Department of Health and Environmental Sciences
STATE OF MONTANA Environmental Sciences Division
P.O. Box 1031
Kalispell, Montana 59901
John S. Anderson M.D.
DIRECTOR

RECEIVED
OCT 7 1975
ENVIRONMENTAL QUALITY COUNCIL

October 6, 1975

Ms. Kathryn Law, Chairman
Grizzly Bear Committee
Montana Wilderness Association
Box 2760
Missoula, MT 59801

Re: Slippery Bill Subdivision Unit #2

Dear Ms. Law:

I would like to thank you and also acknowledge receipt of your statement with regard to the above named subdivision. It will be placed in the record for possible future reference. The plat itself has cleared this office with an approval statement (see enclosure) and is presently either newly filed, or in the county review pipeline.

I am sure you recognize the problem I encountered in processing this proposal. Virtually all of the critical comments were received long after the various suspense dates were passed, and because of the existing administrative structure I had very little reason to deny approval at the time a decision was legally required.

One question I would like to make was with regard to the fact that the Wilderness Society received a copy of the May 13, 1975 Impact Statement. As an address I used Mr. Bob Muth, Rt. 4 Kalispell. I received no response and it occurred to me that I may not be using the proper clearing house address for your organization. It is the address we are now using for all of our work out of this office and that includes other matters in addition to subdivisions. If another address is being used I would appreciate being advised of the fact.

Thank you,

Wilbur O. Aikin, P.E.
Public Health Engineer
Environmental Sciences Division

WOA:jnh

cc: Montana Environmental Quality Council, Box 215 Capitol Station, Helena
Slippery Bill, Helena/Kalispell

SEPTEMBER 10, 1975

MR. WILBUR AIKEN, P. E.
PUBLIC HEALTH ENGINEER
ENVIRONMENTAL SCIENCE DIVISION
P. O. BOX 1031
KALISPELL, MONTANA 59901

DEAR MR. AIKEN:

THIS LETTER WILL PRESENT A MORE DETAILED VIEW OF THE POSITION OF THE MONTANA WILDERNESS ASSOCIATION REGARDING THE PROPOSED SLIPPERY BILL MOUNTAIN SUBDIVISION, WHICH I DISCUSSED WITH YOU BY TELEPHONE EARLIER THIS WEEK.

OUR INTEREST IN THIS PARTICULAR SUBDIVISION STEMS FROM ITS LOCATION IN AN AREA FREQUENTED BY GRIZZLY BEARS. IT IS OUR CONCERN THAT A LAND DEVELOPMENT SITUATED IN THE GRIZZLY'S NATURAL TERRITORY WOULD PROVOKE CONDITIONS DETRIMENTAL TO BEARS AND POTENTIALLY DANGEROUS TO HUMANS.

THE WELFARE OF THE GRIZZLY HAS BEEN A KNOWN CONCERN OF OUR ORGANIZATION FOR SOME TIME. THE RECENT LISTING OF THE GRIZZLY AS A "THREATENED SPECIES" INDICATES THAT INTEREST IN THE WELFARE OF THIS VALUABLE SPECIES HAS BECOME OF NATIONAL SCOPE. THE MONTANA FISH AND GAME DEPARTMENT HAS FOR THE FIRST TIME SET A QUOTA ON THE NUMBER OF ANNUAL BEAR MORTALITIES, THEREBY PLACING THE GRIZZLY UNDER STRICTER CONTROL.

WITH PUBLIC CONCERN NOW BEING DIRECTED TOWARD THE GRIZZLY'S NEW STATUS, IT WOULD SEEM CONTRADICTORY TO ALLOW THE DEVELOPMENT OF A RECREATIONAL SUBDIVISION IN KNOWN GRIZZLY TERRITORY WHERE THE DISADVANTAGES TO THE BEAR ARE SO APPARENT. SUCH A DEVELOPMENT WOULD DESTROY GRIZZLY HABITAT, INTERRUPT NATURAL TRAVEL ROUTES BETWEEN GLACIER NATIONAL PARK AND THE MIDDLEFORK DRAINAGE, AND PRESENT REPEATED THREATS OF BEAR-MAN CONFLICTS.

FOR THESE REASONS WHICH WE BELIEVE WOULD BE OF DELETERIOUS EFFECT TO THE GRIZZLY, WE STRONGLY RECOMMEND AGAINST THE APPROVAL OF THE SLIPPERY BILL MOUNTAIN SUBDIVISION. IDEALLY, THESE 143 ACRES PLUS THE ADJOINING 400 ACRES ON GEIFER CREEK, SHOULD BE PURCHASED BY STATE OR FEDERAL AGENCIES FOR PRESERVATION AS GRIZZLY HABITAT.

MONTANA HAS THE DISTINCTION OF POSSESSING ONE OF THE LARGEST REMAINING GRIZZLY POPULATIONS. WE SHOULD THEREFORE, AS RESPONSIBLE CITIZENS OF MONTANA, SUPPORT ONLY THOSE

WILDLAND DEVELOPMENTS WHICH WILL IN NO WAY JEOPARDIZE THE WELL BEING OF THE GRIZZLY AND OTHER IMPORTANT SPECIES OF WILDLIFE.

