

**Interview with Gabriel Tucker by Max Geier, August 19, 1997 at the Corvallis Forestry Sciences Laboratory; Transcribed by Elizabeth Foster**

*Gabe Tucker engaged with Andrews Forest as an OSU undergraduate and completed a thesis on needle morphology of western hemlock. He then completed a MS at U Washington and PhD at Cornell before returning to work in the Coast Range and on silviculture studies in Andrews Forest. Working closely with Bill Emmingham, Bill Ferrell, and Klaus Puettmann, he co-led establishment of the Uneven-Aged Management Project to explore potential for growing Douglas-fir in multi-aged stands.*

**Max Geier:** You were at the Andrews and talking a little bit about how you worked at the Andrews since being a graduate student. I thought maybe we could start out a little bit before that actually, and describe a little bit about your background and academic path to the Andrews. Did you work in forestry? Why the Northwest? Why the Andrews? Why do you work here?

**Gabe Tucker:** I actually started working for the Andrews as an undergraduate. I was a forestry student over in Peavy [Hall], here. I had come to get into forestry and be in the Northwest. Well, I came to OSU specifically to go into forestry, and OSU is known to be a very good forestry school, and so I ended up here. I had started my undergraduate at the University of Arizona because I was working in biochemistry, actually, at that time. I had a high school job working in a biochemistry laboratory and the job took me, after graduation from high school, to the University of Arizona. And I was working in biochemistry, but what I really wanted to do was to go into forestry, because it had a lot to do with natural history. As a child, because of my sixth-grade science teacher, I was always interested in natural history. Among the fields of natural history, the one that I thought would be most applicable to my interests was forestry, so I decided to go into forestry when I was still in high school.

**Geier:** Where did you go to high school?

**Tucker:** A place called Germantown Friends near Philadelphia. I grew up there. It was a Quaker high school and I was interested in natural history, but it had to be something professional. I had to find some kind of profession. At a young age, the one that I identified with was a forest ranger, so I decided to go to forestry school. I ended up at the University of Arizona, because the person I was working with in Philadelphia at the University of Pennsylvania, took a position at the University of Arizona and he asked me to come out and train his new technician in a technique I had developed in his lab. So, I was out in Arizona and did a semester there, but the forestry program there was nonexistent, so I transferred quite quickly to OSU. At that time there was no Department of Forest Science, only a Department of Forest Management that had a forest science option. There was an undergraduate curriculum in forest science that kind of augmented the normal forest management track for an undergraduate. But there was no department of forest science *per se*, which is a main part of OSU that now works on the Andrews.

So, I really got into it as an undergraduate, and you're required at OSU to take two summers of work within forestry. Most forestry schools have a summer camp where you go and live together, and OSU is adjacent to McDonald Forest, so there is no need for summer camp. But you do have to work within the industry. I kind of blew off the first summer painting houses, I only had two summers left in my undergraduate career, so I had to spend both of them working in forestry. I spoke to my advisor, Bill Ferrell, who is still quite active in LTER. He was my undergraduate advisor, and he was also, Jerry Franklin's master's advisor. Anyway, Bill Ferrell knew I needed a job, and he took my resume and sent it over to Chuck Grier who was working on the IBP program, International Biological Program. He was over in the Forest Research Lab and worked very closely with Dick Waring and Jerry Franklin and others who were heading up what was then a major research project. I'm sure you've heard about that. He got my resume and I went over for an interview. I came for the interview and sat down, I don't know if I've told you this story. It's kind of a funny story. Grier sat up there, rocking back-and-forth in his chair, reading my resume, and it was dead silence for 15 minutes or more as he sat and read my resume and thought about it. I was getting pretty nervous, you know. I really wanted this job bad. I had to get a job in forestry, and doing research was exactly what I wanted to do. I had other research experience, but it wasn't in forestry. Finally, he looked up from my resume, looked at me and said, "Well, it looks like you are qualified, but do you fly fish?" Totally flabbergasted, I said, "No, I don't fly fish, but I can learn fast." (Chuckles) I really wanted this job. And so, Grier said, "Well, it turns out the guy you will be working for, he doesn't want any turkeys. You have to be a fly fisherman to take this job." And I said, "Okay, I will learn fly fishing."

He was actually hiring people to work with this guy named Steve Running. Steve Running was Dick Waring's technician. He had done his masters at OSU and was now a technician. I think he did his masters with Dick Waring. No, Dick Walker over in Botany, and he was a technician for Waring. Running had several research sites inside the Andrews, and ones outside the Andrews located near deep fly fishing holes. His strategy was you had to work a very long day doing water relations, which is the study of plant physiology, the water relation of plants in regard to plant physiology, and you had to start pre-dawn. At 3:00 in the morning, you had to be up and measuring plants. You do what they call pre-dawn moisture stress. You had to start pre-dawn, get a sample from the plants and put it in this pressure bomb, and test it before the sun rose, because then the plant moisture system changed as the sun rose. You had to get the conditions, and then every two hours throughout the day, you would use a parameter and measure the transpiration of the plant. But that only took like 10 to 15 minutes, so for like an hour and 45 minutes, you, basically, had nothing to do. Except you had to start at 3:00 in the morning and go to 10:00 at night. You work like 10 or 15 minutes every two hours for almost all the day.

**Geier:** So, the fly fishing fits in-between.

**Tucker:** Yeah, so the fly fishing fits in-between. We couldn't do it at the Andrews, of course [it was closed to fishing], but there were sites outside of the Andrews that involved IBP. He was

leery about getting a “turkey” [technician who couldn’t fly fish], so the first day at work, he sat me down. Steve Running was very serious about this, and he said, “Okay, you get out a piece of paper and pencil, and we are going to make a list of the equipment you’re going to buy and bring back, and don’t come back to work without it.” And it was a rod, cougar, reel, you know, a forward-weighted fly-fishing line, so much lead. So, I just listened and went down to Anderson Sporting Goods, bought this stuff, and came to work.

**Geier:** Technical equipment.

**Tucker:** But that point aside, the work was really serious and they took it very seriously, but at the same time they needed to get through the day, and this was the way Steve Running ran things.

**Geier:** When was this?

**Tucker:** This was 1974, the summer of 1974.

**Geier:** You came here in 1972?

**Tucker:** I came in ‘72 and I did four years here, fall of ‘72 to spring of ‘76. Starting in June of ‘74, I worked at the Andrews with the IBP program, and my junior and senior year, I worked during the school year as well. They kept me employed during the school year. I worked part time through the school year, my junior and senior year. A lot of it was water relations, because that is what Steve Running and Dick Waring were working on, and that was a big part of the modeling that was going on. IBP was developing simulation models, and a lot of the simulation models had to do with plant moisture stress. That was a real driving factor; the physiological state of the plants and how they would photosynthesize, whether or not their stomates were open or closed. The stomates open when they have plenty of water, and therefore, photosynthesize. That, in return, impacts productivity of the ecosystem. How much primary, how much carbon was being fixed, and therefore, the net primary productivity increases. Running was a very jovial guy, but at the same time, he took his work incredibly seriously, and I don’t think people ever realized how serious of a scientist Steve Running was all this time. When he went from the IBP program into a Ph.D. program, and now is at the University of Montana and really a world-class scientist, he just totally stunned everyone. I think the IBP program and Andrews’ program was kind of a ferment which inspired a lot of his intellectual development in ways that people never imagined, that this joker would go off and become the scientist that he is today.

**Geier:** While he was here, he was a technician?

**Tucker:** Right, while here, he was a technician. He wrote a paper with Chuck Grier, and several with Dick Waring, but people always saw him as Dick Waring’s assistant. They never suspected him in his own right as a scientist. But he was developing his own ideas and coming into his own, unbeknownst to many scientists around him. He went to Colorado State [where he

worked], with a guy named Ken Reed, did his Ph.D., and went on to the University of Montana. Now, he gets literally millions of dollars in grants and has a whole platoon of graduate students.

