

**Interview with Jim Trappe, by Max Geier, September 15, 1997, 1:30 p.m.
in Forestry Sciences Laboratory, Corvallis; Transcribed by Keesje Hoekstra.**

Forest Service mycologist Jim Trappe was somewhat peripheral to the Andrews Forest program, but his research group included scientists who participated more closely and, also, he collaborated on projects with BLM scientist Chris Maser on projects dealing with big wood in rivers and decomposition. His comments in this interview about collaborations, synergies nucleated by Jerry Franklin, and OSU-Forest Service scientist interactions facilitated by co-habitation in the Forestry Sciences Lab reveal key features of the Andrews team's interdisciplinary character and its ability to advance, even when the Dean of the College of Forestry was not very supportive.

(Appears to be missing beginning of interview--introductions, opening question, etc.)

Jim Trappe: I might note that my association with the Andrews was a bit peripheral. I came for occasional fungus collecting there and so forth, but never had any experiments going on there.

Max Geier: Yeah. Ted Dyrness told me that was his perception, also, but that you worked with a lot of the people who worked there.

Trappe: Oh, yeah.

Geier: Well, that's kind of what I was interested in for this interview.

Trappe: Okay.

Geier: He also told me your association with those people goes back. I think he put it, "It goes back....years." I'm not sure exactly what that turned out to be in terms of numbers, but maybe you could talk a little bit about your background and becoming involved with these people. Also your academic background, how you came to know people like Ted Dyrness and Jerry Franklin. I understand you worked with them quite a bit.

Trappe: I got my Ph.D. at the University of Washington in 1962, although I had been working for the PNW (Pacific Northwest) Station since 1958. The first two years were at La Grande [Oregon]. The only one I knew that had much association with the Andrews at that time was Bob [Tarrant]. But then, I was transferred to Portland, and with Tarrant as my supervisor to do regeneration research. It was a two-person project. The first year, we were developing a problem analysis, and getting some small studies going, but mostly surveying forest managers and researchers in the Northwest, to get an idea of what the major regeneration problems were. This took us to the Andrews, because they had quite an active program of silvicultural research going there. We made several

trips there, went out with Jack Rothacher and Dick Fredriksen, and maybe some others. There's a photograph of me from about that time hanging out in the office down at the Andrews, very scientifically inspecting a seed trap. I found that amusing, because I had never done seed trap studies in my life. But one time when Tarrant and I were there, Wally Guy, the station [PNW] photographer, came along because he wanted some photographs of the Andrews. I don't remember whose study it was, but they took us up there, and Wally said, "Jim, go look at that seed trap." (Laughter) So I did, and he took a photograph.

Geier: (Starts to speak, but realizes Trappe is not finished) Go ahead.

Trappe: I think the most significant research I was involved with there had to do with the IBP (International Biological Programme), which would have been in the early seventies. I'd have to look it up, but we had at that time a visiting scientist from Japan, Makoto Ogawa, and I had a post-doc, Bob Fogel, who had been my Ph.D. student also. I guess it was IBP funding that financed them. They were studying coarse woody debris there. It was Ogawa who originally developed the concept of decay classification for coarse woody debris. We had this class 1 through 5 system that was adapted by practically everybody on the West side [Western Cascades]. He and Bob Fogel worked that out, and I, as their supervisor, had some involvement. That proved a very useful thing.

Geier: That was while you were up in Portland?

Trappe: No, no. I was down here. I came to Corvallis in '65.

Geier: Okay.

Trappe: I came from La Grande to Portland in '58, and here, in '65.

Geier: Before you started working for the Forest Service in '58, you were working at University of Washington on your Ph.D. Are you from the Northwest originally?

Trappe: Spokane.

Geier: Spokane? Okay.

Trappe: I actually have worked for the PNW since '56; at La Grande the first two years, and then Portland. I was on the Colville National Forest [Washington] before that.

Geier: Okay. Was your undergraduate degree at Washington?

Trappe: The University of Washington, and the masters at Syracuse [University]

Geier: Did you know Russ Mitchell?

Trappe: Oh, yeah.

Geier: I interviewed him last year. Maybe you could talk a little bit about some of the areas of interest or fields of study in which you worked.

Trappe: The Ph.D. work was on mycorrhizae. It focused on a particular, very common and widespread mycorrhizae fungus, *Cenococcum geophilum*, and I did some collecting on the Andrews with that, but it was on the ecology and physiology of this particular fungus. Then, in the course of working on mycorrhizae, I was digging up root samples regularly, and I kept encountering truffles and related fungi. So, I'd take them back, and Professor Daniel Stuntz at University of Washington, who was my mycological mentor --

Geier: -- Daniel --?

Trappe: -- Stuntz. S-t-u-n-t-z.

Geier: Okay.

Trappe: He'd work with me on trying to key these things out, but with the keys that were available, usually we'd throw up our hands in despair. (Chuckle) He'd say, "Well, send these to Alexander H. Smith in Michigan, because he's working on this group." So I would, and Smith, the first time, wrote back, "This is a [first] report for the State of Washington. Get more." So I went out and looked for more stuff, sent it to him, and he said, "Well, this is a different species, it's a new undescribed species. Get more." He always ended his letters, "Get more." So, after all, I spent as much time looking for truffles as for mycorrhizae. Then, when I finally wound up in Corvallis, and where it was reasonably convenient to get to the Andrews, I went down there a fair amount just collecting these fungi, and of course, other places as well.

Geier: You mentioned you'd go to the Andrews in your Ph.D. work, and also when you're here in Corvallis.

Trappe: Yeah, that would have just been one or two quick swings through to collect some root samples.

Geier: What was the attraction that brought you down there in particular?

Trappe: Well, because it was the Andrews, and there was a lot of stuff going on there.

Geier: You heard about other people's work there?

Trappe: Yeah, and I was a good friend of Dick Fredriksen, who was there at the time, so I could crash at his place. He was at the University of Washington with me, and we were classmates in the Ph.D. program at the College of Forestry.

Geier: But it wasn't the main focus of where you were?

Trappe: No.

Geier: Then, after you got to Corvallis around '65, you began to go there more frequently, it sounds like?

Trappe: Yeah.

Geier: That would have been of course, the time when the IBP begins to pick up?

Trappe: Yeah.

Geier: Was that the main reason why you started to work down there?

Trappe: No, it was just because it was a convenient place to sample the roots and fungi from a variety of habitats. And we were encouraged to work there because it was an experimental forest, and they wanted to get focused there to the degree it was reasonable.

Geier: Were you encouraged by Bob Tarrant, or other people?

Trappe: Yeah. Station [PNW] policy, in general, came from our assistant director.

Geier: The reason I ask, is that Jerry Franklin mentioned that he had seen a memo which came through, he's not sure of the date, from '62 to '65, somewhere in there, a proposal to close the Andrews, and he was thinking that the way to save it from being closed was to get more people working down there.

Trappe: That could well be. I don't recall that, but Jerry would have been much more involved in that sort of thing than I would be anyhow.

Geier: Sure. Maybe you could talk a little bit about your first impressions when you started, when you got to the Ph.D. work, and when you first went down there. That'd be the first time you visited the Andrews?

Trappe: I imagine, yeah.

Geier: Do you recall much about it at that point?

Trappe: No. (Chuckle)

Geier: Not surprising. (Laughs) I've heard there wasn't much there. By '65, when you started to spend more time there, what's your recollection of the place at that point?