VERY TRULY YOURS,

Kathryn Law

KATHRYN LAW, CHAIRMAN
GRIZZLY BEAR COMMITTEE
MONTANA WILDERNESS ASSN.
BOX 2760
MISSOULA, MONTANA 59801

CC:

FLATHEAD COUNTY COMMISSIONERS
WILDERNESS SOCIETY
MONTANA FISH AND GAME DEPARTMENT
DIVISION OF ENDANGERED SPECIES
CHARLES JONKEL

Department of Health and Environmental Sciences
STATE OF MONTANA Environmental Sciences Division
P.O. Box 1031
Kalispell, Montana 59901
John S. Anderson M.D.
DIRECTOR

September 17, 1975

RECEIVED
SEP 18 1975
ENVIRONMENTAL QUALITY
COUNCIL

Mr. Ronald W. Smith
Smith & Rice Attorneys at Law
Ryan Bldg.
129 First St., Suite D
Havre, MT 59501

Re: Slippery Bill, Unit #2 Subdivision

Dear Mr. Smith:

Enclosed is an information copy of the approval statement issued by this office on the matter of the Slippery Bill Unit #2 subdivision.

It was issued because the developer has now complied with all legal requirements of the State Department of Health and Environmental Sciences and because all of the required administrative review time periods had long since expired.

No final impact statement was made inasmuch as the written responses to the draft impact statement were either far too late (Dr. Jonkel and the Wilderness Society for example) or merely reiteration of the same general concepts already made in the draft impact statement. I did, however, make these late arriving statements available to the Flathead Areawide Planning Organization for possible further consideration. Dr. Jonkel, in particular, made a very worthwhile written contribution which should be acknowledged by the developer, if at all possible. He did not, incidentally, clearly suggest that the project should be disapproved. His comments were directed to the probable bear-man conflicts and suggested means and methods to soften this problem.

The petition made by the local landowners and users of the area, I found very difficult to evaluate. There are not, to my knowledge, any guideline indications in any of the environmental quality written materials which reflects on this kind of, essentially unreasoned or unsubstantiated, rebuttal. I realize that the petition was directed to the planning boards and the county officials, however it was also obviously that kind of public contribution which the Environmental Quality Act is designed to generate.

When the county examination of this petition revealed that only a third (approximately) of the names on the petition were valid in terms of conventional "eligibility", it became apparent the petition really had no place to go in terms of influencing any agency decisions. An unfortunate fact, but one I had to accept.

If you have any further questions on this matter of Slippery Bill Unit #2 do not hesitate to call on this office or the Bureau headquarters in Helena. I intend to file the original documents with the permanent files there, however, I shall keep copies of all material here for reference.

Sincerely,

Wilbur O. Aikin, P.E.
Public Health Engineer
Environmental Sciences Division

WOA:jnh

Enclosure

cc: Mr. Ed Casne, Subdivision Bureau, SDH&ES, Helena
Mr. Tom Ellerhoff, Environmental Coordinator, SDH&ES, Helena
Flathead Areawide Planning Organization, Ford Bldg., Kalispell
Flathead County Sanitarian, Box 919, Kalispell
Slippery Bill/Reading

Department of Health and Environmental Sciences
STATE OF MONTANA Environmental Sciences Division
P.O. Box 1031
Kalispell, Montana 59901
John S. Anderson M.D.
DIRECTOR

September 17, 1975

Mr. G. George Ostrom
The Kalispell News
Box 669
Kalispell, MT 59901

Re: Slippery Bill Subdivision

Dear George:

Dr. Jonkel responded to our draft environmental impact statement, however he did so long, long after the suspense date for such comments had passed. His letter, however, was so good and so objective that I thought you might benefit from his comments with regard to utilization of the property.

Therefore, I have enclosed a copy of this material and I hope you will accept it in the spirit in which it is given.

Sincerely,

Wilbur O. Aikin, P.E.
Public Health Engineer
Environmental Sciences Division

WOA:jnh

Enclosure

SCHOOL OF FORESTRY

University of Montana
Missoula, Montana 59801
(406) 243-0211

September 9, 1975

Mr. Wilbur Aiken, P. E.
Public Health Engineer
Environmental Sciences Division
Department of Health and Environmental Sciences
P. O. Box 1031
Kalispell, Montana 59901

Dear Mr. Aiken,

I have reviewed the impact statement on the Slippery Bill Mountain Subdivision, and find it in general a rather well-planned development. The development group should be commended on the care that they have taken to protect the stream courses and the general integrity of the area. However, I will reserve most of my comment for the implications of this development to grizzly bears, their habitat and their management.

Up to the present, there has been no clear policy formulated by the State in regard to grizzly bears and subdivision proposals, or to the acquisition of grizzly bear range. As you are probably aware, there has been a tremendously increased interest in the status of grizzly bears by the public and the federal government which culminated in the listing of grizzlies as a"threatened species" on August 1, 1975 under the U. S. Endangered Species Act of 1973.

Until the August 1 listing, the State had regarded the grizzly as primarily a game species, (and occasionally as a predator), and had maintained that the present management plans for grizzlies are adequate. The existence of a fairly extensive grizzly population in Montana lends credibility to the State's contention.

Within the past year, however, the Montana Fish and Game Department has greatly increased their level of concern for and information on grizzly bears to prepare for the possible listing of the species under the federal act. Concurrently, it became clear that the habitat of the bears was equally or more important to preservation of the species than was management per se. Only recently, therefore, has the Fish and Game Department considered seriously the acquisition of bear habitat as necessary to preservation of the species.

To provide guidance to the Montana Fish and Game Department and other federal, state, and provincial agencies on habitat acquisition, the Border Grizzly Technical Committee is at the present preparing a draft policy statement. Unfortunately, this policy statement is not yet ready to use in evaluating the Slippery Bill proposal.

Equal Opportunity in Education and Employment

I will list my views on the matter nonetheless and I trust that they will be of use to you in your final review of the Impact Statement.

The Geifer Creek drainage apparently includes relatively good grizzly habitat, although we have not yet evaluated that particular area. Based on our current grizzly habitat studies in the Whitefish Range and in the Lewis and Clark National Forest to the east, there is no doubt in my mind that Geifer Creek contains adequate forage and cover for a significant number of bears.

