Interview with Martha Brookes, Wednesday, November 5, 1997, Brookes' office, Corvallis-Forestry Sciences Laboratory. Interviewer: Max Geier; Transcriber: Nicole Duncum.

Martha Brookes was a writer-editor for OSU and then the PNW Station whose personal roots in science gave her a special affinity for the scientists and science programs she worked with. She edited manuscripts by many College of Forestry scientists and supported their work associated with the Andrews Forest in other ways.

Max Geier: I've been trying to sort these out is to have people talk a little about their academic traditions they come from and the pathways that brought you to this point to get here. I usually end up starting out with people's formal connections to the institutions here. My understanding is that you came here in 1956, and you joined the OSU faculty in, what, 1982?

Martha Brookes: It wasn't faculty, it was staff.

Geier: Staff? Okay.

Brookes: I was a civil-servant technical-scientific editor for the [OSU] College of Forestry. They wanted a civil service exam required, and then, it was a half-time job advertised as a half-time job because they thought nobody could process [publications] more than half-time, that it was too intense. They had very few half-time positions in civil service, but they specifically designed it [that way]. Now, when I edit, I put fifteen hours in, nobody says anything about that.

Geier: It is too intense [editing work]. When did you started doing that?

Brookes: It wasn't in the 50's, it was about '64.

Geier: Now, I see your degrees are both from [University of] Illinois.

Brookes: Both from Illinois, yeah. Bachelor's in botany and a minor in zoology and a masters, actually it was marine botany, not very close to forestry.

Geier: Maybe you could talk a little bit about your personal special mentors up until the time you came out to Corvallis here.

Brookes: I mostly took classes in ecology as an undergraduate. At that time, ecology was two separate entities; there was animal ecology and plant ecology. Professors in the two departments didn't even talk to each other much, and they disapproved of each other's philosophy of science. I tended to agree more with the botanical side. We went out looked for oaks and hickories together, beech and maples together, and all that stuff. We knew exactly what we were going to find out there. The botanical side professor, well, one of his favorite

sayings was, “Fellas, plants are where you find them.” And his name was Arthur Gibbs Bestall, and we all adored him.

Geier: What’s his last name?

Brookes: Bestall. He was very good with students, but he never published, or published very little. Marine botany was Paul Silvum, who came from Berkeley, a very inspiring teacher, and I got interested in marine botany from going to Friday Harbor [Lab associated with UW] at the University of Washington. I had no knowledge, no interest, particularly in forestry, but I was very busy in the 60’s doing all sorts of civic good things, and I was on the board for the League of Women Voters. The woman who was president was going on sabbatical with her husband to Russia, and she said, “Why don’t you take my job for a year?” I didn’t know what her job was, but she was an editor for the OSU College of Forestry. I said, “No, I don’t know anything about that.” And she said, “You’re a good writer,” because what I did for all these civic organizations was their public information. I wrote radio scripts and performed them, and wrote all kinds of brochures and guide books and press releases; all that stuff. She said, “And you’re also a scientist, and that would help you.” I think she was a history major, and I found it was an ideal job for me because it was half-time, and I had four small children. They never knew I worked, because I went to work after they went to school and I got home before they got home. And I had a wonderful teacher there. The man who was “the” editor for the College of Forestry then called the School of Forestry, was Jim Overholtzer.

Geier: Overholt?

Brookes: Overholtzer. He was a forester by training, had a gift for words, and was a very ethical, caring, contentious man. He monitored my editing for about the first two weeks, and then he just turned me loose. He said, “You know just as much as I do.” I didn’t, of course, but it was nice for him to say so. Within about a month, he said, “And you should get this job when I retire.” But then, I was recruited by the Forest Service. They had big money. It wasn’t the Forest Service, but really the Department of Agriculture. Ken Wright ran that program. We were sort of on assignment for the department, but the Forest Service handles the money and paperwork, what they call an IPA [Interagency Personnel Agreement]. I still work for Oregon State, officially.

Geier: How did Ken run things? Do you know?

Brookes: Well, my husband was in the OSU Entomology Department, and someone in that department knew me and knew what I do. They told them about me and told me about the job, so when they called, I knew what it was about. It was to be a job in Portland [PNW Station]. They kept saying, “You’ve got to understand, you’ll have to go to work in Portland.” At that point, I had two teenagers at home still. I talked to them and my husband, and I said, “What do you think about that?” They said, “Go for it.” I went up to the interview, a horrifying interview. There were twelve men sitting around a table, twelve people I had never met. Personnel people, and what is it, assistant directors, the director, the head of administration.

When I left the room afterwards, George Hanson, who was the station's editor followed me out the door, and he said, "They're crazy if they don't pick you. By far, you're the most qualified person who applied for this job." That's how I got into the Forest Service. After that job interview I was to go with the college, but PNW Station Director Bob Tarrant decided I should stay with the Forest Service. He didn't want to upset the Forest Service and the university [OSU], so he went down to see the dean [OSU-COF] and asked the dean if he could have me. The dean said it would be a good experience for me, and he was right. I negotiated not to have to go to Portland. It would be silly for me to have my office up there when most people I needed to work with were in Corvallis.

