Date of ~~[illegible]~~ crawling into Old F. B. Bear den

Klaus's last name Nielsen

no. of grizzly tatoo on ▽ sent to us

Mortality chapter – p. 14 – N. Park service – establishment quote

~~[illegible]~~

Mortality – ref. to year – Lewis & Clark

Get Haynes Yellowstone Guide Book – ramp chart

~~Tooth paper~~

Marking & immob. paper

Drug paper

Check on death of #38 – 1961 – small notebooks

#34 – notes on running – timing – black notebook

Get book Bannock Indian Trails –

Function of cleaning up carrion

~~1960~~

# The Roaming of #38

2½ yrs

Movement from Trout Creek to
Pelican Campground
Up Pelican Creek to Main Plateau
Down into Lamar Valley
Up Soda Butte Creek
Set Haynes Yellowstone guide book

#38 shot 1962 Beartooth Plateau
Mother no. 39 – aggressive
Also mother of No. 15 S

Death Possibly Extinction Follow A Policy Change
Introd. — Power Bureaucrats
Start with Synopsis of grizzly bear controversy
Page 3, page — Changes in Park admin
Bring in Supt.'s policy of killing bears
Parts from Zetterberg's letter — cut & paste

Preparation of Mgt. Report 1967
Elimination of Dumps
Warning to P.S.
1968 Reduction of garbage at Trout Creek
Increase in grizzlies captured
P.S. takes suggestions as a personal affront
1968 — Cole's visit to lab. (threat)
Insistence that we give out misinformation
Threat of being pushed out of Park

Anderson's reactions similar
Pushing publication back across desk
Real aims — destruction of bear & scientists
Unofficial policy on bears
Destruction of research program (removal of speakers)
Bureaucracy committee (13)

Bears move into Campgrounds
1968 incidents
1969 bear incidents (Lane)

Death, Possibly Extinction Follow A Policy Change
Outline cont.

2

The 1969 Management Meeting

Bear Mortalities 1969-72
Closing W.Y. Dump
Transplanting
Marked & Radio bears dead

Work In Chapt.

~~Loss of marked & instrumented bears 1968-74~~
Lab destruction
Abstract of pop Analysis
Suggested Approach To Reveal P.S. Liability
KSGT. Interview
2 Chronology papers
Grizzly bear Mortality Chapt. notes (3 pages)

~~Transplanting grizzlies W.Y.~~

Add To Range Chapt

add-range chapt. p. 27

In the chapter on ranges where I treat movement and dispersion I want to take a number of the bears and describe some of the areas of the Park that they wandered into such as up Pebble Creek, and the Mirror Plateau, and the lower Lamar Valley. I think I can do some of this through the movements of No. 14, Bruno, and I'd like to trace some of the wanderings of No. 38, the littermate of No. 37 up into the Mirror? Plateau down in to the Lamar Valley and up into Soda Butte Creek mentioning the sharply rising cliffs and stratified mountains. Up toward the end of Soda Butte Creek there is a red, orange and yellow cliffs reminiscent of the Canyon, probably rhyolite and then mention some of the plants such as fireweed and blue flax, the harebell, etc. Depending on the time of year they could be eating on strawberries, digging up the roots of yampa or the elk thistle. Then I'll have No. ~~37 and~~ 38 going up to Silver Gate to Cooke City and to the garbage cans around some of the stores and wander on to the sheep range outside where he was finally killed.

see Dog article Reattaching p. 16 from notebook

added this →

I want to take various bears and through their movements describe some of the more unique areas of the Park, perhaps treat the Becker? River, the Falls River and some of the other interesting spots.