Geifer Creek also lies between two important centers of grizzly habitat - the Middlefork drainage, and Glacier National Park. Bears traveling between those areas are likely to travel through Geifer Creek.

Recent sightings of grizzlies in that drainage (1975), the need to transplant a grizzly from the development site in 1975, and accounts of bear troubles in the past by the adjacent land-owners, all indicate that this is currently good grizzly habitat.

The proposed sub-division lies at a low elevation and it will "green-up" earlier in the spring than the surrounding high country. This means that bears will move down to this area from the adjacent high areas on an annual basis, because deep snows preclude May-June use of the more typical grizzly range surrounding Geifer Creek.

Individual ranchers whose land includes spring grizzly range or grizzly range during other seasons can be compatible with a local grizzly population. The bears apparently become accustomed to the routine of the ranch activities, and the ranchers in turn accomodate themselves to a certain degree of disturbance by the bears. Subdivision residents, however, are usually seasonal visitors, change frequently, and are not wise in the ways and needs of wild species. In general, therefore, they are not compatible with a local grizzly population.

Problems with bears often are of a recurrent nature. Little research has been done on this aspect of bear-people interactions, but usually a persistent source of food, or a transient human population and a relatively stable bear population are involved. A subdivision by its very design includes both the former and the latter.

It would appear to me, therefore, that the Slippery Bill Subdivision proposal will create a setting wherein long-term, bear-people conflicts will develop. How serious the problems may get, and whether it would cause a serious depletion of northwestern Montana bears, I cannot say, but certainly the proliferation of such subdivisions is detrimental to the species. To be safe in preserving grizzly habitat and an adequate number of bears, I would recommend that the subdivision not be approved, at least until better data are available. Ideally, the State or a federal agency could in the meantime negotiate with the owners as to the purchase of the area as critical grizzly range.

Should the subdivision be approved, on the other hand, I strongly recommend more strict regulations for the home owners. These should include the following:

1. Bars or concrete re-inforcement mesh on all windows.

2. Very secure doors.

3. Absolutely no food or garbage to be left unboxed or outside.

4. Annual instructions for residents concerning the status of grizzlies, the State's management program, grizzly habits, the Endangered Species Act, the local bear population, etc.

5. Restrictions on outside use of the area after dark and by un-attended children, and of designated local areas.

6. Warning signs for unexpected visitors on all ownerships within the subdivision.

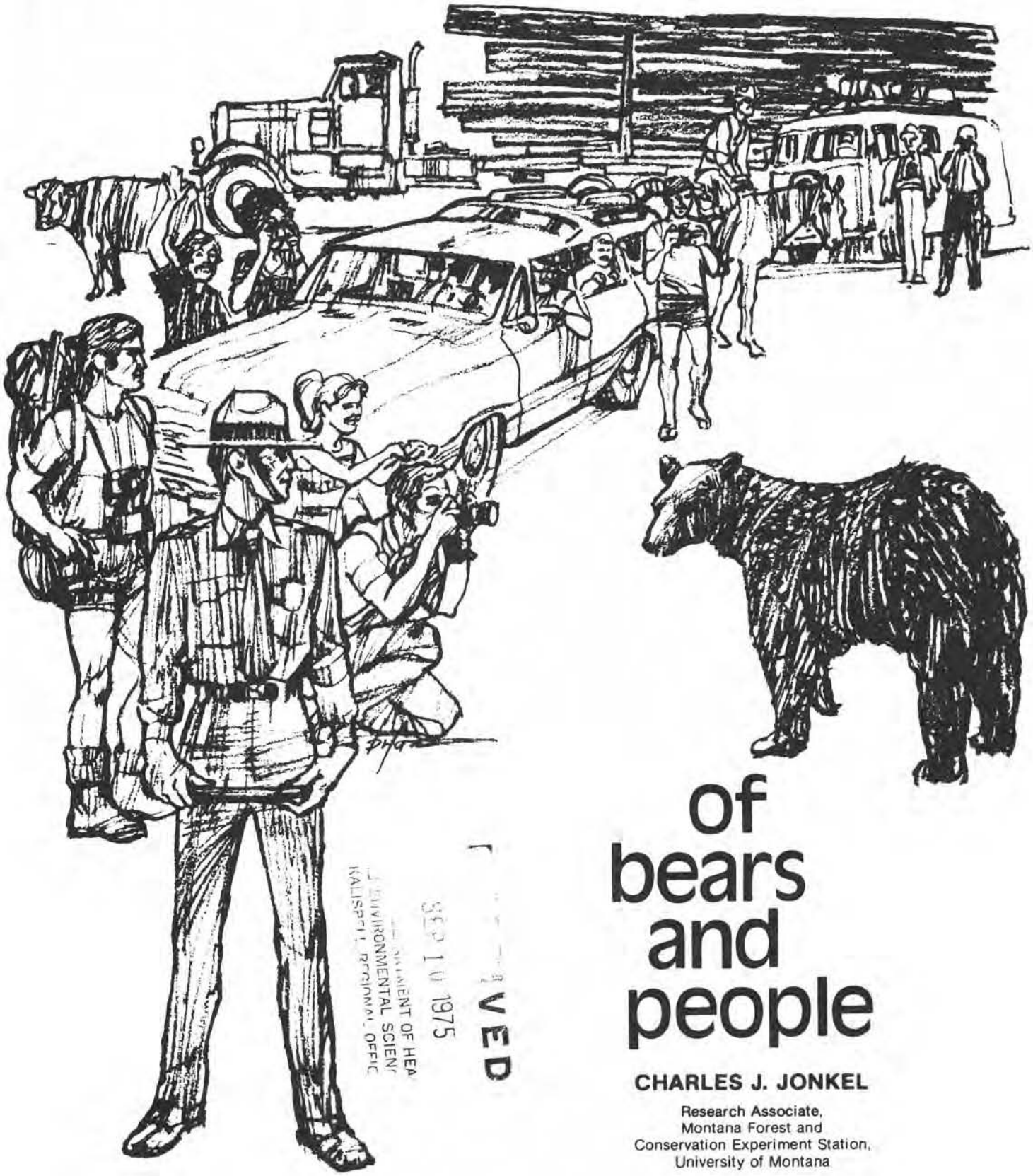
There are no doubt a few other points which should be listed, and of course, infractions should be vigorously prosecuted. The recent tightening of the management of bears and people in Glacier National Park not only corroborate these views, but in themselves, could provide further guidelines for subdivision.