Geier: Who were some of the people that you worked closely on that project at that time?

Brookes: Well, none of them are here. Well, Gary Daterman is the only one that's still here. Roy Beckwith, Boyd Wickman, Sid Mason, Hank Thompson, Torgy Torgerson, Bob Campbell, and then later on in the program, Rob Stark. Then the three of us, Bob Campbell, Rob Stark and I, are the ones that coordinated the book. And the book was very well received. We had a wonderful team. [Bob] Buckman, who had been [UfSFS] Associate Chief for Research, kept a copy of it on copy paper in his office, and gave them away, and these people would say, "Oh, beautiful book." One of the earliest, I think, of the Forest Service coffee table books.

Geier: Some people started moving into this building from the OSU Forest Science Department and the lab. Is that right?

Brookes: I didn't know there was such a thing as a Forest Service "research room." I knew about the Andrews, but I didn't know about this. I found out there was such a place when I was offered a job, and they said I could have an office here [Corvallis] as well as an office in Portland. Starting out, they were going to let me work one day a week down here, and four days a week up there, and then, a little bit later, they said it could be two and three, and then, it could be three and two. By the end of it, I spent one week working full-time in Portland. At that time, this building was the big part. That was the earliest. Then the middle section was completed by the time I came in '77 and then, they had started building the new wing to the west [Phases of USFS Forestry Sciences Laboratory]. I paid no attention to this thing until I started working.

Geier: Were you aware of the Andrews before you started, before you were involved with it?

Brookes: Yeah. I worked at the College of Forestry and there were a lot of cooperative things going on. Some of the papers and particular events and symposia I had to edit, would be people from the Pacific Northwest Forest and Range Experiment Station [Later simplified to Pacific Northwest Research Station]. I didn't know where that was, but I did know about the Andrews because a lot of the people over in our Forestry Research Lab were working with people at the Andrews, and they talked about it. It's a wonderful place, doing good work, and then, after I came over here, I met all these people. Then, as we progressed closer to the present, I got involved a lot in tours for foreign visitors. I was supposed to be in charge of all

foreign visitors. Washington [Forest Service office] would send me a notice to set up a tour for distinguished people from China, or for the Russians, a delegation of Finnish foresters, or whomever else came in. It appeared to me, particularly for the three years when I was social officer, what was exciting and what was influential, was that a great deal of it was coming from the Andrews.

Also, as long as I've been here, one thing that has bothered me, is that my husband's department and the entomologists here [USFS Forestry Sciences Lab] didn't know each other. People here didn't go to departmental seminars, people over there didn't know the scientists over here. I thought this was lunacy. The whole reason for building this lab here is for connections with the university, and the ability to interact. I set up seminars and had people from this lab come over to give seminars for scientists at OSU Department of Entomology. I baked cakes and pies and cookies. I think that's why they came, but at least they were talking to each other. When there would be a seminar speaker, I would post notices so the people here would know about them, and then run around the offices and ask, "Who's going to the seminar?" and force this Forest Service attitude on them. A couple of people complained about going to a seminar, and I don't think the government would approve of me going to a seminar not directly related to the Forest Service.

Geier: What was the time frame when you started setting up those seminars?

Brookes: I think shortly after that, I became a "real forester." You know, after the one-and-a-half years of doing this work. I'd have a speaker come for an evening program, and I would have all of the people from both the departments – forestry and entomology – together, so they would get to know each other. It worked for a little while.

Geier: I'm curious here from your background at Illinois and since you've been involved, how would you characterize the potential for interdisciplinary exchange between the university here and [Forest Service researchers] when you started working for the Forest Service?

Brookes: One always assumes universities are set up in ways detrimental to interdisciplinary interactions. I noticed recently, I'm on some mailing list for the botany department and the zoology department, and they're at least notifying each other about seminars. There's often an awful lot of overlapping interests, and they seem to be sort of reaching out to other departments. It's really a pretty new thing. I suppose in part because of my academic background, I took entomology and lots of zoology classes and botany classes, and even some biology. I would read the papers, even back when I worked in the College of Forestry, and see connections [or lack thereof], and realize that scientist "A" had never read the paper about scientist "B," and they were very closely-related. They appeared to be building houses in their models, and in the next 100 years the ecologists said that they wouldn't grow, and the ecologists were running around trying to find places to study real forestry with real people. I think both groups have gotten over that now. When I was at the OSU College of Forestry there were three departments: a [forest] products one, a science one and an applied research one [forest management]. Now, there's a fourth one, in recreation, but there were economists

there and just a whole array of disciplines. Certainly there were barriers between the departments that didn't seem to get solved very often, but it seems to me that I was excited when I came to the Forest Service, because I thought we don't have deans and departments and things like that in the Forest Service.

