

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
January 22, 1976

Dr. Frank C. Craighead
Apt. 156
Estero Woods Village
Estero, Florida 33928

Dear Dad:

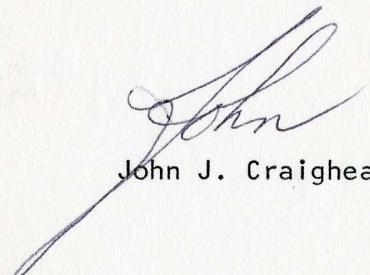
I thought you would be interested in this article which appeared in the January issue of Audubon as well as a copy of my letter to Dr. Gould.

Things are beginng to look up, and maybe eventually the whole controversy will disappear.

I'm making some real good progress on the satellite mapping of grizzly bear habitat and will try to get you a report in a few months.

Will bring you up to date on the news via the telephone.

Lots of Love,



John J. Craighead

JJC:gs

Encl: 2

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January 21, 1976

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

Dear Larry:

I am enclosing some correspondence that will be of interest to you and also a xerox copy of "The Great Grizzly Controversy" which appears in the January issue of Audubon. This article comes closer to telling the truth than any other, but it still fails to divulge those who are most responsible for the controversy. I imagine the reason that neither Reed or Starker Leopold nor Anderson are mentioned is that the writer didn't have the guts to tackle them because I know he was well informed on the roll that these people had played.

In any event, I think we are one step further ahead, and perhaps eventually we'll get Yellowstone reopened for independent research. The one thing that bothered me the most about the article was that the writer didn't differentiate between controversy instigated and prolonged by self-protecting bureaucrats and those that result from the scientific method and honest differences of opinion that are an integral part of the scientific process. I can't see how all of the controversy has negated the sound research that has been done and some of the forward steps that have been made in the management of grizzly bears. One would think from Gilbert's approach that anyone who does scientific work and publicly defends his position is hurting the conservation movement. Apparently Gilbert doesn't recognize that by writing the article and voicing his opinions and, no doubt receiving a handsome fee, that he is only adding fuel to the controversy; even though in this case it may be beneficial to our point of view, the next article would probably well swing the other way. So much for self-righteous journalists.

I hope this finds you and Peg in the best of health.

Kindest personal regards,

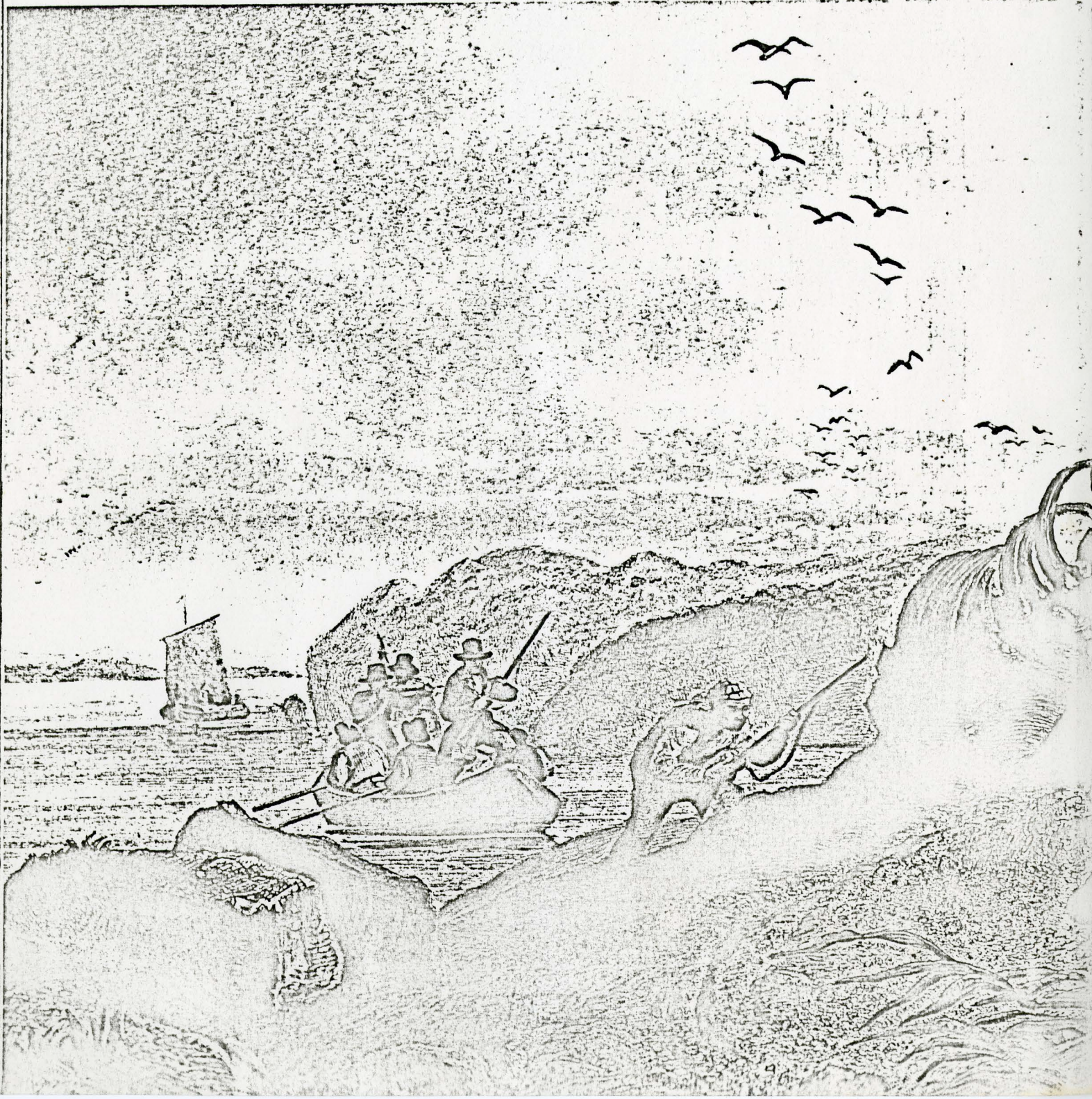
John J. Craighead, Leader
Mont. Coop. Wildl. Res. Unit

JJC:gs
Encl: 7

The Great Grizzly Controversy

*It is time to call a truce
in the acrimonious debate over
bear research and management*

