in it now.

Craighead (John): Age of bear might have something to do with success of transplant. Distance is probably a significant factor. But we may be in more trouble by transplanting them larger distances within their own ecosystem because of hunger, etc. Maybe we need to define more closely what is a successful transplant. We might not be transplanting them into areas where the habitat is not best suited. The areas we had last year are subalpine which bear does not generally utilize as much as lower areas. Maybe we should try #3 and #4. We should also maybe consider time of year and location. Maybe if they are moved during late summer/early fall when they are moving anyway we might have more success. Could we expand areas that we already have, like #1 and #2?

General agreement at meeting that we do need to transplant. Think the problem will ultimately be a local one and that we need to become actively involved with the public. Holman emphasized we do need to publicize what we do this year.

Grizzly Bear Mgt. Meeting
July 7/70
Sept. 6, 1969

r Star - Tribune

Coverage — Wyoming's Largest — Every Day

, WYOMING — Oil Capital of the Rockies — TUESDAY, JUNE 30, 1970 Price 10 Cents

Yellowstone Park Scene Of Death and Tragedies

By CAROL SHERROD

YELLOWSTONE NATIONAL PARK — Tragedy and turmoil stalked Yellowstone National Park over the weekend when a boy was drowned in a thermal pool, a fisherman was missing and presumed drowned, a man was mauled by a bear and wind damages to park and visitor facilities were estimated $100,000.

Assistant Park Superintendent Vern Hennesay said Monday that nine-year-old Andrew Hecht of Williamsville, N.Y., died Sunday afternoon when he fell into a hot pool in the Upper Geyser Basin near Old Faithful.

The boy was with his parents, Mr. and Mrs. James L. Hecht and a brother, 13, and a sister, 11, when the accident occurred. No one actually saw the boy fall into the pool.

Hennesay said the boy was behind his family on the board walk around the pool when his parents heard a splash and turned around and saw he had fallen. His body sank out of sight before it could be recovered.

The temperature of the water in the pool is in excess of 200 degrees and death was presumed to be instaneous. The pool has been measured as 40 feet deep and connects to a geyser.

Rangers were unable to recover the body with grappling hooks Saturday so an artificial eruption was induced in the geyser which also failed to produce the body. A subsequent eruption of the geyser Sunday night brought the boy's remains up.

Saturday 34-year-old Keith Jensen, Salt Lake City, became separated from a party of four other fishermen at Seven-Mile Hole on the Yellowstone River, just below Canyon Village. His companions missed him about 2 p.m. and searched for him until about 6 p.m.

Rangers searched the river the rest of the evening, Hennesay continued, also without results. Several search parties were called out Sunday, supplemented by a helicopter, but also failed to find any trace of him. A search on foot of the area Monday also was fruitless.

"We fear now that he is in the stream," Hennesay said. He said the area will be kept under surveillance now, as time and manpower permit.

The bear incident occurred about 8 a.m. Saturday when James Freeman, 25, and his brother John, 14, both of Grants Pass, Ore., came upon a bear while on the Mystic Falls trail about three miles from the Old Faithful area.

The elder Freeman told officials the bear was startled and charged them. The younger brother ran from the bear, while the elder yelled at it to distract it. The bear then turned on the older brother, knocked him down, mauled him a bit and left him.

The older Freeman suffered multiple cuts and bites on his body, but made it to a ranger station for help. The rangers took him to the park hospital at Lake where he was reported in good condition Monday.

The younger brother became lost in a forested area when he ran from the bear, but was found unhurt about three hours later by rangers.

Hennesay said the pattern of the incident indicates the brothers came upon a female bear with young, and the younger brother mentioned seeing a second bear as he fled the scene.

HIGH WINDS

Winds estimated at from 80 to 100 mph raked parts of the park in two main fronts between 3 and 9 p.m. Saturday. Damage was estimated by Hennesay at $100,000, including fallen trees.

Preliminary reports also indicated two cars demolished by falling trees and damage to a camper pickup and a camper trailer, but not injuries were reported.

Some damage to buildings and picnic tables also was reported. Every road in the park and every campground was blocked by fallen trees at one time or another during the day, Hennesay said.