I then began to think the fact I was an ecologist by training, pushes me in that direction. I'm seeing the connection between the kinds of experimental programs that people are trying to find out the answers to the questions, and I see where this question relates to that one over there. I spent a lot of energy introducing people. I would take people and ask do you know so and so? I think you would be very interested in the work he's doing, and get them together. I did that a lot. Sometimes it worked a little bit, and sometimes it didn't. I did more formal things, like when we put on a big program where we invited faculty from the University of Oregon to come and talk. We had a room full of economists and biologists of all kinds, and the dean of forestry from Oregon State and the dean of forestry from the University of Washington; all in the same room. We had them for lunch, the economist gave a talk on his perspective on owls and logs and the Northwest economy, and then, after lunch and the talk, we were still in Peavy auditorium, and everybody came back and talked for four hours about how the disciplines fit together, and the social components of what we are doing in the forest. I got lovely letters, one from Fred [Swanson], and one from Richard Haynes [PNW Station forest economist]. One of them called me the "Mother of Integrated Forestry," and the other said that I set a new standard for meetings in forestry. But I'm not sure an awful lot came of it, because people are much more comfortable at working in their own department and speaking their own language, and were a little more secure in what they know. It's dangerous out there on the edge.

Geier: Would you say that OSU is any more or less effective in inter-disciplinary work, other than universities, that you are aware of?

Brookes: I don't know there's not a roof, well, maybe evidence that a lot of this stuff is going on. I mean, until people get past the idea that if you have a meeting and a lot of flip charts with people in other disciplines, that comes to "interdisciplinariness." It's a step in the right direction, as you talk to each other, but it doesn't have a great deal of meaning until you really absorb it and actually work together on it. I don't get to do that a great deal. I once put on a great big party with people in natural history, physiology, entomology, zoology, botany and geography. We had all kinds of activities. They got to know each other, graduate students and faculty. There must have been 300 people there. But it's just the idea that we all have interests in common, and if we don't talk about what we are interested in with each other, we can't move forward. In Illinois they had a place called the Bavarian, and it had the ecologist and fisheries people. That group had a more congenial and interdisciplinary culture. They have to look at more things than someone like themselves. But I think ecology has changed so much since then. They are really joint exercises, and what I think of is that the object of all that is that studies are designed that cross disciplinary boundaries; and we don't do a lot of that.

Geier: You said that when working as an intern doing these papers, you tried to be aware of the Andrews. What was your first impression of what was going on at the Andrews, at that point as you started reading through the papers? What kinds of things were catching your attention?

Brookes: Well, the big one of the big things was the, even then, controversy over clear-cutting.

Geier: When was that?

Brookes: The '60s into the '70's. [1980s-on] People were saying things like it's the only way to manage Doug-fir; that kind of thing was coming out of the universities. As long as the clear-cuts had irregular boundaries, they looked natural, and it was okay to grow a monoculture, because it had no diseases and no pests. I think the whole environment of the universities at that time was very much centered on those ideas, and the students there had come to learn how to "grow boards." As soon as the whole Vietnam War thing developed, you could tell who the engineers were and who were the foresters on campus, because the way they dressed. There were conformists and there were people on a mission which was set, and they did they did a good job of it. A lot of publications had words like "decadent" and "over-mature." It just always seemed to me like why don't you just come out and say, "It's cheaper if you cut all the trees at once."

Geier: Have you heard a lot about that language?

Brookes: Yeah, and you think of the generation of forestry students that were taught with that terminology. Those people are in the positions of command in forestry all over the country – the ones that were taught that way. No wonder there is now a rift between the people who trained that way, and then, the group of students who came in later with much more of an ecological perspective and interests much broader than just than they are only trees to harvest.

Geier: How would you characterize the stuff that you were seeing coming from someone just working on the Andrews?

Brookes: I can't tell. My memory of time, and what I've read at different periods in my life, are really hard to separate. I do remember at some point, saying, "Yeah, this is more like it." Allen Berg was an innovator in the [OSU] College of Forestry. He was an innovator in everything in his life, and was a good friend of mine. He did a lot of things up at Black Rock [forest management research area in Coast Range]. One of the science experiments was done with planting hemlock, which is considered a weed by the rest of the group. He did long-term studies. So, it's hard for me to separate the stuff that came from him. Every year he did a young-growth management seminar and there were little inklings of [concern for managing for Douglas-fir monocultures]. Maybe we'll start having problems with insects and disease if we don't learn to plant anything else, and maybe not every place should be clear-cut, because regeneration studies have been talking about [failures to establish the next forest].

Geier: Dr. Berg ought to take a look at where that tree is doing well and the way that forest will be talked about [in the future]. There's a big difference between forestry in Illinois and Oregon.