Trappe: Well, there were a lot fewer clear-cuts (chuckle), and some of the research that was going on, appeared to me to be groundbreaking. I recall the watershed studies were underway, and they were sampling streamflow and water quality from different cutting treatments, and burning versus controls. I think that was the first time that sort of thing was done in the Northwest. It seemed to offer a lot of promise, and in fact, they did learn a lot from those studies. A lot more ecological kinds of studies going on than maybe happened later, in the sense of seed production and dispersal by the various conifer species. Maybe there wasn't more than there was recently, but it impressed me at the time that there was some really good, fundamental kinds of studies, going on.

Geier: Were there people working up there that you had not run across before you started working there?

Trappe: Jack Rothacher would be one, and I don't remember who else was there at the time. Ted Dyrness had stuff going on, I'm sure, but I don't recall what Ted was doing, particularly associated with the Andrews.

Geier: You've mentioned Jack Rothacher several times. It sounds like he was someone you worked with maybe?

Trappe: No, I really didn't ever work with Jack, but got acquainted with him, probably through Jerry. Then it turns out that Jack and his wife, Jerry and his wife, and I, went on many backpacks in the Cascades together over the years. We got to be quite good friends.

Geier: Okay.

Trappe: Jack was into hydrology, as I recall, which was totally different than anything I was involved with, research-wise.

Geier: I was talking to Jean [Rothacher – Jack's wife], and she was talking about these backpacking trips. They formed the "Lost Ladies Group." (Laughter) She said the men had a different agenda in going hiking than the women did.

Trappe: Yeah, well, Jerry and Jack were both guys who could hardly wait to see what was over the next ridge, and I was always looking for fungi, so I would always be a little bit more casual in my hiking, a "tortoise and hare" sort of thing. And then the ladies had their own interest and agenda. Well, we each did our own thing and it worked out well.

Geier: It sounds like, although Jerry was working in a different field, that you knew him before you went down there and started working at the Andrews?

Trappe: Yeah. I knew Jerry, and as I recall, when we were in Corvallis, he got there a year or two after I did. We were a little bit younger and identified mutual interests like backpacking and ecology and botanizing and so forth. It was just good empathy there.

Geier: So, it was more the office work up in Portland, than working where you worked and when you did research there? [H.J. Andrews].

Trappe: Yeah. Jerry was still working on his thesis at the time, which was a habitat- type concept, and flying back to the northwestern forests. After we got down here, we did some field trips together. I was pretty interested in the habitat-type concepts that he was developing, and I was project leader here in forest pathology and mycology. I wondered; did habitat type relate to root diseases in general, *Phellinus weirii*, or laminated root rot, in particular? So, he and I went up into the Oregon Cascades for a few days, and he'd identify a particular habitat type, and then, I'd just make a quick eyeball survey of incidences of laminated root rot. We found some very striking differences between habitat types. I remember one, in which there were two distinct habitat types just butted up against each other - you could almost draw a line. And because of the volcanic geology in the Cascades, there can be some very abrupt changes. In one habitat type, there was just downed trees and sick trees all over the place, but one could walk 50 feet into the other habitat type, and I couldn't find a sign of it at all of *Phellinus weirii*. Let's see, there was something else popping in my head.....it will come to me later.

Geier: Did you do any work at Cascade Head?

Trappe: Yeah. Probably more at Cascade Head than at the Andrews. Particularly some studies with Bob Tarrant, who had been transferred to Corvallis a couple years after I was. On the alder crops down there that were established back in the mid 1930's, Bob did soil comparisons, and I did comparisons of fungi on the pure alder versus the pure conifer versus the alder-conifer mix. Then, we had a student, C.Y. Lee, who is still at Corvallis, who was looking at the effects of alder on soil microbiology with particular reference to how changes in the soil microbial community might affect the laminated root rot fungus. So, there was quite a lot going on down there.

And then, Alexander Smith from the University of Washington, whom I mentioned earlier as being the guy I sent specimens to, I invited him to come out and stay at Cascade Head during the fall fungal fruiting season. He did that at least twice, and then one of his students, Joe Ammirati, came the third year to collect, because mycologically, it's a very rich and interesting area. Ammirati is now a professor at University of Washington, and Alexander Smith's daughter Nancy Webber is here in the Department of Forest Science now, so there's a lot of interlinkages there.

Geier: I was wondering if you could recall your impressions, first impressions of Cascade Head as compared with the Andrews.

Trappe: Well, I think they were both of equal interest to me. Cascade Head was nice to go to because it was close to the beach. But I was usually going there in the rainy season (laughter), so the beach didn't call me out that much, when I was working there, anyhow. The different habitats that each had and how they contrasted with each other, were quite informative to me in terms of the ecology and diversity of fungi. It's at Cascade Head I learned that, no matter how wet the summer may be, a lot of the mushroom species will not fruit until, mid-October or later. It can be pouring rain there in August and a few things will fruit, but most of them will still wait. And that was a good area to observe that where ecologically there's something more than just wetness and coolness involved, probably the physiological state of the trees, which are the hosts of mycorrhizal fungi.

Geier: Was that a species?

Trappe: Well, all the hundreds of mycorrhizal tree species form mycorrhizae with fungi that mostly produce either mushrooms or truffles as their fruiting bodies. So, that also includes fungi on alders. In most forests of the Northwest, the main forest overstory components would be associated with those kinds of fungi.

Geier: You mentioned earlier that one of your first reasons for going to the Andrews, was because there was someone you knew there.

Trappe: Dick Fredriksen.

Geier: Dick Fredriksen. You knew him through graduate work?

Trappe: Yeah.

Geier: He was living there at the time, is that right?

Trappe: Right.

Geier: Can you talk to me a bit about your recollection of the facilities? I think he was living in Blue River?

Trappe: Yeah, there at the ranger station. The station had, I guess, a couple of houses. The Andrews had an office in the ranger station building, but I don't remember for sure. Very little in the way of laboratory facilities, but of course it's a field facility, so they wouldn't have needed much. It was fairly routine Forest Service-type housing they had there. I presume they probably had a bunk house for crews, because most ranger stations did at that time, but I always stayed with Fredriksen when they were still there.

Geier: It's interesting because Dick Fredriksen was a watershed researcher, and I was curious about the way in which your daily work schedule would go, if you're down on

the Andrews. What kinds of activities would you be involved in that period? What kinds of things would you be doing?

Trappe: Mostly, when I was there it had to do with field sampling of roots and fungi. And I was usually doing that by myself, so I was really flexible and could just work it out darn near any way I pleased. I did a lot of just exploring around on the roads and some of the trails seeking out different types of habitat, because at that time, I was interested in the differences between different ages of stands, or wet versus dry stands and that sort of thing. There wasn't really a routine to it. I just set out in the morning and did my thing.

Geier: So you worked mainly off the existing logging roads?

Trappe: Pretty much, yeah.

Geier: Didn't do a lot of cross country?

Trappe: No, not a whole lot, because it took too much time. I'd go down for maybe two days, and I'd want to hit as many different kinds of habitat as I could, so doing that by road was the easiest.

Geier: So, I take it you did pretty much the same thing at the Cascade Head when you were working there?

Trappe: Yeah.

Geier: Did you notice any differences in the road structure or the accessibility of places?

