

Yellowstone Science

A quarterly publication devoted to the natural and cultural resources



Ungulate Management in Yellowstone, Part II: *Oral History Interviews with Former Staff*

Volume 8

Number 2



Let Them Eat Cake, with Frosting

A Ph.D. candidate, embarking on new research on the evolution of environmental thought and its influence on park policy in Yellowstone, recently commented that she came from the “academic ghetto”—the interdisciplinary fields such as American, minority, and women’s studies that “get no respect” from “the disciplines” such as physics, engineering, archeology, and biology. She argued, rather convincingly to me, that by looking across disciplines, we might gain valuable perspectives to help managers negotiate contentious terrain. Yellowstone’s budding oral history program, for example, provides perspectives beyond the views of present-day wildlife researchers and managers involved in the recurring debate over management of ungulates on the northern range.

Although a technique used in this magazine and others, I admit to some discomfort with the interview format, in which I or some other members of Yellowstone’s staff ask a researcher or manager about their work. I expect this comes from having been taught (in one of the “disciplines”) a fairly common view of technical studies and the resultant presentation of results—that they must be brutally objective, non-personal, and well-documented. As Jack Webb might say, “Just the facts, Ma’am.”

Oral histories, on the other hand, make some scholars squirm. Memories falter or fail, or selectively filter out parts, consciously or unconsciously, to protect those who might feel or be perceived as innocent or guilty. They are not, I have been told, as reliable as those written in indelible ink or etched into a compact disk, especially at the time of decision or action.

But such judgment brings out the skepticism in me as well. I *like* reading the stories and opinions from participants in past and present resource issues. They add flavor to what are often fairly dry administrative histories. When participants have not left behind diaries, the bureaucratic record may, I suspect, have selectively omitted much of the real drama that exists behind many stories. Records in Yellowstone’s archives clearly show how many elk were reportedly trapped and transplanted to other parks, or killed by park rangers during the 1960s. We can read of the assignment of a distinguished panel of scientists to a special advisory committee on wildlife management; we can read their final report; we can read when and how management policies subsequently changed. But much curiosity remains among some historians, and present-day students of policy, and managers, and others... *What were they thinking? What was it like? Why did they do, or not do, this or that?*

Yellowstone archivist Lee Whittlesey called oral histories “frosting, added to the substantive cake of written records.” We hope you enjoy this sample.

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Inside cover: Elk carcasses awaiting shipment at the train depot in Gardiner, 1943. NPS photo.

Above: Winter near Geode Creek. Photo courtesy Dale Nuss.

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Capturing Yellowstone's History

Ungulate Management on the Northern Range

By Sally Plumb

When long-time ranger Bob Morey died in 1996 and his friends gathered together to pay tribute, the reminiscences turned to past Yellowstone days that they had shared. Charissa Reid, who grew up in Yellowstone as the daughter of the resident minister, was struck by the tremendous loss it would be to the park if such personal tales and experiences disappeared beyond recall.

Now on the staff of the park's branch of cultural resources, Reid developed a proposal to tap this pool of knowledge through an oral history project. She chose to start by focussing on one of the park's more controversial topics: the management of ungulates on the northern range in the 1960s and early 1970s. When plans called for the reduction of both elk and bison herds in the 1960s, park staff accomplished this first through shooting and later by live trapping and shipment of the animals. By the 1970s, however, Yellowstone's wildlife management strategy had changed to that of "natural regulation," which is still adhered to today. The oral history project was designed to explore the evolution of ideas and actions during this period, which were crucial in shaping the park's current wildlife management philosophy.

After delving into the park archives and research library, drawing up a master list of possible interviewees, and attending a course in oral history techniques, Reid and her co-interviewer, Sally Plumb, were ready to start interviewing. They began in March 1999 with John Good, former chief park naturalist, and Robert Howe, former management biologist and the mastermind behind the reduction plan. Subsequent interviews have been held with park administrators, maintenance workers, photographers, teachers, naturalists, rangers, and biologists. As an adjunct to this project, they also conducted an inter-

view in Palm Springs, California, on April 19, 2000, with former President Gerald Ford, who worked in Yellowstone as a summer seasonal ranger in 1936.

All of the people interviewed have been helpful and generous with their time and knowledge. One of the many benefits of the oral history project is its implications and applications for today's wildlife issues. Many of the concerns that existed in the 1960s and '70s are still significant today. By understanding past rationales, present managers may avoid repeating past mistakes, gain new perspectives, be better prepared for management consequences, and base decisions not only on today's state of the art knowledge, but on the experiences of

yesterday. Plans for future oral history projects include probing the personalities and thinking behind grizzly bear management and wolf reintroduction in Yellowstone.

In this issue, we feature segments from the oral history interviews with a former park manager and a biologist, along with selected remarks from other former park staffers. All worked in the park during the heyday of elk reductions and/or the dawn of a newer management approach. The complete transcript of each interview will be available in the Yellowstone park library's collection as another source of information for interested students of Yellowstone's rich cultural, natural, and administrative history.



Bob Morey first worked in Yellowstone as a "smoke-chaser" in 1943, several years before this photo was taken. In 1952, he took a job at Badlands National Park in South Dakota, but he returned to work in Yellowstone from 1960 to 1967. His daughter Rene was born in the park and today lives at the East Entrance with her husband, ranger Jesse Farias. She recalls her father capturing elk, ski-patrolling to Thorofare, and telling "wicked good" stories. A large gathering of Yellowstone friends, reminiscing at Morey's memorial service in 1996, provided the impetus for the oral history project on the northern range. NPS photo.

Reminiscence from the Firing Line

By John Good

A geologist by training, John Good was a park ranger naturalist in Yellowstone from 1960 to 1968. At a 1999 workshop for park staff, the theme of which was ungulate management in Yellowstone, he shared recollections of his involvement in the elk reductions of the 1960s. The following is adapted from a speech he gave at the workshop. Good's oral history interview is also in the park library.

If you think in terms of wildlife management evolving, what I'm going to talk about today is a blind alley, it's an extinct program, it's a historical artifact, and that is rangers shooting elk in Yellowstone. We called it "direct reduction." A number of other people in the community called it "slaughter," which has a certain ring to it. The object was to reduce the northern Yellowstone elk herd by killing and trapping to numbers commensurate with the perceived range carrying capacity.

The operating word there is "perceived." There was no doubt in anybody's mind as to the validity of this program. We knew, as sure as the sun rises in the east and sets in the west, that what we were doing was called for. It was exactly the right thing to do. Every range manager, every wildlife manager, every Forest Service executive, every person connected with state agencies agreed that there were too damn many elk in Yellowstone and the park service had to knock 'em down. There were a few tree huggers who believed you shouldn't mess around with elk, that they were beautiful. It was nicer to look at them, and if a few of them croaked in the wintertime, there's nobody in Yellowstone in the wintertime anyway, so what the hell difference does it make? But we knew we were right.

When I got here in 1960, the program was underway but it wasn't very successful. The trapping was really tough. We used small traps. Rangers would bait the trap in the evening—it was more like a

horse corral—and then sneak down at dawn the next day and try to get to the trigger to close it. The elk, of course, they knew this game too; they'd go in there and they'd eat hay and then they'd come back out and they'd watch for the ranger. As soon as the ranger came along, they'd just trot off. The shooting was done in a sort of spasmodic way, along the roads. Guys usually worked in pairs, driving pickup trucks, and if you saw an elk, you shot it. You'd gut it out, try to drag it out to the road.

We had various ways of getting rid of the few elk that we shot, but there weren't many of them. And in some respects, it was almost a game. I remember Al Maxey, a friend of mine who lived next door to me, told me that in about 1958, he was shooting with Lee Coleman, the subdistrict ranger here in Mammoth. And on this afternoon, Lee was shooting with a 45-70. I don't know if many of you are familiar with that rifle, but it was a gun that the buffalo hunters used during the '70s and '80s to decimate the buffalo herd. So Lee had one and he liked to shoot the old thing, and it was a real smokepole—the bullet, the shell, was about this long [*holds fingers about 4" apart*]. But it was fun. You know it got kind of boring, going out there and driving around and not seeing many elk, and that's the way it happened.

But in the winter of 1961 and '62, we had a sea change in the elk management program. This was brought about because [*Superintendent*] Lon Garrison was sick and tired of getting beat up at public meetings on not doing anything about

this problem. So he decided that we'd work at it pretty hard. And we certainly did. We accepted the fact that the range was being devastated by these animals. There was no chance of any reproduction of aspen; beaver were a lost cause in Yellowstone. We couldn't tolerate that. So, the black hats were worn by the elk.

Our objective over that winter was to take a herd—it was about 8,000 to 10,000 animals, we really didn't know for sure—and cut it in half. Our objective was to get rid of about 5,000 elk. That's a tremendous, tremendous number of animals. And we had to do it mainly by shooting, because trapping techniques weren't very good. We formed shooting teams of rangers that were pretty good shots. We were shooting only on the northern range—didn't shoot in the Old Faithful area, and we didn't shoot down on the Gardiner flats because we hoped those elk would go out and hunters would get them. So, it was mainly from lower Mammoth out to Lamar, as far as the elk would range.

We set up spike camps, tents with stoves in them, on the Hellroaring slopes and Upper Slough Creek. There you could snowshoe in, spend the night, maybe murder a few elk, and then come on out. But mainly we stayed in housing areas around the park. There were four of us who worked out of the Lower Slough Creek Cabin. As far as I remember, we were the only backcountry team that did that. It was pretty tough going. It was very cold, and we didn't have a lot of luck. Our backcountry team had the best hunting. The other teams used pickup trucks. When elk were killed, we would

We called it "direct reduction." A number of people in the community called it "slaughter," which has a certain ring to it.

drag them to roads by hand or, in the case of the backcountry team, we used “weasels.” They were Korean War oversnow vehicles. They carried four people. They were a tracked vehicle, four cylinder; I think Studebaker made them. They were hideously underpowered. They were track slingers; if you got on the side of a hill of 10 degrees, God help your soul—you were going to throw one track if you were lucky, two tracks if you weren’t! But, anyway, away we went. All of the teams would spread out at about dawn, because that’s when the elk were moving around, and we’d kill all the elk we could see. There was no discrimination; we were trying to get rid of as many as we could.

But 5,000 elk is a whale of a lot of elk and in the beginning of our efforts, we didn’t do too well, even with the backcountry team. My team could knock off maybe 10 or 15 elk a day—that would be a very good day. We’d get maybe five or six, normally. We’d shoot ‘em early in the morning, we’d go in and have breakfast, and then we’d go out and hunt the rest of the morning. We’d gather the elk, tie them up with ropes, head to tail, and drag them out down to the flats there, where the Slough Creek road joins the main park road. Butchers would come out from Gardiner, and they’d field dress the elk. Then Indians would come and pick them up. We sold the carcasses to Indian tribes at about five bucks a head.

We were shooting Model 70 Winchester for the most part, 180-grain loads. A few guys used 300 Magnums. We used the weasels around Slough Creek, and we’d also hunt the Blacktail Meadows, on the Gardner River, Hellroaring slopes, and Little America. In the early stages, as far as the backcountry team went, it was fun because these animals, anything as big and as tasty as an elk, were pretty good at avoiding people. It was kind of a cat-and-mouse game. We’d go out and hunt certain meadows, then we’d lay off those and go someplace else. We were kind of trying to outguess the elk and they were trying to outguess us. We were in a weasel most of the time, but sometimes we were on snowshoes, sometimes we were just wading through the snow, and we were always trying to outwit the animals. We got to be pretty doggone good

at it.

