Grizzly on Washburn Kill

Sept. 21, 1960

I received a call from Dick Hite, the Mt. Washburn lookout. He informed me that he could see a big griazly on an elk kill in a meadow to the south of Washburn. The elk was a big bull and apparently the bear had just killed it. Another bull elk was lying down only several hundred feet away and was watching the grizzly. It is possible that the two bulls had been fighting though Dick had not seen them. Whil e the grizzly was partly burrying the elk another smaller grizzly appeared but then ambled off to the north. The grizzly could be seen defending his kill from all comers including ravens and coyotes.

I called Bob Howe to see if he could hike into the grizzly kill with me. John and Maurice were still off on an elk hunt. Bob and I met at the foot of Washburn and then drove to the top through rain, snow and clouds. Duet to clouds and snowflurries we were unable to see the grizzly. On our way down the back side of the mountain we tried to locate the best place to take off. Explored several spots but the poor weather and the lateness of the hour weighed against going in. We decided to wait until morning and if weather permitted hike in early.

The next morning the 22nd was still cloudy. It was 10 o8clock before the sky cleared enough that we could spot the grizzly and his kill from a southern ridge of the mountain. The grizzly lay on his kill most of the time but occassionally got up and moved around for a few feet. I took some pictures through the mist with the 400 in. lens. These were quite distant and taken just for the record in case we failed to get closer. The sun was shining when we left our cars at the old Geology camp at the low saddle on the road down. We decided to take only one rifle, a 375 magnum, as we were loaded down with camera equipment. Bob carried the rifle and I took my 400 inch lens and tripod. I also put a loaded 38 in my pack.

The bear was in the fourth meadow east of our cars. We approached this from uphill and into the wind. The wind was blowing from the sw and up the mt. Just as we arrived in a position where I thought we might soon see the bear a large bull elk walked out into the opening in front of us. He scented us and trotted off to the south. I hurriedly took a picture and then spotted the griazly at the far end of the same big meadow. The elk was headed right toward him. I took another hasty shot of the elk in foreground and grizzly in distance. With big lens grizzly was not sharp.

Bob and I then began a cautious stalk of the bear using terrain and trees to keep out of sight. The bear gave no indication of suspecting our presence until we got to withing several hundred yards of him. We crawled out to a small stand of trees in the open and from here took pictures of the bear on his kill. He may have caught the light reflections from our cameras. At any rate he became restless and moved off to the timber that nearly joined our small stand. He was sniffing and trying to pick up a scent. We were unable to see him after he entered the timber and as it was quite dense he could approach us very closely before we could see him. I debated climbing a tree and then decided to get out into the open and cross the meadow to the east. Here the grizzly could not approach us closely unseen and we still had trees to climb. The grizzly had been protecting his kill against all comers and I was not at all certain how he might react to human intruders.

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Soon after we reached the cover of this other stand of trees the grizzly returned from his reconniance and once more protectively spread himself over his kill. We approached to within 450 feet of the grizzly from this direction but due to a rise in the ground and back lighting could get no pictures. We saw no ear markers at this distance nor had we seen any before. I decided to again try to approach the bear from the north and west. We circled along the northern edge of the meadow and once again got to the spot where we had first taken pictures and first made the bear suspicious. Apparently he again heard us or noticed movement. At any rate he once more left his kill and started toward us. As he moved west into the timber we moved east keeping out of sight. We were again in the uncomfortable situation of having a grizzly within several hundred yards of us in dense woods where we could not see him nor follow his movements. I decided it would be wise to go up a tree so both Bob and I picked lodgepoles with low limbs and climbed them. We ate our lunches up here and waited to see what would happen. The griazly had not returned by twenty minutes and I began to suspect that he had scented us or heard us and taken off.

We dropped out of the trees and cautiously approached the dead elk out in the middle of the meadow. I wanted to photograph this kill as well as look it over for possible signs of death. The elk was a huge one and would go 800 lbs or better. His head and antlers were uncovered but the rest of him was under a mound of earth a foot deep. The antlers measured approximately 52" from skull to tip and were approx 40" across from tip to tip. I removed the camera box from the tripod and 400" lens and both Bob and I took pictures. Suddenly I looked up and saw the grizzly approaching out of the shadows of the timber to the West. He was between 200 and 250 feet from us and moving right ahead. The first thing I did was to tell Bob " There's the grizzly". I left the 400" lens and tipod as well as my pack which was on the ground and started backing off toward the the trees a hundred yards or more behind us. I held on to my camera but pulled out the 38 that I had tucked in my shirt. Bob started backing up too but held his pack in one hand and still kept the gun on one shoulder. I told him to throw a shell in the chamber and hold it at ready. I took his pack. For a moment the grizzly hesitated and I took the opportunity to snap a picture and take a couple of steps toward him. I thought this might make him turn, but did not yet want to shout or shoot to scare him. The grizzly reared up to see and smell better and waved his arms as he rose. He then ran toward us and reared up again. by this time we were backing off as fast as we could go. The grizzly's attitude was that of a bear determined to protect his kill. When the grizzly dropped to the ground this next time he made a rush for us and the elk. We were getting close to timber so turned and ran. The grizzly stopped at the elk instead of coming on. I doubted if we could get up a tree in time if he rushed us so turned to face him. A few seconds after he reached the elk he picked up our scent. This was apparently the first time he had scented us and thus realized that we were humans. As quick as a flash he turned and ran for the far timber. He was till running when he disappeared.

We again returned to the kill and I gathered up my camera equipment. I partly uncovered the elk and both Bob and I tried to turn it over so we could see whether there were cuts or slashes on the neck or belly. The bear had eaten on the rear quarters but much of the elk was still intact but beginning to smell. With our combined efforts and using the legs as levers we were unable to turn the elk over. We were hampered by the dirt but nevertheless the elk was a very heavy one.

After this we packed up our gear and headed back to our cars staying downwind of where we thought the bear might be. This bear was very silvery in appearance and his coat was matted like an old one. When lying on the elk he looked as big as the elk but it was difficult for me to accurately estimate his size. I doubt if this is a bear we have seen before.

add - scarcity of food (plant) bulbs tires & lying down, thrill

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At this time of year most of the big bull elk have large harems of cows. The mating and constant herding leave many of the bulls tired and rangy by the end of the rut. I have observed some to date that were tired and lying down. They did not even respond to a bugle at close range. There is a possibility that the bull the grizzly was feeding on was tired and sleeping and in this condition was struck by the bear.

