

Interview with Andrew Moldenke by Max Geier, November 14, 1997, Cordley Hall, Oregon State University. Transcribed by Elizabeth Foster.

After an academic upbringing with luminary ecologists at places like Stanford, Andy Moldenke found his way to OSU, settled into the Entomology Department and began working on a wide range of topics, teaming up with many ecologists along the way. He contributed a wealth of information on soil creatures to the survey of invertebrates of the Andrews Forest and was critical in identifying hundreds of species in the plant-pollinator studies in the subalpine meadows. A natural educator, he participated as a mentor for many summers in Research Experiences for Undergraduates programs at Andrews Forest.

Max Geier: Interview taking place 1 p.m., Friday, November 14, 1997; Cordley Hall, Oregon State University.

Geier: The primary focus of the book is on the concept of a community of researchers and scholars. The thing that I am interested in is the way that people formed connections and collaborations, things like that. That is kind of what brings me here to you.

Andy Moldenke: I don't know why you came to have that emphasis, but I think that is the emphasis that makes the Andrews Forest unique. A lot of other scientific endeavors, and certainly a number of other LTER programs and other programs underwritten by large, federal bureaucracies, in this case, NSF, they are written for a specific goal – [not collaborative]

Geier: Go ahead.

Moldenke: -- are written for specific goals, and Andrews Forest is rather unique in that respect. Actually, my association with the Andrews is probably longer than most of the other folks here, except for McKee. Back in the '60's when the Andrews Forest was part of the International Biological Program rather than the LTER program, I was a researcher involved in another IBP program, in a convergent evolution program. At that time, I had met Art McKee, and become friends with Art. And so, I've sort of been aware of what has been going on in the Andrews Forest for over 30 years, and things have changed very significantly in those times, as you no doubt know, and have documented undoubtedly (laughing) many times over. But, I didn't have a good feel for the flavor of the Andrews Forest until, let's say the mid-'70's, when I ended up here in Corvallis. By that time, I would say that the general flavor and organization of the "quote- unquote" Andrews Forest group, had changed very significantly, as you would expect from the early-days to a mature research group. Personally, I think it's changed very much for the better. A lot of the unique characteristics, the give-and-take of the scientists, the give-and-take between science and management, and the give-and-take between science, public policy, and educational outreach, the mesh of all that, had totally, well, it was changing by that time in the mid '70's, and certainly, by the mid '80's. And it had totally changed, I think, for the better. That is what makes the Andrews unique. Whether it is better or worse, who the hell knows,

depends upon your political point-of-view? But certainly, the unique flavor of the Andrews and how it works, and how science, public policy, and public ethics, that mix, has evolved. That is in fact unique to the Andrews, and that has evolved primarily over the last 15 years now, I would say.

Geier: At the time that you first became involved, was that characteristic?

Moldenke: Not at all, I would say. At that time, the Andrews Forest was held up by other members of other IBP programs as a classic example of a very provincial, one-goal-oriented, descriptive science, and certainly not all-encompassing and balanced.

Geier: Relatively speaking?

Moldenke: The give-and-take between a whole bunch of research groups with different interests and different agendas; that didn't exist in those days at all. It was sort of an archetype of the opposite. (Laughs)

Geier: You said that you were involved in the convergent evolution program with IBP. Where was that located?

Moldenke: That was run basically out of Stanford University. That was the center basically, but there were other areas. We were studying convergent evolution in Chile, California, Arizona, and Argentina. We were looking at old questions that Von Humboldt and Darwin had originally posed. By God, you look at the desert in the southern hemisphere, you look at it in the northern hemisphere, and the plants and animals look alike. The real question, and they came from different ancestors, because things evolve outward from the tropics towards the poles, and the question is to study this ecologically, in an ecosystem-process mode. How similar do those ecosystems function? That was the real question. I mean, we knew for 150 years that things look alike. I mean, things looked like cacti here and there, Africa and what not. The question was how does real convergent evolution occur, and in which case do you want to look at actual ecosystem processes? So, I was involved in that project for a number of years. I served on a committee where I was a representative of my IBP program, and Art was representative of his, and that is how we go to know one another.

