

WYOMING GAME AND FISH DEPARTMENT

Game Division

DISTRICT II

GRIZZLY BEAR

W-27-R-30

Progress Report

1980 Field Season

October, 1981

Prepared by: Larry Roop
Wildlife Project Research Analyst

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Interagency Grizzly Bear Study Team

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INTRODUCTION:

This research project is one portion of an interagency team effort to study the grizzly bear (Ursus arctos horribilis) in the Yellowstone region. Actively participating in the study are employees of the National Park Service, U.S. Fish and Wildlife Service, U.S. Forest Service and the states of Idaho, Montana and Wyoming. Since the grizzly bear is highly mobile and freely crosses jurisdictional boundaries of states and federal agencies, a cooperative project of this type is the most efficient way the Yellowstone population can be studied in its entire range. The work of all study team members is directed and coordinated through a team leader so that data will be compatible and that individual efforts will contribute to the overall project. Although the Wyoming portion of the study is designed to add to the study team objectives, it is additionally directed toward gaining a sufficient data base for management decisions within the State.

Funding for all of the interagency grizzly bear research, with the exception of the Wyoming studies, comes from the three federal agencies through special appropriations for the Interagency Grizzly Bear Study Team. The Wyoming grizzly bear research is funded through Pittman-Robertson research grants (W-27-R-30) and state funds. This report pertains primarily to that portion of the study conducted in Wyoming excluding Yellowstone National Park during the 1980 field season, thus the data reported herein constitute only a portion of the overall study. The current Annual Report of the Interagency Study Team, Yellowstone Grizzly Bear Investigations is available upon request from the Interagency Grizzly Bear Study, P. O. Box 1376, Bozeman, MT 59715.

The members of the Interagency Grizzly Bear Study Team during 1980

were as follows:

Richard Knight, Team Leader
National Park Service, Bozeman, Mont.

Joe Basile
U. S. Forest Service, Bozeman, Mont.

Kenneth Greer
Montana Fish and Game, Bozeman, Mont.

Lloyd Oldenburg
Idaho Fish and Game Dept., Boise, Idaho

Larry Roop
Wyoming Game and Fish Dept., Cody, Wyo.

STATE: Wyoming

NAME: GRIZZLY BEAR STUDY

PROJECT NO.: W-27-R-30

TITLE: Distribution and Population

PROJECT OBJECTIVE NO.: 1 JOB NO. 1

ABSTRACT:

During 1980 grizzly bear sightings and sign observations were only slightly above average. Observations totaled 82 for the Shoshone and Bridger-Teton National Forests, as compared to an average of 72 observations for the 1973-79 period. Observations of grizzly bears in fringe habitat or unusual areas are discussed. A continuing increase in the number of fall human-grizzly conflicts, particularly in the Thorofare and Upper Yellowstone drainages, has been documented. Camp problems with grizzly bears, some of which may have been caused by a relocated nuisance bear, were highest in the Thorofare during July and August. There were six known grizzly mortalities during 1980. All but one of these mortalities were thought to be man-caused. The young: female ratio of 2.1 cubs per female is higher than any previous year, but is based on an unduplicated sample of only 9 females and 19 cubs. A direct relationship between the number of female mortalities in one year and the number of observed females in the next year is illustrated and discussed. Analysis of sex and age data from monitored or trapped grizzly bears indicates a population heavily biased toward younger age class animals and a strong preponderance of males. A bar graph is given to illustrate age class distribution.

OBJECTIVES:

The objectives of this portion of the study are to 1.) develop and test methods for obtaining data on indices of grizzly distribution and abundance, and 2.) to document grizzly distribution, population densities, reproduction, age structure, etc. (i.e. population dynamics) and predict population trends.

Study Area:

The study area defined by the Interagency Grizzly Bear Study Team is confined within the following boundaries: beginning at the junction of 45° 20'N. Latitude and 111° 40'W. Longitude, south to 44°N. Latitude, then east to 111° 10'W. Longitude then south to 43° 35'N. Latitude then east to 110° 05'W. Longitude then north to 43° 46'N. Latitude then east to 109° 25'W. Longitude then north to 45° 20'N Latitude then west to 112° 40'W. Longitude, the point of beginning. (Figure 1)

Most of the area within this boundary either contains or has the potential of containing a viable grizzly bear population. Research efforts for the study team are largely contained in this area, although monitoring for distribution has extended beyond the boundaries. Within the boundaries are also some tracts of metropolitan and agricultural areas that are not suitable grizzly bear habitat.

The Wyoming portion of this study area includes all areas within the above boundary in Wyoming excluding Yellowstone National Park. However, because of limited manpower present phases of the study have concentrated on the north Absaroka Wilderness. All of the study area has been monitored for sightings and mortalities, but the bulk of the habitat studies, trapping and radiotracking has been done in the North Absaroka.

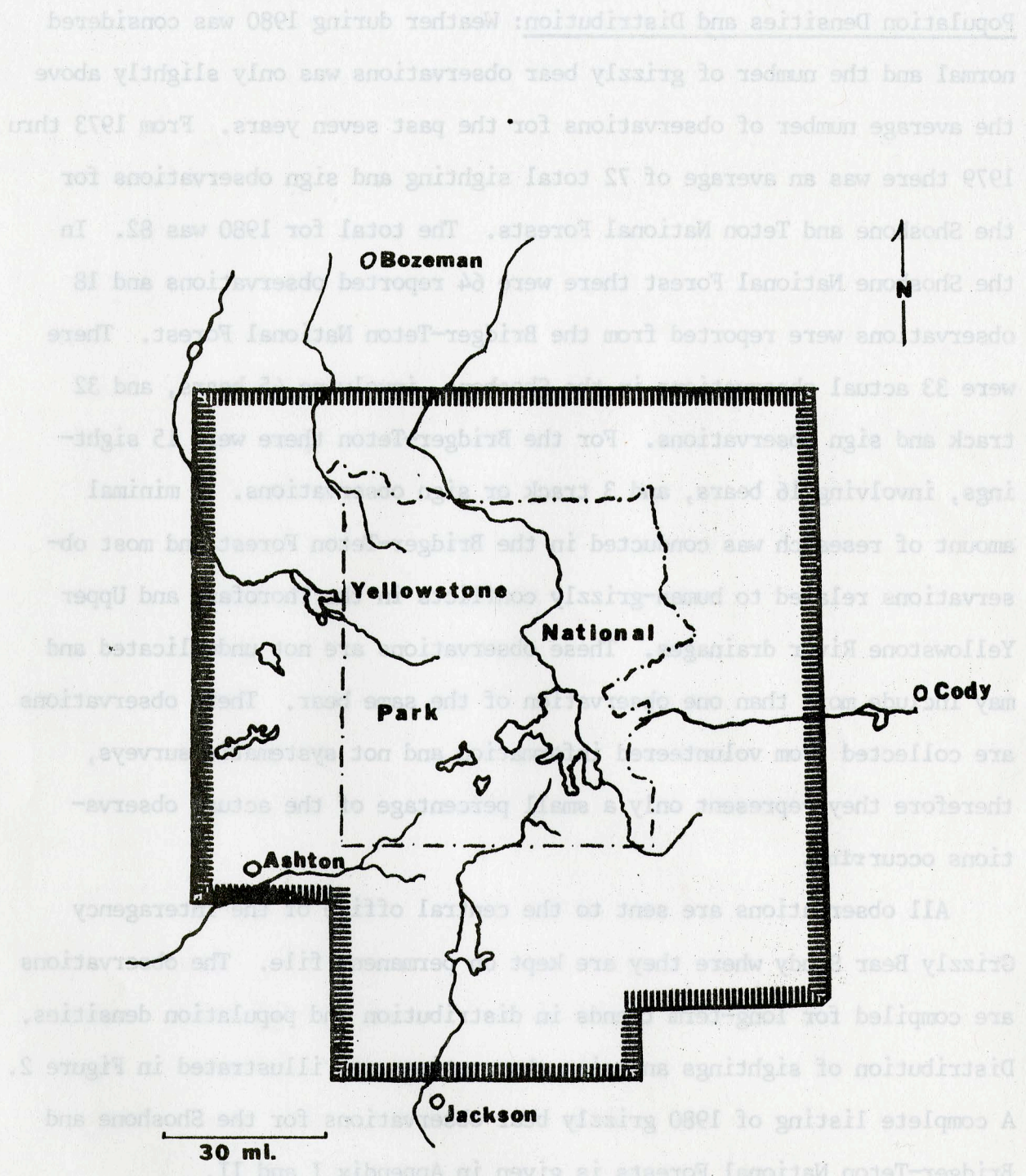
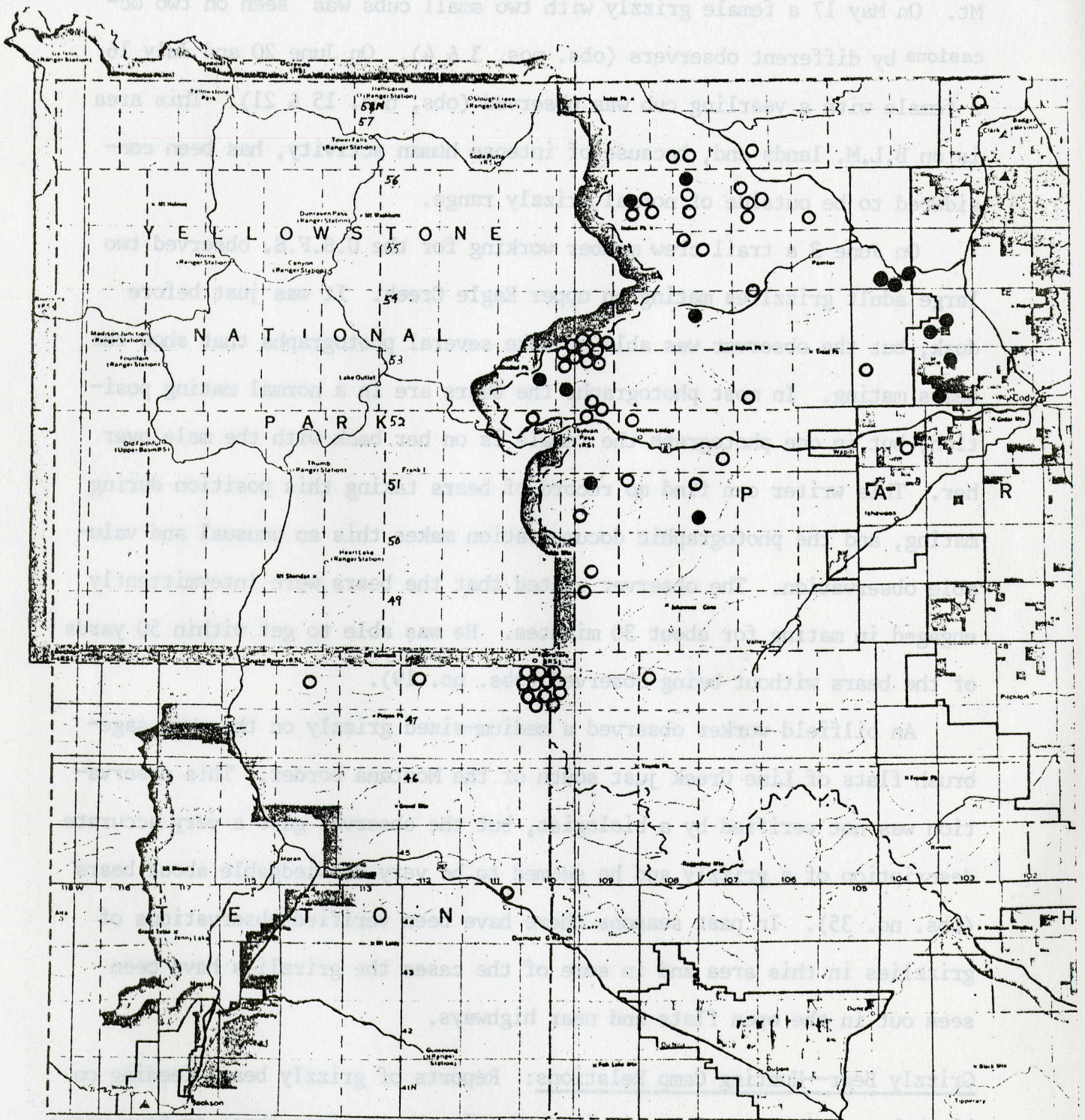


Fig. 1. Study area boundaries.

Population Densities and Distribution: Weather during 1980 was considered normal and the number of grizzly bear observations was only slightly above the average number of observations for the past seven years. From 1973 thru 1979 there was an average of 72 total sighting and sign observations for the Shoshone and Teton National Forests. The total for 1980 was 82. In the Shoshone National Forest there were 64 reported observations and 18 observations were reported from the Bridger-Teton National Forest. There were 33 actual observations in the Shoshone, involving 45 bears, and 32 track and sign observations. For the Bridger-Teton there were 15 sightings, involving 16 bears, and 3 track or sign observations. A minimal amount of research was conducted in the Bridger-Teton Forest and most observations related to human-grizzly conflicts in the Thorofare and Upper Yellowstone River drainages. These observations are not unduplicated and may include more than one observation of the same bear. There observations are collected from volunteered information and not systematic surveys, therefore they represent only a small percentage of the actual observations occurring.

All observations are sent to the central office of the Interagency Grizzly Bear Study where they are kept on permanent file. The observations are compiled for long-term trends in distribution and population densities. Distribution of sightings and sign observations are illustrated in Figure 2. A complete listing of 1980 grizzly bear observations for the Shoshone and Bridger-Teton National Forests is given in Appendix I and II.

During 1978 & 1979 there were some verified sightings of grizzlies on Rattlesnake Mt. just northwest of Cody, Wyo. A radio-collared grizzly was denned in this area during the winter of 1973-74, but this was a bear relocated from West Yellowstone, Mont. and was not considered typical behavior. Again this year there were reports of grizzlies on Rattlesnake



- Lone or single bear
- Bear groups, 2 or more individuals

Figure 2. Distribution of grizzly bear sightings and sign observations, 1980.

Mt. On May 17 a female grizzly with two small cubs was seen on two occasions by different observers (obs. nos. 3 & 4). On June 20 and July 16 a female with a yearling cub was observed (obs. nos. 15 & 21). This area is on B.L.M. lands and, because of intense human activity, has been considered to be outside of normal grizzly range.

On June 3 a trail crew member working for the U.S.F.S. observed two large adult grizzlies mating on upper Eagle Creek. It was just before dusk, but the observer was able to take several photographs that show the bears mating. In most photographs the bears are in a normal mating position, but in one photograph the female is on her back with the male over her. This writer can find no record of bears taking this position during mating, and the photographic documentation makes this an unusual and valuable observation. The observer stated that the bears were intermittently engaged in mating for about 30 minutes. He was able to get within 50 yards of the bears without being observed (obs. no. 19).

An oilfield worker observed a medium-sized grizzly on the open sagebrush flats of Line Creek just south of the Montana border. This observation was not verified by a biologist, but the observer gave a very accurate description of a grizzly and he seemed to be very knowledgeable about bears (obs. no. 35). In past seasons there have been verified observations of grizzlies in this area and in some of the cases the grizzlies have been seen out in the open flats and near highways.

Grizzly Bear--Hunting Camp Relations: Reports of grizzly bears feeding on black bear baits were fewer in 1980 than in the previous three or four years. One reliable report, however, was of an extremely large male grizzly on a bait near Buffalo Bill Reservoir (obs. no. 6). This is very likely a large boar that has been reported in the Table Mountain vicinity since 1976.

Grizzlies were reportedly bothering camps or hunters in the Crandall Creek drainage (obs. nos. 36,39,40, and 55), but there were no serious incidents. Near Pahaska on the North Fork of the Shoshone River a grizzly was reported causing problems several times, but only two of the parties seeing the bear were interviewed (obs. 49 & 52). The bear was unafraid of people and somewhat aggressive. It may be the same bear that treed a hunter on Crow Creek on October 10 (obs. no. 51). It was learned by late October that employees at Pahaska Teepee had been putting out grease from the lodge to attract bears. Evidently this bear had been getting food in the area and this was related to the series of incidents in the area (obs. no. 64).

Another bear was behaving aggressively at Trout Creek (obs. no. 62) and on the Shoshone National Forest grizzlies reportedly tore up camps at Blackwater Creek (obs. no. 50) and Red Creek (obs. no. 61).

Problems with grizzlies began in the Thorofare of Bridger-Teton Nat. Forest during late July. A small radio-collared grizzly was responsible for most of the reported problems (obs. nos. 67-77). This bear caused damage at the Hawks Rest U.S.F.S. cabin and harrassed several parties of campers. The grizzly was described as a dark colored yearling or two-year-old. It showed no fear of humans and came into several occupied camps, usually ignoring any effort to frighten it away. On radiotracking flights in that area this researcher located bear number 32 in this vicinity, but 32 was a very light colored bear and had no history of causing camp problems. Unknown to this researcher at that time, bear no. 49 had been helicoptered to Two Ocean Plateau by the National Park Service on July 26. Bear no. 49 was a darker subadult grizzly with a history of being unafraid of people and frequenting developed areas. This bear was not

located via aerial tracking in the Thorofare at that time since his relocation was not reported until later. When 49 was located on August 3 it was on Two Ocean Plateau, but in September it moved into the Thorofare, indicating it was familiar with the area and could have been the bear into camps in August.

Another uncollared grizzly, described as fairly large and very dark, was into a camp on Butte Creek several times in early September (obs. no. 78). After a dark male grizzly was killed September 16 at Open Creek, reported camp problems ceased in that region. This adult male grizzly was mistakenly shot for a black bear (Table 1.).

Mortality: A total of six known or verified grizzly bear mortalities were documented during 1980. One other mortality, listed only as highly probable, is included in Table 1. Of the six known mortalities, one was natural and five were man-related. The natural mortality was diagnosed as death due to malnutrition of bear no. 56, a yearling female. Among the man-caused mortalities are two illegal hunter kills, one road kill, one associated with a snare injury, a road kill and one Yellowstone National Park control action.

The illegal kill on September 16 was a case of a hunter mistaking a grizzly bear for a black bear. The bear was a very dark male grizzly with claws worn down to about one and one-half inches. The hunter was convicted of killing a grizzly bear out of season and illegal tagging (affixing his black bear carcass coupon to a grizzly bear). The hunter that killed the female grizzly on the Gallatin National Forest claimed the bear was charging him when he shot it. Disposition of this case is not known at present.

The Y.N.P. disposed of bear number 58 after it was trapped in developed areas three times. This two-year-old male was very malnourished and it was

Table 1.

Known grizzly bear mortalities, 1980.

Type	Date	Bear Study Number	Location	Age	Sex	Weight
IGBS	5-21	47	YNP, Nez Perce Cr. probable trap-related; killed by large bear, had dislocated ankle in snare.	1	F	140
YNP removal	8-4	58	YNP, Lewis Lake Campground; trapped 3 times; transplanted twice; mal- nourished condition.	2	M	220
Natural	8-13	56	YNP, Fir Ridge, malnutrition.	1	F	150
Illegal	9-15	—	GNF, Tucker Cr., hunter kill, had 2 cubs-of-year.	Ad.	F	—
Illegal	9-16	—	SNF, Thorofare/Open Cr. hunter kill; mistaken for black bear.	Ad.	M	—
Road kill	11-8	—	GNF, Grayling Cr. killed on road near grease spill.	Ad.	M	395
*Natural	late spring	—	YNP, Flat Mt. Arm, No. 12's cub.	Cub	—	—

* No carcass or remains found. Cub was seen with sow in early spring, but disappeared by late spring — presumed dead.

considered dangerous because of aggressive behavior.

A large truck with a load of grease overturned on a highway west of the Park. An adult male grizzly attracted to the grease was struck by a vehicle and killed.

In May a young female grizzly was snared as part of the Interagency Grizzly Bear Study. The yearling (bear number 47) sustained an ankle injury from the snare and a few days later she was killed by a large bear. Apparently the small grizzly was unable to escape the larger grizzly because of the ankle injury.

The mortalities included two adult males, one adult female, one two-year-old male and two yearling females.

Population Determinations: Annual ratios of young:female for 1974 through 1980 are listed in Table 2. For 1980 the average annual litter size was the largest recorded during this study. The ratio of 2.1 cubs per female is based on unduplicated sample of 9 females and 19 cubs. This is a smaller sample than obtained in all but one previous year. Only in 1975, which was an extremely poor bear observation season, was the unduplicated sample lower.

The number of observed or monitored females appears to be in direct relation to the number of females that died in the previous year. This relationship is illustrated in Figure 3. Although this relationship is based on a relatively small sample size, after any year with high mortality of females there seems to be a corresponding drop in number of females for the next season the population is observed. After five females with cubs died during 1974, there was a drop in the number of observed females from 15 in 1974 to 4 in 1975. Cold, wet weather during 1975 caused an overall decline in bear observations, but there were also no known mortalities that season. After zero known mortalities during 1975, there was an increase

Table 2 . Grizzly bear females with cubs, 1974-80

Year	Females	Cubs	Ratio
1974	21	36	1.7 cumulative sample
	15	26	1.7 unduplicated sample
1975	5	8	1.6
	4	6	1.5
1976	36	69	1.9
	17	35	2.0
1977	24	43	1.8
	13	25	1.9
1978	15	31	2.1
	10	19	1.9
1979	21	39	1.9
	13	26	2.0
1980	13	26	2.0
	9	19	2.1

Figure 3. Number of females with cubs and female mortalities, 1974-80.

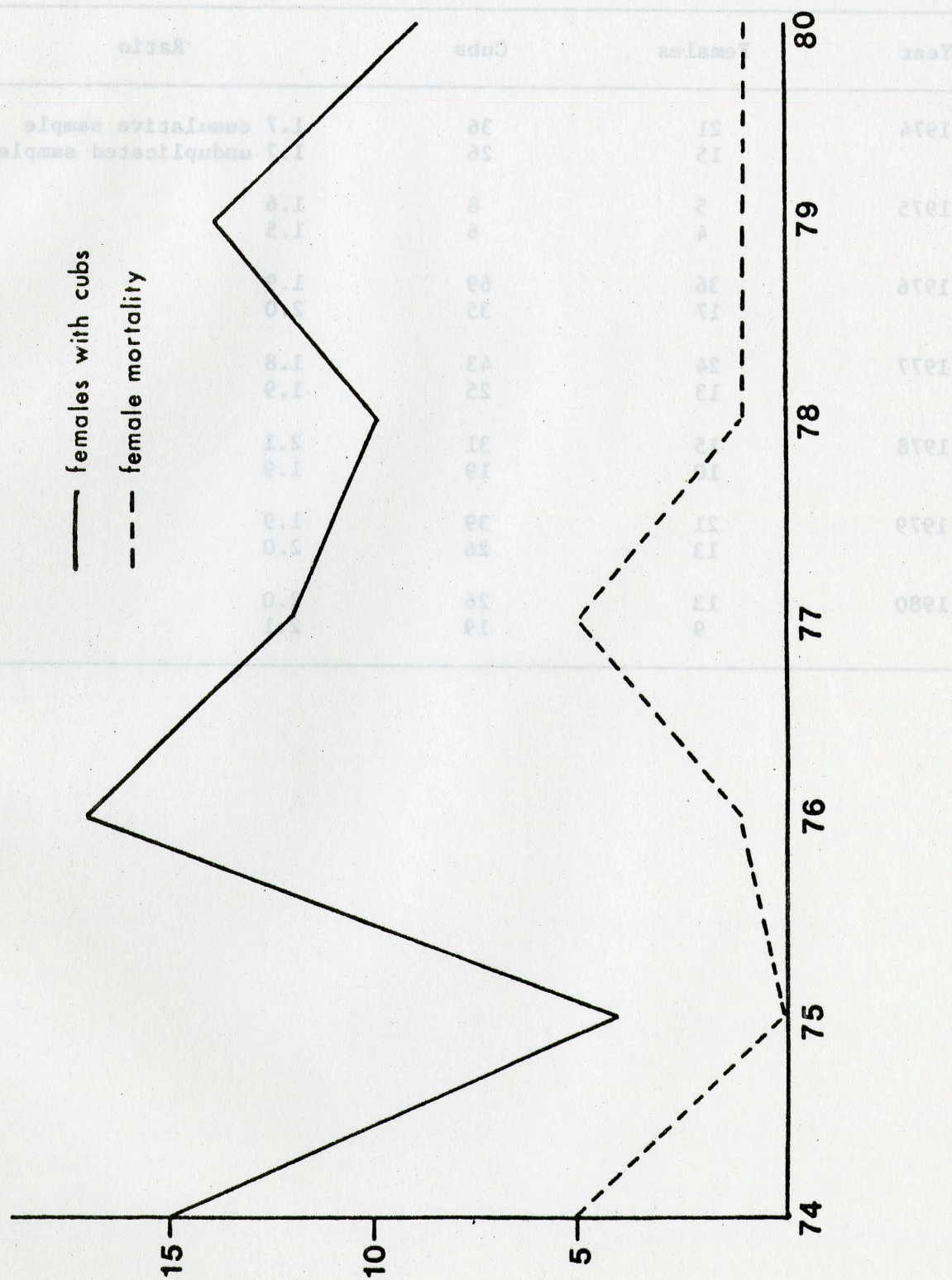
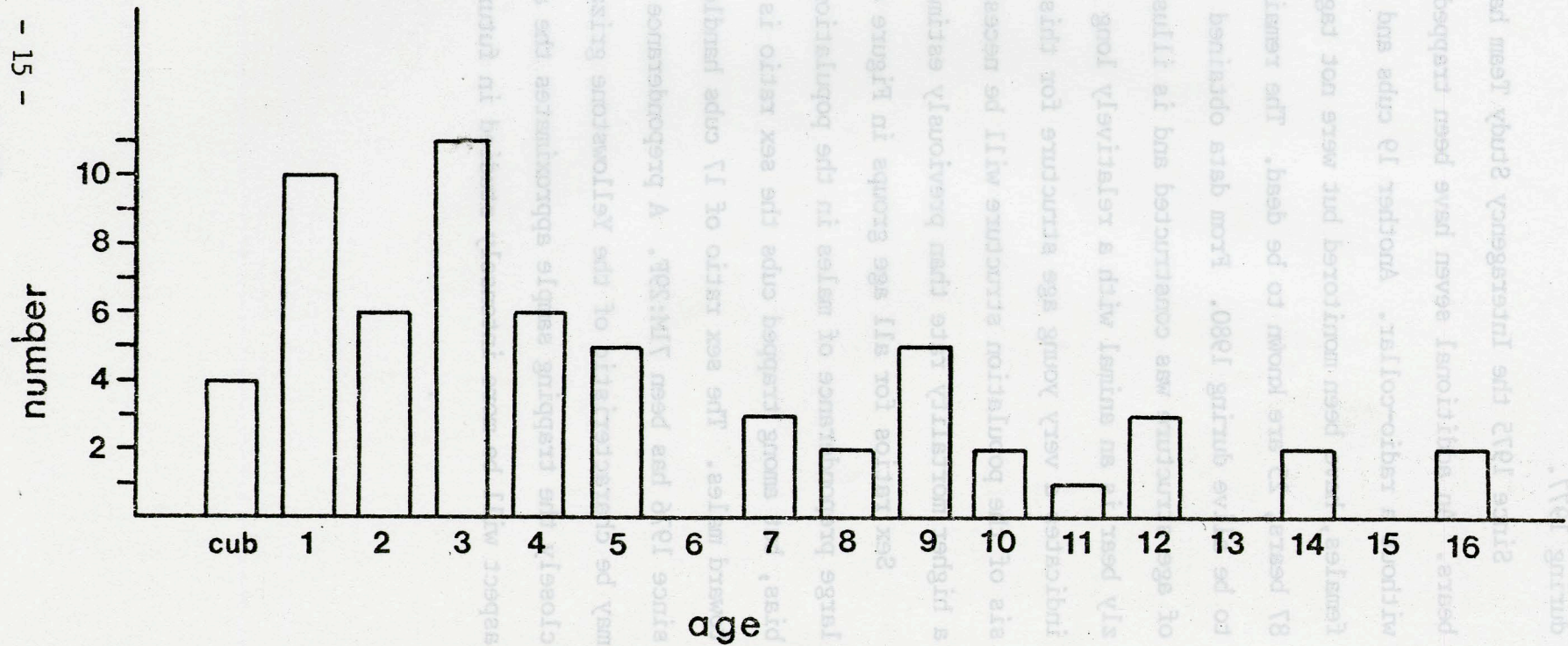


Figure 4.

Grizzly Bear Population Age Structure 1980

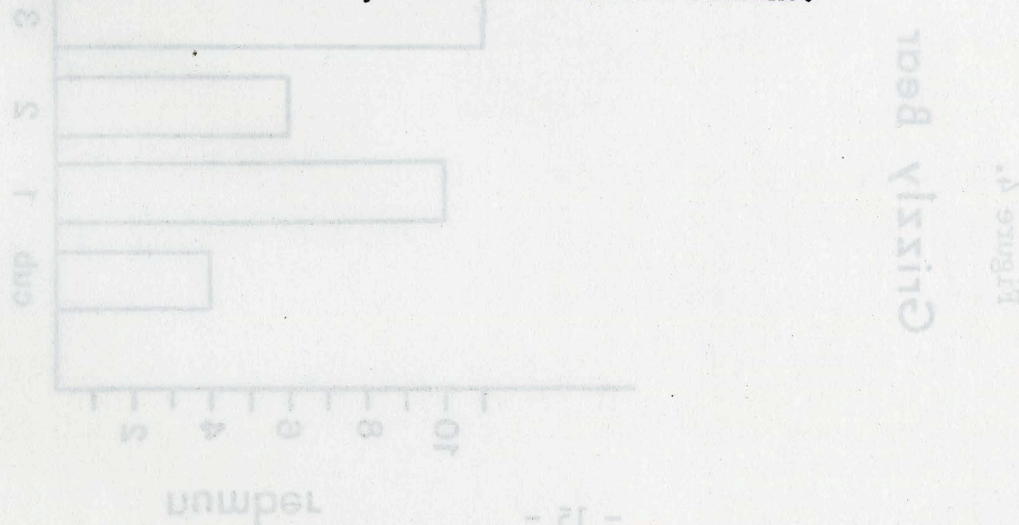
n = 62



in number of observed females with cubs until another high mortality rate during 1977.

Since 1975 the Interagency Study Team has radio-instrumented 61 grizzly bears. An additional seven have been trapped, ear-tagged, and released without a radio-collar. Another 19 cubs and yearlings, siblings of trapped females, have been monitored but were not tagged or collared. Of these 87 bears, 25 are known to be dead. The remaining 62 bears were believed to be alive during 1980. From data obtained from these bears a bar graph of age structure was constructed and is illustrated in Figure 4. The grizzly bear is an animal with a relatively long life span, and this graph indicates a very young age structure for this population. Further analysis of the population structure will be necessary, but initial data suggests a higher mortality rate than previously estimated.

Sex ratios for all age groups in Figure 4 are 62M:38F. In the past a large preponderance of males in the population has been explained by trapping bias, but among trapped cubs the sex ratio is even more strongly biased toward males. The sex ratio of 17 cubs handled in trapping operations since 1976 has been 71M:29F. A preponderance of males in all age classes may be characteristic of the Yellowstone grizzly bear population. How closely the trapping sample approximates the actual population in this aspect will be more intensely studied in future seasons.



STATE: Wyoming

NAME: GRIZZLY BEAR STUDY

PROJECT NO: W-27-R-30

TITLE: Grizzly Bear Movement

PROJECT OBJECTIVE NO. 1 JOB NO. 2

Objectives:

The objectives of this portion of the study are 1.) to delineate migratory or seasonal movements of grizzly bear, and 2.) to correlate behavior, habitat requirements and usage with changes in distribution.

Study Area:

Same as Job No. 1.

Procedures:

Capture and radio telemetry techniques used during 1977 were those established by the Interagency Grizzly Bear Study Team (IGBST). Procedures or techniques have been described in past Pittman-Robertson Progress Reports.

Results:

During 1980, 28 different grizzlies were captured. Some bear were captured more than once and in total there were 32 grizzly bear captures for the season. Captures included 13 adults, 8 subadults, 6 yearlings and 1 cub. There were 16 males and 12 females among the captures, giving a sex ratio of 57M:43F (Table 1).

These grizzly captures were made at 14 different trap locations throughout the study area (Figure 1). Four bear were captured at 2 trap locations in Wyoming, 13 bear at two locations in Montana, and 13 bear at 10 locations in Yellowstone Park.

Of the 34 grizzly bear monitored during 1980, 14 ceased to provide movement data during the year. Three of these grizzlies died, five cast

Table 1. Grizzly bears captured and instrumented during 1980

Bear No.	Sex	Age ^{1/}	Date	Location	Wt ^{2/}
47	F	2	05-06 (I) ^{3/}	Nez Perce Cr, YNP	145
48	F	2	05-10 (I)	Crystal Cr, YNP	225
49	M	2	05-13 (I)	Crystal Cr, YNP	225
49	M	2	07-26 (RIL)	West Entrance, YNP	220
49	M	2	08-08 (RT)	Plateau Cr, YNP	250
50	F	Ad	05-15 (I)	Nez Perce Cr, YNP	275
51	M	13	05-15 (I)	Blacktail Cr, YNP	550
52	M	1	06-05 (I)	Fir Ridge, MT	130
53	F	1	06-06 (I)	Fir Ridge, MT	110
54	M	1	06-10 (I)	Fir Ridge, MT	120
55	M	1	06-11 (I)	Fir Ridge, MT	170*
56	F	1	06-24 (I)	Fir Ridge, MT	150*
57	M	9	07-10 (I)	Cap & Ball Park, WY	600
58	M	2	07-12 (IL)	Norris, YNP	250
59	F	2	07-24 (IL)	Canyon, YNP	175
60	F	3	08-27 (I)	Woody Cr, MT	170*
60	F	3	08-31 (RT)	Woody Cr, MT	180
61	M	4	10-24 (I)	Crandall Cr, WY	535
40	M	5	05-15 (RT)	Rabbit Cr, YNP	400
38	F	9	06-12 (RI)	Fir Ridge, MT	400
41	M	2	05-22 (RI)	Blacktail Cr, YNP	200
43	F	3	09-25 (RI)	Cap & Ball Park, WY	265*
1	M	16	07-28 (RI)	Cap & Ball Park, WY	430*
5	M	12	07-22 (RT)	Woody Cr, MT	390
5	M	12	09-03 (RT)	Woody Cr, MT	450
8	F	14	07-07 (RI)	Woody Cr, MT	230
10	F	9	07-18 (RI)	Woody Cr, MT	310
15	M	9	06-18 (RT)	Fir Ridge, MT	350
22	M	8	08-25 (RT)	Frost Lake, YNP	385
35	M	5	06-19 (RI)	Fir Ridge, MT	325
G-11	F	Cub	07-18 (NI)	Woody Cr, MT	35
G-10	M	2	05-09 (NI)	Crystal Cr, YNP	275

^{1/} Ad = adult, males over 4 years old and females over 5 years old.

^{2/} Weight in pounds; * indicates scale weight.

