NOTES ON GRIZZLY #101

On November 7, 1967, a group of us left Canyon Lab with ski-doo's on trailers. We drove to Hot Springs turn-off and rode ski-doos to Dunraven Pass. From here we hiked westward toward Hedges Peak down the North side of the mountain to the den of #101. Prior to approaching the den, we ate lunch. At 1:40 p.m. the air temperature in the sun was 38° F. In the shade the air temperature was 32° F. and 50° F. in the sun on Pineneedles. The day was clear and bright with no clouds. In snow 12-18 inches deep to within 100 feet of the den, there were no fresh tracks around the den and #101 was moving at a distance as indicated by the signal. I took photos of the den using the 400 millimeter lens. The den entrance faced North and was on a slope and located at the base of a large Spruce tree in a heavy stand of timber. The den was on the North side of the mountain between Dunraven and Hedges Peak.

On November 8, 1967, we again took ski-doo to Dunraven Pass. At 11:15 a.m. there was no signal from a spot beyond Dunraven Pass where signal had been received previously. At 11:35 a.m.-still no signal. At 11:45 a.m., we obtained signal from next bend. The signal was intermittent. The bearing was 200° and placed the bear between Dunraven Peak and Saddle of Pass. The signal sounds as though the bear is

digging a den. At 12:15 p.m., we obtained a signal at the first large bend North of the Pass. This bearing was 240°. At this point there was no signal for the first 15 minutes and an intermittent signal thereafter. At 12:35 p.m., we tried for a signal at the bend at the Saddle, but were not successful. The morning was clear and bright but clouded up in the p.m. This fix provided by the intersection of the two bearings was the approximate location of the second den dug by grizzly #101 and located by Merlin Shoesmith and Harry Reynolds, Jr. on November 13. (took pictures of #101 namesake on ski-doo).

On November 9 the barometer dropped slowly and it snowed all afternoon and throughout the night.

On November 10. Snow depth_____. All roads covered and Southgate closed.

November 11, 1967. John, Harry, and the gang from the University tracked #101 all day and went to and measured the first den dug by #101. She had not returned to the den since having been first disturbed. The den was lined with six inches of boughs-all fir. The entrance to the den was between two large roots similar to the den entrance dug by her before. The large pile of boughs at the entrance to the den was equal to the amount of boughs inside. Numerous young trees had been chewed off near-by trees. Some boughs had been chewed off at least a month ago judging from the appearance of the cuts. There was also some fresh signs of chewing. This would indicate that #101 had at least begun digging and preparing a den by mid-October. The dimensions of the

NOTES on #101

den are recored in notebook dated November 11 and have been transferred to a prepared table. The final confirmation and location of a new den for #101 was recorded by Harry Reynolds, Jr. on the date of November 13.

OBSERVATION OF INSTRUMENTED GRIZZLY
#101 on 11/13/67

This concerns a report of observations of sow grizzly #101 at a winter den site, by Merlin Shoesmith and Harry Reynolds, Jr., research assistants.

Shoesmith and Reynolds departed from the Canyon Research Lab at about 9 O'clock am on the above date, prepared to spend the day in locating and observing #101, believed to be in a den site on the upper slopes of Dunraven Peak at an elevation of about 8800'. A party led by Dr. John Craighead, and including Reynolds, Derck Craighead, and Jay Sumner, had radio-tracked the same bear on November 11 to this general location from a recently abandoned den site located on the NW-facing slope of Hedges Peak.

Arriving at Dunraven, the specific purposes of the tracking were to attempt to locate #101's new den site, and to observe (if possible) how many yearlings were with her. ~~Pass~~, Shoesmith and Reynolds parked the Ski-doo, and then traveled afoot across open country in a westerly direction toward the upper elevations of Dunraven Peak. A good crust remained on the surface of the snow which was over 24" in depth. Reaching a long, open ridge extending in a Northerly direction from the upper flanks of the peak, the ridge was followed to its Northern extremity. Several readings were obtained on #101 from the ridge, indicating she was located

along an azimuth of about 265° from the Northern end of the open, rocky ridge. The signal strength was loud, clear and constant. This vantage point overlooked almost the whole of the upper drainage of Cornelian Creek, as repetitive readings were made before elevation was lost. Leaving the ridge, the two men traveled through mature Whitebark Pine for a distance of about 150 yards before emerging into an open slope about 150 yards in diameter. Lunch was eaten at this point, so that visual observation could be made for a period of time on the opposing but nearby open snow-covered slope. Lunch completed by 11:35 am, the men continued down the steep slope and entered a heavy stand of mature Spruce. Immediately in front of them and within 100' of the edge of the timber was a large windfall comprising several trees interlaced to a height of about 8'.

Progressing very quietly and slowly on course through the heavy timber, with sensitivity of the radio receiver at its lowest point, the windfall was being skirted to the North when signs of a den site were observed directly in front. The recently broken end of an 8" diameter tree was observed, as well as compacted dirty snow. After a brief, hushed consultation, it was decided that this was #101's new den site. Nearby trees were not suitable for climbing, so the two men were in the act of retreating to the edge of the timber and back up the slope when unmistakable, snuffling, nervous sounds of a bear were heard. While the opening of the den could not be seen from the position of the men, because of the down timber and the lay of the slope, it was later estimated to be about

25-30' in distance from the men and on the radio reading they had been following. The men retreated to the open slope at their backs, then followed the edge of timber in a Northerly, uphill direction until safety was reached in the form of climbable trees. The first such tree, a Whitebark Pine-about 150' from the den site-was marked with a long streamer of red or yellow-colored survey (plastic) tape. The men continued to retreat along the edge of the opening until they reached their former route at the top of the slope. An old, gnarled Pine was marked with tape at this point.

Several other trees were similarly marked through the timber until the rocky ridge was attained. Two trees were marked at this point, at the edge of timber on the West facing slope of the ridge. The date, bearing, and distance to the den site was written on one of these last two tapes.

Subsequent readings were made all the way from the den site to the top of the ridge over a period of an hour or an hour and a half. The signal continued to be constant, strong, and from the observed location. Thus, it appeared that #101 had not left her den during or subsequent to the encounter.

The route was retraced to Dunraven Pass, and the men returned to the Lab at 2:15 pm.

Harry V. Reynolds, Jr.

1967

NOTES ON GRIZZLY DENS

On June 13, 1967, Klaus Nielson and I hiked into the den of grizzly number 40 and I took pictures and measurements. Part of the roof had caved in and at first it appeared as though the entire den had been destroyed. The tailing-pile at the mouth of the den was much higher and larger than last fall when the bears entered. Number 40 had raked out most of her winter bed as well as some additional earth. The entrance to this den was not at the base of a large tree as has been customary, but the entrance did go through the roots and base of what had been the stump of a dead tree. The width of this entrance was 17 inches wide and 20 inches high. The bed chamber measurements were as follows: Width 85 inches, heigth 28 inches, length 60 inches. Total length 90 inches. The den was dug in a rich, loose, muddy soil. With as much rain as we are getting, it is quite likely that this den will cave in within another week or two. The den varied from others that we have visited primarily by being wider than the others and not very high. The aspect of the den was North. There is no indication that number 40 had built bough beds on the snow and used them this spring as she had done two years ago.

About 100 feet from this den on the same North facing slope we located an old den that had caved in. The tailing-pile was still quite evident and there were some sections of the den interior that were still intact. The approxi-

June 13, 1967
Den of grizzly number 40

mate measurements of this den were: Length 70 inches, width 52 inches, heigth of den 28-30 inches, heigth of entrance 19 inches, width of entrance 27 inches. The total length of the den including chamber and entrance was 90 inches. The tailings or material pulled out from the den was covered with moss and grass. Very little bare soil was showing. A small tree was also growing on the tailings. This was apparently two to three years old, but I have not yet accurately aged it. This den, like the other one was dug in loose rich muddy soil. I would judge that it was five to seven years old. It is interesting to speculate on why these two dens separated in time should be located so close together. It is possible that the site characteristics are such that it attracted different bears at different times to this same north facing slope. However, the chances of this occurring would appear to be quite remote. There is a possibility that number 101, the bear that was with number 40 just prior to going into hibernation, is the mother of number 40 and that she in one way or another led number 40 into this area to den in the fall of 1966. It is quite conceiveable that the old den was her den and the one that she dug when number 40 was born. Superficial investigation seems to indicate that there is not a great age discrepancy, that is, the den is approximately the same age as "Marian". She is now a seven year old bear.

