

Transcription: Grand Canyon Historical Society

Interviewee: Jennifer Burns (JB)

Interviewer: Tom Martin (TM)

Subject: Jen recounts her many responsibilities as a resource management employee at Grand Canyon between 1980 and 1986

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TM: Today is Thursday, January 24th, 2019. This is a Part 2 Grand Canyon oral history interview with Jennifer Burns. Today we are at the wonderful home of Jennifer here on the banks of the Verde River with these amazing Cottonwood trees all around us. My name is Tom Martin. Jennifer, thank you so much for letting us do Part 2 interview.

JB: You're welcome.

TM: At the end of Part 1, you were working on a resource management degree at the University of Arizona. This is between 1975 and 1980. It sounded like a work study program where you would spend time with an agency, the national park had you at Cottonwood and the national park had you down at Chiricahua.

JB: Chiricahua National Monument.

TM: Right. Did you go to any other service units before you graduated?

JB: No, not before I graduated. No. Although, I might have delayed graduation in order to stay in a cooperative education program one last summer to work at Lassen while I marketed myself to get a permanent position.

TM: And what's Lassen?

JB: Lassen Volcanic National Park in California. I went there for the summer to work in resource management basically doing compliance checks to see who had a permit/who didn't for backcountry. Traveling in the backcountry, patrolling the backcountry, and also working with the resource manager there to do fuel loadings of various habitat types. They were looking at prescribed fire. So a mix of things.

TM: At Lassen, was that your first exposure... Well again, it sounded like you were sort of a ranger without an official citation book.

JB: Well, I was really in resource management, so I was not a ranger. In the Park Service there's a difference. You're in resource management, you do resource management stuff. You don't write tickets and you don't do law enforcement. Or you're a ranger and you can do law enforcement or maybe write warnings or patrol around, do that kind of stuff. So no, I was not a ranger. I was in resource management.

TM: You were working with the resource managers. Your degree is in resource management. So this would be your first on the job training looking at actual completed management plans and seeing how they're working?

JB: Yeah, yeah. That's a good way to put it.

TM: Was there a difference between Lassen and Grand Canyon management-wise, issues-wise?

JB: Oh, I'm sure. There was a huge difference. Yeah. I mean, want me to talk for days about that? Totally different environment.

TM: Big pine trees over there and the desert over there.

JB: Oh yeah. Bubbling pots, it's a volcanic national monument, right? Lassen Volcanic, so it's all about volcanics. Grand Canyon, it's about the river and the canyon. Yeah, it's really different.

TM: So you were there for the summer of 1980ish?

JB: I guess. [laugh]

TM: So Jen has very kindly brought in a little bit of her CV here. It looks like you graduated in 1980 with a bachelor's of science in renewable natural resources from the University of Arizona.

JB: So that would be the summer of '80 then.

TM: So summer of '80, you would have finished up at Lassen and then in the fall, what happened then?

JB: While I was working there, I was looking around mostly through resource management contacts to find out where there might be a job that people would want me in. I don't even know how it came about. I must've contacted a bunch of people at Grand Canyon National Park because essentially they had a vacancy there and so they offered that vacancy to me.

TM: What was that position?

JB: That position was a resource management specialist. Which is to say that you do a whole wide variety of resource management type activities. I was trained as a biologist primarily, but I was doing a lot at Grand Canyon. I was involved in the river monitoring, monitoring of human use along the river; backcountry monitoring, the beginnings of collecting data to revise the backcountry management plan; air tour overflights, collecting data about overflights. Also there was a very robust air quality monitoring program in coordination with the state of Arizona at the park. So there were air quality monitoring sensors here and there in the park. So I was involved in that. I was right away involved in the burro/wild ass removal program, the burro removal program. Then what else... Oh, also cave management. I was involved in developing a new management strategy for the many, many caves in the Grand Canyon. I also was the superintendent of the park's representative to evaluate research proposals where people wanted to do research and access sites in the canyon to either collect samples or do whatever research. I would screen those applications. And, of course, everybody wanted to get on the river. No matter what, they had to get a sample from the river. [laugh]

TM: Some things never change. [laugh]

JB: Yeah. Can't you hike in? No, I have to be on the river. Some things never change, I know.

TM: Any one of these things. The backcountry management plan by itself, the river monitoring by itself, air tour overflights, air quality, the wild ass removal, cave monitoring.

JB: Yeah, I was busy. I was also involved with monitoring the big horn sheep population.

TM: So let's kind of take these things one at a time after...

JB: And I also did environmental analysis [laugh] of the renovation of the Bright Angel and the Kaibab trail which is really about identifying barrow pit locations for material. So that was fun.

TM: Wow. These are all such amazing hot button issues. Just thinking about the trails, given the mule traffic.

JB: Which is now greatly lessened recently, right?

TM: Well, because of...

JB: Yes, the impact.

TM: ...more planning. But the trails got a huge amount of workover in the 2000s again. Those barrow pits got bigger and bigger, and basically they turned into mines and people got concerned. But it's interesting for me to suddenly stop and go, hmm, back in 1980 trying to maintain those heavily used trails was an issue as well.

JB: I actually think at that time that that was kind of the first time they really took a look at it. I could be wrong, but it felt like they really took a look at where they were going to get the material, did the planning that they needed to do in order to identify those sites, and to do the evaluation that was necessary, and to have the permissions to go and use material in the different barrow pits. So since that time... I never did really hear the background behind the more recent decision to limit the amount of dude-guided use of mules. They shifted them more to the rim I think is what happened. But anyway, I didn't really hear the background on that but I would be very interested about that because, yeah, there was a tremendous amount of the use. Just pounding those trails. And it's constant maintenance and there was always a fight about who was going to pay for it.

TM: I would like to pick these issues apart and kind of take them one at a time and what you remember about each issue. I'd like to start with the team that you were working in in resource management. Do you remember who the head was? Do you remember any of the people that were there?

JB: I was working for Jim Walters and he was working for Larry May. Larry May was the chief of resource management. I had a lot of respect for Larry May. He was really an amazing person. I can't really elaborate too much on that. I thought he had a really good way of managing that whole department.