Attending this killing and the rather ineffectual trapping was a PR operation that was very important to our success. Bob Howe [*the park biologist*] and I used to spend a lot of time on the road, going around to towns in the vicinity talking to people about elk management. Why were we shooting elk in Yellowstone? Why was it important? Rotary Clubs, chambers of commerce, you name it, outfitter groups, it didn’t make any difference, we’d talk to anybody—friendly audiences, unfriendly audiences. With the unfriendlies, we thought, “Well, maybe we’ll find a few friends or maybe we’ll make a few people doubt their ideas about what we were doing.”

At the same time that we were on the “chicken-and-cream-pea-circuit,” Lon Garrison and some of the “double domes” in Mammoth were working with the national press—*The New York Times*, *The Denver Post*. We worked with the hook-and-bullet magazines. Any writer that came out here that was interested in elk, we’d really show him around and give a good show.

And we did have opposition. We had unflinching opposition from the State of Wyoming. The governors during our hunting experiences were Milward Simpson and Stan Hathaway. Both of them sued in federal court to block the slaughter and they lost. The courts decided in summary judgment that it wasn’t any of

the State of Wyoming’s business what we did in Yellowstone. Yellowstone had exclusive jurisdiction and in effect, the courts told Wyoming to butt out. And they did, grudgingly. The outfitters were very much opposed to what we were trying to do. Not because of any purity of heart, but because they wanted to bring hunters into Yellowstone and shoot elk. They thought that they could do as well as we could, and it wouldn’t cost the federal government anything to do that. They didn’t make a point out of the fact that they would make a pretty good living out of it.

Hunting in Yellowstone didn’t fly, because the people in the United States did not want people from outside the National Park Service to shoot animals in national parks. But as we did this, and as we got successful not only in ‘61 and ‘62, but in succeeding years, there began to be an uneasiness in the American public. They just didn’t like the idea. You know, they weren’t arguing with our biology, our science, they just didn’t like the idea of killing all these elk in Yellowstone National Park. And there’s not much we could do about that. We tried real hard, but aversion to killing kept swelling. I was very aware when I started going to Greybull and Meeteetse chambers of commerce and Rotary Clubs, I had pretty sympathetic audiences. But after a couple of years, there were more people getting up and saying, “Well, this just doesn’t



Oversnow vehicles used in the elk reduction program, 1960s. Photo by Dale Nuss.

sound right to me.”

In about January or February of '62, the whole game changed. We'd been out trying to match wits with elk, and there were a lot of people that thought the elk were probably smarter than we were. The elk were pretty successful. But then we changed our techniques. We started using helicopters. I don't know whose idea that was, but when you've got helicopters, you're looking for elk at a speed of maybe 80 to 100 miles an hour. And when you find some, you can move those elk, you can herd them like cowboys herd cattle. You buzz that helicopter around behind them and they run the other way. And so we could have our helicopter crews out looking for elk in the evening and they'd say, "Okay, guys, we're going to shoot in Little America tomorrow morning." They'd go out and herd these elk, maybe within 150 yards of the road, and then the helicopter would very judiciously get off to one side, and we'd kill every elk in that bunch. Fifty, 75, 100, 150, we'd just mow them down until they were all dead. And that wasn't fun. That was just plain slaughter. We called it reduction, but it would make you sick to your stomach.

I only shot that one season, '61-62, and I've never aimed a rifle at anything since. It was just too much. But I'll tell you a hangover from that time: to this day, when I see an elk, standing in a meadow broadside or angled, the first thing that

goes through my mind is "If I were trying to drop that elk, what would be the angle of shot?" "Where would I hold to kill him dead?"—because we did kill them dead. We didn't have many misses and we didn't have very many gut shots. Most of the elk that I saw killed, and that I killed, were killed with one shot. We were pretty routinely killing elk at 200 yards. We didn't like to shoot at them when they were running, but you know, in that deep snow they don't run very far. So you could get a crack at them.

Lon Garrison left the park, and John McLaughlin came in as superintendent, and John's attitude towards park management was entirely different from Lon Garrison's. Lon was a mixer. Lon believed that you had to go talk to the governors of the state; you had to talk to anybody that was interested in Yellowstone and explain what your program was. John believed that we were here to manage Yellowstone and basically, it wasn't anybody's damn business how we managed Yellowstone as long as the people came and had a good time. So there were no more discussions with the Sierra Club, no more discussions with the Audubon Society, no more gilded treatment for writers from *The New York Times* and *The Denver Post*. We cut all that stuff out. And the opposition just built and built and built. And I really believe that John was oblivious to it.

Another thing that was undercutting

the shooting was that the trapping was getting much better, too. You don't have to bait animals anymore, you herd 'em. We built traps with wings that extended out a quarter of a mile, sometimes more than that. Got pretty cute about where we put some of these traps, put them in aspen groves, which was where the animals ran to get away from the helicopters. And we could move 50, 75, or 100 elk into a trap pretty easily. So we were trapping very successfully, and the states which had said, "We'll take all the elk you can trap" because they knew we couldn't trap many, all of a sudden were deluged with elk! Bulls, cows, calves. Montana actually got into "put-and-take" hunting. They'd come in here, they'd load these poor damn things up in trucks, haul them out, put them on the range someplace, open the season, and blow them away.

We were trapping and shooting, trapping and shooting. But we cut the herd in half; we shot over 4,000 elk in that one winter of '61-62. Then, in 1967, local opposition became national, and when that happened, the news agencies got interested. I remember that ABC asked for permission to come out and film us shooting elk. I think I was acting superintendent then. Anyway, I told them, "Oh, no, we couldn't do anything like that! It's too dangerous. You know, the bullets are flying, helicopters are flying, and this would just be too difficult." NBC wanted to do it. CBS wanted to do it. And that was our story. It was a little weak. They knew it; we knew it. But we thought we might sell it. And then some lousy producer for ABC said, "Well, look, you know you're right. We can't get in there. It is pretty dangerous. But why don't we just sit off on a hill some place and you drive some elk way off in the distance with a helicopter, and the rangers are out there in a weasel and they shoot some elk, and we'll be satisfied and you'll be satisfied." I didn't make that decision, but somebody did and we said, "Okay, yeah, that sounds all right."

None of us operating here had seen a lens that was more than 300 millimeters long. Well, boy, when those cameras came up, I thought, "Oh, dear God." These lenses looked like something you'd get out of Palomar. And they set these



Hunters removing a killed elk, 1956. NPS photo.

things up, the batteries, the cameras, and boy, we had our best shots out there, 'cause we wanted to drop them clean. The cameras were set up near Frog Rock on a little hill.

We chased the elk out of the Blacktail Meadows and here they came with the helicopter behind them. The helicopter peeled off and the elk were running, and a couple of weasels were set up about 150 yards away, and the guys started shooting and the elk started dropping. Those of you who hunt know that you can shoot an elk through the heart and the elk will go down right away and it will kick. And that's what happened. Those massive lenses picked up an elk's head with a bullet hole in the neck and the critter sort of flopping around on the ground. Then two or three kicking. This went out on the networks and that really did it. The local pressure, the outfitters—and so the Washington Office decided to hold an elk summit meeting in Cody, Wyoming.

People will tell you that elk are politics, that biology is politics. Well, at that time, Lyndon Johnson was trying to enlarge the Vietnam War and having some trouble in the Senate, where one of his strongest supporters was Gale McGee. McGee just happened to be a senator who was up for reelection in '68, who came from Wyoming. And McGee wanted to stop the shooting. Before the big elk summit occurred, we gathered at this big auditorium in Cody and John McLaughlin said, "This is all one big show." And I said, "What do you mean, one big show?" "Watch," he said.

George Hartzog, the [NPS] Director, was favoring us with his presence, to signify how important this was and how important Senator McGee was. John said, "George is having breakfast with Gale, as we speak." And people filed in and Hartzog got up and in his inimical way, he said, "I've been meeting with Senator Gale McGee. Senator McGee is very much opposed to this slaughter of elk." And I knew that was a bad sign. And he said, "He's convinced me that we should stop this. And so I am ordering Superintendent John McLaughlin to stop the elk slaughter immediately." I was standing in the back of the room where John told me to stand. He got up and nodded; I made a telephone call to Yellowstone

and told the chief ranger that we were out of business. And we were.

Gale McGee gave the President the support that he wanted and the rest is history. As you know, the Vietnam War went on for a good many more years. But McLaughlin did get fired. He was a good manager, but he just was not a man of the times. He was an old timer, he thought that superintendents were captains of the ship. And he went down with it. Hartzog used to say, bless his heart, and I think maybe he misled McLaughlin a little bit on this: "You guys stay the hell out of politics. You let me handle that. You tell me what you think we ought to do or you do what you think you ought to do."

Well, in that simpler time, you might be able to get away with that, but you sure can't get away with it now. As a superintendent, you can have very good data and you can be persuaded that this is something that you really should do, and you still might not do it because you think you're going to get your head handed to you in a basket. It happened with John McLaughlin.

In retrospect, there are a couple of points that I'd like to make concerning this reduction operation. We did a lot of things that we never knew we were going to do. We wiped out specific herd groups. I remember a couple of years after things kind of slowed down, [former park research biologist] Mary Meagher and I were riding up in the Washburn Range. There had been elk trails there that looked like the trail between the trailhead and the Lower Blacktail Cabin. They had been formed by elk. Those trails were gone. Because even with a helicopter herding, you could only move elk so far before you exhausted them. We were shooting the elk that were easy to get to and easy to see, the ones that were relatively close to the road. Those were the only ones we got. And we really hammered them. You could go out to Lamar Valley for years after that, you'd never see one damn elk. And if, by any chance, one was out in the meadow, when it saw you, it took off just as fast as it could go. So we changed elk behavior.

The aspen, we were going to save the aspen. We knocked the herd down to 4,000; 4,500 animals; it stayed there for several years. There was no aspen re-

sponse. The animals were still browsing it right off at the snow level. They were still barking the trees in the wintertime and they were cutting off any shoot that they could reach with their teeth. It had no effect at all. It had no effect on the range, as far as I could see. And I don't remember [former park research biologist Bill] Barmore talking about it having any effect. We were just dead, tee-totally wrong, and we couldn't believe that. It took a long, long time.

And what about those trapped elk? Occasionally we'd get bulls in with the cows. They'd go berserk; they would pin the cows to the walls of the corral, they'd toss calves up into the air. The first thing the guys would try to do was lasso the bulls and pull them up against the wall and cut their horns off. And we dipped them for ticks. When these animals were put into trucks for transportation, they were frenzied, scared-to-death cows rearing up, hammering each other with their hooves. When the elk were let out, many calves were bloody rags on the truck floor. It was not a pretty picture at all. And it was so wrong.

We were so sure. Remember that wonderful line of Charlie Brown's, "Now, how can we lose this ball game when we're so darned sincere?" That's what we'd done. And you know, in my iconoclastic way, I would point out something. I listen to us supporting ourselves today. We know what we have to do, we know how we should manage elk—if you could have gone back and sat in on a ranger conference in 1961, you would have found the same attitude. Most reasonable people will accept that we do. We said that in 1961; we're saying it now in 1999. I don't know whether what we're doing is exactly right. All I remember is that to the ancient Greeks, a cardinal sin was hubris. And hubris was pride, and certainty. And so, I wave my finger from the ancient past and say, beware hubris, beware certainty.