The berry crop this year was very poor. The grizzlies got very little food from the huckleberyy harvest. The white pines (Limber and White-barked) are devoid of cones in all areas I have visited. Thus this fall food supply is quite limited. It is possible that this will cause the grizzlies to turn to preying on large game from now on. With the tourist season over there is little food available at the dumps. The campgrounds now offer only tidbits too.

Cascade Kill

Oct. 13 -15/60

At noon on the 13th we approached the elk kill along Cascade Lake road from the downwind side of the little valley. We were able to look down on the kill from above and within the protection of timber. We found a small grizzly busy covering the carcass with dirt and grass. I don't think he would run over 300 lbs. He was not tagged. From our vantage point we watched him for several hours and stood in the open with over half our bodies exposed. We moved about freely taking pictures. Occassionallly he appeared to notice the movement but was never alarmed. Although I took both stills and movies He never got our scent and never suspected our presence. We were observing him from a distance of 250 ft. The next day he was still on the kill and I approached to within 160 ft. to take pictures. I came up on him using a big lodgepole trunk for cover but after reaching it stood out in the open several feet away from the tree. After getting most of the pictures I wanted I returned to our original point of observation and at this time there was a slightchange in the wind. We suddenly felt a breeze on our necks. Almost instantly and without sniffing or rising up the bear wheeled and took off for the opposite timber at a fast run. He kept on running through the trees as far as we could see him. He had scarcely disappeared before five coyotes were tearing up the elk. Although the light was poor I photographed these using a roll of ektachrome. I took some of them amid snow flurries. The magpies also came in and the coyotes tried to chase them away. Several times they nearly caught one but the magpies seemed unconcerned and kept coming in to get a bite to eat. Several ravens lit very close to the elk but came no closer and jumped nervously up and down. Being slower than the magpies they had to stay further away to keep the coyotes at a safe distance. The coyotes tolerated one another but occassionally snapped at each other. Once one went off and apparently came back with its mate.

When the grizzly was not covering the carcass with grass or eating it he lay down on t op of it and do~ed. He did not spread himself as possesively over it as had the grizzly below Mt. Washburn and the one up Haden valley at the thermal area. Like the others he gave the appearance of being proud of himself for having acquired such a bonanza. He seemed more concerned with hiding, protecting and saving it than with gorging himself on it. We thought that he would be wise to eat all he could before a larger and stronger bear came along to take over. This is actually what happened for the next day (15th) we found the Grizzled sow and her two cubs had appropriated the kill. All three of these bear are marked.

In covering up his kill the first bear went methodically about the job. He would move off a little way and then start raking toward him with his fromt claws. At times he would pick up a mouth full of grass and then drop it at his feet. Now and then he seemmed to eat the roots of the grasses and sedges. When he finally got a good sized pile assembled he would slowly back up shoving the pile between his feet. He continued backing up im this way until he reached the elk. It was already well covered but he raked first one pile and then another over the buried carcass. Now and then a coyote would come near and he would suddenly lunge at it or straighten his neck out and stare at the coyote as though warning him not to come closer. The coyotes knew he meant business and slunk off. After awhile the bear lay down on the carcas with his nose into the wind and went to sleep. If a coyote approached too near or when I bugled like an elk he would raise his head and then suddenly let it relax and slump down once more.

The first day at this kill the bear spent most of his time covering the elk and protecting it from all comers. The second day he fainally got our scent and ran off. The next day he was nowhere in sight but we looked over the brow of the hill to see a sow and two cubs asleep on the buried elk. One cub had his head between the tines of the elk8s antler. I took a few pictures of the bears sleeping in this pose and then went back for the movie camera. When I returned the breeze shifted and the sow became alert.It was evident that she had gotten a whiff of us. When I started up the movie camera the noise was all that she needed . She turned and took off at a run with the cubs. This again showed us how keen the grizzly's nose is and how

quickly he or she acts on the warnings it gives. This sow had like the bear the previous day seen us move. We moved less with her due to the lack of wind and the chance of thus alerting her. Nevertheless she had ample opportunity to see and recognize us as humans at a distance of 250 feet. She failed to recognize us by sight.

Whenever the bears leave for one reason or another the coyotes immediately come in and start tugging at exposed parts of the carcass and digging out others. They are very alert and keep a constant vigil for the bear. The magpies come in for a bite too and at first the hungry coyotes try to chase then away. When the coyotes are full they pay less or no attention to the magpies. One of thelast to get anything to eat is the raven. He is not fast enough to c me close to the coyotes when they are hungry but moves in when the coyotes are full. The raven is probably the first to spot the carcass and usually gets the eyes eaten before a larger predator shows up.

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It seems that some carcasses, at least, are consumed faster when no bears find them. The Pelican Creek elk was completely eaten in 3 days. There was not meat left when we looked at it the morning of the 16th and few ravens present. Prior to that there had been many. No bears had come in to this kill. In contrast after five days during xxxxx three of which bears had been there there remained alot of meat at the Cascade kill. This kill was tended by the bears and completely buried except for the antlers. The other was not burried. A large number of ravens were present at the Pelican kill and only a few at Cascade.

Elk Kills

	Location	Description	Sex	Remarks	District
#1.	Upper Hoden Valley	meadow int thermal area	large bull		Canyon
#2.	Between cascade Lake & highway – ocean cascade road	small valley meadow surrounded by trees	large bull		Canyon
#3.	Along old Norris Rd.	In small opening to south of road	large cow		Canyon
#4.	Just beyond barrier to north of old Lake rd to Cody	At north end of meadow	spike		Lake
#5.	Out old lake rd to north of corral	In large meadow several hundred feet from timber to West	bull – approx 3 yr old		Lake
#6					
#8	Yearling buffalo (Old Faithful				
#9	Elk in big Firehole meadow				
#10	Elk along Nez Perce				
#11	Elk on N. East side of Washburn	On steep slope scattered timber	very large bull		Nat'l Dist Town sub-dist
#12	Elk on Blacktail Deer Creek				

Elk Kills

	Date	Time	Date grizzly 1st seen	# Days present	Departure
# 1.	9/23	5:00 P.M.	9/26 – 6:00 P.M.	2+	unknown
2.	10/11	5:00 P.M.	10/13 – 12:00 NOON 10/15 saw 2 ~~sow~~ cubs		
3.	10/12	5:00 P.M.	10/17 saw 3 ~~cubs sow~~ cubs		
4.	10/12	3:00 P.M.	10/16	1	10/16
5.	10/12	5:45 P.M.	10/14		probably 17th or 18th

#6 Cleaned up 10/20 no grizzlies

#11 10/25 5:30 P.M.