Power outages were reported at various times and the Grants Village campsite is still closed because there is no power there to operate the sewage plant. The 400-site campground is expected to open some time Tuesday.

Hennesay said the fallen or hazardous trees have been cleared away and that traffic is moving at a normal pace through the park. Visitors should encounter no difficulties at this time, he said.

He praised park personnel highly for their efforts in removing the obstacles.



Pro-American Rally Girding for 400,000

WASHINGTON (UPI) —Entertainer Bob Hope predicted Monday about 400,000 people would attend a pro-America rally July 4 at the Washington Monument; and that he expected no trouble from young antiwar protesters.

Here to look over the site for the Honor America Day program, Hope challenged critics who have said its entertainers were heavily weighted in favor of those supporting Nixon administration policies.

"We're not trying to sell any political message here," Hope told a news conference. "We are just trying to observe July 4 like we used to."

He said he had invited black comedian Dick Gregory and the Smothers Brothers—all outspoken in their opposition to the Vietnam War—to appear on the program, but would not permit political speeches by anyone.

Hope and evangelist Billy Graham are honorary cochairmen of the all-day rally designed to counter demonstrations which they felt were anti-American. J. Willard Mariott, close friend and supporter of President Nixon and a hotel and food chain executive, is executive director.

Hope was asked about the announced plans of Chicago 7 defendant Rennie Davis to hold a marijuana "smoke-in" on the monument grounds Saturday to counter the Hope-Graham program.

"After this is all over, I may smoke some of that myself," Hope quipped. Growing serious, he added, "I don't expect any trouble."

Asked why the program did not include more personalities who appeal to the young, Hope said all the event's entertainers have wide audience appeal. "Red Skelton, Jack Benny. . .they are young enough."

Hope said he believed the Smothers Brothers would appear—"They've asked me for a couple of favors"—but said he didn't think Gregory could make it.

"The New Left can come in if they have some entertainers to present," Hope said. "I'd be happy to audition them if they have any talent."

The advisory committee for the show includes politicians ranging in sentiment on Vietnam from Sen. John G. Tower, R-Tex., to Sen. George S. McGovern, D-S.D., Hope said. But he said "there was no way" they or other politicians would be permitted on stage.

Political jokes will be allowed "provided they do not get too serious," the comedian said. He told reporters material for the show would be edited to make sure it remains nonpolitical.

McGee Gains $2 Millions In Projects

WASHINGTON (UPI)— Sen. Gale W. McGee, D-Wyo., Friday gained approval of three amendments in the Senate Appropriations Committee which will bring more than $2 million in federal funds to Wyoming.

McGee said the committee, of which he is a member, had accepted his amendment allocating $1.2 million for the first phase construction on the Big Horn Canyon Road.

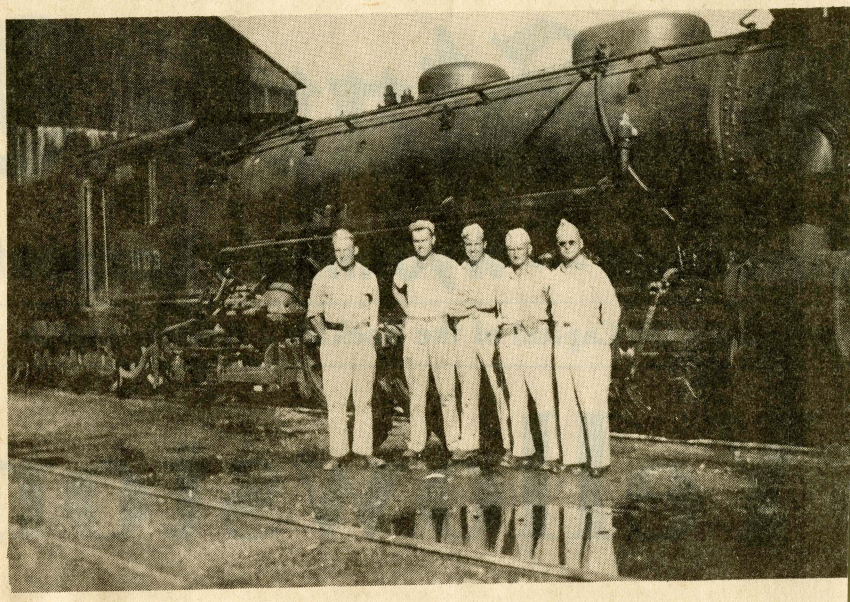
McGee was also successful in securing approval of $712,000 in funds to help finance improvement of the Jackson Hole Airport and a $120,000 increase in the Interior Department appropriation to improve maintenance of law and order on the Wind River Indian Reservation. McGee said the Big Horn Canyon Highway allocation would permit the National Park Service to undertake the basic course construction on the first segment of the road to the Big Horn National Recreation area from Lovell to Fort Smith, Mont.