Draft
copy sent to John

NOTES-DENS of 202
1967

I just returned from a three day trip to the den of male grizzly number 202. Jay Sumner and I left on August 30, 1967 and spent two nights in the bottom of the Yellowstone canyon. With the use of the photograph taken two years ago, we were able to look down from the edge of the cliffs and precisely spot where we had seen grizzly number 202 at his den in 1965. We then hiked back to the snow avalanche shoot and followed this down to the bottom of the canyon. We made camp on the flat grassy spot next to the hot sulphur pools and at 8:30 ~~am~~ A.M., the next morning we climbed up the canyon wall to the base of the cliffs, and after a little searching, located the first year den of number 202 as well as a nearby natural rock cave that may have been used as a day-bed by this bear. We also found the 1966 den that had been dug and used by number 202 last fall.

The 1965 den was a very crude one, more of a day bed than a den. It was perhaps the type of den that one would expect a yearling without previous denning experience to have built. The bear had dug a slight excavation on a very steep and rocky slope (45° angle) and had dug this beneath a rotten log. The rocks were pulled out and the meager tailings made a partial day-bed as has been the case at other grizzlies' dens. The tailing pile was also used as part of the actual hibernating bed. On the steep rocky slope, the bear had levelled out a bed structure of rock and boughs that was about 32 inches high at the outside edge where it dropped off. This built-up portion was made of boughs. In other words, the excavating rocks plus a deep pile of boughs served to make the level bed platform

and ~~within~~ on this platform the bear fashioned a circular bed 31 inches by 31 inches. In the bed he was only partially covered by the cave that he had dug and by the dead log under which it was excavated. Snow that piled up over him provided the only additional protection and insulation from outside ambient temperatures. This bed and hibernating site was located exactly where we saw the bear from above in 1965 when Bob Ruff and I tracked him to this spot by radio and then scared him from his den when we rolled a rock off the cliff from above.

The dimensions of number 202's 1965 den were as follows: the height of the den was 26 inches; the width of the den at the opening (there was no entrance-way) was 43 inches; the bough bed that was built partway back into the cavity and also partway out on the tailing pile was 31 inches by 31 inches and was circular and cup-like in shape. The depth of this bed at the center of the depression was 12 inches. The total length of the den from the back of the cave to the outer edge of the bough bed was 47 inches. The total length from the back of the den to the edge of the bed platform was 66 inches.

Several hundred feet E~~e~~ast of this den and on the same contour level there was a natural rock cave in the base of the perpendicular cliffs that rose vertically to the rim of the canyon. The height of this den varied from 52 to 36 inches. The width was 77 inches and the overall length 87 inches. The rear floor of the den was slightly

excavated and formed a sleeping spot or bed chamber. The height of this chamber was 36 inches; the width 57 inches and the length 33 inches, that is from front to back. There was a skimpy assortment of branches in the den, an indication that the bears had used it; but nothing that would cause us to believe that the grizzlies had ever hibernated in it although it seemed to be a perfect hibernating site.

We looked around for NUMBER 202's 1966 den as we had again tracked him to this area last fall. About 100 yards downhill from his 1965 den we located it. It still contained fresh green boughs in the bed, but it had partially collapsed from huge rocks that rolled down on it from above. The den in general was deeper, better prepared and made a more suitable hibernating site than had his former den. In order to excavate this meager den in the deep rocky slope the bear had to pull out and move about a ton of rock material and practically no earth at all. The length of the den was 43 inches, the total length which included the opening was 63 inches, width 37 inches, height 28 inches. This den, like the other one, was dug underneath a horizontal log that was partially imbedded in a steep talus slope. The log which served as an entrance-way as well as the rocky den roof had all caved in when rocks from above had crashed down on it. The distance from the actual entrance of the den out to the edge of the tailing pile which served as a daybed for the bear was 73 inches and it was covered with some boughs. The den was located among spruce and fir trees-a very narrow strip of timber between two steep rocky shoots both of which were not only snow, but rock avalanche slopes. The entrance to both dens faced North. The entrance to the natural rocky cave faced West.

The den of this male grizzly differed in a number of ways from the dens of the other grizzlies that we have located. All of the other dens have been excavated and prepared by adult sows. To begin with, the location of the den was quite different from the others. It was located in a steep nearly inaccessible canyon area on a talus slope, and was dug in rocks. It was a very difficult site in which to dig a den, and particularly to dig a very large one. The first year den was hardly more than a daybed. In fact, some of the deep daybeds that we have found would provide better protection than did the den of NUMBER 202. His second year den as already indicated, was excavated deeper and was better prepared, indicating that he had prehaps learned something from the experience of the year before.

So far, we have not found any grizzly dens that the bears definitely hibernated in that were not dug by the bears themselves. We thought that this perhaps might not hold true in the canyon, that is, that a natural shelter might be selected or that a natural shelter partially excavated might be used. However, about 150-200 feet East of NUMBER 202's first den we located an excellent natural cave that apparently could have been used by this bear FOR HIBERNATION. ~~to hibernate in~~. It is possible that he did use it for daytime sleeping just prior to hibernating and perhaps he even returned to it after coming out of hibernation. However, there was no indication that he had actually hibernated here. Instead all signs revealed that he used the poorly constructed den that he had dug out of the rocky soil and partially within which he had built a bough bed. In all conceivable ways the natural den seemed so superior

a spot for hibernating that it is difficult to figure why this bear did not use it. He certainly must have been aware of it. One suggested answer is that it is instinctive for the grizzly to dig a den and to dig it in the fall of the year. Thus when the time is right the bear attempts to dig a den. Regardless of whether the soil is suitable for digging or whether it is rocky he eventually produces a shelter that although not ideal is perhaps adequate for his long winter sleep.

Only a short distance from NUMBER 202's 1965 den we found a partial den excavated at the base of a large tree. This had not been lined and digging had been difficult due to the roots as well as to the rocks. Apparently it was discarded. When 202 had first arrived at this denning site in 1965 his radio signal indicated that he was digging a den and this may have been the one. Number 40 did the same thing when she dug a den at the base of a tree and then found that the space between the large roots was too small for an entrance-way. She then gave it up. I took a photograph of the abandoned den that 202 had apparently started to dig. We found still another one, and again at the base of a tree that showed signs of the bears claw marks. It had been slightly excavated, but abandoned before much effort had been spent on it. In 1965, GRIZZLY NUMBER 202 was quite lethargic when he arrived at his den site. This could partially account for the poor den construction and the abandonment of his first attempts to dig one.

At the top of the shoot where we go down into the canyon there was another natural cave that we had spotted the year before. This cave was lined sparcely with boughs and some moss. It appears to have been used by grizzly or black bear but the amount of bedding did not indicate that the bears had used it for hibernation purposes.

Number 202 returned to the same area to den on two successive years and the two dens were located about 100 yards from each other. It is unlikely that this bear would have used the first den that he dug as it was a very inferior one and was such that it did not encourage improvement. The second year den might have been reused had #202 not been shot by the Park Rangers. However, because it did cave in, it is quite possible that he would have again dug a separate den but perhaps close by. Some of the canyon slopes lie at an angle of 45 degrees or more. Snow avalanches run down them each spring. Huge rocks are periodically falling off the cliffs and starting small rock avalanches. There are very few trees that are not deeply scarred from the falling and rolling rocks. Islands of timber, some of them with quite large trees, have established themselves between the steeper avalanche runs. However, even these do not appear to be a very safe place for a bear to hibernate. The one thing that they seem to get here is isolation and it may be that this need for isolation is such that they risk selecting a denning site on or close to avalanche slopes.

The only real threat to the grizzly, the only effective enemy the grizzly has ever had on the North American Continent has been man. For most of the lifetime of this species man has been the Indian or primitive man. The Indian both feared and respected the grizzly and he did not often kill him. The grizzly was usually more than a match for the red man's primitive weapons and even for the Indian's or the White man's early rifles. The only time when the grizzly was and still is particularly vulnerable to man is during his period of deep sleep or hibernation. It is quite likely that primitive man killed more grizzlies when they were in hibernation than he did at any other time. This hunt-

ing pressure at a vulnerable time may have been a factor which over long periods of time helped to evolve prehibernation behavior of the grizzly, causing him to seek isolated areas for his wintersleep or areas difficult of access by man and other animals.