The Thomas Gilcrease Institute of American History and Art, Tulsa, Oklahoma



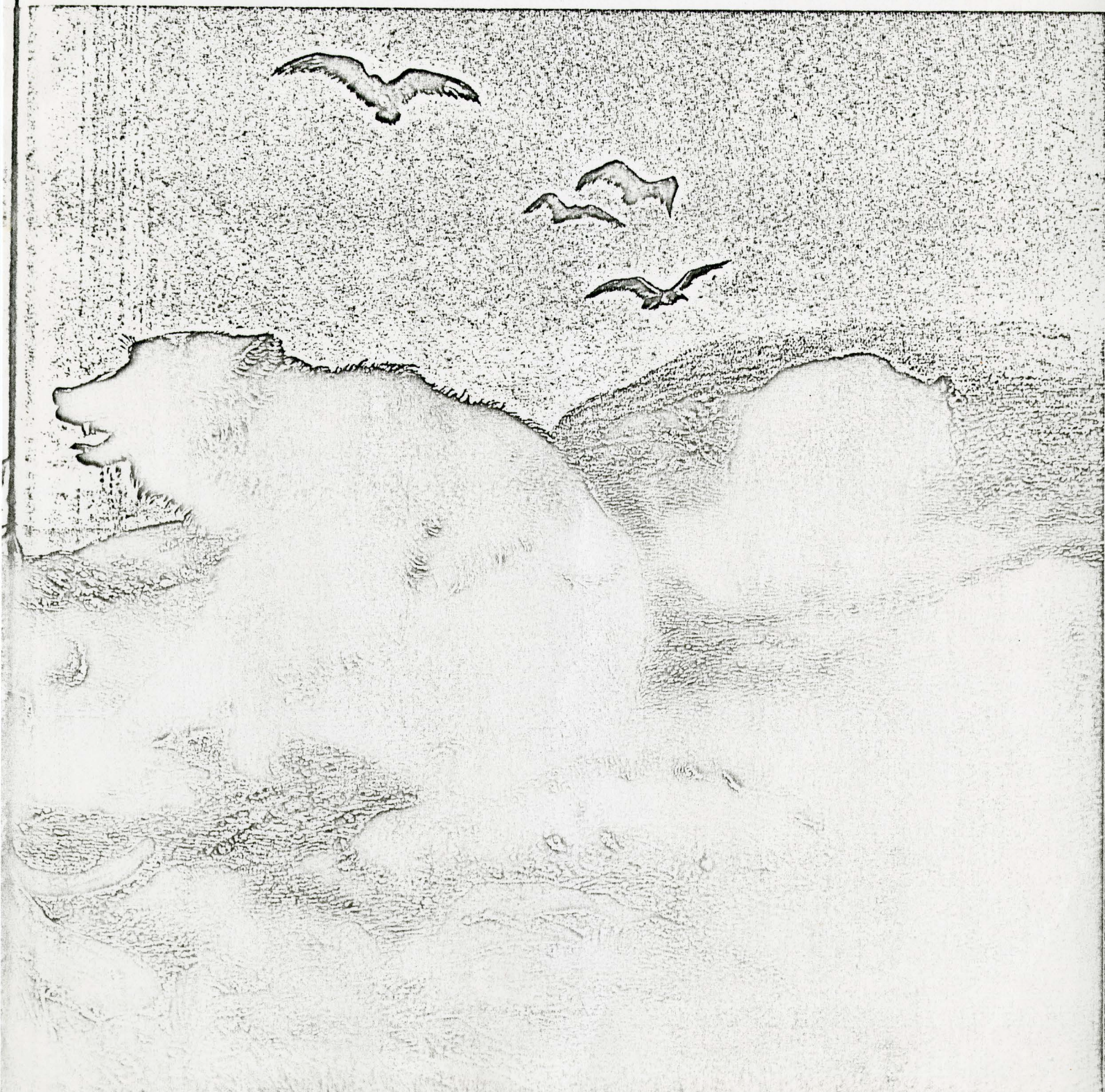
DURING HISTORICAL TIMES in what has become the United States there has been only one land mammal indisputably able and occasionally inclined to threaten man directly and physically. This is the grizzly bear, *Ursus arctos*. On the other hand, man has been the only mammal sufficiently formidable to prey on the grizzly. Because of this rough balance of power, men and grizzlies until about a century and a half ago chose or were forced to coexist where

their ranges overlapped. Men killed some grizzlies for food and to protect themselves or their property. Some bears also were killed for sport and glory—but not many, because of the risks of going against a grizzly with a stone-tipped arrow, lance, or even musket. Similarly, bears in defense of their vital interest, perhaps sometimes capriciously, attacked men and killed them often enough to maintain their reputation.

Three changes which occurred in the

by **BIL GILBERT**

In a dramatic encounter drawn in 1833 by Swiss artist Karl Bodmer, passengers from a keelboat on the upper Missouri River find that opportunistic grizzlies have cleaned out a cache of meat left by an advance contingent of hunters.



middle of the nineteenth century dramatically altered this balance, tipped it heavily against the grizzly. First was the influx of white settlers into the West. Whereas roving Indians, fur trappers, and mountain men had found the grizzly an awesome nuisance, the settlers decided bears were a bottom-line threat to establishing ranches and farm communities, to general peace and prosperity. As they were motivated to build roads, dig wells, fence land, turn the sod, they were motivated to do something about grizzlies. Secondly and thirdly, the settlers either came with or soon obtained two tools with which they could deal with bears effectively and in fair safety: the repeating rifle and strychnine-based poisons.

Equipped with these weapons, western settlers went to war against the bear. The grizzly became extinct in North Dakota in 1870, and there were probably no plains grizzlies left anywhere by 1880. In California, where it was most numerous, the grizzly was gone by 1922. The grizzly was eliminated from Utah in 1923, from Arizona by 1930, and from New Mexico by 1931. The grizzly disappeared from northern Colorado in the 1920s, but three animals were killed in the southern part of the state between 1950 and 1970 and there are continuing though unverified reports that a remnant population still survives in the San Juan Mountains.

Southern Colorado aside, there are three remaining areas in the lower 48 states (Alaska has a largish population) where grizzlies are known to exist. A very small population survives in the Selway-Bitterroot area along the northern Idaho-Montana border. A more substantial number of grizzlies is thought to inhabit the 3,500,000 acres of what is sometimes called the Bob Marshall ecosystem in the mountains of north-central Montana. Another population of grizzlies is located to the south, roaming over 5,000,000 acres where the states of Montana, Wyoming, and Idaho conjoin. A significant common feature of these latter two areas is that at the center of each is a sizable sanctuary, Glacier National Park in the north and Yellowstone National Park in the south. Circumstantial evidence overwhelmingly supports the thesis that the remaining grizzlies are where they are because the parks are where they are.

As to how many grizzlies remain in these three areas, nobody pretends to

have ever counted them. Guesses range from a low of 500 to a high of 1,300. In between are about as many different estimates as there are bear students.

The fact that no one authority has been able to prove to the satisfaction of others that he knows approximately how many grizzlies remain, and the question of what to do or not to do about the survivors, are the basic causes of the Great Grizzly Controversy—a bitter one which has racked the wildlife establishment for the

better part of a decade. In the course of this violent dispute, traditional alliances between wildlife agencies and powers have been broken and improbable new ones formed. Jobs have been lost (so it is charged), reputations tarnished, legal actions initiated, and claims of corruption, coverup, stupidity, and barrages of other hard words have been hurled. So much has been said and charged, so much heat and so little true light generated, that even a summary of the quarrel is neces-



sarily lengthy, complicated, and almost inevitably leads to offending adherents of one position or another.

Though there may be as many or more bears living in the Bob Marshall area, the Great Grizzly Controversy has centered on the status and management of the species in the Yellowstone ecosystem. There were grizzlies in Yellowstone when the national park was dedicated in 1872, of course. Nobody knows how many, and about all that is known is that

originally there seemed to be more grizzlies than black bears. Through the years, presumably because of changes associated with the development of the park, blacks became more plentiful and came to outnumber grizzlies by two to one or more. From the 1920s on, casual, incomplete, and irregular estimates of the grizzly population in the park and adjacent areas ranged from 100 to 300 animals.