**Geier:** He apparently made quite an impression on you, beyond fly fishing.

**Tucker:** Yeah. I also met Bill Emmingham, who is now here at OSU, and also Chuck Grier and Dick Waring, but it was really Emmingham and Running I worked the closest with. I was able to do an undergraduate thesis at the Andrews, and nobody else I know has done an undergraduate thesis at OSU, although it is in the catalogue. You look at the schedule of classes it's always there, undergraduate thesis. When I saw it I said, "Well, I'm going to try that," and I had some ideas. We were doing pressure bomb measurements and plant moisture stress measurements at a place called the Hi-15 in the Andrews. You may be familiar with it; it is Watersheds 6, 7 and 8. Watersheds 6 and 7 were just being harvested at that time in the mid-'70's. In fact, I think they were cut in '75, '76, something like that. We were doing pressure bomb measurements on smaller trees, and I was interested in the development of the trees following clear-cutting. How are these trees going to respond not only from a plant moisture stress point of view, but also from a leaf morphology point of view? How are they going to deal with the large amount of incoming sunlight, when they had been dealing with a very shady environment all their lives? We collected samples, I sectioned the samples and looked at the development of the leaves, and wrote this up as an undergraduate thesis. Not only the IBP program, but the Andrews research enabled that and really started me. That was the first paper I ever wrote in the forestry literature.

**Geier:** You came in with quite a little bit of technical expertise for someone who was an undergraduate. Did you see that as common with the people you were working with?

**Tucker:** Not really, no. I had worked as a high school student in a laboratory and I didn't know of anybody else that had done that. That didn't captivate me as much. I kind of wanted to do my own thing. My father had worked in medicine and biochemistry. I had wanted to do science, but a different kind of science, and this was the science that I wanted to do. The Andrews and the IBP program created the environment that allowed me to really do that. That undergraduate thesis Bill Emmingham and I later published, got me into a master's program at University of Washington, and then, got me into a Ph. D. program at Cornell. It was that start that really kind of got me going in my career. I really credit it to the people, the IBP program and the Andrews, where it happened.

**Geier:** Have you ever regretted your decision to come up here, or were you attracted in by Oregon State's reputation or the forestry complex? Had you any other options at that point?

**Tucker:** No. When I went to Arizona, I had applied to other places. But, when I came here I decided that I wanted to go to OSU and I didn't apply to anywhere else. I didn't know about the Andrews at that time, so it wasn't until I got here that I really found out about it.

**Geier:** You talked a little bit about your first impressions working here with Grier early in the interview. What were your first impressions of the site when you began to work there?

**Tucker:** Well, there were no buildings. I think maybe the warehouse was there, but we never went in the warehouse. Actually, we went to the weather station there near the warehouse. That was there in the early '70's, and I think maybe the warehouse was there, but no other buildings. The road stopped at that warehouse you see on the immediate right as you drive into the headquarters site. There weren't trailers. There wasn't anything. There was nothing on the Andrews. There were trailers outside the Andrews. There was one down at Blue River, and there was one over at Rainbow. That's why the fisheries unit now at the Andrews is called Rainbow, because Rainbow was originally a trailer in the Rainbow trailer park in the town of Rainbow on the McKenzie, where the covered bridge is located, a very scenic little town called Rainbow. It's called Rainbow because there was a trailer that housed the fishery people in the town of Rainbow that was part of the IBP program, but at that time there were no facilities.

My first memories of the Andrews were that weather station, and then, of course, Watershed 10. Watershed 10 was where everything happened, because it related to IBP. You had to do a replica of your research on Watershed 10. You may have research sites elsewhere, but you also did that kind of data collection on Watershed 10. Watershed 10 was cut at about that time, I think in '75 or something. You would know better than I. But we did some data collection in Watershed 10, I believe, before it was cut, and did these pre-dawn measurements. A lot of data I collected, I didn't see where I was, because we were doing it pre-dawn. Once a month I think it was, we had to drive around the Andrews. We started at like one in the morning, and would drive around the entire Andrews to different sites where we would quickly do plant moisture stress measurements using a pressure bomb. It was quite difficult because we were often measuring very large trees, like old-growth trees. The way to do it was to use a shotgun, blow a branch out of the tree, then take the branch and stick it in this pressure bomb, apply pressure and measure the plant moisture stress of the plant. In very quick order, we had to start at one in the morning, and by the time sunrise is coming, we had to reach the last of 10 or 15 sites all around the Andrews. They were recording temperature, soil temperature and air temperature, at all these sites, as well. And they were what we call reference stands. You've heard of reference stands? Once a month during the program, the reference stands were measured for plant moisture stress. So, that's another early memory. I mean, you had to have a good sense of humor to drag yourself up at one in the morning and to go through that. So, there was a lot of camaraderie.

**Geier:** Were there other undergraduates working there?

**Tucker:** Not that many. Actually, there were a few. It was interesting. I wanted to mix with them, get to know them, but a lot of them stayed down at a place called Gypsy Camp. It was where all the hippie, quote, unquote folks, hung out. "Gypsy Camp" is kind a youthism, or hippyism, what they came up with for the name of a place. At that time, that was the only place that anybody stayed on the Andrews, and where any large number of people camped out. In a sense, Gypsy Camp was the first headquarters. Running didn't like Gypsy Camp. I always

wanted to stay there, and he would never go anywhere near it. That's just the way Steve Running was. So, we never stayed at Gypsy Camp, and I never really got to hang out with my peers, fellow technicians or assistant technicians.

**Geier:** Just worked pretty closely with Steve?

**Tucker:** I worked very closely with Running and that's why he was so intent on getting somebody who wasn't a "turkey." To him, if you were a fly fisherman, then it was okay.

**Geier:** You probably weren't a hippie?

**Tucker:** Well, I don't know. Because, obviously, I had to work very closely with this guy. I mean, we were camping out the whole summer in different places, and getting up at odd hours and doing these measurements. It was important that we get along, so he figured a big part of getting along was fly fishing.

**Geier:** Did you get good at that?

**Tucker:** I never got really good at that, but I really enjoyed it. I still do a bit of it with Al Levno, who's kind of the resident expert. The last time I went fishing was with Al Levno.

**Geier:** What was your impression of Andrews' people interacting with people at established communities, like at Blue River or the upper McKenzie area?

**Tucker:** Well, it was different at that time. There were a lot more scientists around during the IBP program, and because there wasn't a headquarters where everybody went and stayed, people interacted more with the community. We went to the Whitewater Cafe for breakfast, and we often had dinner there. And the Blue River Tavern was open and running as a tavern, so we would go there in the evening and have a beer. We didn't interact a whole lot with the loggers, but there was a lot of logging going on at that time. So, it was a different, a very different relationship. Now that there is a headquarters, we all kind of go there and hang out there, and don't mix much with the community. But at that time, we were living in trailers and mostly eating at restaurants, so I think that there probably was more interaction with the community, because there was a lot more logging going on and more of a vibrant community. Blue River is a ghost town now compared to what it was twenty years ago, when logging was really booming.

**Geier:** The level of interaction was pretty much focused on people coming up there to see what kind of work was going on?

**Tucker:** No. The interpretive aspects of the Andrews are really very recent. There was no old-growth trail, no interpretive kiosk, and we didn't have groups of undergraduates coming to study like we have now. So, there was a lot less of that type of interaction with the forest. Any interactions we had was afterhours with the local community, and it was much less formal.

**Geier:** It was strictly during the summer that you were up there?

**Tucker:** Right. Yeah, this is when I worked up there in the summer and then we would collect data and bring data and samples down to the [FSL] here. And there were people like Art McKee and others who were up there year around and graduate students, but at that time I was an undergraduate, so I was doing classes and stuff during the school year.

**Geier:** Do you have perceptions of the interaction or connections between scientists working up there and people working with the ranger district?

**Tucker:** I didn't personally at that time, although a lot of interaction had to do with the fairly close connection because of the logging of Watershed 10, and then of the Hi-15 watersheds, which took place in the early to mid '70's. But, I didn't personally have a lot of interaction with them, although I'm sure Art [McKee] could probably tell you a lot more about that.

**Geier:** I was just curious, was there any kind of orientation to working at the Andrews at the time you started working there? Were people oriented to the philosophy of the place?

**Tucker:** Oh no.

**Geier:** A bunch of fishing equipment and that was it?

**Tucker:** Well, when you work with Steve Running, yeah.

**Geier:** How do you spell his name by the way?

**Tucker:** R-U-N-N-I-N-G.

**Geier:** Okay. That is what I had.

**Tucker:** He's now at the University of Montana. You could call him and he would give you an ear full.

**Geier:** How long was he there, do you know?

**Tucker:** How long was he at the Andrews?

**Geier:** Yeah. Working up there fishing.

**Tucker:** At least five years, I think. I can't remember when he went and did his Ph.D. He was thinking about doing his Ph.D. He might have actually worked on his masters connected to the Andrews. I can't remember. But it was really remarkable what happened to him. I will never forget once when Running related to Chuck Grier that he was thinking about getting a Ph.D.,

and Grier said, “You’re going to get a Ph.D.?” You know, like, “Why don’t you just be Waring’s assistant?” Running said, “I’m not going to be Waring’s assistant for the rest of my life. I’m going to be a scientist in my own right.” Essentially, that is what he was saying. Nobody ever expected that he would turn into the world-class scientist that he has. He’s every bit as much a world-class scientist as Dick Waring, who he had worked for. I mean, NASA and NSF are showering him with all kinds of research grants at this point, and he’s incredibly successful in his own right. There was a paper that he, and I think he and Waring and Grier put together, that kind of got him going into large-scale, ecosystem modeling. Looking at the large-scale ecosystems, which is what he does now, really, from remote sensing and modeling. A lot of that started at the Andrews, and the simulation modeling and what not that was going in there.