Notes – Dens of #202

Tuesday August 1, 1967

I just returned from a three day trip to the den of male grizzly number 202. ~~We~~ Jay Summer + I left on August 30 and spent two nights in the bottom of the Yellowstone canyon. With the use of the photograph taken two years ago, ~~Jay and I~~ we were able to ~~climb~~ look down from to the edge of the cliffs and precisely spot where we had seen grizzly number 202 at his den in 1965. We then hiked ~~went~~ back to the snow avalanche shoot and followed this ~~climbed~~ down ~~this~~ to the bottom of the canyon. We made camp on the flat grassy spot next to the hot sulphur rocks and spent the night. ~~and~~ The next morning we climbed up the canyon wall to the base of the cliffs at 8:30 am and after a little SEARCHING, located the first ~~old~~ den of number 202 as well as a nearby natural ~~a rock~~ cave ~~den~~ that may have been used as a day bed by this bear, ~~occassionally and~~ We also found the 1966 den that had been dug and used by number 202 last fall. The dimensions of number 202's 1965 den were as follows: THE HEIGHT OF ~~this~~ DEN WAS 26 INCHES. The width of the den at the opening ~~where it went back into the rock~~, was 43 inches; the bough bed that was built partway back into the cavity and also partway out on the tailing pile was 31 inches by 31 inches and was circular in shape. cup-like The depth of this bed at the center of the depression was 12 inches. ~~deep~~. The total length of ~~this~~ the den from the back of the cave ~~part where it had been excavated~~ to the outer edge of the ~~bed~~ platform was 47 inches. ~~and~~ The total length from the back of the den to the edge of the bed platform ~~bed~~ was 66 inches. The 1965 den was a very crude one more of a day bed than a den. ~~and unusual and~~ perhaps the type of den that one would expect a yearling without previous denning experience to have built. It was The bear had dug a slight excavation on a very steep (45° angle) and rocky slope and had dug this beneath a rotten log. The rocks were pulled out and the meager tailings made a partial daybed as has been the case at ~~with~~ other grizzlies dens. It was also used as part of the tailing pile

(This was not entirely necessary)

Insert A

the actual hibernating bed. On the steep rocky slope, the bear had leveled out a bed structure of rock and boughs that was about 32 inches high at the outside edge where it dropped off. This built-up portion was made of boughs. In other words, the excavating rocks plus a deep pile of boughs served to make the level bed platform and within this platform the bear fashioned a circular bed 31 inches by 31 inches. He was only partially covered by the cave that he had dug and by the dead log under which it was excavated. Snow that piled up over him provided additional protection and insulation from outside ambient temperatures. ~~served as insulation that he apparently required for his hibernating cycle~~. This bed and hibernating site was located exactly where we saw the bear from above in 1965 when Bob Ruff and I tracked him to this spot by radio and then scared him from his den when we rolled a rock off the cliff from above.

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So far, we have not found any grizzly dens that the bears definitely hibernated in that were not dug by the bears themselves. We thought that this perhaps might not hold true in the canyon, that is, that a natural shelter might be selected or that a natural shelter partially excavated might be used. However, about 150 200 feet east of 202's first den we located an excellent natural cave that apparently could have been used by this bear to hibernate in. It is possible that he did use it for daytime sleeping just prior to hibernating and perhaps he even returned to it after coming out of hibernation. However there was no indication that he actually had used this den to hibernate in. Instead all signs revealed that he used the poorly constructed den that he had dug out of the rocky soil & partially within which he had built a bough bed. The natural den seemed so superior a spot for hibernating In all conceivable ways that it is difficult to figure why this bear did not use it. He certainly must have been aware of it. One answer suggested is that it is instinctive for the grizzly to dig a den and to dig it in the fall of the year. Thus when the time is right and so the bear attempts to dig a den regardless of whether the soil is suitable for digging or whether it is rocky he eventually produces a shelter that although not ideal is perhaps adequate for his long winter sleep.

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tween the large roots was too small and gave it up. I took a photograph of this abandoned den that 202 had apparently started to dig. There was another one, again at the base of a tree that showed signs of the bears claw marks. and had been slightly excavated, but abandoned before much effort had been spent on it.

At the top of the shoot where we go down into the canyon there was another natural cave that we had spotted the year before. This cave was lined slightly with boughs and some moss. It appears to have been used by grizzly or black bear but the amount of bedding did not indicate that the bears had used it for hibernation purposes.

Number 202 returned to the same area to den on two successive years and the two dens were located about 100 yards from each other. It is unlikely that this bear would have used the den that he had dug the first year as it was a very inferior den and was not located so that it could probably have been improved to any great extent. The second year den might have been used had 202 not been shot by the rangers. However, because it did cave in, the rocks pretty well caved it in. it is quite possible that he would have again dug a separate den, but perhaps close by. There are slopes on this canyon where the angle is about 45 degrees. Snow avalanches run down the canyon slopes each spring. Huge rocks are always falling off the cliffs and starting small rock avalanches. There are very few trees that are not deeply scarred from the falling and rolling rocks. Islands of timber, some of them with quite large trees, have established themselves between the deeper avalanche runs. However, even these do not appear to be a very safe place for a bear to hibernate. The one thing that they seem to get here is isolation and it may be

that this need for isolation is such that they risk selecting a denning site on or close to avalanche slopes.

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Grizzlies tracked to dens

1963 — 1, #164

1964 — 2, # 158 & 40

1965 — 2, # 40 & # 202

1966 — 3, # 40, 202, 101

1967 — 3, # 187, 101, 101

Hibernation dates

1960 —	Oct. 29
1961 —	Oct. 21-22
1962 —	Nov. 5 ?
1963 —	Nov. 3-4
1964 —	Nov. 10
1965 —	Nov. 11
1966 —	Nov. 19-21
1967 —	Nov. 19

1 young adult female — bear 164

~~Adult female with cubs~~

1 young adult saw with first cub 40

158 & 202

3 Male yearlings, 2 year old male — weaned 1 with sow yearling & then as 2 year old 202

2 adult pregnant female 40 & 187

2 { adult female with cubs 40, 40
adult female with cub 101

Adult female — yearlings ~~40~~ 101, 39

2 old adults with yearlings 39, 101

female

Oct. 14, 1965

Jamison # 185 & 202 both Lethbridge

202 at den — Lethbridge

40 at den — Lethbridge

1960 grizzlies buried carcasses

Oct. 6

1961 ~~1~~ Bear behaviour on carcasses different from last year. None are completely burying animal & more often little or no attempt is being made to do so. Also once the bears get on the kills they are consuming them faster. ~~It is possible that~~ more bears are coming to ~~1~~

Movement of Grizzlies to Dens
(General) 1967

A storm moved in the afternoon and evening of October 27, 1967. (See weather data). This storm coincided with the movement of No. 187 and No. 101 back to their winter denning areas. Previous to the storm 101 had been in the large timbered island on lower Alum Creek. Number 187 had been in the vicinity of Violet Springs on Alum Creek. Both grizzlies were on the move the evening of October 27. Both probably arrived at their dens sometime during the night of October 27. Number 187 was confirmed to be at her den site at 9:00 P.M. of October 27 and Number 101 was confirmed to be at her den site on October 29. At 11:00 P.M. of October 27, however, the signal showed 101 to be in the vicinity of Canyon and her tracks were observed crossing the highway and she was heading north. When she crossed the divide (probably near Dunraven Peak) the signal was lost. All evidence indicates she reached her den the night of October 27, but because the signal was lost as she crossed the divide, this could not be conclusively determined. It was later determined that her den was about 1/3 mile below the saddle between Hedges Peak and Dunraven Peak.

On November 3, an attenuated signal showed that No. 187 was in her den or digging it. Observations at the den of 101 on the same day conclusively proved that she was inside the den. Neither bear was, however, in a state of lethargy.

From October 27 to November 3 there were no sighs of grizzlies at the Trout Creek Dump. On October 4 there were many tracks. It is possible that these bears still visiting Trout Creek Dump (There were eight on October 23 -- 101 and her three yearlings,(227 and 216) and four subadult bears, two of which were 213 and 211) all moved back to denning areas on October 27. The young bears then moved back following the storm. We will attempt to confirm this within the next week.

It is very unlikely that 101 and 187 will now leave the immediate vicinity of their dens unless disturbed.

There is strong evidence throughout the years that a snow storm such as occurred on October 27 moves all or very nearly all grizzlies back to denning sites. Whether they remain at the den sites until another heavy storm puts them in for the winter probably depends on the age of the animal, the altitude of the den site and the degree of individual lethargy that has been obtained. In the fall of 1966 and also this fall (1967) some bears have visited carcasses and feeding areas after the storm-induced trek to their dens. The general pattern, at least for adult sows,is to return to the den during the storm and then to remain at the den sites either alone or in company of their offspring until lethargy sets in and final snow storm puts them in the dens for the winter sleep.

Radiotracking No. 187

October 26, 1967

Hank, Harry and I left the Norris Road on the Plateau Trail to Marry Mountain. In less than half a mile the signal was strong with the sensitivity turned almost to zero. Hank and I alternately checked the signal strength and direction. Realizing the grizzly was close I asked Hank to keep the receiver on. In the meantime he had turned the sensitivity as far down as it would go, but made no mention of this to Harry or me. The signal tone was loud and clear. Harry was leading with the 44 magnum, I followed with the 400 mm camera and Hank brought up the rear. We were striding down the trail with little caution when Hank said, "there she is." I looked to the right and immediately saw No. 187 with her head down pawing the sedge of a small pot hole. The sun struck her from behind and she made a beautiful sight with her red collar and silver-tipped hairs. We immediately retreated. The grizzly, although only 30 yards away, had not seen Hank or me, but just as Harry was withdrawing she looked up and saw him. She sat back on her haunches with her head and ears erect. When we got together 60 yards down the trail, Harry said, "she saw me". When we moved in again she was gone and the receiver indicated she was still not over a few hundred yards away. Number 187 had been mousing in the sedge. About 60 or 70 square feet of sedge had been torn up. Apparently she had eaten some of the starchy succulent root bases, but her real interest was in a small rodent. We followed her tracks in the 3" snow. The receiver showed she was not far away. We sat down and waited but she did not move off. We then approached her downwind and she moved away and doubled back and cut our trail about half way back to the vehicle.