Funds for the road to open up the new recreation area were left out of the fiscal 1971 budget by the administration, but in special hearings arranged in February by McGee delegations from Wyoming and Montana spoke before the Senate committee on the importance of the road.

The senator noted the House version of the bill, already approved, but did not include the Big Horn Canyon funds.

The $712,000 allocation would go to the National Park Service and "would open the way to realization of the long-awaited construction of needed improvements at the Jackson Hole airport," McGee said.

He said the $712,000 represents the Park Service's share of the total cost of the Jackson project. Lack of Park Service funds has



IN INDIA: Several Wyomingites serving in the 745th Railway Oper talion in India during World War II are pictured with one of the en operated, an American-made one similar to the Burlington 0-4. Oth tives were British and Belgian made. From left are Jim Bush o George Brown of Greybull, M.M. (Bud) Myer of Casper, Jim Border and Bill Kerr, formerly of Casper. Bush, a flyer, was not with t group. Kerr now lives in Evanston, Ill. The railroaders all had been of the Burlington Railroad.

Railway GI's Set Reu

Some 60 to 70 members of the 745th Railway Operating Battalion will hold their 24th annual reunion and celebrate the 26th anniversary of the group in Casper July 9-11.

The organization had its reunion here once before, in 1956, and has been wanting to have it here again ever since, according to one of the four Casper members, J. T. Borders. Other members are Paul Neese, M. M. (Bud) Myer and Gordon Barrett, who is president.

The 745th Railway Operating Battalion is a group of men who operated the railways in the China-Burma-India theater in World War II.

The 745th, which was sponsored by the Chicago, Burlington

The assignment of the 745th was difficult since the railroad extended through a mountainous jungle with heavy rainfall, and an abundance of wild elephants, tigers, leopards and other animals as well as a variety of snakes.

The first day of the Casper get-together will be spent registering at the reunion headquarters, the Ramada Inn, and renewing acquaintances. Caspar and oth terest locally a story-telling sess in the evening.

On Friday the Bear Trap Mea Mountain for sig noon barbeque. A held in the even

Use Star-Tribu

Italian-Americans Hit at Alleged FBI Harassment

By THOMAS DUFFY ZUMBO

NEW YORK (UPI)—Joseph Colombo, Sr., reputed head of the Mafia in Brooklyn, was hailed as

picketing at the Manhattan FBI headquarters since the arrest of his son, Joseph Jr., on federal conspiracy charges in April.

Tuckers

In general, the problem of managing black bears in terms of human contact has intensified over the years, but the grizzly presents little more of a problem in this regard today than in the early 1900s. This can be attributed to the grizzly's habits of avoiding man and of concentrating at and near the refuse-disposal areas, as well as to the administrative zoning of these areas to prevent public access.

(30)

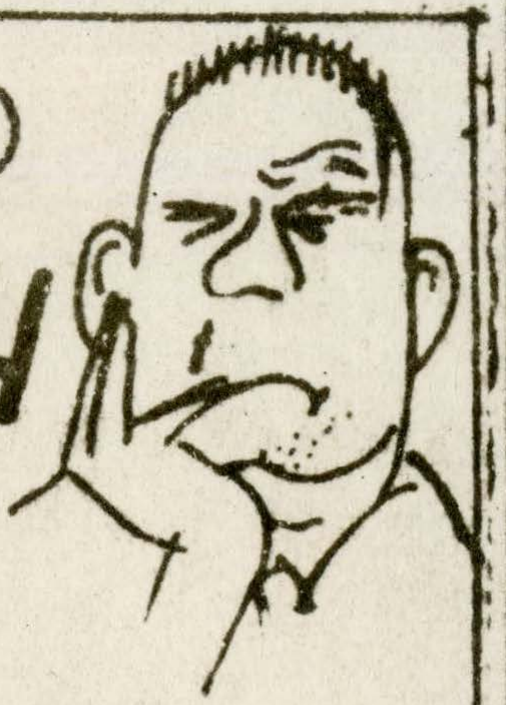
Excerpts from Bear Mgt. Report by J. & F. Craighead