Geier: Did you get involved in the IBP at Stanford through your doctoral work there?

Moldenke: Right.

Geier: Back up a bit and talk about your activities, your academic training, and doctoral work.

Moldenke: Well, I don't know. Talk to me. I don't know what relevance I have to anything.

Geier: What I am trying to get here is kind of a snapshot of people. How their ideas about science originated, what academic career they come from, what led them into this line of work

in the first place, and how those connections come together around the end of the article?
Where are you from originally?

Moldenke: I'm not sure I can answer the question, but lead me on if it is interesting and if I don't answer it. Both my parents were scientists, but one of them was involved in education, well, they both were to a certain extent, and the other was an archetypal taxonomist. My dad was world-famous, and so, as a kid, every week we would have somebody from another part of the world, some biologist would come and visit. So, as a kid, I obviously became interested in science, natural history, ecology, early on. Then, once I had a good liberal arts training as an undergraduate, I came to Stanford. I think the value at Stanford was, and I still continue to think it is relative to all other schools, where my wife and I have taught or what not, is that the minute that you walk in there, once you were accepted as a graduate student, you were treated as a colleague and you were no longer a student. It allowed you to participate in discussions, think for yourself, and because of that and the very high stature of my thesis advisors and world-wide globe-trotting and all the rest they did, it allowed me to have a much broader view of ecological questions than most people did. And because my dad was a botanist and world-famous, I couldn't be a botanist. You couldn't live up to that, so I was an entomologist, and so my work hence has always been ecological. It has always been the interrelations of critters with plants and visa-a-versa. Because of that, and I think my training at Stanford and the really excellent people that I worked with there, and the excellent people my wife worked with there, I tend to think as we all do, that we have a great, personal view of ecology, surpassing in all the rest of that. I think it is a much broader view of ecology than many people have. I count my blessings for that. That is not my own, you know, that is just luck. Luck of the draw.

Geier: Who do you identify at that point in your graduate career of your mentor, someone who brought you along?

Moldenke: The people who brought me along, primarily at Stanford, were Paul Ehrlich and Peter Raven, my principle thesis advisors, and then Hal Mooney, who was my close advisor during the IBP days in North and South America. They don't come any better than those three people, of course.

Geier: How did you get involved in the IBP program? Maybe you could describe that.

Moldenke: My interests were in pollination ecology. And one of the basic ecosystem prophecies that takes place no matter where you are in the world, is pollination. There is seed dispersal, there is primary photosynthesis, there is predation, and all the rest, but, pollination is one of the unique ones, and since I had both, through training in or interest in entomology and botany, it is a natural for me. I became interested and developed a number of the techniques and things that were neat about community approaches to pollination ecology. That was the line that I worked in, I don't know, 10 or 15 years before coming here to Oregon. It was a lot of fun. We learned an awful lot of things. A lot of really neat stuff, many things that blew my mind. I got to see lots of parts of the world that were nifty. And the more you see, of course,

the more you get excited about these things. And then, coming here to Oregon for various incidental and practical reasons, my interests have largely shifted now to food-web biology and function and biodiversity. For the past ten years or so, I have been working primarily in that arena. That is probably most of the way I have been interacting with the Andrews Forest, and participating in the outreach of the Andrews Forest, and in the whole change in the paradigm of growing plantations of Douglas-fir trees to “quote-unquote” ecosystem management and biodiversity, and all the rest of that. Which is now somewhat current, at least it’s the letter of the law.

Geier: I’m curious if you were there about a year?

Moldenke: At Kansas? Yeah, I was there for a year.

Geier: And then you went to from there to Stanford. I was just curious, what was reason in terms of your research?

Moldenke: Oh, it was just that my fiancée, whom I had met as an undergraduate, was at Stanford, and Kansas couldn’t really give us much hope of funding, whereas Stanford said that they would support the both of us for four years, so there wasn’t much.... (Laughing)

Geier: Easy choice.

Moldenke: Yeah

Geier: Then from Stanford, you were working at UC-Santa Cruz in research for about 6-7 years, right? That was during IBP period?

Moldenke: Yeah.