Another bit of historical information

James Walker's 1877 painting depicts Spanish-American vaqueros roping a grizzly. These colonial California cowboys would drag the bear back to their ranch to pit it against bulls in the public arena. Overleaf: A modern grizzly portrait by noted American wildlife artist Bob Kuhn.



James Walker painting courtesy the Denver Art Museum, Bob Kuhn painting (following pages) from the collection of William F. Wallace Jr.

important to recent developments is the fact that shortly after the national park was opened, a number of garbage pits were established. Yellowstone bears soon learned that these open pits contained edibles, and generation after generation congregated and fed at the garbage dumps. During the 1920s watching grizzlies sort through garbage was one of the great public attractions, one which the National Park Service encouraged visitors to enjoy. Later, for esthetic reasons and because of the risk of injury, tourists were excluded from garbage disposal areas. But until 1971, Yellowstone grizzlies remained garbage addicts.

WITH THE INTENT of learning more about the status and biology of the grizzly, an ambitious study was launched in Yellowstone in 1959. The research team was headed by Frank C. Craighead Jr., professor of ecology at the State University of New York in Albany, and John J. Craighead, professor of ecology at the University of Montana in Missoula and also leader of the Montana Cooperative Wildlife Research Unit. In this latter position John Craighead is an employe of the U.S. Fish and Wildlife Service.

Since the 1930s, when they wrote a book and published articles in *National Geographic* about their experiences as teenage falconers, the Craighead twins have led active, adventurous, and publicized lives. They have been well regarded within the scientific community as field researchers and teachers, well known to the public because of popular articles, books, and television and movie productions about their activities as wildlife students, whitewater canoeists, and survival experts. Indeed, the Craigheads (other relatives also have important natural history interests and credentials)

Western lore is rife with fanciful tales of grizzlies attacking men, but enough stories were true to maintain the bear's reputation. In a nineteenth-century lithograph, a mountain man named S. E. Hollister fights off a she-grizzly whose cubs he molested. The trapper was terribly injured but killed the bear with his knife. Another true incident that occurred during a Wyoming grizzly hunt is graphically recorded in W. R. Leigh's 1914 oil painting, "A Close Call."

have been a glamour family within the wildlife establishment.

The Yellowstone grizzly study represented a cooperative agreement between the National Park Service and the Craighead research team. The Park Service in a sense provided the bears and, according to John Craighead, a few thousand dollars a year of the operating costs. However, the remaining funds (well over \$1,000,000 was spent on the project) and facilities were obtained elsewhere. Among other contributors were the National Science Foundation, National Geographic Society, Philco Corporation, Boone and Crockett Club, and the New York Zoological Society.

The Craighead study was a wide-ranging one concerned with age-sex ratios, reproductive and mortality rates, movement, reactions to man, hibernation, habitat relationships. A principal method of obtaining data was to trap grizzlies and mark them with tags, colored streamers, and radio transmitter collars. The Craighead team trapped and marked bears mostly in the vicinity of garbage dumps for the obvious reason that the grizzlies congregated and were most easily caught there. During an eleven-year period, 264 grizzlies were marked in one way or another. (This is a cumulative figure. At no one time were there ever 264 positively identified grizzlies in Yellowstone.) By the late 1960s the Craigheads felt they had identified about 75 percent of the grizzly population of the ecosystem, estimating that there was a total of 245 grizzlies in 1967.

Here it must be noted, because it becomes crucial to the controversy, that these figures and extrapolations were not unanimously accepted. Later, Glen F. Cole, the supervisory research biologist for Yellowstone National Park, was to object that there were 50 to 100 animals which have been referred to as a backcountry population. These were grizzlies Cole believed did not come to the garbage dumps and thus were not accounted for in the Craighead calculations. Cole reasoned that the Craigheads had marked less than 75 percent of the Yellowstone bears and that the total grizzly population for the ecosystem should be in the 300 to 350 range. His belief in the existence of the backcountry bears was based on his own observations plus those of a team of University of Colorado researchers who had been studying black bears in the Yellowstone backcountry.

This party observed that only four percent of the grizzlies they encountered bore the visible markers attached by the Craigheads at the garbage dumps.

Whatever the true proportions, the assumption was that as the Craighead project continued more and more bears would be identified and thus population estimates would become increasingly accurate. However, in 1967 a series of events combined to lead to the acrimonious termination of the study.

In August 1967, on the same night but in widely separated localities of Glacier National Park, two different grizzlies attacked and killed young women. The two deaths became an immediate public sensation, and the National Park Service was severely criticized for general management practices and specifically for the fact that one of the attacks took place near a small backcountry chalet where there was an open garbage dump. Grizzlies, presumably including the killer, regularly visited the dump—and park rangers were among the spectators who watched them. The campground in which the woman was killed was only a few hundred yards away.

Although the problem was Glacier's, repercussions were immediately felt in Yellowstone National Park, which had both grizzlies and garbage. In retrospect, the National Park Service position is that long before the Glacier tragedies—in fact since 1930—they had been closing down open garbage pits and in time would have eliminated the dumps altogether. Despite bureaucratic assurances that everything was proceeding on schedule, both logic and gossip have it that the Glacier killings put considerable pressure on Yellowstone officials to do something quickly about their garbage-eating grizzlies.

Coincidentally, only a few weeks separated the Glacier deaths and the submission by the Craigheads of the preliminary report on their grizzly study. The Craighead paper included some of the data they had collected but noted that much of the information remained to be analyzed and would in time appear in other reports and scientific publications. Additionally, their report included a series of recommendations to the National Park Service on grizzly bear management in Yellowstone. The crucial ones had to do with the bears and garbage.

For esthetic reasons, for the welfare of



A detail from a Charles M. Russell painting, "Death Battle of a Buffalo and Grizzly Bear." Russell based this 1902 work on an account witnessed by an early Montanan who led a wagon train across the plains in 1877.

the grizzlies, and to reduce the possibility of human injury, the Craigheads said they favored eventual closing of the Yellowstone garbage pits. However, they emphatically warned that this should be a gradual process, with garbage feeding being eliminated over a ten-year period. The Craigheads viewed the Yellowstone system, esthetics aside, as a good one for segregating bears and humans—by gathering the bears at dumps well removed from tourist traffic or campgrounds. To shut down the dumps abruptly might cause the garbage-habituated bears to disperse erratically, the Craigheads predicted. Very likely the bears would move toward and into the campgrounds hunting for scraps. This would increase the risk of people being hurt by bears. Also, if there were more bears around campgrounds, park rangers would be forced to kill or remove more of them to protect visitors. Thus the Craigheads suggested

that abrupt closing of the garbage pits would be bad for both people and grizzlies.

The reaction of National Park Service officials to the Craigheads' report might fairly be characterized as testy. Memos flew back and forth between Yellowstone and Washington suggesting that the Craigheads were off base by offering recommendations before they had published their data; that a gradual closing of the dumps would simply result in more and more bears gathering around smaller and smaller food supplies; that the Craigheads should find out what official policy was before making recommendations and then keep their recommendations within policy "parameters."