^{3/} I = Instrumented with transmitter
 NI = Not instrumented
 RI = Reinstrumented
 RT = Retrapped, not reinstrumented
 IL = Instrumented and transplanted
 RIL = Reinstrumented and transplanted

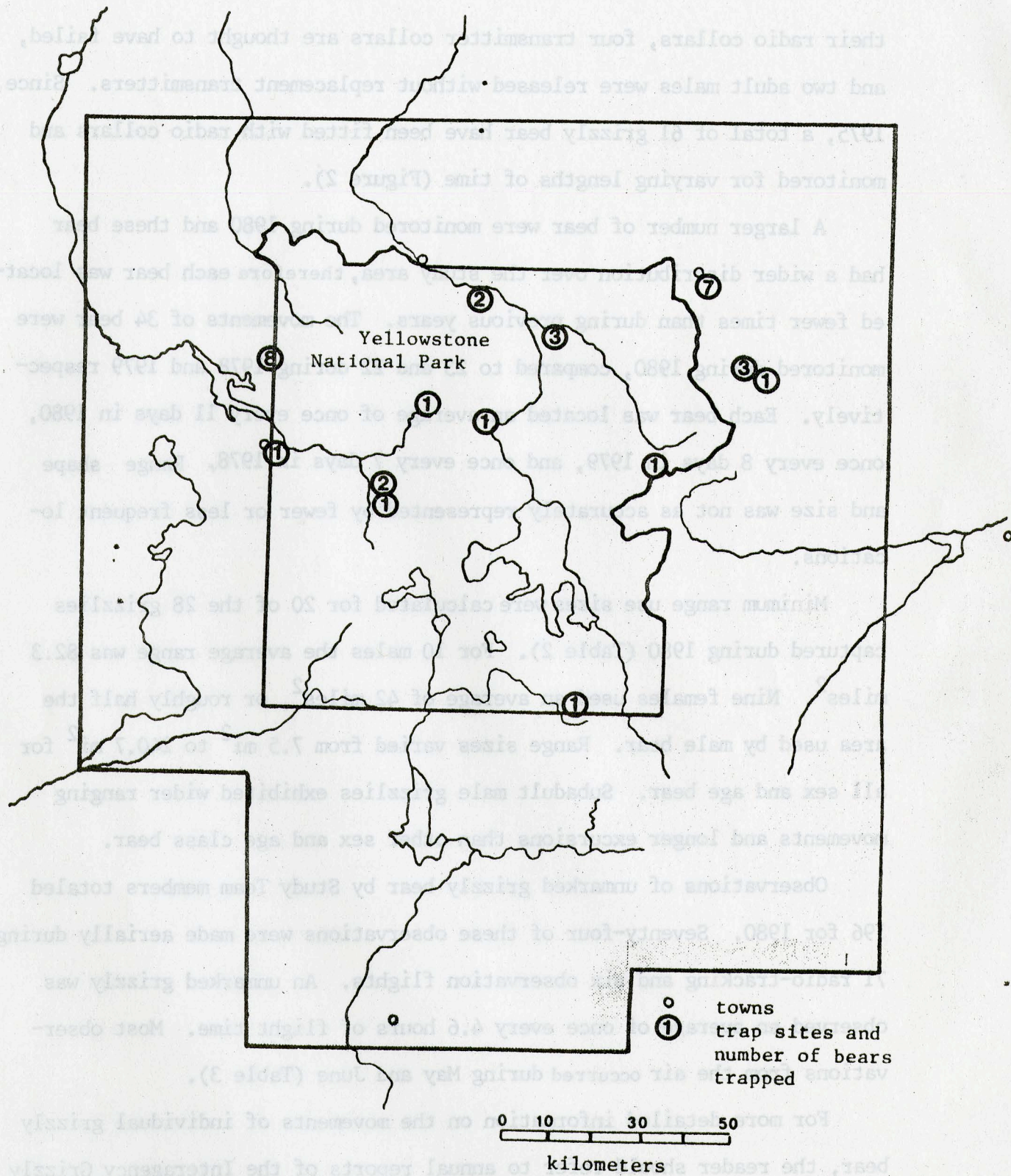


Fig. 1. Study area boundaries and 1980 trap sites.

their radio collars, four transmitter collars are thought to have failed, and two adult males were released without replacement transmitters. Since 1975, a total of 61 grizzly bear have been fitted with radio collars and monitored for varying lengths of time (Figure 2).

A larger number of bear were monitored during 1980 and these bear had a wider distribution over the study area, therefore each bear was located fewer times than during previous years. The movements of 34 bear were monitored during 1980, compared to 23 and 22 during 1978 and 1979 respectively. Each bear was located an average of once every 11 days in 1980, once every 8 days in 1979, and once every 7 days in 1978. Range shape and size was not as accurately represented by fewer or less frequent locations.

Minimum range use sizes were calculated for 20 of the 28 grizzlies captured during 1980 (Table 2). For 10 males the average range was 82.3 miles². Nine females used an average of 42 miles², or roughly half the area used by male bear. Range sizes varied from 7.5 mi² to 240.7 mi² for all sex and age bear. Subadult male grizzlies exhibited wider ranging movements and longer excursions than other sex and age class bear.

Observations of unmarked grizzly bear by Study Team members totaled 196 for 1980. Seventy-four of these observations were made aerially during 71 radio-tracking and six observation flights. An unmarked grizzly was observed an average of once every 4.6 hours of flight time. Most observations from the air occurred during May and June (Table 3).

For more detailed information on the movements of individual grizzly bear, the reader should refer to annual reports of the Interagency Grizzly Bear Study.

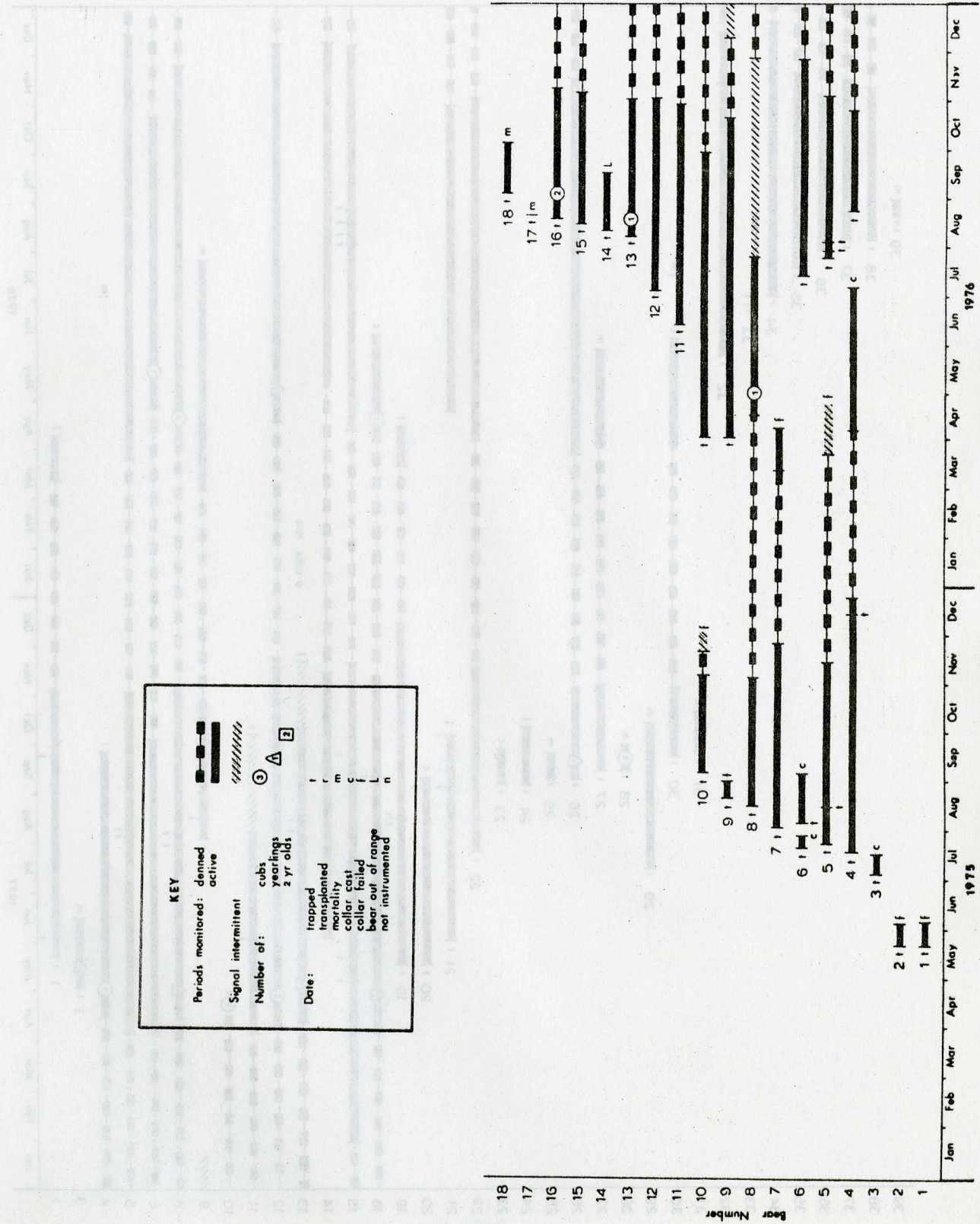


Fig. 2. Histories of radio-collared grizzly bears, 1975-80.

Fig. 2. (continued)

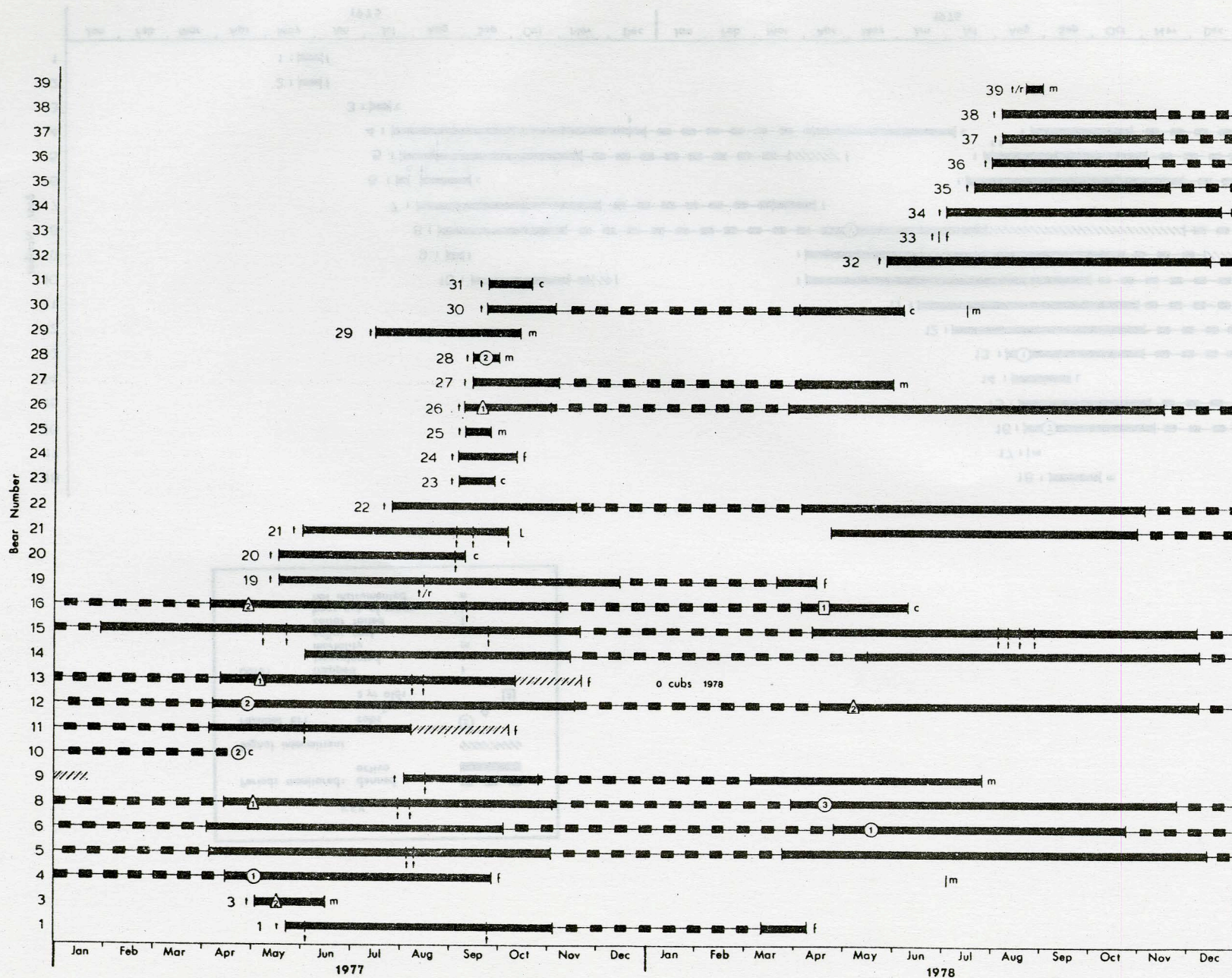


Fig. 2. (continued)

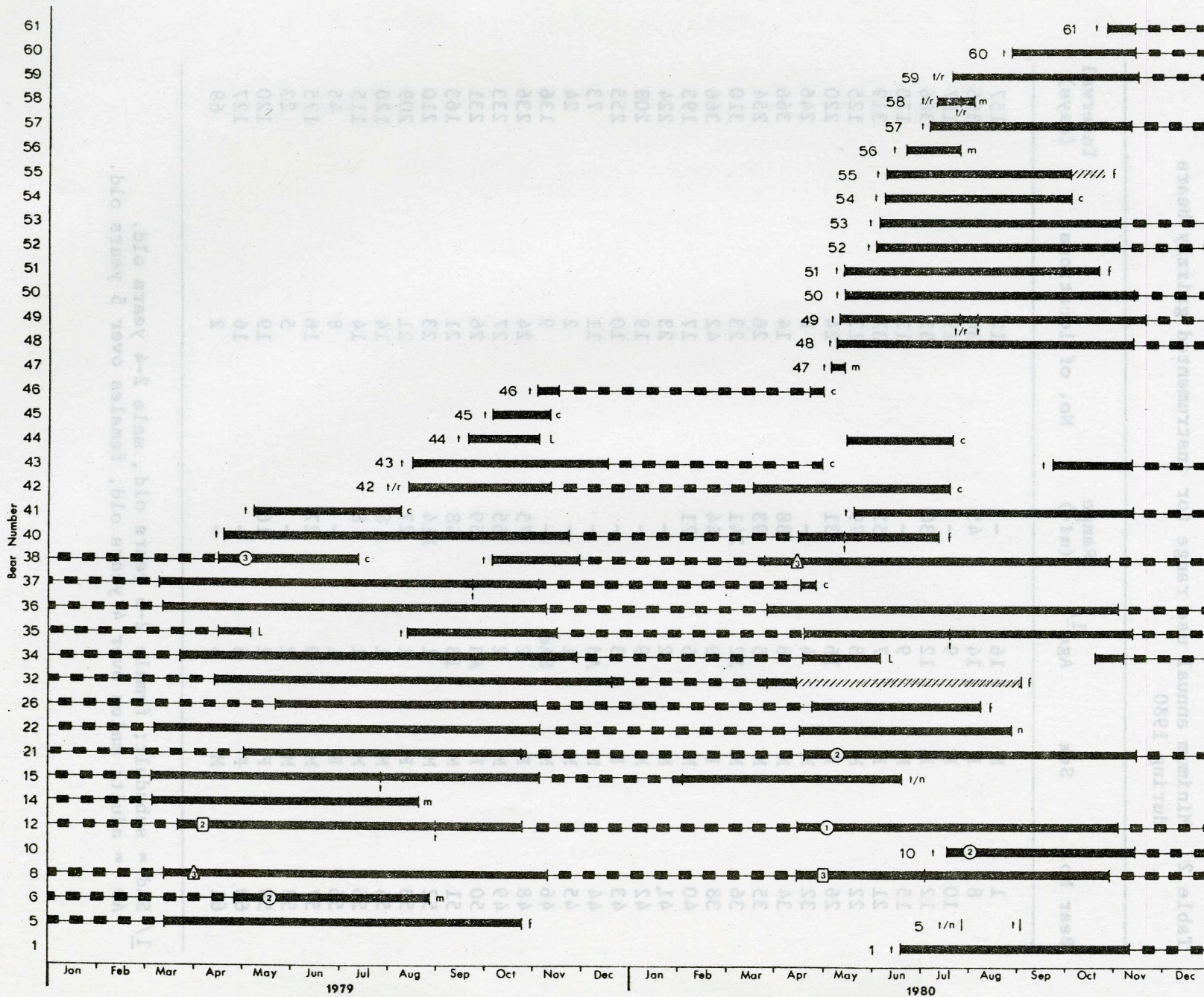


Table 2. Minimum annual use range for instrumented grizzly bears during 1980

Bear No.	Sex	Age ^{1/}	Range (mi ²)	No. of locations	Interval (days)
1	M	16	-	12	157
8	F	14	45	36	366
10	F	9	-	19	167
12	F	12	30	31	366
15	M	9	-	13	170
21	F	7	52	31	319
22	M	8	79	17	125
26	F	16	31	24	220
32	M	4	-	8	246
34	M	8	88	14	366
35	M	5	93	26	254
36	M	12	241	23	310
38	F	9	44	42	366
40	M	5	71	17	193
41	M	2	-	23	224
42	M	9	-	19	208
43	F	3	-	10	255
44	M	Ad	-	11	73
45	M	1	-	2	24
46	M	SAd	-	9	136
48	F	2	75	24	236
49	M	2	55	27	233
50	F	Ad	59	26	231
51	M	13	48	21	163
52	M	1	114	23	210
53	F	1	27	21	209
54	M	1	8	14	120
55	M	1	8	14	115
56	F	1	-	8	45
57	M	9	27	16	175
58	M	2	-	5	23
59	F	2	16	19	120
60	F	3	-	16	127
61	M	4	-	2	69

^{1/} SAd = subadult; female 2-5 years old, male 2-4 years old.

AD = adult; males over 4 years old, females over 5 years old.

Table 3. Summary of aircraft flight reports, 1980

Month	Hours flown	No. flights	Bears obs.		Bears/flight		Bears/hr	
			Black	Griz	Black	Griz	Black	Griz
Jan	3	1	0	0	-	-	-	-
Feb	4	1	0	0	-	-	-	-
Mar	10	3	0	0	-	-	-	-
Apr	29	7	0	12	-	1.71	-	.41
May	42	8	7	20	.88	2.50	.17	.48
Jun	45	10	7	10	.70	1.00	.16	.22
Jul	78	14	3	38	.21	2.71	.04	.49
Aug	38	8	0	7	-	.88	-	.18
Sep	37	7	0	1	-	.14	-	.03
Oct	42	9	0	1	-	.11	-	.02
Nov	24	7	0	0	-	-	-	-
Dec	5	2	0	0	-	-	-	-
Total	357	77	17	89	.22	1.16	.05	.25

STATE: Wyoming

NAME: GRIZZLY BEAR STUDY

PROJECT NO: W-27-R-30

TITLE: Grizzly Habitat Classification

PROJECT OBJECTIVE NO. 1 JOB NO. 3

Extensive work has been done on feeding site analysis, day bed surveys, scat collection and analysis, etc. throughout most portions of the Yellowstone grizzly bear range. Habitat data from Wyoming has been incorporated into the study team's overall habitat survey. The data is best handled in a collective manner for comparisons between different parts of the overall grizzly range. A large volume of data has been collected and much of it is now being evaluated and summarized. The use of computer storage and analysis has become essential because of the volume of data collected. Only a small portion of the field work on the habitat study remains to be done. Some phases of the habitat study, such as den site analysis, have been placed on lowest priority since sufficient information has been collected. Results of the preliminary habitat usage data have been reported in depth in various Annual Reports of the Interagency Study Team. Upcoming Study Team reports will give more complete analysis of grizzly food studies from scat collections and feeding site surveys, habitat usage or preference from day bed studies and den sites, etc.

Prepared by: Larry J. Roop
Researcher

Approved by: James Jorgensen
Wildlife Management Coordinator

Approved by: Terry Killough
District II Supervisor

Approved by: Francis Petera
Assistant Chief Game Warden

1	5/2	Tracks and scars, 2 different ad. walking in trail, fresh.	Cabin Cr., TSN, R10W, J. Oudin, Game Warden S26
2	Mid-May	1 - lg. ad. silvertip, dk. underfur, light head, feeding on bait.	Kitty Cr., TSN, R10W, K. Wagner, Hunter S2
3	5/17	3 - brown to grey sow with 2 small cubs, digging on hillside above ranch, observed for 30-40 minutes thru spotting scope.	Rattlesnake Mt., TSN, R10W, S14, R. Lewis, Ranch Hand
4	5/17	3 - sow and 2 cubs-of-the-year, brownish-grey color, on slope below of server.	Rattlesnake Mt., TSN, R10W, S26, J. Parmenter
5	5/26	1 - ad. observed at close range at end of logging rd.	Blackwater Cr., Local Residents TSN, R10W, S23
6	5/28	1 - very lg. ad., estimated at 800 lbs. or more, feeding on bear bait, may be same lg. bear reported in this area for past 3 years.	Post Cr., TSN, R10W, D. Moore, Hunter S28
7	6/2	Tracks, 1 to 2 wks. old, along creek on Nielson's ranch.	Lodgepole Cr., TSN, R10W, J. Blake, Nielson's ranch S9
8	6/3	2 - subadults, est. 300 lb., light brown, grizzled, walking along trail.	Tape Cr., TSN, R10W, T. Hollock, Nielson's ranch S26
9	6/3	1 - med. size ad., reddish brown with dark legs, feed on horse carcass (black bear bait).	Moran Cr., TSN, R10W, G. Mock, Hunter S8

APPENDIX I

GRIZZLY BEAR OBSERVATIONS

SHOSHONE NATIONAL FOREST - 1980

Obs. No.	Date	No., Sex, Age, Etc.	Location	Observer
1	5/2	Tracks and scats, 2 different ad. walking in trail, fresh.	Cabin Cr., T51N, R107W, S26	T. Fagan J. Oudin Game Wardens
2	Mid-May	1 - lg. ad. silvertip, dk. under-fur, light head, feeding on bait.	Kitty Cr., T51N, R108W, S5	K. Wagler, Hunter
3	5/17	3 - brown to grey sow with 2 small cubs, digging on hillside above ranch, observed for 30-40 minutes thru spotting scope.	Rattlesnake Mt., T53N, R103W, S14	R. Lewis, Ranch Hand
4	5/17	3 - sow and 2 cubs-of-the-year, brownish-grey color, on slope below observer.	Rattlesnake Mt., T53N, R103W, S26	J. Parmenteor
5	5/26	1 - ad. observed at close range at end of logging rd.	Blackwater Cr. T52N, R107W, S33.	Local Residents
6	5/28	1 - very lg. ad., estimated at 800 lbs. or more, feeding on bear bait, may be same lg. bear reported in this area for past 3 years.	Post Cr., T52N, R104W, S28	D. Moore Hunter
7	6/2	Tracks, 1 to 2 wks. old, along creek on Nielson's ranch.	Lodgepole Cr. T56N, R106W, S9	J. Blake Nielson's ranch
8	6/3	2 - subadults, est. 300 lb., light brown, grizzled, walking along trail.	Tepee Cr., T51N, R107W, S26.	T. Bullock, Nielson's ranch
9	6/3	1 - med. size ad., reddish brown with dark legs, feed on horse carcass (black bear bait).	Morman Cr., T52N, R108W, S8	C. Mock, Hunter

GRIZZLY BEAR OBSERVATIONS, Cont. - 1980

Obs. No.	Date	No., Sex, Age, Etc.	Location	Observer
10	6/5	1 - lg. ad., approx. 450 lbs., very light face, coat light or golden, aerial observation while on radio-tracking flight.	Russell Cr., UTM 49604, 6147	L. Roop, Study Team
11	6/5	1 - dk. brown ad., lg. hump, some light hair on back and head, running across meadow in old burn, aerial observation.	Hurricane Mesa, UTM 49657, 5988	L. Roop, Study Team
12	6/9	2 - lg. brown ad., one smaller, hump very distinct on larger bear, feeding in wet meadow, aerial observation while on radiotracking flight.	Jones Cr., T53N, R110W, S28	W. Rudd, Graduate Student
13	6/10	1 - dk. ad., feeding in meadow, ran off after hearing vehicle, est. at 400-450 lbs.	Lodgepole Cr., T56N, R106W, S17	J. Smith Study Team
14	6/10	Tracks, on dirt road, small bear, front pad width 92 mm.	Lodgepole Cr., UTM 49646, 6067	J. Smith, W. Rudd, Study Team
15	6/20	2 - female and ylg. cub, est. sow at 400 lbs., spooked from aspen grove near cattle.	Skull Cr., T54N, R103W, S27	S. McKinney, Ranch Worker
16	6/20	1 - med. size ad., light brown, grizzled, feeding in high alpine meadow, observed by National Outdoor Leadership School group.	Hurricane Mesa, T56N, R108W, S3	L. Roop, Study Team
17	6/27	Tracks, in trail, lg. bear.	Papoose Ridge, UTM 49612, 5972	K. Logan, Graduate Student
18	6/27	1 - lg. ad., dark brown, foraging on north facing slope.	Hoodoo Cr., UTM 49576, 6017	K. Logan, Graduate Student

GRIZZLY BEAR OBSERVATIONS, Cont. - 1980

Obs. No.	Date	No., Sex, Age, Etc.	Location	Observer
19	6/3	2-ad. bears mating just before dusk, good photos taken.	Eagle Creek T51N, R109W, S10	E. Decker, U.S.F.S.
20	7/8	Tracks-fairly large ad., in trail for 4 mi. between Eagle Cr. Meadows and Eagle Pass, claws 3 in.	Eagle Creek T51N, R109W, S28-32	J. Davis, Guide
21	7/16	2-female & ylg. cub, believes these are same bear seen month before, feeding on open slope.	Skull Creek T54N, R103W, S23	S. McKinnley, Ranch Worker
22	7/16	1-ad., light colored with distinct hump, seen across river, observers claim some experience with black and grizzly bears.	Bills Park T32N, R102W, S32	Forest Visitors
23	July	Scat., 2½" diam.	N. Crandall Trail, T56N, R107W	R. James, U.S.F.S.
24	8/5	1-med. size ad., dark, tore camp, unafraid of people, collared bear.	Bridger Lake T48N, R110W	Jones Party, Hunters
25	8/20	Scat., greater than 2½" diam., alpine meadows	Frost Lake UTM 49406 5768	Roop, Smith, Study Team
26	8/20	Scat., subalpine meadow.	Upper Bear Cr., UTM 49401 5776	Roop, Smith, Study Team
27	8/21	Scat., subalpine meadow.	Upper Bear Cr., UTM 49405 5776	Roop, Smith, Study Team
28	8/21	Scat., 2 3/4" diam., subalpine meadow.	Upper Bear Creek, UTM 49405 5776	Roop, Smith, Study Team
29	8/22	Tracks, subadult, front pad 118 mm wide, in muddy trail, fresh.	Red Creek, T53N, R109W, S10	Roop, Smith, Study Team

GRIZZLY BEAR OBSERVATIONS, Cont. - 1980

Obs. No.	Date	No., Sex, Age, Etc.	Location	Observer
30	8/24	Scat, subalpine meadow.	Bear Cr., UTM 49400 5778	Roop, Smith Study Team
31	8/27	Scat, subalpine meadow.	Bear Cr., UTM 49406 5779	Roop, Smith Study Team
32	8/27	Scat, subalpine meadow and white-bark pine forest.	Bear Cr., T54N, R109W, S32	J. Smith, Study Team
33	8/28	Scat, 3" diam., barren hillside.	Bear Cr., T54N, R109W, S32	J. Smith, Study Team
34	8/28	Scat, subalpine meadow.	Bear-Cold Cr., UTM 49407 5775	J. Smith, Study Team
35	9/1	1 - med. to lg. size ad., tan body with dark legs, running on sagebrush flat not far from oil-field.	Line Cr., T58N, R102W, S31	R. Antons, Oilfield Worker
36	9/2	Tracks, made night before, front pad width 6", near camp.	Tough Cr., T57N, R107W, S29	J. Oudin, Game Warden
37	9/5	Scat, lg. rocks overturned, scat full of ants, aspen-lodgepole stand.	Beartooth Cr., T57N, R106W, S36	H. Murray, U.S.F.S.
38	9/6	2 - female & ylg., observed for 20 min. digging along edge of timber.	Arrow Cr., T54N, R108W, S13	K. Kenney U.S.F.S.
39	9/6	1 - med. to lg. ad., dog chased it out of camp at night.	Tough Cr., T57N, R107W, S29	J. Oudin, Game Warden
40	9/7	Tracks in trail for 4-5 mi., different size tracks than grizzly at camp previous night.	N. Crandall Cr. T57N, R108W, S28	J. Oudin, Game Warden

GRIZZLY BEAR OBSERVATIONS, Cont. - 1980

Obs. No.	Date	No., Sex, Age, Etc.	Location	Observer
41	9/13	Tracks, followed in trail from Cow Cr. to fork of Crandall Creeks, very lg. ad., front pad 9" wide.	Crandall Cr. T56N, R107W	J. Oudin, Game Warden
42	9/16	1 - fairly lg. ad., brown, lg. hump, running down gravel road.	Squaw Cr. T57N, R106W, S14	W. Atkins
43	9/16	Tracks, in trail, average size grizzly.	Thorofare Cr. T48N, R110W	D. Bragonier, Game Warden
44	9/18	1 - lg. ad., golden colored, no collar, digging on hillside.	Strawberry Cr. T54N, R106W, S6	L. Warner, Hunter
45	9/19	Tracks, fresh, walking on dirt road, lg. bear.	Crandall Cr., T56N, R106W, S8	J. Smith, Study Team
46	9/25	Scat, near trapping site.	Lodgepole Cr. T56N, R106W, S20	J. Smith, Study Team
47	9/25	Scat, 2-3 days old, small meadow in Douglas Fir forest.	Lodgepole Cr. T56N, R106W, S20	J. Smith, Study Team
48	9/27	tracks, lg. bear, in trail	Mountain Cr. T49N, R109W	D. Bragonier Game Warden
49	10/4	1 - lg. ad., light brown with dark legs, in trail, before daybreak, refused to move out of trail for hunters, growled at them so party circled around it.	N. Fk. Shoshone River, T53N, R109W, S27	D. Carmon Hunter
50	10/6	Tracks, tore up hunting camp, shredded and tore open panniers, chewed open all cans and containers, scattered gear 80 yds. from camp, lg. bear - hind foot 12" long.	Blackwater Cr. T51N, R107W, S19	R. Daniels Hunting Guide

GRIZZLY BEAR OBSERVATIONS, Cont. - 1980

Obs. No.	Date	No., Sex, Age, Etc.	Location	Observer
51	10/10	1 - lg. silvertip, slit in one ear, no collar, about 500-600 lb., put hunter up a tree, was in area for 20-25 min.	Crow Creek T52N, R110W, S1	P. Cambell Hunter
52	10/10	1 - lg. ad., sitting in trail, 2 mi. from trailhead, same location as observation no. 49.	N. Fk. Shoshone River, T53N, R109W, S27	K. Barkken
53	10/12	2 - ad., one dark brown, one reddish brown, crossing meadow.	Jones Creek T53N, R109W, S19	D. Beemer Hunter
54	10/12	Tracks, on trail for two miles, med. to lg. ad.	Papoose Ridge T56N, R107W, S22 & 23	T. McJunkin Hunting Guide
55	10/16	1 - very lg. ad., dark underfur, light silbertip over head, back and sides, hunters rode up on bear in timber, grizzly was feeding on something and stood its ground but did not charge.	Timber Creek, T56N, R108W, S21	R. Daniels
56	10/19	Tracks, fresh in snow, female and 1 or 2 cubs.	Dead Indian Hill, T55N, R104W, S21	K. Morris Hunter
57	10/21	Tracks, female & 1 cub, track verification of report by Morris (obs. no. 56).	Dead Indian Hill, T55N, R104W, S21	L. Roop Study Team
58	10/22	1 - very lg. dark ad., light face, feeding on bait.	Sweetwater Cr. T53N, R106W, S32	G. Hayner Hunter
59	10/23	2 - female and cub, ran across road in front of truck.	Dead Indian Hill, T55N, R104W, S33	W. Bunn Hunter
60	10/24	Tracks, lg. bear headed downslope, front foot 9" long.	Timber Creek T56N, R108W, S29	B. Haflich U.S.F.S.
61	Oct.	1 - lg. ad., grizzly in hunting camp, no one in camp at time.	Red Creek T53N, R109W, S3	L. Humstead Hunter

GRIZZLY BEAR OBSERVATIONS, Cont. - 1980

Obs. No.	Date	No., Sex, Age, Etc.	Location	Observer
62	Oct.	1 - ad., in trail, wouldn't let hunters pass, 2 different parties of hunters	Trout Creek T53N, R104W, S18	Hunter
63	Oct.	Tracks, 4 or 5 different size grizzly tracks seen during hunting season, largest had hind foot over 12" long.	Timber Creek T56N, R108W, & R107W	R. Daniels Hunting Guide
64	Late Oct.	1 - med. to lg. ad., hanging around Pahaska Lodge, employees had been dumping grease near horse barn, reported by N.P.S. Eastgate Ranger.	N. Fk. Shoshone River, T52N, R109W, S3	N.P.S. Employees

APPENDIX II

GRIZZLY BEAR OBSERVATIONS TETON NATIONAL FOREST - 1980

Obs. No.	Date	No., Sex, Age, Etc.	Location	Observer
65	June	1 - lg. ad., a collared bear coming into black bear bait.	Togwotee Area T44N, R111W	S. Price Hunter
66	7/19	1 - ad., brown silvertipping, spooked by airplane, aerial observation.	Howell Cr. UTM 49030 5770	W. Rudd Graduate Student
67	7/24	1 - ad., looked into window of Hawks Cabin, circled cabin and came back to window.	Hawk's Rest T48N, R110W	M. Murdock U.S.F.S.
68	7/25	1 - ad., broke into Max Morris's meat sack, camped alone near Hawk's Rest.	Hawk's Rest T48N, R110W	M. Murdock U.S.F.S.
69	7/28	1 - ad., at Crescent H camp on Yellowstone River, ran off 2 horses.	Yellowstone River, T48N, R110W	M. Murdock U.S.F.S.
70	7/29	1 - ad., ate some meat in a hunting camp, reported to U.S.F.S. by Idaho hunter.	Atlantic Cr. T48N, R110W	S. Weiss U.S.F.S.
71	7/30	1 - med. size ad., dark bear wearing radio collar, tore up panniers and dug in drain field, seen at 100 ft.	Hawk's Rest T48N, R110W	Murdock & Smith U.S.F.S.
72	7/31	1 - same bear as previous day, back at Hawk's Rest, also visited 9 backpackers and tore up 2 packs, into garbage at another party's camp.	Hawk's Rest T48N, R110W	G. Rees U.S.F.S.
73	8/1	1 - ad., same bear back at Hawk's Rest, went to Triangle X camp and got meat from tree, milk and 4 cans coke.	Hawk's Rest T48N, R110W	G. Rees U.S.F.S.
74	8/2	1 - ad., same bear back at Hawk's Rest Cabin, visited Powell camp at night, not afraid of people or campfire.	Hawk's Rest T48N, R110W	M. Murdock U.S.F.S.
75	8/3	Tracks, fresh at Bridger Lake trail.	Bridger Lk. T48N, R110W	M. Murdock U.S.F.S.