It is of interest that the critical distance for an attach from No. 187 under the conditions mentioned must have been less than 30 yards.

October 30, 1967

Number 187 has been in the vicinity of Ice Lake since October 27. She moved back prior to and during a snowstorm that deposited 8 or 9 inches of snow. Hank, Harry and I moved in on her today. We left the Lab about 3:00 P.M. We were within a few hundred yards of her at 7:00 P.M. but it was getting quite dark and we did not attempt to locate the den. Number 187 was approximately 3/4 of a mile due north of the west end of Ice Lake. Very likely her den is also there.

On September 16 and 17 Hank and Jim Claar tracked her to this same area but did not sight her. Our tracking data indicates she has not been back to the area since that date. She apparently did some den digging on September 16 and 17 and perhaps a few days prior to that when her exact whereabouts was not known (see radiotracking notes).

Den of No. 187

November 1, 1967

Hank; Harry, Sr.; Merlin and I located the den of 187 about 12:15 P.M. The den is situated in a small draw 1½ miles due north of Ide Lake. The exposure of the den is north with the opening just beneath a 3" white-bark pine. Ground cover is Vaccinium scopulorum. The matted roots of this plant support the soil over the roof of the den. Number 40's den in 1965 was supported by Vaccinium roots. A number of inactive dens have been dug in heavy Vaccinium. We approached within 100 yards of No. 187 before she moved off. We did not see her but the direction finder indicated she had not gone far, possibly 300 or 400 yards.

Fresh soil was heaped on the snow at the mouth of the den. This digging was done in the last 2 or 3 days. Clearing and enlarging the den just prior to entering it for the winter has been typical of every grizzly bear den we have located.

We can deduce from this that the lining of evergreen boughs or grass, rootlets and Vaccinium must be laid down between the time they go back to the dens and the time they enter to hibernate. No. 187 is a 4 year old pregnant female and should construct a deep lining of soft materials.

The den of 187 is the most visible one we have yet located. It can be easily observed and photographed from the opposite side of the gully about 50 to 60 yards away.

Returning to our vehicle we located a grizzly bear den probably constructed last fall. It was about 1½ mile due south of No. 187's den. For details, see description of INACTIVE DEN - November 1, 1967.

Radiotracking No. 187

November 6, 1967

Harry, Hank and I planned to move in and observe near the den of Number 187. The den is ideally located for photos and I had hopes of getting a shot of No. 187 at her den. The day was clear and cold (0° F in the early morning) but warmed up considerably by mid day. At Ice Lake we struck fresh grizzly tracks. I suspected they were the tracks of No. 187 and we later confirmed this.

When less than 1/3 of a mile from the den we could tell by the signal that 187 was deep in her den or else she was some distance behind us and we had by-passed her on our way in. Since the day was clear and warm, I was quite certain the bear was not in her den and since we had not used the radio receiver to locate her as we came in, I strongly suspected she was behind us. Accordingly we turned back and after hiking about 1/2 mile we got a loud clear signal. We followed this eastward through the lodgepole and jumped No. 187 at about 100 yards distance. She had been bedded down at the edge of a small pothole. Grass and needles had been raked together to form a saucer-shaped day bed. It was on a southern exposure, in bright sunlight. We ate lunch at the pothole, basking in the warm sun and then backtracked No. 187. She had completely circled Ice Lake, apparently slept in a deep bed last night and moved on to where we had jumped her. Piecing together the field evidence and the radio positioning we concluded that:

No. 187 left her den area on November 5 traveling west and south until she arrived at the West end of Ice Lake, she followed the south shore of the lake and went around the east end and then moved northwest about 1/3 of a mile where she bedded down--probably during the night of November 5. She left this bed on November 6 and traveled generally northwest to the point where we jumped her. It appeared that the day bed was not newly constructed, but probably one used at an earlier date. She had completed 3/4 of a large circle to the south of her den. She shows no lethargy. This circular trek is the greatest distance we have yet recorded of a grizzly moving from her den after moving back during a storm. In spite of the distance (nearly 2 airline miles due south of the den) it was apparent that her movements were oriented about the den. To distinguish these movements and activities from those that precede the trek back to the den, I will refer to them as Den Oriented Activities. No. 187 probably covered a ground distance of 6 or 7 miles on her trek. There was little or no foraging activity. She had dug up the ground in two places in the pothole, but it was difficult to determine if she was mousing or possibly seeking clay or something else. The signal had become intermittent. Ice Lake was frozen to a depth of 3 to 4" and we crossed the lake on the ice.

Visit to Den of No. 187

December 7, 1967

Hank McCutchen, Phil Wright, Merlin Shoesmith and I visited the den of No. 187. Got permission to drive through Westgate to Norris Junction. Snow was 18" to 24" deep. A four-wheel drive broke trail for us. Arrived at the take off place opposite Ice Lake at about noon. Took us two hours to snowshoe in to den.

We found the den abandoned. Apparently No. 187 never returned to her den after we initially disturbed her on November 1. We moved in and jumped 187 on November 6 and at that time the signal was interrupted and apparently failing. On November 9 we could get no signal. Several attempts later, one very near den, brought no results. It is now evident that 187 abandoned her partially constructed den but could not be relocated because her transmitter ceased to function.

The partially constructed den was probably initially started on September 16 and digging was resumed on about November 1.

Measurements of the den on December 7 were:

Entrance -- Width 21"
Height 27"
Length of den 36"
Chamber had not yet been dug
Entrance faced due West

It is apparent that No. 187 had her den only about 1/3 dug when we located it November 1. Thus much of the den construction as well as lining the den would have been accomplished after a storm moved her back to the den in November.

In 1966 the den of sow No. 101 was located _____ when only about 1/3 constructed. Shee too abandoned her den when disturbed. She too would have had to do a major share of the digging and the lining just prior to entering the den for winter.

In 1967 the den of 101 was completed and lined on October 31. She abandoned it, however, when disturbed. There was evidence that much of the digging was done prior to October 31. The boughs bitten off for lining appeared to be several weeks old. Number 101 abandoned her den October 31 when we discovered it. On November 7, attenuated signals indicated she was digging a new den. We received same type of signals on November 8 and 9. On November 11 or possibly before 101 completed her den. We approached to within a few hundred yards of it. The next day, November 12, Harry Reynolds and Merlin Shoesmith located the second den (see notes). It required between 4 and 5 days for 101 to construct a new den. Could not determine whether it was lined.

Contrary to our previous experience, it seems that some bears do considerable den construction just prior to entering the den for winter. Probably most or all locate a den area weeks before and do at least some digging, perhaps most of it, at that time.

There is evidence of considerable variation in den digging activity and timing of this activity.

Radiotracking No. 101 to her Den

October 31, 1967

Harry Reynolds, Sr., Hank, Merlin and I all got aboard the Skeedo and tobbogan and drove to Dunraven Pass. A fix showed 101 to be somewhere on the north side of Dunraven Peak (9,900 feet) rather close to the summit. I had been battling the flu so Harry and I built a fire and remained on Dunraven Pass while Hank and Merlin traversed the peak to try and get an approximate position of 101 and her den. They got within about ¼ mile but could not get a null so returned. I was feeling miserable from the flue so we all returned to the Lab.

November 2, 1967

Harry Reynolds, Hank and I again took off for Dunraven Pass. We parked the Skeedo just short of the pass and contoured up the south-east slope of Dunraven Peak. In the saddle between Hedges Peak and Dunraven Peak we got a very strong signal and a good null. Snow on the saddle was nearly 12" deep. We followed the signal 1/3 of a mile down the north side of the mountain and got into large timber (Spruce and white bark pine). With the sensitivity at zero the signal was still pulsating strongly. I suspected 101 to be within 100 yards. We had been hiking two hours, moving steadily along. Now we moved a few feet at a time peering through the timber. At the base of a large dead spruce we saw a taling pile covered with snow and evergreen boughs. We suspected this to be the den but could not see an opening. The signal was so strong I was convinced that 101 was not in the den and that we would soon see her. We contoured around the slope into the wind hoping our scent would move the grizzly. It did not, so approximately 125 yards from the suspected den site we built a fire and ate lunch. The activity and the scent of smoke finally had the desired effect. The signal suddenly became weaker and I knew 101 had left and was on the move. We put out our fire and back tracked about 200 feet through heavy downfall and timber on a steep slope. At this point fresh grizzly tracks crossed our trail. When 101 met our trail, she had stopped short, started to go south up the slope then turned, crossed our trail and headed northeast down the mountain. We could see the fresh grizzly tracks had come from what we believed to be the den. It was just 120 feet from our downhill trail and thus we had passed the den at that distance. Apparently 101 was not fully alerted until she crossed our trail. She and the offspring urinated at this point and a trail of urine lay in their tracks for a distance of at least 100 yards. We have learned that urinating in this manner indicates nervousness and fear. Had the scent of man aroused an aggressive reaction, the grizzly could easily have followed our trail and in seconds have attacked us in the deep snow. The reaction, however, was flight and fear.