Brookes: We don't have trees in Illinois. This is an enormous leap for me to come here. In Illinois, people burned coal in the fireplaces, because it's easier to get that than it is to get fire wood. We don't burn wood in the Midwest; we worship it, cherish it, we carve it if it falls down. Theoretically Illinois is in the north-central forest zone. There were little groves of trees, like in Southern Illinois where the glaciers didn't touch. We had to go quite a distance on ecology field trips to get into anything like the forest. We had a little university forest outside of town about the size of, I wouldn't even say a big hill, in Montana. That would be too big. A wheat field in Illinois. I remember going out there when it was 12 degrees below zero, digging under a tree and finding a whole colony of invertebrates. I couldn't believe it, it was like 10 pounds of weight that was on it. The thing about the forest here is that they're all around us. It took a long time in Oregon to recognize the beauty of the forest. For a long time, they had long corridors along the roads so that you couldn't see through them to the clear-cuts beyond. You didn't fly out of Portland in an airplane because you have all that cutting going on Mount Hood, right? And I think one of those things that pushed people's interest in a more ecologically-gentle approach was the airport coming in and out over Mount Hood and seeing it change before our very eyes from solid green, solid forest to what looked like hedge rows in England, and corridors of trees.

I guess my strongest connection to the Andrews really was earlier, when Jerry was talking about distributing clear-cuts [minimum-fragmentation cutting]. Richard Herman used to talk about how we had finally learned not to cut steeper and all that kind of stuff, and the terrible problems they had in the Coast Range with scotch broom. Back then, people did all this stuff and it took them a while to recognize the effects and deal with that and realize that doing it is a problem in the first place, doing it to that extent. And then Jerry came with his [New Forestry] thing. He seemed to be saying, I am the one that needs to straighten these things out. It finally dawned on him that once you completely clear-cut, then you have no continuity. I can remember his presentation, the first week of presentations, he had a map of future cutting sites, and he had huge photographs. Well, he's even gone beyond that now, he's done so much.

Geier: Well, it sounds like you're saying that Jerry Franklin was the first person you worked with that was directly connected to the Andrews and their standing?

Brookes: Well, I guess he is. I know I've worked on papers before his, that I know.

Geier: Back up one minute here. I want to ask you to talk a little about the decisions you made to move out to Oregon from Illinois, where both you and your husband got your degrees. Right?

Brookes: Yes. He'd never been west. He wanted me to make the decision, and I did not want to make the decision. The decision should be for the professional; what's good for you. For one thing, it was 3000 miles away from his mother, but I don't think that's relevant. I loved

Oregon, I'd been here several times before, and my old boyfriend who was from here. My honors thesis for my undergraduate was a comparison of alpine plants from Bolivia, Diamond Peak and the Canadian Rockies. My boyfriend brought me to Oregon. We camped on the coast and camped at Crater Lake, and I was hoping he'd choose here. He chose here, I think, mostly because Philadelphia said we have no positions, and if you come here, there's no chance you are going to get a job. In Oregon, the [OSU] Department of Entomology had no physiology, and so, there was a possibility he could teach a class and it might turn into a real job. He went to something called the Science Research Institute, which was biochemistry, biophysics, and physiology, all together. That was a wonderful place to work, it was just great and he did get a job in the entomology department, but it had nothing to do with trees or anything really.

Geier: Maybe I could ask you about your first impression about the Andrews.

Brookes: So beautiful, it is so pretty. I can see why forestry people wanted to have it, and I can see why it's been treated with as much as respect and delicacy as it has been. You know, they are certainly often under pressure to hack it to bits, and yet, they were very conservative with how they dealt with the land. Certainly Roy [Silen] was the pioneer in laying out roads away from the streams, during the early stages. They treated it as a cherished part of the experiment station.

Geier: Can you remember the occasion that you first went down there?

Brookes: First time down there, I went on a sort of a "show-me trip" with Fred. Carl Stoltenberg [Dean-OSU College of Forestry] was there, and Stan Gregory. They stopped at a lot of places where they were doing work, talked about it, stood by streams and talked. Beautiful day, they picked a beautiful day. They are very good at picking beautiful days. There were just little trailers there. There was no kind of real facility. Sort of heaped together. I've made four or five trips since then. One of the big things they used to do here, is they did nice things for employees. They'd get a bus every year, and take, maybe that was the first time I went, they would take the secretaries out, and everybody that worked here that wasn't going to the Andrews, could go on this bus for a day, have a sack lunch, and drive you and show you around.

Geier: It was sponsored by the station [PNW Station] here?

Brookes: Yeah, I think it was. It may be unnatural. There used to be sort of a community that isn't here anymore. We used to have an employee community raise money from the Coke machine, and they would have a watermelon feed. Well, a lot of that stuff I organized. They would have Christmas parties, Halloween parties, stuff like that, out of money raised. But they don't do that anymore, we don't even have an employee fund. Nobody was willing to serve on it.

Geier: What's your recollection of Fred and Bob [Griffiths] and Stan Gregory, on field trips?

Brookes: It must have been after Jerry left.

Geier: Would it be the 80's?