Off-limit area: Congregating of grizzly bears within the geographic heart of the park should be encouraged by specific management practices. In working out the details of these practices, park administrators should consider the fact that the grizzly population is now concentrated within the South Loop during the summer (Map 3) and that the bears disperse over the back-country and beyond the park borders for eight to nine months of the year (Map 2). The concentration of grizzlies in the South Loop and other relatively restricted areas during the heights of the tourist season has created a highly favorable situation for zoning. Because much of the land lying within the South Loop is the heart of the grizzly's summer range, portions or all of it should be off-limits to visitors except along the major roads or by special permission.

Elimination of refuse dumps: The unsightly and "unnatural" refuse dumps that have existed for so long in Yellowstone are not in keeping with national-park scenic standards or philosophy. Although the dumps where grizzlies feed are not often visited by the public, they are frequently viewed by dignitaries and scholars of our own and foreign countries who wish to obtain a first look at a grizzly bear. The experience of viewing a grizzly under such conditions, though interesting and even thrilling, does not enhance the image of either the Park Service or the grizzly.

However, concentration of grizzlies during the summer at refuse dumps has both advantages and disadvantages in the management of the species.

THE OLD GROUCH SAYS



Have you heard about "Old Faithful," the Yellowstone grizzly? He bites a camper every night.

Forty-three percent of all grizzly deaths occur when they move out of the park sanctuary (Map 2) and are shot by hunters. Since the refuse dumps within the park attract and hold grizzlies for extended periods of time, they reduce outward movement in summer and fall and by so doing lower the mortality.

Dumps outside the park, such as those at Gardiner and West Yellowstone (Map 3) have the opposite effect. Grizzlies move out of the park to feed at these areas, and although the bears are closely watched by Montana game wardens, illegal shootings do occur.

For years the Park Service has considered replacing the earth-filled refuse dumps with incinerators. To do so will, of course, eliminate the garbage as a food source, and the initial effect of this on the grizzlies will greatly complicate management. Presence of food at the dumps during June, July, and August directly influences grizzly distribution, as well as patterns of daily movement, location of bedding sites, social behavior, and the size of the spring and summer home areas.

With grizzlies concentrated at the Trout Creek and Rabbit Creek sites during summer, it has been feasible to place these areas off limits to tourists and rangers alike, thus greatly reducing the possibility of personal injuries. Zoning of this sort will become more difficult and less effective when the open-pit dumps are replaced by incinerators and the grizzlies, with less food to hold them, disperse more widely during the summer months.

The older bears will require some time to adjust to a summer diet of natural food only. Natural food is more difficult to obtain than garbage, and the bears show a preference for the latter. Also, as management reduces the size of the elk and bison populations, carrion and live meat will become

less available. A high proportion of all big-game animals dying in the park are consumed by grizzlies. The large herbivores are an important, perhaps an essential, part of the grizzlies' diet, especially in late fall and early spring. Although food obtained at the dumps does not appear to be necessary to the grizzlies' welfare or to maintaining the present population level, young bears learn the habit of feeding at the dumps from their mothers, and the habit becomes ingrained. The younger bears in turn pass this learned behavior on to their offspring. It will require a number of years and several generations to break this well-established habit.

Figure 7 (Section III) illustrates the gradual increment of bears at Trout Creek dump during the summer and the similarity of this pattern from year to year. An eight-year record of grizzly concentrations at this dump shows that some individuals are almost nightly visitors. Others come less frequently, and some very rarely. Almost all park grizzlies visit one or more of the six major refuse-disposal areas at some time within a year. Some of the older females have established home ranges that include a dump, and have maintained these ranges for many years. Such ranges are small, eight to 15 square miles, and their size and stability seems to be related to the ease with which the females and their offspring can satisfy their nutritional requirements.