We approached to within 75 feet of the den where the opening was visible and I took some pictures, but did not go closer for fear she might abandon the den as she did last fall. The size of the dirt mound indicates it is a large den. It is at the base of a large dead spruce probably 3½ to 4 feet in diameter. The opening faces due north. I suspect the den is well lined for we could see where the grizzlies had snapped evergreen limbs and raked up ground cover of Vaccinium and there were many evergreen boughs on the excavated dirt.

I could not determine from the tracks whether 101 has only her

yearling with her or also the two yearlings of No. 40 that have run with her all summer. We tracked her some distance but saw evidence of only one adult and one yearling. It is possible, however, that in the deep snow three yearlings followed her, all stepping in the tracksof one another. We must return again in order to conclusively determine how many yearlings are with her. We blazed a trail up the mountain to the saddle and then hiked back to the skeedo.

There is no doublt that 101 was in her den when we moved in, probably with her head near the entrance. I suspect she was also in the den on October 31. If so we got a strong signal when facing the den entrance at 1½ to 2 miles. Directly south and above the den entrance we got a strong signal at 1/3 of a mile.

This bear (101) denned 14 airline miles from her den of last winter at an elevation of 9,200 feet. The den elevation in 1966 was 7,900; a difference of 1,300 feet.

At this point we can pose some interesting questions:

1. Is 101's 1967 den located near the northern periphery of her range?

2. Was her selection of a den site in 1966 influenced by No. 40? It appeared that No. 40 was definitely influenced in her selection of a den site area by her close attachment to No. 101. The 1964 and 65 den sites of No. 40 were approximately 18½ airline miles from this present (1967) den site of No. 101. In 1966 the two grizzly sows No. 40 and 101 denned at the south edge of Hayden Valley approximately 1½ miles apart. For No. 40 this was a distance of 5 airline miles from her 1965 den. For No. 101 it was a distance of 14 air line miles from her present (1967) den. The two sows did not run together this summer. No. 40 weaned her yearlings in June and bred and is now pregnant. Number 101 retained her yearling and adopted the two yearlings No. 40 weaned. Number 101, her yearling and the two of No. 40 have been inseparable all summer and fall. No. 40's yearlings nursed No. 101 (see notes)

No. 40 was instrumented in August but her transmitter failed. When last recorded she was in her old home range and well back toward her 1964 and 65 den sites. I suspect she will den in the upper Alum Creek Area. We may be able to get conclusive evidence on this point next spring since she will probably retain the radio collar and this will identifiy her if we can make some visual observation.

Radiotracking No. 101

November 7, 1967

It was clear and cold. Got a good signal from 101 on the Dunraven Pass Road. The signal showed she was in the vicinity of her den so Harry, Hank, Frank and I hiked up to the saddle between Hedges Peak and Dunraven Peak. We got a good signal from the saddle but in about 2 minutes it disappeared and we could get no signal at all. We suspected 101 was either deep in her den or else she had dropped over the ridge near her den. We moved into the den site and found that 101 had never returned to her den since our last visit. We hiked east about 1/4 mile and got a fair signal. Suspect 101 has been bedded down 1/2 to 3/4 of a mile from her den. She probably will not return until we get a storm. She has apparently been moving about like No. 187.

Tracking 101

November 11, 1967

Harry Sr., Jay Sumner, Derek, Steve Gilbert and I took off for 101's den. We could not get a signal from Dunraven Pass, indicating that 101 was probably not in the vicinity of her den. We climbed to the Saddle between Hedges Peak and Dunraven Peak and did not get a signal there. Snow was 12 to 18" deep. We continued around the northwest side of Dunraven Peak and got a strong signal from the same point that we had gotten it on November 7. The direction finder indicated due east. We followed this bearing for about 1/3 of a mile through very deep snow then lost the signal. I concluded that either 101 was to the east but behind and below the ridge to our east or else she was back at her den and the further east we traveled away from the den, the pooer the signal. With this tentative explanation we retraced our steps and hiked to the den. At 150 feet we got no signal and there were no tracks in the snow so I approached the den and looked in. It was apparently abandoned. From the attenuated signals we received on November 7 and 8, I concluded that 101 had dug a new den and that it lay a mile or so to the east of the old den. Decided to enter the abandoned den and take measurements. It was dug between two large roots of a 40" diameter dead spruce. There was not well or raided sleeping area. From the lower edge of the entrance to the back of the den was nine feet. The width of the entrance was 15" and the height 54". The sleeping chamber was 56" wide and 63" long and 40" high. The sleeping chamber was lined with fir boughs to a depth of 6" and there were sufficient, as yet unused, boughs on the excavation pile to increase this bedding by another 6". The boughs had been chewed from nearby fir saplings. Most were taken at a distance of not over 25 to 50 feet from the den entrance. A few boughs were freshly broken (a week or less). Most, however, appeared to have been chewed or snapped off at least 2 to 3 weeks ago. Took a soil sample and photos.

We left the den and retraced our steps to a point close to the top of the peak where we got the signal and a null that indicated 101 was to the east. We contoured the mountain high and arrived on the ridge to our east. From there the signal clearly indicated that 101 was somewhere in the next valley to our east. The eastern slope of the valley was another high ridge and beyond this another valley that lay directly below Dunraven Pass Road on Mt. Washburn. We decided to remain high on the mountain and countour around until we could get another bearing. We encountered very deep snow, sometimes waist deep, and we crossed three avalanche slopes. Another bearing 1/2 mile farther showed 101 to be near the bottom of the valley. We decended and moved slowly and cautiously toward the signal source. We did not wish to disturb 101 for fear she might abandon her new den. When nearly dark we were still about 1/4 mile from the bear and as we had a long climb out of the valley and about an hour's hike from there to the skeedo on the pass, we decided to give up the search. We climbed to the eastern ridge, there got a fix on 101 and hiked back to the pass arriving about dark. We were all thoroughly wet from the waist down and cold---even colder by the time we made the skeedo trip down the mountain.

Visit to Den of # 187

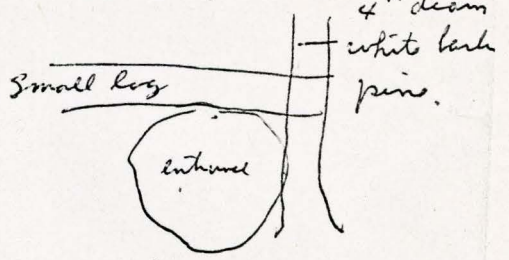
Dec. 7, 1967

Hank McCutcheon, Phil Wright, Merlin Shoesmith & I visited the den of # 187. Got permission to drive through West gate to Nora Jct. Snow was 18" to 24" deep. A 4 wheel drive broke trail for us. Arrived at take off place opposite Ice Lake at about noon. Took us 2 hours to snowshoe in to den.

We found the den abandoned. Apparently # 187 never returned to her den after we initially disturbed her on Nov. 1. We moved in and jumped 187 on Nov. 6 and at that time the signal was interrupted & apparently failing. On Nov. 9 we could get no signal. Several attempts later, one very near den ~~Sta~~ brought no results. It is now evident that 187 abandoned her partially constructed den but could not be relocated because her transmitter ceased to function.

The partially constructed den was probably initially started on 9/16 and digging was resumed on about Nov. 1.

Measurements of the den on Dec. 7 were:



entrance width 21"
" height 27"
length of den 36"
Chamber had not yet been dug-
Entrance faced due West

It is apparent that #187 had her den only about 1/3 dug when we located it Nov. 1. Thus much of the den construction as well as lining the den would have been accomplished after a storm moved her back to the den on Nov. 1.

In 1966 ~~that~~ den of sow #181 was located _____ when only about 1/3 constructed. She too abandoned her den when disturbed. She too would have had to do a major share of the digging & the lining just prior to entering the den for winter.

In 1967 the den of 181 was completed & lined on Oct 31. She abandoned it, however, when disturbed. There was evidence that much

John's notes from Oct 26

Arranged:

1. Movement of Grizzlies to Dens
2. Radio tracking 1987
3. Radio tracking 1991

of the digging was done prior to Oct. 31. The boughs bitten off for lining appeared to be several weeks old. Number 101 abandoned her den Oct 31 when we discovered it. On Nov. 7, attenuated signals indicated she was digging a new den. We received same type of signals Nov. 8 + 9. On Nov. 11 or possibly before 101 completed her den. We approached to within a few hundred yards of it. The next day Nov. 12 Harry R & Merlin Shoesmith located the second den (see notes. It required between 4 + 5 days for 101 to construct a new den. Could not determine whether it was lined.