Kill	No of bears
# 1	1 small bear
# 2	1 small bear ♀(?), grizzly sow + 2 ~~yearlings~~ cubs (all marked)
3	1 sow + 3 cubs + sister of previous bear # 2 & sow
4	1 small bear
5	1 medium sized bear ♂ (?)
6 (black bear)	sow with 3 yearlings including 90 lb cub & # 77
7 Washburn elk	3

Oct. 17. 1960

Checked kill along Norris Rd. and found a sow and 3 ~~cubs~~ yearlings had eaten and covered the cow elk. Maurice and I approached the grizzlies upwind and got to within a little more than a hundred yards of them. We observed and photographed them for several hours. All were well fed and lazy. The sow was lyingg down in the snow at the edge of the timber intermittantly dozing and watching her offspring. Usually while two yearlings slept one stood on the carcass and continued to cover it as though just doing so automatically. Often the next yearling cub in taking his turn would start to undover the carcass but never enough to start eating.

When some coyotes approached the sow raised herself and walked toward the carcass. On several occassions she charged the coyotes. The presence of the coyotes made the sow nervous and seemed to stimulate her to action. She began to rake up more grass and cover the carcass even deeper. After raking up a pile she would slowly back toward the elk pulling the pile with her by pushing it between her legs.

This sow had a fierce alert look and we hesitated to approach her closer as there were no good trees to climb. She apparently saw us on several occassions but did not recognize us a men. She may have thought we were coyotes. As with the others I bugled a number of times. This alerted them at first but soon they paid no attention whatever. Here as at Cascade a challenging bull elk answere several times.

Afterseveral hours there was a slight shift in the wind and the sow caught our scent. We saw her suddenly become nervous and start to sniff the wind in attempt to locate us. She then took off at a slow run with her cubs. These were not bears that Maurice or I recognized. They had not been in to any of the dumps.

Two of the cubs were a darker brown than the third which was a light brown or tan, This adds three more cubs to this years increment and four bears to the total population.

This gave us a hundred percent attendance at the five kills we have made to date. This kill is in a small opening in a dense lodgepole stand and one that would be difficult to locate readily by smell from a distance. Also ravens and eagles or magpies could not be seen from more than a few hundred yards. It was five days before grizzlies located this kill.

To date Oct. 17 we have seen 13 different grizzlies on the five elk kills. Of these four three were marked bears and One we could not tell for sure but suspect it was not marked.

On Oct. 19 the sucostrin'kid's sister with her mother showed up on the Norris kill and appropriated it. This sow is much larger than the one that was first on the kill. She is also a tough fierce bear and the cubs favor her. Maurice saw this sow chase the other one away as she and her cubs approached the kill. The sucostrin kid's sister # 29 is only a yearlying yet she too took after the sow and cubs and drove them off. I was testing radio equip. this day. Returned to kill on the 20th but no bears were present and the elk had been pretty well consumed. Several coyotes were present but all but one took off.

Six grizzlies, one of which was marked (#29) visited and fed off this elk carcass. This is the record number so far drawn into one kill. We drew four into the Cascade kill, three of which were marked.

6

GRIZZLY MOVEMENT

On August5 we set six cable snares at Rabbit Creek to test their effectiveness for black bear and possibly grizzlies. We felt these might be useful in trapping at kills or in the back country.

On Aug. 6. we had a black bear in one snare. We immobilized this bear with sucostrin given via the jag pole. In addition we had snared another bear, apparently a Grizzly. This bear tore up the ground and brush, tore up the log the snare was attached to and pulled the snare off the end. He went off with the snare around one foot.

On Oct. 3 I was in Jackson to pick up Harry Reynold's elk. At the locker I heard that a grizzly had been shot in the thoroughfare country and that he had a cable pulled tight around one paw. Rumors had it that this bear was a mean one and had entered some of the hunting camps and even tore tents down. The hunters waited up fo r him and shot him. They claimed that the foot with the cable on it was sore and festering and that the cable was pulled too tight to ever come loose. They also claimed that the bear had broken most of his teeth trying to tear off the cable. The condition of his foot andteeth they felt were responsible for his raiding the camps for food.

It is quite likely that this is the grizzly we snared and lost at Old Faithful. We stopped experimenting with snares after this try and after hearing about this grizzly have decided to give them up completely.

We will undoubtedly be able to get additional information on this bear and the incidents relative to his shooting.

On Oct. 22 I had a long discussion with Frank Ewing who has been conducting the hunter-wilderness questionnaire for me in Teton Wilderness. I asked him about reports of grizzlies and hunter kills. He said that a very old grizzly had been shot at Hawk's Rest when raiding the camp. The bear's teeth were reported to have been almost completely worn down. It was estimated that the bear weighed about 800 lbs. This bear had a cable around his foot. It had tightened up causing infection and was evidently giving him trouble. The skull measurements on this bear were sent to Boone and Crocket. The Frontier Taxidermist in Duboise was either preparing the hide or mounting the whole animal. There was a write up of this in the Jackson Hole Guide.

Oct. 13 -15 /60

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July 23, 1962

OLD Inge

This evening I took Bill Browning, Irwin Bauer and Jim Graff (YP Co.) out to see and photograph the grizzlies. Prior to dark about 35 grizzlies came in most of them sows and cubs. When we arrived there were about a dozen bears in the pit including a rather large brown colored one with numerous scars. Later in the evening I identified him as Ingemar by his limp and other characteristics.

Inge grubbed away for food and paid little or no attention to the sows and cubs. They in turn seemed to all but ignore him. At one time there were perhaps twenty bears in the pit with him all sow and cubs. Later a s more bears arrived Inge crawled slowly and apparently painfully out of the pit and slowly limped away. He moved slowly but deliberately away and kept on until he was out of sight to the north.