Because phasing out of refuse dumps will disperse the grizzlies by destroying an attractive if not essential food source, the transition from pits to incinerators must proceed gradually, enabling the grizzlies to develop new feeding habits as well as altered social behavior and movement patterns. If the transition is slow, and follows a recommended procedure, it is possible that no severe changes in population level, distribution, or behavior will result. If, on the contrary, the phasing-out operation is abrupt, and a

carefully planned procedure is not followed, the result most certainly will be increased grizzly incidents in campgrounds, accelerated dispersal of bears to areas outside the park, and greater concentrations of grizzlies at the public dumps in Gardiner and West Yellowstone, where food will still be available but where adequate protection will not. The net result could be tragic personal injury, costly damages, and a drastic reduction in number of grizzlies.

Therefore, in replacing the refuse pits with incinerators we recommend that:

1. A cautious phasing-out program be enacted, with an incinerator installed at Trout Creek, where an experimental situation can prevail.
2. For several years a portion (perhaps half) of the Trout Creek refuse be incinerated and the remainder dumped in a pit where it would be available to the grizzlies. Thereafter, a graduated program of incineration would be carried out. If the elimination of the Trout Creek refuse dump does not adversely affect the grizzly population, then similar graduated programs of incineration should be adopted for all refuse disposal within the park.
3. Research be continued during the phasing-out period in order to determine precise effects on bear numbers, movements, behavior, productivity, and mortality.
4. All grizzly-man contacts and property damage incidents throughout the period be recorded and compared with earlier records.

As we have already stressed, it is important in the future management of the grizzly bear in Yellowstone to keep the base population concentrated within the park. Since removal of garbage as a food source will disperse the bears, this must be countered by other means. One practical solution may be the utilization of surplus elk and bison as supplementary food for the grizzlies until they have adjusted to the change. Some of the elk and bison now annually trapped for transplanting could be butchered, frozen, and stored. These carcasses, properly distributed during the spring and summer, would hold the grizzlies in the Hayden Valley Area and prevent wide dispersal during the phasing-out period.

Another approach would be to have surplus elk and bison periodically shot by park personnel from early spring through summer, a few at a time. These carcasses would be left as food for grizzlies. Public sentiment would probably be in opposition to such measures at first, but if the park is to fulfill its mandate, the public must be educated to the need for integrating a program of reducing overabundant species with a program of preserving one that is threatened. Surplus elk would provide a more natural food for grizzlies than garbage, and the practice of shooting elk for this purpose would be no more artificial than present methods used to reduce them. The grizzly feeds substantially on elk and buffalo carcasses during the critical period after leaving the winter dens. As mentioned before, this food source appears to be important in maintaining grizzly population levels.

(98)

Retention of refuse dumps: Grizzly bears have been feeding at refuse dumps in Yellowstone Park since the late 1800's. We have been unable to detect any adverse biological effect on the bears from this habit, unless it be a higher rate of infection from the round worm. Thus the wisdom of removing the open-pit dumps without substituting another method of attracting and holding grizzlies within the park must certainly be questioned.

Location and operation of refuse dumps has been an administrative function. We suggest that this function should be part of the wildlife-management program with consideration given to placement of pits, to the type and amount of refuse left for the bears, and to sanitary inspection, with requirements of the grizzly paramount. Several pits at such widely dispersed points as Trout Creek, Pelican Valley, and Upper Nez Perce Valley -- far from roads, visitor centers, or campgrounds -- might effectively hold grizzlies within the park and at the same time distribute them so as to avoid visitor-bear incidents.

The frequency of campground use by grizzlies was determined in our study by a program of capture, marking, release and by radiotracking. Among 212 individuals captured throughout the park from 1959 through 1965, 48 (22.6 percent) were taken in or near campgrounds. Grizzlies that visited a campground once tended to repeat. Forty-four percent of those captured at a campground the first time were later recaptured at a campground, and 38 percent of these were killed because they were considered a danger to campers. Forty-three percent of the grizzlies captured in campgrounds and then released are still alive and do not constitute a control problem. This indicates, we believe, that many of the grizzlies visiting campgrounds do not become habitual offenders and that a lenient policy of control is justified.