Trappe: No, not much, although there was probably more access at Cascade Head, more frequency of roads. Because like Wildcat Mountain, no, not Wildcat Mountain, but some of the summits on the Andrews hadn't been roaded yet, and some of the drainages for that matter. But the Andrews is so much bigger than Cascade Head, that even with a more sparse road system, the Andrews still had a lot of access to different habitats.

Geier: When you went down there to stay at the Fredriksens, did you wind up staying for about a week at a time?

Trappe: Not that I recall.

Geier: Okay.

Trappe: At that time, my wife and I had our first kid, and then, we had our second kid, and so, I tried not to stay away for too long of a time.

Geier: When you were working at the Andrews in that period, did you have a lot of free time, or did you schedule free time for yourself to go and talk to the people in the community of Blue River or elsewhere in the area?

Trappe: Not really. I had too much fun doing my quote, “work.” (Laughter) I was enjoying that thoroughly, had plenty of people to talk to around here, so I didn’t really know anybody at Blue River. I was in PNW country.

Geier: That was in the early 50’s?

Trappe: Early 60’s.

Geier: Oh, early 60’s.

Trappe: Well, mid-60’s actually. Because it was ‘65 when I moved to Corvallis, so, prior to that, it was just maybe a couple of trips from Portland down there.

Geier: Okay. I see. I was a little bit off base here because I was thinking you were talking about when you were doing your doctoral work.

Trappe: No, this was after the doctoral work. The doctoral work was just at most, two, and maybe only one trip, to the Andrews over that period, so that was very incidental.

Geier: Where’d you stay at that time?

Trappe: I don’t remember. I might have been camping, because I did a lot of that during my field sampling.

Geier: In the beginning of your stage of working at the PNW Station, what would you say was your view of the role of experimental forests in the station [region] at that time?

Trappe: Well, when I started at La Grande, we had the Starkey Experimental Forest and Range. It was an extremely valuable and useful facility for the kinds of studies that were regarded as high priority, and the Starkey actually had some pretty good accommodations, probably better than the Andrews did at that time; in the late 50’s. That was before I was married, and I spent all summer out at the headquarters. So, when I got transferred over to Portland, and went to Andrews with Bob Tarrant a few times, it seemed to me like this was really an ideal working situation. The argument was made then that the Forest Service was better positioned to do long-term research than universities, because the Forest Service had stability, could make long-term commitments, and so forth. Whereas the universities had more turnover, students and so forth, and might have their own experimental forests, but these were not as expansive and did not represent as wide an array of northwestern habitats, as did the

Forest Service experimental forests. The fallacy of that in recent years, has proven to be that while the Forest Service is a relatively stable organization, their funding is not. So, you start a long-term study, then they cut funding. That's just long-term integrated research sites that started out a few years ago as two-hundred-year studies, and got funding for two years, and then the program goes to pieces.

Anyhow, the experimental forests were expected to fill that role. There's quite a bunch of them. There's the South Umpqua Experimental Forest in Douglas County or somewhere down there, and several others scattered around that seem to have been disenfranchised, like the South Umpqua Experimental Forest [It was partially disestablished, but not completely]. So, I guess as the needs and perceptions of priorities change, experimental forests became less and less relevant to what the station's mission became. I think the Andrews, as you mentioned, was in danger of being closed at that time. But, the amount of research being done at the Andrews, the role that universities, OSU especially, remain in using that area for research. That has resulted in it being so valuable, that ultimately, nobody would think of discontinuing it. Then, the NSF started a long-term ecological reserve program [IBP/LTER], so I think it's really a great thing that we still have it.

Geier: Around the same period of time, the research natural area program was starting up. You were involved with some of that, weren't you?

Trappe: Well, in a peripheral way. Within the station, Jerry was probably a leading force there. I collaborated with him a few times on locating some candidate areas. That was fun stuff, but important to do.

Geier: My understanding is that you were in kind of the same situation, where there was a concern in the early 60's about demonstrating there were some utility to these places.

Trappe: Oh, yeah, there still is. I don't know if you've talked to Sarah Greene?

Geier: No, I haven't.

Trappe: She's been in charge of the RNA program, and is probably is the best source on the history of that, how it evolved, and how it's going today. I know she wants to have documented all uses of those RNA's, because they've been under fire in times past, and they seem to be pretty firmly established and respected now, but who knows in the future when there's going to be new pressures to put them to other uses. So, it's important to document how those are used. This does remind me about something I said a little bit ago. Jerry organized this trip to the Wheeler Creek Research Natural Area down in Southwest Oregon. He did this purposefully, because he and I knew each other well, and he also knew a fellow by the name of Chris Maser, a wildlife biologist and ecologist. Jerry thought Chris and I ought to get acquainted, and he thought the best way to do that would be to take us on a long trip in a car, then get out in the woods in a

research natural area and prowl around. So, we did that. Chris and I found conversation with each other interesting, and I told him I was interested particularly in forest fungi, and he was working with small mammals. He said, "You know, I've been studying the California red-backed vole. And every once in a while I've found one that has something in its mouth that appears to be a piece of fungus." So, I said, "Well, gee, next time that happens, save it and I'll look at it." "Oh," he said; "I have saved them."

The upshot of this was that he brought me some of these specimens, also specimens of fecal pellets of various animals, and stomach contents preserved in ethanol. I looked at them and found spores of all kinds of truffles and truffle-like fungi. He had a tremendous number of collections from all kinds of native small mammals. Over the next couple of years we collaborated pretty closely, and published a paper that had tremendous influence on research on the use of these fungi by small mammals, and how that information could be useful in understanding the habits and habitat that various animals occupied. Then Chris got a position with the Bureau of Land Management, had an office in this wing of the building, and he and I then collaborated several more years studying the role of coarse woody debris in the forest ecosystem, and we got out some seminal publications on that. So, while we didn't actually conduct many of these studies, Chris and I did work on the Andrews and Cascade Head. We did have specimens from both that Chris had trapped. It all was brought together by Jerry, who perceived these two people needed to connect.

Geier: Was that the Wheeler Creek Natural Research Area?

Trappe: Yeah.

Geier: What is your perception of the intended differences between research natural areas and experimental forests, and their roles in research?

Trappe: I suppose a major difference, at least as I see it, is that research natural areas are to be kept as natural areas, whereas experimental forests offer the opportunity for various manipulations of the forest; timber harvest, or brush control, or prescribed burning and what have you, or grazing at the Starkey. So, they serve quite different purposes, and I think both are equally important. Now, at a time when biodiversity is regarded as an important consideration, because we have the research natural areas, we have some places where we can get baseline data of what a relatively undisturbed forest produces in terms of various organisms, fungi, for example. Then we can use that to compare with stands that have been manipulated one way or another, and start getting some ideas of how these manipulations or the different successional stages differ in terms of various organisms.

Geier: How would you describe the frequency of use for research natural areas? Do people tend to make use of them for research, or not?

Trappe: Well, I'm sure they do. I really don't have any quantitative feeling for that. Again, Sarah Greene would be the ideal source for that sort of information. I haven't used a whole lot of natural research areas in our fungal work, I guess mostly because of the sorts of things we've been doing. The manipulated stands have been more important, but I think now I'm making much more use of the RNA's. In fact, this year I'm doing a mushroom and truffle survey of the eight research natural areas on the Roseburg BLM (Bureau of Land Management) District, at their request. They want to know what's there.