The sows and cubs seem to have taken over the dump, at leat in the early evening hours and there seems to be no real dominant male present. Old Inge has definitely lost his dominance position and if another bear, perhaps Scarchest has usurped it he does not appear to yet have had it generally accepted as with Inge in the past.

Inge's coat is of a color that he is hardly recognizable as the sa e bear we observed the last two years. It is now no longer almost black but is similar to the brown dirt color of old Scarface before he disappeared and Old Cutlip last year. He too has not yet reappeared. The coat is matted and not sleek as formerly. It will undoubtedly get better as the season progresses and he sheds but the color will probably remain the same.

Inge's actions, coat, walk and general demeanor single him out as an old bear. Just what brought abo t this amazing transformation in a single year is hard to tell. Maurice saw Old Scarneck defeat Inge this spring in a fight but from his action and appearance he was not at this time the fast, tough fighter of former days. He appeared either sick or badly hurt from a former encounter. There is no doubt but what the mating season fights took a lot out of Inge but it seems even more likely that for some reason or other he emerged from hiber nation in poor shape. At the present time it seems unlikely that he can survive through another season. We will try to take him with an immobilizing dart and give him a check over and physical to see what we can determine. It may be that acting the part of the dominant bear in a grizzly society puts such additional stress on the individual that it materially shortens his life.

Fidel, # 2 bear in the hierachy last year, has not yet shown up this year.

✓ By end of season (1962) Inge seemed pretty well recovered and more like his old self.

Pelage – Coloration

Andy (#4) had a very light coat when trapped in 1960 & was shedding. His coat was considerably darker in 1959. Took photos

1960

The sow with the 90 lb cub and her other two yearlings were photographed in June 1960. The ~~cubs~~ yearlings were so red in color that we thought this was a new family of bears. Later we identified the 90 lb cub whose ear~~tags~~ markers had come off.

On Aug. 12, 1960 I observed these same bears again and there was once more a marked change in color. They were a grizzled brown – light tips and dark beneath. We remarked the 90 lb cub this year. 90 ~~lb~~ Cub # 26

Aug. 1960 Inge's coat does not appear to be as black this year as last year. It is now ~~a~~ has more dirty brown mixed with the black.

Aug. 30/60

Saw 90 lb cub sow & others. These bears are now dark & silver tipped. They are completely unrecognizable from bears of early summer.

Saw unmarked but ~~[illegible]~~ offspring are numbers 26, 77, 95

Reproduction

Cubs

Trout Creek

18 cubs in 1959

1 died

2 orphans (1? back in 1960)

16 yearlings in 1960 if all lived

Have accounted for only 8 yearlings so far at Trout Creek+plus unit = 9

To date (1960 Aug.) — There are 17 cubs at Trout Creek

Trout creek	17	(9 sows)
Rabbit Creek	12	
Fishing Bridge	1	
Gardiner	2	
Thumb	2 (not sure)	
	34 cubs (1960)	

Lake	2 cubs reported	}	Probably in addition to 32-34 above
Inland Park	2 " "		
Bacon Rind	2 " "		
Gardiner	3 " " + 1 killed		
Norris Rd.	3 " seen		sure of these

Min of 35 cubs at least

Max of 47 cubs

Total of 169 grizzlies (min.) for Yellowstone

Bears With Neck Attachments For Radio

No.	Type of attachment
1	Blue plastic tape
2	Blue plastic tape
5	Yellow plastic tape
7	Yellow plastic tape
8	Blue " "
9	Purple " "
10	Yellow " "
15	Yellow " "
16	Red " "
17	Red " "
18	Red " "
20	Green " "
21	Green " "

14 plastic tape

40 Red plastic tape just under skin 7/26/60

48 Red plastic tape through lower layer of skin 7/26/60

56 3 strand 1/2" loop of brass wire swivel & plastic box

Dept. 1 all bears apparently off

57 6 strand loop of 20 lb nylon leader

58 3 strands brass wire, snap swivel & Rod box, also 6 strands of nylon

60 Brass wire, Rod box no swivel 20 lb nylon gut leader

Brass wire, plastic box (West G)

61
62
63 plastic box sewed on neck with 6 strands of nylon. Box wired & wrapped in tape, wire swivel attached to box

65. Plastic box wrapped in wire attached by swivel to nylon gut. Also put on a 2" loop of brass wire near nylon loop.

37 Plastic rope collar (white) 1/2" thick & containing a wooden dummy trasmitter

70 – Front Creek cub # 70 ♀, & saw is white faced saw. Put on a dummy box & red flag - wire

9 bears – wire and/or nylon

1 bear collar

Sept. 21 Dump kids collar still on & doing fine

14
9
24

Bears With Neck Attachments For Radio

NO.	Type of attachment
1	Blue plastic tape
2	Blue plastic tape
5	Yellow plastic tape
7	Yellow plastic tape
8	Blue " "
9	Purple " "
10	Yellow " "
15	Yellow " "
16	Red " "
17	Red " "
18	Red " "
20	Green " "
21	Green " "
40	Red plastic tape just under skin 7/26/60
48	Red plastic tape through lower layers of skin 7/26/60
56	3 strand ½" loop of brass wire swivel & plastic box 6 strand loop of 20 lb nylon ~~gut~~ leader
57	3 strands brass wire, snap swivel & Kod box, also 6 strands of nylon
58	Brass wire, Kod box no swivel 20 lb nylon ~~gut~~ leader
60	Brass wire, plastic box (West Y)

14 plastic tape

Sept. 1 all boxes apparently off

Retrays (1960)

#6
#26
#4
#40
#45
#37
#6
#52
#

Yellowstone

June 21, 1960

Correspondence & notes at Canyon
Made arrangements with store manager George White to cash personal checks
With John & Mike Maurice cleaned up headquarters & put gear away.
Picked up tables from old hotel
Photographed grizzlies (1 roll ekt) observed until 9:00 P.M.
observed one mating

June 22

Attended meeting of Yellowstone Natl. Park Council
Discussed Yellowstone Lake boating briefly with Supt. Garrison
Went over questionnaire for Univ. of Calif.
Photographed grizzlies — bears active, light good
Ravens teased one bear & even struck him (took pictures)
Took one whole roll of Kod. (36 exposures) Roll # 4
Set trap for black bear with Mike
Finished supper 10:00 P.M.
Picked up mail from Gilligan. Worked on wilderness
Questionnaire in evening

June 23

Worked on changes in wilderness questionnaire and air mailed to Billigan. Spent total of about 9 hrs on work. Phoned Hallamore Electronics — no chance of getting equipment this summer. Phoned Phil & George Rouyer said he hoped to get us some for summa or a loan basis.