In the end the National Park Service in effect rejected the phase-out-the-garbage recommendations of its own consultants. In 1968 and 1969 the amount of garbage dumped in the pits was reduced and

efforts were made to separate edible from nonedible refuse. At the same time, new disposal systems and facilities were installed and a major effort was made to keep campgrounds clear of garbage. Then, in 1970 and 1971, all the remaining garbage dumps were closed and the bears put on a "cold turkey" program.

WHAT HAPPENED, at least initially, made the Craigheads look as good as prophets. The grizzlies did disperse and did appear to head toward campgrounds. According to Craighead tallies, about six bears a year became campground habitués during the 1959-68 period. During the next three years, 23 grizzlies a year became regular campground visitors. During the same period 70 individual grizzlies were captured in and removed from campgrounds by National Park Service employees, while during the preceding nine years only 57 animals had to be so handled.

There was also a considerable increase in man-caused mortality among the grizzlies. During the 1959-67 period an average of 18.9 bears a year were removed from the Yellowstone ecosystem, including those taken by hunters and predator control agents outside park boundaries. In the 1968-73 period, 31.5 grizzlies a year were removed from the ecosystem. The major reason was increased bear removal within Yellowstone National Park itself. From 1968 through 1972, 33 grizzlies were shot in the park in "control" actions, seven were killed by vehicles, nine were taken to zoos, nine were killed by drug overdoses. (This latter cause of bear mortality is a sensitive matter. Protectionists have cited these figures to indicate that Park Service agents are inexperienced, callous in their handling of trapped and drugged bears. However, in fairness it should be noted that ten grizzlies died during the Craighead research period from overdoses of drugs as the team was "developing and improving" immobilization techniques.)

Indisputably, the National Park Service had more bear troubles during (and the assumption is because of) the garbage elimination period. However, it is unclear whether park visitors had more trouble with bears. The Craigheads' records show that from 1968 through 1970 ten persons were injured in Yellowstone by grizzlies. They say this rate of injury, 3.3 per year, was double the rate during

the preceding nine-year period. On the other hand, Glen Cole, the Yellowstone biologist, has data which shows that in the same period there were eleven bear injuries for a 3.66 rate—but that this was about the same as during the 1959-67 period, in which there were 30 grizzly-related injuries, not 15 as the Craigheads claim. As with so many other issues in the Great Grizzly Controversy, there is no way to determine where the truth lies.

It is, however, a matter of record that in 1972 a grizzly killed a camper in Yellowstone. (There had been two fatal bear attacks previously, both more than fifty years earlier.) The victim was a young Alabamian, Harry Walker, whose parents sued the National Park Service in U.S. District Court in California. The Park Service claimed Walker was illegally camped and had been careless with his garbage, but in March 1975 Judge A. Andrew Hauk found for the plaintiffs and issued a stinging rebuke of several park management practices, specifically citing prior predictions by the Craigheads that the abrupt closing of the garbage dumps would increase the danger of grizzly attacks on visitors. The court ordered the National Park Service to pay \$87,417.67 in damages to Walker's heirs.

Long before this legal confrontation, the relationship between the Craigheads and the National Park Service had deteriorated badly. The researchers stayed in the park after the new garbage policy went into effect but remained critical of it. In 1970 the Park Service offered the Craigheads a new cooperative agreement. However, according to the Craigheads, it was so festooned with restrictions on their research activities, their freedom to publish and comment independently, that they rejected it. "I showed that agreement to some of my professional colleagues at the University of Montana," recalls John Craighead. "They said, 'John, if you accept that you can no longer call yourself a scientist.'"

The Craigheads and their associates left Yellowstone National Park for good in the spring of 1971. Their equipment and facility were removed. Also, as National Park Service employees picked up grizzlies to transport to backcountry areas (between 1970 and 1973 there were 125 such actions) the identifying markers affixed by the Craigheads were removed. Since 1971 the only grizzly bear data coming from Yellowstone has been issued by Park Service sources.

BUT THE EXIT of the Craigheads from the national park did not end and, if anything, hotted up the Great Grizzly Controversy, as a summary of current opposing views indicates:

The Craigheads: "A Population Analysis of the Yellowstone Grizzly Bears" by the Craigheads and their colleague Joel R. Varney was published in 1974 as Bulletin 40 of the School of Forestry, University of Montana. The thrust of the highly technical report is that since 1968 the rates of man-induced and natural mortality among grizzlies in the Yellowstone ecosystem have exceeded the reproductive rate. Therefore the bear population has declined steadily. The Craigheads state that according to the most probable estimates there were 183 grizzlies in the ecosystem in 1971, 152 in 1972, 139 in 1973, and 136 in 1974. The most optimistic estimate, according to the Craighead statistical models, is that there were 233 bears in 1974; the most pessimistic estimate puts the grizzly population at 82 for 1974. In all three models the bear population is declining—and unless conditions are somehow altered the curve will reach the zero mark around the end of the century.

Assuming the natural mortality rate will remain relatively constant, the Craigheads suggest that "an increase in the reproductive rate or a further reduction of man-caused mortalities must occur before the population will stabilize." The Craigheads believe the best bet is to reduce man-caused mortality principally by restricting both hunting and control activities. "If state and federal agencies wish to pursue a fail-safe management for the grizzly, we believe they should base their hunting and control mortality allowances on this conservative estimate for the population level." (The conservative estimate is predicated on a 1974 population of 82 bears and a reproductive rate of .544.)

John Craighead comments that such fail-safe management involves restrictions which will insure that less than ten bears a year are removed from the Yellowstone ecosystem, at least until the population has stabilized and begun to increase. According to the records of the Montana Fish and Game Commission, the average annual mortality rate for grizzlies in the Yellowstone ecosystem was 32.8 for the 1970-74 period. Hunting accounted for 27 percent of these deaths and nonhunting losses for the remainder.

The National Park Service: Based mostly on the investigations and reports of Glen Cole, the National Park Service has rejected many of the Craigheads' premises and conclusions. Cole believes that because of the existence of a population of backcountry grizzlies, Yellowstone bears were far more numerous in 1967 than the Craigheads estimated and thus the base for subsequent estimates should be raised. The Park Service admits that during and immediately after the dump-closing period the increased need for control actions increased bear mortality rates. However, this was a temporary situation, and since 1972 the need for bear control has been sharply reduced. According to Cole no bears were removed from Yellowstone National Park in 1973 and only two were taken out in 1974.

Finally, Cole claims the grizzly population has recovered nicely from the high mortality period of the early 1970s. He bases this claim largely on a continuing compilation of sightings made by himself and other observers whom he characterizes as being highly qualified members of the Yellowstone staff. He believes these observations give him a good census base from which he is entitled to make sound population estimates. He feels there was a population of 250 to 300 grizzlies in the Yellowstone ecosystem in 1968, that this may have dipped to about 250 bears in 1970-71, but then their numbers began to increase. Cole's 1974 estimate for the grizzly population in the entire ecosystem is 319 to 364 animals.