Geier: So, when you go to study at the Andrews, one of the appeals there is the ecosystem sites, I would assume?

Trappe: Uh-huh (Affirmative).

Geier: And what you're dealing with at the Andrews is a managed forest, but one of the unique characteristics of the Andrews involves these areas that are relatively untouched?

Trappe: Right.

Geier: I guess what I'm getting at is; what is the difference in terms of establishing a research program, and going to a place like the Andrews that has managed forests and relatively untouched stands, versus going to a research natural area, which I gather you didn't do a great deal?

Trappe: In a place like the Andrews, you have stands that have been treated in a variety of ways, adjacent to stands that have not been entered [treated]. Research natural areas are set up to represent particular vegetation or other types of natural features. They're not designed to be a comparison with anything in particular. They're designed to preserve a representative sample of something, usually a vegetation or forest type. So again, they're two different things. Now, in the sorts of things I'm interested in now, I'd probably be more inclined, if I had the resources to do it, to compare the RNA's fungal populations, again, to develop the kind of baseline data we don't have for fungi, very much anywhere in the world. Then having done that, expand to see how similar habitat types that have been disturbed in one way or another, compare, and get some idea of the fungal succession, say from the old forest as compared to the just-starting forests, the young forest, the middle-age forest, and so forth. We know there is a succession, but we don't know much about the details, what those details mean, and to what degree is the diversity of mycorrhizae fungi important to the health of the forest.

Geier: You talked about working with Dick Fredriksen a little bit up there. In the 60's or going back to your graduate [school] days, did you do much research with him?

Trappe: No, it was mostly visiting and crashing at his place, and then I'd go out and do my own thing, because he was doing soil and hydrologic work there, which was not very closely akin to what I was up to at the time.

Geier: But you were working with Bob Tarrant to some degree?

Trappe: Yes, on the regeneration.

Geier: In more general terms, could you describe your level of involvement with others at the Andrews. People who were doing research up there, who weren't necessarily residents on site, but were down there?

Trappe: Probably not a whole lot, other than my own sampling. The work at that time we were doing in my project had to do more with nursery production of planting stock with mycorrhizae, and of a laminated root rot on the forest pathology end. The laminated root rot work was mostly in the Coast Range.

Geier: A question here about where you went for relaxation, but it sounds to me like the work was actually kind of a relaxation?

Trappe: Oh yeah. I love getting out in the woods!

Geier: In general terms, you talked about going to the Andrews and some surrounding areas. But wasn't your field work pretty widespread around Oregon?

Trappe: Yeah.

Geier: Mostly in Oregon?

Trappe: Oregon and Washington.

Geier: Okay, and Washington. At the time you were working down there [H.J. Andrews], did you have any degree of involvement with people at the district? It didn't sound like it, regarding the Blue River [Ranger] Station? One thing I'm interested in, is how research questions are formed, and where those ideas come from. Were there ever questions posed to you by management, or concerns that they had that they asked for information about, that might have affected the kind of research you did?

Trappe: We didn't have a whole lot of interest initially by management on our mycorrhizae work. But, as time went on, one industrial forester, Nick Freemyers, became convinced mycorrhizae were really important, particularly in Northern California. He put together a co-operative with Northern California and Southwestern Oregon companies, and the BLM and Forest Service, to fund our studies on mycorrhizal inoculation of nursery stock. Probably, most of the concern by forest managers was on

the forest pathology side, especially on laminated root rot and forest mistletoe. I'm trying to remember where our emphasis came from the studies of coarse woody debris that got Ogawa and Fogel funded at the Andrews. It must have been raised through some of the IBP group discussions here. But, having done that, and having torn apart some rotten logs, and looking at the roots and other organisms in these things, I certainly became convinced they are playing some very special role in the forest.

Ogawa not only did the log classification, but also quite meticulously, I was going to say excavation, but that doesn't quite convey the right thing. He mapped the forest floor down to mineral soil, over a fairly large area, I forget how big, but maybe a quarter-acre or something. And he'd go through it bit-by-bit; this was on the Andrews. He discovered that well more than half of the surface of the ground was covered with old cubicle, brown cubicle, rotted wood. Now you wouldn't see it because it was covered with humus and you'd see the logs. But over centuries, these logs clump and get flattened out, and eventually, at most, there might be a little mound, or not even a mound, it'd be just flat. But you'd look under the humus and there would be this layer of rotten wood. This is a very different thing from what one would see in a clear-cut or even after a forest fire. After a forest fire, there are spots where you had really hot burns and everything's ash down to mineral soil, but a good share of the forest floor, may be ashed or charred on the surface, but the underlying humus could still be intact. If you log the thing, all that stuff is disrupted and moved around, mixed up and so forth. Ogawa showed us this, a very real difference in what's left behind after clearcutting, compared to fire.

Well, what's the significance of that? People are still working on it. Mark Harmon and Tom Spies are doing a lot of work with coarse wood debris. There was a lot of work done in Idaho by foresters and researchers there. They discovered in Idaho conditions, that most of the fine root growth during the summer was taking place where there was this rotten wood under the soil. We've done studies on those finds, and found much the same thing as the Idaho guys did. We found that this old brown cubicle rotted wood can hold up to six times its weight in moisture. It's like a sponge. And actually, these mounds of rotten wood on the forest floor are almost like perched water tables during the summer. You can go out to a place like the Andrews, when we've had a dry summer, you go out where there's mineral soil, and it will be powdery dry, and all the fine roots, the feeder roots for the trees, will be shriveled up, the feeder roots of the trees. You get down under one of these old rotten logs, and you can sometimes even squeeze water out it, and there'll be all kinds of lush root growth and fungal activity, even during the dry parts of summer. So I think it's very important material for our kind of climatic situation. It provided a source of moisture even during an extended dry spell in summer.

Geier: So, your work picked up on those themes?

Trappe: Yeah, right.

Geier: Could you identify a major or some particular publication that would be a good summary of that.

Trappe: Maser and I wrote PNW General Technical Report 164, *The Seen and Unseen World of the Fallen Tree*. That came out some time in 1984. After that, there was another multi-authored and larger report, General Technical Report 229, edited by Maser, Tarrant, Trappe and Franklin, and Swanson, called *From the Forest to the Sea, A Story of Fallen Trees*, something like that.

Geier: One thing I'm curious about is how you saw your role in taking research and making it available for some broader audiences. What did you see as your target in regards to publishing research and getting research support? [funds, etc.]

Trappe: Well, we had multiple targets. Certainly, we tried to design our studies so we would be learning new fundamental things about what we were looking at, but then, we wanted to convey that to people concerned with forest management, whether it be environmentalists, Forest Service managers, or timber company people. To try to convey to them why these things are important to their interests. *The Seen and Unseen World of the Fallen Tree*, is kind of a combination of those. We tried to write it in a way that the lay reader wouldn't be intimidated, but at the same time, presenting a lot of information from both our own studies, and the literature, trying to pull it all together so it made a cohesive story. I think it's a pretty good publication. That's one I'm especially proud of.

Geier: Is that a PNW publication?

Trappe: Yeah. I think I have one here somewhere. I know I have one at home.

Geier: I can probably pick it up in the publications that are over here.

Trappe: If they've got a complete set, I know you can. While we're talking, let me pull up the reference here so you know what to look for.