Yours Sincerely,

Charles Jonkel

CJ:ws

OPINION



# of bears and people

CHARLES J. JONKEL

Research Associate,
Montana Forest and
Conservation Experiment Station,
University of Montana

RECEIVED
SEP 10 1975
DEPARTMENT OF HEA
ENVIRONMENTAL SCIEN
KALISPELL REGIONAL OFFIC

Man and large carnivores have apparently been in conflict wherever and whenever they have coexisted. Primitive drawings and archeological specimens from prehistoric times, folk tales, literature, and descriptive specimens through the pre-science centuries of historical times, and the many documented incidents during modern times all suggest this competition (Jonkel 1970).

Encounters between man and bears, or ursids, in North American have likewise been common. Competition for space between man (and his livestock) and bears has been a particular problem. This competition, as settlement brought a steady increase in the European population, resulted in a steady decline in bear habitat and numbers. The decline slowed, as the easily accessible and more hospitable areas of the continent were settled. Although both black and grizzly bears have been eradicated from much of their former ranges, bear populations have been relatively stable in the mountainous or far northern portions of North America for the past 50 years. But now even these rugged and undeveloped areas are beginning to lose their effectiveness as natural sanctuaries. Settlement, clearcut logging, recreational development, fire control, fossil fuel exploration, water impoundment, and land subdivision are accelerating habitat loss and having cumulative detrimental effects on bear numbers.

The species of bears inhabiting North America have been affected in various ways by man. Black bears have adapted well to increasing land use by exploiting new niches (even within city limits) and by utilizing once-marginal farmlands now reverted to a semi-natural state. The polar bear has not yet come under severe pressure, perhaps because of its extensive use of the sea. The brown or grizzly bear, however, possibly because of its different behavior towards man, lower original numbers, greater wandering, and less secretive habits than the black bear, has been eradicated or critically reduced in numbers in some parts of North America. Although grizzlies are still secure in Alaska and western Canada, those remaining in northwestern Montana and the Yellowstone area may qualify as "threatened" under the U.S. Endangered Species Act of 1973 (U.S. Fish and Wildlife Service 1975). A very small grizzly population, perhaps a remnant of the formerly abundant California grizzly, may still exist in northwestern Mexico, but it is considered by the Mexican government to be endangered.

Recent Improvements in Grizzly Management

Some progress in preserving the grizzly has already been made. Several U.S. Forest Service wilderness areas and the western Canadian and American national parks protect portions of the grizzly habitat. Recent experiments in allowing fires to burn naturally in parks show potential for increasing the grizzly food source. Hunting regulations in the various jurisdictions have become increasingly restrictive; for example, in 1975 Montana will adopt a quota system that allows an almost daily control over the kill.

The National Academy of Science (NAS) Committee on the Yellowstone Grizzlies (1974) has examined available literature and reports on the Yellowstone grizzlies, and has evaluated the research programs of the Wildlife Research Unit (University of Montana) and of Yellowstone National Park, and the management programs of Montana, Wyoming, and Idaho. The Report rejects as inadequate the Park's data claiming a stable grizzly population, and calls for additional research. In addition, it recommends a better-coordinated approach to grizzly management in the Yellowstone area, and removal of no more than 10 grizzlies from the "Yellowstone Ecosystem" annually until research shows a stable population or until better data on the effects of garbage dump closures are available.

The NAS Report failed to stress the loss of grizzly habitat due to poor management by state and federal agencies, particularly by allowing or promoting logging, road building, grazing, and tourism in prime grizzly habitat. It also extrapolates rather too freely from the Yellowstone grizzlies to the grizzlies of northern Idaho and northwestern Montana. However, Wyoming and Montana have begun to comply with the Report by proclaiming a 2-year moratorium on grizzly hunting in the Yellowstone area, and Idaho has kept closed to hunting its portion of the Yellowstone Ecosystem. The U.S. Forest Service has begun a program to close roads and preserve grizzly habitat, but has not been adequately provided with guidelines to follow. The National Park Service to date has not followed many of the research recommendations in the NAS Report.

To provide a broader factual base for management decisions, Montana has prepared a research plan and hopes to cooperate in research with Idaho, Wyoming, the Forest Service, and Yellowstone National Park through the Interagency Grizzly Bear Study Team. With the extensive studies of the Yellowstone grizzlies underway or already completed by the Craigheads (Craighead and Craighead 1971, Craighead et al. 1974), and the studies by Cole (1974) and Greer (1974) to build on, a viable research and management program for the Yellowstone bears should soon be underway.

The classification of the grizzly as a "threatened" species in the lower 48 states would allow the Department of Interior (under the 1973 Endangered Species Act) to provide research funds to state and federal agencies, and to put pressure on private owners and public agencies employing land-use policies detrimental to grizzly habitat. The responsible agencies are anxious to improve their management of the grizzly; only the lack of specific guidelines and scientific data are holding them back.