Contrary to our previous experience, it seems that some bears do considerable den construction just prior to entering the den for winter. Probably most or all locate a den area weeks before & do at least some digging perhaps most of it at that time.

There is evidence of considerable variation in den digging activity & timing of this activity.

* Grizzlies start moving before storm appears
ex. 40 – 1965 101 – 1967

Hibernation date 1960 – 1967
varied from an early date in 1961 of Oct. 21 & 22 to
Nov. 19–21 in 1966

Earliest den digging – Sept. ~~8~~ 3, Sept. 8
Dens varies but most dens are prepared in advance
Movement back & forth
Food movement to den – swimming (ex.) 202

Causes & examples of lethargy
Abstract Tracking of grizzly # 164, 40 & 158, 202
40 & 101, 187 & 101

You may wish to use this as a specific example of bears going to ~~denning~~ dens following during a storm - not "final" storm.

Movement of Grizzlies to Dens (General) 1967

A storm moved in the afternoon and evening of October 27, 1967. (See weather data). This storm coincided with the movement of No. 187 and No. 101 back to their winter denning areas. Previous to the storm 101 had been in the large timbered island on lower Alum Creek. Number 187 had been in the vicinity of Violet Springs on Alum Creek. Both grizzlies were on the move the evening of October 27. Both probably arrived at their dens sometime during the night of October 27. Number 187 was confirmed to be at her den site at 9:00 P.M. of October 27 and Number 101 was confirmed to be at her den site on October 29. At 11:00 P.M. of October 27, however, the signal showed 101 to be in the vicinity of Canyon and her tracks were observed crossing the highway and she was heading north. When she crossed the divide (probably near Dunraven Peak) the signal was lost. All evidence indicates she reached her den the night of October 27, but because the signal was lost as she crossed the divide, this could not be conclusively determined. It was later determined that her den was about 1/3 mile below the saddle between Hedges Peak and Dunraven Peak.

On November 3, an attenuated signal showed that No. 187 was in her den or digging it. Observations at the den of 101 on the same day conclusively proved that she was inside the den. Neither bear was, however, in a state of lethargy.

From October 27 to November 3 there were no signs of grizzlies at the Trout Creek Dump. On November 4 there were many tracks. It is possible that these bears still visiting Trout Creek Dump (There were eight on October 23 -- 101 and her three yearlings,(227 and 216) and four subadult bears, two of which were 213 and 211) all moved back to denning areas on October 27. The young bears then moved back following the storm. We will attempt to confirm this within the next week.

They did not.

It is very unlikely that 101 and 187 will now leave the immediate vicinity of their dens unless disturbed.

There is strong evidence throughout the years that a snow storm such as occurred on October 27 moves all or very nearly all grizzlies back to denning sites. Whether they remain at the den sites until another heavy storm puts them in for the winter probably depends on the age of the animal, the altitude of the den site and the degree of individual lethargy that has been obtained. In the fall of 1966 and also this fall (1967) some bears have visited carcasses and feeding areas after the storm-induced trek to their dens. The general pattern, at least for adult sows, is to return to the den during the storm and then to remain at the den sites either alone or in company of their offspring until lethargy sets in and final snow storm puts them in the dens for the winter sleep.

Frank - these are some general conclusions I made for the year 1967. You may wish to incorporate them into our paper.

1967

Things To Look At — Canyon

Totalizer — used with new receiver
Instructions & temp. charts
in cardboard box
- Tried unit out - looks pretty good

Extended-life transmitter — yellow fiberglass
Range of this is poor
- Will take back with me to check

Red transmitter with snap connector
(one end broken) is temp. sensitive
Might want to use this with totalizer
- didn't find - used body temp

Fake's temp. probe is on shelf — have
covered this battery pack with paraffin
& then a new type of fiber-glass
resin. - couldn't find

Body temp. transmitter — triggers totalizer
with loop antenna ½ mi. Temp.
sensitive transmitter triggers at 2 mi.
- unable to check output power properly but
don't want to take it because you probably
need it. Can check it later.

Receiver with black insulation on it does not appear to be working just right. Put in new batteries but they may be weak from set long on shelf. Receiver OK -

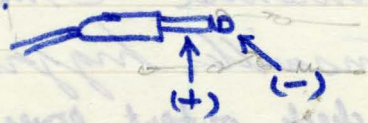
- Batteries weak - replaced with better ones.

Batteries should be checked by connecting meter to BAT TEST jack and case with receiver on. Weak batteries will test OK in many cases unless current is being drawn from them.

See Jay Sumner - 1st cabin meals

Batteries should read 12.5 volts with receiver off and 12.0 volts minimum (for fresh batteries) with receiver on. Replace when voltage drops to 11.5 volts with receiver on.

- Installed auxiliary power jack on new receiver - is wired same as other receivers and can be used with totalizer or ~~jack~~ plug in box on the round table. Polarities on plug should be:



- connector was bad on CB antenna lead in - repaired it

See you later in the fall.

Joel

1967

NOTES ON GRIZZLY #187

Nov. 12, 1967

Four of us hiked into the den of #187 in the afternoon. This den had been located previously just North of Ice Lake. We hiked through 6-8 inches of snow. At no time did we get a radio-signal even though I approached to within 200 feet of the den. All indications pointed to the fact that #187 had deserted her den. It is possible that the radio-signal is still being emitted but this is doubtful. It seems unlikely that the bear was in the den but we hesitated to approach too close for fear of causing her to abandond the den if she was present. Patty Stemsrud, P. Seiter, Hank McCutchen and I took photos.

November 13. On the morning of November 13, Hank and I circled the den of #187 in an attempt to pick up tracks that might indicate the presence of the bear or her direction of travel upon her abandoning the den. We were unable to pick up any fresh tracks. We finally moved in and observed the den entrance with binoculars from a distance of approximately 150 feet. There were no signs that the bear had been to the den since the last time she had been jumped. We back-tracked on the most recent tracks-when the bear was jumped by John and Hank. These tracks were indistinct and we finally lost them but we saw where the bear had run into their tracks and had made a 180° turn and back-tracked.

NOTES on #187

She was evidently firghtened at this time and this may be a possible cause for her desertion of the den. The receiver was being used to track #101 so we were unable to check for a signal. At lunch time the air temperature (12:25 p.m.) was 48° F. in the sun. The air temperature in the shade was 45° F. and the air temperature near ground with TAN background was 62° F. The day was clear with some clouds. We checked with quad on the bus from Norris Junction to Canyon after dark and obtained no signal.

November 15, 1967. Again we checked the signal from #187 from the hill above Trout Creek bridge-no signal. I felt pretty certain that the transmitter on #187 was malfunctioning and not emitting a signal and that she was not in her den but had abondanded it and had moved on to dig another one. This was confirmed on December 7, 1967 (see notes). We closed up the Canyon Lab and left November 16. November 18 was warm and not inducive to make the bears enter their dens. The weather conditions from November 19-21 probably put the grizzlies into their dens for the Winter. November 19. It was snowing at Canyon and Mammoth although it rained most of the day at Moose.

187

October 17, 1967

In the morning we obtained a bearing from Trout Creek which should place #187 in the vicinity of Violet Springs.

At 3:00 p.m., we took off from this same spot to track the grizzly on foot. Harry Reynolds, Sr., Hank McCutchen, John, Phyllis and I made up the tracking party. While moving in on #187, we observed two other grizzlies in the open and apparently feeding on Microtus. These and other bears are also digging up grass tubers. At 5:00 p.m., we first spotted #187. We moved in on her upwind following the signal from the extended-life transmitter. Number 187 was also hunting mice and on one occassion laid down on the grass apparently watching a mouse runway. We observed her and nearby bugling bull elk for approximately one-half hour before starting to hike out to the mouth of Alum Creek. This is the first time since 1963 that the grizzlies have been feeding in the open and is a good indication that the Microtus population is increasing.

We took some photographs of the bear foraging as well as of the trackers.

No other signals were picked up from instrumented grizzlies.

Plane Tracking

October 13, 1967

With Jenny Huidekoper as pilot, we left the Jackson Hole Airport at 9:45 a.m., and returned to Jackson about 12:30 p.m.

From the plane we monitored the Hayden Valley area and located #187 at Violet Springs. We checked for the black bear over Elephant Back Mountain and other grizzlies over Trout Creek and Alum Creek. We flew over Pelican Valley, east around Pelican cove and east up Yellowstone Canyon and up the river to the Lab.