John Good retired in 1980 from Everglades National Park but returned to Yellowstone in 1993 with his wife, Edna, who currently serves as the park's Chief of Concessions.

Perspective:

Robert Haraden, Former Assistant Superintendent at Grand Teton and Yellowstone National Parks

As part of the oral history project for Cultural Resources, in April 1999, Sally Plumb interviewed Robert (Bob) Haraden, now retired and living with his wife near Bozeman, Montana.

Sally Plumb (SP): When was the first time you saw Yellowstone?

Bob Haraden (BH): It was 1959. We were stationed in Rocky Mountain National Park and we came to Yellowstone exactly one month after the 1959 earthquake. The earthquake was on August 19 and we came the middle of September. Most everything was closed, but I remember we stayed at Old Faithful Lodge Cabins and pretty much had the park to ourselves. Some of the roads were closed, but the park engineer gave me a key to get through—people were afraid to go to Yellowstone after the earthquake.

I went to Grand Teton in 1966 as assistant superintendent. The superintendent was Jack Anderson, soon to become superintendent of Yellowstone. While there I was also involved in Yellowstone issues, as I was Grand Teton's liaison with the Yellowstone-Grand Teton blue ribbon master plan team.

Bison and Elk at Grand Teton

SP: And were there bison and elk problems going on in the Grand Teton area when you were there in the 60s?

BH: Grand Teton used to have about a dozen bison and they were penned in. There was a fenced pasture where people could observe the bison. It was between Buffalo Entrance and Colter Bay, just an obscure dirt road you drove down. Every once in a while in the winter, they would break out, but they would always come back for feed. They were fed year-round.

The first winter I was there they broke out and they wandered a little farther away than they had previously. And so Jack Anderson decided, "Heck, we'll just let them go." And they've been free-ranging ever since.

Spring 2000



Bob Haraden, 1973. NPS Photo.

SP: How did the public in the area, the ranchers, take that?

BH: Well, at first there weren't many bison, and they stayed pretty much in the park. Except one got way down into Wyoming and I remember a rancher called Jack Anderson and said, "Do you have a bison down here? It's in my pasture and I'm going to shoot it." And Jack said, "Well, I don't think it's ours; go ahead." They did wander around some of the ranches, but it wasn't a major problem as you find today.

SP: So brucellosis wasn't a big concern to the ranchers?

BH: Not that came to my attention during my time there.

SP: What was going on with the elk in Grand Teton?

BH: Biologist Doug Houston was in Grand Teton studying elk. In addition to the resident elk in Grand Teton, the southern Yellowstone herd from Big Game Ridge came down into the National Elk Refuge. The Grand Teton herd was not over-abundant. We didn't have any reduction program at that time.

SP: Was hunting allowed in Grand Teton in those years?

BH: Yes, there was a special hunt. It's kind of a farce, but you have to compromise sometimes to really accomplish your goal...I forget how long, probably in the early '60s (it was before my time there), they had an agreement with the state of Wyoming to have a hunt. It was up around Pacific Creek and they issued permits. And it had been going on for a few years.

SP: Did you hear about the waves going on in Yellowstone concerning the elk reduction program?

BH: It had been going on earlier, but we were not involved with it. I think people accepted it as part of the management of the park.

Yellowstone in 1972

SP: When did you leave Grand Teton?

BH: In September of '68, I went to Natchez Trace Parkway as superintendent. That's a 450-mile-long parkway from Natchez, Mississippi, to Nashville, Tennessee. I was there three-and-a-half years and then came to Yellowstone in January of '72.

I was assistant superintendent. Yellowstone was such an exciting place to be, especially in 1972, because it was the centennial year and we had all kinds of activities, including the Second World Conference on National Parks. We had something going all the time.

SP: Was there was a presidential visit that year?

BH: There were an awful lot of things that took place, and it culminated in the Second World Conference and the September 19th ceremony, portraying the legend of the famous campfire on the Madison River. President Nixon, by that time, was getting involved in the Watergate scandal and so Mrs. Nixon came. That was my first experience with a presidential type visit. Any time a presidential visit occurs, they send an advance team to make all the arrangements. The man in charge of the advance team wasn't from Washington at all; he was from Seattle. He came with a crew to set things up for Mrs. Nixon's visit. We had been working for a year and a half to get all these world conference delegates housed—the important ones in the important rooms at the Old Faithful Inn. All of a sudden, Mrs. Nixon's advance party wanted 50 rooms on the ground floor of the Old Faithful Inn. Fifty rooms! So, we had to work that out.

One evening the advance man was pouring over a map of Idaho, southwestern Montana, and Wyoming, and he was counting up the population of all these little towns. And he said, "How in the world are we going to get 10,000 people to be at the airport when her plane lands?"



First Lady Pat Nixon speaks to the Second International Conference on National Parks at rainy Madison Junction, 1972. NPS photo.

We'll have to bus them in from Salt Lake City." They wanted a crowd for a 10-second TV clip when she landed. Well, he couldn't pull that off, but what he did do was pretty smart. He invited all the nearby high school bands to come. The town of West Yellowstone thought, "Gee, here's a great chance for our little West Yellowstone high school band to greet Mrs. Nixon." Well, they weren't big enough, so he had the Billings, Montana, high school band to play the big role. And West Yellowstone got left out. Mrs. Nixon found that out later and she sent a presidential pen and a letter of apology to every kid in high school.

Bison and Elk in the '70s

SP: When you came here, Jack Anderson was the superintendent. And Glen Cole was the wildlife biologist?

BH: Yes. I had known Glen Cole in Grand Teton.

SP: So by the time you arrived, Mr. Anderson and Mr. Cole had been here a number of years. What do you remember going on in the bison and elk programs at that time?

BH: We didn't have as many bison or elk either at that time. It seems to me in the early '70s, the bison herd was on the order of 600 or 700. I remember the biologists telling us that the bison population would probably level off, left to its own desires, between 1,000 and 1,100. It didn't quite happen that way, but I can understand that. Anyway, that was their assessment at the time.

We were concerned about them leaving the park as the numbers grew. And Mary Meagher said that probably what would occasionally happen is that there will be a lone, old bull that will drift down the Madison. So we had a plan that whenever a bull bison drifted down the Madison and got within three miles of the park boundary, we would take it out, which we did. There was no big flurry, no tent pole stands or anything like that. I don't remember how many we took out, but there weren't very many. We were later stopped from doing that and I forget exactly why or who stopped us. Mary Meagher later told me they stopped us in Washington.

By '77, they were drifting down the Yellowstone towards Gardiner, and we were trying to keep them in the park. We had a helicopter on duty all fall, hazing them back up the river. [Former Yellowstone ranger] Dale Nuss knew of a really narrow place in the canyon that we could fence off and hold them. It was a great idea, but it was only temporary, as they climbed up around the fence. We knocked off a few, up river, one time. I remember some people got in and made off with the heads. We got a call from the Forest Service Gardiner district ranger and he said, "Hey, we got about a dozen bison downtown." And that was the start of that business. And then we just couldn't contain them.

SP: When you realized that you were going to have trouble containing them, what happened then?

BH: I left about that time, which was a good time to leave! That was the start of the development of plans to deal with it, with removing them, as they did later. Plans evolved from that period.

SP: Was there a lot of public pressure on the park to control the bison that were getting out?

BH: They didn't like them in downtown Gardiner, for sure! There was oppo-



The Crystal Creek trap, during bison reduction in the 1960s. Photo by Dale Nuss.

sition to having them outside the park. Ranchers certainly didn't want them, and they couldn't come down the Yellowstone Valley without getting on ranch land, or grazing land, if it was in the national forest. They didn't like it then.

SP: The Native Americans expressed their reverence for the bison with that walk that they did just recently. Do you recall any Native Americans involved in the scene? Did they express similar feelings?

BH: There was none of that while I was here. That came later. Although earlier, when they had reduction programs going on, I think some of the meat went to Indians and schools. But I don't remember it being an issue.

SP: When you talked about destroying a lone bull that would wander down, what happened to the meat?

BH: We just dropped it and left it for the scavengers, we didn't reclaim any of it. We didn't take very many.

SP: What about the elk? What was happening on that scene when you were here?

BH: They were free-ranging. I forget what the numbers were, but not as large as they are today. I think in recent years it's varied up to 17,000 and 20,000 tops on the northern herd. There wasn't that number—they had reduced it down to 3,500, which they thought at one time

was what the range could carry. It had increased from that, because by the implementation of the natural regulation policy, in the late '60s, their numbers were increasing. There was legal hunting outside the park, and the state had special hunts in the Gardiner area and so there were some reductions from that, but no reductions in the park at that time. There were no efforts to haze in the park, and no feeding took place.

Public and Media Relations

SP: So the park staff weren't actively trying to get the elk hazed off so they could be hunted.

BH: No. There was no hazing to get them off and no hazing to keep them in. They were truly free-ranging. Bad winters were tough on them. I remember one winter, about 1975, when the weather was bad and the snow crusted and they couldn't get down through the snow and

ice, and we had a heavy die-off. A lot of them died just next to the road. I remember the superintendent was gone, so I got stuck explaining it. NBC News came in and filmed it, which they had a right to do, but I didn't even know they were in the park. They didn't have to tell us! The Regional Office found out about it on the evening news before they heard about it from me and so I took hell for that.

And then, others were critical of us. I remember there was a professor over at the University of Montana, not one of the Craigheads, but another professor. He was really critical of us. He said there were hundreds and hundreds of elk on the roadside. I went out and counted 75. There were 75 elk in the ditch line between Tower and Soda Butte. Doug Houston counted 1,200 carcasses on a flight. That was a natural occurrence in the winter. But the damn things had to die right on the roadside! I remember Regional Director Lynn Thompson suggested to me that we ought to haul the carcasses out of sight from the road. And I said, "Oh, geez, if we do that everybody is going to say we're trying to hide the issue," and so we did not do that. There was a lot of scavenging going on along the roadside.

SP: After NBC aired this filming, did you get letters of outrage from all across the country?

BH: I don't recall that we did. Park Service people picked up on it, the Regional Office and the regional information officer. He was really upset at me! I said, "Gee, I didn't have anything to do with it!" He couldn't seem to get over that.

SP: Did the pressure from the public, the criticism of any of the wildlife programs, the bison or the elk, extend to your families personally or to park personnel

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on a personal basis?

BH: It was on the fringe of it, I'd say. Some of us would occasionally get a call in the evening at home from someone in Gardiner who wanted to debate. You could tell they were in a bar down there, you could hear the bar noise in the background. We got word that there was a claim we had buried a bunch of grizzly bears and covered them up. John Townsley was superintendent by then. He sent word back that if they would come up and tell us where that spot was, we'd get a bulldozer and dig it up. Well, of course we never heard from them. It was all bar-room talk, which is pretty free in Gardiner.

There was an occasion when one of the concessioners for some reason made a public statement that he had witnessed a helicopter carrying a grizzly bear out of the backcountry in a sling, out of the Hellroaring River area. I checked; we had, in fact, been hauling some garbage out of the backcountry by helicopter that day. Things like that happened. One time, over in West Yellowstone, the State of Montana borrowed one of our bear traps to deal with their problem. It was outside of the park and none of our business. Well, someone saw the government-licensed bear trap going down the road, and so there was a story about how we were sneaking a bear out of the park. You're subject to all kinds of things like that. Some you try to explain away, but some of it gets away from you.

SP: Were people as quick to threaten to sue as they are today?