TM: Was he science-based? Was he more just a personable...

JB: He was science-based.

TM: ...trying to cover your back?

JB: He was very personable.

TM: Making sure you had what you needed?

JB: Yep. All that. I felt like he really appreciated that he had that job and he understood the importance of it and the importance of resource management in making decisions for that park. So Jan Balsom was also there. She was the archeologist, but she was working for Bob Euler. So he was there down the hall. A guy named John Ray was there as more of a hydrologist, I think, was Johnny Ray's background. Who else was there? Oh, Kathy Davis. She was a resource management specialist.

She was on par with Jim Walters. She retired. She's married to Chip Norton and they live just down Salt Mine here. She would be a very interesting one to talk to. She was the superintendent of all the parks in the Verde Valley most recently. She retired from the Park Service as the regional... There's a bunch of small parks... So she was there. Who else was there? Trinkle Jones was there.

TM: What do you remember about...well, let's take these people one at a time. What do you remember about Jim Walters?

JB: Jim Walters was a very talkative, high energy person. Also very good like Larry May, I thought a good perspective about how important resource management was. Definitely a problem solver. A very creative person. Wasn't always politically correct as I recall. Loved his job. Had been there for a while. Was really fun to work with.

TM: Okay. And you mentioned Larry May. Bob Euler.

JB: Crotchety. Grumpy. I didn't have a lot of direct interaction. He was kind of like shielded. He was down the hall in his own little lair there. Very interesting person. But no, I didn't really interact with him very directly. But I will tell you that when I worked with [phone ringing] these two cavers Penny Meyers and Hans Bodenhamer. Hans later became a teacher in Flagstaff. But they were what I would call your classic dirtbag cavers. They basically lived on top ramen and out of their van. I don't even remember how I got hooked up with them, but they had an official volunteer agreement with the park. All they did was hike down onto the Esplanade and basically explore caves primarily in the Redwall. One of the most unbelievable things that they would do is they would identify openings in the Redwall that they would then rappel down to and then they would swing into with a grappling hook or something. Pull themselves into these holes and check them out. Just systematically going along the Redwall doing this. So anyway, one time they were looking at a cave, which I don't really think it was so much a cave it was just more of an alcove, by Desert View Watchtower and they found a sandal. They would not tell Bob Euler where that was because they knew that he would take it and they had their [laughs] standards. So that was a huge commotion.

TM: I imagine if they had an agreement to work for the Park Service and Euler in theory would have been a boss over them. How did that work out in the end?

JB: I don't even remember but I know he didn't get that sandal. I just remember there was more like, "You know what, we'll keep working for the park if you want us to, but this is the way we're going to work." They were much more valuable even in the more diminished capacity like that. They were the only ones who would do that kind of thing. Who would do that crazy... One time I went with them out on the west rim and we literally... We went into a cave, and I am not a caver. I hate...I'm claustrophobic. But anyway, went into this one, this opening in the Redwall. We literally went like a quarter of a mile or maybe longer through a giant fin in the Redwall. Not crawling so much. A lot of it you could kind of crouch or some of it you could even stand up. There were bones in there, like condor bones and stuff. Then at the very end, we had to wiggle our way through this giant packrat midden to kind of like poop out onto the other side into this talus slope. It was just phenomenal. I mean, there are just, as you probably know, amazing caves.

TM: So Bodenhamer ended up going to Jackson Hole, Wyoming and he's running a caving program in the Teton Mountains, which have some amazing caves.

JB: Now? Is he now?

TM: Yes. Where did Penny Meyers go? You have any idea?

JB: I don't know.

TM: Great. So Penny and Hans were out there doing the caving work and Jim Walters and Larry May... Jan was working for Bob. What do you remember about Jan?

JB: Jan was getting her masters, I'm pretty sure, at the time because I remember going to ASU with her because we became friends. Going down there one weekend with her while she was finishing up some work or whatnot. So she wasn't there all the time. She kind of came and went. She always tells me that she thought I was John Ray's secretary when she first met me because of the way our offices were situated in the clinic. [laughs]

TM: I'll get to that in a minute.

JB: So, you know, we just became friends. I didn't really do much with archeology so we didn't really work close together.

TM: And then Johnny Ray, what do you remember about him?

JB: We did work a lot together on NEPA stuff, National Environmental Policy Act, planning stuff. I think he was the one I was working with the barrow pits. He was involved in a lot of the projects I was involved in cause he was just a general resource management specialist as well. You know who else I met then was Lulu Santamaria who was working for the Grand Canyon Natural History Association at the time and we became friends. I think she was volunteering as cook on a couple of the river trips that we did so that was fun. Oh, John Thomas was there. I started and I think he came... He wasn't there when I first got there and I say that because I was in charge of the river monitoring as well, which was ridiculous. I had like ridiculous amount of... I'm sure it wasn't like me totally involved in these things, but all the kind of field stuff that was related to a lot of these programs was what I was doing, but where I wasn't the responsible one. It would be Jim Walters or it would be John Ray or Kathy Davis.

TM: Just an overwhelming amount of work for... Again, looking at all these different projects for somebody who is their first year at the park.

JB: No kidding. So anyway, the river monitoring was kinda carved off and they hired John Thompson [sic], as I recall. He was solely in charge of that.

TM: John Thomas?

JB: John Thomas.

TM: Where's he now?

JB: I think now he's still working for SWCA, Steven W Carothers and Associates, in Salt Lake City. They have an office there. Pretty sure.

TM: And Trinkle Jones.

JB: Yeah, I had hardly any interaction with her.

TM: You mentioned Lulu Santamaria, so I wanted to ask you about the first all women river trip. Were you on that trip? Cause Lulu was on that trip.

JB: Was it a commercial or private?

TM: It was a do-it-yourself trip.

JB: Yeah, I think I was on that trip with Nancy.

TM: With Nancy McCluskey and Lulu?

JB: And Lulu. [laugh] Yes.

TM: I'll put that down on a list of things to ask you about. Back in the days when everybody was...

JB: Jan was on that trip, too. My friend Michelle was on that trip.

TM: That was in the history books for the first all women river trip.