(100)

Personnel and administrative problems: Control measures for both black and grizzly bears as well as for other wildlife species are carried out by the ranger staff under the general supervision of the management biologist and the chief ranger. Authorization to destroy a bear rests with the superintendent but in practice is delegated to the subdistrict ranger. The bear-management programs in Yellowstone Park have suffered generally from divided authority, inadequate financing, and lack of information and supervision. Management of bears has been considered a minor ranger activity, with few planned objectives and with no specific operating budget.

(101)

Some rangers engaged in bear control do not understand population biology and have retained an outmoded philosophy of complete protection. Others consider bear control as extra duty, and reason that the best bear is a dead bear; in such cases, bear-ranger conflict as well as bear-visitor conflict is considered sufficient cause for control action, sometimes to the point of killing the offender without consideration of alternatives. The result of these attitudes is a laxity of control in some districts and overcontrol in others. The majority of rangers, however, understand the problem and require only more supervision and adequate financing to do a more efficient job.

The administrative aspects of handling nuisance bears in Yellowstone could be improved by:

1. Encouraging greater interdistrict cooperation.
2. Appointing permanent rangers to bear-management duties. These rangers should be given a training course in bear-handling techniques and basic concepts of population ecology.
3. Increasing the bear-capture, bear-handling capability with more equipment and manpower.
4. Rigidly enforcing all regulations pertaining to bear-visitor interactions.
5. Providing an annual operating budget specifically for the management of black and grizzly bears. The budget should be realistic in terms of equipment and manpower requirements.
6. Developing a more comprehensive program of visitor education, through the interpretive service, with regard to bear-management problems.

7. Encouraging and fostering among park personnel a philosophy that recognizes the grizzly as a rare and endangered species that requires maximum protection and should only be controlled under special conditions.

Summary of Recommendations for Management of the Grizzly Bear

Grizzly-bear management has been accomplished almost entirely by zoning. Some of this has been a conscious effort by park administrators and some has resulted inadvertently from the visitor-use pattern that has evolved. Because of its endangered status and its aggressive behavior when disturbed, the grizzly presents a basically different management problem than does the black bear.

(108)

Present grizzly-bear management can be improved by:

1. More effective zoning within the park to maintain grizzly habitat, encourage grizzlies to remain in the center of the park, and reduce or prevent visitor-grizzly incidents. This program would include phasing out of open-pit refuse dumps or more refined methods of operating the dumps.

2. More selective control of grizzlies within the park.
3. Creation of a protective corridor around the park.
4. Revision of hunting regulations in areas adjoining the park.
5. Translocating marauding grizzlies captured outside the park.
6. Continued research and evaluation of management.

DON SAMUELSON, Governor
COMMISSION
ROBERT G. KALB, Sandpoint
PAUL C. KEETON, Lewiston
JOHN EATON, Cascade
R. J. HOLMES, Twin Falls
GLENN STANGER, Idaho Falls

IDAHO FISH AND GAME DEPARTMENT

JOHN R. WOODWORTH, Director

POST OFFICE BOX 25
600 SOUTH WALNUT STREET
BOISE, IDAHO 83707

June 22, 1970

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

COPY

Dear Jack:

Enclosed is a revised draft of the proposed agreement for transplanting grizzly bears along the lines of our telephone conversation last week.

The major change involves the Park Service funds for the follow-up study. Instead of contributing to the Idaho Fish and Game Department, these funds should go to the Idaho Cooperative Wildlife Research Unit under a separate agreement. Dr. Hornocker will be in touch with you regarding terms of the follow-up study if he has not done so already.

We also feel that the Park Service should be responsible for the bears until they are turned over to the State at the release site and, also, it appears to us to be essential to have bears designated for transplanting inspected by someone from the Craighead's research team. In view of their long research and experience with grizzlies in the Park, drawing on their advice would be a minimum safeguard to the State's position that all possible precautions were taken in order to avoid introducing any incorrigible bears. As you can well appreciate, just one unfortunate "incident" with a transplanted animal could doom the entire future program of transplanting Yellowstone grizzlies with Idaho or any other State.