Cole attributes the population rise to the fact that the grizzlies compensated for the garbage pit closures in several beneficial ways. Again based on reports from his cadre of in-park observers, Cole believes that more females are now bearing cubs than formerly, though the rate of cubs per female is less than previously reported. Also, he feels more cubs are surviving to yearling status. He speculates that when the bears were heavily concentrated around garbage dumps, intraspecific competition reduced the number of young females who bred and bore cubs and also worked a hardship on cubs. Now, without the attraction of garbage dumps, Cole believes the bears are more naturally and beneficially distributed throughout the ecosystem.

"I feel the grizzly population in the park is now viable," said Cole in October 1975. "I don't think the numbers game is

that important, but I believe we have or soon will reach the carrying capacity of the park for grizzlies."

As to how the carrying capacity of the park can be recognized if and when it occurs, Cole says, "We should begin seeing the emigration of young animals and older ones past their prime, socially subordinate individuals, from the park into adjacent areas of the ecosystem. When this happens I see no reason why moderate hunting outside the park should be biologically objectionable."

The Craigheads' rebuttal: There are many specific points where the Craigheads are in direct disagreement with Cole's data—reproductive rates, compensatory capabilities, the existence of an original backcountry population, human injury rates from bears, etc. However, there are two fundamental objections. The first is that since 1971 no independent observers have been able to verify the data collected within Yellowstone. Secondly, Cole's case rests on sight observations—by individuals of varying qualifications—of unmarked bears which the Craigheads feel cannot be positively and consistently identified.

"Occasionally," says John Craighead, "there is a bear with unique physical characteristics that can be unmistakably identified in the field. This is the exception rather than the rule. Even very good, experienced observers can make mistakes in such simple things as distinguishing between a large, early cub and a small yearling. When it comes to making more difficult distinctions about the age, sex, and identity of animals, this is usually impossible in the field unless the animals are visibly marked. The park population estimates are nothing more than elaborate guesswork."

The Craigheads spell out this fundamental objection in the conclusion of their 1974 publication. "Without color-marked or instrumented animals, it will be extremely difficult, if not impossible, to obtain accurate annual counts and sex and age designations of the grizzly bears in the Yellowstone ecosystem. We are convinced that more accurate population estimates and trends can be obtained from simulations with the model than from field censusing of unmarked animals."

The National Park Service rebuttal: Glen Cole says his data is more recent than the Craigheads' and that their computer models are too rigid, do not make

sufficient allowance for the adaptability of the bears, their compensatory characteristics. He vigorously defends the accuracy of his accumulated field observations. "I have gone over those reports very critically, thrown out and discounted any which were doubtful. I am convinced that the remaining observations provide acceptable data for making population estimates, projecting trends."

As to the matter of color-marking with visible tags, Cole says those affixed by the Craigheads were removed because they offended visitors, especially photographers. "If the park were simply a research station, then perhaps as a biologist I would want some of the bears visibly marked. However, there are other important considerations besides research in a national park." Among considerations which make marking inadvisable, Cole mentions that handling grizzlies is dangerous for the handler and potentially dangerous for the bear because of overdoses of immobilizing drugs; that although there is no data supporting the theory, it is possible that once an animal is trapped, handled, and marked, he will subsequently display more aggressive behavior toward humans in general.

WITH THE TWO PRINCIPAL sources of grizzly data and theories in such profound disagreement, other individuals and agencies were inevitably drawn into the Great Grizzly Controversy—either as advocates of one position or the other or in attempts to reconcile the differences. Professional protectionists jumped in on the side of the Craigheads (which is hardly surprising, since if nothing needs protection there is no work for protectionists). Among the most active and belligerent has been Lewis Regenstein, an ex-CIA employee who is now the man in Washington for the Fund for Animals. At various times Regenstein has characterized the National Park Service grizzly management policy as being "a wholesale slaughter of the animals with the objective of largely exterminating them in Yellowstone" and as "brutal and unscientific." He accused the Park Service of mounting a "vicious smear campaign" against the Craigheads because "they refused to be muzzled by the Park Service bureaucracy." Regenstein was also instrumental in bringing or threatening several legal actions aimed at making the

Interior Department either explain or change its grizzly management policies.

With Regenstein and others shouting about starving and expiring bears, corruption and coverups in the bureaucracy, the dispute became a juicy public one. Columnist Jack Anderson picked up on the grizzly controversy as did *The New York Times*, *Washington Post*, and the wire services. Senators and representatives began making inquiries. All of this put a lot of heat on upper-level politicians in Interior to do something or at least look like they were doing something about the controversy.

In such situations a traditional fail-safe move for bureaucrats is to summon fact-finding committees, study groups, blue-ribbon panels—which if nothing else tends to provide new targets for critics. In keeping with this tradition, then Secretary of Interior Rogers C. B. Morton requested the National Academy of Sciences to provide a contingent of impartial experts to look into the who-

struck-Johns of the grizzly dispute. The NAS study committee was headed by Ian McTaggart Cowan, dean of graduate studies at the University of British Columbia. In 1973 the six-man group began to pore over the published literature, seek out private opinions, and interview concerned parties. Much of this collected data was made public in a massive report issued in July 1974.

In several crucial areas the National Academy of Sciences study was openly critical of the National Park Service. It decried the fact that "restrictions on studies of the grizzly [have] virtually excluded other agencies" from the park. It also repeated allegations that not all grizzly control actions had been recorded by the park. The committee made no value judgment on this serious matter but commented: "If this allegation is true, such failure jeopardizes rational research and management programs... within the national parks."

The committee did not find there was

John Woodhouse Audubon, one of two sons of John James Audubon, painted this stylized pair of grizzlies for THE VIVIPAROUS QUADRUPEDS OF NORTH AMERICA. The first hand-tinted edition appeared in 1848.





"Crippled but Still Coming" is the title of this 1913 oil painting by Charles M. Russell of a wounded grizzly charging a cowboy whose horses are bolting. The bear's attacks on men were rarely capricious; most incidents were provoked.

sufficient data to support large claims about a sizable backcountry grizzly population and generally was more receptive to the base population estimates of the Craigheads than to those of the National Park Service. In the fundamental matter of the quality of observations, the experts came down hard on Glen Cole: "The observations summarized derive from many different types of observers . . . do not represent any constant or reported number of observers or hours in the field or miles traveled. Such a table has little if any meaning, since there is no basis for comparisons of results from year to year

. . . Estimates of bear numbers for 1971 to 1973 are based on hypothetical calculations, and there are no data to verify them."

While the committee referred to the Craigheads' studies as "the most intensive and sustained ever conducted on any grizzly population," it by no means judged the Craigheads the winner in the debate. Just as Glen Cole claims, the committee concluded that "the rigid characteristics of the model [for population estimates] seem, a priori, to be unrealistic, because no compensatory mechanisms are built into the model."



Overall, the National Academy of Sciences committee found there was not enough clear information about the grizzly to either determine its status or to pass judgment on the effectiveness of management programs. The effect of its report was to certify that there was indeed a grizzly bear controversy. By 1974 this scarcely qualified as news.

ALSO IN 1973, largely at the behest of the Interior Department, an Interagency Grizzly Bear Study Team was created to conduct and coordinate

research in the Yellowstone ecosystem. The team is composed of representatives from the National Park Service, U.S. Fish and Wildlife Service, U.S. Forest Service, and the Montana, Idaho, and Wyoming fish and game departments. A University of Idaho professor, Richard Knight, was hired by the National Park Service to act as the team leader. Currently the team's annual budget is \$200,000.