We checked out Otter Creek and Mary Mountain and Beach Lake, Rabbit Creek and Old Faithful without picking up any signals. We returned by way of the Pitch Stone Plateau.

We first picked up the signal of #187 South of Beach Lake an air mile distance of about 8-10 miles. We also picked up the same signal at the den of #202 in Yellowstone Canyon, a distance of about 9 air miles. The flight further confirmed our theory that the instrumented bears had not altered their habits and moved entirely out of the area but that the transmitter had stopped transmitting. It appears likely that the black bear has gone into hibernation in the area of Elephant Back Mountain.

101's notes with
11/11 added — it was
previously omitted.

Grizzly RADIO TRACKING
1966

Grizzly No. 101
Location _____

Pulse Rate 68/min
Transmitter No. _____

Date	Time	Bearing	Location From Which Bearing Was Taken	Tracking Unit	Remarks
10/30	10 AM	Fix 240° 245	2½ mi N. Dunraven Pass 2 mi N. Dunraven Pass	Quad & Loop Quad	Strong Signal with quad very weak with loop Strong Signal - No signal with Loop Signal indicates bear about 1 mi N.W of Hedges Peak in head of Carnelian Creek Drainage
10/31	1-4PM	Fix - Moved in	1/2 mi NE Dunraven Peak	Loop	Good Signal - Moved in on bear believe it to be 1/2 mi N. of Dunraven Peak
11/2	12 Noon	Fix - Jumped - Moved in on bear from Saddle between Dunraven & Hedges peaks. Found den. Deliberately made noise & built fire about 100 yards to the Northeast. She & one or more yearlings moved out of the den & headed east. The Den was 305° from the saddle and about 1/2 mile down.			
11/7	3PM	Fix - Moved in to den - bears not there. Signals indicated that bear about 1/2 mile to east in next drainage. Tracks indicate that bear has not been back to den since 11/2. Took several bearings from Dunraven Road & bear Den.			
11/8	11:15-11:35 AM - 11:45	No Signal Fix 200° 240°	1 mi N. Dunraven Pass 2¼ mi N. Dunraven Pass 1½ mi N. Dunraven Pass	Loop Loop — Loop —	Interim Hunt Signal. Bearing between Dunraven Peak & Dunraven Pass. Fix on bear at bottom of first drainage (Carnelian) to west of road about 1½ mi N of Dunraven Pass
	12:35PM		Bend in road right at saddle		Sounds like bear digging a den. No signal
11/9	2 PM	230° approx	2 mi N. Dunraven	Loop	Bear still in same area - signal suddenly came on like in den or deep day bed

from True North

Grizzly RADIO TRACKING
1966

Grizzly No. 101
Location _____

Pulse Rate 68/min
Transmitter No. _____

Date	Time	Bearing	Location From Which Bearing Was Taken	Tracking Unit	Remarks
11/11	8a-5pm	Fix – John, Harry Sr. + students moved in on 101. Measured abandoned den + got fix on 101 in next valley to east of den.			
11/13	12noon	Fix - sighting Merlin + Harry moved in and found new den. Heard bear in den. Den down first ridge to west of Dunraven Pass + Tower-Canyon road.			

ALL BEARINGS FROM TRUE NORTH

GRIZZLY RADIO TRACKING
1966 67

GRIZZLY No. 187 ♀
Location HAYDEN VALLEY

Pulse Rate 28/10 sec OFF 20/sec
Transmitter No. 44

Date	Time	Bearing	Location From Which Bearing Was Taken	Tracking Unit	Remarks
10/23/67	1:00 P 1:30 P	295° } Fix 305° }	H.V. GRAVEL PIT USGS TROUT CK. MONUMENT	3 ELEMENT QUAD LOOP	MEDIUM SIGNAL STRONG; VIOLET SPRINGS WEAK
10/24	11 AM	Fix-Sighting	Moved in on 187 she was in meadow 400 yards S of Violet springs Hunting mice.	Loop.	
10/25	11AM	Fix 180°	Mary Lake Trail Head	Loop & 3 element	Strong Signal
10/25	11AM	145°	1/2 mi W. Trail Head	Loop	"
10/25	11AM	105°	1 mi W. Trail Head	Loop	Medium Signal
10/25	9 PM	240° approx	Trail Head	Loop	Signal indicates bear moving to west.
10/26	10AM	Fix-Sighting pothole	Moved in. Bear was eating seeds, shoots & hunting mice in 1/2 mi down Mary Lake Trail From Head. First pothole to left.		
10/27	2-4PM	No Signal	Excelsior Hill & Spots Along Norris Road west to Virginia meadows		
10/27	9PM	Fix 45°	.3 mi West Ice Lake Trail	3 Element	Very weak
		15°	Ice Lake Trail Head	3 Element	Weak
		355°	Overlook S. Virginia Meadows	Loop	Strong Signal - Fix 3/4 mi N. of Ice Lake
10/28	10AM	Fix 10°	Ice Lake Trail Head	3 Element	Weak Signal Fix about 1 1/2 mi N of Ice Lake
		345°	Overlook S. Virginia Meadows	Loop	Medium Signal
10/28	9PM	Fix 350°	.3 mi W. Ice Lake T. Head	Loop	Weak Signal - Fix 1 mi NW of Ice Lake
		25°	1 mi W Ice Lake T. Head	Loop	Weak signal
10/29	3PM	5° with location	Virginia Meadow Overlook	Loop	Strong Signal - used other transmitter (blue)
10/29	8PM	10° approx with location	Virginia Meadow Overlook	Loop	Weaker signal than at 3PM
10/30	2PM	10° with location	Ice Lake Trail Head	3 Element	Strong Signal
10/30	6PM	Fix-Sighting	Moved in - got very close to bear - about 1 mi N. of Ice Lake		
10/31	9PM	350° Bearing w location	Virginia Meadow Overlook	Loop	Strong Signal

Daily Log from 10/27

Oct 27 Moved in on 101. No signal until returned through timberline island & pitched her up. Cloudy cool day. Got fix on 187 in evening, hour ice lake John & Harry left for Jackson. Beat on more 101 came through Canyon in evening heading North.

Oct 28. Got fix on 187, in Morning & Evening Showers, heavily til noon - about 6" on ground. Cleared up at noon. Couldn't locate 101.

Oct 29 Drove shida up to Dunraven Pass & hiked up back road 1½-2 mi to first switch back picked up 101 signal In Canyon in Creek or Tower Creek drainage. about 14" snow on old road. Cold dropped 5°. Went out & picked up signal of 187 - still in same area. Afternoon & Evening Day clear with intermittent snow showers cold.

Oct 30 Drove shida past Dunraven & checked on 101 - still there. Also got signals on 187. John & Harry back. John Harry & I moved in on 187 in the afternoon We got within about ½ mile but got too dark. Strong signal about 1 mi north of ice lake. cloudy - snow shower

Oct 31. Merlin, John, Harry & I headed up the Dunraven Pass in the morning. Got a general location on 101. John sick. Harry stayed with him. Merlin & I moved in on 101 up the

Oct 31. (cont).

afternoon. Turned back at 4:00. believe we got to within
1/2 mile. She was on just North of Dunraven Peak. Day cold,
partly cloudy, with wind.

Nov 1

Merlin, John, Harry & I moved in on 187. We found her
den at noon. It was about 1½ mi N. of Ice lake. Merlin
left. John Harry & I went to West Yellowstone in the afternoon
watched TV program "Grizzly" & got grub & gas.

Nov 2

John, Harry & I ski'd up to near Dunraven Pass. The day was cold
(10°) and partly cloudy. We hiked up the south face of Dunraven Peak & continued
to the west until we hit the saddle between this peak & Hedges Peak. Saw about
35 elk below us. about 12" of snow here In the saddle we picked up 101's signal and located her den
1/3 mile down to the north. We built a fire to spook her (she spooked from
the den). Then we checked the tracks & returned over the pass to the
ski lodge. I checked 187 for a signal in the evening but did not get it.
101 appears to have only the 1 yearling with her.

Nov. 3.

We did paper work & general work around the lab today.

Packed up boxes, collected the traps, etc. Made a check on 187 —
no signal. Went to West with John & spent nite. Harry went to
Jackson.

Nov. 4.

I tried to get tires for Stude. — didn't order right size. Drove back
by old faithful checking for black bear & collared elk.

Nov. 5.

Day off. Stayed at Jail & fixed & hiked. Checked on 187
[illegible]

Nov 6. Moved in on 187 with Super & observing bar at the den. The signal was intermittant & we didnt get a bearing. When approaching the den we realized the signal was less. We back tracked ½ mile & jumped 187 about ½ mi. N of ice lake. She was bedded in a sunny spot in a small pothole. From the tracks she probably left the den the 5th & made a counter clockwise circle from her den around the lake spending the night a couple hundred yards east of where we jumped her. she had done a little hunting for rodents. Frank down in evening. Pistill called also.