We are sending copies of this draft to other members of the International Association's Grizzly Committee for their review and recommendations. By this means we can, hopefully, devise an agreement that would be acceptable to all agencies concerned and thereby serve as a model for possible future transplants into other states as well as Idaho.

If there are other points that require further discussion before completing the agreement, we can take this up at our meeting on July 7.

Sincerely,

IDAHO FISH AND GAME DEPARTMENT

COPY Original Signed by John R. Woodworth

John R. Woodworth
Director

JRW:RMW:beh

Enclosures

cc: Dunkle - Montana F&G
White - Wyoming F&G
Dr. Hornocker
Dr. Frank Craighead
Dr. John Craighead
Woodward - Colorado F&G

COPY

MEMORANDUM OF AGREEMENT BETWEEN THE UNITED STATES OF AMERICA, REPRESENTED BY THE NATIONAL PARK SERVICE, AND THE IDAHO FISH AND GAME DEPARTMENT

WHEREAS, The Act of August 25, 1916, 39 Stat. 535, declares that the National Park Service established by the Act shall promote and regulate the use of the Federal areas known as national parks, monuments, and reservations, by such means and measures as conform to the fundamental purpose of the parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations, and

WHEREAS, The Federal Property and Administrative Services Act of 1949, as amended, Public Law 152, 81st Cong., 63 Stat. 377, Sec. 302(c) (5) permits the entering into contracts with universities, colleges, or other educational institutions without advertising, and authority to approve such contracts has been duly delegated to the Director of the National Park Service and redelegated to the Director of the Midwest Region, and

WHEREAS, funds have been allocated in the 1970 Fiscal Year to begin such studies, and

WHEREAS, the grizzly bear is a component of the native fauna of Yellowstone National Park, one of the most important sanctuaries for the species, and

WHEREAS, the capture and transplanting of grizzly bears from park developed areas is carried out routinely to provide for the safety of visitors, and

WHEREAS, grizzly bear that return to park developed areas within a two year period after being transplanted inside park boundaries are to be donated to zoos, to states for reintroduction into suitable historical habitats, or utilized as scientific specimens for educational institutions, and

WHEREAS, in order to promote and further the transplanting effort of the park's grizzly bear management program and in accordance with the recommendations of the National Park Service's Natural Sciences Advisory Committee, and

WHEREAS, reintroduction of grizzly bears into a suitable historical habitat requires concerted study and evaluation by appropriate research, and

WHEREAS, the Idaho Fish and Game Department, and the Idaho Cooperative Wildlife Research Unit have facilities and qualified personnel to conduct and evaluate the reintroduction of the grizzly bear into state historical habitats, and

WHEREAS, it appears advantageous to the United States of America, acting by and through the National Park Service, Department of the Interior, hereinafter referred to as Service, to enter into this agreement in order that this reintroduction and research may be accomplished;

NOW, THEREFORE, in consideration of the mutual covenants hereinafter set forth and pursuant to the authority contained in the said Acts of Congress, the parties hereto agree as follows:

ARTICLE 1 The Idaho Fish and Game Department agrees to:

A. Accept six (6) each grizzly bears, including not more than three (3) males for reintroduction and transplanting into a historical state habitat.

(1) Capture of the bears and delivery to release point in Idaho will be done by Service personnel.

(2) Each bear designated for transplant will be inspected by a member of the grizzly bear research project of the Environmental Research Institute-Montana Cooperative Wildlife Research Unit.

(3) Bears known to habitually visit campgrounds or garbage dumps or to have been involved in destruction of property or injury to persons, will not be designated for transplanting.

(4) The Idaho Fish and Game Department will sign a receipt for property for each bear upon delivery to the release site. Further, it is established that upon receipt of each bear, ownership is thereby conveyed to the state of Idaho.

ARTICLE II The Service agrees to:

A. Enter into a separate agreement with the Idaho Cooperative Wildlife Research Unit to conduct appropriate research which evaluates the experimental reintroduction of grizzly bears into historical habitats in Idaho.

(1) This agreement between the Service and the Idaho Fish and Game Department shall be contingent upon completion of the agreement between the Service and the Idaho Cooperative Wildlife Research Unit.