BH: No, not like today. We didn't have suits on how we're managing the park. I recall Mike Finley saying he had four judges helping him make decisions on how to manage the park and that's unfortunate, because some of those judges or others who get stuck with making those decisions obviously don't have the background. You can't be critical of them for that; they're stuck with making the decision. Decisions today are not as easy to make as they used to be. You didn't have the kind of public involvement that you have today—and the public demands involvement. But they didn't demand it in the earlier days as much. You had the feel of what people wanted by meeting and visiting with them and gaining support for what you were doing. And that's

the value of good community relations and listening to the visitors. I don't think it's as much fun as it used to be.

Natural Regulation

SP: You mentioned earlier the term "natural regulation." What does that mean to you?

BH: That man would not interfere with regulation of wildlife—flora and fauna. That their numbers would grow as they naturally would and they would crest and crash because of, perhaps, a particularly bad winter or perhaps overgrazing. The range would restore itself and then wildlife would increase again, but it might be a long cycle. Maybe we haven't even watched it long enough yet to know if it really can be successful in the long run. But it's without interference from man.

SP: Was that term commonly used in the park back in the early '70s?

BH: Yes.

SP: Did most everyone have the same idea of what was meant by that?

BH: I think so. It meant non-interference. Not everybody supported it, and a lot of people who kind of liked the idea, I think, have trouble with 20,000 elk on the northern range. I do. I know there are many studies that say it's okay and others say it isn't. I just have a gut feeling that 20,000 elk on the northern range is too many. I know there are much fewer today.

Wildlife was the most active, controversial issue. Elk and bison. We didn't deal with wolves at that time.

SP: And it was the issue that you touched on, about the bison going down out of the park?

BH: Yes, out of the park, and increasing numbers and range damage—alleged range damage.

SP: What were some of the possible solutions that you thought up to deal with the problems?

BH: We were still on the track of natural regulation. We were trying to sell that idea, convince people that it was the way to go. That followed the Leopold Report, which occurred in the late '60s.

SP: Could you expound a little bit on how the Leopold Report came to be written and what it said?

BH: Starker Leopold was a professor at the University of California and a very

highly respected person, the son of Aldo Leopold, author of *The Sand County Almanac*. I don't recall who was on the committee, but prestigious people. Their thought was to return the park to what it might have been like when European man first came here. Or to carry that a little farther, what it would have evolved to be like since then. They proposed minimum manipulation.

SP: Did scientists come into the park and study it and then write their recommendations?

BH: That occurred before I came, but I'm sure they made visits to the park. And, of course, they had access to all the written information. The people involved were very familiar with the park and the issues.

SP: And so that led to the idea of natural regulation?

BH: Natural regulation followed, and I'm sure, was influenced by the Leopold Report.

SP: Was the park experiencing backlash from the direct reductions that had gone on, or was that pretty much over with by the time you arrived?

BH: They were not beating on the park too much for reductions at that time. But many people thought we should have still been doing it.

SP: Did the park alienate some people that had gone out on a limb to support it and then all of a sudden it wasn't going on?

BH: Probably. There were people on both sides of the issue. I happened to be in Yellowstone when John McLaughlin made his last visit there. John McLaughlin was the superintendent before Jack Anderson. He was a highly respected park manager. But he had to be removed because of the elk issue. I remember him telling me that when he got in trouble over the elk issue, he went to this professor, Les Pengally at the University of Montana, who had been on the Montana Fish and Game Commission at one time. He said, "You know, I'm in trouble with elk management. And I need you to help. And Pengally said, "Well, I support you and your management, but I can't help you."

SP: Why?

BH: The politics of the fish and game department. His position at the univer-

sity.

SP: So when the reduction program was closed down, did you feel that McLaughlin was the fall guy for this? Do you think he deserved to be moved on because of the reduction program?

BH: He was just caught up in the politics of it.

SP: And did anyone rise to support the reduction program at the time it was closed down?

BH: I wasn't there at that time, but there were supporters of it. Supporters and critics, always.

SP: How were the changes in the park's management being communicated to the public? Or was that over by the time you arrived?

BH: The initial implementation had occurred, but it was promoted in ongoing activities. Any time you gave a talk, you talked about it. There were opportunities to talk with service clubs and other groups and introduce it into interpretive programs.

SP: Did you give a lot of these talks?

BH: I didn't give so many talks on wildlife issues. But I did go over one time and participate at a talk in a class in the University of Montana with the professor who had been critical of the park.

Memories of the Backcountry

SP: When you were the assistant superintendent, did you ever go into the backcountry or into the interior of the park during the winters?

BH: I didn't spend a lot of time in the backcountry in the winters. But my youngest son and I used to ski into some of the backcountry cabins. I remember skiing from Tower into Hellroaring River and down in Yancey's Hole, skiing by a big herd of bison, circumventing them, of course.

SP: When did the park interior open to snowmobiling?

BH: When I was in the Tetons, in the mid '60s, we had a couple of snow planes—a cab with a pusher propeller behind. I recall going on a trip from Colter Bay up into Yellowstone, to read a snow course between South Entrance and Grant. There was nobody around, no snowmobile tracks or anything. That was



Snowmobiles parked near the Hoodoos, 1970. NPS photo.

'67. By the time I went to Yellowstone in '72, there were a lot of snowmobiles.

In Yellowstone, I did a lot of snowmobiling. I'd go to Old Faithful at least once a week, maybe twice. I'd make the loop at least once a week. If we went to Old Faithful on a Sunday and there were 30 or 40 snow machines there, we thought there were a lot. Now I understand the parking lot is full of 200 or 300 of them and full of blue smoke. I can't imagine it.

SP: So, you haven't been back into the park in the winter recently?

BH: No, I've not. I'd like to go to Old Faithful.

SP: Did any of the visitors, or any of the park personnel, for that matter, ever have any accidents on snowmobiles with elk or bison involved?

BH: No, and I just can't understand that it's been all this time and no one has been killed by a bison in the winter. We would see them on the road and ease by them, but always with your heart in your throat. I remember coming back from Lake one time alone, late in the afternoon. And just below the Canyon corrals is a bridge, and there was a bison laying down on the edge of the road right at the end of that bridge. I didn't know what to do. I didn't want to go all the way back around Old Faithful to get home. I would ease up toward the bridge and then I'd change my mind. You couldn't turn a

snowmobile around without getting off and yanking it around, and you couldn't do it very fast. But I'd do that and I'd go back away and wait. Finally I screwed up my courage and drove on by, and the bison didn't even look up!

SP: Do you remember any incidents of people being chased by elk?

BH: I don't recall elk chasing people. I went out the back door of the assistant superintendent's quarters one time; it was just a few steps over to the office, and I got down by a big spruce tree. I noticed the other day the bottom branches are cut off but they went all the way to the ground then. As I went down by the tree there was a moose bedded down there. It had been there for the night, I guess. And I was the first one by. The moose jumped up and started chasing me. Fortunately, it wasn't very far to the headquarters office. Not everybody gets chased by a moose on the way to the office in the morning!

A Park Service Career

SP: How long did you spend in Yellowstone?

BH: Six years.

SP: When you look back on those days, are they mostly happy memories?

BH: Yes. It was a great time to be there and I liked being an assistant superintendent because it was a job that is in charge of the day-to-day operations of the park.

The superintendent was gone a lot of the time, so I was acting superintendent 20-25 percent of the time, including most of all one summer. There's such a variety of issues to deal with in a place like Yellowstone. I enjoyed that. It was a great assignment and an honor to have been there.

SP: What were the most controversial issues when you were the acting or assistant superintendent?

BH: We were getting into a natural fire management plan. Some staff biologists wanted to let all naturally caused fire burn without suppression. Management tried to be sensitive to whether or not Canyon Village or Jackson Hole would be full of smoke on the 4th of July. And we were determined to have a long string of successful natural burns to establish the program and silence the critics before one finally got away from us. This had happened in another park, and it set their program back.

SP: Where did you go after leaving Yellowstone?

BH: I went to Big Bend as superintendent. We loved it there. I went to Glacier from Big Bend, as Glacier's superintendent, in 1980. I retired from Glacier in 1986.

The Condition of the Park Today

SP: Have you been back to Yellowstone recently?

BH: Last Thursday (April 8, 1999).

SP: Has it changed very much?

BH: I don't think it's changed that much. The park goes on and on and it doesn't change much. There are improvements that have been made and some of the roads have even been upgraded! The biggest visual change resulted from the fires of 1988.

SP: What do you think about the condition of the range now?

BH: I'd like to see photographs. In the '70s, Doug Houston did an extensive, monumental study on elk and the range and he compared photographs. He found photographs from really early days, a hundred years ago, and he found the old photo sites. He then retook those photos to show the difference, if there was some.

Today it doesn't look all that bad to me. I talk with Bob Murphy quite a bit; he's a close friend of mine. He gets into the park often on backcountry trips—he has horses. He says the only damage he really noticed was to riparian zones like in the upper Hayden Valley... some of those riparian zones have been hit pretty hard. But soon there will be green grass com-

ing out all over the place.

I get a little upset with people who complain about the devastation of the fires; if you drive all the park roads, mostly you will be driving through green forest. I've noticed that. Some people are supportive of it, but not everybody. I think the park misses the point sometimes. I'm not sure they realize how many people still consider it devastation, people I've talked with around here. They comment on how bad it is still.

SP: Do you have any advice to offer to people who are working in the park today, especially on the wildlife issues?

BH: I'm not sure I'm in a position to offer much advice, but I recall when Lon Garrison was superintendent here in the '50s and early '60s, he was trying to initiate some issues like wilderness on Yellowstone Lake, which was one of his big issues. He had what he called a "truth squad." This was a group of management people who were available to go out and speak on the issues. Superintendents are out speaking often, I'm sure. I would think some sort of an aggressive campaign of a select few people who can really put a story over, going to service clubs, where you're always welcome, because you're free, and to other groups to talk about the issues that are so contentious. There may be more of this than I am aware of.

SP: Seems like everyone has an opinion on Yellowstone.

BH: Everybody has a solution. Some of them are sort of amusing. They oversimplify the matter—all you have to do is this; all you have to do is kill off the wolves, or do something. But it's a complicated park to manage. I think Mike Finley is a great one to have there at this time. He understands the issues and he knows how to deal with them. And he has the background to deal with Yellowstone, having been superintendent of Yosemite and Everglades, two of the really tough ones. Everglades is particularly tough. Bob Barbee was also a very effective superintendent.



Hayden Valley. NPS photo.

Perspective:

Glen Cole, Yellowstone National Park Biologist, 1967-1976

Oral history interviewers Charissa Reid and Sally Plumb had a conversation with Glen Cole, John Varley, the current director of Yellowstone's Center for Resources, and former park historian Paul Schullery on October 13, 1999. Glen had returned to Yellowstone as the park's guest in conjunction with the 4th biennial science conference on greater Yellowstone and to complete an oral history interview on ungulate management and the northern range.

Charissa Reid (CR): We're interested in focusing today on history when you were in charge of research in the park.

Glen Cole (GC): The thing I remember about this research assignment was that there was no specific agenda—it was simply just look at what you see relative to “the green book,” which was [NPS] policy [on natural area management] at that time. It was very loose. Nothing specific at all.

Sally Plumb (SP): Did you work directly for the superintendent?

GC: No. Johnny Mac [McLaughlin] was the superintendent. Gale McGee, Senator McGee, held this hearing and there was quite a bit of controversy at that time. I was just a field biologist out of Grand Teton and somehow got invited along. And I could see there was some real concern for the control program that was going on in the park, but I was given no specific instructions other than to get up there and implement the recommendations of the National Academy of Science on research.