Geier: While you're looking for that, I was wondering if there was anybody at the national forest level who might have been your contact for trying to get information out from your studies, if you saw something you thought would be relevant to management interests and concerns about management of the forest.

Trappe: Along those lines, probably the person that I dealt with mostly when I was working in the regeneration project, was Bob Tarrant, and the regional office had a guy in charge of regeneration by the name of Harold Dahl; D-a-h-l. Harold was a very good communicator and a good asker of questions.

That's *Seen and Unseen World of Fallen Trees*, General Technical Report, PNW 164, published in 1984 [showing Geier copy]. With the red alder research, we had a lot of interest from forest managers, and, collectively, several of us, Bob Tarrant, C.Y. Li, and K.C. Lou, who was a microbiologist with our group, and a professor, Walter Bollen from the OSU Department of Microbiology, joined forces. I don't know whose idea it was originally, but in a lot of conversations, we all agreed that the manner in which red alder influences forest soil structure, builds up of nitrogen, reduces soil pH, and perhaps helps cleanse the soil of laminated root rot. We started a series of experiments to test that concept and some of these were done at the Andrews, as we said earlier. We actually did some big studies on the incidence of laminated root rot in mixed Doug-fir–alder stands, compared to pure Douglas-fir stands. And that involved the hiring of Everett Hansen, a post-doc. Everett, subsequently was hired for the open forest pathology position in the OSU Botany and Plant Pathology Department, where he is today.


Geier: When was he hired as a post-doc with your group?

Trappe: Well, I suppose sometime around 1980. That's when a lot of this was happening. Very little of that was done on the Andrews, but a lot was done at Cascade Head because of these old red alder plots set up there in the 1930's. Pure alder, versus pure conifer versus alder-conifer mixed.

Geier: We were talking about connections with the forest.

Trappe: Okay, with forest management. At that time, the Siuslaw National Forest had declared war on red alder, and they were spewing herbicides around like nobody's business. They were putting herbicides on alder, not only to release Douglas-fir from alder competition, but also they were spraying alder everywhere. I'm not sure I ever heard this said, but I got the impression that they were trying to eradicate the seed source. They wanted alder off of the Siuslaw Forest. We were doing our work and I heard from some the Siuslaw people asking at the time, why were we wasting money on a weed like alder that everyone wanted to get rid of.

Geier: So, this was in the early 80's?

Trappe: Sometime around there. I was the project leader for forest pathology, so I tried to explain why we had this interest. Well, alder isn't going to do anything for us there, and just good silviculture will take care of the  problem. At that time, laminated root rot was thought to be primarily a disease of large boles and small soft timber size trees. Then, somewhere in the Coast Range out of Corvallis, a bunch of tree saplings started dying. The pathologists were called in, and these were plantations of seven- to ten-year-old trees. I think it was Everett Hansen and Earl Nelson here, who went and looked at these trees, and behold, they had laminated root rot. That's about when we had convincing evidence that if you have a laminated root rot center, tree death occurs. The fungus persists in the soil a long time, we know now that's fifty to seventy or more years

in a more or less dormant stage in old rotted roots. When a root from a young tree contacts a buried dormant fungus, it can be reactivated and infect the new root, and then, work its way into the root system. What was happening, they were clearcutting laminated root rot areas, and planting Douglas-fir right on top of infected soil. We hypothesized later that the natural succession in the Coast Range would be, you'd have fire and then alder, or at higher elevations, perhaps sitka spruce and vine maple, that are not infected by the disease. You'd have an alternating rotation between the susceptible Doug-fir and non-susceptible alders or shrubs. During this alder-shrub occupation, over time, much of the residual inoculum of the disease would die out.

So we thought, if alder affects the soil to the point, it more or less hastens the demise of the fungus. If true, then it would be a good intermediate rotation for these old root rot centers. Once the mortality from laminated root rot in young stands was discovered, then people got to looking at it, and it was found to be much more extensive than anybody guessed. Red alder is absolutely resistant to the disease. I think it was over about a two-year period, that the Siuslaw Forest went from criticizing us for doing alder research, and spraying herbicide all over the place, to planting alder and growing it in nurseries. They could plant red alder in root rot infection centers. Moreover, the alder sawmill industry people had been upset with the Siuslaw, because they wanted a continuing supply of alder, and Siuslaw was trying to get rid of it. So, that was kind of fun to see one's participation in a research project lead to such a drastic change in management practices. And, to this day, I feel is a much more sound ecological practice.

Geier: You mentioned Harold Dahl is one person with the region [Region 6, USFS]. Would he have been involved with this shift? Or who is the person or the people you see as key in that two-year period of shifting policy?

Trappe: I guess I don't really know that. I didn't have all that much direct contact with the Siuslaw people. Everett Hansen and Earl Nelson would probably know who that might have been on the Siuslaw Forest.

Geier: So, the dissemination of information wouldn't be you talking directly to them?

Trappe: No.

Geier: Somehow, they would pick it up through channels?

Trappe: Yeah. I have never had any problem with talking with forest managers or lay people, and trying to explain what we're doing and why. In fact, I rather enjoy doing that. But I'd had such negative interactions with Siuslaw foresters that I just didn't go out of my way to rub elbows with them very much.

Geier: It sounds to me from what you've said, that there was somehow a change from your earlier work in the 1960's. We didn't talk too much about this kind of experience. Was there something that you see as changing the climate there, or why might that have become more important?

Trappe: Early on in my mycorrhizae studies, we had the idea, since there are so many different mycorrhizal fungi, that each one has different physiological capabilities, that one should could select fungi adapted to its planting site. Just like one uses the right seed source to grow seedlings in the nursery. Select fungi from the planting site, inoculate those on the nursery seedlings, so that when the seedlings get planted out they have the mycorrhizal system ready to go, and have a better chance to establish. It was a great idea, but it took us about five years to conclude it just wasn't going to work, because the fungi that naturally occupied the nursery were so aggressive there, they just out-competed the introduced one and antagonized anything we tried to introduce into the nursery. That was in the early 80's, and by 1985 or so, Randy Molina, who was in my project, Mike Castellano and I, decided we needed to shift our focus, learn more about the ecology of mycorrhizal fungi, how to maintain the mycorrhizal potential of the sites being clear-cut, and how to modify practices so that there would be healthier soil biology. So we started. We got away from the nursery inoculation thing and went more into the fungal ecology thing. About that time, I took early retirement from the Forest Service and continued on the OSU faculty here, with Randy [Molina] providing me with office and lab space, which he does to this day. So, we have the university and the Forest Service group here, the "Soil Mycology Team" as we term it. We pay very little attention to who works for whom, that's just a matter of who pays your salary, but we're really an integrated group working towards common goals, and trying to work together.

Geier: Actually, that makes a point I was interested in while you were working at the PNW Station. You mentioned various university collaborations. What are the origins of that kind of interaction in your case?

Trappe: When I got here in 1965, this wing of the lab was "the lab." The other parts hadn't been built yet. And the university, the Forest Science Department [OSU-COF] people, were over in the Forest Research Lab on Western [Blvd.]. Aside from knowing those folks, and getting together once in awhile at meetings or something, there was very little interaction. Then the lab was expanded here [Forest Service FSL], the middle wing was built, the west wing was built. We had what was, if not the largest, certainly among the larger facilities for forest research, in the world. Unfortunately, at the time we got all this space and wonderful facilities, our budget started getting cut. It was getting to the point where nobody could afford the lab space. It was putting us all out of business, using up our operating money. There were even some reductions in the work force going on. So, while the lab building was expanding, the staff was contracting.