ARTICLE III It is further mutually agreed between the parties:

A. The Director, Midwest Region, may approve on behalf of the Service, such changes in project plans as may be necessary to accomplish the objectives of this reintroduction and research, with prior consent, in writing, of the Director of the Idaho Fish and Game Department.

B. This contract shall not be transferable nor assignable without the prior consent, in writing, of the Director, Midwest Region, National Park Service.

C. This agreement shall terminate on June 30, 1971, unless renewed by mutual consent of both parties.

IN WITNESS WHEREOF, the parties hereto have hereunto subscribed their names and affixed their seals.

UNITED STATES OF AMERICA

_____
(date)

By_____
Superintendent
Yellowstone National Park

IDAHO FISH AND GAME DEPARTMENT

_____
(date)

By_____
Director

Attest:

_____

(CORPORATE SEAL)

Approved as to content and form

_____
T.J. Jones III
Legal Counsel

_____
Date

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

June 3, 1970

Mr. John R. Woodworth
Director, Idaho Fish & Game Department
P.O. Box 25
Boise, Idaho 83707

Dear Dick:

Frank, Maurice, and I discussed the pros and cons of transplanting grizzly bears when we arrived in Lewiston following the Snake River trip. We had planned to get together with you on this discussion, but somehow it never materialized although I did have the opportunity to mention the subject to you.

In view of the discussion that the three of us had I would like to make some suggestions concerning grizzly bear transplants for your consideration:

1. I think it would be wise if neither you nor Harry Woodward accepted any grizzly bears from the National Park Service for transplanting purposes prior to the July 7 meeting of the bear committee of the International Association of Fish and Game Commissioners. Maurice, Frank, and I all felt that the whole subject should be thoroughly aired at the July 7 meeting, and the three of us will come prepared to do this and to help your committee draw up a grizzly bear transplant program.

2. Frank, Maurice, and I and our respective staffs and students can be helpful on the transplant project by supplying technical advice, equipment, and supervision.

3. The actual job of transplanting grizzly bears and monitoring the transplant should probably be the responsibility of each state in cooperation with the Forest Service and other land management agencies. We do not believe that this is a task for the research units or for graduate students. One possibility is that the Environmental Research Institute could supervise the monitoring of a transplant or it could cooperate closely with any state to help in the technical aspects of transplanting and monitoring grizzly bears.

4. We are skeptical about the advisability of initiating a transplant program using campground or incorrigible grizzly bears. This could doom the project to failure at the outset. We believe that an initial feasibility grizzly transplant should be made with unspoiled grizzlies and then progress to the stage where we could transport and release troublesome animals.

5. It would be advisable for each state willing to accept grizzly transplants to thoroughly investigate the legal problems connected with releasing such animals. Furthermore, we strongly urge the states to request the National Park Service to deliver the bears to the site of release within each state. This would, we believe, tend to place greater responsibility on the National Park Service and would put the states in a more favorable light if trouble arises or unfavorable publicity develops. We advise that members of our grizzly bear research team inspect each bear designated for transplant and make a brief report to your bear committee or to the director of the respective fish and game departments concerning the advisability of transplants. We know from long history of individual bears that some Yellowstone grizzlies are not suitable for transplant and would only be a liability. On the other hand there are many bears that have records of infrequent visitation to developed areas and many of these bears are known to our research personnel and these would make promising transplants.

6. In view of the many biological, bureaucratic, and legal ramifications of transplanting grizzly bears I suggest that the transplant program be a coordinated program between the states of Montana, Wyoming, Idaho, and Colorado, and that all major decisions concerning the transplanting of grizzly bears be made by your bear committee and its technical advisors. In this way the states can present a united position should litigation ensue or should the scientific community question the merits of the transplant program.

Dick, I am very much in favor of transplanting grizzly bears as you know, but from my experience in dealing with the National Park Service we are "playing with fire" and therefore that a very carefully integrated and coordinated program should be worked out before any grizzly bear is accepted for transplant by any state fish and game department.

These suggestions are certainly not offered to dampen your enthusiasm, but rather to alert you to some of the problems we envision.

Sincerely,

John Craighead rd

John Craighead

JC:rd

Copies: Dr. Frank Craighead ✓
Dr. Maurice Hornocker
Dr. Charles Loveless