CR: So it wasn't specific to one species or one issue.

GC: Oh, I think you got the message that the elk was a key species in this whole thing, but when I got up here, Bill Barmore was working on the elk. As I remember, I simply asked what information do we have on winter distributions here and there and this kind of stuff, and tried to come up to speed with Bill

Barmore's help.

SP: Before you arrived here, had you had much interaction with the other biologists who were here?

GC: No. I discussed this stuff back when I was with Montana Fish and Game, but the park was in this control program and they would bounce things off of almost anybody they met those days.

Paul Schullery (PS): What was the general attitude of Montana Fish, Wildlife, and Parks when the park was taking out 2,000 elk each winter?

GC: It was Fish and Game in those days. I guess the assumption was that, from a professional standpoint, that was park service business. I didn't lose any sleep over it. The philosophy was that you were going to manage these things to

have them more in balance with their food supplies and everything else. That was standard operating procedure for fish and game departments.

At that time I was the game research supervisor for Montana. Previous to that I was the state range biologist and a field biologist.

Walt Kittams had been here. He had a position down there in Tetons and worked on the Grand Teton and southern Yellowstone herds and, through his contacts, apparently got my name and called me up and made me an offer I couldn't refuse. I was headed for academia with a Ph.D. on pronghorn antelope, or a Grand Teton and southern Yellowstone field job. Well, I've always been partial to field jobs and field biologist is my name



Glen Cole, fishing in Yellowstone. Photo courtesy Glen Cole.

tag. I went and had a wonderful time for five years.

And I think it was perhaps my first opportunity to even consider such things as how were these animals naturally regulating. I looked at the large group of animals on the elk refuge being fed hay. I looked at the extensive areas that they had to forage on, which they were not using. And then I watched them through the winter. Yes, there were these groups on the feed grounds, but not all of them went to the feed grounds. There were other elk down there that free-ranged and I thoroughly enjoyed myself, both field work and literature reviews, trying to get at: How did these things get by, before we came along?

CR: If you weren't given direction, what made you focus on that?

GC: The enabling legislation of the National Park Service is very different from the Fish and Game agenda; you manage these things for recreational hunting or as a harvestable crop, or because they're in conflict with agriculture, and so forth. Here you had an opportunity to work for an agency that had an entirely different mandate.

This was a high point in the park service too, these administrative policies. Whoever wrote that did a real good job for that point in time. Everybody would carry these green books in their back pocket, and it was good. Brought us back, to the Organic Act, the basic enabling act for the park service.

Elk Feeding

PS: When you were in the Tetons, you enjoyed reviewing the scientific literature. Do you remember what literature jumped out at you as applicable?

GC: Down there, feeding the animals was "necessary because it was not historical elk winter range" and this was even in a book on the elk. As I went through the literature I found out there are records of old trappers who saw thousands of elk in the Snake River Valley. Imagine that.

Well, there was a guy that came in from New York. I don't know who he talked to, but he went back and wrote a paper. And this not being historical winter range got in the literature and then everybody cited it as fact. But that was the beginning of how important it is to do your home-

work and check out what is conventional belief for everybody.

John Varley (JV): Montana is anti-feeding; they still are; Wyoming is pro-feeding. Did that influence what you were saying?

GC: No, I think I could see what they were doing. The main reason they were feeding was to keep away from conflicts with agriculture. What I think they couldn't live with was, the next ranch over was [owned by] the governor of Wyoming and he'd had elk all over. So, they had a situation where it would have taken some real finesse to get those things free-ranging and staying off of agricultural lands. And they haven't resolved it yet, you know; they're still feeding.

Working with Jack Anderson

CR: At Grand Teton, they have such a checkerboard of land ownership. Was Yellowstone kind of a freeing experience, just because it's such a big piece of land?

GC: Believe me, the exclusive jurisdiction was a delight—that you could walk into a park administrator's office and make a recommendation and have it implemented, no big deal. If you got the information you tended to get consideration. His job was politics, yours was biology, and the biology doesn't always prevail.



Superintendent Jack Anderson at rear of canoe on Yellowstone Lake with Curt Gowdy and Pete Kriendler, c. 1972. NPS photo.

PS: But you got a hearing with the decision maker. What were your impressions of working for Jack Anderson?

GC: It was ideal for rapport between research and management, and relationships were as good as you could ever ask for. But that didn't mean that there were not times he had to say, hey, I can't follow your recommendation.

CR: Did Anderson seem to have a particular area of interest?

GC: Fishing. I think the thing we hit it off with down in Teton was the idea of getting dam releases that were less harmful, where they would just open the gates and you'd have that flush of water going down to the potato fields in Idaho. When they had all the water they wanted down there, they'd just close the gate, and there were all the gravel bars and everything else, with little fish and insects flopping around. And they were doing some construction and here were the culverts above, in the stream that was a cutthroat spawning stream. We said, "You shouldn't be doing that."

He loved to receive a list of conflicts with the objectives of the park, and would check those off as fast as he could. Sometimes he could do it and sometimes he couldn't, but these were very good days. He did what needed to be done, and it was for the good of the park.

SP: During the hearings with Senator McGee, in Cody, a lot of sportsmen's groups wanted to open up the park to public hunting. Do you think anybody took that seriously?

GC: No. A couple of years after I'd been here, I wrote "Elk in the Yellowstone Ecosystem." Someone in Washington read it, I don't know if it was George [Hartzog]. And Jack Anderson called me in and said, "How many deputized hunters do we want?" I said I'd had a chance to look at this; I'm not sure you want any. I'd like to be able to try this variable quota system that would allow these elk to migrate out and have the control done on that lower segment of the Yellowstone, by hunting outside the park. I said, "I know the Montana guys and I think we can work something out."

About that time, this idea of hunting things in national parks—biologists didn't think it was as good an idea as we'd thought. It would be such a conflict with

the aesthetic and scientific values, particularly if it wasn't necessary. I think George mentioned one time, we're going to study this thing to find out if we need to "manage." I said yeah.

And that's what I'd like to think we're still on today. You've got all the testables and hypotheses that were developed by [former ungulate ecologists] Doug Houston and Mary Meagher and myself; they're still being tested, and if we need to do something different I would like to think we would be the first to know, through the studies. And maybe there'll be some graduate student or some college professor that shows us a need to look at this a different way; what you guys were doing was not right. I can accept that, as long it's systematic testing of those rejectable hypotheses, which is the scientific method.

Natural Regulation

JV: Did you ever think that 30 years later, we'd still be testing that hypothesis?

GC: Oh yeah. You know, there's always somebody comes up with a smaller particle in physical science. So stay loose. The best thing you can have at any one time is a working hypothesis that you critically evaluate at every chance, to find out if it needs to be rejected, or if it needs to be restated so it is more consistent with the available or new information. Or simply reject it and figure out another way to go.

SP: One of the comments from other people I've interviewed is that they feel there's far too much research still going on. Especially some of the old rangers. They think you've got the research, now do something about it.

GC: Well, have we got a lot of people that are really not focused on this thing as it should be.

SP: John, do you find it's an issue with some people?

JV: If anything, the issue has evolved. The critics of what you put into motion 30 years ago keep shifting the target. That's very frustrating, because you get a big chunk of research money and it goes on for three or five or eight years... when we first went into the kind of management that we did, the notion of too many elk was primarily focused toward grasslands,

The term "natural regulation"...was first used to describe density-dependent effects in reproduction in these ungulates... Sometime later, in the 70s, it came to be known as National Park Service dogma. And it got applied to everything, the whole system—trout, grizzly bears, fire, elk, were all seen as part of the natural regulation policy. It became a label for something much bigger than the scientific term ever intended.

so we put all of the research money into grasslands. And they said, well, the grasslands are doing just fine. Well, that might be so, but what about the willows and aspen, what about the erosion? It's that moving target sort of thing.

GC: Oh yeah. And if you don't like the information you go and kind of discredit the people who are gathering it. It's what you live with and it goes with the territory, so to speak.

PS: Glen, tell us about the development of the term "natural regulation" and your view of the use of the word today.

GC: In attempting to get at what the primary purpose of an area is, as recommended by the National Academy of Science, you treat the attempts to conserve or portray the plant and animal life as an integrated whole, what they really mean as an ecosystem or an ecological system. We tried to get across the idea that the primary purpose of the park was to preserve this representative natural ecosystem and then we would define "natural" as "without human influence"—that you've got to distinguish the *presence* of man from the *ecological effects* of man.

You can have people all over this place, but if they're not causing ecological change, so what? That's in keeping with our mandate, to portray this place and provide for the enjoyment of it in ways that leave it unimpaired for the next generations. And unimpaired, to me, was natural.

CR: Had other people been using the term at other places, or did you coin it independently?

GC: There may have been other people using it, but the *modus operandi* or the state of knowledge in the early days was, these things need to be managed, to prevent them from overusing their food sources or the big guys getting rid of the

small guys. That was pretty much the rationale for managing wildlife as a harvestable crop.

And it's not incorrect, if you're trying to produce a maximum crop of harvestable animals, and that's my training as a fish and wildlife biologist. But this business of having wildlife out there for non-consumptive uses, for the aesthetic and scientific values, I had to go to the Park Service to find out that that was what somebody wanted.

The term "natural regulation"—and this goes way back, so this is fairly foggy to me—was first used in Yellowstone to describe density-dependent effects in reproduction in these ungulates. It was a perfectly good ecological term that described that very specific thing that happened in ungulates when you had low population. Sometime later, in the 70s, it came to be known as National Park Service dogma. And it got applied to everything, the whole system—trout, grizzly bears, fire, elk, were all seen as part of the natural regulation policy. It became a label for something much bigger than the scientific term ever intended.

The idea is that the term is almost self-explanatory, and people criticized it before by saying, well, you just don't like people, but that's not it at all.

PS: It sounds like there was an umbrella over all your conversations—natural regulation—during that time. A very unifying thing, this bigger idea, and all these other things were sort of falling underneath this umbrella.

GC: Well, it doesn't seem to me like I went in just to talk about natural regulation. We would talk about whatever it happened to be that day. Someone would have seen an interesting bird or something and it would just launch a conversation. If it went on long enough it started sucking people out of offices.

CR: So, it wasn't like religious zeal over natural regulation? It was just excitement over the resource?

GC: It was just excitement over stuff, yeah.

Ecological Carrying Capacity

SP: Do you think that what has been written about the policy actually portrayed accurately what went on here in Yellowstone?

GC: Well, I think the confusion comes in many cases, and I think Houston points this out, when you don't distinguish between an *ecological* carrying capacity and what he calls an *economic* carrying capacity. Those are two terms, and you've got to ask which kind are you dealing with. I don't see the need to be confused about this, and now it's become very acceptable to manage things for non-consumptive use.

CR: John Good remembers you coming into his office during this time and saying to him, "John, can you think of anything in the paleontological record that would indicate that a species has ever destroyed its own food supply, thereby destroying itself?" John says he said, "No," and you said, "hmm," and walked out.

GC: I was probably trying to get something that a geologist could relate to. And I think you've got to ask yourself, how does something destroy what determines its own numbers? You know, the universality of feedback loops in regulation, a species' or population's birth rate or death rate; how can it destroy what limits itself?