JB: Couldn't believe it.

TM: It is hard to believe, but it happened at one point and the question is who did it. So we start with what we know and then work backwards if we can. So I want to try to get that date when that trip was. So this is the team. This is a pretty powerhouse team of people here.

JB: It was. It was a great team. Really was.

TM: Thank heavens because the work is huge. And maybe we should start with...you mentioned the river monitoring. What do you remember of that program? What were you monitoring and why? [JB laughs]

JB: A lot of river trips primarily with the law enforcement folks, the river ranger types. Kim Crumbo and Curt Sauer. Measuring campsites/looking at campsites for the most part, that was the focus. How big were they? This work is still going on today. Trying to map them. It almost feels like that was the first time, but it couldn't be, of mapping all the campsites because I remember hiring a pilot. This was before we could go to Google Earth and get really good satellite imagery so we hired a pilot. His first name was Robin but I can't remember his last name. He would do low flights, I mean scary low flights, with his camera on the belly of his plane and take photographs for us of all the camps. We were measuring the impacted area, basically. It wasn't about peaking power or beach loss. It was about impact. Trailing, measuring the number of trails coming out of a camp; impacted vegetation uplands, that kind of thing. That was the primary emphasis.

TM: But wouldn't it be interesting to go back and look at those photographs from 1980 almost 40 years ago?

JB: Oh yeah. I'm sure they're there.

TM: See what the changes over time are. So the river team at the time, Kim Crumbo and Curt Sauer, what do you remember about those people?

JB: They were really good. Kim, super good boatman. I remember I always wanted to ride in Kim's boat because I didn't have to worry about a thing. They were just good trips, fun trips, and a lot of work got done. Those guys were pretty much running the show when it came to all the equipment and all that kind of stuff. It wasn't like resource management had all this equipment.

TM: Were these the law enforcement rangers at the time?

JB: Yeah, but there was a river unit.

TM: There was a river unit that had all the river equipment and gear.

JB: Pretty sure. Yeah.

TM: So the river monitoring I'm assuming would have been an outshoot of the 1970s studies to get to the 1979 river management plan that then got crosswise in politics in DC with the special interest

legislation passed and the river concessionaires got to keep their increase in user days and their motors increase in user days helping them financially when they got rid of their motors. And all that came in the new plan in 1981. But the monitoring that you were doing, in theory, was based back on work that was done maybe five years earlier or so the 70s...

JB: The Roy Johnson...

TM: ...Roy Johnson work.

JB: ...stuff. Maybe.

TM: And of course all that river monitoring stuff would happen in the summer during the river season. Not so much in the winter.

JB: No, we were down year-round. We did winter trips. We also accessed the backcountry from the river. One of the things that I remember, something that was really cool that happened when I was there, is that I was starting to...and I don't even know why I was assigned this...but it was the start of the revision of the backcountry management plan. The backcountry management plan had been predicated on issuing permits for a quota of people going in at a certain trailhead, basically, irrespective of how long people were going to stay and therefore how many people would accumulate in a place down by the river or someplace in the backcountry. The idea was to change it to the zoning that exists today.

TM: Ah, so hang on. That's an important point. Let me make sure I understand that. The backcountry management plan revision was going to take the prior plan based on we're going to meter the trailheads and...

JB: Well, the plan that was existing metered the trailheads. It had a quota for number of people going in at any one trailhead and it didn't really matter how long you stayed. They would just have a quota like a hundred people a day could go in the Hermit trailhead for example. And it wasn't even, I don't think, based on parties. And that was another thing, right? You can see what the river management plan, which was probably a change at some point, where what really made a difference was not necessarily how many people, but how many parties because parties all camp together. I mean, the number of people beyond a certain amount makes a difference. But the fact that people are all camping together means they're going to impact one site versus if there're say six parties and each party has one person in it, they are going to impact six sites cause they want to get away from each other. So anyway, none of that was considered in the backcountry management plan, the original one. So then the new one started thinking about different ways... Because what was happening was you were getting just too many people. I mean, literally a couple hundred people.

TM: Let's back up a minute because I was interviewing someone and they were telling me about the late 1960s. At Phantom, for example, during spring break there was unlimited number of people and you could stay for 14 days. It was sort of what the Forest Service and the Bureau of Land Management have now. Fourteen day/one spot and you have to move on to another place. But the trash and the things that were happening. Just totally too many people and out of control as far as permits. It was just first come first serve and wedge yourself in. People were leaving their food for the people that had just arrived. Kind of rolling this big wall of food forwards. [JB laughs] A fascinating time. Then they said, "Okay, we're going to stop all this and we're going to institute a lottery for permits to get on top of the Bright Angel campground and we're only going to allow 30 people down there as a total." This was in the late 60s/early 70s. Now somehow, eventually, that was spring-boarded into a backcountry management plan that you were updating in the 1980s. So I'm curious about that plan...the regional plan.

JB: There was a capacity. What you're saying is there was a capacity set for the Bright Angel campground.

TM: That had to be set because things were being just totally overrun.

JB: I don't remember that. We're talking about backcountry. That's front-country, I would say. In the backcountry, there were no campgrounds so all they had was a capacity per trailhead. So simultaneous then, probably, to having this capacity set for Bright Angel campground, which is kind of a front-country thing/a developed a site, they would have set, I'm guessing, capacities for all the other trailheads because they didn't understand or have the data to set a capacity for the actual backcountry sites. Take the Tanner beach area. That's the destination for everybody going down the Tanner, more or less. They didn't have the data to say, okay, we're going to limit it to only a hundred people at one time down here. And they didn't, certainly, have the information to understand that you don't even do it that way. What you do is you set the number of parties and put a maximum on the party size. They didn't know any of that. So what they did was...I'm pretty sure, you can look at the old plan...they just did what they could which [laugh] was to set a capacity for the number of people per day who could go in at any one trailhead. Because of that, as things got more and more popular, that capacity would be reached. It might've been parties going in even. You'd have to look. Not so bad as at Phantom, what you're talking about, not that bad but pretty bad where people were all concentrated in the most popular places right down by the river causing some damage.