Obs. No.	Date	No., Sex, Age, Etc.	Location	Observer
76	8/5	1 - ad., collared bear, into Jones Party camp.	Bridger Lk. T48N, R110W	D. Bragonier Game Warden
77	8/21-22	1 - med. size grizzly, into camp at night, after food in panniers.	Hawk's Rest T48N, R110W	R. Michaels Camper
78	9/1-2	1 - dark ad., 200-300 lb., no collar into camp 2 or 3 times.	Butte Creek T48N, R108W	R. Dewitt T Thompson Outfitters
79	9/15	2 - yearlings	Big Game Ridge	R. Jackson, V. Hamre, U.S.F.S.
80	9/16	Tracks, average size grizzly, in trail near Game & Fish Cabin.	Thorofare T48N, R110W	D. Bragonier G. Warden
81	9/23	1 - ad., lg. dark grizzly	T48N, R112W, S13	J. Mumma, M Murdock U.S.F.S.
82	9/27	Tracks, lg. bear, on trail	Mountain Cr. T49N, R109W	B. Bell, Outfitter

10/4/82

To the editor

An August 17 memorandum to members of a steering committee overseeing the Interagency Grizzly Bear Study Team was ^{recently} leaked to the press. The document stated that the estimated 1982 grizzly population in the greater Yellowstone ecosystem is 187 animals which includes 30 mature females. A recent executive summary presented a breakdown of the population for the close of 1981. The total grizzly population was placed at 237 animals. In 1980 Larry Roop, Wyoming Game and Fish biologist stated that the IGBST members were of the opinion that there are between 300 and 350 grizzlies in the Greater Yellowstone Ecosystem. Numerous other figures have appeared in print including the Craighead team 1974 report that revealed a nine year average of 229 grizzlies, a 1967 peak of 245 and a 1974 computed decline to 136 animals.

The August 17 memorandum or Wauer memo states " Unless some positive management actions are taken soon to limit grizzly bear mortality, the population may reach a point from which it cannot recover." This memo also included ^{improved} a solution and recommendations for checking the grizzly bear population decline and for encouraging a recovery.

This belated recognition ^{the} and a public dissemination of the critical plight of the grizzlies is a ^{real} ~~great~~ step forward. ^{Hurried} Immediate management actions based on the varied population figures are not. Before ^{proceeding} ~~going~~ ^{make public} ~~proceed~~ with ^{its best official} ~~management solutions~~ the Interagency Grizzly Bear Study Team should ^{publish} ~~publish~~ their estimated of the current grizzly population ~~and composition~~.

along with the age and sex composition. In addition annual mortality and productivity figures ~~or best estimates~~ should be provided for each year of the study.

This basic information and the methods used in acquiring and analyzing the data should accompany the population estimates. This would provide for peer review of conflicting and controversial figures and it would serve as a basis for making difficult management decisions, some of which will have wide repercussions. ~~Next~~ These

decisions are bound to affect special interest groups and will create opposition and dissension. It is therefore imperative that management changes be based on the best information available, which ^{Hopefully such} ~~will~~ ^{lead to} a consensus as to the reliability of the ^{data} ~~data~~ and ^{such an approach} ~~provide~~ ^{It will} ~~also~~ provide unified support for solutions to ^{tend to}

the grizzly bear crisis.

Frank Craighead

Letters to the Editor

Continued from page 4

create opposition and dissension. It is therefore imperative that management changes be based on the best information available. Hopefully, such action will lead to a consensus as to

the reliability of the population data. Such an approach will tend to provide unified support for solutions to the grizzly bear crisis.

Frank Craighead
Moose

4 - JACKSON HOLE NEWS Thursday, October 14, 1982

Weather Picture

	Max.	Min.	Prc.
Oct. 6	54	19	tr.
Oct. 7	55	23	0
Oct. 8	41	22	.02
Oct. 9	45	22	0
Oct. 10	49	19	0
Oct. 11	67	23	0
Oct. 12	65	22	0
Oct. 13	64	14	0

LETTERS TO THE EDITOR

Grizzlies

To the Editor:

An Aug. 17 memorandum to members of a steering committee overseeing the Interagency Grizzly Bear Study Team (IGBST) was recently leaked to the press. The document stated that the estimated 1982 grizzly population in the greater Yellowstone ecosystem is 187 animals, including 30 mature females. A recent executive summary presented a breakdown of the population for the close of 1981. The total grizzly population was placed at 237 animals. In 1980 Larry Roop, Wyoming Game & Fish Department biologist stated that IGBST members were of the opinion that there are between 300 and 350 grizzlies in the greater Yellowstone ecosystem. Numerous other figures have appeared in print, including the Craighead team's 1974 report that revealed a nine-year average of 229 grizzlies, a 1967 peak of 245 and a 1974 computed decline to 136 animals.

The Aug. 17 memorandum or Wauer memo states: "Unless some positive management actions are taken soon to limit grizzly bear mor-

talidity, the population may reach a point from which it cannot recover." This memo also included a proposed solution and recommendations for checking the grizzly bear population decline and for encouraging a recovery.

This belated recognition and its public dissemination of the critical plight of the grizzlies is a real step forward. Hurried management actions based on the varied population figures are not. Before proceeding with proposed management steps, the Interagency Grizzly Bear Study Team should make public its best official estimate of the current grizzly population, along with the age and sex composition. In addition, annual mortality and productivity figures should be provided for each year of the study. This basic information, and the methods used in acquiring and analyzing the data, should accompany the population estimates. This would provide for peer review of conflicting and controversial figures, and it would serve as a basis for making difficult management decisions, some of which will have wide repercussions. These decisions are bound to affect special interest groups and will

Continued on page 15



Frank C. Craighead Jr.
Box 156
Moose, Wyoming 83012

Alston Chase
Chase Ranch
Route 38, Box 2042
Livingston, Mont. 59047

April 27/83

Dear Alston,

Thanks for the copy of the Atlantic, Letter To The Editor, with Paul Schullery's comments on your article and your reply. As to Paul's remarks I cannot comprehend how a so-called professional historian could write as he does. His information is largely hem-say, not documented. He is glib or downright dishonest. Some day I'll have to meet the guy just out of curiosity.

I thought your reply excellent and accurate. I hope the continuing controversy will not take too much of your time and energy. It has been a great drain on my energy and resources, ^{OFTEN} blocking my efforts on more constructive work. I now try not to get too involved with people like Paul.

I would like to keep in touch with you. I'm away on Tapa most of the winter - Baja, Colo River. I'm gone from May 25 to June 25 (Baja).

regards

FC



ROOM 141 - UNIVERSITY HALL
BERKELEY, CALIFORNIA 94720
PHONE (415) 642-4811

BERKELEY DAVIS IRVINE LOS ANGELES RIVERSIDE SAN DIEGO SAN FRANCISCO SANTA BARBARA SANTA CRUZ

SCIENCE EDITOR TRANSCRIPT--BROADCAST #10845, S.E. #1546

(Monday, July 19, 1982)

A: ALL ABOUT GRIZZLIES

B: BEARS AND PEOPLE

C: ARE BEARS ENDANGERED?

D: FIRST AID IN THE WILD

Those are today's stories in the world
of science and technology.

Anncr: The University of California, in cooperation with the
CBS Radio Network, presents another visit with the Science Editor.
Your Science Editor is Charles Levy.

A: ALL ABOUT GRIZZLIES

S.E.: The Latin name for Grizzly Bear, *Ursus Horribilis*, requires no translation. Known for its great strength, the 600-pound adult stands up to 10 feet tall and has no natural predators. Female grizzlies are considered the most dangerous of all bears, because they'll defend their young when taken by surprise; and with their long, straight claws, which, by the way, prevent them from climbing trees, they can easily kill an unarmed backpacker. Yet, given this awesome power, and no mean measure of intelligence, under "natural" conditions it's the bear who fears man rather than the other way around. One man who's very familiar with grizzlies is UC Berkeley's professor Dale McCullough.

MC CULLOUGH: I've lived with grizzlies on the Tundra in Alaska, where there isn't a tree to climb for 600 or 1,000 miles. I've been close to bears, and I know they'll run from me. And so I'm not afraid of bears in that situation. But where you get bears that have been habituated, bears that are used to people, then I don't want to go there, because I go to have a good time and relax, and I don't want to have to be worrying about a bear that's trying to get food out of my backpack, you know. I might have to climb out of my sleeping bag in the middle of the night, and climb a tree. No such thing; it just isn't fun.

S.E.: No fun, and no assurance of safety, McCullough warns. Although grizzlies are unable to make it up the tree trunks they can hang onto large branches, and there've been cases where a terrified human has been pulled down by the feet.

Anncr: Yet you say grizzlies in the natural state of things actually fear humans. What's the story on that? What accounts for the change?

S.E.: Well, just take a look at the history of the grizzly in this country. Although the bears once ranged over most of the western plains and mountains, today they're found only in Wyoming, Montana and Idaho, with most of them in Yellowstone Park. Back in 1959, the Craigheads, twin brothers who were biologists, began a 12-year study of the bears in Yellowstone. Now in those days, as McCullough explains, the park service allowed bears to take food from human garbage dumps.

MC CULLOUGH: The success of the Craighead studies was largely dependent on having those bears concentrated in large numbers around the dumps. They were easy to study there because they could literally drive up in a car and poke a tranquilizer gun out the window, and capture these bears and mark them. Not only that, they could count the bears simply because a large proportion of them were showing up at the dumps on virtually a daily basis.

S.E.: Then, in 1968, two women, camping in different areas of Glacier National Park, were killed by two different grizzlies on the same night. And of course there was growing public alarm.

Anncr: So the bears had become habituated to humans because of all the food around, is that it? And they just weren't afraid anymore.

S.E.: Yes, and that's when they began to attack backpackers, eating their food, and sometimes, McCullough says, even the people.

Anncr: What, then, is the wisest advice when it comes to these "habituated" bears?

*no
not before
was closed*

S.E.: The park service now warns visitors to stow all food in secure containers. Backpackers are told to camp in designated areas, and food is to be suspended some way and placed a few hundred yards from sleeping areas.

Anncr: And is it a good idea, when on the trail, to have bells on your pack to warn of your approach?

S.E.: Not if the bears are "habituated," McCullough says. The bells only signal that the next meal is just around the bend. *false*

MC CULLOUGH: Well, there are some cases in Glacier Park where the bears became essentially mugger bears. They waited along the trail for the people to show up. And the people came along. They threatened the people. The people dropped their packs, climbed trees, and the bears rifled their packs. And they were making a living like that.

S.E.: UC Berkeley's Dale McCullough.

B: BEARS AND PEOPLE

S.E.: Until the late 1960s, Mike, the National Park Service permitted close contact between bears and people. And bears were able to raid open garbage dumps for food in both Yellowstone and Glacier parks. As the animals became "habituated" to humans they also grew dangerous. When two women hikers were killed by grizzlies in 1968, everyone suddenly realized that park policy no longer worked.

Anncr: So, were those open dumps closed down?

S.E.: That wasn't so much the question. It was how to close them down, for the bears, as UC Berkeley's Dale McCullough says, had become dependent on the dumps. One group of researchers, who'd spent years studying the Yellowstone grizzlies, urged the closing-down take place over a 10 year period and the bears supplied with elk in the interim. Another research team wanted the dumps shut down as soon as possible, and recommended the setting up of bear-proof trash containers throughout the parks. This is the approach ultimately selected by the Yellowstone Park Service.

Anncr: Now that meant the bears had to find other ways of filling their stomachs.

S.E.: Yes, and the 180-or so bears who had become "dump regulars," *false* so to speak, couldn't make the adjustment.

MC CULLOUGH: You had a whole bunch of bears there that were incorrigibles, in the sense that they spent a lifetime living out of garbage dumps, and they weren't just going to go out and dig roots and ground squirrels, and gather pine nuts, and stuff like that. You know, they were going to show up at campgrounds.

Why did. Dumps only furnished a small part of their food supply

S.E.: And that of course is exactly what they did. *& the Grizzlies predicted this*

Annecr: So how were the troublemakers handled?

S.E.: If a bear bothered campers it was transported outside the park into back country. If the bear returned to disturb campers again, it'd be hauled out once more. After a third such occurrence, however, the park service would either ship the bear to a zoo, or shoot it.

Annecr: Wouldn't that tend to reduce the bear population to a dangerously low level for survival?

S.E.: Quite a few people thought that way, Mike, and in fact there was such a public furor over the park service handling of the grizzlies the National Academy of Sciences was asked to look into the whole matter. That was in 1972, and McCullough was a member of the Academy panel. Well, using accumulated data he discovered that killing some of the grizzlies actually increased the overall reproductive rates. *— crap*

Annecr: And how would that be, exactly?

S.E.: With fewer bears around the females had more food for themselves and were able to give birth once or twice a year, rather than only every two or three years--as they do, McCullough says, when the population is denser. The Berkeley scientist sums it up this way. *false*

MC CULLOUGH: If you have to go and kill a bunch of bears, like they did at the closing of the dumps, it's not a disaster because they bounce back fast.

S.E.: McCullough's theory certainly appears to hold water, Mike; after an initial decline in bear population in the early '70s, right after the dumps were closed, there was a marked increase in numbers of cubs.

Annecr: All right, then, if the new park policy regarding grizzlies is no threat to their existence, what's the story when it comes to protecting park visitors? Is there a new approach on that score?

S.E.: Oh, yes, the Park Service undertook a campaign of education about the dangers of close contact with bears, McCullough says.

MC CULLOUGH: If you go to Glacier Park now, the signs entering the Park are no longer the Smokey-the-Bear-type pictures. They show this big, black bear with exposed teeth, you know, and a mean look.

S.E.: A look having no resemblance whatsoever to that of a "teddy bear," says Dale McCullough, who's professor of forestry and resource management on the Berkeley campus of the University of California.

C: ARE BEARS ENDANGERED?

S.E.: While grizzly bears are on the endangered species list, no one really knows how many of these impressive animals are still actually around. The University of California's Dale McCullough, who served on a National Academy of Sciences panel to study the nation's grizzlies, looks at the question this way, Mike.

MC CULLOUGH: I'm one of those people that worries about the grizzly bear because it's a relatively small population, and the potential is there for losing them. I don't think we are losing them, but I want to know. I don't want to guess about it, you see. So I want research to be done on the best way to monitor those things effectively and efficiently.

S.E.: Since you can identify individual bears by their color patterns, McCullough suggests a standardized way of counting them. Researchers would fly over parks such as Yellowstone and Glacier, where the bears are concentrated, following a given route for a given length of time, and at a certain time of year. In that way they might estimate the minimum number of grizzlies.

Anncr: Would that include back country bears as well?

S.E.: No, back country bears don't mix with their more "urban" park kin, McCullough says. The back country ones learn about food gathering from their mothers early in life and prefer to forage for their food.

Anncr: In other words, they like roots, nuts, berries, salmon and carrion better than twinkies and chocolate bars.

S.E.: Exactly, and it's those acquired tastes of park bears that certainly create problems for campers.

Anncr: Well, is there a way to teach park grizzlies not to have a taste for human foodstuff?

S.E.: The only way is to instill fear into them, McCullough says. His suggestion is a harmless round of buckshot to a sensitive part of the anatomy.

Anncr: Exploding firecrackers won't work.

S.E.: No, unless the bear associates the noise with pain.

MC CULLOUGH: If you shoot them once with a shotgun, so they associate the bang with the pain in the butt, firecrackers will work. In other words, it will reinforce something you have already done. But if you have a naive bear that's habituated, they are used to hearing a lot of people noises, and you suddenly interpose a firecracker, what's that going to mean to the bear?

S.E.: Just another loud noise. But once fear is instilled, McCullough says, the mother bear will train her young to stay away from humans.

Anncr: I can imagine there are plenty of objections to this approach, however,

S.E.: Well, McCullough says the objectors are likely to be the same people who don't think twice about reaching for a package of meat in the local supermarket.

MC CULLOUGH: In my viewpoint, it's less of a transgression of the laws of nature to go out and prey on an animal that has evolved in the presence of predation for three million years than to go out into a pasture to take poor old trusting "Bessie" and load her in a truck and send her off to the slaughter house.

S.E.: Ideally, of course, bears and people would each recognize their own territories. For example, in Alaska State Park there's a salmon stream where grizzlies congregate to gather fish. Nearby is an area where photographers come to observe and take pictures. Any bear that wanders into the observation area gets a load of buckshot, McCullough says. But any photographer who crosses the line has his or her equipment confiscated and may in addition be fined.

MC CULLOUGH: So they have bears and humans right close together. And in one sense they're habituated. But what they've learned is that dividing line, you see, on both sides. The bears are habituated in the sense that it's OK for people to be up there, and it's OK for me to be down here, but if I go up there people are dangerous.

S.E.: Professor Dale McCullough of UC Berkeley.

D: FIRST AID IN THE WILD

S.E.: Well, it's midsummer, Mike. There's not a cloud in the sky. You stop the family car on a shady mountain road and set out for a little hike. Do you see any problem with that scenario?

Anncr: Not if it's all as you say. You might have a sweater along and maybe a snack.

S.E.: It's not all that I say, of course. You hike in a mile or two, and suddenly the weather turns stormy, with the temperature dropping 30 degrees or so. You can't even see your way out.

Anncr: Now all you need to do is fall and injure your ankle, and you've really had it.

S.E.: That's why it might be a good idea to read The Common Sense Medical Guide and Outdoor Reference before you set out on a mountain jaunt. It's written by Newell Breyfogg, who's with the Department of Physical Education at UC Santa Barbara. The book spells out what you need to know about basic first aid and outdoor survival.

Anncr: What do you need to have in a first aid kit?

S.E.: Include a signal mirror, Breyfogg says. It'll be useful when the sun comes out again.

BREYFOGGLE: As far as first aid kits are concerned, I always take a flashlight with an extra bulb. I always take some sterile pads. I take--to me this is the most important wrap of any--a four-inch elastic bandage. People say take white granulated salt. I don't believe in salt tablets. Salt tablets stick to the stomach, or pass through. You do need a little salt, so if I took salt tablets I would grind them up.

S.E.: Breyfoggie says you might also include a snakebite kit.

Anncr: What about a whistle?

S.E.: Yes, a plastic one that won't freeze to your lips, in case you're out in the winter. Take moleskin for foot problems. And a fish line in case you're really stranded. But Breyfoggie says never to use more energy trying to find food than you'll get from the food itself.

Anncr: You'll need water of course. And then I've heard it's a good idea to take along iodine tablets for water purification.

S.E.: Yes, in the last few years there've been reports of a disease called giardiasis, from a water-transmitted parasite. Breyfoggie recommends iodine or iodine-based tablets, but warns this isn't enough.

BREYFOGGLE: Now the only real safe way, positive 100 percent way, of taking care of the bacteria is by boiling; and you boil for 10 minutes at sea level, plus two minutes per thousand feet.

S.E.: There's another obvious way to get good drinking water, and that's to find it's source. Breyfoggie says about the only time you can be sure that water coming from a rock isn't being routed from another side of the mountain is to know the water is coming directly from a glacial runoff or from a pure, underground spring.

So before you set out on what seems to be a nice, sunny summer's day, it's a fine idea to prepare yourself for the out-of-doors by learning some first aid and a few survival techniques. The name of that book, again, is The Common Sense Medical Guide and Outdoor Reference. The author is Newell Breyfoggie, of UC Santa Barbara, and the publisher is McGraw-Hill. And that's it for this edition.

This program was produced by Charles Levy and Sylvia Paull.

In Yellowstone Park

Jackson Hole News - Aug. 2/82

Debate resumes over grizzly's decline

By Becky Woods
Staff writer

The grizzly bears in the greater Yellowstone ecosystem are in trouble: Their population is slowly but steadily declining and the number of female bears is at a dangerously low level, according to estimates from a federal grizzly bear study team.

The National Park Service, recognizing the situation, claims the decline is caused by illegal hunting and habitat destruction. Jackson Hole biologist and bear researcher Frank Craighead thinks otherwise.

"The main reason for a low bear population is mismanagement by the Park Service," he said.

The interagency grizzly bear study team of state and federal wildlife agencies estimates that there may be only 30 females and 157 male grizzlies in the area that encompasses Yellowstone and

Grand Teton National Park, and five surrounding national forests.

The findings prompted Roland Wauer, director of Natural Resources Management for the NPS, to write an internal memo to the joint federal-state committee studying grizzly bears, warning them that grizzly bears in Yellowstone are in danger of becoming extinct.

"It is imperative that highest priority be given to eliminating grizzly bear mortality. Only immediate and broad-scale protection can save the grizzly," Wauer said.

The Wilderness Society obtained a copy of the Wauer memo, which it then released. The Park Service confirms the findings. The report, said Yellowstone Park spokesman Joan Anzelmo, "is not something new."

She said the grizzly bear is being extensively studied now, and that more research needs to be done. The park,

she added, has already restricted backcountry areas frequented by grizzly bears to minimize conflicts with the animal, and may close off whole areas in the future.

Craighead says the problem is not new, but the Park Service acknowledgement of the problem is. "I'm glad to see they (the Park Service) recognize publicly that the grizzly bear population is in bad shape and is threatened," he said.

Craighead believes the agency created the roots of the problem in the 1960s and 1970s. "The grizzlies were mismanaged from the top all the way down," he said.

In cooperation with the NPS, Craighead initiated a long-range study of grizzlies in 1959. His recommendations on bear management in the park were not followed and not published, a situation which eventually led Craighead

See page A 10

Bears

From page A 1

to publish his own findings in his book, "Track of the Grizzly."

One of Craighead's recommendations was to close the dumps slowly, so the dependant bears had time to adjust to the change. Instead, the Park Service closed the dumps rapidly.

The bears did just what Craighead predicted they would do — they moved to the adjacent campgrounds for food, and people-bear conflicts rose dramatically.

To deal with the problem, the Park either mismanaged or killed the "problem bears," Craighead charged. "There were 53 known bear mortalities in 1970, and 48 known bear mortalities in 1971." In all, the Park Service "decimated about 44 percent of the population," he said.

The wholesale destruction was done with little understanding of the grizzly bear's low reproductive rates. A female is not ready to mate until she is four to five years old, Craighead said, and then usually produces only one cub a year. "They set the stage for this to happen in the late 1960s and 1970s."

The biologist is concerned with the recent bear counts, pointing out the large disparity between the number of female and male grizzlies.

Because of the grizzlies' reproduction rate, he said there may only be a third, or 10 bears, who will bear cubs this year. "It may be too late to save them. Everything possible should be done to encourage their survival," he said.

Anzelmo denies that Park Service policies have affected the grizzly. She did say the park has engaged in "management actions," and occasionally must destroy a bear. But, she said, few bears have been destroyed in recent years, and none this year.

Craighead believes it's too little, too late. "Now they (the Park Service) are in a difficult position. Now they can't kill an aggressive bear because there are so few."

Vandals deck furniture

Vandals threw all the deck furniture at Sundance Tennis and Swim Club at Teton Village on to the pool cover the evening of August 24.

The action poked several holes in the \$3,000 cover, causing an estimated \$200 worth of damage.

EXECUTIVE SUMMARY

Status of the Grizzly Bear Population in the Yellowstone Grizzly Bear Ecosystem

Prepared by Stephen P. Mealey

LMP Specialist, WO; 9/10/82

Knight et al. (1982) characterized the Yellowstone Grizzly Bear Population at the close of 1981 as follows:

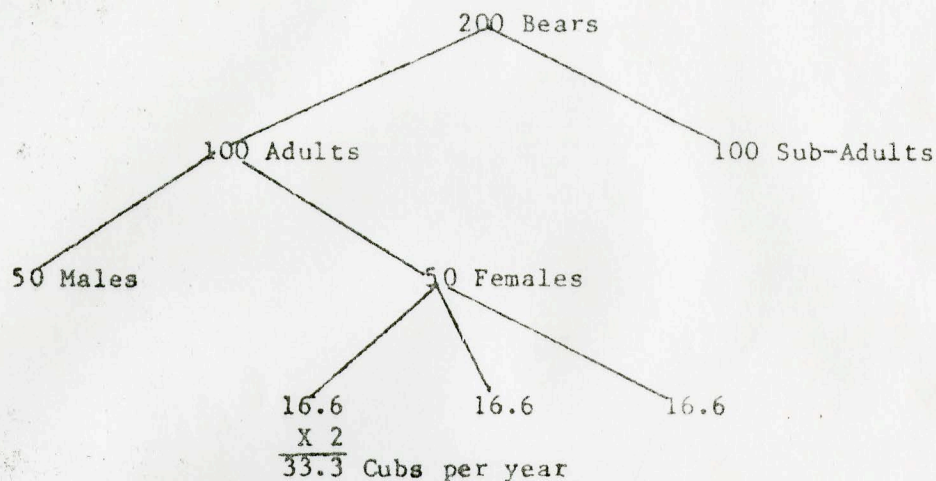
- 1) population size - 237
- 2) adult females - 29
- 3) adult males - 40
- 4) subadults - 168
- 5) known ann. mortality - 17 (53% caused by hunter/outfitters)
- 6) cubs produced, 1981 - 22

The current population point estimate displayed in Figure 1 generalizes this population's structure. Adult, female grizzly bears produce cubs approximately once every three years. The adult females can be seen as three distinct breeding teams, each producing every third year. With an average litter size of 1.9 cubs per litter, 19 cubs per year would be produced.

The major concern of the researchers is the status of the adult female segment. The trend in the number of females each year with cubs is down while the total mortality level appears to be relatively constant

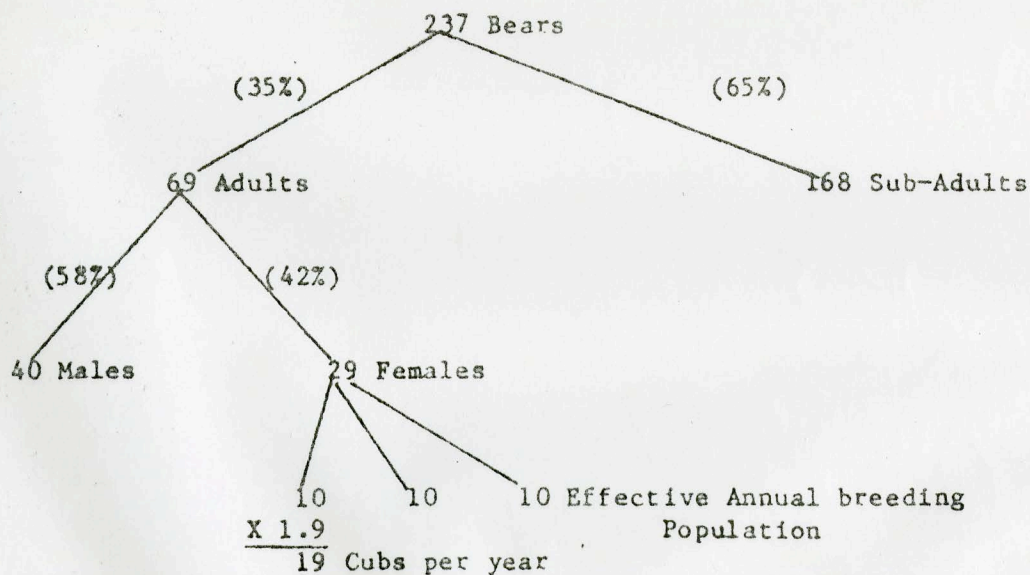
POPULATION POTENTIAL

Theoretical



Mortality must average $\leq 16.6\%$ and be minimal in adult females.

Current Point Estimate



Mortality must be $\leq 8\%$ and be minimal in adult females.

Figure 1. Structures for theoretical and estimated current populations of grizzly bears in the Yellowstone Grizzly Bear Ecosystem.

or increasing, particularly among the female segment. The point estimate (Figure 1) implies that annual mortality should be less than 8% and be minimal in adult females. This level assumes survival of all cubs, which is unlikely. Known mortality for 1981 was approximately 7%; actual mortality was probably much higher. The important point is this: if mortality exceeds production, the population will decline. In the Yellowstone Ecosystem, grizzly bear production is, for many reasons declining while mortality, particularly among the producers is constant or increasing. This has led the researchers to conclude about survivorship and mortality: "If adult females alone were considered, the mortality curve would probably drop below the point needed to maintain the population"; and "Since 1981 was a high mortality year, mortalities in the female segment probably exceeded that which the population can withstand" (op. cit.).

The Grizzly Bear Recovery Plan indicates that the control of direct man caused grizzly mortality is the primary management opportunity to achieve population recovery. The plan indicates that all man-caused mortality should not exceed 11 bears per year. To date in 1982, 13 bears are known to have been either killed or removed from the Yellowstone Ecosystem; 42% of the 1982 activity period remains including the fall big game hunting season when man caused bear mortality is usually high. Probability for a continued decline in the female segment of the population is high as long as man caused mortality remains high. With this probability, long term prospects for population recovery are poor.

Over the years and again this year a significant portion of direct man caused grizzly mortality has occurred on National Forest land. Much of that has been associated with activities sanctioned by special use permits, leases and contracts (i.e., outfitter camps, bear baiting, livestock grazing, summer homes, resorts, logging and mining).

Forest Service Management Opportunities

The Forest Service has made major management efforts in grizzly bear conservation; among them are:

- 1) preparation of "Guidelines for Management Involving Grizzly Bears in the Greater Yellowstone Area";
- 2) assistance in the preparation of the Grizzly Bear Recovery Plan;
- 3) support of the Interagency Grizzly Bear Study Team;
- 4) participation on the Interagency Grizzly Bear Study Steering Committee;
- 5) preparation of a final AMS for grizzly bears to be included in the Custer, Gallatin, Shoshone, Bridger-Teton and Targhee National Forest Management Plans. The AMS assumes, among other things, that the preferred alternative in each of the five

forest plans will, as a minimum, reflect a recovered population.

Preliminary and informal review by LMP of 3 of the 5 forest plans covering national forests in the Yellowstone Grizzly Ecosystem shows no specific accountability to the recommended man-caused mortality goal in the Recovery Plan of less than 12 bear deaths per year.

Specific accountability for "controllable" man-caused mortality (i.e., that resulting from activities sanctioned under Forest Service special use permits, leases or contracts) could be established as follows:

- 1) apportion as man caused mortality targets, the Recovery Plan mortality goal over the administrative units in the Yellowstone Grizzly Bear Ecosystem;

Yellowstone & Grand Teton Natnl Pks. - less than 4 mortalities

Shoshone NF	-	"	"	3
Bridger-Teton NF	-	"	"	3
Gallatin NF	-	"	"	2
Custer NF	-	"	"	2
Targhee NF	-	"	"	3

- 2) each national forest plan prepare forest-wide standards and guidelines reflecting implementation measures from the "Guidelines for Management Involving Grizzly Bears in the Greater Yellowstone Area" that would provide for man-caused grizzly mortality within target limits;

3) convene, for each mortality, a board of inquiry to determine how management could be refined to prevent future losses.

Establishment of specific accountability for man-caused mortality, compatible with the Recovery Plan, will provide quantitative criteria for determining the contribution of each forest plan to grizzly bear recovery in the Yellowstone Grizzly Bear Ecosystem.

Literature Cited

Knight, R., B. Blanchard, K. Kendall. 1982. Yellowstone grizzly bear investigations. Report of the Interagency Study Team, 1982.
USDI-NPS. 70 pp.

Rocky Mountain Grizzlies Called a Vanishing Species

By TOM HARVEY

MISSOULA, Mont. (UPI) — Exploration crews probing the Rocky Mountains for oil and gas are dislodging the mighty grizzly from one of its few remaining natural habitats in the lower 48 states, some experts say.

The numbers of the great beast with its silver-tipped coat and massive humped back — symbol of the untamed western frontier — are consequently dwindling, from shrinking habitats and from poachers killing them for pelts.

* * *

Excluding Alaska, major grizzly bear populations in the United States are clustered around Yellowstone and Glacier National Parks. Estimates of the grizzly population throughout the Rockies range from 700 to 950, with most of the bears in the two parks.

"In both these (park) areas the populations are in trouble and are in need of firm policy guidelines acceptable to the numerous resource agencies responsible for protecting them," says John Craighead, director of the Wildlife-Wildlands Institute near Missoula.

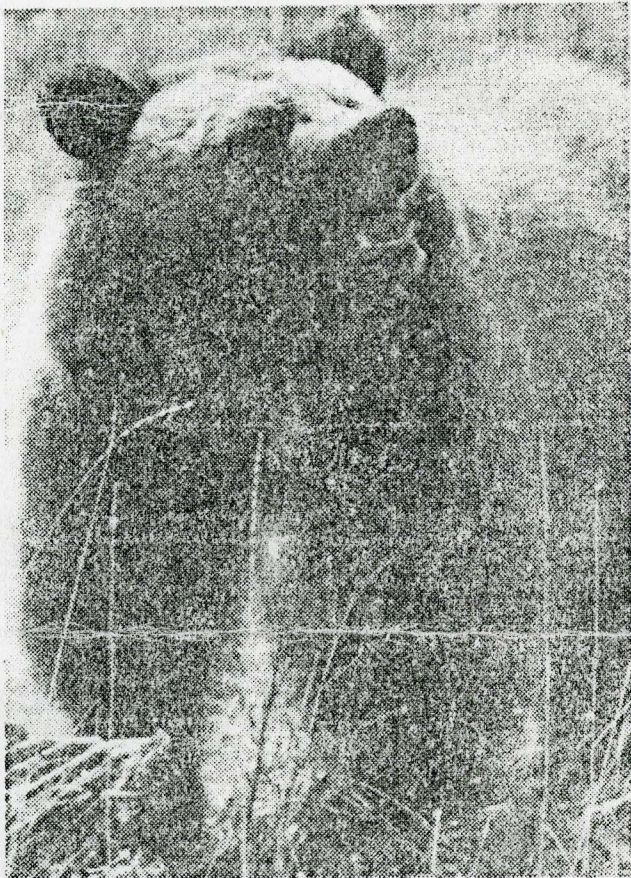
Dr. Charles Jonkel, a University of Montana professor and director of the Border Grizzly Project, said the accelerated search for oil and gas in the Rocky Mountains is intruding into the large, wild areas crucial to the survival of the grizzly.

"They're a very expensive animal to keep around," Jonkel said. "They automatically get in the way of people who want to rip things off."

Last year, 17 bears were lost in Yellowstone to poaching, natural death, or removal by park rangers for unruly or dangerous behavior.

The poachers are of particular concern. The Audubon Society has offered a \$10,000 reward for information leading to the arrest and conviction of hunters bagging grizzlies in game preserves.

Craighead wants the grizzly de-



BEAR IN TROUBLE — The mighty grizzly bear is in danger, experts report, from exploration crews probing for gas and oil in its natural habitat in the lower 48 — the Rocky Mountains — and from poachers, who shoot them for their pelts. This three-year-old male grizzly was photographed last spring in Montana. —(UPI Telephoto)

signed an endangered species.

"Frankly, the intelligent thing to do now is to let the grizzly alone, protect its habitat, and cut down mortality," he said.

But Bob Gilbert of the Montana Woolgrowers Association said conservation groups from the eastern United States, such as the Audubon, do not understand the livestock raisers' problems.

Trying to fight the Audubon, however, is like "being against

motherhood," he said.

Montana rancher Dick Christy saw bears kill up to 84 of his sheep last summer in a leased grazing area near Glacier Park. He says the public is being "duped" by the government and researchers into believing that grizzlies must be protected at all costs.

Christy said that this summer, bears constantly were in his camp.



IN REPLY REFER TO:

PA

United States Department of the Interior

FISH AND WILDLIFE SERVICE

MAILING ADDRESS:

Post Office Box 25486
Denver Federal Center
Denver, Colorado 80225

STREET LOCATION:

134 Union Blvd.
Lakewood, Colorado 80228

SEP 2 1982

Mr. Frank C. Craighead, Jr.
Environmental Research Institute
Box 156
Moose, WY 83012

Dear Mr. Craighead:

I am aware of your continuing interest in various aspects of the work and responsibilities of the Fish and Wildlife Service.

As you probably know, the Service is in the process of some reorganization. The management responsibilities previously assigned to the Area Offices at Billings, Bismarck, Pierre and Salt Lake City in Region 6 have been assumed by the Regional Office at Denver. The Area Offices in Region 6 closed formally on August 1.

Your interest in Service activities, and your views about wildlife resource issues, have been helpful in broadening the perspective of those serving in decision-making roles.

I hope that you will feel free to contact me or appropriate members of my staff in Denver about matters previously addressed by the Area Office, or on any matters of mutual concern.

Your past concern and help regarding Service activities are appreciated, and we look forward to the relationship continuing.