Geier: Now, when would that be roughly?

Trappe: Late 70's or early 80's, as I recall.

Geier: Okay.

Trappe: The PNW Station decided they had to rent out some of the space to help pay for the building's overhead costs, because it was just killing them. And about that time, the Department of Forest Science was bursting at the seams, and so OSU rented a lot of space in this lab for Forest Science faculty. That's the time when we started really having a lot of PNW-OSU interaction. It's just amazing to me that two buildings can be side-by-side, but, like over in Peavy Hall, I hardly ever see any of the people there. They stay there and I stay here. But now, I'm bumping into Forest Science [OSU] people all the time, and they're bumping into Forest Service people all the time. In addition, the PNW researchers are pretty routinely given courtesy faculty appointments [OSU], and that's helped a lot too, because it put us in a position of being able to accept graduate students, for example, and be much more involved with the College of Forestry [OSU].

Geier: Now, is that something new that started in the 70's? When did that happen?

Trappe: It was certainly building in the 70's. I'm sure it started before I got here in '65. But the Department of Forest Science was pretty small in '65, and the PNW Station was growing, but still not all that big. All of us were in this one wing [now three] here. As both organizations grew and these courtesy OSU appointments were given to PNW researchers, and there were graduate students, which involved us in the faculty meetings and so forth, I think both organizations fostered this kind of interaction and integration. Then John Gordon, who was department chairman of Forest Science, was just a wonderful person and loved to see collaboration between organizations. Then John went to Yale, and Bob Tarrant was employed as acting department chairman while they conducted a search for a new chair. He'd retired from the PNW Station and moved down here. I think it was about a year that he was acting department chairman while they were recruiting someone new, who turned out to be Logan Norris. Tarrant and Logan both had been PNW employees, and Logan was here as project leader [leader of a Forest Service research group, one responsible for watershed studies at the Andrews Forest]. So, we had a PNW person becoming department chairman, and with as much or more enthusiasm than John Gordon, to promote interactions and involvement of each group with the other. There's been a very positive direction there, not only from the people themselves, where if you don't have it from the researcher, no matter what an administrator says, it's not going to happen. But Logan had the researchers interested to do that. Collaboration actively encouraged by the department chairman and the PNW people, makes a really nice organization.

Geier: So, from what you're saying, it sounds like a combination of departmental-level encouragement, Station-level [PNW] need, and the specific geography of the lab here.

Trappe: Right. And the physical geography is much more important than I ever would have guessed.


Geier: Just the layout of the building, or the fact you were brought into the building?

Trappe: Well, you meet each other in the mail room or walking down the hall, and would say, "Oh, hi Kermit [Cromack]. By the way, I just saw something I thought you'd be interested in. Let's talk about it." That sort of thing. Also, having students, because then we have a graduate student who has his or her program committee, and that will involve various people in the department, and also the Forest Service. So, just a lot of opportunities for interaction and [opportunity for] identifying mutual interests.

Geier: That was my next question. What is the degree of involvement of Oregon State University students in your work? Especially your work on the Andrews, but in general terms also.

Trappe: Oh, students do all my work. (Chuckle) I just have the fun!

Geier: Now, has that always been the case?

Trappe: I've had students since I got my first doctoral student somewhere around 1969 or 1970, and I've had students ever since, sometimes too many. There was one time I had 12. But, yeah, graduate students are a very important part of our PNW research here. Randy Molina, for example, is team leader for soil microbiology from the PNW. He has one student and one post-doc. I've got three students right now working on their research and writing. One's completed [recording fades...thesis/dissertation?]  They add vitality and enthusiasm and creativity to the group, and they're willing to work hard for little pay.

Geier: The students that you have, it sounds like they're doctoral students?

Trappe: A few masters, but mostly doctoral.

Geier: Okay. Do they do much work on the Andrews themselves?

Trappe: Bob Fogel, who was my Ph.D. student, and then was around for a couple, three years as a post-doc, was involved with the IBP and projects that were on the Andrews. Dan Luoma, who is now assistant professor in forest science, did his doctoral work totally on the Andrews. So, he might also be someone you want to talk with. This was done around the end of the 1980's, and his thesis was published in '92 or something like that.

Geier: Luoma is L-u-o-m-a?

Trappe: Right.

Geier: Okay. What was that on?

Trappe: It's on comparison of mature versus old growth and moderate versus dry sites for production of truffles, native Pacific Northwest truffles.

Geier: My understanding from Martha Brooks is that you're also president of the Truffle Society?

Trappe: I'm scientific advisor for the North American Truffle Society. When they organized themselves, I said I'd do that, but I didn't want to be an officer.

Geier: Is that a kind of activity you've been involved in frequently in your career?

Trappe: Oh yeah. That's been going on for twenty years or more. And it came as a result of Tony Walters, who was teaching a mushroom identification course for Linn-Benton Community College. He asked me if I would come and give a lecture on truffles, which I did. It was a good group, and most of them were adult and continuing students. Then he came back a few weeks later and said, "You know, people were so excited about your talk that we decided we'd like to continue some involvement with truffles, even after the class is done." So, we thought we might form a "truffling society," if there wasn't one already. Tony had it all lined up and organized, with goals that would be scientific and culinary both, and it took off from there. They've been a valuable resource. That group must have found well over fifty new species of truffles since they've organized.

Geier: When was that organized?

Trappe: Well, let me see. The first thing would be for me to get their newsletter for you. I guess, I don't have any left. [Looking for copy in office.]

Geier: If you find one, you can just drop it in my mailbox right over here.

Trappe: Oh, okay. Wait a minute. 1978.

Note: Apparent break in recording/transcription leaves gap in narrative and subjects.

Geier: [Name?] set that up it sounds like. Had he known you from somewhere before?

Trappe: Nope.

Geier: Just by reputation?

Trappe: Yeah. He heard about my work with truffles and invited me to give my lecture to the class.

Geier: You're probably wondering how long this is going to go on. (Laughter) We're almost done if you're worried.

Trappe: Okay.

Geier: But, I had two more things I wanted to address before we're through. The first one is that I understand that you've done quite a bit of work in international research, with international groups, and things like that. I wondered if you could give me some examples of collaborations, and any links to the Andrews.

Trappe: Well, the Ogawa case would be one. He came over, maybe funded in part by IBP and part by the Japanese government, but he was here for a year. But even before that, our group had developed a fairly good reputation internationally for our research on mycorrhizae. We'd have people liking to see if they could come and spend time here on a post-doc. We never had money for that, but we said sure, if you can put up the money. They'd come here for training, six months, a year, or whatever. So, we had researchers from Switzerland, Canada, France, Germany; several from Germany. We've had four now from Sweden, also some from Mexico, Brazil, Argentina, a couple from China, one from Thailand, several Australians and New Zealanders, and also from Spain and Italy. A really tremendous variety of people, and we almost always have some kind of foreign post-doc here either on a post-doc or a sabbatical. Right now, we have a Norwegian mycologist.

Geier: So, people are attracted here by the reputation of the group. You don't go out and recruit them?