**Geier:** Your perception of that time, that a student in the process of becoming a scientist, would be unusual among the Andrews’ people working as technicians?

**Tucker:** It’s hard to say. I think in many ways, the Andrews created a real ferment that allowed people to think a lot and develop ideas, so that it gave people opportunities they wouldn’t have had otherwise. I don’t know if Steve Running, for example, would have gone on, or if I would have gone on to a Ph.D., had not it not been for that, but it certainly was crucial to our situations.

**Geier:** Does it stick out in your mind, mainly because you worked closely with him, not because he was an exception to the rule?

**Tucker:** No. It was because people underestimated him and he did go on to great things. I think a lot of that had to do with his experience at the Andrews and IBP program. Another person was Henry Gholz, who was a graduate student at the time, and is now a professor at University of Florida at Gainesville.

**Geier:** Henry Gholz.

**Tucker:** Gholz. G-H-O-L-Z. He started out doing a master’s program with Waring then they quickly eliminated the master’s and turned it into a Ph.D. He did really great stuff and now has gone on. He really benefited from that whole scene. And it’s hard to say, what was going on. In many ways it was much different than it is now. During the IBP program, there was no facility, so that wasn’t the focus. Right now the focus that brings people together, is kind of the facilities that are there, and everybody kind of staying in those buildings. But then, there wasn’t that, but there was this unifying research program in the IBP, which in many ways was much more unifying than LTER. It was a very short burst of energy, a short infusion of money they knew wasn’t going to last a long time. It wasn’t long-term, it was very short-term, but it was a kind of funding that forestry research had not seen and never expected to see again, so they were making use of it. That really pulled people together, and made them think not only of their own work, but how they could develop simulation models to pull in the work of other people as well. And it had a certain camaraderie and an atmosphere that I haven’t seen in



research since, and which is really different from the LTER program, which is much more entrenched in the long haul.

**Geier:** Sounds like it was almost a different mission, a different sense of mission and lifestyle?

**Tucker:** Well.

**Geier:** Was there a different kind of dynamic there? I was curious if there were any particular problems that came up when you were out there. One that struck me, driving around at night on the roads at the Andrews, was you either got to know the roads really well, or you were just lucky. Which was it?

**Tucker:** There was also a lot more logging going on, so the roads were better maintained. Right now, the roads are much more dangerous than they were then, because road maintenance is dependent on logging. And there is very little, if any logging going on, so the roads aren't graveled and they don't brush the sides of them. The use of the shotgun kind of had me concerned, as I didn't come from a background of hunting and fishing for that matter. You're dealing with this shotgun and it was a little spooky, but we got used to it and nobody was hurt, and the most important thing you had to remember was one person. There was a fellow named Glenn Hawk who worked there, and Hawk had tried out a technique with the shotgun where he would lie flat on his back and hold the shotgun, because, you had to steady yourself. He wanted to try a new technique, so he would lie flat on his back on the forest floor and hold the shotgun to his shoulder. He got a much steadier aim at the branch he wanted to shoot. When he fired the gun, it had no place to go. The kickback, or whatever from the gun, had no place to go and really hurt his shoulder. That was the way not to do it. Glenn Hawk apparently taught us that.

**Geier:** Did you have much experience out in the woods before this happened? Sounds like you were doing laboratory work.

**Tucker:** Yeah, I had some. I had been in scouting and I did an Outward Bound program. I was pretty comfortable in the outdoors, and I did a lot of mountaineering through my undergraduate, too. So, being in the outdoors didn't bother me. There was no problem actually being in a car on a logging road. We had these big cylinders of gas that we had to carry around everywhere, and we were really worried that if you broke the valve stem on one of these, it could just be a bomb, we were always concerned about that, and Running was very careful. He made a box that kind of bolted down in the back of the station wagon and kept it stable. We had to carry this large, full-size cylinder of nitrogen gas everywhere we went. Now, if we had been rear-ended, you know, by a logging truck or something and had broken the valve stem on that cylinder, it would have just taken off. That was probably one of the biggest dangers and one of our biggest concerns.

**Geier:** What was that for?

**Tucker:** It was for the pressure bomb. You see, to do the plant moisture stress measurements, you had to put the plant in a chamber with the cut branch end sticking out. Then you would apply pressure and would restore moisture up to the cut end, and the amount of pressure that it took was equal and opposite to the tension that was present within the plant when it was pulling the water column up the leaves. It's a very good, accurate measurement of the moisture stress, the tension the water column is under. But you had to carry around a source of pressure with you, which meant a big cylinder of gas. That was probably one of the biggest dangers, but nothing ever happened. We were driving old station wagons at that time. There wasn't even a radio at that time, and the OSU motor pool wouldn't even issue a car with radios, AM/FM radios, because they were, you know, frivolous. Now, you can't buy a car without a radio, or it is cheaper for them to get them with it. Anyways, we were driving old, old station wagons around the Andrews. I guess at that point in my life, you know, when you're a teenager, nothing can happen, so we didn't really worry about that.

**Geier:** What led you to leave OSU and go elsewhere for your graduate work at that point?

**Tucker:** When I left OSU (chuckles), one thing I knew was that I wanted to do be a forester. Another thing that I always wanted to do was to go into Peace Corps, so I quit working on the Andrews program in June of '76, and the next month, in July of '76, I was in Africa working in the Peace Corps. Then my life kind of went off in that direction. I worked for six years overseas in West Africa, and I spent five years on a Ph.D. program. So, it wasn't for ten or eleven years that I got back to the Pacific Northwest. At that point, I was working with OSU and started working at the Andrews again.

**Geier:** In the meantime, what about OSU or the Andrews led you back there, and why return after all the work in West Africa?

**Tucker:** Yeah. Well, it was a good opportunity to work. Once I got my Ph.D. at Cornell, I was married, had kids, and I needed work. This was a good opportunity and to come work in the OSU College of Forestry. I applied, and was lucky enough to get it. So, I ended up back here. At first, my work didn't directly associate me with the Andrews, but I made contacts, renewed my old contacts with Art McKee and others.

**Geier:** Had you been in touch much in the interim?

**Tucker:** In the interim, a little bit, a little bit. I would always look up McKee and Running at national meetings. We would go to the ESA, Ecological Society of America, when I did my masters. When I did my masters after the Peace Corps up at the University of Washington, I was in touch with people here at that time. It was usually through scientific meetings that I would kind of stay in touch with folks at the Andrews, and people I had worked with.

**Geier:** You came back as a post-doc?

**Tucker:** Yeah, I came back on a post-doc, essentially.

**Geier:** When did you wind up going up to Evergreen? [College in Olympia, Washington]

**Tucker:** I came back here in January '91, and I started work at Evergreen in the spring of '95. In the interim, I worked somewhat on a program that kept me in the Coast Range, not at the Andrews. But then, starting in about '92, '93, I started working on the Andrews program, which I've been doing ever since. Mostly I've been affiliated with the Cascade Center [for Ecosystem Management], as opposed to the Andrews proper, although now I'm doing more in the Andrews proper. The Cascade Center is an interesting alliance between the Department of Forest Science, the Willamette National Forest, mainly the Blue River Ranger District, the Andrews and the PNW Station. I've really enjoyed that, working with the ranger district and the projects that we've been working on.

**Geier:** Back up a little bit, and we will talk about the transition from your 1970's undergraduate work through your return in the '90's. What were the major transitions of Andrews in that period? I want to get two things here, first, if you can remember when you first came out here as an undergraduate, what was your perception of what you thought of experimental forests for the purpose of the forest and the site itself. Do you remember?

**Tucker:** Well, at that time I think my thoughts were pretty traditional. Ecosystem science wasn't something that I really appreciated, and I think it was the Andrews that made me appreciate that, whereas my concept at that time in the early '70's of what forest research and what experimental forests were all about, was very traditional.