TM: Tanner is a good example of that. A south rim trailhead, fairly easy access from Flagstaff. Not a too terribly terrifying journey down to the river. Suddenly you down there, it's a great place to hang out and there you go. Versus other trailheads much more remote. I'm thinking of Tuweep Point off Great Thumb or something on the north side down 150 mile where it'd be very difficult to get to the river. It gets you to a much different landscape.

JB: Of course Hermit would be the same as Tanner probably.

TM: Thank you. Yeah.

JB: The other aspect of that is just people's experience because it really wasn't backcountry. All of a sudden you're down there and it's like, oh, I'm here with 100 other people. So anyway, getting back to what was kind of an amazing thing for me is I was starting to do a lot of reading and research into how different protected areas managed backcountry. I kept coming up with the same guy, Dr. David Cole. Do you know David Cole? Tiny bit? You know who I'm talking about? David Cole is like the guru of backcountry impact research. He's retired now. He worked for the Forest Service at the Missoula... No, he was at the Aldo Leopold Institute in Missoula. I mean, this is the way things work, right? Serendipitous. This letter came to the superintendent and the superintendent shoves it on down to resource management. Comes to my desk and it's, "Dear superintendent," Dick Marks probably, "I will be traveling through your area and I'm a famous backcountry [laugh] researcher." No, he doesn't say that, but he says...

TM: But you knew that when you saw his name.

JB: "I do a lot of research [laugh] into backcountry." Yeah, that's exactly what happened. I saw his name and I was like, oh my god, we need to get this guy on a river trip so that we can go and access a lot of backcountry sites quickly. So we did. I called him up and I said, "We need you and we will offer you a free river trip." [laugh]

TM: [laughs] Everybody wants to do research on the river.

JB: So that started the whole collaboration between him and his colleagues and the backcountry management planning and then the river planning. It's things that Roy Johnson really didn't get into.

Roy Johnson got into a lot of things like when you bury your shit in the sand it never decomposes, that kind of stuff. But he didn't really understand some of the principles of... Here's one of them I'll describe that David Cole documented through his research, is that basically 80% of the impact is caused by the first, say, 10% of the use. So it doesn't really matter how many more people you throw into a site if those initial people have already created that impact. Then the other one is that group size, yes it's important, but it's more about the number of groups versus the number of individuals. There's a lot of things that Dave taught us. He also engineered some impact research into cryptobiotic soils there because that was a big thing about how long does it take to recover and how much impact is done by the first 20 people and who cares if the next 80 people go over it, it's already destroyed, right? So that was really an important time.

TM: What do you remember about him as a person? Dave Cole.

JB: Oh, Dave Cole. Super quiet, not shy, and very well spoken. When he did speak, it would be words of wisdom. He would think very deeply before he spoke. He had a good sense of humor. We did a lot of hiking together. There was another guy too, Bob Manning. Bob Manning was a social science researcher from New England. Linda would know where he's... Anyway, the three of us did a lot of hiking together and looking at all these backcountry sites, all these river sites. Basically Dave was just a really good guy. He was sturdy, loved the backcountry, was really passionate about what he was doing. And he didn't speculate. He was a scientist. He came out with one paper after another that was solid research. That was really important, of course at that point, because changing how people use the backcountry was going to be very political.

TM: Political how so?

JB: Because it's just tampering with how people... Like the boy scouts for example, who have used an area the same way with the same numbers. The boy scouts, for example, go with the same numbers. They go with large groups, typically. So to get them to understand why they might need to split up, that kind of thing, you've really got to have your data solid and gotta be able to stand behind it. If you're gonna clamp down on the number of people going into an area and try to spread them out. This is something that happened so zones were established, basically. And understanding...this is where Bob Manning comes in, is understanding that one of the things people really want is they want freedom. They want freedom of choice of where they're going to camp. Just like people on the river, right? One of the things about people on the river is people are always saying, why don't you just designate the campsites and make them say where they're going to have to stay every night. Well, that's just a really horrible thing to have to live with when you want a certain type of experience. So that was understood and so that's where the zones were all set up. All kinds of gyrations about what the boundaries of those zones would be. And then establishing capacities for the number of groups, setting group size limits within those zones. All that kind of stuff.

TM: Did you come up with its own idea or did Bob or did Dave or...

JB: I don't remember, but it's not new. This was something that was applied at other places.

TM: This was something busy or heavily used national parks we're dealing with?

JB: Yeah. Possibly Yosemite already did that. But I'm not sure. I'm sure we didn't come up with it.

TM: Okay. And I'm sorry, you were mentioning the benefits of zoning to avoid contact cause you had a really good point, which is we're going to limit...we're only gonna have three parties at the trailhead. Well, those three parties all go to the same place. Now I've got 30 people down there in three different parties of 10 and it's a party of 30.

JB: And by the way, the next day three more parties are coming down and they're going to stay also for 5 days or 10 days or whatever. So the next day, three more parties are coming down and pretty soon you've got...

TM: A hundred people down there.

JB: Yeah. Uh-huh. All at the same place.

TM: Alright. So to shift there to a zone, the concept is on any one night in any one zone, there's only gonna be so many people.

JB: Yes. There's only gonna be so many parties and there's only going to be so many people. The people numbers kind of shift because say your maximum party size, like on the river, is 16 if you're a noncommercial. Some trips don't have 16, some trips do, but you just assume all trips are going to have 16 and so your maximum number of people theoretically at any one time is whatever the party number is times the 16. But typically you're going to have less than that cause not everybody fills their... Here's something Dave Cole said, he said you have a choice. As a manager/as the gatekeeper, you can have a system where you allow less people into an area but you allow them a lot of freedom — well obviously, they have rules and stuff but they have quite a bit of freedom to go where they want — or you can allow a lot of people in an area and you can just load them up with rules. I'm exaggerating here, but the one where they have the freedom to choose where they stay is really what backcountry is all about and wilderness is all about. So anyway, that was one of the premises for the backcountry management plan. Kind of less regulation about where you're going to be, but at the same time setting a capacity on how many people at any one time are going to be in a certain area.