Not surprisingly, the Interagency Grizzly Bear Study Team had some difficulties getting started and was not operative until 1974. Though everyone involved favored the concept of cooperation, there were long-standing rivalries and conflicts of interest. The three federal agencies often have been at odds in wildlife matters. Also, one of the practical facts of American wildlife management is the suspicion, if not hostility, that exists between state and federal operatives. The states have a traditional fear that the feds are plotting to take over *their* animals—especially through the endangered species program. Balanced against this is the tendency of federal game managers to feel that perhaps they *should* take over because state wildlife agencies are responsive only to hunting interests.

Also, though it has been touted as a sort of superagency, the interagency team does not have an entirely free hand. For example, it must get permission to operate within Yellowstone National Park. "Our major request so far was to put radio collars on two bears in the park," says Knight. "Permission was granted, so no problem. If we want to do more we will take that up when the time comes. But we do have to ask."

The U.S. Forest Service, however, turned down a request from the team to put radio collars on bears in a wilderness area in the Yellowstone ecosystem. Also, though it was recommended in the National Academy of Sciences study, the Forest Service has not yet substantially reduced grazing permits to ranchers in the ecosystem. The rationale behind this suggestion is that if there is less stock there is less likelihood of stock being killed by grizzlies and of grizzlies in turn being killed as stock predators.

Administrative matters aside, the major problem for the Interagency Grizzly Bear Study Team has been the same that others have had to cope with—the difficulties of conducting a field study in this rugged, mountainous area. This past summer, for example, the team had the

equipment and manpower to put radio collars on at least 20 grizzlies, but by fall had working collars on only five bears. "It is not simply a matter of picking up where the Craigheads left off with their radio telemetry work," says Knight. "They were working around the garbage dumps where the bears were reasonably accessible. All the dumps in the park and all but one outside the park are now closed. We don't have that concentration. Our problem is basic—a lack of bears."

"I think the Park Service missed the boat so far as research is concerned when the dumps were closed," Knight continued. "If they had put collars on some of those bears we might have a pretty good idea of how they dispersed, how the population is distributed. When I first started with this project it seemed reasonable that there might be a back-country population, separate from the animals that had used the dumps. This still seems reasonable, but the Craighead figures are looking better to me."

Otherwise, Knight has been doing a lot of flying, trying to locate grizzlies from the air. It has been frustrating work, not only because he has found it difficult to identify, much less age and sex, individual grizzlies from a plane, but also because this past year was bad for all bear-watchers. By late fall, the sightings of both the interagency team and those made by observers within Yellowstone National Park had been far fewer than those made during an equivalent period in 1974.

"It is possible that there are many fewer grizzlies to be seen," says Knight, "but my opinion is that the sightings are down because it has been much harder to see bears this year. A crusted snow stayed on the ground well into the spring and probably kept them in the high country, where they are less often observed. Foliage is lush this year, and there are a lot of berries. The animals may well be dispersed over an exceptionally wide area and be shielded from sight in heavy cover."

Knight feels the Interagency Grizzly Bear Study Team has not identified enough grizzlies to make new and original contributions regarding the bear's status. However, working mostly with previously collected data, the team's first annual report for 1974, issued in March 1975, suggested there might be anywhere between 237 and 540 grizzlies in the Yellowstone ecosystem.

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MEANWHILE, the U.S. Fish and Wildlife Service has become independently involved in the Great Grizzly Controversy. Through the years its agents killed a good many grizzlies in connection with predator control activities. However, in 1966 the Fish and Wildlife Service declared the grizzly to be officially endangered. Two years later the species was removed from the endangered list. Spokesmen now offer several explanations for these moves. First, it is said that the status of the grizzly was not well researched in 1966. Secondly, at the time there was no provision in the law for regional classification: a species was either endangered everywhere or nowhere so far as the law was concerned. The problem was that the grizzly seemed plentiful in Alaska, and Alaskans objected to the restrictions imposed by the endangered classification. (There is speculation about another possible reason: It would not have looked good for one Interior agency, the National Park Service, to start killing a large number of grizzlies in Yellowstone as part of a control action, while a sister group, the Fish and Wildlife Service, was insisting the animal was in danger of extinction.)

After 1968 the U.S. Fish and Wildlife Service was very quiet about grizzlies. Even though one of its senior scientists, John Craighead, was in the midst of the controversy, the bureau gave the impression of a pacific man caught in a barroom brawl who hopes to go unnoticed by slouching down in a back booth.

However, a variety of outside pressures finally smoked the Fish and Wildlife Service out of its neutral position. In 1974 the agency initiated a review of the grizzly's status. No new research was undertaken, but existing data was pawed through once again, and in July 1975 the grizzly was listed as threatened in the lower 48 states. (The Endangered Species Act of 1973 permits regional classifications.) As a result, federal and state agencies worked out an agreement concerning bear hunting. In the Selway-Bitterroot ecosystem, no grizzlies may be legally killed except in defense of human life. In the Yellowstone ecosystem (outside the national park), hunting is now banned but bears may be killed in defense of human life or when they are certified as predators on livestock. This prohibition of grizzly hunting in the two areas was more a symbolic federal gesture than it was a change in management



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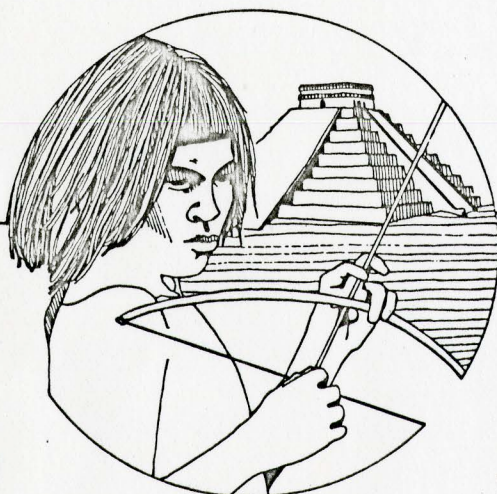
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practices. Idaho, in which most of the Selway-Bitterroot area lies, has not allowed grizzly hunting since 1947; Montana halted sport hunting within the Yellowstone ecosystem in 1974, and Wyoming in 1975.

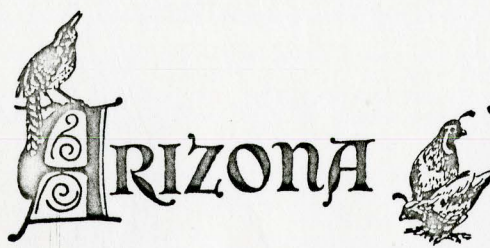
To the north, in the Bob Marshall ecosystem, the grizzly's new status was translated into a different kind of management program. It was decided that grizzlies were more numerous here. Clifford J. Martinka, the Glacier National Park research biologist, estimates that there is a stable population of about 200 bears within the park. While such estimates are backed by even less data than is available in Yellowstone, a ballpark figure of 500 to 650 grizzlies is often used for the entire northern population. Whatever the total, it was believed there were enough grizzlies so that 25 bears could be removed each year. Sport hunting is permitted, but the hunting kill is added to other grizzly kills and the total must remain under 26 animals. For example, if prior to the hunting season two bears have been "controlled" in Glacier park, two killed as stock predators outside the park, and one killed on a road, then hunters may kill only 20 bears.