**Geier:** Explain what you mean by traditional.

**Tucker:** Oh, what I mean is it would have to do with how a given species of tree would grow on a given site and how that would be harvested, and how much wood it would produce, and maybe how that individual species of tree would work physiologically, and how it would grow faster. But it didn't take in all the ramifications of the ecosystem, which is what we deal with now and what the International Biological Program at the Andrews made us all appreciate. It just was a quantum leap or maybe several orders of magnitude more complex when we were done with it. It really made us realize how challenging it is to deal with forest ecosystems as opposed to agricultural systems, which is what forestry really was much akin to not that long ago.

**Geier:** Can you tell, had you been involved with or even been in any other experimental forests up until that time?

**Tucker:** Let me think.

**Geier:** You mentioned the McDonald Forest. [OSU's McDonald-Dunn Forest near Corvallis].

**Tucker:** Well, of course, McDonald Forest. As an undergraduate, I did all of my undergraduate studies out there. Instead of having a summer camp, we just went to “Mac” Forest every week, almost every day, in the vans. The Mac Forest was at that time, as much as anything, a learning environment as much as it was a research environment. There were a lot class labs conducted out there, and a fair amount of research. There has always been a fair amount of research, but for me as an undergraduate, it was the learning, the labs and what not, that we would do out there. In addition to different research trials, which were usually species-oriented or site-oriented, that learning was not so much ecosystem-oriented, which is what is going on at the Andrews.

**Geier:** When you went to the Andrews, was there anything that kind of hit you that this is different than the whole forest, something that kind of hit you in the face?

**Tucker:** Yeah, in many ways the Andrews as a piece of land, was really remarkable. I think the beautiful old-growth stands that are there, and the work that had been done to document those old-growth stands and their differences in climate as you go up a relatively steep altitudinal gradient. I think that’s what, even at that time, was really striking about the Andrews, these beautiful old growth stands, and then the documentation of them and research associated with them via the reference stands that was going on. That to me was the most striking thing about the piece of land itself. Perhaps more important than even that was just the people, the *esprit de corps*, and the interest that was going on. The full ferment of activity had as much to do with the people as the place, you know. And then, the synergism, obviously to that piece of land, and the people that were drawn to it. What that created, I think, was a whole research community that revolved around the Andrews, that is really unsurpassed in forestry. I mean if you look around, and I’ve worked at the University of Washington and at Cornell, and have visited the Boggess Forest for Cal-Berkeley and several forests related to Cornell, and there really is nothing that compares. I think maybe Oak Ridge in Tennessee, and then Harvard Forest, are maybe on a par with the Andrews. But they’re really few and far between.

**Geier:** When you came back in the early ‘90’s, what were the first impressions for you here? What do you recall when you first arrived? You were expecting something. What did you find?

**Tucker:** A lot of what had happened in the interim, was the building that had gone on. At that time, there were a lot more buildings and a lot more of a permanent focus on research, than had been there before. Like I said, when I left, there was only a warehouse, and when I came back, there were several warehouses and office-trailer combinations, and people living up there all the time. In many ways, the focus was now the place that we would interact, this group of buildings. And in many ways, the land was still the same. There was some research going on, notably Dave Perry had installed some experiments, and now the focus was long-term. It was the LTER program instead of the IBP program, and LTER was unsurpassed in its commitment to the long haul. That just brought another, a different perspective. In other words, it wasn’t a short burst of research in half a decade. It was several decades, centuries of work, that was going to be going on at that site, and it was obviously this new commitment. That it had been

named [a reserve] in the Man and the Biosphere Program [of UNESCO], which was obviously a serious commitment, not only on the part of OSU. I felt proud to have started there, you know, and then to have gone away and come back and seen that this place had really blossomed and been recognized by the world-at-large. So, it's a big part of me, as a person, as a scientist. I would like to see it succeed, and I would like to do more stuff there.

**Geier:** You came back here at kind of critical point in your development as a scientist, just finishing your Ph.D. What were your priorities in going to the Andrews? What kinds of projects were you interested in pursuing at that point?

**Tucker:** I've always been interested in how the Hi-15 [experimental watersheds] has developed since I've first worked there, and that will continue to be a place I'm interested in. But Art McKee is a friend that I've had since the time I was there as an undergraduate, and his work had always been invested as well in that particular place, the Hi-15 [Watersheds 6, 7, and 8, the experimental watersheds which comprise the Hi-15 study site]. A lot of the faces were new. I mean, Art is one of the few people that's provided continuity and has been there since the early '70's and is there now. Fred Swanson as well, is there, but he's a physical scientist really, and I didn't work with him early on.

**Geier:** He came in after you had left.

**Tucker:** Yeah, he came in, I think in the early '70's. But, like I say, he was a hydrologist [geologist-ecologist], and at that time we weren't doing ecosystem science, so we weren't interacting as much as we are now, even though IBP did create a fair amount of interaction and I still hung out at that time. I think it would have been hard to believe a physical scientist, which is what Fred is, could have led a group of biological scientists, which is what he is doing and has been doing for a long time, and doing really well. But, that maturation of the intellectual approach to forestry, I think created an environment that allowed that to happen.

**Geier:** Was there a strong relation between what you've been doing in your Ph.D. research, and what you found yourself doing at the Andrews when you got here in '91?

**Tucker:** No. My Ph. D. was completely related to allocating hardwoods in the East and sugar maple, maple syrup for that matter. It was related to tree physiology, but not to the same species and same environment. But, because I had worked there before, I felt very comfortable getting back into it and switching species and environments, but using a similar approach that I learned in IBP.

**Geier:** So, you were thinking more in terms of career path and potential opportunities than you were about where can I take the skills I learned and apply them. It sounds like you were willing to shift your research priorities.

**Tucker:** Absolutely. I was willing to drop sugar maple and the work I'd done there, for the opportunity to come here to OSU. Once I got to OSU, I was anxious to renew my relationship with the Andrews, and I'm really glad that's where I'm at. I can't imagine anything at the OSU

College of Forestry that I'd rather be doing than working with the Andrews program and Cascade Center. It's clearly the program that best fits my personal interests, and where I think forestry should be going.

**Geier:** You mentioned Art McKee several times. Who did you work most closely with in the early '90's when you were here?

**Tucker:** When I first came here?

**Geier:** Yeah.

**Tucker:** Like I said, when I first came here, I was more associated with coastal forests and not with the Andrews. It was a program called COPE, Coastal Oregon Productivity Enhancement. Andy Hanson, who worked in COPE and did work at the Andrews, he, probably as much as anyone, was able to work at the Andrews and at the same time do research on the coast. So, in some ways I followed him because he went from the COPE program to work with the LTER group, and I did the same thing. I went from the COPE program, but in a very different way in many ways, and Fred was glad to see both Andy and I make our way to the LTER.

**Geier:** How did you find the Andrews? Obviously, there wasn't much of a staff there in the early '70's. Or was there?

**Tucker:** At the Andrews?

**Geier:** At the Andrews, because there really wasn't a site.

**Tucker:** There wasn't a permanent staff. I don't know if Art was even around yet. I don't know if they actually called him the director then? Maybe they did.

**Geier:** He was a coordinator in the field, I think was what they called him. Somewhere around there. I'm trying to remember the years.

**Tucker:** But Art was the person we associated with most closely with the Andrews, mostly because he is very bright and was able to absorb all of the minutiae of information that was associated with the Andrews, so if anybody had a question, they would go ask him and he generally knew. So, Art's the person that that really comes to mind.

**Geier:** I guess what I am getting at, you mentioned earlier, that when you first went there in the '70's, you dealt pretty much with Steve Running, and it sounds like the two of you were pretty much on your own. When you came back in the '90's, you mentioned the different facilities and the congregation of people at the headquarters there. Looking at the quality of interaction between you and other scientists, were there people that you worked with on an ongoing daily basis, or people that you were kind of casually meeting, but doing your own thing still?

**Tucker:** At that time, it was much more casual. It wasn't that a lot of that has to do with the Andrews and functioning of it as an interdisciplinary group and the Andrews proper, but the monthly meeting that Fred religiously holds there which brings together people, and that's two hours away from the Andrews. But the fact this meeting takes place every first Friday of each month, means that everybody associated with the Andrews, if they have a concern or they want to hear about something, they know to go there. Fred's been really good about that, and that's a real important thing he's made sure happens, and not only does he make sure the meeting happens, but he personally makes sure the notes from each of those meetings comes out and there is a record of that. The style that the meetings are carried on is very open and informative. It's really to his credit I think that the program has functioned so well, and the Andrews has continued to have the focus that it has, and that monthly meeting, in many ways, has a lot to do with it, even though, like I say, it's two hours away from the Andrews. It's at a place where most of the people that are concerned about the Andrews are on a regular basis.