TM: Could you talk a little bit about wilderness. When I think of wilderness, I think 1964 passage of the Wilderness Act. That the Park Service wasn't real happy with the passage of the law because they already managed some of their areas as wilderness. They knew about wilderness in the 1930s when Toll and Tillotson wandered around in southern Utah trying to make Escalante National Monument out of Glen Canyon. They talked about wilderness values at that time. So the park had a long history of wilderness. Wilderness Act passed in 1964 and then now we're up to 1980 after the Colin Fletcher discover the backcountry boom of backpacking. Wilderness and the American Mind, Roderick Nash. What were you thinking? Do you remember what people were...

JB: I wasn't. [laughter] I wasn't really thinking about wilderness. [pause] I didn't do much with wilderness.

TM: Okay. But it was a component of the backcountry plan with regards as you say to group sizes and zones and how many people. Are you going to have less people and more freedom versus more people and less freedom, more regulations. That feeds right into wilderness in the concept of how are we going to manage the place.

JB: Well, yes, I guess, but it wasn't wilderness. But yet the thing is that I think in all the planning and the modernizing of how the park backcountry was managed, it did not forget that there was also a front-country. You have to look at the park holistically and that's what the backcountry management plan did. It recognized that there was also a front-country and so the backcountry didn't have to be the front-country. They are different things and they are there for different purposes and to provide a spectrum of experiences for people. One of the ends of those spectrums is you might call it wilderness, but it's probably not entirely wilderness because there's motorized trips coming through and other things going on. There's motorized search and rescue. There's probably some motorized maintenance going on. Probably things like that which you may not do if it was true wilderness.

TM: It's interesting because after the Act in '64, much of Grand Canyon qualified as wilderness with regards to the identification and principles of that. So all agencies, Park Service included, then were required to manage their wilderness suitable lands as if congress would eventually someday say, we're going to designate this with actual law in wilderness.

JB: I just don't remember that as a large component of the whole thinking of, well, as if. So what does that mean for this management plan that we're doing. I don't remember that as being a big deal is all I'm saying.

TM: It's interesting because, again, just talking about the back country plans, so many moving parts, and it seemed great that you had some pretty interesting thinkers, Manning and Cole, looking at the issue and willing to spend some time there and ponder.

JB: Yeah. I think that was really important to pull in the people who were on the cutting edge of this kind of research, basically. The social sciences behind what people are looking for/seeking in the backcountry, backcountry type experiences, and then also understanding the underlying environmental impacts.

TM: Meanwhile, while that was happening there were helicopters flying overhead. They had been flying in the park since Ed Montgomery brought in a couple helicopters and was flying in 1950. And then Halverson came in again after Montgomery left at the end of 1950. Didn't come back until Halverson showed up with his helicopters in the 60s. By the time 1980 rolled around, this was just before the fixed wing hit the helicopter, which happened in '86 I believe or '84, and that started the Overflights Act, some actual legislation to get involved. Do you remember what was happening in the aircraft overflights before that accident? This would have been '80, '81, '82, '83.

JB: You know, I think there was a lot of complaining and I think that there was the beginnings of monitoring. To go and sit someplace and record, not audibly record but make notes of, how many flights, what time, is probably the basis of it. That midair collision was the genesis of controlled airspace over Grand Canyon. If people hadn't died, there would probably be... Well, you got to wonder. That's one thing that people think about with Sedona and the Red Rocks, is if there was a midair collision or if there was a helicopter that slammed into the side of a cliff because it lost power and it was so low that it couldn't auto rotate then maybe the FAA would pay attention. Meanwhile, the number of overflights... So that's the parallel with Red Rocks right now is they've gone through these cycles of recording, complaining, nothing happening, recording, complaining, nothing happening and no midair, no tragedy. Well, Grand Canyon had a tragedy. I firmly believe that's the reason why. But meanwhile, there was just a lot of noise. Noise in places where people would go. They would hike someplace and then all of a sudden a helicopter would be there. It's like, what the heck? I expected quiet and not getting it.

TM: Superintendent Harold Bryant in 1950 is writing to his superior Tillotson in region whose writing on up to NPS director. Superintendent in Grand Canyon is saying, people come here for quiet and this thing is flying around backfiring over our heads. It totally changes...

JB: Below the rim.

TM: 1950. Oh yeah, yeah, they were down. So right away this is a new type of ride that impacts the visitors in a whole visitation and soundscape perception-scape. Really fascinating in how that is managed.

JB: Yeah, there's a whole story there. There really is. Maybe nobody's tackled yet the trajectory of that. You probably do know this, but on 9/11, I wasn't working there obviously, but I think those guys jumped on it when air traffic was shut down to go and record the natural soundscape without aircraft. Without high altitude. When they were doing some monitoring at Grand Canyon, at some

point they determined that the most prevalent noise, not the loudest noise but the most prevalent, the most constant, is high altitude jets. So here, all the jets were shut off so they could really kind of see what that...

TM: Get some natural quiet, ambient background sound.

JB: Yes, which they'd never get otherwise.

TM: And then there was air quality.

JB: Yeah, so air quality. Things have changed, I think, significantly with the air quality. A lot of the pollution, the haze in the canyon, was coming from California. It would come right up the valley from California. And also from the Navajo Generating Station and other generating stations, coal fired. Those things have slowly become under control. So I think air quality is much improved at this point. But anyway, there were monitoring stations. There was one at the Hopi lookout tower right there on the west rim. There was a person, Shirley Wetherill, Jim Wetherill's, aka Buffalo's, wife. Shirley has been the lookout up here above Fossil Creek for 17 years now. She moved. She got divorced and married a Forest Service person and moved over there. I supervised her. She would go and take all those measurements. I would go take measurements occasionally primarily for the state. The state was analyzing all that information.

TM: Would the state provide the air quality monitoring machinery?

JB: They would provide some of it. All kinds of things that they were sucking air in and actually measuring it. But there was also something that the Park Service out of Fort Collins, their research office there in Fort Collins, they set up technology which would look at the light reflection on the really fine particulates that were pumped out by these power plants. They were measuring that. They had measuring equipment on the north rim and on the south rim. That was a part that the Park Service did, otherwise it was mostly the state. But the park would collect all the samples and everything for the state. So that was cool. I met a lot of interesting people.