Kenneth R. Greer, a Montana Fish and Game Department biologist and that state's representative on the Interagency Grizzly Bear Study Team, provides some background on how the 25-bear quota was established. Since 1967 Greer has been keeping painstaking records of grizzly mortality from whatever cause. Greer says: "Schreiner [Keith M. Schreiner, an associate director of the U.S. Fish and Wildlife Service] came out to look over the situation. My records show that the hunter kill in the northern ecosystem averaged 29 bears a year between 1967 and 1973. He said it might be safer, look better, to cut that back a little, so the figure of 25 was suggested."

So much for the science of wildlife management.

Last year was the first under the 25-bear quota, and hunters had 20 bears to shoot for, five animals previously being killed. Greer considers the system workable and said he thought state agents could stop the hunt after the twentieth and before the twenty-first bear was killed. "We don't plan to let it go down to the wire," he told me in October. "When we begin to approach the limit we can begin to shut things down. Hunters have 48 hours in which to report kills, and that

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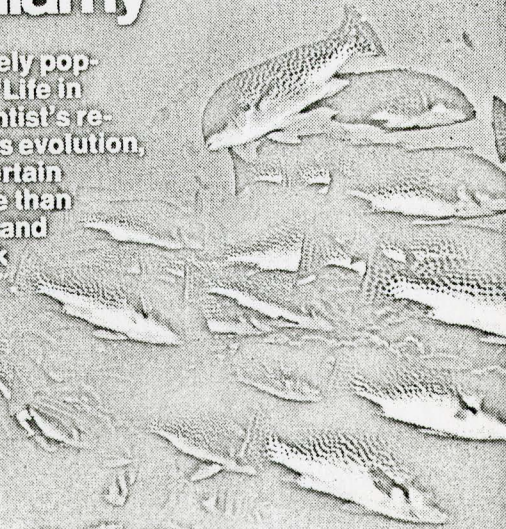
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Montana game officials feel there are enough bears in the north so that they can continue to permit hunting. They cite the case of Idaho, where bear hunting has been prohibited since 1947 but the grizzly population remains small and is very likely still declining. This, says the Montana Fish and Game Department in a September 1975 statement, proves that a hunting ban didn't help the grizzly in Idaho (and by inference would not help the species in Montana). Of course this is simply another theory. It is just as likely that what the Idaho experience proves is that grizzlies had been reduced below the recovery point prior to 1947. More clearly, such statements indicate that Montana would like to maintain an open season on grizzlies as long as possible.

THIS IS HOW THINGS STAND at the moment among the *crème de la crème* of American grizzly students and would-be grizzly managers. Working from essentially the same raw data, they have arrived at profoundly different and often contradictory judgments and policies.

In these circumstances there is a strong temptation to retreat into cynicism, to conclude that self-interest rather than hard facts has largely determined the various positions. Thus we find the National Park Service proving that there is a sufficiency of Yellowstone grizzlies because that is just what it needs—sufficient bears to support a series of arbitrary administrative policies. (It would violate everything we know about bureaucratic behavior for the National Park Service to announce: "We have reviewed the record and now conclude that closing the garbage pits set off a chain of events which jeopardizes the survival of the grizzly and very possibly has increased the risk of humans being injured by bears.")

In the same vein the Montana Fish and Game Department has an interest in continued grizzly hunting, and the U.S. Forest Service has an interest in stock grazing, clearcutting of timber, and recreational development. A low estimate of the grizzly populations would be an embarrassment to these policies. The U.S. Fish and Wildlife Service finds fewer bears, few enough to call the grizzly a threatened species but not so few as to list it as an endangered species. The



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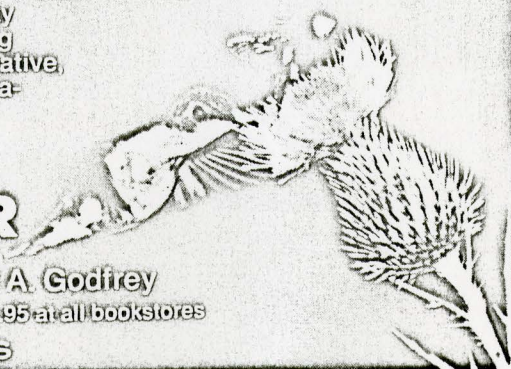
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Interagency Grizzly Bear Study Team, a creature of all these interests, is in the middle and makes estimates which do not offend anyone. The grizzly has been in bad trouble since 1970, say the Craigheads and their associates, and that is what the Craighead computers prove.

Consciously or not, we all are susceptible to self-interest. This is true of individuals and it is particularly true of bureaucracies, whose guiding principle is always and everywhere a negative one—don't rock the boat. Therefore, in such a controversy, in the main a bureaucratic one, the manifestations of self-interest are worth keeping in mind.

However, cynicism is not enough. One cannot deal with John Craighead, Kenneth Greer, Richard Knight, and Glen Cole and come away with the feeling that these are deceitful men, timid about their reputations and careers. Rather the impression is of decent, intelligent men who care passionately and professionally about the grizzly bear.

In this situation—conscientious men in violent disagreement—a fantasy scenario suggests itself. The Craigheads, Cole, Greer, Knight, et al, are manning a gigantic seine long enough to sweep through the entire Yellowstone ecosystem and strong enough to enmesh every grizzly living there. At the end of the sweep the men gather to look at their catch. It is a personal feeling that they would all agree on the count and those who had guessed wrong would profusely apologize to those who had been right.

Obviously there is no such device or technique. A more possible, though not necessarily probable, conclusion to the Great Grizzly Controversy is that someday it will become apparent that nobody has seen any grizzlies for a long time. Then agreement will be reached, apologies made, after it is too late to concern or benefit the grizzly.

IN THE MEANTIME, what evidence exists on the status of the grizzly bear in the lower 48 states remains essentially circumstantial and open to any interpretation. But even if there is no way to make a firm value judgment on the merits of the various opinions (there are already too many opinions stewing in this particular pot), there may be room for some reflections on the relationships between men and grizzlies—a matter which has been obscured in all the confusion about

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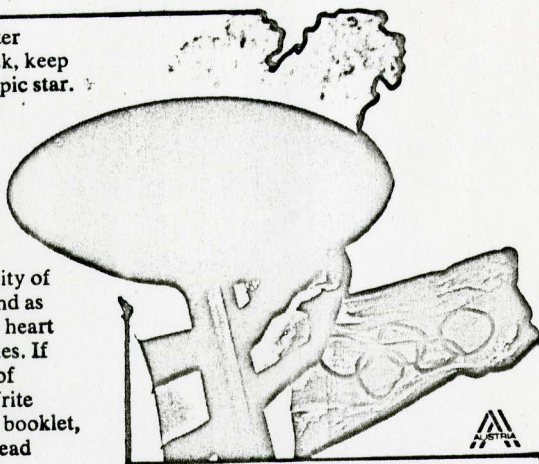
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which men are right about which grizzlies.