Down on the hillside I watched the elk. And I think I figured out that if these things do have ecologically complete habitats—that's a collective term for contingencies to obtain food under varying environmental conditions—the central, healthy breeding group is immune to mortality. On the edges of it, the very young, the weakest young, and the old animals, they go, but this core center breeding population persists. I had an affirmation of that from my studies on the Firehole, Madison, and Gibbon. You could look out there and see it. And it kept a lot of grizzly bears happy, too. Now I understand, talking to [*park biologist*] Doug Smith, that it's keeping the wolves happy.

SP: Were there other parks that were struggling with similar issues?

GC: Oh yeah. A lot of the African parks.

SP: How about in the United States?

GC: The Canadian parks, Glacier, Rocky Mountain. I got up here and then finally, I don't remember when, they set up mission-oriented research programs in the other Rocky Mountain parks.

JV: How did Yellowstone get Doug Houston?

GC: Barmore was interested in going back for his doctorate. I said there's no point in me working on the northern herd, it'd be more effective if we got another guy and I'd like to have Doug Houston, so he came. He was a graduate student working on moose when I was in Teton.

Working with Peers and the Public

CR: So during this whole natural regulation thing, who were your peers?

GC: Bill Barmore. John [*Varley*]. Jack Dean [*former USFWS fisheries project leader*]. They're all very interactive. We never had any staff meetings, we just had meetings all the time, as we went by one another and had coffee. We had hallway meetings.

CR: What was your peer group's relationship with the rangers, the people who were carrying out the elk reductions?

GC: I didn't do the actual trapping. This thing worked as well as it did because every agency, every division was contributing.

SP: Your overall impression was that the morale across divisions was really good here?

GC: Oh yeah. I think the programs worked because there was enough cross-fertilization between the divisions.

PS: How did you personally deal with the public criticism of that whole period, some of it directed right at you? Didn't you ever pick up the newspaper and think, I feel so misunderstood?

GC: I had a job to do and we had other people in the park that handled the public relations. I think it goes with the territory; do you want to be loved or respected?

CR: What kinds of public education or interpretation efforts were made to try to inform the public of what was really going on?

GC: Oh, all those information sheets.

Plus, the papers would go out...

PS: Looking back on it, I think that in some ways we were way too alarmed. The elk reduction was registering with the special interest groups and with the media, which is a special interest group, but for the mass of the American public, this was way below their threshold of interest. They'd come to visit the park, spend a day and a half, buy a rubber tomahawk, and leave. And the National Park Service, I think all the way up to the Superintendent, worried too much about how many of them even knew this was going on. In 1976, we had the so-called big die-off of elk, and there was an article in the *Billings Gazette* about how you could smell the dead elk clear to Billings.

That summer the Chief of Interpretation, Al Mebane, sent out a memo asking what he called "key interpreters" to talk to the visitors each week, and ask them what they thought. After a few campfire programs I quit asking, because it was embarrassing. None of them had heard of it. None of these people we were so afraid hated us had even heard of this story.

JV: Do you have any nagging, unanswered questions when you come back?

GC: I've been really interested in who's following up on the Firehole-Madison, because some of the concepts on natural regulation resulted from looking at that bunch of elk there. And out of it came, in combination with the work of other biologists not only here but elsewhere, an invitation to give a shake-up kind of paper at a Wildlife Society chapter meeting, which was this population regulation in relation to *K* [*carrying capacity*]. And I had fun.

And then we did an ecological rationale for managing or not managing native ungulates in national parks. That turned out to be kind of a winner, for somebody needed to do it and, of course, Yellowstone was one of the lead outfits to test some of this.

I think I didn't take as good an interpretation of what I was seeing on how elk were regulated along the elevational gradient of the Firehole and Madison and Gibbon. And on the predation effects—I'd be interested in what Doug Smith comes up with on wolves. He told me that you now have about 600-1,000 elk in the Firehole-Madison-Gibbon. I used to have

1,600.

Okay, you had the fires—what did that do? Did that increase the ecological carrying capacity for those animals or not? I can't help myself from being interested, and I'm delighted that you've got a guy working on that.

JV: The guy who's studying that, Bob Garrett, came into the study with his own money and has since moved to Montana State from the University of Wisconsin. He's found that about one calf, on average, is recruited into the adult population per year. He did not believe, coming into that study, that there was any natural regulation in elk.

GC: That's very high selection pressure. You've got to be tough. [*In talking about the return of wolves to Yellowstone,*] and some of the stuff on predation that I came up with, I had to reject my most cherished hypotheses—that predation smoothes the fluctuations.

Wolves in Yellowstone

CR: We have some questions about things that have made you a man of myth, or legend, or mystery. Maybe they're totally untrue. We had someone tell us that someone who worked here years ago swears that you asked him if he would

help you release some wolves in the park. It's "common knowledge," in and outside the park, that the park tried to sneak some wolves in.

GC: Well, where that came from, there was a guy down in Jackson Hole...

JV: Eastman. Gordon Eastman.

GC: Oh yeah. He had a bunch of wolves that he hauled around and photographed. And every time someone would ask him, "What do you do with the wolves?" he'd say, "I'm taking them to Yellowstone." I accused him of this, and he said he didn't do it. I think that even if he said, "I'm taking them someplace else," someone may have wanted to believe that this was a group of wolves that was going into Yellowstone.

JV: I dialed up Gordon Eastman; he's a resident of Cody. Man, I needed an asbestos shield. I mean I've never heard a barrage. He denies that he used to travel around with wolves to take their picture in natural settings. Not only does he deny it, he denies it with multiple four-letter words.

GC: He stopped in here with a truckload of wolves. Right out here, off from the superintendent's place.

JV: So there is no truth to the rumor that you released wolves in the park?

GC: None. You could no more quietly or discreetly plant wolves in here—and that's not the way to do it, anyway. The way to introduce those wolves was as you did, with the general release from an enclosure. You hang on to them, you get the bonding of these things as a pack unit, and you gentle-release them. To just kick them out of a back of a pickup or something like that, why, you'd have to bring a lot of wolves.

PS: It doesn't sound like you, with your science background. But it certainly is out there, as part of an enormous body of folklore. But I don't think I ever had enough time back then, 25 years ago, to talk to you about the wolf sightings we were getting in the late 1960s and early 1970s. I've always been curious about those probable wolves.

GC: Yeah, there were some wolves. My interpretation is they just never appeared to breed and retain a pack. We had single animals; I had reputable biologists that observed wolves. Plus, I went out there and measured tracks, and coyotes don't have five-inch pads. I can always remember being in the Firehole-Madison-Gibbon and I was carefully looking. [*My wife*] Gladys was sitting next to me and she said, "Of course it's not a coyote, can't you see?"

JV: Former Wyoming governor Cliff Hansen swears that he was on a snowmobile trip with Jack Anderson when Jack told him personally that you all had done a surreptitious plant of wolves.

GC: No. Jack would not do that. A lot of people believe what they want to.

PS: But if you knew Jack at all, and I only knew him slightly, you know that he loved to tell stories.

GC: Jack was a believer that we should have wolves. What we were doing with our scattered observations was kind of saying, they'll come in on their own.

JV: A lot of people say that they're really glad the wolves have been reintroduced, but that it had to wait, the time wasn't right till now. Do you agree with that?

GC: Maybe so. If Jack thought he could, he would've cut us loose.

PS: You wrote an environmental assessment on wolf reintroduction.



Elk carcasses lashed onto the trunk of a vehicle, 1954. NPS photo.

The one thing I remember from Starker—I suppose it was the early 80s... he was still saying he had specific concerns about what's happening to those aspen. It's something he really loved and hated to see what was happening. Natural ecosystems, they're sometimes pretty messy.

GC: Yeah. Gentle release at Slough Creek. But at that time I think Jack was on his way out, he was going to retire. And of course, when [Anderson's successor, Superintendent John] Townsley got here, he didn't want to touch that with a 10-foot pole.

Wildlife Biology and Politics

JV: If you were in charge of ungulate management in Yellowstone today, from your background working for the state, what measures would you take in trying to find resolution with the state of Montana?

GC: I'd have to have a look at what data before I could, you know. Do you have a problem?

JV: We've got a big political problem. I'm still not convinced we've got an ecological problem.

GC: I'm no expert on politics. I would say that you've still got Houston's testable hypotheses, and mine here. And you want to have alternative interpretations, get your paper out, and if we want to go back-to-back at a scientific conference, why, that's fine too.

PS: How did you get to know Starker Leopold?

GC: I don't know. He could have come down to Teton when he was a member of that science advisory board. He reviewed the bear program. As for the whole ungulate stuff, evenings over a cocktail, we'd talk about it, or out on the trout stream. He had no trouble with what we were doing, the idea that we would be putting out the reports and proceeding. That was despite some of the recommendations in the so-called Leopold Report. I think we were a little bit beyond that report by the time I got to know Starker.

JV: Some of the critics say that you embraced Starker Leopold and his committee's report, but not about the Yellowstone elk.

GC: Well, I think that when Starker was writing that report, we were only considering the economic kind of carrying capacity—the usual thing you're taught—that you've got to compensate for fewer predators or keep them in balance with their food sources, as put out by the universities at that time for how you manage wildlife. It was consumptive use, not what we were in.

PS: So by the early '70s, when you guys were fishing, he was an interested observer in the experiment?

GC: Oh, more than that. We would review this stuff with him officially. He had no problems with the attempts to test hypotheses. Starker was enough of a scientist that he knew that he had to keep going in order to stay current.

Also, it wasn't only here; they had some changes in thinking on elephant management in the African parks. He was advising them on a lot of this stuff. I don't know how many different groups would bring the African biologists or administrators together to review how well this was going, on the different resource studies and management.

The one thing I remember from Starker—I suppose it was the early 80s, I didn't hear from him much after that—he was still saying he had specific concerns about what's happening to those aspen. It's something he really loved and hated to see what was happening. Natural ecosystems, they're sometimes pretty messy.

SP: When you look back on your tenure here, is there any specific thing that you can think of as your greatest success?

GC: Well, I would point out it wasn't me alone. It was a crew of people and a group of interacting biologists—everything from Bill Hendrickson's work on the blister rust in those days, and fire and Don Despain. So much has worked out well here on everything from fish to bears.

That was a group of people that made a difference. And it wasn't just biologists, it was administrators, it was naturalists. We were earning our wages, very much so.

CR: Did you work eight, ten, twelve hours a day? Did you spend time after hours with these people?

GC: Bunch of workaholics. The social stuff, I don't know. It was a group of interacting people and it extended beyond 8:00 to 5:00, that's for sure.

PS: This was one of the most intellectually stimulating places I've ever been, that little group of people up on the third floor. You could always walk in there and toss an idea around. And there seemed to be so many of them, just incredible thinkers. You usually figure that's only the kind of environment you get at a university. Well, I'd go to the university and they'd want to talk about the basketball games! If you wanted to talk biology concepts and things like that, your best bet was coming to Yellowstone.

SP: And you also got support from regional and national levels?

GC: Oh yeah. You had a superintendent that could more than handle himself in carrying out these things. There wasn't just a dedicated group of people. It was the fact that these guys knew each other. They were always on the phone to each other. And it was all through the system, from the director to regional director, and it was quite remarkable that you had this organization where there was this rapport at all levels.

JV: I expect you guys got the calls from [former Assistant Secretary of Interior] Nat Reed just like I did.

GC: Got a note from him on my desk right now that I have to respond to. You know, here was the Assistant Secretary of Interior dealing directly with the park biologist. I went in and told the superintendent I got a call from Nat Reed. "Oh nice, what'd he have to say?"