Trappe: Right. We've never gone out to recruit them because we never had, and rarely, have we had money to do that. It's been a tremendous benefit to us, because we always learn as much from them as they learn from us, if not in terms of the scientific aspects, then culturally or whatever, and they make good contacts. In 1967, I was given a year's sabbatical by the PNW Station. I was told that this was the first time any Forest Service researcher has had a sabbatical, and I did it in Italy. And I was told, (laughter) it was the first time any Forest Service researcher had spent a year abroad on salary.

Geier: Why Italy?

Trappe: Because, by that time I'd gotten really involved in truffles and false truffles, and mycorrhizal fungi and important organisms in our forest, and because they are a food for the animals and so forth and have important mycorrhizal fungi. Italy was probably the best place to go study taxonomy of these fungi. At that time, the PNW had a little

bit different organization. My assistant director was Bob Furniss, an entomologist. Bob was a great believer in international collaboration and in the training of scientists to go abroad. So, he and I talked about this, and he said, "This would be a great thing to do. Maybe we can get something started." So, he supported it. I got approved by the director and by the Washington office to do this, with the proviso I pay for transportation costs myself. So, I wrote up a couple of grant applications and was fortunate enough to get funds to pay my travel. Then, while I was in Italy, Bob Furniss retired and was replaced by Ken Wright, also an entomologist. After a while, Ken wrote to me and said, "Jim, we haven't had any travel claims from you. Don't let them pile up, send them in, let's say, monthly." I responded that the agreement for the sabbatical was I'd pay for the travel expenses. He replied, "Oh, I don't think that's necessary." I did use my grants to pay for my round-trip ticket Portland to Italy.

I had really good support from my supervisors. And that set a precedent that has been exercised in stations all over the country by many, many scientists since. That's kind of a nice accomplishment, too, but it's really Bob Furniss and Ken Wright's accomplishment as much as mine, because without their support it would have been dead in the water. Anyhow, we have these people come here as post-docs or on sabbatical, and then, as in the case of the Swedish professor Torgny Unestam, he wanted some of his students to come here. Unlike the United States, most countries seem to make funds available fairly often for students to study abroad. They consider that an important part of the educational experience, and some countries like Finland, for example, require their students to go abroad for at least one year for study in forestry. So, we have those people coming here, and then they develop joint interests with ours, they go back home, and we continue collaboration. We had a guy from Australia come around 1970. He spent a year here. He and I have been working together ever since.

Geier: Who's that?

Trappe: Nick Malajczuk. M-a-l-a-j-c-z-u-k, from CSIRO in Perth. He got a big grant that brought me and Mike [Castellano] over to Australia at least half a dozen times, working with the mycorrhizae truffle fungi.

Geier: West Australia then?

Trappe: Actually, tropical Australia was his program. We did go to Western Australia, too. And then, partly because of that work, we had another Australian, Andrew Claridge, ask me to be on his thesis committee at the Australia National University as external examiner, and then, at the Australian National University. After Andrew earned his Ph.D. he applied for and got a Fulbright Fellowship to come here, and he spent the year here in 1994. Since then, he got a big Australian grant, so I've been over there four times working with him. So, it snowballs. We have a good group here and they're open to visitors, and one of our policies has always been to share all information with anybody who asks for it. And I know Andrew told me it was just like a breath of

fresh air to come here, because any questions he'd ask of any of our group, he knew he'd get as complete an answer as anybody had. Nobody was keeping anything hidden. And people in general just seem to have appreciated the research atmosphere in the group here [HJA].

Geier: Several people told me that they made a cautious decision about the time the NSF grant picked to go with post-docs rather than graduate students. Sounds like in your group here, that you dealt mainly with a wide diversity of kinds of people?

Trappe: Well, the post-doc can work full-time under our system, but a graduate student has to take so much coursework the first two years. Basically, they can only barely get started on their research. So, if you have a post-doc, they can hit the ground running and they don't have all these other requirements to meet. On the other hand, the post-docs are twice as expensive or more, so I like to have a mix.

Geier: Well, I promised I only had two more, and I've got more than that.

Trappe: I wasn't keeping track.

Geier: I do have one question here, the last one I want to get in, and make sure I don't forget. I was wondering if you could describe some about your perception of the way the Andrews group is governed. How much input do you have as someone who's kind of working with people, but not directly involved in the running of that program? How much input can you have or have you had, in decisions about various studies, and what's it like to be a specialist?

Trappe: I've never felt inhibited, but I've never had that much occasion to need to have input. I know any time I want, I can call up Art McKee [Andrews Forest Director] or whoever, and if I have an ax to grind, he'll let me grind it and do his best to see that my needs are met, and that's fine with me. I'm just happy how things go. We use the Andrews facilities down there, off and on, now. We've had some project or group retreats down there. We've had "Westwide Fungus Forays," which are a gathering of mycologists in the western states, from British Columbia to San Diego State, and as far east as Idaho and Utah. We've had that at the Andrews. It's just a really nice facility for that sort of thing.

Geier: Since they built that headquarters facility there in the early 90's?

Trappe: Yes. The facilities are really nice for lots of kinds of things. Of course, they're very heavily used during the field season, so it's a little bit hard sometimes to get a slot, but for our fieldwork with fungi, they're mostly fruiting in late October, November and December, then we always have easy access to the facilities. There's one other thing I wanted to mention. One time, I suppose in the 70's, the Forest Service National Research Advisory Committee met at the Andrews. This included, as I recall, Chief

[Richard] McArdle [U.S. Forest Service] at the time. I know the Deputy Chief for Research at the time, Les Harper, was there, plus eminences in forestry from academic and industrial sources that were on the Chief's Advisory Committee for Research. Bob Tarrant and I were asked by the station [PNW] directors to set up the tour of the Andrews and other destinations. They didn't have the facilities at the Andrews at the time to host something like that, but we made good use of the various lodges along the McKenzie River, other picturesque places and so forth.

Geier: Where did you put them up?

Trappe: Well, I can't remember the name of the place, but there was a sort of quasi-rustic lodge. I think it was upriver from Blue River, as I recall. Bob Tarrant might remember. Have you interviewed him by the way?

Geier: Yeah, I have. This is ringing a bell, because I've been going through some documents over in the university archives [OSU] relating to research forests, and one of the recommendations that came out of that advisory committee in relations to that site, was that better facilities were needed at the Andrews. It's a must read.

Trappe: I would imagine.

Geier: That's why I was looking at it, thinking this was one of the issues they were talking about; facilities.

Trappe: The [PNW] station put together a sort of souvenir photograph album for participants, and I got one of those which I ran across in my trunk at home not long ago. If you like, I can see if I can find it again. (Laughter) I don't know what I did with it. I know I kept it, because I thought, "Well, this is kind of cool. I'd forgotten all about that."

Geier: That's from that group when they were there?

Trappe: Yeah.

Geier: Yeah, I'd like to see that. Either that or copies of some of the photos. As I understand it from this work I've been doing, Oregon is the facility [was a discussion point] with that advisory committee by the then [PNW] station directors, and that you and Tarrant had put this itinerary together.

Trappe: Well, Bob was responsible for it, but since I worked for him, I was part of that. That was fun and we had a hell of a good time. We had to go up and down the McKenzie checking out all of the facilities, trying the food. They had a bus which they wanted to take over McKenzie Pass. That was quite an adventure in itself, getting a bus around some of those hairpin curves. I drove a guide car, so I could go ahead with flashing lights and the bus would go on like that, to get around some of the curves. Yeah, I had heck of a time on that.