Geier: I was curious. You leave in `77, and that is about the time you came to OSU?

Moldenke: Yeah, more or less. One of the problems is that I get involved in so many things that I never have time to publish. I didn’t do enough publishing, so I did some perishing. But the real problem was, I didn’t particularly approve of the educational philosophy at UC-Santa Cruz. Not necessarily what they claimed the teaching philosophy was, but the way it actually worked and was practiced.

Geier: Their portfolio base had such a range?

Moldenke: To a large extent, that is part of it, just a minor part of it. And in addition, my wife, who is smarter and has more training than I do, wasn’t able to get a job there. So we had a period where she was looking for the primary job, and I was going to be the house husband and caretaker. And we did that. She got the job here at OSU, so she has been employed here at OSU, whereas I am just a faculty spouse. So, even though I control several offices and bring in

hundreds of thousands of dollars in grants, I am the [trailing spouse]. We sort of switched roles.

Geier: Accommodation of the professional reasons.

Moldenke: Yeah.

Geier: You touched on it a little bit, but maybe you could elaborate on it more. I was wondering if you might compare and contrast the research at UC-Santa Barbara and the teaching emphasis. Particularly, I am interested in the kinds of collaborative essentials.

Moldenke: Well, actually, at UC-Santa Cruz, I collaborated rather closely in teaching, but not in research, with Jean Langenheim, a very, very bright lady. She does some really wonderful stuff and had some really good ideas and whose teaching philosophies I shared. Her main interests were international as well, North and South America. But, team teaching, not too much. I team taught with Jean at Santa Cruz, thought that was very wonderful, I learned a lot from it, and thought that was very good. But in terms of research, I was on my own. There really wasn't anyone to deal with there, *per se*. I kept up some contacts at Stanford and at [Cal.] Berkeley and [Cal.] Davis, which were just a hop away. The collaborative research that I did at that time was all IBP-based, and an awful lot of fun, but practicalities worked out such that there really wasn't a way to really start to implement that on a different aspect at Santa Cruz. But again, at that time there were questions about my wife's employment and my employment, and we wanted to optimize her chances of employment for a while.

Geier: Okay. I was curious if there was anybody else that was working on the IBP, if there was anybody else besides Art that you became involved with?

Moldenke: No, only Art up here. That is the only way that I had heard of this area and to a large extent since. Art and I were on this consumer process committee, which I chaired or co-chaired for a while. The Andrews Forest basically wasn't interested in consumer processes, and so, Art got a lot of free trips, but couldn't have anything to report. (Laughing)

Geier: Maybe you could characterize your perception is of OSU's potential for collaborative research as concerned with you and a number of other places.

Moldenke: It's probably not too much a function of the institution. It is more a function of people and the positive feedback, once a group gets going. Other than broad generalizations; when you are at small, private institutions, you are much more liable to do collaborative research, especially interdisciplinary collaborative research, than you are at a large, state-run institution like OSU. And I have found tremendous bureaucratic pressure against doing anything collaborative here at OSU, and the only reason I can do it is that I am soft money. If I were a regular, tenure-track appointee, I would think that there would be tremendous bureaucratic pressures on me not to do anything like that.

Geier: So, your wife was in that situation of being regular tenure-track here?

Moldenke: Well, she works half-time in entomology as a researcher, and half-time she directs the editing facility for the [OSU] College of Forestry. So, she is soft money-hard money mixed, but not really tenure-track either.

Geier: What is her name?

Moldenke: Allison.

Geier: I think I know her. I used to work over there as an editor.

Moldenke: Oh, you did?

Geier: Yeah, for a period.

Moldenke: Then you know her, Allison, yeah. When Ralph was in charge.

Geier: Yeah. (Laughter)

Moldenke: Yeah, that's Allison.

Geier: You mentioned briefly your first impressions of Andrews as a place within the IBP circle that has a representation of being kind of about traditional forestry?