**Geier:** It's interesting that several people mentioned in various ways that there was a shift. Earlier there was field research and then there was a shift to laboratory work, and Art pointed out that there was a shift from agency work to university work. There was kind of a transition, but with what you're working on now, is a shift in the other direction again.

**Tucker:** Well, it's more agency-oriented. You see, the Cascade Center does that, because the Cascade Center for Ecosystem Management involves the Willamette National Forest and the Blue River Ranger District. We're doing, you know, agency-oriented type of stuff. And in many ways, I feel like I work for the National Forest system as much as OSU, because my money comes from the National Forest system now. I feel like I work very independently of them, and I always challenge them intellectually in a lot of ways. But, I think that if we did make a move away from doing applied work, the Cascade Center brings us back to that.

**Geier:** Just curious. You focused on the program in the IBP days with a burst of creative energy and people under a sense of mission, and now there is this long-term potential with LTER, and now what you have is a more conscious structuring of the community of scientists you have with all these LTER meetings. What is the difference from earlier? I'm just curious how that influences the way ideas are formed, and what I'm thinking of here, specifically, are your current efforts to develop this "uneven-aged management" study with practical, in-the-field applications. I just wanted to ask you to talk about the origins of that idea, that concept, scientific origins or the community-agency interaction origins. How did that idea originate? Who is involved?

**Tucker:** The idea of the Uneven-Aged Management Project is about uneven-aged management. What has been commonly practiced and traditionally practiced in the Pacific Northwest, is even-age management, not uneven-age management ["even-age management" generally means clearcutting]. The reason for this is that right after the Second World War, well, in the late 30's and 40's and early 50's, there were attempts to partially cut Douglas-fir forests, to practice uneven-age management in old-growth forests, and for a variety of reasons it didn't work. This research wasn't actually carried on in the Andrews itself, but was done throughout

the Pacific Northwest. Those forests were of such large structure that it was very difficult to bring down these large trees, to get them out of the forest and not destroy the understory which would be necessarily be preserved to carry on with uneven-age management [i.e., trees intended to be left would be destroyed in logging operations]. But what we're trying now, is not uneven-age management starting with old-growth forests, but uneven-age management with very young forests. The Andrews, having liquidated a fair amount of its old growth the last few decades, is now at a point where those stands have been regenerated and we have young stands which can be managed in a variety of different ways, one of which would be uneven-age management. Since it was tried on old growth some decades ago, it really hasn't been tried by agencies since then.

Small landowners have tried it in a small way, and their reasons for doing it are varied. One of the biggest reasons is that people have a strong infinity to their own small piece of land, and they don't necessarily want to cut it all down. They don't want to clear-cut it. So, there's the aesthetic thing, but there is also a desire to have a small, continuous income, instead of a boom-or-bust kind of thing that even-age management and clear-cutting brings you. Small landowners are particularly sensitive to that, if they are wanting to have a regular income out of it. Also, another thing is that small landowners don't necessarily have the best land. The timber industry has done everything they can to buy up the best pieces of land and put it in good blocks. Starker, for example, did that in Benton County and around here, and then of course, other bigger timber industries have done that as well. That has left smaller landowners often with the more droughty soils and more inland areas. So those areas, in many ways, lend themselves more to uneven-age management because they don't produce dense forests, trees that are rapidly growing and closing the canopy quickly. They produce more open, park-like forests, like what you would find on the east side, where uneven-age management occurs naturally. By trying uneven-age management here on the west side and at the Andrews in particular, we're trying a system that has more history with small land owners and which we'll probably have to work at. In other words, the ecosystem doesn't necessarily lend itself to it as much as the east side where you naturally get very open park-like forests with multiple age classes of trees with prolific understory regeneration. We'll probably have to thin to create regeneration.

Whereas, on many drier ecosystems, like on the east side, you get fires which would sweep through. Here, particularly with fire suppression, we don't have that so much on the west side. The public as well as the scientific community, is anxious to try alternatives to clear-cutting. They've seen what clear-cutting does from an aesthetic point-of-view, a wildlife point-of-view, and an ecosystem productivity point-of-view. There were concerns that by removing all of the forest cover in a given area, and then also by slash burning, which is often associated with that, that we may be over the long haul, be reducing productivity. Now, there is another project specifically looking at that: LTEP, or Long-Term Ecosystem Productivity. But these are general concerns that people have. Any question in forestry is going to take decades, centuries, to really answer. But, I think we have to stay ahead of the game and try different things, try alternatives to clear-cutting and uneven-age management, are what needs trying.



**Geier:** It's interesting, because up until World War II, the Forest Service was in a position of generally trying to promote selective-cutting over clear-cutting, and after World War II is when clearcutting on Forest Service lands began. As you talk of this agency-driven shift in LTER, there's a return to that earlier philosophy, although it's not the same thought, but it's not clear-cut. I am curious, is there a chain of scientists or particular people whose work was influential in leading up to the point at which you're at, where you come in, say, with some authority now, and have people follow your suggestion that we should be trying these alternative strategies?

**Tucker:** I think the best examples, unfortunately, are not in the American forestry literature. They are in European forestry literature. And in some cases with our own species like Douglas-fir. The Europeans have been practicing uneven-age management in coniferous forests for much longer than we have. It's in Germany. It's in Europe. I've had a hard time really getting into it.

**Geier:** Of course, that's where Fernow came from.

**Tucker:** Right, that's where Fernow is from. And Fernow was into even-age management, as much of Prussia was managed, and there is also uneven-age management in Germany that has continued to this day. And the eastern United States and intermountain west has practiced uneven-age management. There really is very little on the west side, I should say in the Pacific Northwest, as far as research goes that guides us in this direction. Clearly, we will have to work at it to make it work in very dense, productive forests. I personally think that it is worth working at finding solutions or alternatives to clear-cutting. I'm not saying that uneven-age management will be more "natural," quote-unquote, than even-age management or clear-cutting. It will require more frequent entries and much more intensive stand-tending. But it will also avoid the catastrophic effects of clear-cutting, which not only has aesthetic problems, but from a wildlife point-of-view, in ecosystems from a region lacking in mature and old-growth forest habitats, we need to maintain closed-canopy forests, and thinning can clearly benefit the development of forests structure, but clear-cutting is often very detrimental. Like I said, the best examples don't come from this region. I think, that's in many ways, the reason why we need to at least try it here. It may not work. It will be possible to do it, the question is how feasible is it to do it?

Uneven-age management, as much as anything, requires good knowledge of the stand and regular stand-tending. It will mean that foresters will have to be intimately involved with their forests. They will have to know it's done right, and when it's done right by small landowners, they know personally, each tree. They know that this tree is not ready to be cut now, but in five years this one growing next to it will be bigger, and you can remove this one and replace that one. That kind of a knowledge on a tree-to-tree basis, is where it works best. Any land management agency cannot afford to have that kind of relationship with its forests. It is much more of a broad-brush approach, and that's why most forest practices have been more akin to agriculture than anything else. But with small landowners in the United States, and then also with "forest meisters" in Germany, who have lived with a given parcel of land and worked with it for their entire career, and they become intimately involved with it. Whereas, the Forest

Service and other land management agencies, but particularly the Forest Service, are in the habit of constantly moving people around from one ranger district to the next all over the United States, and that does not develop the kind of relationship between a forester and his forest necessary to really understand what is going on. I'm not saying it is definitely going to work; a lot of things would have to change to make it work. But I think it's worth trying, and it's worth seeing what it would take to make it work. Because, if nothing else, these are public forests and the public is concerned as to why we haven't come up with alternatives to clear-cutting, which is clearly something that has serious concerns attached. For too long, we have gone on saying there are no alternatives. There are alternatives, but the question is: are we willing to go to the extent needed to implement them?

**Geier:** A couple things come to mind here. One is, in the time that you were absent from the Northwest, there was a major issue over old growth that involved people working at the Andrews becoming essential to that public debate which ensued. One of the questions is, how much did that have an influence on your decision to come out here? Obviously, that brings the forest into the limelight and some of these questions that you had an interest in.