The International Convention on the Trade of Endangered Species of Wild Fauna and Flora (1973) provides an additional mechanism for controlling the killing of grizzly bears, and for a greater continental monitoring of the status of the species. More recently (January 1975), an informal committee was established to determine the research and management information needed to preserve the shared grizzlies of northwestern Montana, southeastern British Columbia, and

John Harris

These grizzly bears are feeding on a winter-killed elk, and are harming no one. But where they compete with man for space, they could as likely be feeding on a cow or a camper's cache.

southwestern Alberta. The work of this committee should provide a cooperative approach to safeguarding the habitat and numbers of grizzlies in these areas. Montana, which through good management has maintained the only viable, non-park grizzly population in the United States, has led in this cooperative endeavor.

Grizzly Preservation and Public Attitudes

Many animal species, excepting game or fur-bearing species and those which pose health or predation problems, have in the past been treated with indifference by people and governments. The grizzly, however, has never been treated with indifference. It was both feared and revered by the early Indians, and it still holds an important place in the mythology and religion of native peoples who perceive the land and people as one. The grizzly was viewed with respect by early explorers, and with hatred and dread by early homesteaders. Today, the grizzly is an exciting big game trophy to some hunters, a nuisance to some cattle and sheep men, and a symbol of the wild and natural world to many ardent conservationists. Those who have been mauled by a grizzly, or who have suffered serious economic losses to bears, are bound to have a different outlook than many eastern city dwellers. Thus, while some people see grizzlies as vermin or marauding killers, others see them as Mother Nature personified, and because of the vast differences in life styles and values of people in North America, it is often a fine line which divides one extreme view from the other. Few people, it seems, can span the years of change like Andy Russell, author of *Grizzly*

Country, who has been both a killer and a friend of the grizzly.

Unfortunately, the bears are caught between persons living in mountain country who act unilaterally and with cold efficiency to kill them, and private groups who thwart sound management by their well-meant but frequently unscientific views on protection.

Biology

The biology of the grizzly, too, creates special problems in its preservation. It is a difficult animal to study because of its size, strength, and disposition; therefore only limited biological data are available upon which to base evaluations or management proposals. In general, the only grizzlies in North America on which adequate data have been published are somewhat atypical, such as those at Alaskan salmon streams, in Yellowstone National Park, or in zoos. The long-term studies of grizzlies in the Yellowstone Ecosystem by the Craigheads do provide extensive basic information on the species, but additional research is needed on other populations in other habitats.

Despite the scarcity of specific regional information, we can assume from completed studies that grizzly productivity (both of the species and of individuals) is low, and that total numbers (as with other large carnivores) are not high. Of course, if the range of a low-density species is extensive, there is no need to worry about productivity or total numbers – but that may no longer be the case with the grizzly.

The areas in which grizzlies still exist are probably as densely populated as we can ever hope them to be. But the total range is restricted because of habitat loss and destruction, and we must therefore begin to consider the implications of the low productivity and low density of this species. Game and land management plans must not only be increasingly refined or precise, but easily modified, and based on data from current and extensive research programs. Denning habits must be evaluated, denning areas must be located and managed, food chains must be understood and protected, and critical habitat components such as cover must be identified and preserved.

We also know from studies of grizzlies and other ursids that bears have keen senses, are creatures of habit, and are often aggressive towards man. Knowing human nature, the insensitivity of many corporations, and the frequently conflicting plans and goals of government agencies, we can be sure that problems between man and the grizzlies, and hence problems in grizzly management, will continue.

Because bears hold the interest of a wide spectrum of the public, even their biology has become a matter of opinion and lay interpretation, and different analyses of existing data have been made. This led in part to the controversy over management of the Yellowstone grizzlies which began during the late 1960's and early 1970's; fed by variously motivated persons, it has grown in intensity to where it now threatens proper management of the species throughout the Rocky Mountain area. It is a sad commentary on wildlife management when conflicting viewpoints, bureaucratic expediency, and well-meaning but poorly informed pressure groups have more impact on the fate of a species than the principles of game management and the scientific data available. We have reached the ludicrous point where bear biology may be decided in the courts, by the press, or by lobbying groups, rather than by cumulative research. For the welfare of the species, this situation must be changed as soon as possible through research, coordinated and informed management, and an objective look at the entire problem of grizzly preservation.

Is Hunting Causing the Extinction of Bears?

Because the grizzly bear is often referred to as an endangered or threatened species, many people believe it should be protected from hunting south of Canada. But several points must be considered in this proposed solution:

1) Hunting has a beneficial effect on the preservation of species which can, because of their size and strength, be harmful to people. For instance, hunted grizzlies become wary, avoiding man and areas frequented by him; this reduces conflict by decreasing the corruption of the bears' natural behavior.
2) Hunting (in general) as a sport is being increasingly criticized as urban centers increase their influence, and could conceivably cease within several decades. It is still a valid and fairly widespread form of recreation, however, and fully within the rights of those who wish to pursue it.
3) Hunting can also be used as a tool to keep animal numbers in balance with habitat components. In this

Charles Jonkel

Black bears have adapted well to increasing land use by exploiting new niches and utilizing farmlands now reverted to a semi-natural state.

R. W. Behan

Even the rugged and undeveloped areas of the northern Rockies are beginning to lose their effectiveness as natural sanctuaries for grizzly bears.

case, by removing surplus bears annually, the hunter precludes the movement of sub-adult animals into populated areas where they may injure people, kill livestock, and create "bad press" for the species.