I will write to Larry Mullen and see if I can get a Forest Service map that covers all the areas surrounding the Park so that I can use it to locate the movements and places where various bears were killed. I think I will also bring in some of the vegetative types that the bears move to like lower down into the lodgepole on up Soda Butte Creek into the spruce-fir, lower down moving into the sagebrush and grass types along the river and then higher up hitting the shrubby dense willow patches along the streams that the moose feed on. I could also mention the very bitter tasting buffalo berries

that the bears don't seem to utilize to any extent. I don't plan to do a chapter on bear foods so want to bring in most of the foods, plant and animal, that they feed on as I go from chapter to chapter. Somewhere I should include digging up large areas to get marmots at high elevations. This would work in well with Bruno's travels. And also the digging of the ~~lamacium and~~ Lomatium on some of the higher talus slopes to get at these roots and here I could mention seeing signs of ancient mans visiting and camping these same areas, picking up scrapers that they used in cleaning off the roots of the same plants that the bears were feeding on.

Lower down on Soda Butte, actually pretty far up, there are expansive meadows of lush grass, liberally spotted with the elk thistle. Also colored by goldenrod and fireweed. There is a general impression that the indians didn't make much use of the Yellowstone area and were afraid of it. I think that I might bring out in several places the finding of indian artifacts and reveal that the area was well known and was rather liberally used by the indians considering its remoteness and I could even show how one of their cave-like encampments when collecting pine nuts that later on one of the wandering bears used this same spot for a day bed.

I want to list all of Marian's offspring from year to year that were captured and marked and then in the mortality chapter I want to refer to those that died or were killed and mention the way they died. This will also give me a chance to bring in again the marking and numbering of certain families and following them through from generation to generation. In the lower Lamar Valley I can mention some of the fringing but rather extensive aspen stands and bring in the scarring and marking of these from elk eating the bark and in the Mirror Plateau I can mention the scarring and rubbing of the conifer trees, particularly

the lodgepole in some ways looks like bear scratching and was thought to be this by some people but is actually due to the buffalo rubbing against the trees to scratch themselves or just hitting them in passing through where the timber is dense. While describing the movements of bears into some of the scenic regions of Yellowstone, I want to mention that due to their poor eyesight the bears do not see the countryside as we see it, but that the elk with their sharp keen sight, probably do. The bears sensory world is more dependent on smell than on sight. At their maximum, about 15 thousand years ago, glaciers covered all but the highest summits in the Yellowstone region. In the Lower Lamar Valley you can see where moving glaciers transported enormous rocks and loads of material and debris downstream. Then when warming climate caused the glacier to melt back, it left a trail of features such as illustrated in the Lamar Valley---Scattered glacier boulders, ridge-like moraines, and scattered shallow ponds. These large boulders were picked up by the glaciers from granite rock outcrops in the distant mountains up toward the headwaters of Soda Butte Creek. In the area of the boulders there are numerous granite outcrops as well. Somewhere in one of the chapters in fall I want to mention the colorful red leaves the geranium and the storklike-beak seed pods. I also want to bring in the colorful leaves of the vaccinium and mention the tree species that are found in the Park, particulary the swamp species with its very colorful dark red leaves. In addition I want to mention the silvery seed pods of the climbing clematis as well as the clematis douglasii and the conspicuous fruiting heads of the geum and then these standard white puffy dandelion-like heads of numerous species of the composite family.

Notes

Autopsy notes on #75 could go in Mortality Chart.
Fierce & aggressive – large adrenals – "The Belligerent Sow"

Gross Autopsy Bear #179 Old Rose

Suggested Changes

Perhaps a few words about Maurice Chpt. I p. 2 – also John & my part in the study – John, emphasis F.C.C radio

Description of Joel p. 5

A word about John & myself p. 6

p. 10 – add elk sedge, l 9

check p. 12, l. 14 four weeks?

Chapt. 2 mention Maurice's study, describe immobilizing & drugs

Chapt 4 – p. 9 Scope of Study pencilled X – change, deceptive country

p. 10 – wet, tired etc – lunch

p. 17 – #40 losing cub

p. 20 – add description of catching mice, Canyon 1974 notes

p. 21 – blood sample

p. 29 – line 15 elaborate

Chapt. 5 p. 6 – sedges – see 1974 notes (Canyon)

p. 6 – insert Marian & yearling catching gophers

p. 14 – Work on buffalo incident

p. 4 – add here on hibernation

p. 34–36 Hibernation – check abstract of den paper

over

Sept. 3, 1964 – Notes Range & territoriality;
Marian with head out of trap – conditioned to sis