Photographed bears in afternoon while John took movies. Used High speed Ektachrome. Should have gotten some good ones. Took a number of old cutlip close up. Shot a number of bears at trap. Set traps overnight.

June 24

The wide collared bear was in one of our traps. The other had caught a bear but it raised door & got out. Big trap weighs 1270 lbs. Wt of bear and trap 1480, wt of bear 210 lbs. Weighed immobilized bear in net on spring scales — wt. 220 lbs. Marvin jabbed bear in neck with syringe loaded with succinyl. Broke syringe when bear lunged but injection was successful. Gave a light dose of 35 mg. succinyl or ~~6 to 1~~ 1 to 6. Bear was out in 1½ min, could bite again in about 7½, recovered in about 15 min. & then ran off stopping briefly now & then.

As bear was coming out of succinyl we gave him a shot of pentothal sodium — 25 cc intrathoracally of 2½% solution

There was no noticeable effect & we were unable to attempt to give more. The needle was only 1½" & it is probable that pentothal didn't get into lungs.

The collared bear was nervous & fast moving in trap just as in wild. This was bear #32, Warden's red book, purple tag.

Mixed 2½ grams of pentothal sodium in 100 cc of sterile water, This made a 2½% solution. From Troyer's work we figured that we'd use 1000 cmg pentothal per 150 lbs of bear.

Met Major Bromfield from Africa (Buchanaland) Buchanan land, game control officer — showed him grizzlies at Trout Creek.

June 25

Two bears in traps at Trout Creek — a sow & a boar. Weighed bears — boar 425 lbs, sow 260 lbs

Gave 425 lb-bear a 1 to 6 dose (71 mgs). This immobilized him in 1½ min. Then gave 3 injections totalling 60 cc of Pentothal sodium in 3 minutes. Used 1½" needle & gave in interperitoneal cavity. Ten minutes after giving 1st shot the boar appeared to feel effects. Bear reacted rapidly but made no attempt to get up.

Stand and fall — 18 min.
7 first steps — 28 min.
Walk unsteadily — 29 min.
Move away — 35 min.
Recovery time — 37 min.

Gave bear 1 cc of pentothal per 5 lbs of body wt.

Bear got 4 gms of pentothal 5% solution

Gave 1 gm. per about 100 lbs

She sow received 1 cc per 3.7 lbs

Gave 1 gm per 74 lbs

She received 70 cc of 5% solution or 3.5 gms pent.

Sow #34 weighed 260 lbs. We gave her 37 mg. oxcostrin or 1 mg. to 7 lbs body wt. This dosage worked quite well & immobilized her in 4 min.

♂ #33 — ear markers red look, pink tail

♀ #34 — ear markers red look yellow tail

Dr. Fritz Bell & Son Mike arrived from Hamilton

Maurice saw a total of 63 bears on evening censuses

6 cubs
11 yearlings
8 2-year olds
38 adults

old Scarface appeared for first time

June 26

A grizzly in each trap — an adult ♂ and a yearling that is apparently "The Succotrin Kid."
Dr Fritz Bell & son were along with us.
We had difficulty with succotrin doses. Started with 1 to six and did not immobilize either bear. Next tried 1 to 4 with similar results & then finally immobilized with 1 to 3 according to highway scales. We then reweighed each bear in net using spring scales.

	Highway scales	Spring scales
Adult ♂	~~100~~ 220	
Yearling ♂	220	100

The highway scales weighed light which to some extent at least accounts for the failure of the succotrin dose to take effect & immobilize bears. However, it also appears that either the succotrin varies with batches or that there is an individual variation in bears reaction to it. Dr. Bell is going to run some experiments to test this bottle & compare with last years batch & next one we purchase. Will also run tests on old & adult mice.

We gave both bears pentothal sodium interperitoneally & both went to sleep breathing regularly & deep. The adult bear came out very suddenly when we attempted to make a dental impression. He got right to his feet & came at us scattering the whole group. He could have caused trouble. Snapped a few pictures.

The Succotrin Kid came out from effects of the succotrin before pentothal took effect. We couldn't hold him & had to release him. The succotrin had never completely immobilized

him & we pulled him out of trap to inject with pentothal. Yearling ran off groggily & John overtook & shot him with another dart. This slowed him down but did not fully immobilize him. We threw net over him & carried him back to truck. Gave him more pentothal while weighing him. Yearling finally went to sleep at 12: and did not open eyes until 1:35. It was 1:49 before he made his first wobly steps. At 2:37 he was still in same spot & when disturbed got to his feet & retched. His stomach heaved & he looked sick. A little later he wandered off.

It took 4 sucostrin darts to finally tag Sucostrin Kid. Last summer we hit him with 7 & never got him. He is a rugged little bear & even charges & tries to bluff the adult bear. It will be interesting to see if he becomes the or a dominant bear as he matures.

Mature male was bear # 35
Sucostrin Kid is bear # 36

Took some photographs at dump in evening but Major Bromfeld & Mr Ed Frost drove out & photographed also so I couldn't get pictures I wanted.

A saw we've seen regularly with three yearlings, one very reddish turned out to have a marked cub - only eartags present. This could only be the 90 lb cub & his mother & littermates. Their colors have

changed so from dust fall that we failed to recognize them — thought this was a new ground sage made identification possible

The following bears, unmarked have been seen again at Canyon:

Scarface
Cutlip
Scarchest

The sow with green ear markers & yellow neck marker, #7 charged John when he tried to move closer to take some movies. She turned & came like a flash, then flattened out like a badger as she put on the brakes. The charge may just have been a bluff but it was a good reminder not to take ~~unnecessary~~ unnecessary chances.

June 27

We took the day off & with Dr Fritz Bell & his son went down into Yellowstone Canyon to 3-mile hole to fish. Mamie, John, Mike Stephen, Mike Bell & Fritz & myself made up the party. Fishing was wonderful. Caught most of the trout on wet flies, particularly those somewhat resembling salmon flies. A few salmon flies were out & the fishes' stomachs were full of the salmon fly Pelgamite. All of us together caught & released well over 100 trout. We cooked some for lunch & supper on hot rocks & then packed out the larger fish - The biggest weighed about 3½ lbs but we had a few hooked that would have gone 5. Climbed out slowly (1 hr) and reached the rim by 8:45 P.M. Took quite a few kodachromes.