Sincerely,

GALEN L. BUTERBAUGH

Regional Director

Rolland Wauer

MEMORANDUM - August 17, 1982

To: Members of the Interagency Grizzly Bear Steering Committee
From: Chairman, Interagency Grizzly Bear Steering Committee *Rolland Wauer*
Subject: Status of Grizzly Bears within the Greater Yellowstone Ecosystem

Issue: Evidence persists that the population of grizzly bears within the greater Yellowstone ecosystem has seriously declined in recent years. Unless some change occurs to reduce the grizzly's mortality rate soon, the probability of retaining this wildland species in Yellowstone National Park is minimal.

Background: The abundance and distribution of grizzly bears within the coterminous 48 states has declined in the past 280 years from 50,000 occupying the entire area west of the Mississippi River to fewer than 1,000 bears occurring in only six isolated places. By the 1960s, only two of those places had retained viable populations, the Yellowstone ecosystem and the northern continental divide ecosystem.

The management of grizzly bears within the Yellowstone ecosystem has evoked a great deal of controversy during the past 25 years:

1. In 1969, based upon several years of research by the Craigheads and NPS scientists and a review of their data by the NPS Science Advisory Board, the Service established a policy of closing garbage dumps in Yellowstone National Park and encouraging a population of "free-ranging" grizzlies.
2. In 1973, a six agency (NPS, FWS, FS, and states of Idaho, Montana and Wyoming) Interagency Grizzly Bear Study Team (IGBST) was initiated to determine (a) grizzly bear status and trends, (b) habitat use, and (c) relationship of land management activities to the behavior and welfare of the bear population. An Interagency Steering Committee, chaired by the NPS and consisting of representatives from each of the six agencies, was chartered to guide the IGBST.
3. In 1974, a committee of the National Academy of Science completed a review of the status of the Yellowstone grizzly bear population and concluded that the information available was too incomplete to pass judgement on the status of the grizzly bear population or the effectiveness of the NPS management program.
4. In 1975, the grizzly bear population south of the Canadian border was listed as "threatened" by the U.S. Fish and Wildlife Service.
5. In 1979, five National Forests and two National Parks completed joint guidelines for managing grizzly bears within the greater Yellowstone ecosystem; this document is updated annually.
6. In 1980, the Steering Committee chartered a comprehensive Technical Peer Review Panel to examine IGBST research results to date. The resultant report (February 1981) stated that the habitat work had progressed well and received considerable praise, that the management needs appeared to be reasonably well understood, but the status and trend information required considerably more attention. It recommended continuation of the field study until 1988, with an intensified two-year trapping and marking (radiotelemetry) effort in the field seasons of 1983 and 1984 designed to gather sufficient population data that would complete the database required for grizzly bear status and trend analysis.

7. At the March 1981 Steering Committee Meeting, the Technical Review recommendations were reviewed and resulted in the following determinations: (a) continue the study through 1988, (b) support a special initiative in FY 1983 and FY 1984 to radio-collar as many grizzly cubs and young as possible so that a statistically reliable number of cubs could then be tracked for three or four years to obtain missing information on bear mortality rates by age classes, and (c) increase the size of the Steering Committee by adding the Recovery Plan Coordinator and management representatives from WPS, FWS and FS.

8. In April 1982, the Grizzly Bear Recovery Plan was approved; this document states that an all out concerted effort must be taken if the status of the Yellowstone grizzly bear is to improve.

9. In summer 1982, the 1981 analysis of the 1981 study results was completed and revealed that the most recent population estimate had dropped to 195 individuals, including as few as 30 adult females. L.L. Eberhardt (personal communication, July 25, 1982) reviewed this latest report and stated, "The presently available evidence indicates that the Yellowstone grizzly population most likely cannot sustain its present level unless adult female survival rates improve."

Discussion: The survival of grizzly bears within the greater Yellowstone ecosystem is dependent upon reversing the current population decline. This can only be accomplished by eliminating or severely restricting two principle causes of mortality of Yellowstone's grizzly bears: (A) illegal killing by outfitters, sheepmen, ranchers, and others, and (B) habitat destruction or modification relating to resource needs for resources and land development.

(A) In a statement to the Interior Sub-committee on Bear Management at Glacier National Park (August 1981), Joe Cutler (resident of West Yellowstone) said:

"Right this minute, within two hundred miles of Yellowstone, there are at least 500 illegal grizzly claws being offered for sale to those folks whose regard is lessening their person with these gee-gaws. --They were obtained by poachers working around the Park's borders, and in one case, actually harvesting a live bear from inside the Park. --In the past 30 days alone, I personally have reported to the U. S. Fish and Wildlife Service Enforcement Division, either in face to face meetings, by telephone, or through contacts, 12 flagrant violations. --For example: 3 bear carcasses, one of which was a large grizzly, hanging in a frozen meat locker at a restaurant less than 20 miles from Yellowstone's west gate. a trayfull of approximately 30 grizzly claws on sale in the showcase of an Ennis, Montana, sporting goods store. an Indian jewelry dealer in Bozeman, Montana, who purchased two sets of grizzly claws from an Idaho/Targhee National Forest sheepman. a man in the vicinity of Quake Lake who is offering not only an impressive selection of grizzly claws but two dozen eagle talons and an assortment of eagle talons. an individual in Cooke City, Montana, who was offering three grizzly claws and telling prospective customers that he could get anything they wanted in grizzly parts."

A 1981 investigation of these and other reports by "undercover" FWS officers, uncovered the sales and grizzly parts and related activities to move underground. More recent (summer 1982) factors affecting the grizzly bear population within the Yellowstone ecosystem include:

1. Two male grizzlies were deliberately killed by a hunter at a black bear bait station in Wyoming. The shooter was caught, went to trial, fined \$1400, and released.
2. Two grizzlies (1 male and 1 female) were shot by black bear hunters in Wyoming.
3. Montana State trapped three grizzlies near Cooke City; two females were released unharmed in British Columbia and one male was killed (all were removed from the Yellowstone population).
4. A young radio-collared sow was recently found dead near where it had gone to den for the winter.
5. A young radio-collared male apparently starved in his den during the winter.

These data suggest that the estimated 1981 population of 196 grizzlies is already down to 187 (this does not take into account any unknown mortality).

(B) Habitat destruction and modification has occurred throughout the greater Yellowstone ecosystem in recent years, and additional significant threats to the habitat continue to pose potential negative impacts. Grizzly bear habitat has deteriorated both within and outside of the park. Human use of the land is gradually reducing the totality of available wildland space. Any human use of the land that had previously provided feeding, resting, denning, and travel space during some parts of the grizzly's existence is likely to add to the accumulative impacts upon this species in one way or another. Grizzly bear habitat is being nickle-and-dimed out of existence.

Yellowstone's buffer zones have been most seriously eroded. New and increasing developments surround the national park. And recent energy exploration has added to this picture. Potential geothermal developments at Island Park and oil and gas leasing in the Gallatin National Forest and Washakie Wilderness may all contribute to the declining status of the Yellowstone grizzly bear.

During the period of 1970 to 1973, modeling done by the Craigheads and analysis completed by the National Academy of Science Committee provided population estimates that ranged between 254 and 306 grizzly bears for the greater Yellowstone ecosystem. The IGBST is "reasonably certain" that today's population is less than 200 individual grizzlies.

Unless some positive management actions are taken soon to limit grizzly bear mortality, the population may reach a point from which it cannot recover.

Solution: We no longer have the luxury of time to research the remaining parts of the puzzle. The Yellowstone grizzly bear picture is presently sufficiently clear enough! Any additional delays in mitigation, actions that the bear management community has known it must take for several years, will likely result in the loss of grizzly bears from the greater Yellowstone ecosystem. It is imperative that highest priority be given to eliminating grizzly bear mortality. Only immediate and broadscale protection can save the grizzly. Increased protection efforts must be a united one by all of the pertinent land managers. Without it we will only be documenting the demise of the grizzly bear within the Yellowstone ecosystem.

To reach this end, I recommend the following dual program:

A. The greatest impact on the Yellowstone grizzly bear population is illegal killing by outfitters, sheepmen, poachers, and others. This impact may be greatly reduced or stopped altogether by:

1) Introduction of new legislation that would enforce stronger civil penalty for killing grizzlies and other threatened/endangered species, and requirement that all these cases must be heard in a federal court. Recent legislation increasing penalties for poaching moose and sheep in Idaho have greatly reduced moose kills.

2) Increasing U.S. Fish and Wildlife Service investigative capability to address illegal activities within the greater Yellowstone area to an extent that illegal killings will be greatly reduced.

3) Increasing NPS and FS protection activities in the Yellowstone ecosystem backcountry; this would entail increasing personnel and support funds to permit these agencies to properly carry out resource protection programs.

4) Developing a habitat enhancement plan for the Yellowstone grizzly population that would entail special assistance to the grizzlies during periods of the year when they are most stressed and/or vulnerable to human impacts; consider limiting of human access to grizzly habitats and supplementing food during critical periods.

B. It is important that management-oriented research continue. Rather than to go ahead with the special initiative trapping and telemetry program earlier recommended for FY 1983 and FY 1984, the study should proceed with the following revised objectives:

1) Develop a monitoring system which can be used and applied by management agencies on an annual basis to develop data to access the trend of the grizzly bear population in the greater Yellowstone ecosystem, and to determine confidence intervals that can be applied to this monitoring system.

2) Investigate methods to facilitate the habitat enhancement program and to monitor the effects of this program.

3) Develop a method to quantify the effects of human activities on grizzly bear behavior and habitat use that will lead to reduced confrontations between humans and bears.

Funds to support objectives 1 and 2 are already available through the ongoing IGBST program. This change would increase flight time by fixed-wing aircraft to monitor grizzly bears relative to habitat enhancement and to determine the success rates of transplanted grizzlies. IGBST would assist the Park Service and states in trapping, marking and transplanting activities.

Objective 3 will require an additional (approximately) \$55,000 annually for two years. Glacier National Park would be the most logical location for this study.

Summary: This departure from the earlier recommendations of the Steering Committee is recommended because of the critical nature of Yellowstone grizzly bears. This revised emphasis must begin immediately.



DEPARTMENT OF PATHOLOGY

Penrose Pathology Group, P.C.

M. Berthrong, M.D.

G. H. Moore, M.D.

D. L. Dawson, M.D.

R. M. Sherwin, M.D.

N. Weidner, M.D.

C. G. Sciotto, M.D.

PENROSE HOSPITAL
2215 N. CASCADE AVENUE
COLORADO SPRINGS, CO 80907
POST OFFICE BOX 7021 80907
A/C 303-630-5816

PENROSE COMMUNITY HOSPITAL
3205 N. ACADEMY BOULEVARD
COLORADO SPRINGS, CO 80917
POST OFFICE BOX 7148 80907
A/C 303-591-2511

5/28/82

Dear Frank & John —

This was in — an editorial —
the Wall Street Journal 5/25/82.
Thought you'd be interested.

I'm sorry yet relieved that
your Father died. While
nursing home life in confusion
is no life for someone like
him, when he is finally
gone, it is difficult too
and of course will be hard
on your Mother.

Hope I'll see you this

Deftner

Morgan

Assurance

DEPARTMENT OF PATHOLOGY

The Silent Scandal

Suppose the U.S. Army were buying a lot of land and asked Congress for \$100 million when it knew the real cost would be closer to \$500 million. Suppose it used arbitrary power to clear ranchers, retirees and summer homeowners off the land. Suppose it gave some people three months to vacate, and sent armed officers along with the appraisers.

Suppose furthermore, it couldn't get all the land it wanted at fair market value because of its grossly underestimated budget and so arranged with sympathetic local officials to slap zoning changes, building restrictions and the like on targeted parcels to force landowners to sell at its price.

And suppose that the boundary lines on these Army ranges kept changing to include some people, at their loss, and exclude others, at their considerable gain. That an internal investigation, after noting that a series of preliminary boundary maps were missing from the files, offered the official conclusion that it could find no documentary evidence of wrongdoing. And, to top it off, that all the land-buying served no overriding national purpose. We think there might be some public outcry on the situation.

Well, one major federal bureaucracy has been charged with just this pattern of behavior. It's not the Army, but that motherhood and apple pie outfit, the National Park Service.

Evidence has been mounting for years that something is very wrong in the way the Park Service has been taking private property to add to the vast federal land hoard (about one-third of the U.S. land area). The U.S. General Accounting Office has issued eight thick audits severely criticizing Parks and the Interior Department. Interior's own Inspector General recently completed a major investigation; Parks personnel, citing the summary, claim they were exonerated, but that hardly holds up when you look at the main body of the report.

In the Santa Monica Mountains east of Malibu and in the Cuyahoga Valley between Akron and Cleveland, Ohio, the Park Service has been assembling "national recreation areas" by means particularly vulnerable to attack. Landowners in the Santa Monica Mountains say they have been told by park officials on the scene that their property won't be taken, yet they have discovered it on acquisition lists filed in Washington. The local park supervisor has encouraged conservationist-dominated local boards to impose land-use restrictions on them, further fueling their anxiety.

The threat has become reality in the Cuyahoga Valley, a moderately scenic, semi-suburban area. Park officials promised to take only 30 homes but actually have condemned 300, converting the area into a strange, seedy landscape of boarded-up, decaying homes, weed-grown farms and tumble down roadside stands.

A few homes were spared. One expensive dwelling was occupied by a park official. The area encompasses the home of Congressman John F. Seiberling, chairman of the Parks subcommittee of the House Interior and Insular Affairs Committee, and one of the proponents of park expansion. It was not condemned. Department files reveal that the Congressman also succeeded in saving the homes of some of his neighbors.

These exemptions were made possible by "scenic easements," which allow owners to keep their land if they agree not to make changes that would affect the "scenic" quality. Congress indeed has encouraged Parks to purchase scenic easements rather than land. The unwillingness of park administrators to accept this guidance has been mainly responsible for purchase cost overruns. Congress authorized \$155 million for the Santa Monica project; the Park Service now estimates costs could go to \$700 million. The Cuyahoga acquisition went from \$35 million to \$70 million and the latest estimate, nearly three years old, calls for \$100 million more.

The pattern is consistent nationwide. However the department's land grabbers feel about birds and trees, they seem to have little regard for people.

The personal anguish occasioned by Park Service takings played a large role in Interior Secretary Watt's decision to place a moratorium on land acquisition last year. Loud environmentalist outcries forced him to rescind his action. Just a few days ago, he issued a new directive to field staff to de-emphasize acquisition in favor of less costly means, like scenic easements, of achieving objectives. It remains to be seen how that will play with his bureaucracy and its environmentalist constituents. It also remains to be seen how much relief already targeted homeowners will get.

The scandals of the 19th Century involved large private interests exploiting public land. Today, the reverse is true. Powerful public agencies exploit little property owners. Many in Washington will argue that the ends justify the means, but to us it looks no prettier.

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Audubon - Nov. 19, 1982



DMB

Breath-holding in Grizzly Country

*In the twilight of the great bear's years,
the killing and habitat ruin must be stopped.*

—PROLOGUE—

This is the story of one year in the life of an adult female grizzly bear in the vast ecosystem that encompasses Yellowstone National Park. She is not a single observed animal, but rather a composite of many, based on findings that have emerged from the past decade of research throughout North America, a period characterized by myriad discoveries about grizzly behavior, habitat use, and population dynamics, as well as by radically increasing danger to the species' survival in the Lower 48.

In attempting a faithful and comprehensive portrait of the Yellowstone grizzly, I have employed a subjectivity that may have risked anthropomorphism—a practice which is abhorrent when insufficiently grounded in reality. But in this case, given data as rich and extensive as those now available on the grizzly bear, I feel it is fully justified.

Except in those instances where her behavior is specified as anomalous, this bear is entirely typical (if, that is, any member of so idiosyncratic a family can be called typical). When, for example, just after emerging from her long winter in the den, she yawns much and eats little, it may be assumed that this is the way of the grizzly. Likewise, her and her cubs' behavior

when she has been trapped is precisely the documented behavior of a real bear family—that of Number Sixty-eight in the Interagency Grizzly Bear Study. When I speak of her “deciding” to do something, I do so advisedly, for grizzlies' conceptual abilities, as observed by rigorously nonanthropomorphic biologists, easily accommodate such a sophistication of thinking.

In my emphasis on behavior and research I have perhaps given short shrift to management. It is said that the best grizzly management is none at all—all the bears want is to be left alone, with lots and lots of country all their own. This, of course, is no longer possible. Grizzly management in the Yellowstone ecosystem, with the bears in such peril as they are, should be intensive. Yet, necessarily, it is also provisional, subject to the ongoing expansion of human understanding and also, alas, to political pressures that change like the wilderness wind. For the moment, therefore, grizzly management consists mainly in protection, a kind of breath-holding against the day when we can be confident of what positive measures may be useful. Meanwhile, the best we can do seems to be to keep people from killing grizzly bears and from ruining their habitat. This is not very dramatic, but the results may yet be.

ON THIS STEEP and faraway mountainside among gnarled subalpine firs and a few black rocks, the blankness of the snow is as absolute as the fierce April sun above it. Then, from beneath, there appears in the whiteness a darkness, a hole. And then there appears in the hole a wet black nose.

And, with a sudden snow-explosion, where there was nothing there is now a whole lot of something. A grizzly bear. Four hundred and fifty pounds' worth. Sniffing: it is still winter here at eight thousand feet, but the bear can smell spring just down the mountain.

She ambles down, and right away smells meat. The snow is deep this spring, and the elk and deer and moose that have wintered in this sheltered valley are down to the woodiest browse, and there is not enough of even that to go around. They are dying everywhere. The grizzly paws a carcass out of a drift, takes a few lazy bites, and yawns. Although she has eaten nothing for six months, she is still not hungry. What she is, she decides, is still sleepy, and so returns to the den beneath the snowbank.

After a week of languid napping and snacking, she is finally fully awake, and ravenous. She sits with her hind

legs splayed out on the snow, blinking and scratching in this lush beatitude of sun, and voices a soft *whuff!*

Then out into the blinding white world tumble two more grizzly bears—considerably smaller than the first—perhaps five pounds apiece, which is still five times bigger than they were when squeezed forth from womb-darkness into den-darkness two months ago and left to themselves to suckle and grow while their mother went back to sleep for the rest of the winter.

They are born knowing three basic rules: follow mother, obey mother, and have as good a time as possible. With appropriate stops, therefore, for wrestling, sniffing, somersaulting, and nursing, the three make their way downslope to the carcass the female buried last week.

She is still gorging when she smells meat on the hoof nearby. It is an elk, limping: in December it had fallen from an icy precipice, and although its broken leg has healed this elk looks distinctly shabby. Even a crippled and starving elk is still a lot of animal, however, so the grizzly is careful. The elk assays a few weak kicks and a lurching charge, but soon stands panting and passive as the bear circles, bounds from behind, embraces her vic-

by TOM McNAMEE
drawings by Paul M. Breeden

BREATH-HOLDING IN GRIZZLY COUNTRY

around the trap, trying to dig her out. This goes on all night.

At dawn, the mother bear lies exhausted in the culvert, smeared with her own excrement. The cubs pace hopelessly around the trap, bawling, hungry, scared.

Some hours later, a pickup jounces down the rutted track and two men emerge. "Look, Larry—we got another," one whispers hotly. This is Bart Schleyer, graduate student in wildlife biology and Cooke City's leading heartthrob.

"Bart, these bears are just waiting in line to get in your trap. They're getting to be worse than the girls up in Cooke." This is Larry Roop, research biologist for the Wyoming Department of Game and Fish, and member of the Interagency Grizzly Bear Study Team.

As the men approach the trap, the mother grizzly barks a peremptory dismissal at her little ones, and they high-tail it for cover. "Cubs!" exclaims Schleyer.

"All right!"

A female with cubs is an important capture. The study team's trapping has been yielding many more males than females, and there is growing evidence that the Yellowstone grizzly population may be severely deficient in reproducing females. There may be only thirty still alive, and of those only ten per year can be expected to have cubs. Because females must be at least four and a half years old before they can breed successfully—and sometimes are eight or nine before they do—and because they give birth to only one to three young every two to four years, changes that appear minor can have very major consequences a couple of generations hence. And because the Yellowstone population is isolated from others, no deficit can be made up by an influx of bears from another ecosystem. Thus the study of population dynamics—of reproductive rates, mortality, and the rate of cubs' survival to maturity—is an essential aspect of the team's work. Lately the population dynamics have been looking very bad indeed.

This grizzly shows little gratitude. When the men come near the trap, she lunges for them with all her might, smashing headlong into the bars. "Shhh," says Schleyer, "easy, easy, old mama. What do you say, Larry? Three hundred and fifty pounds?"

"Yeah, she's a big'n all right. I'm going to dose her on the light side so we can get her back to her cubs quick."

"Come on, come on, turn around," Schleyer says softly to the bear as Roop draws three and a half cc's of Sernylan into the syringe. Sernylan is the trade name for phencyclidine or PCP, an anesthetic—and, in smaller doses, a rather violent psychedelic known as angel dust. An equivalent dose, on the basis of body weight, would kill a human being several times over, but all it's going to do to this grizzly bear is put her swiftly to sleep. On top of the Sernylan, Roop draws in an equal amount of acepromazine, a tranquilizer, which will assure that she comes out of this rather strange experience in a relatively placid frame of mind. Now the loaded dart/syringe is fitted into an air pistol, Schleyer prods the bear with a stick, and as she whirls in rage Roop aims at her haunch

through the bars and fires. Soon her head begins to droop, then her legs give way, and finally she sleeps.

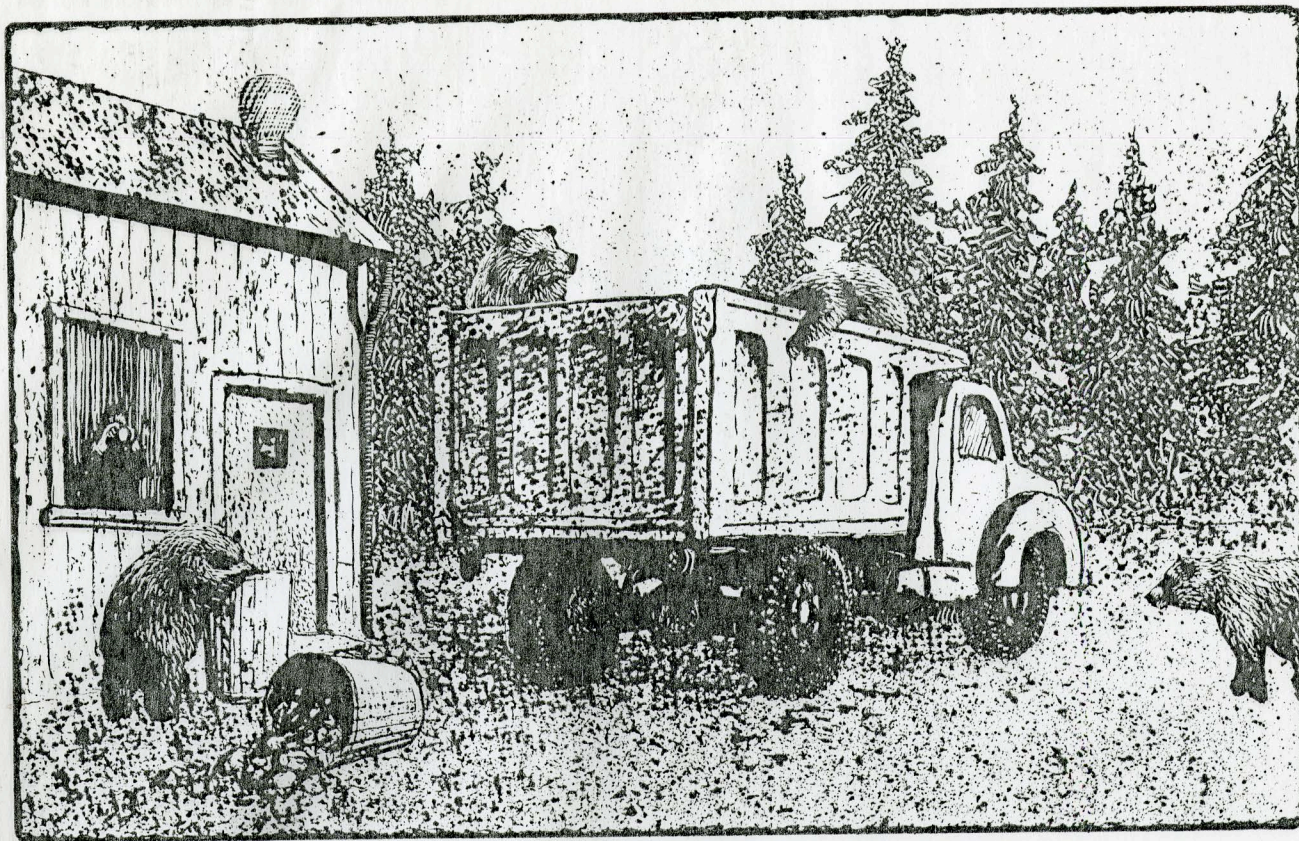
Stretched out limp on the ground, she looks like nothing so much as a scruffy fur bag of assorted bear parts, but beneath that almost comically floppy caparison you can poke and feel an awesome musculature. Schleyer dabs at her lifelessly staring eyes with a tube of ointment and shields them from the sun with a scrap of towel. Roop pulls a tooth: a count of its annual rings in the lab will tell her age, just like a tree's. A weird pair of pliers, faced with little needles in the pattern of reversed numbers, is clamped briefly to the inside of her lip, and an indelible ink is painted over the tiny holes it has made—a tattoo. A bright yellow plastic tag bearing the same number is clipped through a hole Schleyer has punched in her ear. They take a blood sample and a fur sample. "There's been speculation," Roop explains with a quizzical smile, "that lighter-colored fur may be correlated with some blood chemical that's an indicator of aggressiveness. We send this to the guy who's trying to find out." The bear gets an injection of a diuretic, and after a few minutes ("Thar she blows!" cries Roop) a urine specimen is taken. They measure her from stern to stern, recording all on a schematic bear diagram. They hoist her aloft in a tarpaulin and hang it from a stout pine limb to weigh her. Finally they fit her with a radio collar. Roop is proud of the collar's new design, which features a section of heavy canvas that will rot through at about the time the battery runs out. The sun is growing warm, and they drag her to a cool spot in the shade, and wait.

"You have to stay with them till they come out of it," Schleyer explains, "because some other bear might happen along and try to take advantage of the situation." Does he mean eat her? Yes.

Soon the cubs reappear, timid but not especially afraid, and apparently not much discomfited by their mother's condition. They both go to work kneading her teats to start the milk flowing, and soon they are nursing contentedly, producing a strange, soft humming that sounds like a hive of bees.

Sernylan wears off from the top down, so the mother grizzly's first sign of life is a woozy shake of the head. A few minutes later, she can rise on her front legs and turn to gaze in groggy mystification at her still useless hindparts and her humming progeny. As she begins unsteadily to stand, the cubs fall away already fast asleep, and the scientists discreetly withdraw.

OUR BEAR IS NO LONGER only her wild and private self. She is now also a source of data for the Yellowstone ecosystem Interagency Grizzly Bear Study, one of the most comprehensive wildlife research projects ever undertaken. As such she has gained a degree of power beyond even that mystical primacy with which grizzlies were invested in the days when firearms had not yet appeared and no one messed with a grizzly bear. The power is not, however, precisely hers; it is a power with which we have saddled her—due, paradox-



ically, to her weakness, for the Yellowstone grizzly's very survival may now be in grave doubt. The grizzly is classified as threatened in the Lower 48, but in Yellowstone, at least, it probably should be listed as endangered. The bears are still fairly common only in Alaska—the best guess seems to be about ten thousand there.

These bears' survival or extinction will be a judgment on the nation, and at the highest levels—political and legislative—the nation has already decreed that the grizzly shall survive. And the government has put its money where its mouth is. There have been extensive studies. A comprehensive recovery plan has been written. The National Park Service and the U. S. Forest Service have agreed to implement a set of strict grizzly habitat management guidelines in the Yellowstone area, and similar guidelines are being developed for other parts of the bear's range. The National Forest Management Act of 1976 stipulates that the conservation of threatened and endangered species will not be compromised by other considerations. And there is at last a reasonably adequate understanding of what kind of food, cover, and range the grizzly requires. Ongoing research has begun to demonstrate that many activities previously deemed incompatible with grizzly bears turn out not to be, as long as a few simple rules are followed. And yet, at the level where knowledge and laws and policy are to be put into action—the local, administrative level—the response so far of those charged with carrying out the law has been,

at best, ambiguous.

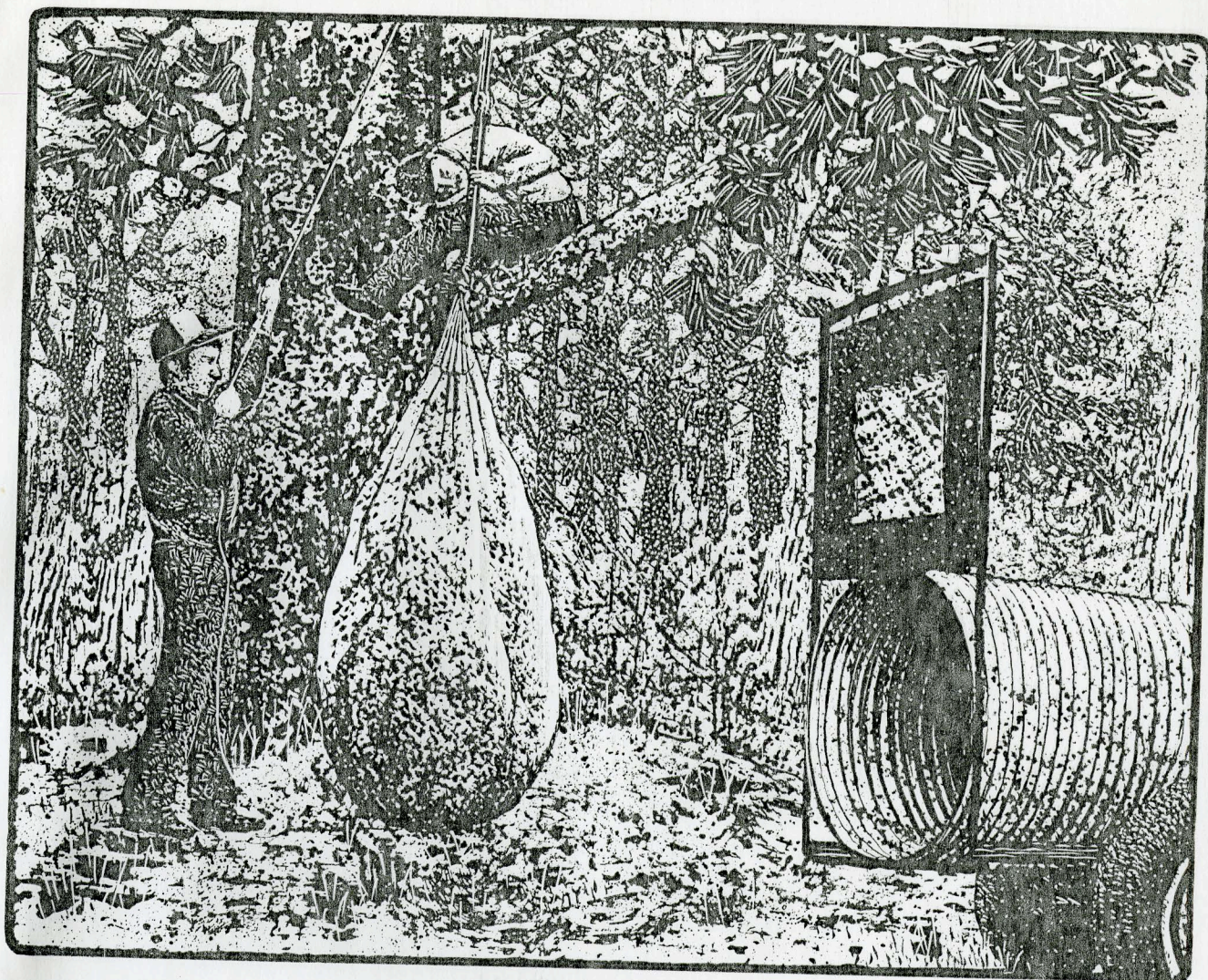
The grizzly's fate may be a judgment on the nation, but it now rests mainly in the hands of a few individuals whose power is far from national: the administrators of the particular national parks and national forests where grizzly bears live.

There are six, maybe seven, grizzly populations in the United States outside of Alaska. The six are: in the Cabinet-Yaak ecosystem of northwestern Montana; in the area centering on Yellowstone National Park, including parts of five national forests; along the northern continental divide, embracing Glacier National Park, the Bob Marshall Wilderness, and a number of other jurisdictions, mainly national forest lands; in the Selkirk Mountains of northern Idaho; in the Selway-Bitterroot Wilderness of north-central Idaho; and in the North Cascades of Washington. The seventh is in the San Juan Range of Colorado, where a man killed a grizzly three years ago, but since then there has been no further evidence of grizzlies.

Only the first three populations are considered significant in the recovery plan. There have been strong objections to this emphasis, but it may be taken as an ominous commentary that the plan's principal author, Don Brown, an outstanding authority on the grizzly and dedicated to its survival, felt such a limitation to be necessary.

The fate of the Cabinet-Yaak population, already small, is highly uncertain, due principally to proposals for

BREATH-HOLDING IN GRIZZLY COUNTRY



massive mining operations in grizzly territory. How Congress disposes of the question of mineral entry to protected wildernesses may determine these bears' fate.

The grizzlies of Yellowstone, particularly adult females, continue to experience far more human-caused mortality than they can compensate for, and the cumulative effects of the massive development activities proposed for the area are only beginning to be felt. Again, the possibility of oil and gas drilling and mining in Forest Service wilderness lands is a major threat.

Only the northern divide population can be considered relatively healthy. But even here there is a full-tilt rush into oil and gas exploration. There is extensive hard-rock and uranium exploration under way in the Kootenai area to the west and on the Blackfeet Indian Reservation east of Glacier National Park. There are conflicts between grizzlies and residential subdivisions in the Flathead Basin, and a bitterly hostile local populace in the Selkirks. In Glacier National Park, there has been strife with bears that seem to have become habituated to human food sources. A proposed improvement of the primitive road up the North Fork of the Flathead, along the park's west-

ern boundary, has been met by a U. S. Fish and Wildlife Service opinion stating flatly that its construction would jeopardize the continued existence of the grizzly. U. S. Highway 2 is slated for widening and straightening, which would radically increase traffic and its speed through the heart of grizzly country. Virtually all the proposed developments require new roads, and studies in British Columbia have shown definitively that grizzlies tend to avoid areas within a half-mile of roads. The recovery plan itself states that "frequent vehicle travel, or for that matter any noisy travel by humans, may deny grizzly bears use of habitat." Direst of all, one of the world's largest coal-mining complexes is planned on the North Fork just over the boundary in Canada, producing millions of tons of coal and bringing thousands of workers into what until now has been remote wilderness.

It sounds bad, and it is. But it is not hopeless. Management decisions made now and through this decade will probably spell doom or survival for the grizzly. After years of inaction, the procedural structures are in place. Research continues, and the already substantial body of scientific knowledge grows yearly. What remains to be seen

is whether the federal government's land managers will live up to the commitment they have all proclaimed.

July, and the living is easy. There is food almost everywhere: for grizzlies living near Yellowstone Lake, a prodigious spawning run of cutthroat trout wriggling up the feeder streams; for bears that like to dig, meadow and ridgetop soils full of roots, bulbs, corms, and rhizomes, all crisscrossed with tunnels where little rodents cower; for fruit-eating bears, streambanks and woods thick with huckleberries, buffaloberries, strawberries, gooseberries, thimbleberries, kinnikinnick, and mountain-ash; for salad lovers, an endless smorgasbord of springbeauty, elk thistle, white clover, oniongrass, American bistort, dogtooth violet, yampa, yarrow, horsetail, biscuitroot, sedges, grasses, and dozens of other good green things, each to be harvested, later and later the higher you go, at its maximum of savor.