Grizz #300 40 July 1, 1960 – wt 175 lbs 1st capture
Oct. 24 " " 230 lbs
Sept 21, 1961 " 300 lbs

Grizzly # 40 was instrumented in 1961 at the age of 3½ years and each year thereafter to 1967 for a total of 333 tracking days. – Sept 21, 1961 trapped, wt. Instrumented Sept. 22, 1961 – snow flurries

Female # 101 was instrumented in 1967 at the age of 10½

Female # 187 observed to mate at 4½ yrs of age was instrumented for a 65 day period

"Green" sow – 1st captured July 4, 1959 Trout Creek # 7
Radio collar – 1st, July 26, 1963 Trout Creek
Ear markers green – thus name

| Spring Breeding 1969 | Spring Ent. Hib. 1970 | Spring yearling Hib. 1971 | Spring 2 yr old Breeding 1972 |
|---|---|---|---|
| 1 | 1 | 1 | 1 |

Marian

# 40 – Age when captured & marked – 2 ½ yrs (marked 7/1/60) Marian
Instrumented in 1961 at age of 3½
known age bear #6 was instrumented at the age of 5½

No. 101 instrumented in 1967 at age of 10½

Female **No. 187** was observed to mate at age 4½

♀ #15 mated at 4½ yrs & had a litter of cubs at 5½ yrs (1963)

Marian was bred by Jorge #12 & Bruno #14 in 1962 – no cubs resulted (4½)

Marian was one of 2 Two year olds weaned in June 1960 by unmarked ♀

Marian was observed to mate for the first time at age of 5½ yrs.

Copulation June 14 & 18, & 27, 1963

Produced 2 cubs in 1964 at age of 6 years, one cub disappeared early & was presumed dead

other was captured & marked No. 188 ♂

Marian & her cub radiotracked to winter den in autumn of 1964

Weaned yearling No. 188 in spring of 1965

Marian mated thrice on 6 26th of May & on 28 & 30 May 1965 ? 2 2

Marian whelped 2 cubs in 1966 at age of 8 years

No 188 summered at Trout Creek during 1965, 66 & 67 but evinced no family ties with his mother & her second litter.

Marian weaned her second litter as yearlings in late May, 1967 and mated June 3, 1967. Successfully mated on 8, 9 & 22 nd June – and probably also copulated successfully on 6th, 12th & 27 June – Should whelp in 1968 ? 3 cubs

Weaned yearlings of her second litter (one #216) were adopted by ♀ #101 who had one yearling of her own #227 a ♀

all three yearlings were suckled by 101 throughout the spring & summer of 1967. Three of 4 offspring produced by 120, 45 have survived through 1967.

Marian & 3 cubs produced in 1968 were tracked to their fall & winter den.

In October 1969 yearling # 241 was captured at Lake
Yearling # 256 also captured
On October 13 2 of Marians yearlings were captured

Marian — date first tooth extracted 9/1/66 — age by tooth $8\frac{1}{2}$
date 2nd tooth " 9/4/68 — " " " $9\frac{1}{2}$-$10\frac{1}{2}$
known age $10\frac{1}{2}$

Lacked sufficient tooth material on 2nd extraction

GRIZZLY BEAR ARTICLE

The following are some of the incidents, information and ideas that should be included or considered in the article.

Start the article with raising and sighting gun, shooting (adult or cub) neck shot. Instead of falling bear turns and snarls at nearest companion then resumes normal activity. Had we missed at such close range. No -- for though no high velocity bullet had shattered the neck, ~~Instead~~ hypodermic a dart lookinglike a giant mosquito clung there. Instead of withdrawing a meal of blood, however, the mosquito-like dart had injected a dose of a powerful muscle relaxant.

If shooting cub, continue above with cub falling over followed by scaring off sow running out and grabbing struggling cub. Could do this at night in beam of powerful flashlight. Might bring in the incident where I waded in picked cub out of stream, held at arms length and raced up hill to waiting truck.