June 28

Caught up on correspondence, tried to phone Jack Fletcher, verified plane reservations, inquired about typist etc.
John & Dr Bell collected data at Lake
Photographer in evening but did not get bear shots I wanted. Bob Gustafson of Wyoming F & G. Comm., Chief Ranger Murdock, Bob Howe & others came out to see & photograph bears.

We have worked on the following bears to date

Number	Sex	Age	Weight	Markers
31	♀	adult	225	——— died
32		adult	220	Red book, purple tip
33	♂	adult	425	Red book, pink tip
34	♀	adult	260	Red book, yellow tip
35	♂	adult	265	white book, red tip
36	♂	yearling	130	white book, yellow tip

Saw # 34 tonight come in to dump

Succinin

# 32	Succinin dose	1 to 6
# 33	" "	1 to 6
# 34		1 to 7
# 35	" "	1 to 7, 1 to 6, 1 to 5 last successful
# 36		1 to 7.6, 1 to 5.2, 1 to 4, 1 to 4

Succinin dose perfect on 32, 33 & 34
Pentothal ineffective on 32, 33 & 34

Weight was off on # 35 & 36. 1 to 4 immobilizes # 36 just enough to get him out of trap. He then ran off & had to be shot again. Had already given 30 cc (5%) pentothal

Pentothal sodium doses were:

33 — total dose 80 cc of 5 ± ½ % solution
Mixed 1 gm pent. to 20 cc sterile water
Drew 1 cc per 5 lbs of body wt

Nov.	Total dosage	cc / body wt (lbs)	gms of pentothal	gms / lbs
33	80 cc 5%	1 to 5	4	1 gm to 100 lbs
32	25 cc 2½%			
34	70 cc 5%	1 to 3.7	3.5	1 gm to 74 lbs
35	50 cc 5%	1 to 5.3	2.5	1 gm to 106 lbs
36	45 cc 5%	1 to 3	2	1 gm to 65 lbs

Pentothal dose effective on # 35 & 36. Number 36 may have had a little too much, # 35 not quite enough

Pentothal given intraperitoneally with 1½" needle

Activities (T.C.C.) Summer 1960

July 24 — Drove from Jackson to Yellowstone.

July 25 — Retrapped & marked Old Andy

July 26 — Marked 4 bears — 2 retraps

July 27 — Photographs of martin — Mr Arnold (With Clarke)

July 28 — Trapped bear #49, skinned bear killed by rangers
Took Andy to Old Faithful.
Called Jackson Lake Lodge

July 29 (Tue) Drove to Moose
mi 61817 - 61922

July 30 Met Harry Reynolds at South Gate & rode into Basin Creek Lake. Camped at 11:30 P.M.
61951 - 62000

July 31 Rode up to Heart Lake & out to Heart Lake access point on highway. Drove back to Moose. Met Jim Gilligan at Moran.
62000 - 62090 — 90

Aug. 1 Drove to Moran, ORRC. meetings (wilderness etc.)

Aug. 2 Drove from Moose to Canyon — mi. 62258
arrived slightly after noon

Drove 441 mi on work between July 29 — Aug. 2
Does not count Estes drive back to Moose

62258
61817
441

Aug. 3 & 4 Bear trapping at Rabbit Creek — 2 yearlings

Aug. 5 Tagged sow & 2 yearlings at Rabbit Creek
Coleman Newman of N.P.-5 was along.

Aug. 6 Checked snares at Rabbit Creek. Black bear with yearling in snare. Took pictures. Swam in Firehole

1960

Aug. 7. Noon left for hike to 3-mile hole to spend night. Took series of photographs. Caught a 4 to 4½ pound cutthroat. Charlie, Derek & young Harry were in party.

Aug. 8 Hiked back out of canyon — on rim by 2:00 P.M. Set trap in place at Trout Creek for flash pictures. Took a few flash pictures but results only fair. Worked out some bugs in trap. Old Hotel burned. Took pictures until after midnight.

Aug. 9
Wrote notes, meeting with Wesley S. Griswold
Wes & crew went off to West Yellowstone to trap for a few days
John & Maurice flew over Park with Montana Fish & Game

Aug. 10
Packed gear & drove John, Derek & Charlie to cabin at Moose. Took pictures in John's cabin of him & Harry pouring dental casts.
Took first group of pictures using ascorlight but forgot filter.
Next group on different roll with filter

Aug. 11
Dug up Yampa roots (Perideridia Gairdneri & took pictures identifying bear foods using plates.

Aug. 12
Drove from cabin to Canyon. Took pictures of Everett's thistle & Yampa with Harry Reynolds in picture. Used flash
Drove out to Thumb dump.
Made census with Maurice at Trout Creek
~~Saw~~ Bears # 61 & 62 marked at West Yellowstone

Aug. 13
Bear. Drove to West Yellowstone. Bear #63 a 575 lb
bear in trap
Took pictures of inside of mouth, rear paws, pelage
Purple loop – pink tail
Saw Joe Fraser & gave reprint – drove on to Canyon

Aug. 14. Wrote notes & drove Harry to Lake & went on to Cabin
Diarrhea since 11th. Harry sick night of 13th, Pete has
had diarrhea for about a week, lost wt.
Went to party at Balderstons + discussed radio work

Aug. 15-17 1960
Correspondence & phone calls at cabin. Party with Berthrongs,
Reynolds, Zirkels, Gloria & John's family & mine. Hanks also present
Tried unsuccessfully to call Phillco.
17th Drove to Lake with Es & spent night with Reynolds. Morgan
& family preceded me by a few hours.
Aug. 18
Phoned Darge Rongee – He said they were making up
sets & were field testing models for us
The frequency is 28.795 mg, the band between 27-30
They are using a crystal controlled transistorized transmitter
New crystals will be around 29 mg.
Batteries 10 day life. Plan to turn transmitter on by command
& engage relay. Testing mercury batteries
Size of transmitter is $\frac{1}{2}$" × 1 2 to 2"
Whip loop antennae about 32" – around neck
Don't yet know range
In afternoon talked to Mike Conn, engineer on the project.