Brookes: No, I think Jerry had left. I went later, on one where Mark Harmon told about big logs, how they are trying to keep the insects out [with netting], and let the log rot. To learn what is the role of the insect. And they talked about how hard it was to get the logger to part with this perfect log. They expressed that point-of-view, too. I thought it was fascinating. And then, Art took me out and showed off the new building. I always loved to go, as I always learn something whenever I go. It's a beautiful place and beautiful to me for its intellectual contributions, such as the way it was. If Norman [Anderson] was here, we'd have outdoor laboratories accessible to scientists from everywhere. A big thing was IBP. That made a big difference down there. Dick Waring, in the College of Forestry, was prominent in IBP. So that was a real shot in the arm.

Geier: How do you characterize the interaction of scientists involved in research at the Andrews with other scientists in terms of interdisciplinary involvement on campus?

Brookes: Well, in more modern times, the "Stream Team" has a big Andrews focus, and that includes not just fisheries biologists, but also hydrologists and people interested in aquatic insects, like Norman Anderson. All these people work at the Andrews. There's a lot more interdisciplinary stuff going on now than when I was trying to get the entomologists just to meet the other entomologists. This is the group that included the fisheries people, like Howard Horton, and of course Howard is one of the people who's gotten started as an undergraduate on the Andrews. And he's a fisheries person. He was fun to talk to.

Geier: As someone who had tried, in the past, to stimulate that kind of interdisciplinary activities, why would this team have more success with doing that?

Brookes: I've always thought that one of the reasons why biologists tend to be a little more social than, for example, economists or sociologists, is that biologists went on field trips and they were cool. If you sit around a campfire and drink beer, which is at least it was the way it was at my school, we went to the Indiana Dunes. That was a big deal every year, we would go to the Indiana Dunes. We also went to a lake in Tennessee for a week. You're with these people every day for a whole week. At the dunes, we camped out, and lived in cabins with screen doors. You cook out, you carry heavy equipment and you slog around in the mud and then you bond, you really do. You have to count on each other, and you have a lot of time together on this bus going down there, and you talked about everything. A lot of the times we talked about what's wrong with your discipline or how we could do a better job of understanding ecosystems. It was just what we do together. So, I think that gives you a kind of push in the right direction. And I think a lot of it is in whoever is in charge. You know, if you have somebody who has the mind-set that I'm more important than you are, I will tell you what you need to know, rather than someone who pulls observations out of the good intentions. And I think it's good, if you're lucky enough to get somebody with curiosity. I think that people

are, no matter what titles they have or what degrees they have or what different schools they came from, they may have just as good ideas as you do.

The Andrews has selected for that sort of person. Jerry was one. Fred is certainly one. Art McKee is also. They're authoritative, and they just have contagious enthusiasm. They are excited about what they are doing, and that's a wonderful environment to work in. It makes people want to contribute and want to be part of it. I think Jerry started it, meetings that they have twice a week, but Fred carries them on, people come and they learn and they interact. I think a lot of it is persistence. They just keep working at this, they care about this. I think they do that because they thought they could do even an even better job.

I think it takes a rare scientist to recognize the social component of science. They think of it as intellectual process and they don't realize [the human dimension]. You read *The Double Helix,* and Jim Watson talks about the real breakthroughs coming when they are standing in the [tea room] debating about someone waiting to get their cup filled, or they are at the pub after work drinking beer, that's when the ideas flow and the creativity is maximized. I think when people are relaxed and comfortable, those leaders have been good at creating that kind of environment. Putting students in it, that's another component of the mix that adds a lot. People are all doing stuff, and they start to know each other's ideas after a while, but the new people come along and it makes it move and sort of boil. I've watched them in field and I've seen the enthusiasm, you know, being emotionally connected with what excited about, they are. They don't hide it.

Geier: What are your views of Jerry's departure?

Brookes: Well, I know there was obviously a big shock to everybody when Jerry left, and there were a few that were a little concerned about how Fred would do in the leadership role, because they do have very different personalities. Fred's very gentle and he doesn't like to tell somebody that their all wet. That doesn't bother Jerry, and he is more forceful. I think there was concern that Fred might not be able to deal with people that weren't pulling their weight or that he would not be as forceful as Jerry, but he's not. He came to realize that one can't weigh down a group with non-producers; it goes against the grain. He's a very sweet man and it makes it hard for someone extremely nice to ease out the people that, you know, don't fit, that don't work well. I've never talked to Fred about what ever prompted that.

Geier: What has kept them from getting the book done? [HJA Synthesis volume]

Brookes: I can't tell you, I really can't tell you. It was before Jerry left. And what this guy was doing was, he made this career for himself around getting groups to work together, which is certainly a good objective. It's just that, I think, almost any group of scientists would find any place to be uncomfortable. But what I thought they were worried about, was the problem of getting that they all felt they had a message about old growth they wanted to get out. And a message about managing forests. There were components of that message that worked in soils and through water and birds and mammals so that you need an expert on all these topics. You

would need all these experts to write this book, and that wasn't happening. And they thought maybe they wouldn't be comfortable together. And I said, "Jerry, this is idiotic, you guys are a team. You guys work together; you trust each other, so there should be no problem trying to decide which one person or two people or maybe three people are the best writers and have them develop the framework for the book, write the book and then hand it around to all the experts, let them all review it. You haven't done the soils right here or you need something about this fish or, you know, we have other measures of water quality than the ones you've given.