Some such exciting yet representative incident should be followed by general description of the purpose, scope, location etc. of study. Emphasize briefly the cooperative nature of the study and name cooperators.

Might bring out that this was a research project that we had looked forward to undertaking for a long time and that when the right graduate student came along (Maurice) and financing, cooperation etc. had been worked out we got going .

Should describe in detail step by step the trapping, shooting marking and relaeasing of the bears. Describe the bear's symptons and reactions.

Tell about working out dosages.

Describe incident of boar that ~~boar that~~ went down in one minute and then got up and came at us after seven. One ear marked only. Forget rules of etiquette when trying to get in car door.

Tell about old one-eye and of retrapping him and giving another dose.

Mention that sucostrin chloride is not an anesthetic and does not impair sensory perception. Wondered whether bears we worked on would remember us and attack when we met up with them at a later date. In joking about this with the rangers we told them that we were not worried as we made it a practice to wear a ranger uniform jacket and hat while immobilizing the bears inorder to mislead them as to our identity.

Describe some of the bear personalities such as sucostrin kid Ingemar, old scar face and cut lip, The disciplinarian etc.

Take the Fifty-pond Cub and follow him from time of shooting to release and later observations. Have pictures of this cub all the way through. marking, weighing, releasing, feeding in cage, running off and being chased by raavens, coming in to bait at night to be photographed.

Describe in detail the wrestling match John and Maurice had with cub and go on to tell about trying to give a hypodermic shot to cub in trap. Emphasize the tremendous strength.

√ Should bring in a little history such as where and by whom first bear was collected, Meriwether's enco nter with a bear, Hugh Glass and others.

Try to get story from YMCA friend who was attacked by grizzlies above timber line in Glacier Natl. Park.

Discuss weighing and measuring the bears and tell of one authority who lists 86 subspecies and how such measurements are helpful in classification. Bears based largely on skull measurements.

Tell a bit about bear behavior and bring out difference between protected and hunted bears and between bears in a protected area and thos not in one --- even same bear under these varied conditions.

Bears when hunted and persecuted tend to become more solitary. When unmolested they are gregarious, travel and feed in packs, often family groups, don't even fight over food. Tell about bears coming into meat and bait along stream.

√ Bear shadow boxing with his breath

Bring in somewhere a little on food --- ominiverous feeders ---meat, berries, grass, pine nuts.

√ Tell about pack of seven swimming yellowstone river , crossing road, going over steep stream bank (almost a cliff) and continuing on into the semi-darkness at a gallop as fast as a horse could run and over much rougher country.

√ Might wind up article by telling of tracking bear ~~on the~~ in the snow and of finding a potential denning site. Bring in a word on hibernation, birth of young and size and number. Mention ~~trying~~ planning to try and locate a hibernating grizzly and to learn more about where, and how they hibernate under natural conditions.

√ Bear trails

√ Releasing 50 lb cub
300 yds full shoal, cross stream, raven, out of sight to N.
Saw + cub in from south

√ Ritual of setting trap
lemon drop & spring trap

Discuss mocturaal habits of grizzlies and tell of setting up trap to photograph families, groups and individuals. Using trap for blind beside stream, staking down bait, rigging up ascorlights liningwith sleeping bags, taking photos, observing and then trying to get out with bears all around.

Work in earthquake incident. No noticeablechange in bear habits or birds, trip to West Yellowstone and return to get bear trap. Cliff coming down and excitement of boys.

✓ Should give an interesting description of some of the bears reaction to the succostrin chloride. Reaction of most bears in coming out of drug is to move away -- not attack. Bears don't appear a angry or vicious, just puzzled or bewildered. Several rolled over and looked at their feet reproachfully, 2feet that wouldn't do their biddin

✓ Like other predators, a gentle disposition can instantly turn to that of the killer.

Bear John & Morris shot that fell in water

John Thune

Cookie to 50 lb cat

Old Andy

Big Foot — Wooden stick

Lightfoot — Baldone, ear tag

One-eye

Ravens

Chapter on Hierarchy....disciplinarian

Sow # 48 who abandoned her cub in 1960 and she also abandoned a cub in 1962. In 1963 she had three cubs plus one adopted cub (check on this to see if there is any confusion with #148.)