PS: Starker and Nat Reed and you and Jack Anderson were all hardcore fly fishermen.

GC: That might've helped!



Other Perspectives

Excerpts from Oral History Interviews

Ted Scott, Yellowstone ranger 1964-1978

...We'd head out in the wee hours of the morning, before daylight, for perhaps the Lamar Valley, and scout out where the elk were, and then we would just shoot down about five elk. At random. The rest of the job was hauling these around, weighing and measuring and assisting the biologists, taking the samples and all of that. But it was kind of interesting...in the morning, before you started shooting you wouldn't hear a thing—it would be just dead silent. And you'd make the first shot and the coyotes would start howling. They got to know it was dinnertime, because everything else was left for the coyotes that wasn't part of the collection...

The park built new traps at Soda Butte and up on Blacktail. And they were, as elk traps went, the state of the art. They were located so that they were hidden, the actual corrals, and the only things visible were the wings that went out to direct the herd in toward the trap proper. They would extend out there probably several hundred yards—it allowed you to herd elk in from a wider area. Once they got into the throat of the trap it got narrow enough that you could control them and run them into the holding pen. Then somebody slammed the gate on them. In the entire operation we must have had about 10 or 15 people involved.

Sometimes you'd have a trap full—you could have 100 or more elk. But, the years that I was involved in it, we didn't really get all that many. I think we'd get 50, 75 in, because it was rather open winters in those years. We just had a heck of a time getting the number that they had prescribed. But sometimes those guys would be working there late in the afternoon on a winter day trying to finish them



Ted Scott, 1964. NPS photo.

up and get them out, because you hated to have them held in there any longer than you had to. And of course, there was a certain amount of casualties—of elk get-

ting crushed or stomped on or one thing or another.

Max Hancock, who was here when I first got here, a great big tall guy—Max used to go out there and haze them in, but sometimes these old cows would take exception to the fact, and of course they were pretty harried anyhow and they'd kind of take you on. So I remember Max had made himself a big wood shield that he could put in front of him while he was hazing the elk down into the chute. There was also a large ladder-like structure in the center of each pen, and more than one ranger was put up that ladder by an irate cow.

As they'd go through the chute the bulls' racks were sawed off, and then they were put into a squeeze chute where the vet would test blood, tag them, and turn them loose. Or, they were loading them into trucks and shipping them off to whatever state wanted them. I think it even got to the point where, if private



Tagging elk at the Crystal Creek Trap, 1959. NPS photo.

organizations wanted them, they would give elk to them, too. Yellowstone elk stocked elk range all over the country.

You always saw quite a number of winter-killed elk. But, then again, depending upon the year and the snow conditions, it's going to happen whether you reduced the herd to five or you had 50,000. When the winter conditions reach a certain density of snow and ice crust on top, you're going to lose elk, bison or deer. When the conditions are particularly bad, and they can't get to the food, you're going to lose them. Most people think that the highest calling of an elk or a deer is to be consumed by man, and I don't quite feel that way. Let's face it, starvation is a natural regulator as well. It's a sad thing to see happen, but it is the natural process.

After the fires, my wife Holly and I were lamenting the fact that we weren't seeing herds of elk in places like Elk Park. Then a little light bulb turned on and I said, "They don't have to come up in Elk Park for grass anymore; there's grass everywhere! I mean, it opened up. The canopy is gone, and grass is growing out where there was just woods before, and nothing else. And so just because of

the fire there's more feed out in that park than there's ever been. And, heck, you can go to Tower and you can practically look into Yancey's Hole. You never could do that before!

Bill Keller, park photographer 1961-1984

...They would normally round up maybe 50 to 100 head, and the traps had wide wings sticking out from them and they would drive the elk around to the

outside of the wings and then head them in. And frequently, that late in the season—it was in probably December or January—why the cows, the older cows in the herd, were leading the herd. They would be running along ahead and sometimes they would see the "V" coming together of the trap wings and couldn't see an opening to get through, and they'd realize they were, you know, boxed in, couldn't get out. And they would stop...

One morning down at Stephen's Creek...they set up wings there for a trap. I flew with the pilot that morning, photographing from the air. As we were driving the herd in, again, they stopped when they saw the "V" and the trap. And a few of the cows headed off to the right, swinging back around, between us and the trap. The chopper pilot kicked his control to go over and cut them off and he cut them off all right, but we just kept going and kept going, and I looked back over at him; he was holding both hands trying to pull the joystick back up. It was so cold that morning the hydraulic lines had slushed on him and he couldn't get the thing pulled up. And he said, "Well, I think we're going to find out what it feels like to wrap up a hurricane fence!" But at the last instance he got it freed and we went back up...The other pilot yelled over, "Are you having a little trouble with your controls?" And he said, "Yeah, they seem to be a little stiff this morning!" It was 40-something degrees below that morning and it was a cold winter, a tough one on the animals...

But as severe as the winter would have



Rangers removing an elk's antlers, 1936. NPS photo.



Ranger Harry Reynolds and pilot Mel Calloway on an elk reduction flight, 1962. Photo by Bill Keller.

been, I'm sure most of those animals would have died anyway just from exposure or whatever, and lack of food... There were animals all over, laying around, dead. And so, in a way, we were doing a mercy killing. You know, it was relieving the animals of an awful lot of tough times, hard times... freezing and very little food and they were eating aspen limbs up to a half inch in diameter just to try and get some nourishment. The grasses were so buried. We'd find bodies in the spring, laying right beside a very lush grass area that had been under five feet of snow in the wintertime and they couldn't get to it. And the elk weren't the only animals that suffered that winter. There was large deer kill and bison kill and it was just a hard winter. I could see the need for reducing the herd because there just wasn't enough vegetation, enough food available for them. So I was in sympathy with the kill.

...I remember Lon Garrison was the superintendent at that time, and every morning about 6:00 a.m., Lon would go over to the office and call Washington to see if he was still working that day. That's the amount of pressure that was put on.

Dale Nuss, Yellowstone ranger 1953-1980

One time, [Bob] Murphy and I were going over the old road from Blacktail to Tower, the Plateau Road, and all of a sudden Bob Schellinger (a hell of a good pilot who "bought the farm" in his heli-



Dale Nuss, 1978. NPS photo.

Spring 2000

copter) got us on the radio and said, "I've got a bunch of elk up here; there's 33 of them. Is there a shooter in the area?" So I got on the radio and told him where we were, and he says, "Okay, pick out a spot for me so I can land. I want one of you to come with me where you can knock out these elk." He set the chopper down, picked up Bob, and away they went. And I got back on the radio to Schellinger and I say, "You want me to come on up now?" I knew where they were going to be, so I went on up and then shut the engine off but left the radio on. All of a sudden I heard these shots—33 shots. Pretty soon, Schellinger came back on the radio and said, "Okay, Dale, come on up. Bob will be out here on the road to meet you." I pulled up and stopped and he climbed in and I said, "How many did you get?"

"Thirty-two. I missed one."

You learn real quick what you're supposed to wear. Sometimes it was 1:00 or 2:00 in the morning before we were through, 'cause anything we shot we had to drag to where the trucks and the Indians and the butchers could get to it... They paid, I think, \$5 a head. And I think the only reason they paid was just to pay for our ammunition.

...It had to be '63, '64...they had reached the goal that they were after, which was a population of 5,000 elk. And when the park had started going and shooting them one of the old timers told me that there were supposedly 28,000 in the park. Now I understand that there's a hell of a lot more than that. And I understand that that's part of the reason why they got wolves in... One of the district rangers that I worked for when I was a seasonal killed the last wolf in the park. It was in the early thirties, '32, I think.

Mary Meagher, park curator/naturalist 1959-1967; biologist 1968-1997

I did not get into bison with any thought of questioning the management program of the time, which was reductions; the same was true of the elk. I just was interested in bison. But I was also in Yellowstone National Park that first part of the '60s. We had shooting reductions



Mary Meagher with bison blood samples, 1991. NPS photo.

before we got into the live trapping. I would look out of my quarters and see the helicopters—they were kept in the big equipment garage where they wouldn't freeze up at night. You could set your watch by when the choppers were wheeled out... The atmosphere was—how would I put it—it was close to mob violence...

Glen Cole had asked me what justified the bison reductions. "What do we have for data?" And when I went checking on the bison and file-digging, I found one memo. As far as the interior of the park, not a shred of data. A memo, written very carefully by hardworking Walt Kittams... It was 1956. He was here from '48 to '58, and for the state of the knowledge, and a person who was spread very thin, I have a lot of respect for Walt and his time. He basically had "ridden the range," vehicle, horse, and said, "I think there's a problem." There is a Hayden Valley range reconnaissance report. I've made very good use of his photographs, bless him for taking photographs... The park was just beginning to try air surveys with no knowledge that what you counted on the Mirror Plateau in the summertime was both the Mirror and the northern range bison combined, that they'd moved together. But, basically, he wrote first

this report and then a memo saying I think there's a problem and if there's a problem, then these should be trial numbers for management reductions.

But Walt was careful. He also said "evaluate." And then Walt was gone. And there was no research person after '58. When I came in—and I'm sure this was true of Bob Howe (park biologist after Kittams), it was true of park administration—there was just sort of an assumption that there were file drawers of data supporting these programs. So when Glen [Cole] came in and started saying, among other comments, "What's our data?" and we started digging, as I say, I found a memo...

What justified shooting bison on the open range, which they did by the hundreds...there was no long-term data. There was no historical homework. There was just this memo, dated November 1956...

I worked pretty much regularly, as part of the trap crew on the bison reductions, when we shifted to trapping. I did not work the field shooting. We had no traps in Pelican and the last reduction held there of 30-some animals was a field shooting job. That was in '65. There had been earlier field shootings in the mid '50s, before my time, both in Hayden Valley and Firehole. When the bison reductions were set up in the early '60s, an interesting aside, initially, was the political overtone. It's the only time I have ever known Yellowstone to go to a contract reduction (the contract was rigged somewhat). A man named Bud Basolo, who was more of an entrepreneur, was big into trying to raise hybrid bison/cattle and set up really the antecedents of one of the big buffalo ranches now in Wyoming. Basolo tried rounding up, initially, with horses. Didn't work too well. The Nez Perce trap, initially, was built by Basolo and I think for his last efforts that he did enlist a single helicopter. Also, if you look at the Boone and Crockett records, you will still see a number of bison heads in the records credited to Basolo. They are Yellowstone heads, out of the reductions...



Bob Howe checking on willow growth in an exclosure near Tower Junction, 1961. NPS photo.

Bob Howe, park biologist 1961-1966

We sure were aware that the public didn't want elk killed. *Life* magazine had a whole half an issue on elk reduction in Yellowstone. I was on the front cover, shaking my fist at the crowd. We spent an awful lot of weekends running around to Butte and other places, talking to sportsmen clubs, trying to convince them that what we were doing was right. We finally got some of them down here and took them out on elk censuses with helicopters. Then they had to admit there were elk still. And they also happened to come in the spring, when there were a lot of elk dying, and we'd stop the bus and get out and go across a little hummock. And there's a great big bull, you know, he's so weak he can't get up off his butt to move away and you'd walk right up to him. He just lays there. I mean, he's laying there in a position that looks

healthy, his head is up and all that, but he won't move. He's too weak. And that impressed them more than maybe some of the range facts... because some hunter should have been able to shoot that bull and not had him end his life like that.