And you'd have a book. If you have 60 people, each one writing a little piece of it, you'll never get a book that tells a story. You've got to a story to tell, find the best storyteller, let that person tell the story, and you fill in the blanks." He said, "You're right, you're right." As far as I know, that book was never written. That is what I think should be done, to try to get to move towards the "Andrews story." There have been a lot of little brochures, there have been articles, but not the full story. To me, one of the exciting things about the Andrews is how much useful, valuable, informational, revealing work has come out of that place. I think it's done that in part because of the place itself. It has so much to offer in terrain, in watersheds, great big rocks and all. It has so much to offer as a site. A large part of it is the people and the fact that they've been able to overcome a lot of the barriers between groups, and barriers between cooperation among scientists. I mean, scientists tend to be very lethargic and not play well with others. Not that group. That's what I said in an essay I wrote about Fred in June; plays well with others. That's what's in their being and in much of society, the ability to work with other people and synergistically produce a great deal more than any extreme man could have produced on his own.

Geier: It's interesting that you describe Oregon State University as not being unusually congenial at doing this work [interdisciplinary]. The PNW Station certainly is not. We both mentioned IBP as a critical point, but, the IBP had other components all over the country where it didn't produce. What you are saying it sounds like, it is people, particular people, who were crucial?

Brookes: A lot of it is particular people, and in part, it is a particular place. It's accessible to go from here to there, and it's sort of a magnet to people. When people are down there, they're in their blue jeans and their boots, and they bring along a sack lunch, sit on a log and talk, talk about what's there. So, the place is the contributor, not just the people. It takes both. From the very beginning, I've always thought one of the reasons men work well down there is that. It's not that they're not competitive, particularly Jerry. I don't think Fred's competitive nearly as much as Jerry. I introduce him to students, too. One of my first lodgers was one of Jerry's students.

End of Side A, Tape 1 (of 1)
Begin Side B, Tape 1 (of 1)

Geier: Maybe you could talk about how the Andrews compares to other experimental forests.

Brookes: Well, I haven't visited other experimental forests. Have I been to any others? Well, I've been to some natural areas. I've been a small one, Greenwood Falls is an interesting place. The houses are built by the WPA. It's a very different environment there, a pine forest. And Cascade Head is a very interesting place, but it's also on a much smaller scale. There are not big acres of forest like the Andrews and I think probably there's a lot more scope for research at the Andrews. Lots more different kinds of things you could do there, or maybe not. I keep thinking about your Alaska book where you talk about when Bernard went up there and was warned about what a big place it was, and to keep the church close to where he is so he could get to it [in time of need]. That's almost similar to the Andrews, because it's big.

Geier: Ethan Abby Creek near the Burban area. What's the difference there, the people there? Where the Andrews is quite a drive, you know.

Brookes: Yeah, fortieth [Andrews Forest anniversary-1988]. We haven't had the fiftieth yet. Yeah, it was just the fortieth. I thought that was great. They did a really good job.

Geier: Well, I guess my question was, do you get a sense that people view a trip on the Andrews as kind of a special experience as opposed to something you do every day.

Brookes: For me it's always been a very special experience, maybe, because it's beautiful and I love the forest, and for a person who grew up in corn fields and loves mountains. I love rushing little streams like the one by [the headquarters site]. It's glorious to me to be allowed go there. But it's also the stream of intellectual achievement that's come out that thrills me. That's one of the reasons why it's so special to me. I don't know what other people feel about it, but it's like going to the City of Refuge on the big island of Hawaii. That is a beautiful place, but it also has this aura about it, because of the antiquity of uses of the land, and shelter for the people who are being pursued. It's like focusing on this as a very special piece of land and it carries something of an ancestral use for the place. It becomes part of you. I think the fact that the Andrews is sort of a trek from here could have been a deterrent, but apparently, the people who started out pioneering down there didn't seem to mind staying in motels in Blue River or camping out or staying in rusty trailers, because they don't dwell on that. They made jokes about it and laugh about it, but they don't really check. It's a little hard to explain. But, I think it is less of an ordeal to go down there now, because you can stay there. For scientists, I mean, their labs are right there now. They can go down and I'm not sure that that any more creativity or any better science is going to come out of that, but it's just more convenient. A lot of changes happened.

Geier: I was wondering, around that time, obviously, you've seen some scientists come into the station. The young faculty come in, some getting tenure and some not. I was wondering, in this culture, what are the implications of that for young scientists, as far as how much you've seen?

Brookes: Gosh, I have not registered. I know there are people who have been here, like Chuck Grier, who is now at the University of Washington. He was at a civil rights meeting I went to Dallas, but he was IBP. There are quite a few people here for a while that aren't here anymore.

Geier: Oh, I didn't know that. Scary thought.

Brookes: My son tells me that he has hanging on the wall in his living room his trumpet from when he played in the marching band.