In 1963, the year we tracked #164 to a den the black bear at Old Faithful was in hibernation on Oct.27..quite sometime before the grizzlies went in.

Where I mentioned mousing I might bring in the incident ~~th~~ of Oct. 26, 1963 with five grizzlies mousing in the meadow along Norse Road and in the morning the two marked yearlings of the grizzled sow were observed mousing in the field near Otter Creek and the ravens were following them on the ground to catch the mice as the bears tore open their runways and scared them....flushed them about.

On Nov.1, 1963 John, Maurice Morris and I crawled back into the black bear den near Gem Pool near Old Faithful and tried unsuccessfully to get a blood sample. Oct. 23, 1963 elk were moving across Hayden Valley from the area of the gravel pit toward Mt. Washburn on their fall migration to lower winter range. While tracking #150 in this same fall we watched her pouncing on mice which were abundant and we saw her stretch out, lie down and scrutinize the runways where the ~~mice~~ mice were scampering about. This apparently was one of her methods of getting the small rodents. In 1960 the disciplinarian with the 90 lb. cub were observed ~~throughly~~ early. The colors had so changed from last fall that we failed to recognize them and first thought this was a new group.

Mousing

p15

✓ I want to write up incident of immobilizing
✓ grizzly in Old Faithful Campground & cub of #31
✓ Sept. 1, 1960 (big notebook) from 200 to 520 lbs in 14 months (Reg. incid).
✓ Putting big men up tree

mention front paws & long claws as well as hump on back.
Digging in frozen soil — turning over buffalo-chips
Somewhere in the book — perhaps — Chapt III or IV I want to mention that new life would be emmerging from the dens in spring and then ennumerate some of the natural & control mortalities up to that time. I want to show a picture of normal productivity & mortality.

This will contrast with a later ennumeration of mortalities from 1959 to 1968 followed by a rash of deaths in the 1968 — 1972 period.

In Chapt. II ✓ I want to bring in the terms Alpha & beta animals
Straight-line dominance order
Alpha animal dominates all the others in the group
The next individual the beta animal, similarly dominates all individuals in the group except the alpha animal
The omega animals wins no fights & therefore submits to or avoids all the others.

Notes: GRIZZLY BEAR

The next chapter that I want to do with the grizzly bear deals with tracking the grizzlies to their dens using radio. I want to first of all tell about the instrumenting and tracking of #164, and the final location of the first grizzly bear den. Then, I want to follow this with the instrumenting of #40 and 158 and the tracking of these two bears to their dens in a four day-and-night trek. In this chapter I'll bring out the square mile ~~fxxi~~ fall range of #150 and her feeding habits and the fact that she never went to the dump. I will early in the chapter mention the first attempts of trying to track #40 to a den. In this chapter I may give some of the instances indicating a lack of territoriality, including the buffalo carcass on the Yellowstone River, the buffalo carcass where Marion moved in up Trout Creek and also ~~the~~ 101 and 40 at the den. Included in this chapter then should be: the three mile, couple hour trek after #150 in which we also jumped 13 other grizzlies. Some of these then could be named. This chapter may not be necessarily the second one in the book, but it does make a complete unit, and I think I'll treat it in this manner.

One of the yearlings in particular had changed to a very reddish color. In 1960 sow #7 charged John when he tried to move in toward her to take some movies. She turned and came like a flash then flattened out like a badger as she put on the breaks. The charge may just have been a bluff..was a bluff but was a good reminder not to take unnessary changes. On August 19, 1960 I discussed with Ranger Harmond the shooting of old Andy #4. (I want to bring out some of the earlier mortalities) I believe the 50 lb. cub is one of the offspring~~s~~ of the disciplinarian and the 90 lb. cub is the offspring of the mean sow.

Dog.

Add weighing & immobilizing - captures grizzlies p. 9
Sucostrin effect - p. 13, p. 22

Outline for Radio T. artists

Death of one bear - overdose
History - p. 16, 17
50 lb cub - 18
Disciplinarian - 20
Inge - 19
Bigfoot - 21 Trapping
The Mean Sow - 21
Photographing from trap - 24
Elk bugling - p. 35

No. 80 - puts big men up tree
No. 53 - setrapped - p.