TM: It seems as though when America went to unleaded gasoline and we had a lot of different automobile motor changes in how fuel is burned...

JB: In particular in California.

TM: In particular in California. ...air quality got better.

JB: To reduce the smog which was what was traveling up.

TM: Air quality in LA got better. I mean, you could see the Peaks north of town which was a new experience for people because it was working. That then equated to anything downwind off to the northeast being Grand Canyon. Okay. Interesting.

JB: Burros.

TM: Burros, yeah.

JB: I can't say how many burros there were at that time when I first... But I can tell you when I first arrived, it was almost my first day there, I was told to go out on the east rim and arrest Mr. Erickson, Dave Erickson, because he was sling loading burros into the back of a truck at one of the vista points from the canyon. There's a backstory to this of course, but I was like, I'm going to go arrest Dave Erickson, twice or three time world champion bronc buster from Wikieup, Arizona. This guy has broken every bone in his body like twice. He was hired by Cleveland Amory of Fund for Animals, that we called "Fun with Animals." Fund for Animals was the nonprofit that the Park Service arranged

with to assist with the live capture of the burros after the big fiasco of shooting some of them and the public going crazy because you're killing Brighty. So that was kind of what happened first is the Park Service recognized the huge problem with the burros and decided that they would just shoot them. They started to implement that plan and public went crazy so they stopped. I don't know how Jim Walters got involved, and Stan was part of this, too, with Fund for Animals, but somehow Cleveland Amory stepped up. So then I was there. I got there and this operation was well underway. What it was was basically Fund for Animals hired, and I don't even know how they found Dave Erickson in Wikieup, him and his wranglers. So they came, there's probably like maybe 10 of them. There's Dave, and there's a bunch of cooks, and then the wranglers and their cutting horses and their dogs. They rode down onto the plateau.

TM: Down the Tanner trail.

JB: Was it down the Tanner? They went down every trail. I mean, they had hit these different locations one after another. They would camp out on the plateau with their canvas tents. They would have fires and they would tear down vegetation and burn it. They would bury their trash. [laugh] They needed to be babysat and so I was their babysitter, basically. That was my job. So they were down there and their operation was basically that... And they also had a helicopter. They would use their horses, which were the most amazing cutting horses. They would ride their horses and they would get some burros, one or two or maybe three in a rare case, up against a cliff or something. Somehow they would lasso them. I think they would just lasso them and then they would hogtie them. Then they'd put them in a net and then the helicopter would sling them out. This particular day they were slinging them straight out to the truck right there on the rim. It was very highly efficient, but it was right in the eye of all the tourists and everything. It was really [laugh] a no no.

I did not arrest Dave Erickson, but I did bring him in. We had a chat and that was my first encounter with Dave Erickson. Subsequent to that, I actually rode Dave Erickson's horse because he would fly in every day because he didn't want to sleep on the ground because he had broken every bone in his body. He was a hurting guy. But I got to ride his horse, and that was amazing, ride his horse around to the different sites and stuff. But they did use the helicopter a lot to haze these animals into a position where they could actually lasso them. I remember one time I was down there, I'm on my radio and I'm talking to one of the guys and I said something like, are you sure? Cause they had just dumped some ashes. They had a bag of campfire ashes in a grain sack that they leaned against their tent. One of these big canvas tents, right. I said something like, "are you sure that those ashes are out? Dead out, right?" I'm talking on the radio and I'm looking over his shoulder, or maybe he's looking over mine, but anyway, like eyes are...cause the side of the tent is going up in flames. [TM laughs]

I would eat with them. They just survived on coffee and steaks and donuts basically. That was kind of their diet. And they had these dogs, these like ranch dogs that were down there on the plateau, too, with them. Had no purpose whatsoever. They basically retrieved I'll say a round number of 100 at \$1,000 a burro. So \$100,000 that Fund for Animals spent and then basically Fund for Animals said, "We're done. That's all the money we have." After that the Park Service went into shooting mode and shot the rest of them, which I was also part of. There are some kind of interesting stories of the burros. Dave Erickson single handedly killed a burros with a rock cause it came at him. He just took a rock and just *boom* right on the head. So that was one that was dead. Down there in the Hermit area they kept a jenny, a female burro, who was pregnant in a corral cause they got paid by the number of burros they pulled out. They wanted this jenny to give birth and then they would get paid for two. But the jenny died. I don't know why. I don't know if it was that burro or some other one, but they couldn't just have the burro laying there dead, right, decomposing in an area that visitors would be coming through. So they put a rope around its neck and tied it to the helicopter and pulled it out in

full view of the Hermit trail. We started to get calls about, "what the heck is going on with this burro removal? They've got one by the neck." [laugh] Anyway, that was another story. I flew around a lot in helicopters then. I almost got left behind one time cause they just sort of forgot about me. I don't know. I was doing some kind of reconnaissance or something. I didn't have a radio and end of the day, you know, "Hey!"

TM: Last flight out. Did they fly away and come back?

JB: Yes. I did get picked up. [TM laughs] Yeah. It was a crazy, crazy scene.

TM: Some of the burros went out on boat.

JB: Right. Also at the lower end they did have a huge raft, like a pontoon raft, and they put a bunch of burros on a boat and floated them out. That's true. The other thing that was interesting is that they took burros out from the south side and the north side. They got a bunch of burros out of the Shinumo area by Bass there. I don't know if you know what Founders Syndrome is. Founders Syndrome relates to genetics. If a small population of individuals of a species is isolated they will tend to interbreed and if there isn't much genetic diversity, it kind of accentuates certain traits. In this case it accentuated the original wild ass from the Middle East look of these burros. They had the stripe down the back. They had basically zebra stripes on their legs, boxy noses. They looked really different than run of the mill burro coming out from the south side which had a much bigger population. But all those burros were just all thrown together in a corral and then adopted out.

TM: That would be an interesting animal to own. It wouldn't let you come up and pet it I bet. What else about that program do you remember?