Lewis Regenstein, the vocal Washington operative in the controversy, has written that the elimination of the grizzly from most of its original range, the drastic reduction of its numbers, was the result of "remorseless persecution." This is standard protectionist rhetoric, implying that what happened to the grizzly was like what happened to the Jews in Nazi Germany—that it was a mindless exercise of spite and sadism. The rhetoric may be standard but it is nevertheless mischievous. There were substantial reasons, flowing from the nature of the two species, for what happened.

As another ball-park guess, it is sometimes said that there were 10,000 grizzlies in northern California at the time Americans took that acreage from the Mexicans. Whatever the true figure, the point is this: You cannot have present-day San Francisco and Sacramento and 10,000 grizzlies, any more than you can have Omaha, Nebraska, and 30,000,000 free-ranging buffalo. It is not so much that grizzlies would chop up the citizens as it is that an economy, social organization, and countryside that support San Francisco and Sacramento will not support 10,000 grizzlies—or, indeed, *any* grizzlies. It is presently fashionable in many circles to be peevish, Miniver Cheevish about this reality, to yearn for the good old "natural" days. The fact is that all of us, biologists, conservationists, protectionists, hunters, the citizenry at large, have opted for and continue to opt for San Francisco and Sacramento.

The grizzly is a magnificent, impressive animal. Also it has become a symbolic one, a reminder of what our West and we ourselves once were—but are no longer. The general feeling seems to be that it is desirable to keep a few grizzlies in the lower 48 states for symbolic and esthetic reasons, but that the tolerable number of grizzlies is very small. This is an observable truth. (In all of this debate it should be honestly admitted that the genetic, ecological, natural future of the species lies in Canada and Alaska.)

Much the same truth applies to grizzly habitat. It is possible that clearcutting, road-building, ranching, mining, oil drilling, and recreational development will one day dangerously reduce the amount of country suitable for bears. At the moment, however, there is a great deal of good grizzly country remaining in

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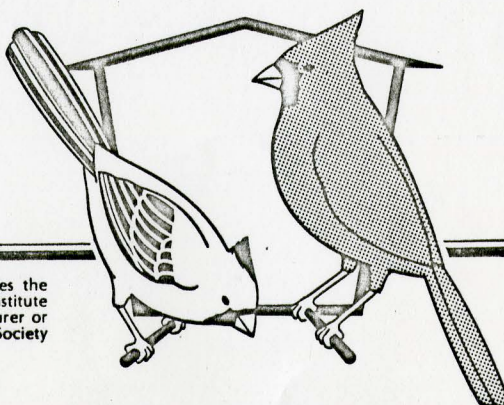
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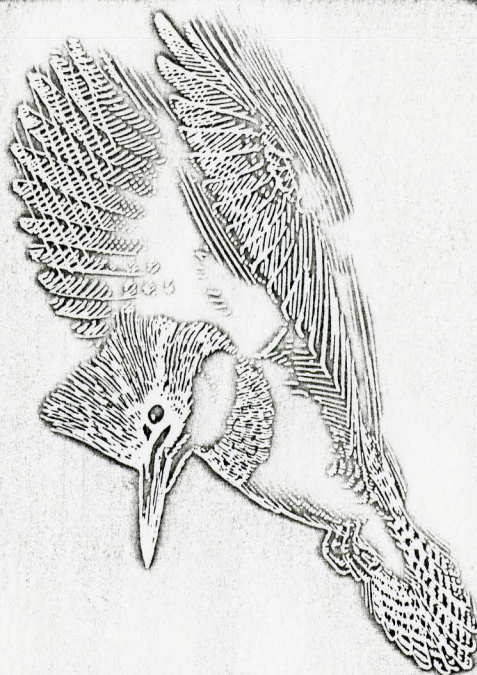
the West. Indeed, much grizzly habitat in Arizona, New Mexico, Colorado, Utah, Idaho, Washington, and California has no bears in it. Some have suggested that grizzlies could be restocked in portions of their former range. Perhaps they can and should be, but no steps have been taken, largely because local residents and game managers have shown no eagerness to take part in such experiments. Dedicated protectionists may feel this reluctance is reactionary and shortsighted, but they are not the people who have backyards to which grizzlies could be transplanted. Just as we can tolerate only a small number of grizzlies, we can tolerate the animals in only a few places.

As if to underline this point, during the summer of 1975 five people were injured in grizzly attacks in Glacier National Park and two others were injured by grizzlies in Yellowstone National Park. Three of the injuries occurred in the same incident. A father and two children were hiking a trail in Glacier, made a turn, and came upon a grizzly. They had no food. The bear had no cubs. The hikers did not try to harass the animal but the bear charged and mauled them. Unquestionably he could have killed them. The grizzly has never been identified and presumably is still at large.

Cliff Martinka, the Glacier research biologist, says he has lain awake nights brooding about the incident. "I used to think that with prudent management we could largely eliminate bear-man incidents. Now I'm not so sure. I'm beginning to believe the grizzlies have reached the point where they have encountered so many people that it has affected their collective behavior. They may be losing their shyness of man but not losing their aggressiveness. It might be they are becoming behaviorally more like black bears, which now are very bold around people. If grizzlies get as bold as blacks it could be critical because they are altogether a more aggressive and dangerous animal."

To segregate grizzlies and people, officials in both Glacier and Yellowstone national parks have instituted bear monitoring and human traffic control systems. Because of bear activities, visitors are now excluded from certain localities at certain times. However, as the Glacier incident illustrated, there are limits to such preventive protection. Each year the parks have more visitors to both developed and backcountry areas, and

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perhaps, as Martinka intuitively feels, each year the grizzlies become more habituated to visitors.

"I think it is almost inevitable that sooner or later we will have more tragic encounters," says Martinka.

All consideration of habitat, reproductive and mortality rates, good and bad management aside, the single greatest threat to the survival of the grizzly bear in the lower 48 states is this: If one summer the 1975 Glacier incident is repeated, with the difference that three people are killed, not just mauled; if this were to happen twice in a summer, as it could; if six people were killed by grizzlies in a season in the national parks, there would be a bear pogrom. Existing game laws, behavioral excuses, scientific justification, would not stop it.

For some reason we can tolerate thousands of traffic deaths, drug overdose deaths, industrial accident deaths, deaths in brushfire wars, but we can tolerate very, very few deaths caused by wild animals. This, and the fact that the grizzly is capable of death-dealing, are also observable truths.

In the Great Grizzly Controversy, acrimonious debate about technical research and management matters has taken us as far as it can. It would be more in the public interest—and in the interest of the grizzly—if a truce could be called and efforts made to stimulate an open, formal dialogue on the relationship between men and grizzlies. Such a dialogue could profitably include all points of view, from that of fervid protectionists to convinced consumers of wildlife. Its objective should be to reach an honest agreement on how many bears we can tolerate and where they are tolerable.

Given such an agreement, the now warring technicians could set to work establishing and managing some pieces of public land as true grizzly country. In such sanctuaries (and it is by no means certain that national parks are best-suited for this purpose) it should be agreed that the grizzly is supreme, its interests more important than those of lumbermen, miners, ranchers, hunters, photographers, tourists, even researchers and bureaucrats.

We might find that we want or need only a very few such areas and very few bears. However, only under such terms and in such truly inviolable retreats do the long-term prospects of keeping any grizzlies seem very promising. ☼