Geier: I think I would have rather been in the guide car than on the bus. (Laughter)

Trappe: And it would be my guess that Les Harper, kind of a curmudgeonly guy, and he was I think from Vermont, very taciturn, somewhat dour looking and **intimidating**, wanted to go. But he had to leave early and I drove him to the Eugene airport. On the trip to the airport, I found out he was a really nice person. I was just a young kid, a researcher, and he treated me like a real researcher. In the course of that, I took advantage of asking him some things about Forest Service research, and he was very emphatic that the Forest Service had to change from it's old habits of going out and testing this, that, and other forestry practices, for the national forests, to change from that to getting into a fundamental understanding of how forests work and operate. I suspect he was a very strong proponent of the experimental forest concept for that reason. The phrase was at the time, making a lot of our research "narrower and deeper," and really try to understand how these systems **work**. It later occurred to me that Dr. Harper would have been the Washington office administrator who approved my proposal for a year in Italy.

Geier: That was the early, must be the early 70's, right?

Trappe: I think so. Well, no, actually it would have been the early '60's, because it was before I came to Corvallis in '65. It might have been '62, '63, '64, or something like that.

Geier: So, that's not connected with the advisory **committee**? [For H.J. Andrews EF]

Trappe: The advisory committee was before I came to Corvallis in '65.

Geier: Well, it's interesting that he would be making that argument at that point.

Trappe: Yeah, it is.

Geier: That's pretty early, that I know. Well, that's really it. I don't want to keep you here all afternoon. One question that I asked before, maybe that I asked in a different way. There's some advantages and disadvantages in working in a group context, you know, working with other people and cooperating. I was curious; the Andrews group is made up of a lot of people with overlapping interests. My understanding is that their research is a little bit more specialized and **focused**?

Trappe: I think when Ogawa and I were doing the coarse woody debris study, is when I had maximum interaction with other people. I know Jim Sedell, for example, and the role of fallen trees and so forth, in streams and wetlands. A guy whose name I forget now, who was down at the marine science center, was focused on the role of coarse woody debris in estuaries and **beaches**. It is true that our studies have tended to be rather specialized in their focus, until Chris Maser and I published these papers about

the use of truffles as food by small mammals. And amongst other things, our data indicated that the northern flying squirrel, subsisted primarily on truffles. Now, they will consume some other stuff, but throughout the year, probably 80% of its diet is truffles. Then comes the northern spotted owl, whose major prey from the “Willamette divide” north, is the northern flying squirrel. So, all of a sudden, truffles are discovered to be an important part of the food web for the owl. We have this neat interacting system, where the trees have got to form mycorrhizae to get enough nutrients and moisture from the soil. And many of the mycorrhizae fungi are truffle-formers, and the fungus needs the tree as it’s source of energy, the squirrel needs the fungus as its food, and the truffle spores are disbursed by the animals that eat them, and the spores go through the digestive tract, and where they’re excreted, then there are little packages of spore inoculum that get dispersed through the soil. The owls need the squirrels, and they need the trees for nesting and so forth, so you have this cycle of interacting organisms, and that’s just the macro aspect.

C.Y. Li determined that there are free-living nitrogen fixers associated with mycorrhizal fungi, including the fruiting bodies. He’s tracked these through the digestive tract of the squirrels that eat the truffles. When the truffle spores are being dispersed by the animals, they’re also dispersing the nitrogen-fixing fungi. So, there’s just all kinds of stuff going on there. That, got us into collaboration with other specialists, particularly Andy Carey’s group at Olympia. So, I had a graduate student, Wes Colgan III, just successfully defend his thesis a couple of months ago. He looked at truffle crop productivity over time and seasons at Fort Lewis, in conjunction with Andy Carey’s group there. They were trapping and tagging squirrels and chipmunks, and every time they’d have one of these animals captive, they’d squeeze a few poops out, so we got little vials of poops to analyze for truffle spores. It’s been a lot of fun to have that kind of interaction. The same sort of thing was happening at the DEMO project down on the Umpqua.

Geier: It’s interesting to me, you were talking about how if you have to use the Andrews for your study site, you don’t have any problem going down there. I’m just curious, is there some trigger or mechanism, or what kinds of things lead them to come and draw you into those kinds of studies? Is it just the proximity of being in daily contact with these people, or do they actively seek you out on some issues?

Trappe: Some of both. One of the things that IBP demonstrated, at least to the National Science Foundation, was that one of the major black holes in our knowledge was of below-ground processes and organisms. So, they have put over the years, some special emphasis on studies of what’s happening below ground. Insofar as we can be helpful to other groups in that, we’re very open to that kind of collaboration.

Geier: So, it’s kind of a gradually evolving process?

Trappe: Yeah. Probably a lot of it, again, is just the kind of contact we have; in the same building instead of two buildings with a parking lot between them. I'm a little bit concerned with these new buildings going up here. It's going to take more energy to maintain these contacts than it does at the moment.

Geier: Are people going to be moving out of this building into that one?

Trappe: Oh, yeah, a lot. Probably two-thirds of the Department of Forest Science.

Geier: That would require more formalized structures, if you want that to continue?

Trappe: However it's done, it takes energy and time. Because, if you don't see people more or less spontaneously on a regular basis, then you have to put effort into seeing them. Everybody has far more to do than they can realistically handle. "Oh, I really want to go over there and talk with so and so, but I've got this thing to get out today and tomorrow, and I have to do this lab work and stuff next week." Well next week, it's the same thing, so you really have to make an effort to do it. We may have to formalize that in some way in the sense of agreeing with people we want to especially keep in touch with. "Let's say every third Thursday of the month, we'll have lunch together, or sit down for an hour or two in the afternoon and update each other." If it's not scheduled that way, it's not going to happen. I'm sure of that.

Geier: Well, it's like you're talking about the same thing that our group does, where they meet [regularly]. Everybody knows it's to be on that day, and they plan on it.

Trappe: Yeah, right.

Geier: Well, this has been real useful to me, because, first of all, I was not aware that Bob Tarrant was the acting chair. I'd known he was on the faculty. Who would you recommend I talk to for the university perspective on that period?

Trappe: When Bob was -- ?

Geier: -- when he was brought in as acting chair, and when the university began to place faculty in the Forestry Science Lab.

Trappe: Well, I suppose most any of the faculty that were here at the time. Dave Perry would certainly be a good person.

Geier: I'm in his office. I should probably get a hold of him.

Trappe: Oh, yeah. You can slip over to Hawaii on official business. Mike Newton would be another, and Joe Zaerr.

Geier: Joe?

Trappe: Joe Zaerr, I mean.

Geier: Okay.

Trappe: And there are others I'm sure, but those are the three that come to mind. Joe might be among the better ones, because I guess he's retired more or less now, but his title is likely associate department chairman for Logan [Norris], and I think he probably was very much involved in helping Bob as well.

Geier: You still have Bob here?

Trappe: Uh-huh. I think he's over in his office right now.

Geier: Well, I think I've probably taken up enough of your time here. Forgive me.

Trappe: I don't envy you having to sort the meat out from the garbage here, but so it goes.

Geier: No, this has been real helpful.

Trappe: I guess that historians are used to that.

Geier: Yeah. I like to tell people when I do my work, I think I use maybe two percent of the research notes that I wind up taking. You are probably familiar with that, too. I appreciate your time.

Interview Ends