Hunting, per se, is therefore not always detrimental to a species. In some cases, excessive preoccupation with the pros and cons of hunting bears has diverted attention from problems more urgent to their preservation. Whereas protection from *all* hunting is warranted for species such as the whooping crane that have reached dangerously low numbers and do not compete with man for space, it may not be for the grizzly. In fact, full protection of the grizzly in Yellowstone Park, combined with the National Park Service's "open-pit" garbage disposal program, led to one of the most tragic examples of wildlife mismanagement of recent years. Bear numbers became far too high in the same areas where people were concentrated, and both bears and people developed atypical behavior towards each other. Similarly, full protection of polar bears at Churchill, Manitoba during the 1960's, plus an inadequate garbage disposal program, led to excessive numbers of bears. As a result, people were frequently injured by bears, the bears were harassed, wounded, or killed by local residents, and many people grew to dislike or despise polar bears.

Control actions by rangers, wardens, and game officers in both cases have become very expensive, and have had limited success because transplanted bears return or because the bears learn to avoid the control efforts. In most years, this type of management has resulted in a death rate of the bears about equal to the kill rate with normal hunting success. Merely protecting bears from hunters, therefore, is no solution to bear preservation. In both cases, carefully controlled hunting could provide an economical bear management alternative, a culturally rewarding form of recreation to local hunters or native peoples, and a reduction in undesirable conflicts between people and bears.

What then are the Real Problems in Grizzly Preservation?

I mentioned earlier that the conflict for space between man and bears, as well as the alteration or destruction of bear habitat, have in the past been the main causes of loss in bear range and numbers. Hunting, too, has been a secondary cause for bear losses. However, one must remember that bear hunting before the last few decades was oriented differently; it was far more intensive, and had few restrictions. For example, bears were baited and shot or poisoned all year round, and were the object of extensive hunting or killing by professional hunters and government predator control agents. Those types of hunting and killing were required under certain circumstances. However, they are now considered deplorable by most people, just as is the hunting of polar bears off the Alaskan coast by aircraft, and in the Norwegian Arctic by set-guns (boxed and baited guns which shoot the animal in the head when the bait is taken). Such hunting methods are unacceptable today, and should not be considered as management tools.

But today it is probably the loss of bear habitat, not hunting, that is the primary problem in grizzly preservation. Few land managers recognize fully the habitat needs of animals, but those who do (and most biologists) unanimously agree that a species cannot be maintained if its habitat deteriorates. This is a scientific principle hardly open to debate. But the habitats of animals have not been valued adequately in the past by people or their governments. And in the meantime, inadequate land-use regulations have allowed the systematic reduction of grizzly bear habitat.

Large corporations, large ranches, and federal agencies have been the primary offenders in the disregard of grizzly habitat requirements. Through an almost total indifference to values other than the economic values in timber, minerals, hydroelectricity, or domestic stock, lands have been routinely made inhospitable to the grizzly. And due to public and governmental disregard, the grizzly's feeding areas, denning areas, essential types of cover, and seasonally important areas have not been identified through research or protected through management planning.

The result has been to make grizzly bears exceedingly vulnerable to killing (legal or illegal) along roads in their remaining range, to encourage sheepmen and cattlemen (who obtain grazing permits in grizzly habitat) to "protect their stock" from the bears, and to cause the loss of high elevation patches of timber probably essential to the bears for cover and denning. These harmful practices have gone largely unnoticed and uncorrected because of resource development emphasizing economic return, and the preoccupation of the public and press with the pros and cons of hunting.

The matter can no longer be ignored. Grizzly habitat has already been reduced seriously, and will come under increasing pressure from the crush of sheer human numbers and from more intensive searching for fossil fuels. Under the terms of the Endangered Species Act of 1973, large public and private landholders in grizzly habitat can be compelled to modify their land-use practices.

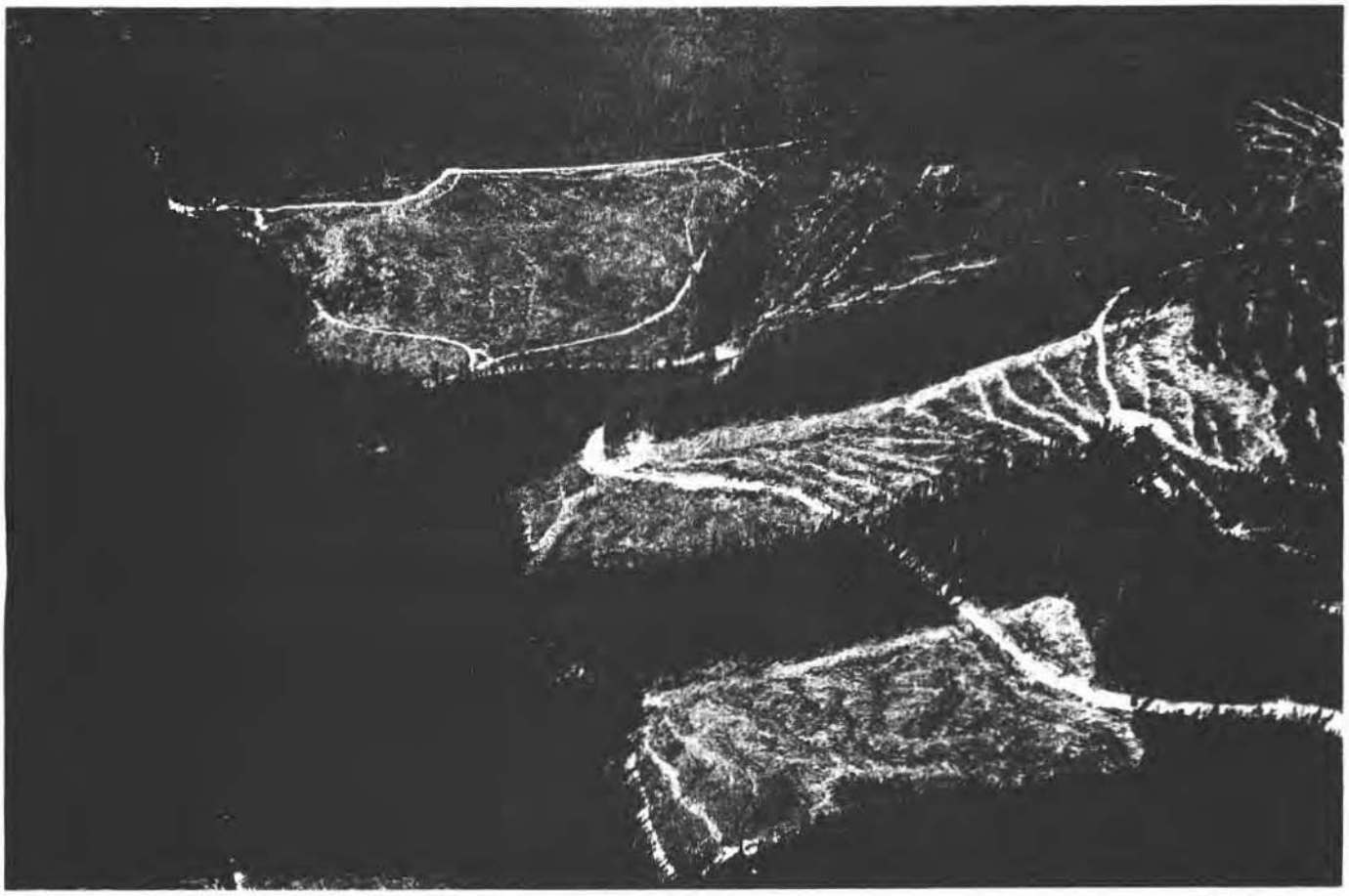
So What do We do Now?