JB: I remember that initially they were... Stan Stockton was doing a lot of the shooting, I think, and also Jim Walters, where they would tranquilize burros because they weren't really allowed to kill them. But they needed to get some data and they needed to put collars on them and stuff like that. There were a lot of overdoses. I think it was just they were really dialing in their methodology. I don't think they deliberately killed them because there was really no reason to do that.

TM: And that shoot to kill is still in place.

JB: Is it?

TM: Still is.

JB: If they see a burro they shoot to kill it?

TM: I believe that's true on north side. But in the traditional use area with the Havasupai and the Hualapai, from where the Owl Eyes Bay on the Esplanade and makes a natural break. So there's wild horses and wild burros and some of the horses are out of Supai. The piles of dung are knee high. It's a fascinating place down there where the concept of species management at a sustainable level is not in place.

JB: Are you talking about Supai or are you talking about Owl Eyes on the Esplanade?

TM: Owl Eyes on the Esplanade.

JB: Oh, so there's just like lots of animals there.

TM: Yeah. There's no keystone species predation. There's no hunting. There's no Erickson with a helicopter to try to pull them out. It's whatever the species can propagate and still survive. That's what's going on out there. Now the cat population is big, which is interesting, as the hikers will know

that wander up in that area. It's just real fascinating to see northside none, southside when you're camping on the northside, you can hear the burros braying at night. [burro sound effect]

JB: I wasn't paying attention to that.

TM: Really fascinating over there.

JB: I didn't know. Looking up at Owl Eyes. That's one of my favorite camps.

TM: We talked a little bit about cave management with Penny and Hans. Trying to just get a handle on a national park which has more caves than Carlsbad or any other national park. That these caves are huge there. They have every cave formation on the planet, it seems. And still there's more being found.

JB: Yeah. It's amazing. But we didn't really come close to revising the cave management plan portion of the resource management plan is what I think it was. We didn't. There was just too much. All we did was just inventory with those guys. There was a lot of research. There was a substantial amount of research going on that was within caves. I can't remember their names, but there's a couple researchers who their specialty was radiocarbon dating the bones that they would pull out of these caves. So for sure they were going down the river and they were hiking. Well, both from the rim and the river they were getting samples and stuff. So that was pretty important research, paleo. So that was going on.

TM: The Pleistocene remains in the caves. Absolutely amazing. Harrington's mountain goat, all that stuff, just stunning.

JB: Yeah, yeah. But as far as the cave management plan, there wasn't near the pressure on the park to do anything as there was for the backcountry, revising that and growing more the river management plan and air tours. I don't even know what the status of cave management is in the park right now. If they've ever totally tackled that.

TM: I think it's still the same. It's still under survey and it's basically there's a couple of caves that are sort of open. The Cave of the Domes off of Grandview. Everything else is closed without permit.

JB: Yeah, which just to say that if you're a wiley caver, you're probably going into those caves anyway.

TM: That's right. That's right.

JB: Cause that's the way cavers are.

TM: The nice thing at least about cavers so far, it seems like they're very reticent to disclose locations. There's not like websites with cave stuff online...

JB: It's amazing.

TM: ...like there is with rock art or rivers or any of the other things that are out there.

JB: Archy sites.

TM: Yeah. So as you said, I'm claustrophobic. I don't like that stuff. There's a lot of us that feel that way and that may be cave survival. [JB laughs] Then there was... [laugh] Just going through this list of things you had to do. You also had to evaluate research proposals coming in and everybody wanted to do a river trip as you mentioned.

JB: Yeah, and that was mostly just about going through the decision tree. Really ultimately, does it have to be done in the park? Cause if you can do your research someplace else, then you need to do your research someplace else and not in Grand Canyon.

TM: Do you have any stories of really neat proposals that people put in that did great stuff and just a whack kind of this proposal shouldn't even see the light of day?

JB: No, but I do remember people getting mad at me for asking questions of them like why. Why do you have to go down on a river trip? Or why can't you hike in and get those things? Or why do you have to do it in the Grand Canyon National Park? "Well, because I'm professor so-and-so and I get everything I want kind" of a thing. But no, I can't tell you too much. But there were a lot of them. A lot of research, a lot of applications. Yeah. People really want to get into the park.

TM: How many years were you there at Grand Canyon?

JB: Well, I say five, but maybe it was a little less.

TM: It looks like you went back to Grand Canyon again.

JB: Yeah.

TM: '99 - 2000.

JB: When I went back to the Grand Canyon, it was specifically to work on the river management plan.

TM: So from 1980 to 1984 and then from '84 to '87 going to University of Arizona for school of renewable natural resources.

JB: I'll tell you one more story about when I was a resource manager.

TM: Yeah, please. You can tell me 10 more stories.

JB: [laugh] Down in the Bright Angel campground in that area, there were always deer that had been fed people food and they would become problems. Dave Buccello was the ranger down there. He's the guy who actually later... I don't know if you remember that campground went in its denuded dustbowl state for years and years. I mean, literally, probably decades it was just a beaten out dustbowl. Then Dave Buccello got the idea. He ran it by me and I scoffed at him but he made it happen. He diverted water from the creek somehow to create these little irrigation channels and he identified specific campsites, basically. Then he planted willows, baccharis and stuff. It is a Garden of Eden now. It is amazing. He did an amazing job. That was a tremendous change and kind of an inspiring thing to see how something can change so much and create all this privacy between the sites. But anyway, so problem deers. I hiked down in there because he had requested specifically somebody from resource management come down and look at the deer problem. I basically told him that the only answer is just basically shoot the deer because [laugh] nobody's going to pay to transplant these deer. Arizona Game and Fish Department does not want these deer. And then during that same visit, there were tomato plants, volunteer tomato plants growing under the spigot in the campground there. I said, "Are you gonna pull that out or am I gonna pull that out?" I don't know if it was his prize plant or what, but he was so mad at me. I mean, I got a letter of complaint sent to resource management about my bad ideas and bad behavior. I had to bend over backwards to apologize to him because I wanted to keep the peace. I could have talked to him about maybe he needs to work harder on getting the visitors to quit feeding the deer. [laugh]

TM: Well, they were feeding them bits of the tomato plant. [laugh] There was a date palm at boat beach that eventually was removed. But who would of planted it? Would that have been planted sort of in the Dave Buccello timeline?