High in the alpine country of Wyoming's Washakie Wilderness, the grizzly and her cubs seem to float in a sea of wildflowers. The big bear's winter coat is falling off in patches, but the little ones are beautiful: the male a real silvertip, shading from steely blond on his hump to almost black on his feet, all of it shot through with silver highlights; and the female a dazzling strawberry blonde, with a white ring around her neck. They have come a long way from Cooke City, and they will go farther still, up to the edge of the receding snow, following their food plants' progress.

With every passing summer the mother grizzly must do more detouring and outright escaping, for campers seem to be everywhere. She is in a nettled mood these days, partly the natural consequence of having cubs and partly because she has been running into people-scent all over the place, even here in the high country. She has not attacked anyone yet, although a few years back she did charge one interloper up a tree when he walked between her daybed and an elk carcass she had buried nearby.

Every grizzly bear needs cover, so even though many of their foods are found in open country they usually feed near timber where they can quickly disappear. But here in this alpine meadow, sight lines are long, and the absence of visible threat also serves as a kind of cover. This afternoon, as dusk has come on, the grizzly and her cubs have awakened and wandered well out into the open, digging up bulbs and ants. They are so absorbed that none of them notices the human form creeping toward them from downwind.

At the sound of a faint metallic click, however, the big female whirls around, stands up, and takes a look. Another click from the camera. She drops to all fours and directs her cubs to flatten themselves against the ground. She walks sideways with her back humped up to show how big she is. Then she pops her jaws loudly, meaning, "You are on my territory, and I am politely but firmly asking you to leave." But the man doesn't move. He's scared stiff. He has read that you should not try to run from grizzly bears. The bear lowers her head almost to the ground in warning, her hackles high, and the photographer still doesn't get the message. He figures that be-

cause she is not snarling (which she cannot do, since she has no lip-curling muscles), she is not really mad. He is mistaken. She hurls herself at him, a furred lightning bolt.

Out in the middle of this treeless meadow, and clinging to the maxim about not running, he simply stands his ground and prepares to die. But as the bear reaches the last bound before she will be on him, she stops.

Stops cold, and just stares at him. He is shaking so hard he can barely think, but he tries not to move. The bear snorts, spins around, and races away as fast as she had charged, woofing at the cubs to get into the woods.

What happened? Hard to say. It may have been something authoritative in the man's body language, or it may have been that at the last second the bear just chickened out. Perhaps she had been shot at in the past. Another bear, in any case, might easily have killed the man. On another day she might have done it herself.

IN A COOKE PASS, MONTANA, cafe—on whose windows a grizzly on the prowl for garbage this morning has smeared his unmistakable signature—Larry Roop and Bart Schleyer are sipping coffee and waiting for Steve Mealey and his grizzly ecology class from the Yellowstone Institute. Schleyer already has been down to the old dump site to check the trap, and for the third morning in a row—thanks mainly to that fool whose garbage buffet has been attracting bears from far and wide—they have caught another grizzly.

"Roop, you old hick," booms Mealey from the door, "you sure can catch bears!" Mealey, a Forest Service biologist and planner, wrote his master's thesis on the Yellowstone grizzly, helped write the recovery plan, and was the principal author of the interagency guidelines, so he and Roop are old pals. He is here now to conduct a week-long seminar on every aspect of the grizzly situation, biological, administrative, and political.

"It wasn't me," Roop rejoins. "It was Bart who caught that bear. He just charms 'em in."

"I heard it's old Number One."

"Yep." This is a bear they both know well, the first ever captured in the interagency study, back in 1974. Old Number One has been a good bear. He has kept out of trouble with people, but, as Roop explains, "You just can't keep that bear out of the trap. I can't remember how many times we've caught him."

Meanwhile, back at the dump, Number One slumbers tranquilly in the culvert he knows so well, his belly full of bait. The arrival of the human crowd seems not to bother him in the least. Roop recalls that this bear weighed about five hundred and fifty pounds last fall, and so he gets darted with an appropriate dose of anesthetic and tranquilizer. As they drag him from the trap—to delighted oohs and ahs from the seminar—identical expressions of pale horror come into Roop's and Schleyer's faces. In the darkness of the trap's interior they could not make it out, but this seventeen-year-old bear is not—as he ought to be in early August—in his prime. He is hide and bone, pelvis

BREATH-HOLDING IN GRIZZLY COUNTRY



and ribs jutting starkly beneath thin, sagging skin. His fur is falling out in handfuls. And his weight is down to three hundred and fifty pounds.

This is bad. He has gotten much too much drug. A violent convulsion jolts through the bear, and his limbs flail spastically. Schleyer jams a stick in the bear's mouth so he will not swallow his tongue. Then, as suddenly as it came, the convulsion passes. "Poor old bear," Roop says quietly, lifting Number One's head to fit him with a new radio collar.

"He's not going to make it, is he, Larry?" says Mealey, turning now to speak to the class. "By this point in the summer, this bear ought to have gained most of the weight that would carry him through the winter. He should be absolutely swaddled in fat. His coat ought to be thick and shiny. But as it is now, if he makes it through the fall he may well die in the den, or soon after he emerges next spring. Do you have any idea what might be the matter, Larry?"

"Not really. Grizzlies don't get sick very much. I think this bear just hasn't been getting enough to eat. Still, if he gets a few good meals, he might pull through. Bart,

don't you think we can leave him this bait?" They lower the quarter of a calf from the tree where it has hung and lay it in the shade nearby. Roop also has a reeking road-killed marmot in the back of his truck. He has scrounged a supply of spoiled New York strip steaks from a dude ranch whose freezer broke down, and he leaves a heap of those too.

The rains have slackened. The great peaks' crescents of snowpack attenuate in the August sun. The countryside is drying up. Back in Yellowstone National Park now, the mother and cubs are on the move every day—or, rather, every night, for the annual influx of human visitors is at its height. The bears' coats are darkening, and they are growing fat. The cubs weigh close to eighty pounds apiece. They can travel tirelessly now, up to the subalpine ridgetops where squirrels' treasure-hoards of whitebark pine nuts may be raided, and biscuitroot dug. As the bears move downslope, they come to moist hillside parks where the clover and grass still are green and succulent. They move through rich and shaded woods where mushrooms and the rhizomes of western false Solomon's seal abound and trees may be stripped of bark for the cam-

bium beneath; and, as ever, to Yellowstone's most reliable sources of grizzly food, the lush wet meadows and seeps.

As the summer progresses, such feeding sites are ever more scattered and scarce, and the bears may make long excursions outside the familiar neighborhoods where they feel safe. While grizzlies are not strictly territorial, some, particularly mothers with cubs, seem more so than others. It is with caution, therefore, under cover of night, that our three bears venture beyond the protection of the national park and up to the Beartooth Plateau, a high and rocky alpine zone where first-class bear food and halcyon solitude may be found even in August and where, on the meadows that ring the numberless lakes, domestic sheep are grazed. Such easy prey is deliriously tantalizing, and once into a band of panicked and defenseless sheep a grizzly may indulge in a frenzy of wanton slaughter. Thus has many a Yellowstone grizzly met its end, with a sheepherder's bullet through its lungs. Our heroine does not lead her cubs into temptation but avoids altogether the trampled greensward where mutton bleats in the moonlight.

We now can know precisely where the family travels, for the mother's radio collar is constantly emitting signals that are regularly monitored, at first from a light plane by Larry Roop and later, much more closely, on foot by Bart Schleyer. Schleyer's thesis work on grizzly movements obliges him to trudge up hill and down dale day after day, night after night, gathering data on habitat use and stopping for catnaps only when the bears do. He always stays just close enough to keep his hand-held antenna receiving and just far enough away to avert violence or flight.

The *Grizzly Bear Recovery Plan* and the *Guidelines for Management Involving Grizzly Bears in the Greater Yellowstone Area* are two of the most detailed and ambitious wildlife management documents ever written. Together, they weigh better than two pounds, yet they are not verbose. The grizzly bear problem is simply that complex. The following points from the recovery plan begin to suggest the monstrous difficulty of saving the grizzly:

- ✓ Between 1800 and 1975, grizzly populations in the American West declined from an estimated one hundred thousand to fewer than one thousand.

- ✓ The early settlers' behavior tended to condition grizzlies to avoid conflict with humans, but in later years bears have been increasingly attracted to carrion, garbage, and the sprawling residential areas that have invaded their habitat. The result has been problem bears that have learned to prey on livestock, break into tents and houses, and even kill people. This has led to frequent illegal shootings and other kinds of removal. With the continuing decline in grizzly numbers, the remaining bears have been confined to ever-smaller fragments of their former range.

- ✓ One of the most profound developments in the application of ecology to biological conservation has been the recognition that virtually all natural reserves are destined to resemble islands. As man takes over, they are carved up into small, isolated fragments of what was formerly much larger continuous habitat. This is particularly crit-

ical in the case of grizzly bears, for they are large animals with great metabolic demands and require extensive home ranges. This need, plus their low densities, low reproductive rate, individualistic behavior, and use of riparian habitat (also used extensively by man) makes grizzlies more vulnerable to extirpation than many other species. The necessity of developing or maintaining corridors to connect separated populations may prove to be very important.

- ✓ Although grizzlies are relatively long-lived—individuals in the wild have lived forty years—they have one of the lowest reproductive rates among terrestrial animals. They start reproduction at a late age, have small litters, and a long interval between the litters. Furthermore, before her first estrus, a female grizzly may be more likely to be dispatched for food by an adult male than to mate with him.

- ✓ During the first ten years of her life, a female grizzly is capable of adding only two litters to the population. If these are litters of two cubs, one of each sex, she can at best replace herself with one breeding-age female in the first decade of her life. Even that is achieved only if her first female cub survives to breeding age. In some populations, only twenty to fifty percent of the cubs survive that long.

- ✓ If one assumes optimum conditions, no cub mortality, and an equal sex ratio, and using the oldest documented female weaning her last litter at age 24.5, a single female could add only seven females to the population during her lifetime. But a reproductive performance of far less than this maximum could be expected, given the usual mortality rate, a protracted reproductive cycle of 3.4 to seven years, and the increasing stresses of habitat encroachment by humans. Obviously, providing maximum protection for females is essential to recovery.

- ✓ "The most important ingredient in this recovery plan will be the degree of commitment exhibited by individuals in supervisory capacities toward saving the grizzly bear," Don Brown wrote in his introduction. On a later occasion he added, "And so far it just isn't there."

STEVE MEALEY REFUSES to be discouraged. He pounds his fist on the table and thunders at his seminar, "Unless we believe it can be done, it won't be done! You'll see. This is a new era in wildlife management, and there's a cultural change in our society now under way that's going to bring the necessary public support. If managers carry out these guidelines, the Yellowstone grizzly will make it. Land use doesn't have to be harmful if it's done with sensitivity. Bears and humans have lived in proximity for hundreds of years. It can be so simple. For example, just manage your garbage—that will minimize bear interest and therefore mortality. It doesn't have to be hard." Listen to some of the main ideas in the guidelines:

- ✓ Avoid disturbance of spring range.
- ✓ Dispose properly of logging slash, and do not scarify the soil.

BREATH-HOLDING IN GRIZZLY COUNTRY

- ✓ Maintain cover near feeding sites.
- ✓ Minimize residential development on public land.
- ✓ Lay out your timber sales right. Most important, stay off wet areas where the best bear food grows.
- ✓ Make hunters and outfitters hang their game so it is inaccessible to bears.
- ✓ If you have to put in roads, close them except for the resource user, and after that close them down altogether.
- ✓ Keep mineral exploration limited to times when the area isn't important to grizzlies. (This one is turning out not to be quite so easy, with all the pressure from Washington.)
- ✓ And, most important of all, do a systematic and thorough job of evaluating your grizzly habitat. The techniques are available. All it takes is commitment to doing it right. Then, when you draw your management-zone lines, you can be confident that no matter what happens the bear will benefit.

It is this last idea—stratifying the entire Yellowstone region into five levels of management according to grizzly population and habitat conditions—that has been the great achievement of the guidelines. The quality of data fed into the stratification process, of course, will determine how well it works, and so far that quality has varied rather strongly from one management entity to another.

The actual stratification guidelines are complicated, but in summary they are:

- ✓ Management Situation 1 is the heart of grizzly habitat. (All of Yellowstone National Park falls into this category.) All management decisions here will favor the needs of the grizzly over competing land uses. All land uses that can affect grizzlies or their habitat will be made compatible with grizzly needs or else be prohibited. Grizzly-human conflicts will be resolved in favor of grizzlies unless the bear involved is determined, according to strict criteria, to be a nuisance. Nuisance bears may be relocated or killed, but only if such action would result in a more natural free-ranging population and only after all reasonable measures have been taken to protect the bear and its habitat, including closing whole areas to human use.
- ✓ Management Situation 2 areas tend to fall just outside Situation 1 boundaries and to act as buffer or containment zones. They are not considered essential to grizzly recovery, although there may be occasional use. Periodic review may cause an area to be reclassified. Demonstrated grizzly populations and habitat will be accommodated in land-use activities to the extent feasible, but if there are conflicts the other land-use needs will prevail.
- ✓ Management Situation 3 consists of areas where grizzly-human conflicts are likely but where the habitat is of low quality. The presence of bears and of bear attractants is actively discouraged.
- ✓ Management Situation 4 is potentially good grizzly habitat, and the area is needed for recovery although grizzlies may not be using it now. Habitat maintenance and improvement are important.
- ✓ Management Situation 5 has little known value as grizzly bear habitat. Grizzlies are rare or nonexistent there.

Maintenance of grizzly habitat is optional, and there is no obligation to consider grizzlies in decisions related to other resources.

Not surprisingly, the drawing of these guidelines has raised a lot of dust. Sometimes it's so thick you can't see through it at all.

Ross and Emery Davis' family has been running sheep in the Conant Basin on the west slope of the Tetons for five generations—since long before it became part of Targhee National Forest and long before the country east of the ridge was Grand Teton National Park. Yellowstone National Park, on the other hand, had been protecting and producing grizzly bears to eat Davis sheep for a century, and for a century Davises had been killing them with impunity. Then the Endangered Species Act came along, and suddenly grizzlies were worth more than wool and lamb.

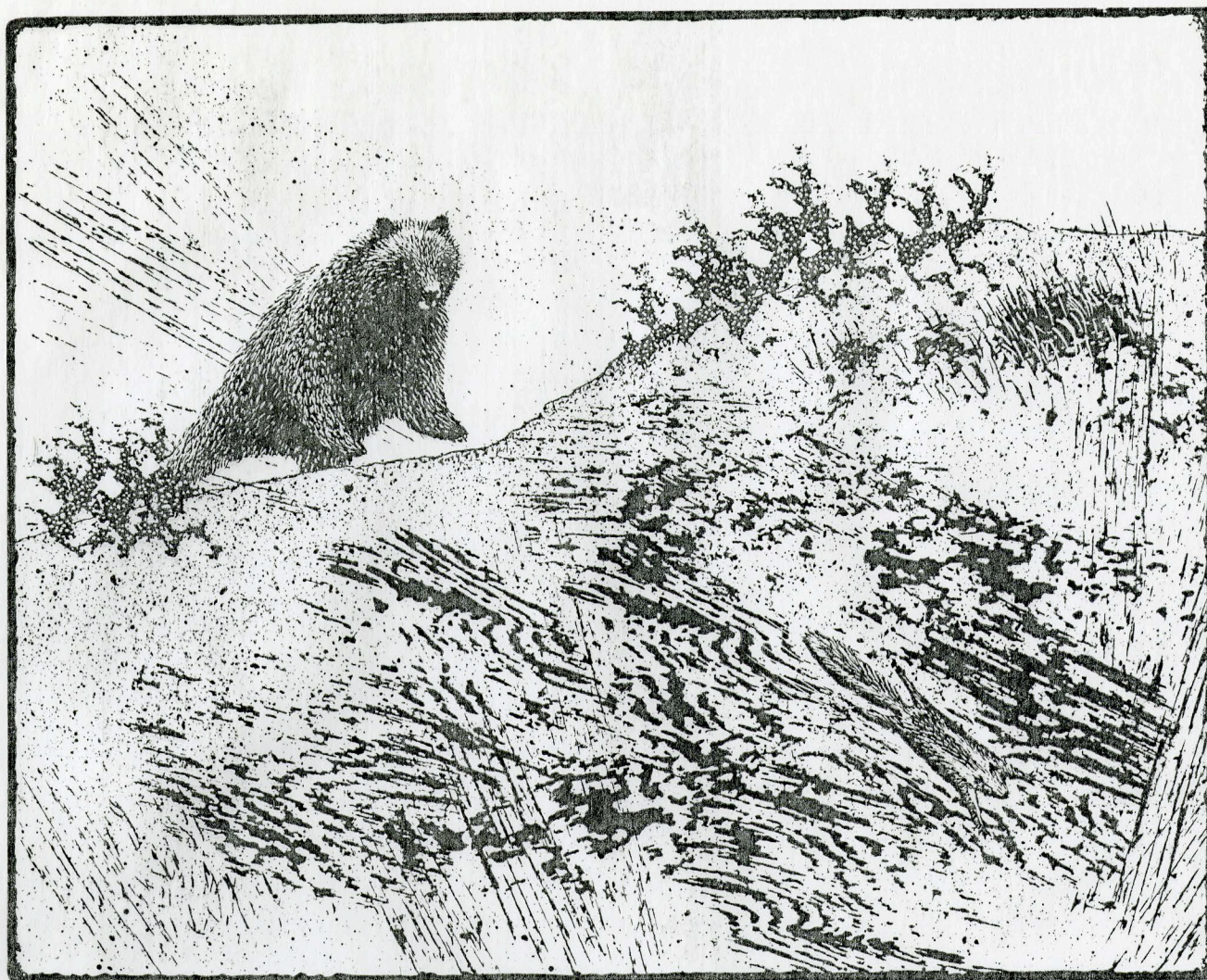
By 1975, when they were declared a threatened species, Yellowstone's grizzlies were clearly in trouble. There was furious internecine combat over how many remained (see Bil Gilbert's "The Great Grizzly Controversy," *Audubon*, January 1976), but there was unanimous agreement that this slaughter could not long be sustained.

Yet grizzlies continued to die—shot, or poisoned—and a wildly disproportionate number of these deaths were occurring on or near the Targhee sheep allotments. In a 1978 Forest Service study, David Griffel wrote, "It was obvious that the herders were not cooperating fully in monitoring efforts. There were several cases when the herder provided erroneous information concerning sheep kills, and cases when the herder refused to communicate in any way."

The interagency team's 1979 report stated, "Sheep-herders openly admit they kill any bear they see, whether it is killing sheep or not." There were strong indications that the number of unreported killings was actually growing in response to the Endangered Species Act. From 1970 through 1975, twenty grizzlies were reported killed on sheep allotments, but between 1975 and 1979 the reports dropped to zero. The study team knew that at least two of its radio-collared bears had been killed in grazing areas during that period, and in both deaths sheepherders were logically, albeit not legally, implicated. Undercover agents estimated that as many as fourteen grizzlies were killed on the Targhee allotments between 1977 and 1979.

The study team's most optimistic estimate of the Yellowstone ecosystem's population was three hundred and fifty bears. Taking their most conservative estimate of sheep-connected mortality, they had lost 1.5 percent of their grizzlies in two years. Taking their most pessimistic population estimate of only eighty-four bears, and their highest mortality estimate of seventeen, they had lost twenty percent of the whole ecosystem's grizzlies.

In his 1980 report to the Wyoming Department of Game and Fish, Larry Roop wrote, "This area has been one of the most serious, constant, long-term drains on the grizzly bear population since the beginning of this study." Two grizzly deaths were reported in 1978—one discovered only because it was wearing a radio collar, and the other



found by a researcher in a shepherd's camp. (The shepherd apparently didn't appreciate this, since he subsequently threatened the researcher's life.) There were four other suspected grizzly deaths on the Targhee in 1979—all associated with sheep grazing.

In a 1981 study, Forest Service biologist Philip Lee wrote that the interagency study team "estimates an average of eleven grizzly bears have been killed per year in the greater Yellowstone area since 1976. Less than 0.5 percent of the sheep using the Yellowstone area were killed by grizzly bears, [yet] more than ten percent of the entire grizzly population in the ecosystem were killed after livestock conflicts on the Targhee—or possibly ninety percent of the bears using that forest during this period. (The Targhee makes up only four percent of the total ecosystem classified as Situation 1.)"

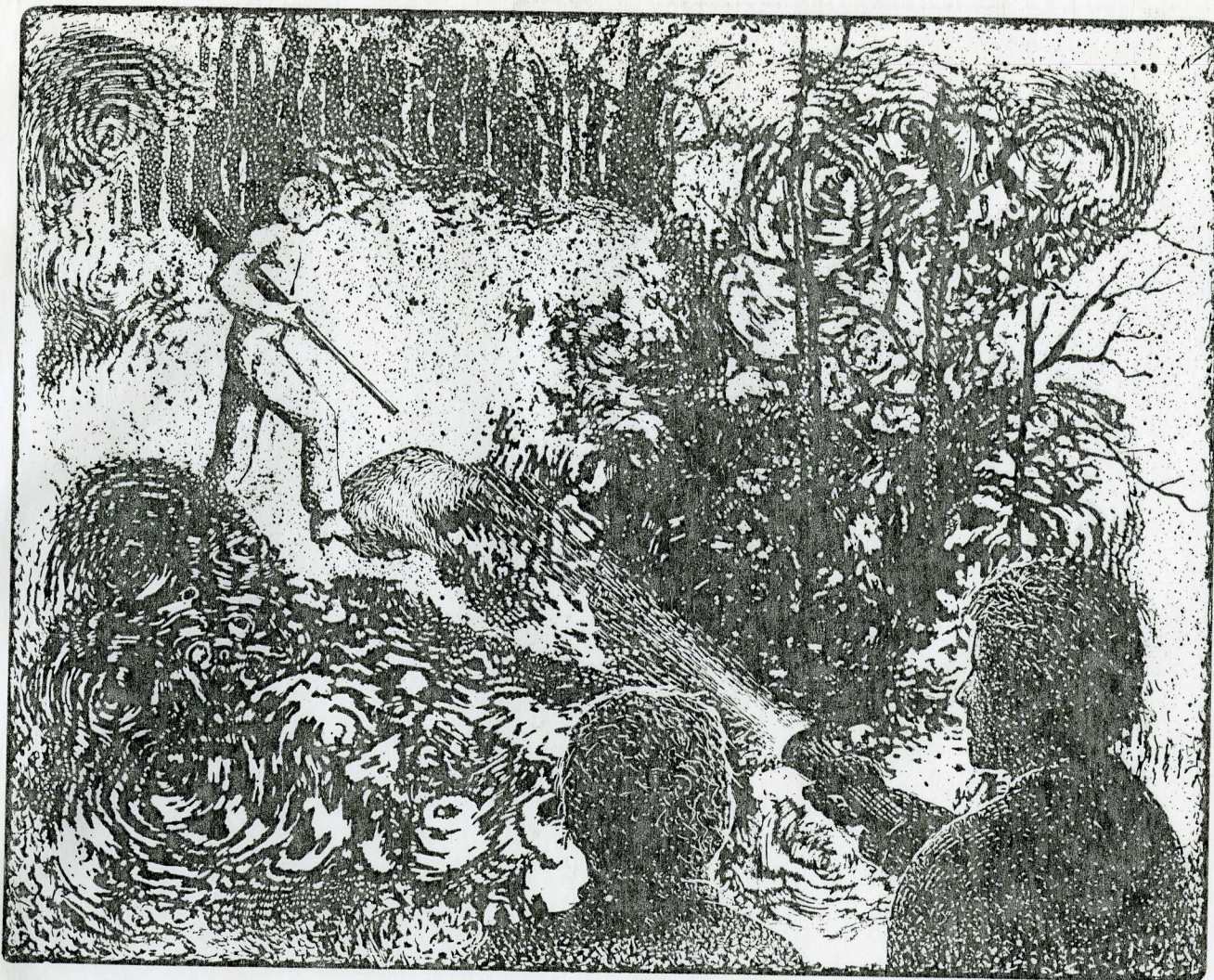
Richard Knight, head of the study team, has been arguing strenuously for years that the Targhee allotments in prime grizzly habitat should be closed down altogether, and in its evaluation of the Yellowstone guidelines the Fish and Wildlife Service did the same.

But in mid-August of 1981, leaning back in his saddle

as he neared the escarpment above Grizzly Creek, Targhee National Forest Supervisor John Burns sounded the note of doubt that runs through all the crashing discords of grizzly bear argument. His manner was taciturn, his voice mild, almost bland, his words slowly and cautiously chosen: "My judgment is that these figures are very inflated, for several reasons. The first is that most rumors and bar-room tales tend by their nature to be exaggerated or unbelievable. The interagency team and law enforcement people treat each of these stories as a statistic, so the purported incident gains credibility and acceptance. In fact, many of these tales are concocted simply to get a rise out of the feds. Much the same is true of early bear-kill statistics reported to us by shepherders. Also, there's a motivation there to look good with the boss, so one needs to realize that herders were prone to exaggeration. Then too, they enjoy spinning tall tales for their occasional visitors.

"I make no attempt to justify actions taken here in the past, but I want it understood that the Targhee National Forest is committed to protecting the grizzly. It's our legal responsibility, and we take it seriously." Burns described

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the Targhee's grizzly protection plan, which has been approved by the Fish and Wildlife Service:

"First, we've closed down several grazing units that have had a history of conflict. Others will be closed permanently if there's so much as one incident. When sheep are about to go into a unit, it will be surveyed for signs of grizzly use, and if there is any the sheep won't be allowed in. If a bear comes into the unit later, then the sheep will have to be moved out. The herders are going to have to move their camps every two or three days, and tepee out with the bands. Basically, wherever there's a conflict it will be resolved in favor of the bear, and grazing will stop. Most important of all, we've got a full-time biologist up here all the time monitoring the herds and living day and night with the herders."

Wouldn't it be simpler and much less expensive just to stop grazing altogether in Situation 1? And hasn't the herders' behavior amply justified that? Burns' reply to that query is: "Well, we're working on some areas at lower elevations, outside of Situation 1, to improve them for sheep, and I think eventually we'll be able to keep grazing out of the high country. Also, these guys have

been up here all their lives. There's a tradition involved. And, especially now that Wyoming has passed a law to compensate stockmen for their losses to bears, I believe we're going to be getting a lot more cooperation. Emery Davis has been consistently willing to work with us. I have Emery's assurance that his people will not shoot grizzlies. This represents a genuine willingness by him to solve the problem, and it's the key to a long-range solution. Sure, the monitoring program is costly, and we'd save a lot if the area were simply closed to grazing. However, my feeling is that the grizzly will make it only if all uses of the forest are dovetailed with the needs of the bear. We have to make the uses *compatible*, not mutually exclusive."

Emery Davis' camp looks like something out of a particularly realistic hard-grit western movie, set in the mid-1800s: mobs of sheepdogs frisking among the tethered horses, a big cast-iron pot for lamb stew, the traditional sheepman's pyramidal canvas tepees, and dirt—dirt everywhere. No, not quite everywhere. There is one item in all the camp that is not covered with dust: a spotless, gleaming, scope-mounted, high-powered rifle. The herder never

lets it lie far from him. Davis—who with his red suspenders, generous spill of belly, and gap-toothed grin would fit right into the movie—is friendly, hospitable, and very cautious. These visiting federal officials have the power to wreck his life.

The resident monitor reports that everything is going great. There hasn't been a grizzly in the area all summer.

Back at base camp a few miles away, district ranger Dan Schindler and district biologist John McGee, both of whom were instrumental in devising the new grazing plan, are talking quietly in their tent. A few others are still sipping coffee down by the fire. It is the last evening of the new Targhee supervisor's visit to the sheep allotments in grizzly country. Only the faintest remnant of daylight glimmers in the western sky. From over the ridge in the next creek drainage, where a band of sheep other than Emery Davis' biologist-guarded one is pastured, a rifle shot cracks, then another, then three more, and then the wilderness silence returns.

Schindler and McGee, talking, did not hear the shots, but when told they are unconcerned. "He could have been shooting at anything," says Schindler.

"Might have been a coyote," says McGee.

"Might have just been target practice."

In the dark?

"It could have been anything."

DUST WHIPS ACROSS the sagebrush flats, gold in the September sun. Most of the grizzlies are high in the mountains, searching out what few succulent plants remain in Yellowstone's driest season and harvesting the fruits of mountain-ash, wild rose, red osier dogwood, and twinberry. There are also good high-protein roots to be dug, of cowparsnip, yampa, loveroot, biscuitroot, buckwheat. The whitebark pines are dropping their cones, and the unsuspecting squirrels are still diligently hoarding them for the delectation of their ursine murderers.

The elk are in the addling throes of the rut, trumpeting their pompous *amour-propre* through the canyons and occasionally so thoroughly self-involved that they don't notice a grizzly crouching in the brush nearby. Furthermore, outside the park at least, it is hunting season, and the wounded and lost game make for sumptuous bear dining. Again, however, the temptation to carnivorousness is perilous, for the bears sometimes fail to make the delicate distinction between carrion free for the taking and that which some well-armed hunter believes is his own.

High in the Absaroka Mountains, near Yellowstone's northeast corner, an outfitter and his dudes have ridden hard all day, a hot one, and at last, at dusk, no more than a hundred yards short of camp, they have felled a fine bull elk. They dress it out in near-darkness, and by the time they are gathered around the dinner fire they are very bushed and very dry. The whiskey flows apace, and a heavy torpor descends. The guide agrees that quartering the elk and hanging it high can be put off till morning.

At one in the morning, after a long day's profitless

scrounging at a hillside where the mother grizzly thought she remembered a seep, the three hungry bears are feeling no more cautious than the hunters. They drag the hunting party's elk into a draw and set to gormandizing. The cubs squabble over a particularly toothsome morsel. The male whops his sister in the head, and she lets out a yowl.

"Oh, hell," cries the guide from his sleep, his hand already reaching for the rifle.

The mother and the male cub vanish into the timber, but the pale golden female, distinct against a wall of Engelmann spruce, does not. Three shots ring out in rapid succession.

The outfitter nudges the small bear's body into the brush as his blinking clients approach, wakened by the sound of gunfire. He turns to stare into their flashlight beams. "These little old black bears are the bane of my existence," he says. "Naw, I missed the son of a bitch. Somebody come down here and help me get this elk back to camp. I reckon we better hang him up, what's left of him, in case that bear comes back."

To run an operation that steps on as many toes as the Interagency Grizzly Bear Study, it helps to be as ferocious as a grizzly bear, and Dick Knight is. "Of course the agencies all say they want to save the grizzly bear," he says in a voice saccharine with sarcasm. "Every winter I sit through meetings with the Fish and Wildlife Service, the Forest Service, the Park Service—I sit there till I'm sick of them, listening to everybody tell each other how great they're doing, saying, 'By God, I'm for the bear!' And they are, as long as it's easy. But let them come up against something that's difficult from a public pressure standpoint—well, then the bear takes it. They bulldoze him away."

Doesn't Knight work for an agency himself, the Park Service?

"I'm paid by the Park Service, yes. But when I came to this job, it was understood that I wouldn't take orders from anybody. I'm my own man."

"We've got one overwhelming problem here, and that's mortality. It just can't keep up like this—especially when we're losing so many breeding females. The sex ratio of the bears we've handled is sixty-two percent male to thirty-eight female, and of the cubs we've caught, seventy-four percent are male. These sheepherders and outfitters are going to have to stop killing bears or there just aren't going to be any more."

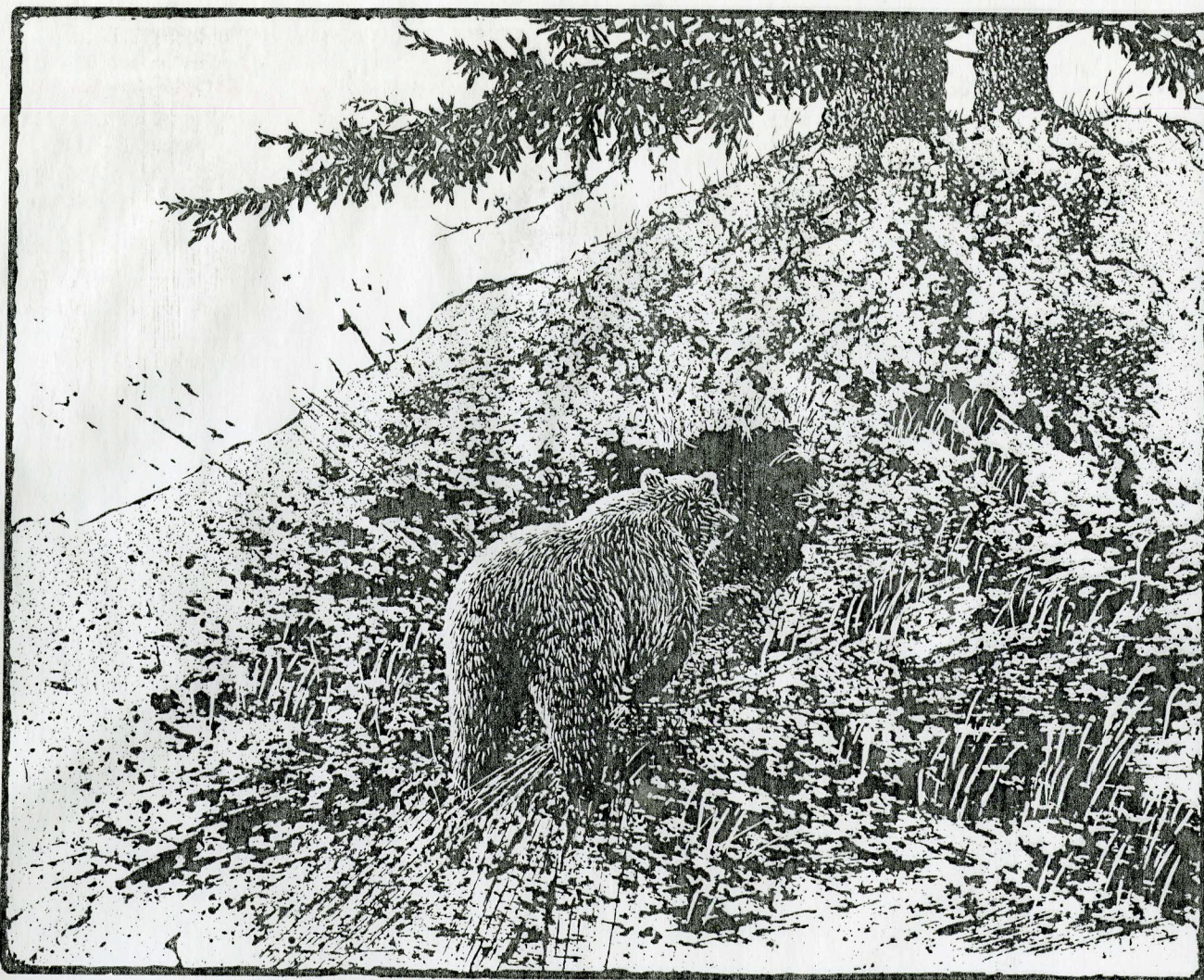
Many of the people living around the park feel nothing but malice for the bears. Even more know nothing about grizzlies, or the study. Wouldn't a little public relations benefit the bears?

"Look," Knight replies, "we're not in business to educate the public. Our job is to provide information to the managers, so they can make the wisest possible decisions about grizzly bears. They're the ones with the money to hire the public relations people. I'm a scientist, not a public relations man."

What about the future?