For years to come, there's going to be this controversy about range and wildlife in Yellowstone, I'm sure. You talk to a lot of range people, and of course, they'll say it's overgrazed, but then right away, somebody else says, "But this is a national park, we don't care if it's overgrazed or not." The fish and game departments in the state that have to provide hunting for the hunters want to be sure that they try to keep their ranges good, so that they'll always have adequate huntable animals... Like everything else, it changes over the years and people, scientists especially, get different ideas over the years because of more research, about what should be done about different problems. And I don't think this one's going to be solved...



Wild Trout Conference to be Held at Old Faithful

"Wild Trout Management in the New Millennium" is the theme for the seventh Wild Trout conference, scheduled for October 1-4, 2000, at the Old Faithful Inn. Presented papers will be organized into sessions on wild trout regulations, ecosystem management, electrofishing injury and salmonids, and threats and management opportunities for wild/native trout populations. Panel discussions will address the Endangered Species Act and management of native salmonids, and "limited entry" trout fisheries. To register or obtain more information on the conference, contact program co-chair Steve Moore (Great Smoky Mountains National Park) at Steve_E-Moore@nps.gov or use the website, www.montana.com/wildtrout.

Grizzlies Have Good Year in Greater Yellowstone

In 1999, for the second consecutive year, grizzly bears in the ecosystem met or exceeded the population objectives spelled out in the *Grizzly Bear Recovery Plan*. Biologists counted 33 different female bears with 63 cubs-of-the-year, compared to the goal of at least 15 females with cubs-of-the-year. Although Yellowstone National Park occupies only about a third of the recovery zone, it supported 45 percent (15) of the females with cubs-of-the-year observed in 1999.

Only two known grizzly bear mortalities occurred, one due to a bear conflict with humans and the other a natural mortality. The minimum estimate calculated

for the ecosystem's grizzly bear population was 348.

Two persons were injured by grizzlies, and two grizzlies were trapped and moved to other locations within the ecosystem due to potential bear-human conflicts. One black bear was killed by a vehicle encounter; no black bears were involved in human injuries or translocations. Seven incidents of property damage were attributed to grizzlies, but most of the damage was caused by a single animal.

On March 1, 2000, the U.S. Fish and Wildlife Service released a draft *Conservation Strategy* to guide future management of the Yellowstone grizzly bear population and ensure its sustained recovery. The document will be put in place when the grizzly bear is removed from the list of threatened species now protected under the Endangered Species Act. A team representing Yellowstone and Grand Teton national parks, the ecosystem's six national forests, and the states of Idaho, Montana, and Wyoming assisted in development of the strategy, which calls for continued monitoring of bears and habitat within a Primary Conservation Area (which is the same as the current recovery zone). A copy of the draft plan is available on the World Wide Web at <http://www.r6.fws.gov/endspp>.

Yellowstone Honored by Explorers Club

Yellowstone Park received a Citation of Merit from the exclusive 3,000-member Explorers Club at their annual banquet, held March 25, 2000 in New York. Superintendent Michael V. Finley accepted the award on behalf of the park, the first government entity to receive such a tribute. The citation recognized the park and its leader for "outstanding efforts to save and to protect the endangered gray wolf species and to restore the health of the entire Yellowstone ecosystem" as well as for fostering exploration and scientific research in the park. The Explorers Club, founded in 1905, is made up of world travelers and scientific pioneers who support explorations through

grants, expeditions, educational programs, and publications.



Biologists Report Ungulate Herd Counts

Biologists with the Northern Yellowstone Cooperative Wildlife Working Group have completed ungulate herd counts on the northern winter range in and outside Yellowstone National Park. Observers for the northern range elk count, completed on December 27, 1999, counted 14,538 elk. A late winter elk classification survey of 3,157 animals, done in early March 2000, indicated ratios of 23 calves per 100 cows, 7 spikes per 100 cows, and 23 bulls per 100 cows. In early April, park biologist Wendy Clark counted 205 pronghorn, compared to the 204 counted in the spring of 1999. As predicted because of the mild weather, winterkill was not observed to be significant in the Gardner Basin and other areas north of the park.

Late winter-early spring counts of bison across Yellowstone National Park indicate the herd numbered about 2,470 animals in the late fall-early winter. There were some efforts outside the park to haze bison back into Yellowstone, but no removals of bison in the winter of 1999-2000. In April and May, parties involved in preparation of the draft *Bison Management Plan* and EIS entered into a court-requested mediation aimed at resolving differences between federal agencies and



the State of Montana. Analysis of public comments received on the plan continued; managers hope to issue a final record of decision on the long-term bison management later this year.

New Elk Study Launched

A new study that will focus on elk population responses to wolf restoration in Yellowstone began in March under the direction of primary investigators Dr. Rolf O. Peterson of Michigan Tech University; Dr. L. David Mech of USGS-BRD and the University of Minnesota; and Dr. Mark S. Boyce of the University of Alberta-Edmonton. On March 15-16, 45 elk were captured by helicopter net-gunners and radiocollared for the study. Biologists plan to conduct weekly flights to locate the elk and assess seasonal habitat use and selection, especially in relation to occupied wolf territories. Also, they plan to capture and radio-collar elk calves to assess calf mortality rates and causes. The researchers hope to answer numerous questions, including:

- 1) Does the number of wolves depend strictly on the number of elk? If there are more elk, are there more wolves?
- 2) How many elk are killed per wolf as a function of elk group size, elk habitat selection, absolute prey availability, or some combination of these factors?
- 3) Are adult and calf elk predation rates dependent on what other prey is available, on what habitats elk choose, or some combination of those factors?
- 4) Do wolves limit recruitment (the number of calves that reach adulthood) in elk?

Although current funds for the study are limited, investigators hope to obtain funding for a long-term project.

Bioprospecting Agreement Upheld

On April 12, 2000, the U.S. District Court for the District of Columbia dismissed with prejudice a legal challenge to Yellowstone's "bioprospecting" benefit-sharing agreement with the Diversa Corporation of San Diego, California. The suit had been brought by the Edmonds

Institute, the International Center for Technology Assessment, the Alliance for the Wild Rockies, and a Bozeman, Montana, citizen. The 1997 agreement provided that Diversa would share with Yellowstone specified economic and scientific benefits that might result from its research activities involved with microbes sampled from the park's geothermal features. Although collection of biological specimens from Yellowstone for research purposes dates to the 1890s, the Yellowstone-Diversa agreement (known as a Cooperative Research and Development Agreement or CRADA) marked the first time that researchers agreed to share any resulting benefits with the park for conservation purposes.

Judge Royce C. Lamberth ruled that the CRADA was "consistent with the governing statutes because it would produce direct concrete benefits to the park's

conservation efforts by affording greater scientific understanding of Yellowstone's wildlife, as well as monetary support for park programs." The opinion rejected the plaintiffs' allegations that the agreement violated several park-related laws and regulations, and found that the CRADA "plainly constitutes an equitable, efficient benefits-sharing arrangement."

As a result of a prior order from the same court, the NPS is initiating a study to determine the environmental impacts of establishing additional research-related benefit-sharing arrangements in national parks throughout the U.S.

World's Tallest Geyser Spouts Again

Around 6 a.m. on May 2, 2000, Steamboat, the world's tallest active geyser,



The steam phase of Steamboat Geyser's eruption, at about 9 a.m., May 2, 2000. NPS photo.

erupted for the first time since October 2, 1991. At around 7 a.m., a park employee spotted a tall vapor column as he neared the Norris Geyser Basin and, suspecting a possible eruption, stopped to investigate. Two visitors who had been sleeping in their truck at the Norris parking area stated that they were abruptly awakened by what they thought was an earthquake. By the time the park employee arrived, a heavy, wet mist enveloped most of the area, and Steamboat was in full steam phase—emitting a tremendous roar, with a huge, visible vapor plume approximately 500 feet tall. During a major eruption, Steamboat's water phase can reach heights of over 300 feet, lasting 3-40 minutes, and for 12 or more hours after, Steamboat thunders with powerful jets of steam. In the 20th century, eruption intervals of Steamboat varied from three days (in 1989) to 50 years (between 1911 and 1961).

NPS Reduces Snowmobiling in Parks

On April 27, Donald J. Barry, Assistant Secretary of the Interior for Fish, Wildlife, and Parks, announced that the NPS would begin enforcing existing regulations regarding snowmobile use in the National Park System, the net effect of which will be the significant reduction of recreational snowmobiling in most parks. The decision was prompted by a rulemaking petition received in 1999 from the Bluewater Network and more than 60 other environmental organizations that requested a ban on snowmobiling in all NPS units.

Existing executive orders, legislation, and NPS regulations establish high environmental management standards that

must be satisfied before recreational activities such as snowmobiling are to be allowed in national parks. Executive Orders No. 11644 (Feb. 8, 1972) and No. 11989 (May 24, 1977) closed all public lands to off-road vehicles, including snowmobiles, except where specifically authorized, and required agencies to actively monitor the effects of these uses and immediately prohibit such uses when it is determined that they will cause, or are causing, adverse effects on soil, vegetation, wildlife, wildlife habitat, or cultural resources.

Under the new enforcement program, snowmobiling for general recreational purposes will be prohibited throughout the NPS, with a limited number of exceptions for park units in Alaska and Voyageurs National Park due to provisions in their enabling legislation, and in units where snowmobile use is deemed essential to provide access to inholdings within a park or to adjacent private lands. However, the prohibition will have no immediate effect on Yellowstone and Grand Teton national parks, which are currently undergoing a winter use planning effort. The process already underway there will continue, and winter use in these two parks will be determined by the final record of decision, which is expected to be completed in late 2000.

Air quality degradation, videotape evidence of negative impacts on the soundscape, wildlife, and air resources of Yellowstone National Park, and the compilation of public comments were all cited as factors in the NPS decision to enforce existing rules and standards regarding snowmobile use.

New Publications Available Online

The *State of the Park* report, a candid appraisal of the state of Yellowstone's natural and cultural resources and the ability of the National Park Service to properly manage and protect them, is now available on Yellowstone's web site. The *State of the Park*, developed in response to accountability concerns

expressed by Congress, documents the shortages of staffing and funding needed to properly manage Yellowstone's resources. While the comprehensive report illustrates Yellowstone's positive achievements in protecting resources, it also points out disturbing trends, such as the escalating encroachment of alien species and the future of the park's geothermal systems. To read the report or the executive summary, visit:

www.nps.gov/yell/stateofthepark.htm.

The *1997-1998 Investigators' Annual Reports* is also newly available on Yellowstone's web site at: www.nps.gov/yell/publications. The investigators' annual reports represent a summary of all of the research done in Yellowstone during these years and include a range of projects from virtually every academic discipline.

Mammoth Campground Eligible for National Register Listing

Yellowstone's cultural resources staff and the Wyoming State Historic Preservation Office recently determined that the Mammoth Campground is eligible for listing in the National Register of Historic Places because of its significance as one of the first "planned" campgrounds. Before a 1938 redesign of the campground, visitors drove among the trees and other campers until they found a suitable place to camp. They then pitched their tents and built fires wherever they liked. With ever-increasing visitation, this haphazard approach to camping quickly denuded Yellowstone's campgrounds. In 1928, E.P. Meinecke, a plant pathologist for the U.S. Department of Agriculture, published a report documenting the serious environmental impacts of this style of camping. The redesign of the Mammoth Campground was largely based on Meinecke's report, and other national parks across the country quickly adopted the "Meinecke system" of designed campgrounds to protect vegetation and improve campers' experiences.