Many people must be persuaded to change their views (and therefore their activities), research programs must be funded adequately and initiated promptly, land-use practices by corporations and federal agencies must be examined and given the guidelines for change, and management of the bears and their habitat must be improved and coordinated among governments.

A first problem is the *widespread misuse of the terms "endangered" and "threatened,"* and the resultant wrong impressions that many people obtain from such misuses. The IUCN (International Union for the Conservation of Nature and Natural Resources) Red Data Book now lists the polar bears and brown bears of the world as "vulnerable." This term denotes species believed likely to move into the endangered category if causal factors continue operating; it implies that the status of such species should be closely monitored, that research on problems relating to their welfare should be undertaken, and that they should be managed with increased precision. It does not necessarily mean that they should be totally protected (from hunting), but it does mean that the preservation of the species should be guaranteed through better management, and that total protection may be

H. P. L. Kilaan

In their natural surroundings, polar bears seldom encounter or harm people. But like all bears, they are opportunists when it comes to food, and create problems around human settlements.



USDA Forest Service

Logging and road building should be restricted in high-elevation areas encompassing critical grizzly habitat, and clearcuts should be made with far greater restraint in adjacent, lower-elevation areas.

necessary in certain portions of their range. As used by the IUCN, "vulnerable" also implies that the status of the species in question may vary from one area to another. It is, in effect, comparable to the term "threatened" under the U.S. Act.

Unfortunately, the term "endangered" is widely used as a synonym for vulnerable or threatened. But it is not a comparable term. Under both the IUCN usage and the U.S. Act, "endangered" denotes a higher level of concern, and can only be applied to a species that has reached critically low numbers throughout its range, or to a local segment of a population that is at a critically low level. In the latter case, one must be explicit in the use of the term and say "endangered in this particular portion of its range," or "in this particular habitat." It is by no means a valid term for either grizzly or polar bears in North America, except perhaps for the Mexican grizzly and for the polar bears off the Labrador coast.

Stop-gap measures to strengthen the security of grizzlies in the mountains can be initiated by *adopting interim management changes based on available land-use and biological information.*

1. In isolated portions of their range where grizzly numbers appear low (possibly the Cabinet Mountains) or where a reduced kill seems advisable because of extensive control activities in the past (Yellowstone area), hunting perhaps should be suspended temporarily until further data are available.
2. Logging and road building should be further restricted in some of the areas assumed to encompass critical grizzly habitat. This would mean leaving patches of timber at the heads of drainages in good grizzly habitat (the Swan Mountains, the Whitefish Range, etc.) to protect blocks of undisturbed range (no roads or logging) along the divides and main ridges. The building of certain connecting roads and fire roads, as well as logging in critical areas, should be suspended. Because clearcuts at higher elevations can also cause serious erosion and re-seeding problems, additional benefits can be derived by this change in logging techniques.
3. Clearcuts should be made with far greater restraint at lower elevations adjacent to the above-mentioned critical areas. Clearcutting in some cases interferes with grizzly feeding and denning habits, and makes the bears more vulnerable to hunters.
4. Road closure, destruction, and perhaps reforestation should be undertaken in good grizzly habitat. Because bears and people both prefer to walk on roads and trails during many seasons, increased construction leads to increased conflict and makes the bears more vulnerable to hunting.