**Tucker:** Yeah, to a large degree, when I came back out here 1991, the spotted owl controversy was at its height, and there were people who were still desperately holding on and thinking that they could hold off efforts to preserve remaining old growth. I just kind of parachuted in to the middle of that controversy. It was really very interesting to me, because the undergraduate thesis that I had done looked at what we call advanced regeneration, or the small trees that are regenerating in the understory, and those are just the kind of trees that need to be promoted to a position of canopy dominance with partial cutting or other alternatives to clear-cutting. I've always had some of these concerns and think I came back at a time where, in many ways, I've thought this too, that it was in some ways better to go away and come back twenty years later. Rather than to hang around here and fight the fight all those years, because it was clear to me that at least shelterwood cutting, as opposed to clear-cutting, was a much better way to develop advanced regeneration, understory structure and understory cohorts. That was obvious to me in the mid '70's, and yet people thought I was nuts to be concerned about these small understory trees. So, in many ways, I think it was fortuitous to go away and then to come back. And now there's a much more obvious acceptance to alternatives to clear-cutting, and the concern for many cohorts of trees as opposed to one single cohort of trees.

**Geier:** There is a different level of involvement necessary with talking about now, between scientists, researchers and the forest managers, in the region and district. We need to talk over about your relationship with people in the region and the forests.

**Tucker:** I think that in the past, managers in the Blue River Ranger District were interested in implementing timber sales to do these scientific experiments, but it wasn't something they were really directly commissioning. They were really interested in seeing the results. This was just something those scientists were interested in, and it was their job, and the managers were going to help them do it. That's how Watersheds 1 and 2, 6, 7 and 8, were put in [H.J].

Andrews]. Now it is very different; the National Forest System is really under the gun; they are in court. People want to know why they have to clear-cut, and are there other things they can be doing, not only to do as alternatives to clear-cutting, but to develop young stands to replace old-growth stands that have been liquidated. Can't we raise forests to engender mature and old-growth characteristics? So, the National Forest System is actively seeking responses to these kinds of questions, instead of just being a steward to forest lands for scientists of the university. They are now, through the Cascade Center, becoming more involved than ever. At least, that's the end of things I work on.

There are others, like Mark Harmon, and those who work more directly with LTER, that are less closely associated with the National Forest System and Blue River Ranger District. But I, personally, and others at the Cascade Center are increasingly associated with them. And it's a really useful relationship because, by being an employee of Oregon State University as opposed to an employee of the Forest Service, I can maintain my intellectual integrity. I don't have to toe the line of the Forest Service; getting the "cut out" is the last thing on my mind. Okay, but at the same time, they can avail themselves of our expertise ["getting the cut out" was a Timber Era expression for meeting the timber targets of ranger districts or national forests]. And we can be of service to them. I think it is a very useful relationship, an incredibly useful relationship, and the Andrews is really very unique in that way. I don't know how many other experimental forests there are, where the director is a university employee, and yet, the forest land is part of the National Forest System. Art McKee's situation is a very difficult one, yet it is a very unique and useful to the forestry community-at-large. Art may have filled you in on how unique the situation is, and how difficult it is. But it is really critically important that somebody like him be a university employee, and that there are people like me and others that are university employees, and yet they are working on Forest Service land and on problems that concern these public lands. Because, unless we are university employees, we can't maintain our autonomy from the interests of "getting the cut out," or whatever they may be interested in, ultimately. And that's important.

**Geier:** I was just going to say, there's an interesting issue you touched on earlier that I wanted to revisit. Perhaps fortuitously, you were gone for a while and came back. I was wondering, some problems with maintaining autonomy have to do with the way that scientists have been brought into the public eye. There's not just autonomy, but appearance about what's important. I was wondering, in the case of Eric Forsman [Northern spotted owl researcher], what kind of pressure was he under that you aren't having to face?

**Tucker:** Well, I don't know the pressures that Eric Forsman was under. He does work for the Forest Service, although he is with the PNW Station as opposed to the National Forest system. So, it is a little different. Most of the people, for example, who work for the PNW Station are ultimately part of the U.S. Forest Service and U.S. Department of Agriculture, and Congress puts certain mandates on them. I don't know how difficult it is to operate in their work environment, if they don't align themselves with those mandates. I should think that getting research funding is a lot easier, if you are more interested in traditional types of things, but I think that he would be in a much better position. People like Fred Swanson would be in a much

better position to answer that. I, for one, personally, am glad that I am working at the university end of things, just because I think it allows me to intellectually align myself with what I think is important. If I worked for an organization, I think, instinctively, I would want to align myself with the concerns of that organization, but I can't really speak for those people.

**Geier:** I'm just curious because you're in a totally different situation here, in that you've been at the Andrews or been affiliated with OSU and the Andrews as an undergraduate, as a post-doc, and now as a cooperator for another university. We start talking about this and concepts of autonomy when you float from place to place. This is a different category. I'm not saying it's better or worse. I'm just interested if you have any insights on what is the situation of a cooperator with the Andrews group when you are on appointment at OSU right now.

**Tucker:** But that might change. I may go to be an employee elsewhere and not be an employee of OSU. Yeah, I think that you become less directly involved. But, the way that things are run, and I think that the *esprit* that people like Fred Swanson promote is very inclusive, and it doesn't really tend to throw up boundaries for one person as opposed to another person. I think that the most important thing, from my point-of-view, from doing silvicultural research in the Andrews, is to be aligned with the needs and concerns of the Forest Service. Because I think the ultimate clientele for the Andrews is the people and the managers that are charged with managing the people's land. I think "alternative" silviculture is in many ways, fulfilling that need. The Blue River Ranger District realizes that; the Cascade Center realizes that. And if I can convince them that answering questions about uneven-age management are going to be questions that are useful to them as land managers and useful to the public that are concerned about the management of their lands, then I think that is going to be something that can be done or something that can be broached. But it doesn't necessarily have to be something that was done in the past or something that is traditional. In many ways, I feel like I can get the best of both worlds. There is a real synergism by bringing together these different organizations under the umbrella of public land management, and that I think the Forest Service alone could never get, or even the PNW Station and the National Forest System could never get, if OSU wasn't involved. And the best example of that is the fact that OSU has brought in so much National Science Foundation funding. That would not have happened, clearly, if OSU was not there, because the research community at large, the national research community, would not have recognized the Andrews as the center for objective scientific research, if it hadn't involved Oregon State University.

**Geier:** I guess it is remarkable to me is that there is, from what you're saying, very little difference between being a cooperator and being a post-doc, permanently associating with people here. And that is due to the fact that you spend nine months of the year up at Evergreen State College [Olympia, Wash.] teaching, and come down here for three months in the summer. Two things that I am curious about. One is, do you see a change in your relationship the longer you stay at Evergreen? And two, what are the mechanisms that allow someone like yourself to be fully integrated into the group while you're down here? How do they accomplish that?

**Tucker:** Well, it is true that the longer that I have been here, the more I've kind of detached myself and moved toward Evergreen, which has provided me with a permanent job. But, at the same time, the longer I've been here, the more I've become familiar with the people and the issues, and the more I think that I've been respected for that. So, one has kind of countered the other. Now, what was the other question that you had?

**Geier:** I'm curious what the mechanisms are that that the group has developed?

**Tucker:** I think the mechanism that has kept me involved and has kept me well associated, is what I've mentioned before, and that is the monthly meetings. It so happens that my personal situation is such that I have two sons that live down here near Corvallis, and I come down here every month to spend time with them. I do that to coincide with the LTER meeting. So, I make every LTER meeting and it fits well into my personal life, and that's what's kept me involved.

**Geier:** It sounds partly because you built your personal life around that?

**Tucker:** Exactly.

**Geier:** That is a critical element.

**Tucker:** Yeah, I know the first Friday of every month that I'm going to come to the meeting, and then after that I will spend the weekend with my sons. And that's added a certain continuity to our lives, in a professional and a personal level.

**Geier:** I don't want to keep you here too long.

**Tucker:** No, that is all right. It's quite fine.

**Geier:** Art and I talked a little about the decision made fairly early, to use post-docs as opposed to graduate students, to work on the Andrews. Of course, that puts post-docs in an unusual position. It's a temporary position, not one that is leading to tenure, but they are usually people that have some ambition. I was just wondering, how did you balance these concerns when you were working there, long-term? How actively involved were you in seeking a tenure-track position elsewhere, or where you pretty much resigned to the situation of being a post-doc?