Took pictures of John shooting CO^2 gun at grizzlies. Took Morgan
to spot bear to see bears. Shot twice unsuccessfully at cub of
white-faced sow.

2
31
18/
5

425
260
165

5
31
19/
55

Aug. 19, 1960

Called Les Pengelly & discussed wilderness project
Retrapped Grizzly #6 at Trail Creek & after anaesthetizing
by intrapulmonary injection of pentothal sodium we
weighed, measured, photographed & took dental impression
This was first cub marked in 1959 & this the 2nd
retrapping this year. She is daughter of grizzly sow

	orig. wt. July 4	June 29, 1960	Aug 19
#6 ♀	45 lbs	105 lbs	160 lbs

She gained 55 lbs in 51 days or 52% of her June wt.
I guessed this bears wt. at 168 lbs on basis of a 60% increase as
indicated by bear #34.

#~~34~~ 34 ♀	June 25, 1960	Aug. 17, 1960
	260 lbs	425 lbs

She gained 165 lbs in 54 days or 63% of her June wt.
Approx. gain of 3 lbs per day

Rangers had a black bear they were going to shoot so "Handy"
brought it out to Trail Creek & Morgan Bethrong
autopsied it for us after we gave it an overdose of succostrin
Bear died of acute heart failure & pulmonary congestion
Heart had soft bruise-like areas on it similar to (but less severe)
sow #23 in 1959.
Pulmonary edema (froth in windpipe (white)) was evident
Blood was all congested on venous side of heart
Aorta & smaller coronaries were white, exceedingly smooth &
free of any sign of arteriosclerosis (pictures)
Adrenals were unusually small (pictures)
Thyroids were also " small (pictures)
Adrenals were located right under renal vein.
Small intestines smooth & without rugal folds or
convolutions. This is typical of predators
Stomach quite small but with very thick powerful muscles
Longitudinal rugal folds
Stomach muscles much more powerful than in humans
Took pictures of omentum — lace-like, fatty tissue that

conjugate at points of infection

Tapeworm in intestine (picture)

Discussed PBI (protein bound iodine) test with Morgan
This tests level of thyroid hormone circulating in blood
& can be used as an index for metabolism.

Discussed shooting of Old Andy with Harmon
Took pictures of packrat

Aug. 20, 1960

Hiked down into three mile hole with Morgan Bertheong, P.M. & Jimmy. Sandy, Karen, Harry (III) & Paul came to. Fishing was poor as the river was dropping fast — perhaps falling rise that accompanied rain & snow. Caught about 30 trout & hiked out after dark. Took a few pictures of small falls. Ravens swiped a few fish. They'll come down within ten feet of us to swipe food. Osprey dived at one several times.

Aug. 21

Wrote notes, arranged meeting with Harry Reynolds & Tom Hyde. Drove to Harry's and discussed shooting of Andy, new bear regulations, taking measurements etc. Took shooting picture at Trout Creek
Saw big American balloon ~~satellite~~ satellite moving across heavens 1000 miles up.

Aug. 22

We had three grizzlies in traps this morning. One was one of the "Dump Bears" # 37. The other was the grizzlies sow and her cub-no. 52. Sow is #65
The respiration of the cub in trap while resting was 17/min.

over

1960

#37 is a 2 yr old male

This bear (37) weighed 145 lbs when captured June 29 Aug 22 it weighed 245 lbs a gain of 100 lbs in 54 days.

Figuring on a 60% gain we estimated weight of bear, for sucostrin dose, to be about 232 lbs. Allowing for fat we gave 42 mg. which was a heavy dose for this bear judging from reaction.

wt

Grizzly #37 gained 69% of his June 29 wt in 54 days. Cyanosis developed & irregular diaphram breathing. Saved bear with O_2 given through catheter in throat back over tongue. Took numerous pictures of Morgan & John.

rope collar

Put a white rope collar with dummy transmitter on this bear. His neck circumferance was 25". We put the collar on rather loosely & may lose it by slipping over head. Took pictures of procedure. Used ascorlight on some

Cub #52 was trapped July 30. He weighed 100 lbs at that time & 120 lbs when recaptured Aug. 22

20
100 | 20.00
200

This was a gain of 20 lbs or 20% over his July wt.

Cub nursing

The sow #65 has another marked cub #43 - July 9, 1960. When the cub (52) was released his mother was sleeping soundly under influence of nembutal. The cub went over to mother & nursed on all nipples until dry, then took off and left her still sleeping. (Pictures)

Aug. 23

Four to five inches of snow fell overnight. Worked on a paper on Yellowstone Lake zoning to be presented on 24th at the Lake hearings.

Aug. 24 Attended Lake hearings on Yellowstone Lake zoning. Gave a prepared statement. Talked with Garrison, Murdock, Elt Davis, Tom Hyde, Harry Reynolds, Allyn Hanks & others. Drove to Moose in evening.

Aug. 25-30, 1960
Correspondence with Mel Payne, Philco etc.; saw Balderston & arranged Yellowstone meeting for pictures, phoned Pat Hunt, tried to look up Chuck Loring on Solitude study, met with Jim Cole.
Worked on road at house, outhouse, pumphouse roof etc. & got E.s & kids off on trip east at 9:00 A.M. Monday 29th.
Drove to Canyon evening of 30th.

Aug. 31
Film off to Geog.; rope collar to Philco, slides to Griswold. Went over Griswold's manuscript, letter to Griswold. Tried to get orphan yearling, met with Bob Have observed at Nort Creek & had supper together. Discussed mgt. problems.

Sept. 1 Got off a letter to Jim Gilligan & saw Harry Reynolds about hunter questionnaire. His boss thinks it best that he not undertake the job. Sent off some Geog. reprints.
Maurice & I drove to Old Faithful & made a count. Saw 15 grizzlies. The sow #58 with her two yearlings 56 & 57 was present. None had dummy boxes on their necks, or at least we couldn't see them with a good look at neck with glasses. The sow's rope ear marker was missing in right ear. After census Maurice & I drove over to see Lee Robinson & Riley McClellan. They wanted us to get rid of a large marked grizzly that had been roaming camp ground & eating at garbage cans. An orphan cub of sow #31 was also rearing up at visitors that tried to approach it closely or pet it. Under the present bear directive, both would have to be shot.