5. Grazing leases in or adjacent to grizzly range should be strictly controlled, and given only during seasons when grizzlies do not frequent the area. Such leases are often given to ranchers who pressure the local ranger or land manager for them, a practice which does no one any good. Firm backing for these managers by the parent agency has often been lacking in the past, and should be provided as soon as possible. At present, dead or dying stock on poor ranges and stock in grizzly habitat during the wrong seasons cause bears to learn to prey on stock. This inevitably leads to conflict between ranchers and the bears, and to authorized or unauthorized control actions. Grazing permits should be revoked when bears are killed illegally.
6. Recreational developments (ski resorts, fishing camps, etc.) and subdivisions in grizzly habitat should be publicly reviewed by government agencies. Land managers and politicians in even the most remote areas of the world need not be duped by the glitter and publicity of promoters, but they often are. Even a few such mistakes can have serious consequences for grizzlies. Public reviews would guarantee that development would not be allowed where critical grizzly habitats were endangered.
7. Management of game on Indian lands, including the management of grizzlies, is haphazard or non-existent, and should be improved through consultation and technical aid.
8. A coordinated approach to grizzly management should be undertaken by management agencies (as advocated by the Craigheads and the NAS Report in the Yellowstone context) and governments (such as Montana, British Columbia, and Alberta), perhaps on a continental basis, as suggested by Dr. A. M. Pearson of the Canadian Wildlife Service.
9. As soon as possible, *extensive research projects should be initiated* to analyze the available literature on the grizzly and similar species, the components and extent of grizzly bear habitat, the special problems grizzlies face where conflict with man is inevitable, and the various biological problems of the grizzly in its many natural and disturbed evnironments. Specific management recommendations should be made available to the responsible agencies.

The manpower and funding for such projects are available if the resources of the various agencies can be pooled, and if student help can be utilized. However, it is essential that both public and professionals be aware of the importance of such work, and that efforts be directed towards specific problem solving. Studies on black, polar, and grizzly bears already completed or underway can provide valuable interim guidelines, and the recently formed working group of grizzly bear research and habitat management personnel from Montana, British Columbia, and Alberta promises a new pool of expertise and equipment.

In addition, a large number of state, provincial, and national conservation groups have shown interest in the grizzly for various reasons. Their participation should be increased by providing them with better information, and by involving them in research programs.

Steve Gilbert

While hunting has been a secondary cause of grizzly bear decline, habitat loss is the primary problem in grizzly preservation today.

Certain studies, such as the role of the grizzly in the culture of native peoples, the comparative behavior of the various species of bears, the problems of government bear management programs, and the physiology of bears, are not as easily funded by government agencies as by private sources. To study the entire complex of problems common to bears and man on a continental basis, and to obtain the freedom and variety of research necessary, a degree of private funding is essential. With the cooperation and goodwill of all interested persons, we can retain viable bear populations and still ensure the compatibility of man and bears.

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STATE OF MONTANA
STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
CERTIFICATE OF SUBDIVISION APPROVAL
(Section 69-5001 to 69-5005, R.C.M., 1947)

RECEIVED
SEP 18 1975
ENVIRONMENTAL QUALITY COUNCIL

TO: County Clerk and Recorder
Flathead County Courthouse
Kalispell, Montana 59901

Re: Slippery Bill Unit #2
No: 15-75-K184
E.S. 75/K32

THIS IS TO CERTIFY THAT the plans and supplemental information relating to the water supply and sewage disposal systems for the subdivision known as Slippery Bill, Unit #2, presently in the process of county review prior to filing, located in Flathead County, Montana, have been reviewed by engineers of the Environmental Sciences Division, and,

THAT the documents and data required by Section 69-5001 to 69-5005, Revised Codes of Montana, 1947 and the rules and regulations of this Board made and promulgated pursuant thereto have been submitted and found to be in compliance therewith, and,

THAT approval of the plat of said subdivision is made with the understanding that the following conditions shall be met:

THAT the lot sizes as indicated on the plat filed with the County Clerk and Recorder will not further be altered, and,

THAT the individual water system will consist of a drilled well constructed in accordance with the criteria established in Regulation MAC 16-2.14(10)-S14340 of the State Board of Health and Environmental Sciences to a minimum depth of 35 feet and will be indicated on typical plot plan, and,

THAT any alternative individual dug or drilled well system which pumps water from a depth less than 35 feet shall be properly sealed and protected from contamination and that such flow into the water supply system will be continuously and adequately disinfected, and,

THAT the individual sewage disposal system shall consist of a septic tank and subsurface drainfield of such size and capacity as set forth in Regulation MAC 16-2.14 (10)-S14340 and will be located as indicated on typical plot plan, and,

THAT the individual subsurface drainfield installed on each lot shall have an absorption area based on a wastewater application rate of no more than 2.35 gallons per square foot per day.

THAT no sewage disposal system shall be constructed within 100 feet of the maximum high water level of Geifer Creek, and a minimum four feet of separation must be maintained between the bottom of the draintile and the maximum high groundwater elevations, and,

THAT seepage pits are expressly prohibited,

THAT the developer shall provide each purchaser of property with a copy of the typical lot layout and said purchaser shall locate water and/or sewage facilities in accordance therewith, and,

THAT instruments of transfer for this property shall contain reference to these conditions, and,

THAT plans for the proposed water and individual sewage systems will be reviewed and approved by the Flathead County Health Department before construction is started, and,

THAT departure from any criteria set forth in State Board of Health and Environmental Sciences Regulation MAC 16-2.14 (10)-S14340 when erecting a structure and appurtenant facilities in said subdivision is grounds for injunction by the State Board of Health and Environmental Sciences.

NOW, THEREFORE, the subdivision plat, and plans and specifications for said plat, in accordance with the requirements of Section 69-5003 Revised Codes of Montana, are hereby and herewith approved.

YOU ARE REQUESTED to record this subdivision approval by attaching this certificate to the map or plat of said subdivision to be filed in your office as required by law.

DATED this 12th day of September, 1975.

FOR THE STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

DUPLICATE

Wilbur O. Aikin, P.E.
Public Health Engineer
Environmental Sciences Division
Kalispell Regional Office