**Tucker:** I guess I am the kind of person that I have to have some certainty in my life. I really feel it gnawed away at me that I was operating on soft money, and I think that's really what made me want to get that position at Evergreen. I wanted to know I would have some certainty in my life, and that I wouldn't always be operating on soft money. I had to have that kind of certainty, and I think all post-docs operate to some degree under that. Now, some are incredibly productive and successful scientists, like Mark Harmon. He must have a lot of confidence in knowing what he has produced as far as research results and publications. I think there is also a continuing amount of stress, because soft money is still soft money, no matter how many

publications you might have, and no matter how comfortable you may feel in your situation. Soft money is still soft money. The way I dealt with that is to get another position that could take care of me for at least nine months of the year. Then, through my students up at Evergreen and their work down here, I come down the Andrews for three weeks. I brought students with me this last spring, and hope to continue that. So, it's just the kind of the way that I've carved my niche at the Andrews.

But other people do it in different ways. I imagine Mark Harmon has been so successful in the scientific community, and has been a real leader, not only in our LTER group, but in LTER nation-wide. He has a very much a different niche he carved for himself. But money is so short, and because of Ballot Measure 5, it doesn't look like OSU is going to be creating any more tenure-track positions in the near future. Different people deal with that in different ways. Some people leave all together. Andy Hanson was a post-doc here, and he kind of regretfully left and went to the University of, or Montana State [University], in a faculty position. He had intended to do summer research here, but it was just too far away and we haven't seen Andy. He wanted to maintain his ties, but wasn't able to do it. Maybe I'm kind of in the middle where I've kind of maintained my ties, and then there's somebody like Mark Harmon that never created new ties. Clearly, somebody like Mark deserves a tenure-track position, but the money just ain't there. One strategy I think that somebody could try is to become integral in a group, and then to find a job elsewhere, and say, look I'm going to take this job, if you don't create something. But you have to be really good to do that. I think Mark could maybe try that, but that would be another strategy that somebody could. That could be a very risky strategy, because it might not work.

**Geier:** One paradox at the Andrews is this long-term work done with all this soft money.

**Tucker:** With all these short-term people, that is very true. There are some old timers like Bill Ferrell and Ted Dyrness, but they are not as closely connected with it, and are basically retired. I think in many ways, the PNW Station provides continuity because people like Fred Swanson have been around a long time and will continue to be around, hopefully. But there aren't many of them either. From my personal point-of-view, we clearly need a tenure track or permanent PNW position to cover silviculture. What could be more important to an experimental forest, than a silviculturist that is going to study the culturing of trees and how that's going to impact different treatments for experiments in the future. Yet, that is a position not being filled. I dealt with it the best I could as a post-doc, but I was focused on things that would move my career in a more permanent basis. That didn't necessarily add continuity to the Andrews.

**Geier:** So, from your research goals, you were thinking in terms of what it might possibly do in the direction of your practical position?

**Tucker:** Yeah. Maybe I should have been thinking more about that. One of the problems I've had within the Andrews is that there were several projects. I've worked a lot to get projects going, but these projects won't really produce good results for quite a while. I've been as lucky as I have, I think, because people have been understanding of that. It hasn't been so much of a

“publish or perish” environment. As long as I’ve kept these projects going. We are only now getting the first data set out of a project that was first conceived about a decade ago. Forestry takes that kind of time. It’s hard, it’s really hard. But there are people that are able to do a mixture of short-term results and publish those, and then also longer-term results, from data maybe other people have abandoned. People like Mark Harmon have been very successful at that. Charlie Halpern has as well. He has made use of some data that Ted Dyrness first started collecting, then Ted Dyrness went off to Alaska and Charlie Halpern came along. As a post-doc, he was basically given stacks and stacks of data sheets. Through a hell of a lot of hard work, he made sense of them and published on them. But that wasn’t data that he collected or initiated, but was data that he was hired to deal with. That is really a different mode of science than laboratory science, where people do an experiment and end it in a day. We do experiments in decades, and that makes it difficult in many ways to be on soft money in an environment like that. Makes it very difficult. That’s why I’m up at Evergreen, because it provides more continuity in my life than I could get here.

**Geier:** Was there some point at which you reached a decision that it was time to move on to Evergreen? You were a post-doc here, for what three or four years?

**Tucker:** Yeah.

**Geier:** Was it just the fact the position was open? Was there something particular about Evergreen that attracted you, or was it a decision based on personal situation at the time to go on?

**Tucker:** Oh, a combination of those things. I was attracted to Evergreen because I felt it had a good reputation for teaching, and because teaching was something I realized that I really enjoyed, that I loved. I was given an opportunity to teach a short course, really enjoyed it and did well. I said, “Hey, this is something that really gives me a lot of satisfaction and that I’m good at.” I’d heard of a temporary opportunity at Evergreen, and I knew that they didn’t have anybody that was really doing applied forest ecology. There were forest ecologists, but nobody really doing silviculture or applied forest ecology, so I thought, “This is a niche that I can fill,” and I pursued it. It did get me into a more permanent situation, one where I didn’t have dependence on soft money hanging over me all the time. In the future, I would like to involve my students up there and to bring in modest amounts of research money to carry me through a summer. To continue to fill what my intellectual and research interests are, but at the same time have the stability of at least a nine-month job.

**Geier:** Have you had much chance to teach while you were down here?

**Tucker:** Something that is really unique about the Department of Forest Science at OSU, is that we are all in a graduate department and there were very little, if any, opportunities to teach undergraduates, to do any teaching at all, really. This affects post-docs that work at the Andrews. They have little if any opportunity to do teaching, and they are expected to be moving into jobs where teaching is going to be a major component of the job. Yet, they’re not

generating the experience to fill those jobs. This is a real problem, this has come up at Forest Science retreats, and I've pointed it out. The opportunity I got to teach was through a very narrow window. The Department of Forest Science here has a relationship with a Forestry College in Argentina, and I was asked to go there and teach a short course in tree physiology. It was through that opportunity that I got to teach, and it was under a difficult situation. I was teaching non-native English speakers and taught them tree physiology, which has a lot of details that goes with it, and yet, it went off well. So, it was that little opportunity to teach I sort of capitalized on and it allowed me to go to Evergreen. Because Evergreen accepted me basically on that experience at the University of Buenos Aires, and the recommendation I got from that. If I hadn't had that, I don't think I ever would have gotten the job at Evergreen. But there not many opportunities like that. Normally, you would be in a department of forestry or department of forest management, and you would have undergraduates all around you in your department that needed TA's, and that needed classes taught. As a post-doc you would take a quarter and teach a course and get that kind of experience. Well we don't have that around here. You get kind of locked into being a post-doc doing research, and it can be difficult to get out of it.

**Geier:** Did you find your experience in the Peace Corps to be helpful down in Argentina?

**Tucker:** Yeah, for sure, and in working for the Forest Service here.

**Geier:** Working with Forest Service also?

**Tucker:** When in the Peace Corps, I worked for the Forest Service in Niger, in West Africa. Essentially, I worked for a government agency. I was an employee essentially of a government agency; the Department of Waters and Forests in Niger. My boss was basically a district ranger, and I was managing plantations, planting trees, and managing planted trees for him. So, that whole government worker side, was one that I learned early on there. You can still see the same corporate culture, as it were, in the Forest Service, which is not wholly dissimilar to the corporate culture in West Africa. In fact, there are probably more similarities than there are dissimilarities.

**Geier:** What country were you in?

**Tucker:** I was in Niger, in West Africa, north of Nigeria. It was a government agency that managed the forest there and it was under some difficult systems that weren't made any easier by an almost intractable bureaucracy. I think the Forest Service is often ham-strung by its bureaucracy. So, I can kind of empathize maybe a little with the agency.

**Geier:** One thing I've noticed about the "Andrews Days" [public and outreach event held each year in June at HJA] is it seemed like a lot of undergraduates there. Maybe it's my perception as I'm getting older, but these people are there working on projects with scientists. Is that what is going on? There is some interaction with undergraduates, but not as a teacher?



**Tucker:** Not in a classroom situation. There is not teaching, there are teaching opportunities, *per se*, but summertime is about research opportunities.