Old F. recapture of #1

We patrolled around campground & finally spotted the grizzly, a large one that we first estimated would go 400 lbs. We accordingly made up two darts of 90 mgs of succinin. We then lost the bear for awhile but eventually located him again. This time he looked even larger & we would have taken him for a different bear if we had not seen the ear tags (metal). Waited for a close shot & missed opportunity. Again located bear & I shot him from car in rear at about 30'. He jumped & ran like an elk hit with a slug. We followed him slowly on foot & were immediately among tents & sleeping campers. The hit grizzly had gone within a few feet of them. We returned to car & drove around to other side of loop. The grizzly was lying down 100' from road & trying to get to his feet. He had moved less than 100 yds from where I shot him & had dropped in at about 2 minutes. Bear was still raising head and snapping jaws when Francis & I grabbed him & started dragging him toward the road. We yelled for help but got none, except one man who held an flash light. The bear was heavy (5-200 lbs) & the two of us dragged him to trap & then did most of the lifting & straining as we tried to get his head & front feet into the High Park trap. We finally got some help from rangers. I think they also realized that if we didn't soon get him in he would be loose among us. I was just giving a final push to his rear end when someone yelled to shut the gate. I barely got my hands out as the door whistled down. By the time I walked around to the back of the trap & looked in the bear was raising up & looking out at us.

Shot bear with 90 mg. succinin

We parked this bear in trailer & then started hunting for the orphan cub of sow #31. We located this little fellow with flashlights & then chased him around area in cars. Park rangers kept track of him to some extent via radio cars. I finally got a rear end shot as he was moving through trees. It was a long shot but I hit him. Francis & I tried to follow on foot & finally located cub down but crawling & far from immobilized. I pounced on the back of his

#31 last spring

neck & held him while Dennice ran to get our panel wagon & cub-cage. The cub let out a loud bawl. We were within 20' of a trailer & I was sure this would awaken the occupants - if it did they gave no sign of hearing us. We pushed cub into trap, threw trap in car & took off. It was a good night's work — two bears with three shots. We later identified the large bear as #1. We had never seen him since tagging him over a year ago. He then weighed 200 lbs. When we weighed him next day he topped the scale at 520 lbs. This was a gain of 320 lbs in about 14 months. If this bear had not been tagged we would not have believed it could possibly be the same animal. This amounts to the phenomenal growth of 160% — or an increase of 160% over his June 26/59 weight.

Sept 2. We set the traps at Trout Creek the night before & in morning found we had a grizzly in each trap plus the cub & bear we had taken at Old Faithful.

We started work on the cub (not cub-caught in trap) that we had gotten at Trout Creek. It was a ♀ weighing 105 lbs & became quiet. #20. We marked this bear with yellow rope & green flag. Took dental impression & put on a dummy radio box.

We next started on the big bear we had shot the night before at Old Faithful. We gave him the same dose of succinin (90 mg). This barely did the job & I got in trap with him to administer nembutal. Had trouble getting needle in. Bear heaved several times & once struck my head against top of trap. After bear #1 was sleeping I took several photos in help of Maurice giving nembutal. We could scarcely believe what the ear tags revealed — that this was bear #1 that had weighed only 200 lbs 14 months ago. We heaved & tugged to get bear out of trap & then weighed him. He weighed 520 lbs. After getting him in trap I estimated 550. Took pictures of weighing this bear — Maurice & Pete.

We gave #1 a total of 46 cc of nembutal in 3 doses 35 — 6 — 5. At 1:20 his respiration had jumped to from 24/min. to 36. As there was still a lot of work to be done we decided to give him another 5 c.c. This made a dose of 1 cc to 11 lbs. We didn't think it too much under the circumstance, & had no idea it would be fatal. However, soon after giving this last dose I suddenly noticed that the bear had just about stopped breathing. We immediately gave Oz but it apparently was too late to help. Later autopsy showed no heart lesions suspicious of death from succinin. This bear apparently died of an overdose of nembutal. He was a big, healthy bear in his prime. The dose we gave, though a heavy one had not killed other bears. We felt discouraged & blue

over the loss of this fine animal.
We next tackled the cub from Old Faithful & gave her the same dose we had used to down her the night before. It had been hard enough to immobilize her so we could catch her. This dose of .22 mgs. proved heavy for her as she actually weighed only 85 lbs. This was a dose of close to 1 to 4 & should have been O.K. The cub got a bit cyanotic & we administered O_2 & got back color. At this time he was snapping jaws & raising head. We gave him 6 cc of nembutal intrapulmonary & he stopped breathing almost instantly. O_2 & respiration did not revive him. Autopsy showed congestion of blood in heart, big vessels & lungs. Apparently this cub had too much sweating & this along with shock of getting nembutal caused heart failure.

Reunion of Trapped Sow & cubs

Sept. 7, 1960

On the 6th a group of scientist arrived from Missoula to make aardiographs of a grizzly and to take some sternal punctures to try to obtain dividing cells. This group included Dr Harold Brown, physician and heart specialist, Dr. Bert Pfeifer, Univ. physiologist, Dr. Otto Stein and wife and his assistant Miss Gabriel Mueling. We set two traps on the evening of the 6th and on the seventh we had caught the grizzled sow # 65 and Jesse # 45. We released the grizzled sow without immobilizing her and she took off. We hauled Jesse to the fenced compound at Canyon and made a cardiograph (see other notes). Also-garbed Scarface # 73, 780 lbs (Sept. 8)

In the evening at Trout Creek we saw three bears approaching. An adult was coming in from the north and two cubs were coming up Trout Creek. At about 3 hundred yds. apart the bears seemed to sense the presence of one another but gave no sign of recognition. Neither the cubs nor the sow seemed to recognize each other until within 200 yds of one another. The cubs appeared to recognize the sow first and started running toward her. Once they started moving, the sow apparently recognized them and started running too. When they got together the cubs suckled immediately. This is th e first actual reunion of sows and cubs that I have witnessed. After the cubs were satisfied the sow led them away and off to the north. This was the grizzled sow & her cubs #65 - #52 + 43

When the bears were approaching one another the wind was toward them so that neither got the scent of the other, at least until within a few hundred yds. of each other. Even then it appeared as though the recognition may have been by sight. This tends to collaborate other evidence that the grizzly's sight is not too good at a distance. For further evidence of this see notes on grizzly and kill south of Washburn.

Took photo with high speed skt. though light was very poor.