Geier: What does his brother do?

Brookes: I don't know. I have no idea. But he is extremely competitive. [May be speaking about Dick Waring] He has done a lot of really good work. I worked on his paper with Russ Mitchell on tree stress and the inability of trees to fend off insect attacks because they were under drought-stress. Very good work. This is another of my introductions. I got Dick Waring and those people connected with the people at LaGrande. They did a bunch of studies together and published. The papers they published were because of me; it's very nice. I tried, when I was in the OSU College of Forestry, because they were the people I thought I would be connected with. But the up side is that they are so much more friendly. You can connect with them. They were more amenable to it. It might not have anything to do with the university environment.

Geier: Culture, would be people see it as something to be positive for a career and afterwards?

Brookes: Yeah, I think it's coming. I mean, because people talk about it a lot. Almost everybody says, "Well, for years, people thought it was a good idea, but not me, not me." You know, I don't want to think about it.

Geier: But your stuff earlier wasn't that the people were hostile to the idea, it was that they didn't see that they were going to be involved.

Brookes: I think they didn't see any reason for it. In my line of work, I don't have credentials. I don't have a Ph.D. I'm not a professor. I'm not a scientist, labeled a scientist, so it's taken me a lot of years to get the credibility that you need to really [interact]. Every scientist whose paper I've worked on in which I had found something embarrassing that would have been published – like a mathematical error I found, a misquotation or anything that saves them from embarrassment – they become true believers and then I can say to them, you really ought to read. It's like you said, every paper I've ever worked on. Nobody can [be perfect].

Geier: Not any of mine.

Brookes: Not any of yours?

Geier: No, none of mine.

Brookes: Oh, I'm so glad, it's very heartening.

Geier: I was going to say, it strikes me that you're the one communicating about what you do, and a lot of times, trying to get other people to communicate with each other. I was curious to know; what is your assessment of how the effectiveness of the Andrews group has affected them in communicating what they do to scientists? How that's changed over time? What direction?

Brookes: Well, for a long time, I don't think there was very much effort in the station to worry about what ordinary people knew about the Andrews or thought about it or to work at the station. When I was in [the public affairs group], I used to talk to [the PNW leadership] about what I thought we could do to raise the profile of the station. The people who are our [clients] know about it. We send out these quarterly reports and our publications, so they know all our work. And that was one of the first things one of the justifications [for Forest Service Research]. They didn't want me to [promote the PNW Station], it was not part of their agenda.

I think that everybody in that era pretty much agree that our clients were [Federal land managers]. And he said that when he came and by the end of his tenure, of course, he got a lot more push at his sudden involvement. That's when he said, "That's who our clients are. We should do what they want. Study what they want us to study." I think in a way, it reflected what was their general belief that, it's nice, if you have time to spare, to go to the state fair and hand out brochures, that kind of thing. But writing promotional material wasn't anybody's job. I'm not sure that they're doing a better job.

Now, Cindy Miner's training and entrance and background [information for employees], and so I think there's a lot more emphasis on it now on. I babble on video tapes all the time. They always seem to come down to do a video tape about something or other, and with virtually no budget. It's a little hard to compete with no funds. It really is. And it's just like in the old days. It used to be that someone got a projector and showed actual color slides on the walls. People could look at anything. Then they got to the point where they were doing 2 or 3 ones with music. If it isn't good quality, PBS special [quality] they don't want to look at it. I guess the people wasted money. I think we seem better off when we have exciting research breakthroughs, some news about where we have something to tell people. You make a one-page sheet, put them on the counter in the district offices. I mean, advocating all this stuff for years. They think you have to put lots of color photographs and pretty covers. They're just interested if you know the research before they read and they'll read about it in the PNW Quarterly List and they'll want to read about it. It doesn't need to be decorated. I think there are probably ways it could get to the public, if you wanted to. But, I think maybe there are books they need to be writing since the Andrews' story has been told, but you need a good storyteller, you need a good story, and, if it's intended for the public, it has to be very readable. It can't be too fast, it has to be told in an interesting, and a very short way. They've got to tell a story like that, or otherwise the intricacies of individual results and research studies are not going to be understandable. That's what I'm talking about. But, if we do have a story to tell, it's only a story, if we know the context.

The problem is that, for one thing, there isn't a person who knows all of it. And the little bits and pieces that are published as the result of individual studies, don't often make sense. Those papers are out there and they could read them, if they wanted to. We don't reward people who waste their time taking other people's original bits and pieces, putting it together so it tells a story, so it has a meaning, so it gives direction to what you want it to do. It isn't put together, it doesn't tell you how to manage your land. It only tells you that, if you put fertilizer on a little tree, it will grow faster. It doesn't tell you what it will do to the other plants, the animals, or, if you fertilize it, you're reducing [something else]. You do the same thing next year, something else or nothing, because they never go beyond what they just tell you a little piece. Expecting the people in the wide world to read those things is unrealistic, but to be able to see how they fit together, what concepts lead you to say you can do this, but not if you do that, we don't exactly know. There was a program, they had a research coordinator, an applications coordinator, whatever they called the head guy. They had someone else called the integration coordinator, a person who was very good at writing review articles. He was also a highly productive scientist, as he would turn out 5 or 6 papers a year. So, if he wanted to take a few weeks to write a review article, it didn't bother anybody. They put him in as an integration coordinator and I thought, what a funny term, but what he did from the beginning of the program all the way through, was make people talk to each other his job, make them talk. Wherever he saw an overlap or a chance for pulling something together, he put up signs saying, "You talk to so and so and work out who's going to do what now." And in the end we had a magnificent book.