JB: I think before that. It could've just been a volunteer from somebody eating a date. There was a date palm in the cave...

TM: Christmas Tree Cave.

JB: Christmas Tree Cave. Yeah.

TM: There was a date palm up Havasu scattered here and there, and that could have been river people planting and hoping.

JB: There's a beautiful fig tree at Phantom.

TM: But the problem deer. In 1948 there was a pet deer at Phantom. They'd have been a problem for a long time. Still today is an issue.

JB: Right. Like the beaver.

TM: Yeah. Beaver. What do you remember about beaver and resource management? Who was looking at them? Who was thinking about them?

JB: Well, I told you about the beaver at Cottonwood, right? Where I trapped the two beaver.

TM: Yes.

JB: We talked about that last time.

TM: Tumbled down in their little bag.

JB: Right. That was pretty much all I remember about beaver management is relocating the beaver, which was a stupid idea. I think Buccello was into putting wire around trees. I think he was definitely good on that. But no, I don't think there was really much active beaver management going on.

TM: It's interesting thinking about the campground at Phantom Ranch after the '64 Crystal flood. That whole place got reamed and then they brought in a D7 Caterpillar and rip-rapped the daylight out of that through there. So it makes perfect sense that that campground was just a big flat dust bowl.

JB: Yeah. It was created by that piece of equipment.

TM: After all that work and nobody had thought about re-vegging and reworking it.

JB: No.

TM: Very interesting. Of course we don't think about that today. We go, ah, isn't this nice? You don't realize what it was.

JB: Yeah.

TM: Fascinating.

JB: And then they put the hand blow dryers in. [laughter] I couldn't believe it. Aah. That was after my time.

TM: I'll ask you about this because when I think of Grand Canyon...and today the Grand Canyon backcountry management plan which is sort of sidelined on a little railroad track somewhere, includes the trans-canyon/front-country corridor as part of the backcountry plan. So when somebody says there's a hairdryer or there's a hand dryer hot thing in the bathroom, I suddenly go, well, wait a minute. There's a hotel there. There's a solid waste treatment plant there. There's three-phase electricity there going from rim to rim that run these big giant heavy lift power things. It's fascinating that in the middle of this incredible what I consider wilderness area, one of the prime wilderness areas in the country, here's this bathroom with hand dryers in it.

JB: And I think with lights that are on all night. You can't think of everything, right? So they didn't think about that stuff. Just because you have sort of a front-country or a highly developed situation doesn't mean that you forget the experience of the user. And they did forget. Another thing that they'd forgot is you can see... You know the metal foot bridge down there that has shiny sides?

TM: The silver bridge.

JB: The silver...not the...

TM: Not the black bridge?

JB: It's over Bright Angel Creek.

TM: Oh, I'm sorry.

JB: That one.

TM: There's two of them that go across the creek there.

JB: Yeah, so the upstream one. You can see that from the rim. You can see the light shining on that from the rim. These are things that typically in the Forest Service a landscape architect would do a visual resource analysis and make sure that you're not going to see the reflection off the roof of the bathrooms at Phantom. So if they put galvanized steel on it, for example...no, you wouldn't do that because you're going to see that from all these different locations. The Park Service at Grand Canyon, they weren't thinking about some of those things when they did some renovations down there. So the hand blow dryers, those are great but they make a noise. So if you're camping there, what you want is quiet. And they forgot. They just forgot.

TM: Let me ask you about this because it's interesting. If you walk today along the rim between the El Tovar down to the Kolb Studio, there are some wonderful historic, old, tiny looking lamp poles that have wonderful glass globes on them right along the rim there. Half those globes are painted black on some of the lights and on many lights there are no half painted black at all. So if you go down to Phantom Ranch and you look back up at the rim or you're on the Tonto level, which more people, just a whole row of lights up there.

JB: It's terrible. It should not be like that.

TM: Is this an issue of sometimes there's a resource management team that looks and corrects these things and sometimes there's not?

JB: Mhm.

TM: How does that happen? Cause I would like to assume that in such manner, and by such means as we'll leave it unimpaired for the enjoyment of future generations. This is a long haul journey here and we need to kind of stay on top of this stuff. How do things fall apart?

JB: How do things fall apart? Because again, they're not thinking of everything. I have to use the Forest Service again as an example. The Forest Service employs more landscape architects than any other agency in the...anybody in the world basically. And this is the reason they do, is because the landscape architect thinks about the visual resource. They were brought on board because of the mistakes the Forest Service did with clearcutting in the past. But they've expanded out into every aspect of color, reflectivity, lighting, noise, all that kind of stuff. The Park Service doesn't really have that so much. Some of them do, some of them don't. So they overlook some things like that. I'm sure somebody went, oh, oops with those lights and painted some of them. Actually they could have just designed the lights or set them back on the other side so they aren't even at that angle. Here's another example of where they really thought something through. Verizon or whoever, I don't know whoever the provider is up there, wanted to put a new cell tower right behind the community center so there was a lot of thought about what kind of coverage that would provide or wouldn't. There was a deliberate effort to mask coverage below the rim cause they didn't want people on their phones when they're hiking on the trails. Blah, blah, blah to your friends, annoying everybody else and stuff. That's just an example of thinking through the visitor experience not just on the rim but in the canyons, both places.

TM: And now of course, on day one you can talk on your cell phone as you go down Marble Canyon.

JB: Oh, I know. Our first camp, I took some pictures and I sent them to my friend. [laugh]

TM: So it just grows. On the trail there's cell phone service now in spots. This is a fascinating journey unimpacted for future generations dealing with technology and social constructs.

JB: Well, and wilderness. We talk about wilderness and bringing your cell phone. Any kind of technology.

TM: Fascinating. Would this be a good place to stop interview 2?

JB: Sure. Yeah.

TM: Anything else you'd like to wrap into this before we? Jennifer Burns, thank you so much for a wonderful interview. Today is January 24th, 2019. This is the end of Part 2 Grand Canyon oral history interview. Thank you so much.

JB: You're welcome.