"Last year, I was giving twenty or thirty years until the Yellowstone grizzly would be extinct, or a remnant. This

BREATH-HOLDING IN GRIZZLY COUNTRY



year I'm more pessimistic. But nobody ever said saving the grizzly was going to be easy. Just look at the habitat encroachment around here. Three hundred and fifty thousand acres under lease application for oil and gas exploration in the Washakie Wilderness. Thousands of acres in the heart of the Teton Wilderness, clear into the Thorofare. Applications all over the North Absarokas. Mining and logging in the Gallatin. Geothermal on the west. Residential development all over the place. We're surrounded! Not to mention the poaching rings working out of Cooke City and West Yellowstone. You can walk into some of those souvenir shops over in West and pick up a nice grizzly claw for two hundred bucks. A big hide might bring ten thousand. Meanwhile, where's law enforcement? We do have a couple of good law enforcement officers, and I hate to downgrade them. The problem is that there are too few of any kind of officers operating in grizzly bear habitat, and fewer good ones.

"And the habitat encroachment is always considered by the Fish and Wildlife Service item by item. They're always saying, no, this won't jeopardize the bear by itself. But what about the cumulative effect of five or six developments? They won't address that. Yellowstone Village is

a big real estate development right in the middle of where there used to be lots of bears. Then you've got Ski Yellowstone, and that by itself wouldn't wipe out the bears—just take a few more. And right here in the park, twenty to twenty-eight million dollars' worth of development at Grant Village is coming, sitting on top of five Yellowstone Lake spawning streams—some of the most heavily used grizzly habitat we've got.

"I'd say that the way things are going, the future of the grizzly bear as we know it is bleak."

Since the aspen-gilded days of late September, the mother grizzly and her surviving cub have been spending most of their time in the neighborhood where she denned last winter. Now that the groves are stark white and black, bare and stiff, and the October sleet is flying, the mother's excavation has begun in earnest. She has chosen a steep, north-facing slope, in the lee of the prevailing southwest winds of the winter to come, where the snow will stay deep and she and the cub will remain sealed off from the world.

Through the roots of a big fir she has dug an entrance tunnel six feet long, sloping slightly up from the door so heat will rise into the bedroom. Thanks to the steepness

of the site, the hundreds of pounds of dirt and rock she hurls between her hind legs scatter out of the way down-slope in an apron of rubble, and the roof above her head, root-woven and thick, will stay secure.

The chamber proper is cozy, just big enough to enclose her and the cub and their bedding, which they have been out collecting today. They drag in boughs of spruce and fir, divots of moss, long sprays of supple beargrass for a springy, air-entrapping mattress that will keep them warm through the bitterest climacteric.

Food is getting scarcer daily. The berries are gone. The whitebark pine middens are under snow. The perennials of autumn have withered to straw. Yet an auspicious mer-

cy falls in the path of the two bears. A bison has died.

They eat till they can barely walk. They can't stop yawning. Pacing dreamily back and forth on the porch of the den, they are already half-insensate. You could walk right up and scratch them behind the ears. And still they stagger to the bison carcass daily, grunting, farting, roly-poly and complacent.

When the blizzard comes, therefore, they are ready. They stretch, crawl in, and snuggle up. After three days and nights of tempest, the apron of spoil, their tracks, their door, all signs of grizzly bear are gone. The blankness of the snow is as absolute as the pale November sun above it. ▲

—EPILOGUE—

Beyond the diligence of the scientists, the rule-following of the land managers, and the rule-propounding of the bureaucrats, an unfaced danger lurks. Even among those with the utmost apparent commitment to grizzly bear recovery, this phenomenon represents an ongoing and virtually ubiquitous threat to the bear. Simply put, it is the inability of many of the bear's partisans and would-be partisans just to get along—to cooperate, on the grizzly bear's behalf, in an atmosphere of mutual trust and shared goals. Time after time in the preparation of this piece, it was clear to me that personal resentments, ego-tripping, empire-building, professional jealousy, turf obsession, and plain old nasty machismo have played prominent roles in what ought to be objective discussions of a very important and significantly threatened animal.

The job of soothing inflamed tempers and smoothing ruffled feathers—and of getting on with saving the bear—now has fallen to a young and strong-willed biologist named Christopher Servheen, whom the U. S. Fish and Wildlife Service has designated as grizzly bear recovery coordinator. The task before Servheen is formidable. Besides all the bubbling hostilities and overt contention, there are whole areas of grizzly research so poorly coordinated, so riddled with gaps, and so inefficiently carried out that hefty sums of ever scarcer research money are being wasted—if your criterion is effective contribution to grizzly bear survival. Other essential research projects are drying up for lack of funding. Some administrators loudly proclaim their commitment to grizzly recovery, and then put into effect policies that show little evidence of it. Explosive personalities, scattershot work habits, and outright hypocrisy abound in grizzly country.

The killing of grizzly bears by humans, however, is unquestionably the most serious danger in the Yellowstone ecosystem, and it rages on. As many as twenty bears may have died of rifle fire in the summer and fall of 1981. One poacher was prosecuted by the State of Montana and fined fifty dollars. During last spring's black bear season in Wyoming, four grizzlies died in Shoshone National Forest, all of them shot over bait, two of those by the same man. When wardens came to arrest him, he had the head and claws of one bear in his freezer, and the entire carcass of the other hanging in his garage. The U. S. Fish and Wildlife Service office in Billings, Montana, had the power to prosecute him under the Endangered Species Act, and he could have been

fined as much as \$20,000 and sentenced to a jail term of one year for each bear killing. But the U. S. Attorney General has ordained that whenever there is concurrent state and federal jurisdiction, the case should be handled by the state. So, the State of Wyoming prosecuted the man; he served four days in jail and paid a fine of \$1,400.

In the rest of grizzly country, habitat loss is the greatest threat. For the moment, mineral exploration in classified wilderness has been suspended, but whether Congress will act to forbid it altogether is doubtful. Existing leases will almost certainly be honored even if Congress does act, and there are plenty of them. Coal mining and other development in the Canadian lands that border on northwestern Montana grizzly habitat are going forward on a huge scale. And thanks in part to the Reagan Administration's unwillingness to do anything about American-caused acid rain in Canada, that country has not shown much interest in the problem of the mining development's pollution, which will flow straight down the North Fork of the Flathead River and through the heart of grizzly country. There is still a healthy population of grizzlies in this northern continental divide ecosystem, but its diminution, when it comes, is likely to be precipitous. So far there has been little preparation for dealing with such a calamity. The single most helpful action would be for the private interests that will profit from the exploitation of grizzly habitat to support research that would identify in advance the likely effects of their operations. But the possibility that the news might be intolerable—that the kinds of development the corporate powers have in mind would prove incompatible with grizzly bear needs—apparently is too great for them.

There is, of course, a chance for the American people to intervene, and for their government to act on the public's desire to save the grizzly bear. National Audubon Society has announced the establishment of a \$10,000 cash reward for information leading to the arrest and conviction of grizzly poachers, and a growing outcry over the epidemic of killings seems at last to be disturbing the bureaucratic slumber. If the slaughter can be controlled, there still remains the costlier and far more complex job of habitat protection, a problem not yet squarely faced by government agencies. But if they will face it—and can stop both the killing and the erosion of habitat—the grizzly can recover.

So saying, so wishing, I hear a dour inner voice muttering, "Good luck, pal."

—T. M.

Aug. 31/82

n 1891

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25 Cents

Grizzly bears nearly extinct in Yellowstone

WASHINGTON (UPI) — Wildlife experts are warning the grizzly bear may soon be extinct in Yellowstone National Park, according to a U.S. Park Service memorandum disclosed Monday.

The internal memo states that a special "Interagency Grizzly Bear Study Team" of federal and state wildlife agencies estimates there are as few as 30 female and 157 male grizzly bears left inside the huge nature preserve.

The population of the massive brown bears in Yellowstone is being wiped out by illegal killing inside the park and destruction of the bears' habitat by new land and energy development adjacent to the park, wildlife researchers say.

Yellowstone, the oldest and largest national park, is located mainly in northwest Wyoming, and spills

over into Montana and Idaho. It provides one of the two remaining major habitats for grizzlies in the lower 48 states. The other area is in and around Glacier National Park in Montana.

Female grizzlies usually give birth to no more than one cub per year, and never more than two. Adult grizzlies grow to 800 to 1,400 pounds.

The dire threat to the grizzlies is reported by Roland Wauer — director of Natural Resources Management for the Park Service — in an Aug. 17 memo to a joint federal-state committee studying the grizzly bear problem. Wauer is chairman of the panel.

"IT IS IMPERATIVE that highest priority be given to eliminating grizzly bears.
Please see BEARS, A16

Bears

Continued from A1

zly bear mortality. Only immediate and broadscale protection can save the grizzly," Wauer warned.

A copy of the memo was obtained by the Wilderness Society. Wauer was out of town and not available for comment, but Park Service

spokesman Duncan Morrow said officials have not yet decided what to do about the findings.

Morrow said the memo was "brought to the attention" of National Park Service Director Russell E. Dickenson last Friday. Dickenson also was not in Washington for comment.

J.H. News Nov 1982

Acting Yellowstone chief concedes grizzly worries

By George Gladney

Jim Thompson, the acting superintendent of Yellowstone National Park, says it has become apparent to federal officials this year that the Yellowstone grizzly population is in trouble.

In an interview with the News last week, Thompson said the steering committee overseeing the Inter-agency Grizzly Bear Study Team may discuss the possibility of supplemental feeding when it meets in Denver next week. Thompson is a member of the committee.

Another protective measure the committee may choose to study is increasing closures to visitors in certain areas at certain times of the year.

Both measures were mentioned as possibilities in an Aug. 17 memorandum sent to committee members by Roland Wauer, director of natural resources management with the National Park Service (NPS) in Washington D.C. That memo, which was leaked to the press, widely publicized Wauer's contention that the grizzly population could be as low as 187, when previous government estimates put it as high as 350.

Thompson, who was appointed acting superintendent after the death of Superintendent John Townsley in September, said that Wauer's memo, combined with the loss of 16 grizzlies in the population thus far this year, has officials worried.

Thompson said that Wauer's bear population estimate is contested in some quarters, but he said that determining a correct figure is not the main objective. He said that even if the population is as high as 300, the bears are still in trouble, considering that more than five percent of their number (the acceptable annual mortality rate) have been lost to the population in 1982. A total of 13 have been found dead by gunfire or natural causes, while three "incorrigibles" were moved to British Columbia.

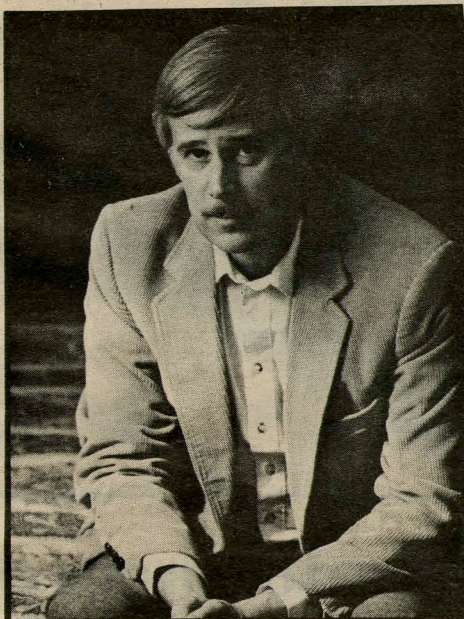
"I think the generally accepted figure is 200 to 250 grizzlies," said Thompson, "but you can't substantiate that. But is it really necessary to know? We far exceeded the five percent level in mortalities this year, and that argues for a declining population."

Thompson said officials are equally concerned with the low ratio of females to males. Wauer estimated that only 30 females may exist in the population.

Thompson said that if the steering committee (comprised of officials from the NPS, the U.S. Forest Service and the U.S. Fish & Wildlife Service) takes up the idea of supplemental feeding, the committee first will probably want to give it thorough study. "It's not something that we would start next spring," he emphasized.

A decision to do a supplemental feeding would depend on the availability of the bears' natural diet, Thompson noted. He said, for example, that officials would consider factors such as depth of winter snowfall and the availability of staples such as white bark pine nuts, which had poor harvests in the fall of 1980 and 1981.

If a feeding program were started,



Jim Thompson

he said, it probably would entail dropping natural food, such as elk carcasses, into areas where it is known the bears are suffering from lack of food.

Thompson said, "It is not an easy question because it raises the same problem of garbage feeding. You have to ask, 'Will you always have to do it? Will the bears develop a dependency on it, and lose the ability to hunt?' It's not something you can answer right away."

As for periodic visitor closings, Thompson said that previously they were ordered primarily to protect humans, but now the thinking has changed—closings may be in the interest of protecting the bears from humans.

Thompson said that during critical periods, such as when a grizzly is raising cubs, humans in an area can produce harmful stress on grizzlies. "We're seeing a significant change in our thinking," said Thompson. "We're beginning to look now not only at visitor safety but impact on the bears."

Thompson, who came to Yellowstone after spending four years as deputy regional director of the National Park Service's Rocky Mountain regional office in Denver, said he would welcome the opportunity to serve as the Park's permanent superintendent.

"I am familiar with the region's issues, I worked closely with Townsley, and I think it is relatively easy for me to be current on things here, and also provide some continuity," Thompson said.

A native of Iowa, Thompson graduated from the University of Wyoming with a major in geology in 1959. He joined the NPS in 1960, starting as a ranger at Rocky Mountain National Park. After working as a department manager and program analyst in the NPS's offices in Washington D.C., he took on his first park superintendency in 1969 at the Theodore Roosevelt National Park in South Dakota.

In 1972 he became superintendent of the Death Valley National Monument and from 1976 to 1978 he served as associate regional director for operations at the Pacific Northwest regional office in Seattle.



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EXECUTIVE SUMMARY

Status of the Grizzly Bear Population in the Yellowstone Grizzly Bear Ecosystem

Prepared by Stephen P. Mealey

LMP Specialist, WO; 9/10/82

Knight et al. (1982) characterized the Yellowstone Grizzly Bear Population at the close of 1981 as follows:

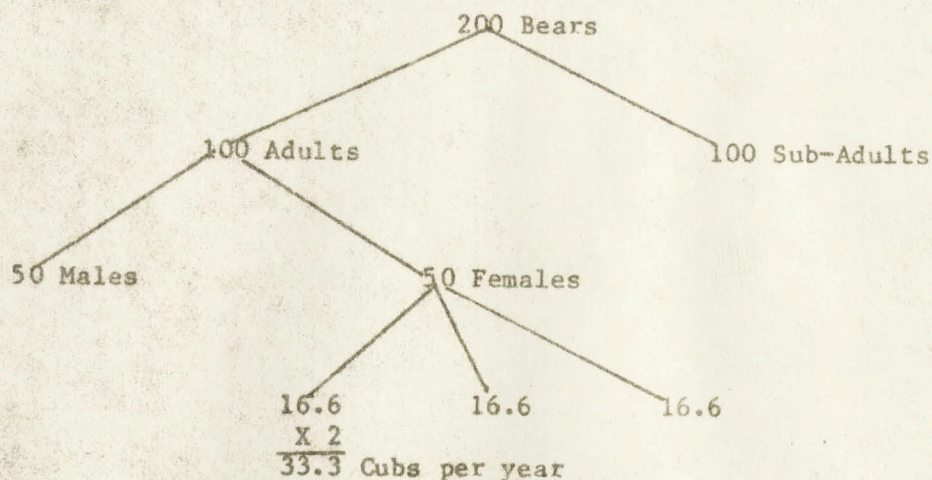
- 1) population size - 237
- 2) adult females - 29
- 3) adult males - 40
- 4) subadults - 168
- 5) known ann. mortality - 17 (53% caused by hunter/outfitters)
- 6) cubs produced, 1981 - 22

The current population point estimate displayed in Figure 1 generalizes this population's structure. Adult, female grizzly bears produce cubs approximately once every three years. The adult females can be seen as three distinct breeding teams, each producing every third year. With an average litter size of 1.9 cubs per litter, 19 cubs per year would be produced.

The major concern of the researchers is the status of the adult female segment. The trend in the number of females each year with cubs is down while the total mortality level appears to be relatively constant

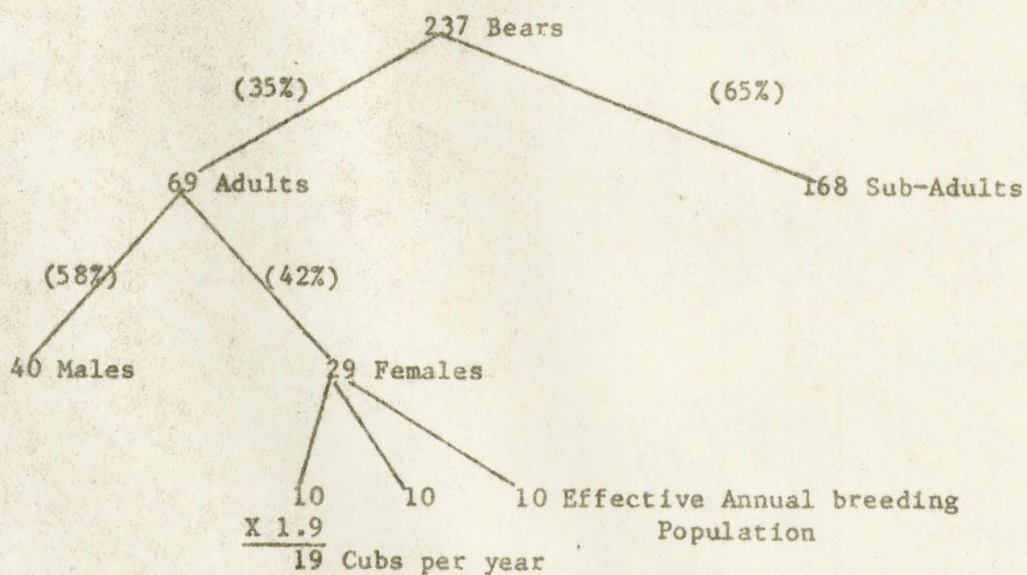
POPULATION POTENTIAL

Theoretical



Mortality must average $\leq 16.6\%$ and be minimal in adult females.

Current Point Estimate



Mortality must be $\leq 8\%$ and be minimal in adult females.

Figure 1. Structures for theoretical and estimated current populations of grizzly bears in the Yellowstone Grizzly Bear Ecosystem.

or increasing, particularly among the female segment. The point estimate (Figure 1) implies that annual mortality should be less than 8% and be minimal in adult females. This level assumes survival of all cubs, which is unlikely. Known mortality for 1981 was approximately 7%; actual mortality was probably much higher. The important point is this: if mortality exceeds production, the population will decline. In the Yellowstone Ecosystem, grizzly bear production is, for many reasons declining while mortality, particularly among the producers is constant or increasing. This has led the researchers to conclude about survivorship and mortality: "If adult females alone were considered, the mortality curve would probably drop below the point needed to maintain the population"; and "Since 1981 was a high mortality year, mortalities in the female segment probably exceeded that which the population can withstand" (op. cit.).

The Grizzly Bear Recovery Plan indicates that the control of direct man caused grizzly mortality is the primary management opportunity to achieve population recovery. The plan indicates that all man-caused mortality should not exceed 11 bears per year. To date in 1982, 13 bears are known to have been either killed or removed from the Yellowstone Ecosystem; 42% of the 1982 activity period remains including the fall big game hunting season when man caused bear mortality is usually high. Probability for a continued decline in the female segment of the population is high as long as man caused mortality remains high. With this probability, long term prospects for population recovery are poor.

Over the years and again this year a significant portion of direct man caused grizzly mortality has occurred on National Forest land. Much of that has been associated with activities sanctioned by special use permits, leases and contracts (i.e., outfitter camps, bear baiting, livestock grazing, summer homes, resorts, logging and mining).

Forest Service Management Opportunities

The Forest Service has made major management efforts in grizzly bear conservation; among them are:

- 1) preparation of "Guidelines for Management Involving Grizzly Bears in the Greater Yellowstone Area";
- 2) assistance in the preparation of the Grizzly Bear Recovery Plan;
- 3) support of the Interagency Grizzly Bear Study Team;
- 4) participation on the Interagency Grizzly Bear Study Steering Committee;
- 5) preparation of a final AMS for grizzly bears to be included in the Custer, Gallatin, Shoshone, Bridger-Teton and Targhee National Forest Management Plans. The AMS assumes, among other things, that the preferred alternative in each of the five

forest plans will, as a minimum, reflect a recovered population.

Preliminary and informal review by LMP of 3 of the 5 forest plans covering national forests in the Yellowstone Grizzly Ecosystem shows no specific accountability to the recommended man-caused mortality goal in the Recovery Plan of less than 12 bear deaths per year.

Specific accountability for "controllable" man-caused mortality (i.e., that resulting from activities sanctioned under Forest Service special use permits, leases or contracts) could be established as follows:

- 1) apportion as man caused mortality targets, the Recovery Plan mortality goal over the administrative units in the Yellowstone Grizzly Bear Ecosystem;

Yellowstone & Grand Teton Natnl Pks. -- less than 4 mortalities

Shoshone NF	-	"	"	3
Bridger-Teton NF	-	"	"	3
Gallatin NF	-	"	"	2
Custer NF	-	"	"	2
Targhee NF	-	"	"	3

- 2) each national forest plan prepare forest-wide standards and guidelines reflecting implementation measures from the "Guidelines for Management Involving Grizzly Bears in the Greater Yellowstone Area" that would provide for man-caused grizzly mortality within target limits;

- 3) convene, for each mortality, a board of inquiry to determine how management could be refined to prevent future losses.

Establishment of specific accountability for man-caused mortality, compatible with the Recovery Plan, will provide quantitative criteria for determining the contribution of each forest plan to grizzly bear recovery in the Yellowstone Grizzly Bear Ecosystem.

Literature Cited

Knight, R., B. Blanchard, K. Kendall. 1982. Yellowstone grizzly bear investigations. Report of the Interagency Study Team, 1982.
USDI-NPS. 70 pp.

Bears

From page A 1

to publish his own findings in his book, "Track of the Grizzly."

One of Craighead's recommendations was to close the dumps slowly, so the dependant bears had time to adjust to the change. Instead, the Park Service closed the dumps rapidly.

The bears did just what Craighead predicted they would do — they moved to the adjacent campgrounds for food, and people-bear conflicts rose dramatically.

To deal with the problem, the Park either mismanaged or killed the "problem bears," Craighead charged. "There were 53 known bear mortalities in 1970, and 48 known bear mortalities in 1971." In all, the Park Service "decimated about 44 percent of the population," he said.

The wholesale destruction was done with little understanding of the grizzly bear's low reproductive rates. A female is not ready to mate until she is four to five years old, Craighead said, and then usually produces only one cub a year. "They set the stage for this to happen in the late 1960s and 1970s."

The biologist is concerned with the recent bear counts, pointing out the large disparity between the number of female and male grizzlies.

Because of the grizzlies' reproduction rate, he said there may only be a third, or 10 bears, who will bear cubs this year. "It may be too late to save them. Everything possible should be done to encourage their survival," he said.

Anzelmo denies that Park Service policies have affected the grizzly. She did say the park has engaged in "management actions," and occasionally must destroy a bear. But, she said, few bears have been destroyed in recent years, and none this year.

Craighead believes it's too little, too late. "Now they (the Park Service) are in a difficult position. Now they can't kill an aggressive bear because there are so few."

Vandals deck furniture

Vandals threw all the deck furniture at Sundance Tennis and Swim Club at Teton Village on to the pool cover the evening of August 24.

The action poked several holes in the \$3,000 cover, causing an estimated \$200 worth of damage.

In Yellowstone Park

Jackson Hole News - Aug. 2/82

Debate resumes over grizzly's decline

By Becky Woods
Staff writer

The grizzly bears in the greater Yellowstone ecosystem are in trouble: Their population is slowly but steadily declining and the number of female bears is at a dangerously low level, according to estimates from a federal grizzly bear study team.

The National Park Service, recognizing the situation, claims the decline is caused by illegal hunting and habitat destruction. Jackson Hole biologist and bear researcher Frank Craighead thinks otherwise.

"The main reason for a low bear population is mismanagement by the Park Service," he said.

The interagency grizzly bear study team of state and federal wildlife agencies estimates that there may be only 30 females and 157 male grizzlies in the area that encompasses Yellowstone and

Grand Teton National Park, and five surrounding national forests.

The findings prompted Roland Wauer, director of Natural Resources Management for the NPS, to write an internal memo to the joint federal-state committee studying grizzly bears, warning them that grizzly bears in Yellowstone are in danger of becoming extinct.

"It is imperative that highest priority be given to eliminating grizzly bear mortality. Only immediate and broad-scale protection can save the grizzly," Wauer said.

The Wilderness Society obtained a copy of the Wauer memo, which it then released. The Park Service confirms the findings. The report, said Yellowstone Park spokesman Joan Anzelmo, "is not something new."

She said the grizzly bear is being extensively studied now, and that more research needs to be done. The park,

she added, has already restricted backcountry areas frequented by grizzly bears to minimize conflicts with the animal, and may close off whole areas in the future.

Craighead says the problem is not new, but the Park Service acknowledgement of the problem is. "I'm glad to see they (the Park Service) recognize publicly that the grizzly bear population is in bad shape and is threatened," he said.

Craighead believes the agency created the roots of the problem in the 1960s and 1970s. "The grizzlies were mismanaged from the top all the way down," he said.

In cooperation with the NPS, Craighead initiated a long-range study of grizzlies in 1959. His recommendations on bear management in the park were not followed and not published, a situation which eventually led Craighead

See page A 10

SPEAK IT OUR OPINION

The bear facts

In a perverted sort of way, it's fair to say "I told you so" to an intransigent person who refuses to recognize the truth. But in this case Frank Craighead must get no satisfaction in hearing the National Park Service admit after nearly 20 years that its bear management policies have driven the grizzly to the edge of extinction in Northwestern Wyoming.

By stating that everything possible must be done to avoid killing any of the 200 bears left in Yellowstone, the Park Service is admitting that the grizzly population is in danger. But the agency refused to acknowledge that its own management policies are the cause, placing the blame instead on poaching and habitat destruction, both of which are true to some extent.

It seems to us, though, that until the Park Service realizes the true cause of the bears' problem, any management decision will be only a finger in the dike at best.

Recent closures of areas to people indicate that the Park Service is learning, and no longer has the desire to wipe out the grizzly population as it once did. Still, we feel that with Craighead's experience and the findings of the interagency study team, the Park Service could find a way out of the present jam and preserve the grizzly in this part of the country.—RPW



Atmospheric Sciences Research Center
Earth Science Building - Room 324
State University of New York at Albany
1400 Washington Avenue
Albany, New York 12222



January 22, 1982

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

Dear Frank:

It was great hearing from you again. Nobody here knew much about your activities in the past year or two.

I enjoyed your article on "Nesting Raptors in Western Wyoming, 1947 and 1975." We are checking on the possibility of having some additional copies made for you.

Happy New Year.

Sincerely,

Mary Haley

for

Volker A. Mohnen

Dr. Craighead,

*I'd like to add my good wishes for
the new year.*

*Sincerely,
Mary*

Grizzlies Seen as Imperiled in Wyoming

Special to The New York Times

YELLOWSTONE NATIONAL PARK, Wyo., Oct. 2 — Yellowstone Park officials, finding it increasingly difficult to protect grizzly bears here, say the animals could disappear from the park unless drastic steps are taken.

Biologists say the bears are dying in increasing numbers because of poaching, the destruction of their habitat and the garbage they eat. And at least one biologist faults past park management practices.

Park officials say that in retrospect they wish they had known more about the habits of grizzlies, but deny any mismanagement. Thomas Hobbs, the Chief Ranger, says park officials did the best job they could with the data they had.

Adding to the problem is the fact that biologists do not know how many bears are necessary to keep the population alive. There are about 30 adult female bears in the Yellowstone area, which includes land outside the park. Female grizzlies can give birth only once every three years. And right now the bear death rate is outpacing the birth rate.

Richard L. Knight, director of the Inter-Agency Grizzly Bear Study Team in Bozeman, Mont., a group of Federal and state wildlife agencies, says there are only about 200 bears in the park.

"With the mortality rates we're getting, we're looking at the end of the grizzly bear population in 20 to 30 years," Mr. Knight said. "Something drastic needs to be done."

On Aug. 17, a National Parks Service memorandum said there were 187 bears in the Yellowstone area and acknowledged that the population was declining. The service had previously maintained that the grizzly bear population was 300 to 350. Mr. Knight says the park estimate is wrong and that there are at least 200 bears in the area. But biologists are still concerned.

There are about 1,000 grizzly bears in the lower 48 states, most of which are found in Glacier Park in northern Montana and surrounding wilderness areas.

Some critics say the grizzly bear situation underscores a flaw in Yellowstone Park's natural management philosophy, because, they say, park officials are trying to accommodate an animal that needs twice as much territory as the 2.2 million-acre park offers.

Poaching has taken a severe toll on the grizzly this year. Four bears have been legally killed this year south of the park in Wyoming. Two others were killed illegally and an additional two were killed by hunters who said they were looking for black bears but mistook the grizzlies for that smaller species. The grizzly is protected by Federal laws under the Endangered Species Act.

Poaching of the big bear can be lucrative. The hide can be sold to collectors, the claws to jewelers, and the gall bladder, prized by some Asians as an aphrodisiac, can bring several thousand dollars.

The illegal hunting has become such a threat to the bears' survival that several weeks ago the National Audubon Society in New York offered a \$10,000 reward for information leading to the arrest of anyone killing a Yellowstone grizzly.

Yellowstone grizzlies are also being harmed by what biologists call indirect mortalities, such as disruption of feeding areas. This year, for example, it was disclosed by the Park Service that 25,000 acres of prime grizzly habitat near the park's western boundary had been leased for oil and gas exploration.

Cooke City, Mont., a small tourist town at the northeast entrance of the park, has been cited by biologists as another major cause of grizzly bear deaths. Mr. Knight called the town a "grizzly bear population sink" because

bears feed on the garbage that some motel and restaurant owners leave out. He said this caused bears to lose their fear of man and become "habituated" to garbage, making them easy prey for poachers.

Sometimes bears attracted to the garbage must be removed by wildlife agents because there have been several cases in which humans have been killed or injured by the animals.

Darrel Crabbe, owner of the All Season Inn in Cooke City, and other townspeople say that if anyone is mistreating the bears, it is the wildlife agencies. Residents say the agencies handle the bears roughly when trapping them, give them overdoses of tranquilizers and sometimes kill them unnecessarily.

Bears are a rare sight these days in Yellowstone, where they used to line the roads looking for handouts from tourists. After several people were injured by bears, park officials began closing park garbage dumps in the late 1960's. Many bears then began invading campsites to find food and park officials began killing or removing animals that could not be forced to return to their natural state.

Two experts on grizzly bears, John and Frank Craighead, said they had recommended that the Park Service slowly wean the bears from the dumps to gradually reduce their dependence on them as a source of food. But the Park Service closed all the dumps at once, they said, and in doing so had to kill more than 50 grizzlies.

"The damage was done a good many years ago," said Frank Craighead, who faulted park officials for "mismanagement of the bears at that time," causing "a major decline."

Mr. Hobbs, the head Ranger, said gradually eliminating the dumps "would not have solved the problem, just prolonged it."



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SCIENCE EDITOR TRANSCRIPT--BROADCAST #10845, S.E. #1546

(Monday, July 19, 1982)

A: ALL ABOUT GRIZZLIES

B: BEARS AND PEOPLE

C: ARE BEARS ENDANGERED?

D: FIRST AID IN THE WILD

Those are today's stories in the world
of science and technology.

Annecr: The University of California, in cooperation with the
CBS Radio Network, presents another visit with the Science Editor.
Your Science Editor is Charles Levy.

A: ALL ABOUT GRIZZLIES

S.E.: The Latin name for Grizzly Bear, *Ursus Horribilis*, requires no translation. Known for its great strength, the 600-pound adult stands up to 10 feet tall and has no natural predators. Female grizzlies are considered the most dangerous of all bears, because they'll defend their young when taken by surprise; and with their long, straight claws, which, by the way, prevent them from climbing trees, they can easily kill an unarmed backpacker. Yet, given this awesome power, and no mean measure of intelligence, under "natural" conditions it's the bear who fears man rather than the other way around. One man who's very familiar with grizzlies is UC Berkeley's professor Dale McCullough.

MC CULLOUGH: I've lived with grizzlies on the Tundra in Alaska, where there isn't a tree to climb for 600 or 1,000 miles. I've been close to bears, and I know they'll run from me. And so I'm not afraid of bears in that situation. But where you get bears that have been habituated, bears that are used to people then I don't want to go there, because I go to have a good time and relax, and I don't want to have to be worrying about a bear that's trying to get food out of my backpack, you know. I might have to climb out of my sleeping bag in the middle of the night, and climb a tree. No such thing; it just isn't fun.

S.E.: No fun, and no assurance of safety, McCullough warns. Although grizzlies are unable to make it up the tree trunks they can hang onto large branches, and there've been cases where a terrified human has been pulled down by the feet.

Anncr: Yet you say grizzlies in the natural state of things actually fear humans. What's the story on that? What accounts for the change?

S.E.: Well, just take a look at the history of the grizzly in this country. Although the bears once ranged over most of the western plains and mountains, today they're found only in Wyoming, Montana and Idaho, with most of them in Yellowstone Park. Back in 1959, the Craigheads, twin brothers who were biologists, began a 12-year study of the bears in Yellowstone. Now in those days, as McCullough explains, the park service allowed bears to take food from human garbage dumps.

MC CULLOUGH: The success of the Craighead studies was largely dependent on having those bears concentrated in large numbers around the dumps. They were easy to study there because they could literally drive up in a car and poke a tranquilizer gun out the window, and capture these bears and mark them. Not only that, they could count the bears simply because a large proportion of them were showing up at the dumps on virtually a daily basis.

S.E.: Then, in 1968, two women, camping in different areas of Glacier National Park, were killed by two different grizzlies on the same night. And of course there was growing public alarm.

Anncr: So the bears had become habituated to humans because of all the food around, is that it? And they just weren't afraid anymore. *not before then was closed*

S.E.: Yes, and that's when they began to attack backpackers, eating their food, and sometimes, McCullough says, even the people.

Anncr: What, then, is the wisest advice when it comes to these "habituated" bears?

S.E.: The park service now warns visitors to stow all food in secure containers. Backpackers are told to camp in designated areas, and food is to be suspended some way and placed a few hundred yards from sleeping areas.

Anncr: And is it a good idea, when on the trail, to have bells on your pack to warn of your approach?

S.E.: Not if the bears are "habituated," McCullough says. The bells only signal that the next meal is just around the bend. *false*

MC CULLOUGH: Well, there are some cases in Glacier Park where the bears became essentially mugger bears. They waited along the trail for the people to show up. And the people came along. They threatened the people. The people dropped their packs, climbed trees, and the bears rifled their packs. And they were making a living like that.

S.E.: UC Berkeley's Dale McCullough.

B: BEARS AND PEOPLE

S.E.: Until the late 1960s, Mike, the National Park Service permitted close contact between bears and people. And bears were able to raid open garbage dumps for food in both Yellowstone and Glacier parks. As the animals became "habituated" to humans they also grew dangerous. When two women hikers were killed by grizzlies in 1968, everyone suddenly realized that park policy no longer worked.

Anncr: So, were those open dumps closed down?

S.E.: That wasn't so much the question. It was how to close them down, for the bears, as UC Berkeley's Dale McCullough says, had become dependent on the dumps. One group of researchers, who'd spent years studying the Yellowstone grizzlies, urged the closing-down take place over a 10 year period and the bears supplied with elk in the interim. Another research team wanted the dumps shut down as soon as possible, and recommended the setting up of bear-proof trash containers throughout the parks. This is the approach ultimately selected by the Yellowstone Park Service.

Anncr: Now that meant the bears had to find other ways of filling their stomachs.