Geier: So, what you've been saying here is that until very recently the Andrew's group has not been particularly successful in communicating what they've been up to.

Brookes: Well, from my point-of-view, I don't know. Maybe they feel successful. I helped them write some brochures. I just don't think it's ever been a high priority for them. They do have a very high priority for engaging visitors viewing the science in the works at the Andrews. Doing the kinds of things that we do at the Andrews, we could do them in China, we could do them in Russia, we could do them all over the world. I think that they concentrate a lot on the educational role

.

Geier: We were talking about the communication efforts of the Andrews. What would you identify as some of their more successful efforts to broaden the range of their target audience?

Brookes: I think one thing they did was really good was that birthday celebration. They brought in a whole lot of people from all over, congressional staffers, industry people, scientists from other places, and deans. They had both deans from Washington and OSU, and because I was a public affairs officer, I was considered a VIP. They had us to dinner and had us stay overnight before they had facilities to house people on the Andrews, but we stayed overnight at some Catholic Church retreat center that was wonderful. It's literally it's on the river and it looks like the river is flowing underneath the house. It's so beautiful!

Geier: Where was that?

Brookes: It's somewhere near there. I don't know what it's called, but it's a gorgeous place. They had a nice dinner, they had breakfast the next day, they housed us all and it's nice they had a meeting where they had chairs, folding chairs, in a great big room, and we had a guided discussion about the Andrews, to get to know each other better so they would be comfortable talking. I didn't do much talking, but it was a real nice idea. They have had meetings more recently down there where people come and talk about things. I think they had a flood meeting after the big flood of 1996. There is a constant kind of contact between the researchers and National Forest people. They certainly have been looked upon benevolently by the forest supervisor. I don't know about the current one or whether the current one has that feeling. If you think about the National Forest system as the client, then any information you get [is a plus].

Geier: I've got one more question, one more major question here.

Brookes: One more question. Well, I talk too much.

Geier: How would you characterize the difference between basic and applied science?

Brookes: That's very interesting because that certainly blurs. There's hardly anything that they aren't interested in. Anything that we find out is potentially useful to forestry, so it's hard for me to draw a line. Other people do, like Andy [Moldenke]. You still talk about earthworms, earthworms are good. They are good for your garden. They dig around and they do things. Well, then, they show you exactly how much soil they process and if you multiply it per individual, you get this huge figure and you go, oh, my gosh! Well, there are many more [examples] than there are earthworms, but nobody really knows what they all do and what would happen if they all quit, went on strike one day, they don't know.

Yeah, and trying to distinguish them. I went right to it. Here you go. [Looking at a publication by Andy Moldenke on mites of the Andrews Forest] You should see these pictures in here. I'm going to give you 10 minutes to look at this page full of [illustrations of mites]. These are the major types, they're not species they're just types and it goes on and it goes on.

Geier: Good grief!

Brookes: And there are these electron microscope pictures. These are all different. Are you seeing the differences, as you go through?

Geier: Oh yeah.

Brookes: We have nice drawings of them so that you can really see the differences. One interesting thing to me about this publication is, not only does he have all the mites he captured, but a bunch that ought to be, he's included them in there so someone later on a

committee can find one that ought to be there. Isn't that incredible? You think of that as basic research.

Geier: This makes a lot easier to add it to the morphology.

Brookes: To the bits and pieces, yes, it helps.

Geier: That's pretty straightforward.

Brookes: But that's when I got the angriest I've ever been at Karen Esterholdt [PNW Station editor]. She wrote the nastiest letter to Andy. Andy's graduate student took all the photographs, the graduate student graduated. We were supposed to pay the graduate student for the photographs, so Andy paid him out of his own pocket. Then Karen thought, because he didn't follow PNW rules, she said really mean things about him, and they don't usually do such things. But I took it and showed that letter to [higher authorities], and I said this is important enough to me that I discarded my lifetime commitment to not tattle on people, but this is a matter of great importance to my husband and his partner. That can cause discord between us and the university. This bill must be paid, and she must not write letters like that again. If she wants to yell at me, she could do that, that's fine. Now she says to the head communications, that I told her not to write to anybody. She's much better off when she just talks to people. I can't believe it!

Geier: That's what my problem is I put all these names that don't have many faces and I walk past them as I'm trying to make phone calls.

Brookes: Well, it's way too much, I have talked a lot, but it is interesting.

End of Interview