Nov 7. John, Frank, Harry & I ski doed up to Dunraven then hiked over the pass Hedged-Dunraven Road. & snowed in on 101. She was not at the den but in the next drainage to the east. Beautiful day. Phyllis down in eve.

Nov 8. John, Harry & I worked around lab on packing & paperwork. Phyllis & Frank drove up & checked on 101.

Nov. 9. Phyllis left. Checked all day for 187 - no signal. John & Frank went to talk with Superintendent. Had good, long talk. Harry & I ski doed up to Dunraven past & beyond & checked on 101 - still in same area. Day partly cloudy - snow in eve.

Nov. 10.

Daily Log

Nov 10. Checked on 187. - no signal. Worked around Lab. Students down in evenings.

Nov 11. Harry Sr, Jay, Derek, Steve + John moved in on 101's den. The den was abandoned. They measured it. I checked on 187 - no signal. 101 located east of old den. Harry + Jack down.

Nov 12. Loaded gear to take back. Frank + I moved in on 187 den with Phyllis and Patty. Students left.

Nov 13. Frank + I moved in on 187's den. No fresh sign around the area + no signal. Harry + Merlin Moved in on 101 + found new den - bear was very close before they noticed her.

Nov. 14 Harry + I hiked up on Mt washburn with quad + tried for 187 - no luck

Nov 15. I tried to locate 187 - tried quad in Hayden valley but no luck.

Nov 16 - Moved out of Lab. I moved to Mammoth to wait for a black bear. [redacted] Harry + Frank left.

Dear Frank:

Here is the material you wanted. Hope I didn't forget anything. When checking through the field note I found a fix deleted on 101 for 11/11 so I added it. - Am enclosing the revised field notes. Also I am including the copies of the original bar name data and copies of my computation of fixes bearings etc.

Let me know if you need anything else

Sincerely

H. McCutchen

Grizzly No 40

Date	Area	Type
9/11	Dump	Fix
12	Timber S. Dump	Fix
13	Dump S Head T. Creek	Fix ?
14	Mouth T. Creek	Fix
15		Bearing
16		Fix
17		Bearing.
18		No Attempt
19	Hayden Valley	Fix
20		Bearing
21	Timber W. T. Creek	Fix
22		No Attempt
23	Timber W. T. Creek	Fix. (Attempted to sight - no signal)
24		No Signal
25		Bearing
26	Beechlake	Fix
27		
28		
29		
30		

Computations

Date	Area	Type

Instrumented 9/11 - 9/26 (16 days)

Number of Fixes 9

Number of Bearings 4

No Signal 1

No Attempt 2

16

Number of attempts to sight 1

Number of sightings 0

Grizzly No. 188 Computation 1967

Date	Area	Type of location		
8/22	Dump	Fix - instrumented	8/22 - 8/26	5 days
23	Timber & Dump	Fix.		
24		Bearing		
25	Timbered island	Fix		
26	Timbered island	Fix		
27		No Signal		
28				
29				
30				
31				
~~9/1~~				
~~2~~				
~~3~~				
4				
5	Dump	Fix Reinstrumented	9/5 - 9/14	10 days
6	Timber & Dump	Fix		
7	Dump	Fix.		
8	Hayden Valley	Fix		

9		No Attempt
10		No Attempt
11	Otter Creek	Fix
12	Timbered Island	Fix
13	N. Central Hazelton Valley	Bearing w location
14	Otter Creek area	Fix
15		
16		
17		

Total	15 days
Total Number days fix	11
Number days bearing	1
Number days bearing + location	1
No Signal	
No Attempt	2
	15

Attempts to Sight	0
Sighted	0

Panel

Computation of Fixes & Bearings & Sightings

Grizzly #1 of 1967

Date	Area	Type	
9/6/67	Dump	Fix -	X
7	Timber S. Dump	Fix -	X
8	Timber S Dump	Fix -	
9		No Attempt	
10		No Attempt	
11		Bearings	
12	Island Catamaran	Fix -	
13	Island Center Small	Fix -	X
14	Large Island	Fix -	
15		Bearings	
16	Large Island	Fix -	X
17		Bearings	
18		No Attempt	
19	Timber S. Dump	Fix -	X
20		Bearings	
21	Old Dump Area	Fix -	
22		No Attempt	
23	Old Dump Area	Fix -	
24		No Signals	
25	Stoller Creek	Fix -	

Date	Area	Type	
10/9/67	Dump	Fix -	X
10			
11			
12			
13			
14			
15			
16			
17			
18			
19	Reinstrumented Dump	Fix -	X
20	S. Timber Dump	Fix -	
21	Large Island	Fix -	
22	Large Island	Fix -	X
23	Large Island	Fix -	X
24	Large Island	Bearings w/ location	X
25	N. of Dump	Fix -	
26	Large Island	Fix -	
27	Large Island	Fix -	X
28		No Signal	

Page 1 cont

26		Bearing	10/29	Dun Raven Ph	Bearing w location
27		Bearing	30	Dun Raven Ph	Fix -
28		Bearing	31	Dun Raven Ph	Fix -
29		Signal Stopped	11/1		No Attempt
30		No Signal	11/2	Dun. Ph	Fix -
10/1/67		"	3		No Attempt
2		"	4		No Attempt
3		No Attempt	5		No Attempt
4			6		No Attempt
5			7	New Dun Raven Ph	Fix -
6			8	New Dun Raven Ph	Fix -
7			9	Dun Raven Ph	Bearing w location
8			10	No At	No Attempt

Date	Area	Type
11/11/67	Duntrave PK	~~No Attempt~~ ~~Fix~~ ~~Bearing~~ Fix ~~Location~~
12		No Attempt
13	New Rem Duntrave PK	Fix
14		

26 ~~[illegible]~~ Fix
7 Bearings
~~13~~ Bearing with location
~~11~~ No Attempt
2 No Signal
49 Days

9/6 - 9/28 23 days

11 fix
7 bearings
4 no attempt
1 no signal
23 days

19 attempts to locate
18 locations
1 did not locate

10/19 - 11/13 26 days

15 fix
3 bearings with location
7 no attempt
1 no signal

19 attempts to locate
18 Locations
1 did not locate

X = attempt to sight & successful
| = attempt to sight failed
Total = 16 attempts to sight, (12 sightings, 4 no sightings)

Pasel

Tally of Fixes, Bearings and Bearings with location
Grizzly #187 1967

Date	Location	Type
9/4/67	Dump	Fix
5	near Island East	Fix
6	Big Island	Fix
7	Big Island	Fix
8		No Signal
9		No Attempt
10	Big Island	Fix
11	Island (west)	Fix
12	Island (west)	Fix
13	Dump - evening	Fix ~~Bearing~~ ?
14	Violet Springs	Fix
15	Near Ice Lake	Fix
16	N. of Ice Lake	Fix
17	E. of Norris	Fix
18	Violet Springs	Bearing w Location
19	Violet Springs	Fix
20	Island (west)	Fix
21	Island (west)	Fix
22	N. of Violet Springs	Bearing w location
23	Grebe Lake area	Fix
24	Grebe Lake area	Fix

Date	Location	Type
10/3/67		No Attempt
8		Bearing
9		Bearing
10		Bearing
11		No Attempt
12		No Attempt
13	Violet Springs	Fix
14	Near Island (east)	Fix
15	Island (east)	Fix
16	Violet Springs	Bearing w location
17	Violet Springs	Fix
18	Violet Springs	Fix
19	Violet Springs	Fix
20	Violet Springs	Fix
21	Violet Springs	Fix
22	Violet Springs	Fix
23	Violet Springs	Fix
24	Violet Springs	Fix
25	Trail Head	Fix
26	Trail Head	Fix - sighting
27	N. of Ice Lake	Fix

25	Grebe-Violet area	Fix	28	N. of Ice Lake	Fix
26		No Attempt	29	Ice Lake.	Bearing w location
27	N. of Violet Springs	Bearing w location	30	Den area	Fix X
28	N. of Violet Springs	Fix	31	Den area	Bearing w location
29		No Signal	11/1/67	Den	Fix X
30	Grebe Lake Trail	Fix	2		No Signal
10/1/67		Bearing	3		No Signal
2		Bearing	4		No Signal
3		No Attempt	5	Den Area	Bearing w location
4	Island gap (west) ~~Violet Springs~~	Bearing w location	6	Ice Lake	Fix - sighting X
5	Violet Springs	Fix	7	Ice Lake area	Bearing w location
6	Violet Springs	Bearing w location	39 Fixes —		

#187 Tally

Instrumented - 9/4 — 11/7 65 days

Number of fixes 39

Number of bearings w/location 10

Number of bearings 5/54 Attempts successful

No Attempt 6

No Signal 5

65

≠ No of days attempted to sight - 9

X = No of days attempt to sight + succeed - 7

/ = Day attempted to sight + failed - 2