S.E.: Yes, and the 180-or so bears who had become "dump regulars," *false* so to speak, couldn't make the adjustment.

MC CULLOUGH: You had a whole bunch of bears there that were incorrigibles, in the sense that they spent a lifetime living out of garbage dumps, and they weren't just going to go out and dig roots and ground squirrels, and gather pine nuts, and stuff like that. You know, they were going to show up at camp-grounds.

They did. Dumps only furnished a small part of their food supply

S.E.: And that of course is exactly what they did. *& the Grizzlies*

predicted this

Anncr: So how were the troublemakers handled?

S.E.: If a bear bothered campers it was transported outside the park into back country. If the bear returned to disturb campers again, it'd be hauled out once more. After a third such occurrence, however, the park service would either ship the bear to a zoo, or shoot it.

Anncr: Wouldn't that tend to reduce the bear population to a dangerously low level for survival?

S.E.: Quite a few people thought that way, Mike, and in fact there was such a public furor over the park service handling of the grizzlies the National Academy of Sciences was asked to look into the whole matter. That was in 1972, and McCullough was a member of the Academy panel. Well, using accumulated data he discovered that killing some of the grizzlies actually increased the overall reproductive rates. *crash*

Anncr: And how would that be, exactly?

S.E.: With fewer bears around the females had more food for themselves and were able to give birth once or twice a year, rather than only every two or three years--as they do, McCullough says, when the population is denser. The Berkeley scientist sums it up this way. *false*

MC CULLOUGH: If you have to go and kill a bunch of bears, like they did at the closing of the dumps, it's not a disaster because they bounce back fast.

S.E.: McCullough's theory certainly appears to hold water, Mike; after an initial decline in bear population in the early '70s, right after the dumps were closed, there was a marked increase in numbers of cubs.

Anncr: All right, then, if the new park policy regarding grizzlies is no threat to their existence, what's the story when it comes to protecting park visitors? Is there a new approach on that score?

S.E.: Oh, yes, the Park Service undertook a campaign of education about the dangers of close contact with bears, McCullough says.

MC CULLOUGH: If you go to Glacier Park now, the signs entering the Park are no longer the Smokey-the-Bear-type pictures. They show this big, black bear with exposed teeth, you know, and a mean look.

S.E.: A look having no resemblance whatsoever to that of a "teddy bear," says Dale McCullough, who's professor of forestry and resource management on the Berkeley campus of the University of California.

C: ARE BEARS ENDANGERED?

S.E.: While grizzly bears are on the endangered species list, no one really knows how many of these impressive animals are still actually around. The University of California's Dale McCullough, who served on a National Academy of Sciences panel to study the nation's grizzlies, looks at the question this way, Mike.

MC CULLOUGH: I'm one of those people that worries about the grizzly bear because it's a relatively small population, and the potential is there for losing them. I don't think we are losing them, but I want to know. I don't want to guess about it, you see. So I want research to be done on the best way to monitor those things effectively and efficiently.

S.E.: Since you can identify individual bears by their color patterns, McCullough suggests a standardized way of counting them. Researchers would fly over parks such as Yellowstone and Glacier, where the bears are concentrated following a given route for a given length of time, and at a certain time of year. In that way they might estimate the minimum number of grizzlies.

Anncr: Would that include back country bears as well?

S.E.: No, back country bears don't mix with their more "urban" park kin, McCullough says. The back country ones learn about food gathering from their mothers early in life and prefer to forage for their food.

Anncr: In other words, they like roots, nuts, berries, salmon and carrion better than twinkies and chocolate bars.

S.E.: Exactly, and it's those acquired tastes of park bears that certainly create problems for campers.

Anncr: Well, is there a way to teach park grizzlies not to have a taste for human foodstuff?

S.E.: The only way is to instill fear into them, McCullough says. His suggestion is a harmless round of buckshot to a sensitive part of the anatomy.

Anncr: Exploding firecrackers won't work.

S.E.: No, unless the bear associates the noise with pain.

MC CULLOUGH: If you shoot them once with a shotgun, so they associate the bang with the pain in the butt, firecrackers will work. In other words, it will reinforce something you have already done. But if you have a naive bear that's habituated, they are used to hearing a lot of people noises, and you suddenly interpose a firecracker, what's that going to mean to the bear?

S.E.: Just another loud noise. But once fear is instilled, McCullough says, the mother bear will train her young to stay away from humans.

Anncr: I can imagine there are plenty of objections to this approach, however,

S.E.: Well, McCullough says the objectors are likely to be the same people who don't think twice about reaching for a package of meat in the local supermarket.

MC CULLOUGH: In my viewpoint, it's less of a transgression of the laws of nature to go out and prey on an animal that has evolved in the presence of predation for three million years than to go out into a pasture to take poor old trusting "Bessie" and load her in a truck and send her off to the slaughter house.

S.E.: Ideally, of course, bears and people would each recognize their own territories. For example, in Alaska State Park there's a salmon stream where grizzlies congregate to gather fish. Nearby is an area where photographers come to observe and take pictures. Any bear that wanders into the observation area gets a load of buckshot, McCullough says. But any photographer who crosses the line has his or her equipment confiscated and may in addition be fined.

MC CULLOUGH: So they have bears and humans right close together. And in one sense they're habituated. But what they've learned is that dividing line, you see, on both sides. The bears are habituated in the sense that it's OK for people to be up there, and it's OK for me to be down here, but if I go up there people are dangerous.

S.E.: Professor Dale McCullough of UC Berkeley.

D: FIRST AID IN THE WILD

S.E.: Well, it's midsummer, Mike. There's not a cloud in the sky. You stop the family car on a shady mountain road and set out for a little hike. Do you see any problem with that scenario?

Anncr: Not if it's all as you say. You might have a sweater along and maybe a snack.

S.E.: It's not all that I say, of course. You hike in a mile or two, and suddenly the weather turns stormy, with the temperature dropping 30 degrees or so. You can't even see your way out.

Anncr: Now all you need to do is fall and injure your ankle, and you've really had it.

S.E.: That's why it might be a good idea to read The Common Sense Medical Guide and Outdoor Reference before you set out on a mountain jaunt. It's written by Newell Breyfogle, who's with the Department of Physical Education at UC Santa Barbara. The book spells out what you need to know about basic first aid and outdoor survival.

Anncr: What do you need to have in a first aid kit?

S.E.: Include a signal mirror, Breyfogle says. It'll be useful when the sun comes out again.

BREYFOGGLE: As far as first aid kits are concerned, I always take a flashlight with an extra bulb. I always take some sterile pads. I take--to me this is the most important wrap of any--a four-inch elastic bandage. People say take white granulated salt. I don't believe in salt tablets. Salt tablets stick to the stomach, or pass through. You do need a little salt, so if I took salt tablets I would grind them up.

S.E.: Breyfoggie says you might also include a snakebite kit.

Anncr: What about a whistle?

S.E.: Yes, a plastic one that won't freeze to your lips, in case you're out in the winter. Take moleskin for foot problems. And a fish line in case you're really stranded. But Breyfoggie says never to use more energy trying to find food than you'll get from the food itself.

Anncr: You'll need water of course. And then I've heard it's a good idea to take along iodine tablets for water purification.

S.E.: Yes, in the last few years there've been reports of a disease called giardiasis, from a water-transmitted parasite. Breyfoggie recommends iodine or iodine-based tablets, but warns this isn't enough.

BREYFOGGLE: Now the only real safe way, positive 100 percent way, of taking care of the bacteria is by boiling; and you boil for 10 minutes at sea level, plus two minutes per thousand feet.

S.E.: There's another obvious way to get good drinking water, and that's to find it's source. Breyfoggie says about the only time you can be sure that water coming from a rock isn't being routed from another side of the mountain is to know the water is coming directly from a glacial runoff or from a pure, underground spring.

So before you set out on what seems to be a nice, sunny summer's day, it's a fine idea to prepare yourself for the out-of-doors by learning some first aid and a few survival techniques. The name of that book, again, is The Common Sense Medical Guide and Outdoor Reference. The author is Newell Breyfoggie, of UC Santa Barbara, and the publisher is McGraw-Hill. And that's it for this edition.

This program was produced by Charles Levy and Sylvia Paull.

8
Casper Star Tribune 9/1/82

Expert blames Park Service for low number of grizzlies

MOOSE, Wyo. (UPI) — Years of mismanagement by the U.S. Park Service has led to the near extinction of the mighty grizzly in Yellowstone National Park, one of the world's leading experts said Tuesday.

Frank Craighead Jr., author of "Track of the Grizzly," said the Park Service regarded the giant bear as a nuisance during the 1960s and 1970s and failed to realize the

grizzly has a low reproductive rate.

In memo disclosed this week in Washington, the Park Service said the bear was nearing extinction in the nation's largest and oldest national park. Illegal killing inside the park and nearby energy development were blamed.

"The grizzly numbers declined rapidly in the late 60s and early 70s due to mismanagement by the Park Service," Craighead said. "One of

the things they did was abruptly close the park dumps where grizzlies came for some of their food."

At this time, Craighead was making a nine-year independent study of the park grizzlies.

"When we realized the park was going to close the dumps, we recommended they do it gradually over a period of time," he said.

Please see BEARS, A12

Bears

Continued from A1

because the bears were not being given enough time to adjust to a return to "natural" food.

CRAIGHEAD SAID as mauling incidents increased "the Park Service actually wanted to get rid of bears, and then didn't realize they (the bears) had a low reproductive rate."

As many as 50 grizzlies were killed each year during this period — some from hunting and poaching, some from natural causes, "but a large part of that was control," he said.

Craighead said litters average only about two cubs per year so it will be "impossible" to rebuild at a rapid rate.

Yellowstone National Park spokeswoman Joan Anzelmo said she did not believe the decline in grizzly population could be blamed totally on poor Park Service management.

"We have learned an awful lot," she said. "Certainly, we have done better by the bear for the last 12 years since we have been a lot stricter in the way people and garbage are managed."

Ms. Anzelmo said the grizzlies have been weaned off garbage and are living "more natural lives"

September 1, 1982

Mr. Frank Craighead
Moose, Wyoming

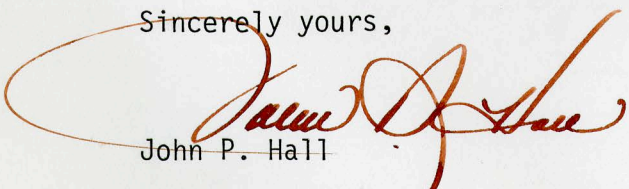
Dear Mr. Craighead:

First, we were pleased to be able to locate a set of bear paw book ends while in Wyoming Outfitters this past weekend after a two week stay in Yellowstone National Park. As you may recall, I wrote to inquire about their availability and was more than surprised and pleased to locate a set in Jackson. In more than a physical sense, they grace my roll-top desk and the literature on our rare national treasure.

Second, I thought that you might be interested in seeing a copy of the brief article that appeared in this morning's Rocky Mountain News. Since the News doesn't have the distribution of the Post in the Jackson area, I wasn't sure whether you would see this particular article. With a deep concern for the Grizzly as an interested "lay-person" I can imagine that you, as a professional in the field, must feel a tragic sense of confirmation of your research and recommendations.

With this commitment in mind, and familiarity with Dave Nead, we have recently joined the newly formed Great Bear Foundation and trust that the efforts and support that might be generated by that organization and the persons associated with it will not be too late to assit the Grizzly. For those of us who have been concerned about the Grizzly, you should know that we appreciate your contributions and those of your brother over the years.

Sincerely yours,



John P. Hall

5706-A South Pearl
Littleton, Colorado 80121

Denver Post 8/31/82

Wyoming Grizzlies Declining

Washington Post

WASHINGTON — The grizzly bear is disappearing at an alarming rate from the Yellowstone National Park area — one of its last two habitats in the lower 48 states.

Fewer than 200 of the giant bears remain in the Montana and Wyoming backwoods around Yellowstone, and the number of adult females may have dropped to as low as 30, according to a long-term study made public Monday.

It had previously been estimated that there were between 300 and 400 grizzlies around Yellowstone.

The bad news was compiled in an urgent-sounding memorandum by the Interagency Grizzly Bear Study Team, a state-federal group that has been monitoring the grizzly population for almost a decade. The study team's memo was released in Washington by the Wilderness Society, a conservation group.

"Unless some change occurs, the probability of retaining this wildland species in Yellowstone National Park is minimal," said the Aug. 17 memo from Roland Wauer, a National Park Service official.

The bear's other remaining habitat in the lower 48 states centers on Glacier National Park and the Bob Marshall wilderness in Montana.

Poachers around Yellowstone are killing grizzlies illegally and profiteers are selling their claws as "macho" charms for up to \$250 each, the memo says.

Rocky Mtn News 9/1/82

Park Service lambasted on grizzlies

MOOSE, Wyo. (UPI) — Two decades of mismanagement by the U.S. Park Service have led to the possible extinction of the grizzly bear in Yellowstone National Park, one of the world's leading authority on grizzlies said Tuesday.

Frank Craighead Jr., who headed a nine-year study of the grizzly and authored the book "Track of the Grizzly," said the Park Service regarded the giant brown bear as a nuisance during the 1960s and 1970s and failed to realize the grizzly has a low reproductive rate.

The Park Service, in a memorandum disclosed this week, said the bear is nearing extinction in the nation's largest and oldest national park. An interagency task force team estimated Yellowstone's grizzly population at 30 females and 157 males.

"The grizzly numbers declined rapidly in the late '60s and early '70s due to mismanagement by the Park Service," Craighead said. "One of the things they did was abruptly close the park dumps where grizzlies came for some of their food."

Craighead said that at the time he was carrying out a nine-year independent research program on the grizzly in the park.

The abrupt closure of dumps did not give the grizzly time to readjust his feeding habits back to "natural food, and so they wandered into campgrounds," Craighead said.

Craighead said that as mauling incidents increased "the Park Service actually wanted to get rid of bears, and then didn't realize they had a low reproductive rate."

Craighead said as many as 50 grizzlies died each year during this period — some at the hands of hunters and poachers, some from natural causes, "but a large part of that was control."

Grizzly litters, under ideal circumstances, average only about two cubs every two years. Craighead said it will be "impossible" to rebuild the populations at a rapid rate.

But Yellowstone National Park spokeswoman Joan Anzelmo said she did not believe the decline in grizzly populations could be blamed totally on poor Park Service management.

"We have learned an awful lot," she said. "Certainly, we have done better by the bear for the last 12 years since we have been a lot stricter in the way people and garbage are managed."

Jackson Hole News 9/3/82

Memo reveals grizzly status worries

By Angus Thuermer, Jr.

After spending years contesting a local biologist's views that the Yellowstone area grizzly bear population is in severe danger, federal officials have recently changed their tune.

In an Aug. 17 memorandum to members of a steering committee overseeing the Interagency Grizzly Bear Study Team, committee chairman Roland Wauer concludes the grizzly population could be as low as 187. He warns that without immediate action "the population may reach a point from which it cannot recover."

The position is different from past government claims that the Yellowstone area population numbered perhaps as many as 350 animals. State Game & Fish Department biologists, believing the population could withstand 12 mortalities a year, have proposed a "chauffeured" hunt that would allow the taking of problem bears in an effort to reduce illegal kills.

Frank Craighead, a Moose resident who pioneered grizzly research in Yellowstone with his brother John between 1959-69, has pointed out that past government population estimates are not based on scientific data and are high. "They're saying now what we said 10-12 years ago," Craighead said Tuesday.

In 1968 the Craigheads protested a new Yellowstone plan that closed down garbage dumps at which the bears were feeding. The abrupt closure, the two men reasoned, would cause bears to seek easy pickings in campsites and result in

confrontations and bear killings. The split between the independent biologists and the Park Service worsened until 1970 when their research stopped because of restrictions placed on their work by authorities.

Since 1974 the grizzly, *Ursus arctos horribilis*, has been protected as a threatened species under the federal Endangered Species Act.

Wauer, who is director of Natural Resources Management for the National Park Service, said in

his Aug. 17 memorandum: "We no longer have the luxury of time." He wrote that evidence is "sufficiently clear enough that any additional delays... will likely result in the loss of the grizzly bear from the Yellowstone ecosystem."

He attributed the decline of the local population mainly to "illegal killing by outfitters, sheepmen, hunters, poachers and others," and by habitat loss related to human needs for resources and land

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Memo reveals grizzly status worries

Continued from page 1

development.

Bears in the Yellowstone population frequently travel outside the National Park boundaries into areas where grazing, hunting of other animals, and other activities not allowed in the Park occur.

But Craighead said, "I don't go along with their reasons. The basic reason the population is low and threatened is the large number of them that were eliminated in the late '60s and early '70s by Park Service mismanagement. He said that mismanagement included "the rapid elimination of dumps, forcing the bears into campgrounds, the movement (trapping and moving by biologists) of bears away—some of them dying in the areas they were transported to, others being shot on the way back to the point of capture.

"The damage was done a good many years ago. Mismanagement of the bears at that time caused the major decline," he said. Craighead and his brother counted about 40 and 50 grizzly mortalities in two successive years in the early 1970s. They said over 40 percent of the population had been lost in a several-year period then, and because of the animals' low reproductive rate, the group has been unable to overcome that loss.

In Cody, Wyoming Game & Fish district supervisor Terry Killough said the request for a limited hunt is still current but that the number of mortalities he believes the population can withstand has been lowered from about a dozen to "five or six." He emphasized his belief that hunters' and ranchers' perceptions that there is no legal way to deal effectively with a problem bear has led to illegal killings. A limited season might change that perception and reduce illegal kills, he said.

While it is possible to kill a dangerous animal today, Killough said it is "very difficult to do" because of overlapping jurisdictions with federal agencies and his department. He said he is now a "little pessimistic" about federal approval for a limited season.

"It is necessary to eliminate some when dangerous," Craighead said. "The problem is they eliminated so many in the past they can't eliminate the dangerous ones without threatening the population even more."

In his recent memorandum Wauer suggested a six-point plan to reduce the population's decline. Noting that the greatest impact to the species is from "illegal killing," he said new legislation imposing stricter penalties for poaching should be adopted and recommended all such cases be heard in federal court. He proposes increasing U.S. Fish & Wildlife investigating capabilities, increasing National Park Service and National Forest protection activities and also developing a "habitat enhancement plan."

Wauer also said officials should consider limiting human access to grizzly habitat and should consider supplemental feeding. Research on the animals should continue as planned but with slight modifications and an extra \$55,000 allocated to study the effects of human intrusion on grizzly bear behavior and habitat use. That topic is possibly best researched in Montana's Glacier National Park, Wauer wrote.

In 1980 Larry Roop, Wyoming Game & Fish biologist in Cody and a member of the IGBST wrote, "At present the IGBST has made no population estimates based on field data, but study team members are of the opinion that there are between 300 and 350 animals in the populations. It has been stressed that these figures are not from a scientific data analysis but are a result of inductive inference from the number of animals handled and observed in the field."

In 1981 the team's annual report estimated the population at 247 bears, a figure "we are unable to assess [with] precision [. . . and] accuracy at this time."

In his recent memo, Wauer said the 1982 study of 1981 data "revealed that the most recent population estimate had dropped to 196, including as few as 30 adult females. Since that count, nine grizzlies are known to have died or been moved from the Yellowstone population, lowering the estimate to 187. Wauer also said that undercover investigations of poaching "caused sales of grizzly parts and related activities to move underground."

According to a Casper Star Tribune story, a national park spokesman in Washington said his agency has not decided what course of action to follow concerning the memorandum.



Jackson Hole

Vol 31 No 7

68 pages

Thursday, September 2, 1982

Jackson H

In Yellowstone Park

Debate resumes over grizzly's decline

By Becky Woods
Staff writer

Grand Teton National Park, and five surrounding national forests.

The findings prompted Roland Wauer, director of Natural Resources Management for the NPS, to write an internal memo to the joint federal-state committee studying grizzly bears, warning them that grizzly bears in Yellowstone are in danger of becoming extinct.

"It is imperative that highest priority be given to eliminating grizzly bear mortality. Only immediate and broad-scale protection can save the grizzly," Wauer said.

The Wilderness Society obtained a copy of the Wauer memo, which it then released. The Park Service confirms the findings. The report, said Yellowstone Park spokesman Joan Anzelmo, "is not something new."

She said the grizzly bear is being extensively studied now, and that more research needs to be done. The park,

she added, has already restricted backcountry areas frequented by grizzly bears to minimize conflicts with the animal, and may close off whole areas in the future.

Craighead says the problem is not new, but the Park Service acknowledgement of the problem is. "I'm glad to see they (the Park Service) recognize publicly that the grizzly bear population is in bad shape and is threatened," he said.

Craighead believes the agency created the roots of the problem in the 1960s and 1970s. "The grizzlies were mismanaged from the top all the way down," he said.

In cooperation with the NPS, Craighead initiated a long-range study of grizzlies in 1959. His recommendations on bear management in the park were not followed and not published, a situation which eventually led Craighead

See page A 10

Bears—

From page A 1

to publish his own findings in his book, "Track of the Grizzly."

One of Craighead's recommendations was to close the dumps slowly, so the dependant bears had time to adjust to the change. Instead, the Park Service closed the dumps rapidly.

The bears did just what Craighead predicted they would do — they moved to the adjacent campgrounds for food, and people-bear conflicts rose dramatically.

To deal with the problem, the Park either mismanaged or killed the "problem bears," Craighead charged. "There were 53 known bear mortalities in 1970, and 48 known bear mortalities in 1971." In all, the Park Service "decimated about 44 percent of the population," he said.

The wholesale destruction was done with little understanding of the grizzly bear's low reproductive rates. A female is not ready to mate until she is four to five years old, Craighead said, and then usually produces only one cub a year. "They set the stage for this to happen in the late 1960s and 1970s."

The biologist is concerned with the recent bear counts, pointing out the large disparity between the number of female and male grizzlies.

Because of the grizzlies' reproduction rate, he said there may only be a third, or 10 bears, who will bear cubs this year. "It may be too late to save them. Everything possible should be done to encourage their survival," he said.

Anzelmo denies that Park Service policies have affected the grizzly. She did say the park has engaged in "management actions," and occasionally must destroy a bear. But, she said, few bears have been destroyed in recent years, and none this year.

Craighead believes it's too little, too late. "Now they (the Park Service) are in a difficult position. Now they can't kill an aggressive bear because there are so few."

by Michael Park, UW professor of zoology. *Michael Park*

Objectives are to establish baseline data for each lake, including bottom characteristics, physical profile, chemical content and the living organisms present.

Two UW students — David Gulley, a graduate limnology (fresh water science) major from Denver and Chris Weydevel, a sophomore forestry student from Cheyenne — are backpacking into the high lakes to gather most of the field data. Their efforts have been hampered by delayed snowmelt, but they hope to complete the survey of the initial group of 45 lakes before leaving the center this season. The balance will be examined next season.

The work will result in the first detailed description of the lakes and background information considered vital to their future management. Once collected, the data will allow park resource managers to monitor human impact resulting from anticipated increases in visitor use and such outside influences as acid rain. Without such data, management policies must depend upon "best guesses" — a scientifically inadvisable second choice.

Aquatic beetles occupy their niche in the Grand Teton ecosystem, performing varied roles, often as predators and almost invariably as links in the natural food chain. As such, they constitute a resource and a fit subject for another of the inventory studies currently in progress.

The water beetle survey is being conducted by Gregory Daussin, who earned his M.S. degree in entomology at the University of Minnesota in 1980, then spent the next two years as a technician with the Smithsonian Institution in Washington, D.C.

His self-funded investigation in the park's still and flowing waters has turned up a range of genera, each replete with varied subgroups along with notes on the location of capture, distribution, relative abundance, habitat preference, food sources and life cycle.

Daussin hopes to complete his study within the next two summers, then submit a report cataloging the park's resident water beetle populations. He is being voluntarily assisted by his brother, Fernand, a sophomore biology major at George Mason University, Fairfax, Virginia, where Greg earned the B.S. degree in 1975. Daussin will enter New Mexico State University this fall as a doctoral student and teaching assistant in entomology.

Still other studies in progress fall into the inventory/baseline/monitoring category.

One, by a University of Washington doctoral geology student, Anthony Barnosky, centers on the Miocene mammals of Jackson Hole. It is impor-

At least 13 projects on the books for the current season reflect concern for this type of research which carries broad implications for long-term national park management in the four-state area of Wyoming, Montana and the Dakotas.

One example of this type of investigation is the survey of about 90 alpine lakes, situated above 8,400-9,000 feet elevation in Grand Teton Park, directed

If you don't know what's out there, you can't expect to do an effective job of managing the resources.

This reasoning underlies the emphasis given each year to various inventory, baseline measurement and monitoring studies undertaken as part of the program administered through the University of Wyoming—National Park Service Research Center.

Robert C. Bergstrom, UW professor of parasitology, is examining the picture of parasites of large mammals in the area with emphasis on the relationship of certain beetles to lungworm infestations in elk.

James H. Steele, a veterinarian and respected public health authority now at the University of Texas, is tracing the history of rabies in the northern Rockies to determine if the feared disease is native to the area or if it was introduced by Europeans as they penetrated the region at the turn of the 1800s.

Kent H. McKnight, a U.S. Department of Agriculture specialist, is conducting an inventory of the Grand Teton-Yellowstone mushrooms, many of which are unknown or are to be found nowhere else.

Even the resident director of the UW-NPS Research Center is involved in such studies. Despite the press of his administrative duties, Kenneth L. Diem, UW professor of zoology and game management, continues to monitor the population of the white pelican flock on Yellowstone Lake's Molly Island. It is the only flock which successfully breeds at an elevation of 7,200 feet and within the boundaries of a national park.

He says the flock's population has become relatively stable in recent years, following some serious fluctuations due to unfavorable weather and other conditions at various times since his studies of the flock began in 1949. Diem is also working on a series of natural resource map overlays depicting monitoring sites, fire histories, vis-

itor use and other features in stone Park. He also takes a seasonal bird census and is a monitoring the flora and fauna of a cotton streamside zone in Grand Teton National Park. This will serve as and Wyoming Game and Fish Inventory data base.

Studies administered through UW-NPS center are not limited to Grand Teton area. Several in parks of interest zones.

The UW-NPS Research Center has been operated since 1978. With state and federal funding, it works to promote physical, biological and research of benefit to national operations in Wyoming, Montana and the Dakotas.

Park looking for 'what's out there'

Thursday, September 16, 1982, Jackson Hole

Great two 'jokers' not picky about Park

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Inside:

This Week in Jackson Hole

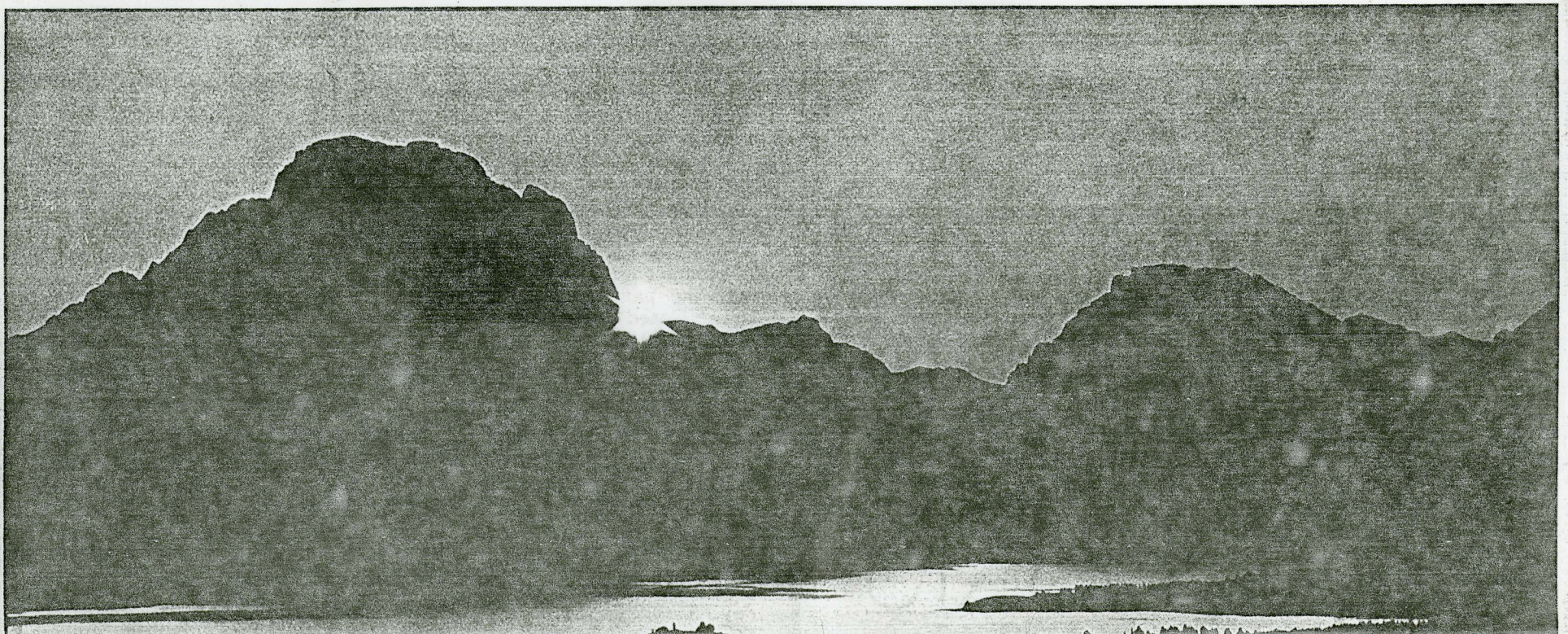
WEEKLY ENTERTAINMENT
AND RECREATION GUIDE

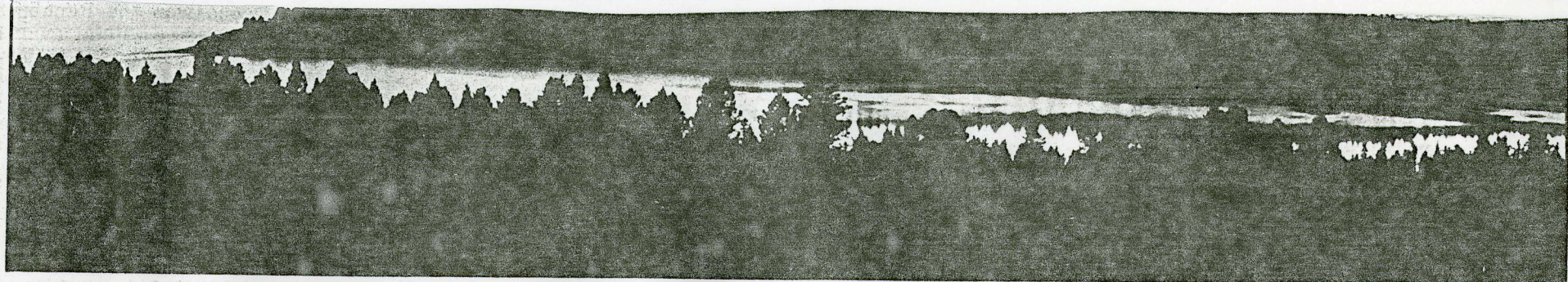
Jackson Hole News

Volume 13 Number 15

Wednesday, September 22, 1982

25 cents





News photo/Richard Murphy

Last light The last light of day sparkles off Jackson Lake as an Indian summer sun sinks behind the northeast ridge of Mt. Moran.

More grizzly deaths prompt concern

By Robin Pierson

A rash of grizzly bear mortalities this year may result in stricter black bear hunting policies in the Yellowstone region.

State Game & Fish Department officials in Jackson last week recommended a tighter policy in view of the fact that the Yellowstone grizzly population is known to have lost 14 of its members so far this year. Two were shot to death within the Jackson G&F office's jurisdiction in the Bridger-Teton National Forest this month—one because of mistaken identity with a black bear.

The officials recommended that the area near the site of one of these killings, the Buffalo Valley area, be off limits to bear hunting.

The restrictions would affect the hunt of black bears, since in several incidents this year grizzlies, which are protected from hunts, have been mistaken for the more populous and less protected black bear. The black bear is open to hunting; in fact, all resident elk permits automatically entitle their bearers to hunt black bear—a policy state Game & Fish Department officials have tried for years to get the Legislature to abolish.

The recommendation was prompted in part by a Sept. 14 incident in which a Texas hunter, apparently misjudging the species of his target, shot and killed a young male grizzly southwest of Turpin Meadows, located in the Buffalo Valley between Moran and Togwotee Pass. But that was just one of a number of incidents this year in which

grizzlies have either been killed, wounded, or moved to other regions of the country, causing the official worry about the status of the Yellowstone area grizzlies.

The other grizzly killing this month occurred Sept. 11 when a sow was shot in the Wyoming portion of the Targhee National Forest. In that shooting, a sow apparently was with two cubs and attacked the hunter, who was south of the Bechler Ranger Station in the Cave Falls area.

The G&F officials' latest recommendation comes

less than a month after dissemination of a government memorandum that revealed that, in the opinion of the Interagency Grizzly Bear Study Team (made up of state and federal officials), the grizzly population may be as low as 187 in the Yellowstone area. Previously, the government had claimed that as many as 350 grizzlies were in the area. In the memo, Roland Wauer, the study team chief, warned that without immediate action "the population may reach the point from which it cannot recover."

Continued on page 14

Forest Service delays Getty road

By Angus Thuermer, Jr.

A U.S. Forest Service official in Washington D.C. on Tuesday blocked Getty Oil Co.'s plans to build a disputed road into the Gros Ventre mountains until two appeals of the development plan are studied.

The decision, penned by acting Forest Chief Ray M. Housley, was made after Getty recently submitted additional requested information on the financial impact the stay would create. The stay was requested by Wyoming Gov. Ed Herschler and the Wyoming Wilderness Society in separate appeals filed with the Forest Service.

"Assessment of evidence [submitted by Getty]

leads me to the conclusion that while Getty Oil will clearly suffer some economic hardship, a portion of that damage as described is speculative," Housley wrote. He said that concerns about environmental damage expressed in the appeals are "not to be lightly dismissed by mooted the appeal by complete denial of the stay."

The decision indicates that the Forest Service considers that appeals of road plans on National Forests can be made to its Department of Agriculture even though other similar appeals filed with the U.S. Department of Interior have been rejected.

The delay was referred to by the Forest Service
Continued on page 15

More grizzly deaths spark concern

Continued from page 1

In an earlier move, state Game & Fish biologists, believing the grizzly population could withstand 12 mortalities a year, proposed a limited "chauffeured" hunt that would allow the taking of problem grizzlies in order to avert illegal kills.

In the Sept. 14 grizzly killing, Jesse L. Howington, Jr. of Houston apparently mistook a three- to four-year-old, dark-colored grizzly for a black bear and shot him 350 yards away from the Buffalo Valley Road. Howington then brought the animal to Wildlife Taxidermy & Museum, owned by Ross Berlin, to be stuffed. After the hunter left, Berlin contacted Game & Fish officials who confiscated the bear.

Howington faces a maximum fine of \$1,150 and a year in jail for two charges—taking a grizzly without a proper license and taking a grizzly out of season. Howington, who will be represented by Jackson attorney Ken Cohen, did have a valid non-resident black bear license. He is scheduled to appear before Justice of the Peace Bob Brodie Oct. 21.

While local Game and Fish officials contend that grizzly and black bears are easily distinguishable to experienced outdoorspeople, with their new recommendations they have conceded the the average person has trouble telling he difference.