Bear charging at W. G.
ability of bears to turn on dime
coord & timing of gymnast
Or part if bears had ganged up against men as
men have against bears they would quickly have
eliminated them from the earth
Why didn't they & why does man Bill to try to
eliminate other life including bears

# Marians Companions And The Radio Bears

✓ Mt. Washburn incident (false attack, burying carcass) Wilderness article Sept. 21, 1961 large notebook
✓ The Cascade Kill – recycling
✓ Ivan comes out from drug. Tears up equip. & bites pan. (Science Year)
Pch The Bug Crew Bear #80 – June 19, 1963 shot Shoshone

Reunion of grizzled sow and cubs – large notebook
Use of carcasses in mgt. – results – Oct. 17, 1960 (large notebook)
Detecting carcasses
Science Yr. p. 14

Grizzlies and elk bed together

Grizzly attacks – p. 18 Science Yr.
Sow #34 – 11 crossings of Yellowstone R. Science Yr. – p. 15

Pulsing transmitters at different rates – p. 12 Sc. Yr.

Rip – nosed sow's family #17 Geog. radiotracking p. 22

Bears, ravens & coyotes
notes ~~of~~ on yellow paper (Ravens)
Notes on white paper (March 23/73) Bears & Ravens
Mousing
Mousing notes May 18/74

✓ Releasing grizzly boar – West Yellowstone – notebook 1971 – Oct. 24 (Grizzly typed notes)
✓ Tracking Marian – roaring on trail – notes Nov. 7, 1968
Description of #7's bluff charge at John June 26/60 Big notebook

Desp. Radiotracking

Version
There was nothing - - -

ecology - p. 6.
photographing # 37 in hair - p. 8
reasons for study - p. 9, a
Types of info' - 9a, 10
Social organization - p. 13
Inge's pen conditions - p. 14, 15
First cub - # 6 - p. 16
Return of marked bears in spring - p. 17
Family # 13 of # 37 - p. 17-22
Death of # 38 - p. 21
Rip-nosed sow's family # 17 - p. 22
# 53 numerous trappings
autopsies, blood etc

NOTES: November 26, 1973
from Reports & Field Notebooks
Also, ideas on the book or on Papers

The paper on ranges, I want to take the data from the Table, page 38, of the 1964 Geographic Report. Page 8 of the Biotelemetry Report for 1965 is a Table for the bear ranges for 1963, 64 & 65. I want to make a photostat of this. 1965 Geographic Report has information on ranges, but not a Table. Range data for 1966 in relation to area and "fixes" has not been tabulated but should be done. Hank McCutcheon has made the maps & compiled the data for grizzly ranges during 1967. For the 1966 tracking I have the number of bearings, fixes, sightings, and so on, ~~xxxxx~~ tabulated for each instrumented bear but so far have not located maps or area compilations. I should check further for this & if I cannot find it, see if John knows where this data is.

I want to see if I can work in the den monitoring of the black bear & use the popular article I had prepared for the Geographic. This could be done by treating our return to several of the ~~xxxx~~ winter dens of the grizzlies& finding that we could not disturb them without danger both to the grizzlies and to ourselves.

Information on fights can be found under, "Incidents for Consideration for Geographic Article & in Morris's Report, page 77.

In the equipment report I want to ~~xxx~~ mention the use of the dipole ~~"dye pole"~~. One occasion is mentioned in my 1966 notes on Marian Nov. 9. I also want to mention the use of the relay. My notes of November 2, 1963, mention #150 & her cubs eating frozen mushrooms.

Gather together all Biotelemetry Reports for reference
1965
1966
1967 etc. – Geog. report to Oelser

Science Year Manuscript
Evan – immobilizing
#6 – mother protecting young

Mention fixes from time to time in chapters
Reunion of grizzled saw & cubs – large notebook
Washburn kill – Sept. 21, 1961, large notebook