**Geier:** Experiential learning.

**Tucker:** Yeah, right, and that's good. At Evergreen, I'm in a good position to kind of engender that, because students can take not only summer contracts, but also fall, winter, and spring contracts, where they can come and do research. So, we might create research opportunities for undergraduates at the Andrews like that for the future. I'm anxious to engender that. I think we can do more of that, where, for example, I have two, three students, that were hired to work the summer at the Andrews. We had a crew of nine, and three of them are from Evergreen. Two of them are not only collecting data, but summarizing it, and they have created a homepage for the project, and hopefully we will get a *Northwest Science* publication out of it. I think it's great to have these opportunities for undergraduate research, especially in a place like Evergreen, where graduate schools have such difficulty with their transcripts that don't have grades on them. If they have a publication, even in something like *Northwest Science*, that can just speak volumes for the potential of this student in graduate school.

**Geier:** It is interesting, your continuing involvement at the Andrews, for this purpose. There are other places, Wind River [Experimental Forest, southern Washington], for example, that bring students in. Have you considered that?

**Tucker:** Yeah. That is a good question. I often ask myself why I haven't been more involved there, but I guess it's because I'm so closely affiliated with the Andrews and the facilities at the Andrews. Wind River doesn't have anything like the apartments-complex at the Andrews, and I'm not as closely tied with the research that's going on there. For a lot of reasons, the Andrews is becoming a center for not only research, but also teaching throughout the Pacific Northwest. Pack Forest is another one, which is much closer to Olympia, and has a lot of stuff going on. Pack Forest is the college forest for the University of Washington's College of Forest Resources. But the facilities there are very expensive for students. A student pays five dollars a day at the Andrews, which is just dirt cheap, or eighty dollars a month, something like that. That is really good. I can bring down a class of students. There are different possibilities. I can either hire a cook to feed them, or I can have them feed themselves in a central dining hall there, or they can fend for themselves in the apartments. At Evergreen you've got vegans, vegetarians, and omnivores, and they all have their own peculiarities. It's much easier to put the vegans in an apartment, the veggies in another apartment, and the omnivores in another apartment, and they can deal with it themselves. So, the set-up is just perfect for that kind of thing there, and we just don't have that kind of opportunity elsewhere, so the facilities make it useful, not to mention the ongoing research. In the past, Art always made himself available, I really appreciate it and try not to take advantage of it. He gives a great tour, knows every square inch of the Andrews, he's enthusiastic, and the students love him. That's a good thing. Wind River had a lot of things, like the canopy crane and what not, but I think I will continue to drag students down to the Andrews.

**Geier:** The reason I ask that question, is in my interview with Jerry Franklin, he was talking about the difference between the Andrews and Wind River up in Washington.

**Tucker:** Oh yeah? What did he say?

**Geier:** He says that dealing with University of Washington and OSU is two different worlds. He's never felt like he's been able to replicate there anything close to the community spirit that evolved on the Andrews, which is what you're talking about, it sounds like. There are positive aspects and there are things that are different that he likes about it [Andrews].

**Tucker:** You went to Seattle and interviewed him, or he was down here?

**Geier:** He came down to Blue River, and we were out near the crane there at Wind River, and the Forest Service-controlled forests there. A Forest Service cabin right down on the river, not the river, but along a stream. It was picturesque.

**Tucker:** Well, that's good. He's got a great perspective on the Andrews, and that is really important that you interviewed him. He is such a great character and such a great personality.

**Geier:** He was there when you were there?

**Tucker:** Oh yeah. Jerry Franklin and Dick Waring ran the IBP program in the early '70's, and he was there in the Forest Research Lab, so I guess he was here, that's right. Jerry was housed over here in this building [Corvallis FSL]. This part of this building was just being built at that time, but Jerry was housed over here, and then, much of the rest of IBP was over in the FRL, the Forest Research Lab on Western Avenue. That's where Dick Waring was, and so much of the Andrews was run out of the FRL over there.

**Geier:** Oh, I didn't know that.

**Tucker:** Yes. That's the hub, and I mean, Dick Waring, Chuck Grier, Steve Running, Bill Emmingham, and I think even Art McKee had his office in the Forest Research Lab on Western Avenue. We were physically separated. I didn't personally come in contact with Jerry on a day-to-day basis, except maybe when I was at the Andrews. But when I was working in Corvallis, we were physically separated. When the Department of Forest Science [OSU] was created, we came together, and then, the Andrews people came together in this building. In the mid '70s, the Department of Forest Science [OSU] was created, and that brought them together in this building. On a day-to-day basis, you ran into these people. That had something to do with it. Finally, they are building here, which is essentially bringing the FRL here. At this point, all there is forest products out there; there's no forest science. We were really lucky part of this building was vacant, and the college was able to get space in the building. I think that engendered a lot of synergism and *esprit de corps*. That kind of brought the Forest Service and OSU together, the fact there was space in this building to house the Department of Forest Science.

**Geier:** Yeah, that is interesting. I didn't know that. There was a cooperative agreement announced that was drafted, and John Gordon had a role, about '76 to '78. It got a critical mass of minds at one location, it was institutionalized, it was place-centered, and it had a research outlet at the Andrews. We are nearly out of tape here and I don't want to keep you here all afternoon. Also, I don't want you to think that this is the end of your input if you have anything else. I really encourage you to take a look at the book prospectus.

**Tucker:** Especially the last part you said.

**Geier:** Well, you might take a look at this. The book is roughly-organized chronologically. One of the chapters is dealing with the IBP period in the 1970's. You might look at that one, and then the last two chapters, especially the last chapter, which probably has strong relevance to what you're doing now. But you might also think of some of the continuing things you talked about a little bit, what draws people back to the Andrews after being away for a while. One of the reasons why I wanted to interview you was to get into that, so, if anything else occurs to you along those lines, feel free to drop me a note. Actually, you talked fairly eloquently here today about it, so I'm pleased I got a chance to talk to you. It occurred to me after the summer you were going to be gone to Evergreen.

**Tucker:** What was the book you mentioned?

**Geier:** Oh, it's by Paul Hirt, H-I-R-T.

**Tucker:** H-I-R-T.

**Geier:** It's called *Conspiracy of Optimism*. It's a history of, I can't remember the subtitle, but something to do with Forest Service management in the West since World War II, '45 to present. But he talks a little bit in there, in the beginning chapters, about traditions of the Forest Service, and how they were basically violated after World War II, things they had really been pushed early on. One of the things that happens in the Northwest is this Advisory Council of Forests, and the PNW Station has a research advisory council that is heavily dominated by the industry. That's one thing that obviously happened, but also, it's just a part of the culture of post-war America.

**Tucker:** I wonder how people like Forsman were impacted by that. And that was really one of the questions you gave. I just don't know. Are you going to interview him?

**Geier:** I plan on doing it. I was going to put it off a little while. There is a chapter in there where we're focusing narrowly on the old-growth issue.

**Tucker:** I've never seen him at the Andrews. Apparently, he goes there once in a while, but there is a lot of spotted owl monitoring work done there. The owl folks have a presence there, although he himself does not. He's really kind of kept to himself. God, he's shook things up.

And his Ph.D. thesis, which became an *Ecological Monographs* monologue, I mean, brought down the “house of cards.” Changed everything.

**Geier:** Of course, he was here all through the scramble, and his name is well known in the public realm. One of the things that U.S. forestry does is name recognition, which can work against you, too. People will automatically pigeon-hole you in this camp or that camp. Whereas, what you’re doing right now with this second-growth land management, is not as easy to pigeon hole.

**Tucker:** Right, that’s true. I’ve benefited from that, too, and I’d rather not be in a particular camp, although being at Evergreen, it is almost unavoidable. People think that I’m a particular way. If you’re at Evergreen and advocating that Evergreen consider cutting down some trees, (chuckles) it’s different. The name Forsman comes up among environmentalists at Evergreen, and they just put him on a pedestal and call him a saint. I wonder how difficult it was for him to operate within the Forest Service, and how much flack he must have gotten. I just don’t know.

**Geier:** I’ve never talked to him about it. I’ve run into him a few times at the LTER when the PNW Station Director came down to visit, and he was there giving a presentation. But, it strikes me, his situation is similar to Wallmo.

**Tucker:** Who?

**Geier:** Charlie Wallmo, the guy who did the deer research up in near Juneau, Alaska. This is about the time you were down here as an undergraduate. In the late ‘70’s, mid-to-late ‘70’s, he was up there blowing holes in the myth about creating habitat for deer by clear-cutting southeastern Alaskan forest. He died not too long after the controversy blew up in their face. Ted Dyrness was in here the other day, saying how he’s convinced that it was, because he was up at Fairbanks at that time, that it was the reaction against him, that killed him. It was just intense pressure from the PNW Station as well as the region [6 – Pacific Northwest Region of the Forest Service] up there. The pressures and his temperament didn’t match.

**End of interview.**