The Targhee killing involved a 24-year-old hunter who apparently was acting in self defense when he shot the 20-year-old sow. "The evidence clearly indicates self defense," said Fred Herbel of the Game & Fish Department office in Jackson. Consequently, the seasonal Yellowstone National Park employee

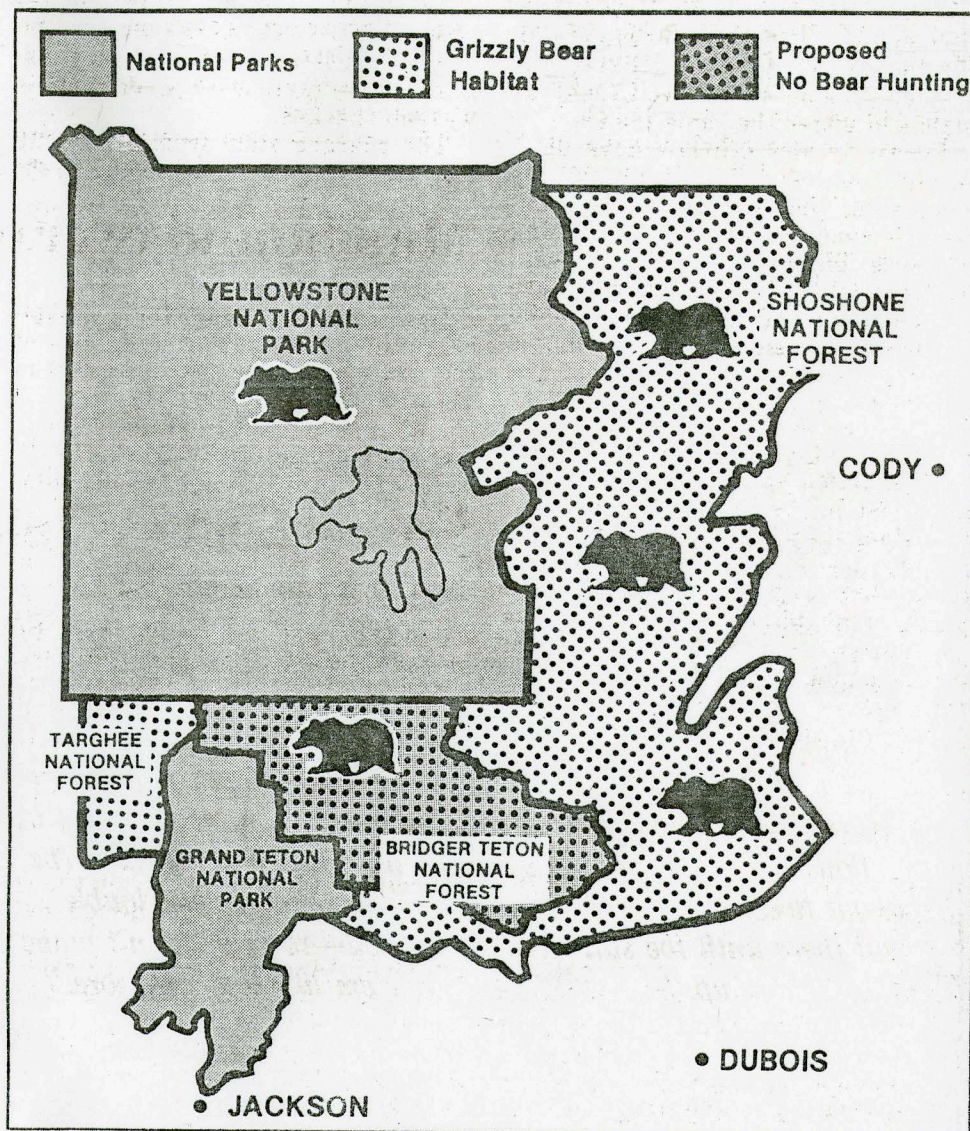
The man did not see the grizzly prior to the attack, Herbel said. After the initial encounter, the hunter shot the animal in the mouth, ran, and was caught again and bitten before successfully fleeing. The bear later died. Ear tags on the sow indicated that the animal had been relocated twice due to past confrontations.

While John Weaver, the forest service's endangered species biologist, applauds the local Game & Fish officials' initiative in recommending that black bear hunting be banned in a portion of the Forest, "We would like to see a single consolidated proposal" that would encompass all grizzly habitat," Weaver said. According to Weaver, grizzly range also includes the portion of the Shoshone National Forest adjacent to the eastern border of Yellowstone National Park, a portion of the west side of the Tetons north of Alta and the Spread Creek area east of Grand Teton National Park.

Weaver's population demographics have been graphically illustrated this year. Four grizzlies have been killed over baits in the indicated portion of the Shoshone.

According to Larry Roop, research biologist for the Cody office of Game & Fish which manages the animals in the Shoshone, some of those slayings were due to hunters mistaking grizzlies for black bears when they came to prey on baits set out in the Forest, while others were "malicious" attempts to procure a grizzly, perhaps for resale on the black market. As a result of the killing, the Cody department is recommending that no bear baiting be allowed in the area.

Roop, however, would not condone



Shoshone where the grizzly roam, due to frequent black bear confrontations with livestock, in campgrounds and around lodges. "We're concerned that we have a [bear] season because we have a real depredation and nuisance

black bear problem," Roop said.

If black bear hunting becomes illegal in the area recommended by the Jackson department, Roop said it is likely that his department will pro-

Grizzly

Continued from page 14

pose that the remote southwest portion of the Shoshone, encompassing the upper Yellowstone River, the Thorofare and Mountain Creek, be managed under the same policy.

Forest service officials have unofficially countered Roop's solution by suggesting that if the Cody department is concerned about dispatching nuisance black bears, they should hold special hunts where hunters are guided by an official to the problem animals. Discussions between the two agencies are currently ongoing.

Besides the six bears that were shot by hunters, another was killed by Montana Game & Fish officials as a control action and three others have been lost to the Yellowstone population since they have been moved to a remote portion of British Columbia after they repeatedly caused problems in inhabited areas. Three bears are known to have died of natural causes and a grizzly captured by the Interagency team recently died due to what is thought to be an allergic reaction to the drug used to tranquilize it.

"This is shaping up as one of the worst years," for grizzly mortalities, Roop said. Roop recalled that the previous high for grizzly mortalities was in 1977 when 12 bears were killed.

"The new recommendations are a result of the concern for the serious problems for the grizzly," Roop said.

"Mortality is becoming a problem now because of bait hunting and black market hunting," Roop said. "The situation is now getting out of hand," he said, stating that the grizzly mortality rate has increased substantially over the past few years. "Grizzly parts are highly valued on the black market," he said, causing the increase in illegal slayings. While no prosecutions have been made to date, "a lot

Two men face assault charges here

Larry Leon Barnes, 34, and James Noble Barnes, 28, have been bound over to district court to face aggravated assault with a dangerous weapon charges.

The charges stem from a June 15 incident in which Pioneer Press

employee Colin Joseph was severely beaten. The two face a maximum 14 years imprisonment and \$1,000 fine if convicted. Colin was kicked and beaten with a shotgun and was hospitalized with head injuries.

Man bound over on burglary

Howard Ripley Van Winkle waived his preliminary hearing in Justice of the Peace court recently on a charge of receiving stolen property.

He now faces action in District Court and could receive up to 10 years and a \$1,000 fine if found guilty.

Van Winkle is charged with a July 26 theft of five pieces of stereo equipment from the Richard Timmermeyer residence in Jackson. He was charged after selling the equipment which had had its serial numbers removed.

Forest Service delays Getty road

Continued from page 1

as a "partial stay" because the regional forester in Ogden, Utah was given permission to approve part of Getty's road operations to access the proposed drill site in the Little Granite Creek drainage. The regional forester can approve reconstruction of 2.7 miles of existing road in the area; he also can allow Getty to survey and drive stakes along the remaining 5.9 miles of proposed new road. Those operations could be completed by this winter, Housley said.

However, he noted that such action would be done at Getty's own risk since the limited approval "implies no guarantee that approval of further construction will be granted after the appeal is decided." The partial stay will "allow all parties to more precisely assess the impacts of the proposed road alignment, grade and cross sections," Housley said.

Appellants have contended that the proposed new road cannot be reclaimed satisfactorily, as required by Forest Service regulations. The

Forest Service will decide later how to handle requests for oral presentations about the road plan. The appeal will be heard at the regional Forester level, local officials believe.

In Denver, Getty's Bob Jacob said he had not seen the decision as of Tuesday and that Getty has not decided on a course of action. He said Getty is waiting for a Forest Service-approved road plan so it can reapply to the Wyoming Oil & Gas Commission for state approval for its project.

"We think there have been enough delays and delaying tactics," Jacob said. Two years of study [preparing an environmental impact statement that recommended approval of the well and road] ought to be enough. We don't think there's a good reason for delaying approval of the complete road plan." He said the oil company believes it can build the road in an "environmentally safe" manner and reclaim it. "We're ready to proceed and would like to do so immediately,"

LIFE and other trivia

WORDS TO CAST IN BRONZE

'Fighting fair is a damn good way to get killed.'

MEMO TO BROKERS AND AGENTS.

Recommended reading: 'What's Happening To The American Family?' Levitan & Belous, John Hopkins University Press, 206 pages. \$21.95. Stuff from sociologists can drive a dog off a gutwagon but this reads clear and hammers home its points: the American family is surprisingly stable; positives cancel out negatives and people still give a damn about one another. Since life insurance for family needs and wants is still the mainstay of our craft, you should read this - if only to restore your soul.

But, if you want to pass it, our alternate selection of the month is 'Training Your Retriever To Handle' by D.L. and Ann Walters. This fine book takes up where Free's 'Training Your Retriever' stops. It has nothing to do with insurance and won't make you a red cent. In truth, if you catch the bug it will cost you dearly in time and money. You will go to the dogs and waste your days stumbling about in swamps and marches drinking Buckhorn beer.

PRODUCT NOTE: Your clients can be interested in Executive's Graded Lifesm and its rockbottom rates. Re-entry provisions, providing further savings, are most liberal. Ask us about it and tell them about it. Or do you want some other pirate to steal 'em?

MOUNTAIN LIFE GENERAL



Governor Ed Herschler has unveiled a proposal to create a Wildlife Trust Fund using revenues from wildlife habitat stamps and a three-eighths of a percent of state severance taxes except those on oil and gas. Herschler, in a letter to the director of the Wyoming Game and Fish Department, said he does not believe the wildlife fund should be combined with a fund for recreational purposes, as has been proposed in bills considered by the Legislature. He said recreation should finance through the general fund.

Herschler said he is proposing the wildlife habitat stamps for hunting and fishing licenses because he believes the beneficiaries of the Wildlife and Conservation Fund should pay part

of the cost. He said diverting three-eighths of a percent of the mineral severance taxes would have a significant impact on availability of funds for other needs. The severance tax money would be used for a habitat protection program and an operating reserve before going to the trust fund. Herschler estimated the fund would reach \$255 million by the year 2000.

A Yellowstone National Park spokeswoman says the Park Service may have made mistakes in managing the disappearing grizzly bear, but the giant brown bear now lives a "more natural" existence than it did 20 years ago.

Park spokeswoman Joan Anzelmo, says the decline in grizzly numbers cannot be blamed totally on poor Park Service management. Anzelmo says the bears are returning to their natural lives since the park closed their garbage dumps. And, she says the closure of the dumps has reduced incidents of grizzly mauling of campers to a "negligible amount."

Frank Craighead, one of the world's leading authorities on grizzlies, claims two decades of mismanagement by the Park Service

Thursday, September 2, 1982 3 (2)
has led to the possible extinction of the grizzly bear in Yellowstone, the nation's largest and oldest national park. Craighead says the Park Service regarded the giant brown bear as a nuisance during the 1960s and 1970s, and killed many as a means of controlling the population.

Jackson is reportedly being considered as a possible site for an economic summit of Western world leaders. The summit has never been held in the continental United States in its previous eight sessions. The summit is scheduled for next June. In addition to Jackson, seven other areas are being considered as possible summit sites, including Keystone, Colorado, Yosemite National Park and San Diego in California, and Williamsburg, Virginia.

Mountain Bell has asked the Wyoming Public Service Commission to let it jack up the deposit charged new customers.

Mountain Bell wants to increase the deposit by one-third, or to \$120. Company officials say that amount is needed to insure that reliable paying customers don't get stuck with the tab for people who don't pay their bills.

* The nation's largest and
* oldest national park.

Wednesday, September 1, 1982 3

Craighead said the grizzly used to feed on campground dumps, but the Park Service suddenly closed the dumps and did not allow the grizzly time to readjust his feeding habits. So Craighead says the grizzlies wandered into campgrounds for food and became dangerous. The Park Service then had to destroy many bears.

Craighead said the grizzly can be saved, but said that would depend on keeping man and bear apart. He said some areas of the park may have to be closed to people entirely.

Famed Jackson trial lawyer Gerry Spence says there is only an "illusion" of justice in America. Spence, in Denver to promote his book "Gunning for Justice - My Life and Trials," said there is "big justice for big people and little justice for little people."

Spence, who gained fame in such cases as former Miss Wyoming Kimberly Pring's multi-million dollar libel suit against **Penthouse** magazine, added that the United States is just a "hairbreadth" away from becoming a police state. He said suspects are no longer presumed innocent until



The grizzly bear is probably one of the animals people fear most, but wildlife experts say the grizzly has more to fear from people, total extinction.

Participants in a special federal-state "Grizzly Bear Study Team" say the grizzly is nearing extinction in Yellowstone Park, the United States' oldest and largest national park. They estimate there are as few as 30 female and 157 male grizzlies left in Yellowstone, mainly because of illegal killing inside the park and new land and energy development adjacent to it.

Yellowstone is one of only two remaining major habitats for grizzlies in the lower 48 states. The other is in

Female grizzlies usually give birth to only cub per year, and the study warns that unless something is done, the species could be wiped out.

In a memorandum just released, Park Service spokesman Duncan Morrow says officials have not decided on a course of action, but one thing he suggests is stricter federal civil penalties for killing the giant bears.

Frank Craighead, one of the world's leading authority on grizzlies says two decades of mismanagement by the U.S. Park Service have let to the possible extinction of the grizzly bear in Yellowstone National Park.

Craighead, who headed a nine year study of the grizzly and authored the book "Track of the Grizzly," said the Park Service regarded the giant brown bear as a nuisance during the 1960s and 1970s, and failed to realize the grizzly has a low reproductive rate.

Now, the Park Service, in a memorandum disclosed this week, said the bear is nearing extinction in the nation's largest and oldest

Sixth grizzly kill may lead officials to end baiting

By Becky Woods
Staff writer

A female grizzly bear was shot to death after attacking a 24-year-old hunter September 11.

The death marks the sixth time this year a grizzly bear has been destroyed — intentionally or in self-defense — by a hunter. Because of the grizzly's shaky survival status, the Wyoming Game and Fish Department is studying a recommendation to close the Teton Wilderness area next spring to bear baiting.

Fred Herbel, of Game and Fish, said the hunter, a part-time Jackson resident, surprised a 22-year-old sow and her two yearling cubs in the Cave Falls area of Targhee National Forest, just south of Yellowstone National Park.

Herbel said the startled sow charged, and just as she reached the hunter, he fired off a fatal shot. The man sustained two puncture wounds and some scratches from the attack. He was treated by a companion, who happened to be a nurse.

Herbel said there are no indications that the bear was killed for anything but self-defense, and no charges will be filed for destroying the animal. He added that the sow had already been trapped twice — once in the Old Faithful area in Yellowstone in 1971, and again in the same area in 1976 — to be transported to remote areas of the park.

Charges have been filed in a second hunter-bear incident that occurred September 14. Jesse Howington, Jr., 47,

Grizzly

From page A 3

of Springs, Texas, faces a maximum fine of \$1,150 and a year imprisonment for killing a grizzly near Turpin Meadows in the Togwotee Pass area.

Howington and three other non-resident hunters were traveling from Ditch Creek hunting camp to Turpin Meadow Ranch via Buffalo Valley Road the afternoon of September 14.

The men stopped when they spied a large animal about 500 yards off the road. Howington and another member of the party got out of their vehicle and approached the animal. When they were about 350 yards from the bruin, they decided it was a black bear and Howington shot and killed it, according to documents filed in Justice Court.

The animal's head was brought to Ross Berlin's Taxidermy Studio to be mounted by outfitter Elaine Luton. After examining the head, Game and Fish personnel discovered the animal was a grizzly.

Statements were taken from the involved party, and Howington was subsequently charged with taking game without a proper license, which carries a maximum fine of \$750 and six months imprisonment, and taking a grizzly during closed season, which carries a maximum fine of \$400 and six months imprisonment. His case has been continued until October so he can obtain legal counsel.

Four grizzly bears were illegally killed in the Cody area earlier this year. A hunter responsible for two of the four deaths, Cody resident Fred Neasbitt, received the maximum \$1,150 fine for each killing.

The hunter-bear encounters concern the Game and Fish. The agency is presently reviewing recommendation to close Area 22 — which is essentially the Teton Wilderness just south of Yellow-

The alternative is being pursued to alleviate hunters mistaking grizzly bears for black bears. In the future, black bear hunting may be totally banned from some areas. Joint elk and bear permits are issued now.

Opponents of the control measure are worried that the restriction will cause a black bear nuisance problem. In 1981, for example, 236 bears were killed by hunters. Without that control, it is argued that a large bear population will begin raiding camps and have more contact with people.

An alternative solution is to have a nuisance season to get rid of the problem black bears if bear baiting is banned.

The Game and Fish recommendations will be forwarded to the Wyoming Game and Fish Commission, a six-member panel that will assess different options. The commission meets October 22.

The commission will undoubtedly be under pressure to do something to help protect grizzly bears. The animal became the focus of national attention several weeks ago when an interagency study revealed that the grizzly bear may be an endangered species in the greater Yellowstone ecosystem, which encompasses Yellowstone and Grand Teton national parks and five surrounding national forests.

According to the study, there may only be 30 females and 157 male grizzlies left in the region — dangerously low numbers that prompted local biologist and grizzly bear researcher Frank Craighead to state it may be too late to rescue the bears from extinction.

SPEAKING OUT

OUR OPINION

The bear facts

In a perverted sort of way, it's fair to say "I told you so" to an intransigent person who refuses to recognize the truth. But in this case Frank Craighead must get no satisfaction in hearing the National Park Service admit after nearly 20 years that its bear management policies have driven the grizzly to the edge of extinction in North-western Wyoming.

By stating that everything possible must be done to avoid killing any of the 200 bears left in Yellowstone, the Park Service is admitting that the grizzly population is in danger. But the agency refused to acknowledge that its own management policies are the cause, placing the blame instead on poaching and habitat destruction, both of which are true to some extent.

It seems to us, though, that until the Park Service realizes the true cause of the bears' problem, any management decision will be only a finger in the dike at best.

Recent closures of areas to people indicate that the Park Service is learning, and no longer has the desire to wipe out the grizzly population as it once did. Still, we feel that with Craighead's experience and the findings of the interagency study team, the Park Service could find a way out of the present jam and preserve the grizzly in this part of the country.—RPW

The Weather

Date	Hi	Lo	Precip
August 25	83	38	---
August 26	83	38	.15
August 27	83	38	.01

YOUR OPINION

Questions

To the editor:

Why hasn't Robert B. Lunger told the people of Teton County that much of his touted "experience in real estate" has been as a land acquisition officer for the government?

He was recently assigned to Grand Teton National Park where he used questionable methods to take private land through condemnation, and also attempted to have bona-fide deeds of land to my children nullified by county action.

Does this jibe with his advertised qualifications of being "responsive, cooperative, fair and equitable?"

Frank C. Craighead
Inholder of deeded land within Grand
Teton National Park

Interruptions

To the editor:

I recently had the pleasure of experiencing Teton National Park. However, one inescapable distraction kept me from completely feeling the solitude and beauty around me. Walking near Blacktail Pond trying to observe birds and other wildlife, I soon was interrupted by the sight and looming

the extra cost in getting goods to Jackson.

However, I feel harm can come to Jackson Hole when it becomes known around the country that the merchants here put a gun to the tourists such as did a local small market. I questioned their charge of \$2.43 for a half gallon of milk, almost \$5 a gallon, and was told it was not a mistake, it was their price. I bought another half gallon, same brand, at another market for \$1.06.

It is expected that a small convenience store is a little higher in price, but not 130 percent. It's a disgrace for the store to rip off the tourists on an item such as milk. It is the only food store in that half of town, and captive tourists are robbed by it. Or is this par for some of Jackson's merchants?

J. Flynn
Chicago, Illinois

Thanks

To the editor:

The Teton County Parent Teacher Association would like to thank you for the special school issue. In publishing the bus schedule as well as the other information we feel that you have made it easier for all parents

Park Service lambasted on grizzlies

MOOSE, Wyo. (UPI) — Two decades of mismanagement by the U.S. Park Service have led to the possible extinction of the grizzly bear in Yellowstone National Park, one of the world's leading authority on grizzlies said Tuesday.

Frank Craighead Jr., who headed a nine-year study of the grizzly and authored the book "Track of the Grizzly," said the Park Service regarded the giant brown bear as a nuisance during the 1960s and 1970s and failed to realize the grizzly has a low reproductive rate.

The Park Service, in a memorandum disclosed this week, said the bear is nearing extinction in the nation's largest and oldest national park. An interagency task force team estimated Yellowstone's grizzly population at 30 females and 157 males.

"The grizzly numbers declined rapidly in the late '60s and early '70s due to mismanagement by the Park Service," Craighead said. "One of the things they did was abruptly close the park dumps where grizzlies came for some of their food."

Craighead said that at the time he was carrying out a nine-year independent research program on the grizzly in the park.

The abrupt closure of dumps did not give the grizzly time to readjust his feeding habits back to "natural food, and so they wandered into campgrounds," Craighead said.

Craighead said that as mauling incidents increased "the Park Service actually wanted to get rid of bears, and then didn't realize they had a low reproductive rate."

Craighead said as many as 50 grizzlies died each year during this period — some at the hands of hunters and poachers, some from natural causes, "but a large part of that was control."

Grizzly litters, under ideal circumstances, average only about two cubs every two years. Craighead said it will be "impossible" to rebuild the populations at a rapid rate.

But Yellowstone National Park spokeswoman Joan Anzelmo said she did not believe the decline in grizzly populations could be blamed totally on poor Park Service management.

"We have learned an awful lot," she said. "Certainly, we have done better by the bear for the last 12 years since we have been a lot stricter in the way people and garbage are managed."

ROCKY MOUNTAIN NEWS 9/1/82



The fierce grizzly is in danger of being wiped out of Yellowstone Park, thanks to mankind.

Grizzlies facing extinction in Yellowstone, experts say

WASHINGTON (UPI) — Wildlife experts are warning the grizzly bear may soon die out in Yellowstone National Park, according to a U.S. Park Service memorandum disclosed Monday.

The internal memo states that an Interagency Grizzly Bear Study Team of federal and state wildlife agencies estimates there are as few as 30 female and 157 male grizzly bears left in the huge nature preserve.

The population of the bears in Yellowstone is being wiped out by illegal killing inside the park and destruction of the bears' habitat by land and energy development adjacent to the park, wildlife researchers say.

Yellowstone, the oldest and largest national park, is mainly in northwest Wyoming, and spills over into Montana and Idaho. It provides one of the two remaining major habitats for grizzlies in the contiguous 48 states. The other is in and around Glacier National Park in Montana.

Female grizzlies usually give birth to no more than one cub a year, and never more than two. Adult grizzlies grow to 800 to 1,400 pounds.

The threat to the grizzlies is reported by Roland Wauer — director of Natural Resources Management for the Park Service — in an Aug. 17 memo to a federal-state committee studying the problem. Wauer is chairman of the panel.

"It is imperative that highest priority be given to

eliminating grizzly bear mortality. Only immediate and broad-scale protection can save the grizzly," Wauer warned.

"Unless some positive management actions are taken soon to limit grizzly bear mortality, the population may reach a point from which it cannot recover."

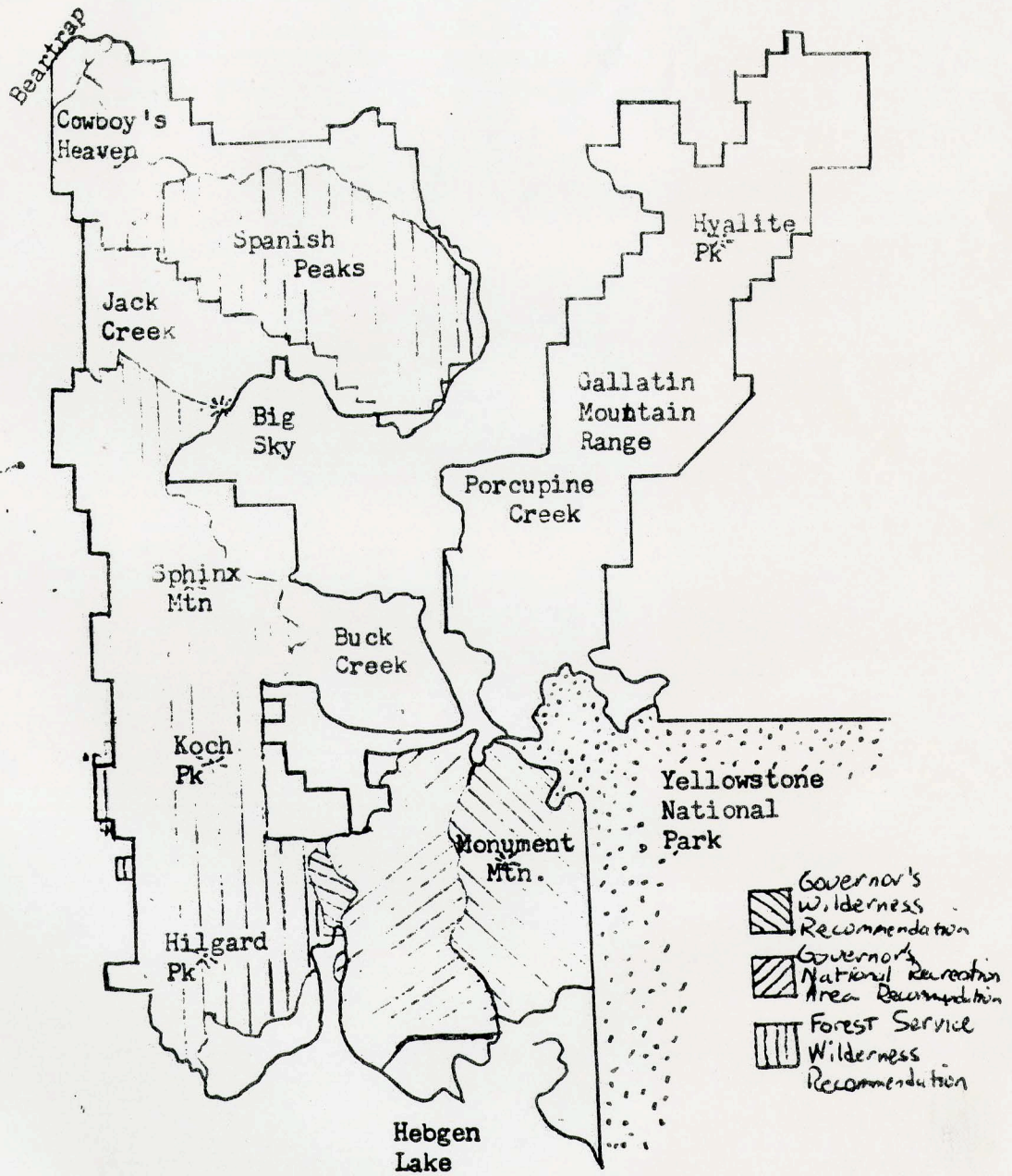
A copy of the memo was obtained by the Wilderness Society. Wauer was out of town and not available for comment, but Park Service spokesman Duncan Morrow said officials have not decided what to do about the findings.

Morrow said the memo was "brought to the attention" of National Park Service Director Russell E. Dickenson Friday.

"Grizzly bear habitat is being nickel-and-dimed out of existence," Wauer declared. He said Yellowstone's "buffer zones" such as the Gallatin National Forest and the Washakie Wilderness Area are being "seriously eroded" by land and energy development.

But he said the greatest threat to the Yellowstone grizzlies "is illegal killing by outfitters, sheepmen, poachers and others."

He called for stricter federal civil penalties for killing grizzlies, boosting U.S. Fish and Wildlife Service power to investigate the problem, increasing federal protection of Yellowstone's "back country," and limiting human access to the bears' habitat.



Bozeman Star Tribune 9/1/82

Expert blames Park Service for low number of grizzlies

MOOSE, Wyo. (UPI) — Years of mismanagement by the U.S. Park Service has led to the near extinction of the mighty grizzly in Yellowstone National Park, one of the world's leading experts said Tuesday.

Frank Craighead Jr., author of "Track of the Grizzly," said the Park Service regarded the giant bear as a nuisance during the 1960s and 1970s and failed to realize the

grizzly has a low reproductive rate.

In memo disclosed this week in Washington, the Park Service said the bear was nearing extinction in the nation's largest and oldest national park. Illegal killing inside the park and nearby energy development were blamed.

"The grizzly numbers declined rapidly in the late 60s and early 70s due to mismanagement by the Park Service," Craighead said. "One of

the things they did was abruptly close the park dumps where grizzlies came for some of their food."

At this time, Craighead was making a nine-year independent study of the park grizzlies.

"When we realized the park was going to close the dumps, we recommended they do it gradually over a period of time," he said.

Please see BEARS, A12

Bears

Continued from A1

because the bears were not being given enough time to adjust to a return to "natural" food.

CRAIGHEAD SAID as mauling incidents increased "the Park Service actually wanted to get rid of bears, and then didn't realize they (the bears) had a low reproductive rate."

As many as 50 grizzlies were killed each year during this period — some from hunting and poaching, some from natural causes, "but a large part of that was control," he said.

Craighead said litters average only about two cubs per year so it will be "impossible" to rebuild at a rapid rate.

Yellowstone National Park spokeswoman Joan Anzelmo said she did not believe the decline in grizzly population could be blamed totally on poor Park Service management.

"We have learned an awful lot," she said. "Certainly, we have done better by the bear for the last 12 years since we have been a lot stricter in the way people and garbage are managed."

Ms. Anzelmo said the grizzlies have been weaned off garbage and are living "more natural lives"

Aug. 31/82

Grizzly bears nearly extinct in Yellowstone

WASHINGTON (UPI) — Wildlife experts are warning the grizzly bear may soon be extinct in Yellowstone National Park, according to a U.S. Park Service memorandum disclosed Monday.

The internal memo states that a special "Interagency Grizzly Bear Study Team" of federal and state wildlife agencies estimates there are as few as 30 female and 157 male grizzly bears left inside the huge nature preserve.

The population of the massive brown bears in Yellowstone is being wiped out by illegal killing inside the park and destruction of the bears' habitat by new land and energy development adjacent to the park, wildlife researchers say.

Yellowstone, the oldest and largest national park, is located mainly in northwest Wyoming, and spills

over into Montana and Idaho. It provides one of the two remaining major habitats for grizzlies in the lower 48 states. The other area is in and around Glacier National Park in Montana.

Female grizzlies usually give birth to no more than one cub per year, and never more than two. Adult grizzlies grow to 800 to 1,400 pounds.

The dire threat to the grizzlies is reported by Roland Wauer — director of Natural Resources Management for the Park Service — in an Aug. 17 memo to a joint federal-state committee studying the grizzly bear problem. Wauer is chairman of the panel.

"IT IS IMPERATIVE that highest priority be given to eliminating griz-

Please see BEARS, A16

Bears

Continued from A1

zly bear mortality. Only immediate and broadscale protection can save the grizzly," Wauer warned.

A copy of the memo was obtained by the Wilderness Society. Wauer was out of town and not available for comment, but Park Service

spokesman Duncan Morrow said officials have not yet decided what to do about the findings.

Morrow said the memo was "brought to the attention" of National Park Service Director Russell E. Dickenson last Friday. Dickenson also was not in Washington for comment.

WEDNESDAY

Editorials

Saving grizzlies in Yellowstone

IT took the invention of the repeating rifle to give man a decisive advantage over the grizzly bear, but no mere weapon explains why the grizzly is courting extinction today in Yellowstone National Park. That honor goes to those old enemies of animals everywhere: human thoughtlessness and pride.

Few Americans wish the grizzly ill, yet the creature's numbers continue to decline because just as few Americans will brook having the grizzly get in the way of their pleasure, their prosperity, or their professional judgment.

Take the U.S. Park Service, whose memorandum last week disclosed that as few as 30 female grizzlies remain in the park. In 1967, the Park Service decided to

close Yellowstone dumps, in which grizzlies foraged for food, in order to rehabilitate the bears to a completely wild condition. The policy may have been admirable, but its execution was not. Instead of being weaned off the dumps, the bears were expected to go practically cold turkey. Some, especially pregnant females, apparently couldn't adjust and died or had to be killed when they wandered into campgrounds for food.



Frank Craighead Jr., one of the world's foremost authorities on grizzlies, writes in "Track of the Grizzly" how known deaths of the bears during 1968-73 — after the dumps were closed, in other words — rose to 31.5 per year, compared with 18.9 per year for the period 1959-67. Instead of reassessing its policy, however, Craighead says the Park Service forged ahead, determined to vindicate its judgment.

Then there is the growing crush of visitors to the park each year and the recreational and energy development in surrounding national forests — again, all worthy activities in themselves, but signs of doom for the grizzly.

Will the bear survive at Yellowstone? It's too early to tell. In an effort to see that the bear does make it, however, the Interior Department must begin to put more restrictions on use of the animal's habitat, which includes all of the park and about an equal amount of land in surrounding national forests and wilderness areas. Within Yellowstone itself, Park Service officials already have begun efforts to minimize the effects of the yearly 2.5 million visitors — a number expected to reach 3.5 million within the decade. But the Park Service might have to go further, perhaps drastically limiting access to Yellowstone's back country. In addition, civil penalties for killing grizzlies should be made harsher.

To allow the grizzly, perhaps the noblest animal on the continent, to slip into extinction at Yellowstone would constitute a squalid failure of management, of vision and of commitment to America's wildlife.

LETTERS TO THE EDITOR

Grizzlies

*J.H. Wauer
10/14/82*

To the Editor:

An Aug. 17 memorandum to members of a steering committee overseeing the Interagency Grizzly Bear Study Team (IGBST) was recently leaked to the press. The document stated that the estimated 1982 grizzly population in the greater Yellowstone ecosystem is 187 animals, including 30 mature females. A recent executive summary presented a breakdown of the population for the close of 1981. The total grizzly population was placed at 237 animals. In 1980 Larry Roop, Wyoming Game & Fish Department biologist stated that IGBST members were of the opinion that there are between 300 and 350 grizzlies in the greater Yellowstone ecosystem. Numerous other figures have appeared in print, including the Craighead team's 1974 report that revealed a nine-year average of 229 grizzlies, a 1967 peak of 245 and a 1974 computed decline to 136 animals.

The Aug. 17 memorandum or Wauer memo states: "Unless some positive management actions are taken soon to limit grizzly bear mor-

talidity, the population may reach a point from which it cannot recover." This memo also included a proposed solution and recommendations for checking the grizzly bear population decline and for encouraging a recovery.

This belated recognition and its public dissemination of the critical plight of the grizzlies is a real step forward. Hurried management actions based on the varied population figures are not. Before proceeding with proposed management steps, the Interagency Grizzly Bear Study Team should make public its best official estimate of the current grizzly population, along with the age and sex composition. In addition, annual mortality and productivity figures should be provided for each year of the study. This basic information, and the methods used in acquiring and analyzing the data, should accompany the population estimates. This would provide for peer review of conflicting and controversial figures, and it would serve as a basis for making difficult management decisions, some of which will have wide repercussions. These decisions are bound to affect special interest groups and will

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create opposition and dissension. It is therefore imperative that management changes be based on the best information available. Hopefully, such action will lead to a consensus as to

the reliability of the population data. Such an approach will tend to provide unified support for solutions to the grizzly bear crisis.

Frank Craighead
Moose