Moldenke: But by the time I came here in the mid-'70's, I found that the Andrews Forest is the only organization within any of the biological departments that had an inter-disciplinary interest and scope, and that was at least somewhat devoid of egocentric empire-building kinds of crapola that normally cuts down on the give-and-take. I would say that the only reason I even remained associated with OSU for the past 15 years has been because of the Andrews. Not for any other reason. And even though for the last few years I have been doing things, well, things have gotten awfully busy for personal reasons, and I can't really go to meetings every month, and what not. But I am still pretty heavily involved with the Andrews, and especially in teaching.

Geier: Is that workshops or classes?

Moldenke: For seven years I co-PI-ed the grant with Art and Joe Beatty on research experiences for undergraduates [REU]. That was for seven years or so. We taught some of the best undergraduates from the country there at the Andrews, during the summer. Now I am a collaborator with one of the other grants through Chemekata [Community College], that Art is also co-PI on. So, I help out those guys in that junior college's sustainable forestry program. Then, I also have my own grant from NSF, and it's again a big, big thing, a five-year grant where we are taking high school and middle school teachers, biology teachers, and giving them hands-on ecology training during the summer. All in the hopes that they will get some more give-and-

take, and intellectual content into their teaching programs in the elementary schools, and try to establish a real relationship between the public and the potential for the public, either through teaching programs *per se*, or other groups, to participate in monitoring for the Forest Service and BLM, all these other agencies whose responsibilities are infinite.

If they weren't before, they really are now. There is no way government has any personnel, any time, or any money to do the things it is now mandated they do with ecosystem management, but, yet, there is a tremendous potential for the public to assist these people gathering data which otherwise will never be gathered. That is the outlook of that particular program, and we have been running that now for one year. We will be finishing it up this week-next weekend. We have a *post hoc* review of what it was we did right, what we did wrong, all the rest of that. One of the first *post hoc* reviews for that project is the Andrews Forest, and we have a couple of *post hoc* reviews around the state, up at Mount Hood National Forest and down in the Siskiyou. That is largely the way that I have been involved with the Andrews the past seven to eight to nine years, mostly in the educational capacity and outreach of trying to get more people in the public involved in "quote-unquote" science. Also, monitoring natural history databases, and trying to get the public to actually comprehend what ecosystem management entails and means, rather than have a little banner people wave for two to three years, the "flavor of the month," then it goes away and there is nothing left. That is where my most of my activities are going now.

Geier: This is on a five-year grant?

Moldenke: Yes.

Geier: Is there any connection between that and an earlier volunteer program that I think Art was involved in?

Moldenke: Not particularly, no.

Geier: Okay, what are the benefits of this?

Moldenke: The benefits have just been, ever since we started to do "quote-unquote" ecosystem management, it's obvious to anybody who doesn't work on mammals, birds, and big trees - i.e. the non-charismatic biodiversity - that nothing will ever be done or can ever be done unless you increase the interest group, make more of the public aware of the importance of these things, and the neatness of these things. And then, try to involve them in the actual process of data-gathering. Otherwise it will never be done. Period.

Geier: Can you recall the first time you actually did work on the Andrews or what purpose there was?

Moldenke: I think the first time I actually did honest-to-God research on the Andrews would probably be, I think we moved here in '73, would be '74, when I had contracts to do rare plant surveys within the Andrews and the rest of the Willamette [National Forest]. I certainly went

all through the Andrews, looking for rare and endangered plants, and that is probably the major initial way I got acquainted with the ground in the Andrews, the diversity of ecological habitats and neatness of the area to work in.

Geier: Do you remember your first impressions of the biodiversity and the resource center?

Moldenke: Yeah. Coming from other parts of the world, your first impressions are number one: there is no biodiversity here, it is all one species of tree and there is no life here, because it is always totally quiet. There are never insects singing, never birds singing. Coniferous forests of the Pacific Northwest are very different from the deciduous forests of the east or tropical forests. Part of the fun has been taking those initial impressions and seeing how remarkably diverse and wonderful all the critters and the interactions are that do exist there. But the first impression though is always, if you come from any other ecosystem in the world, is how incredibly pauperized it is, species-wise. How it looks, and then, how incredibly quiet it is, and how difficult it is to see organisms there, because it is also dark and misting all the time. And drizzling. It's a lot of fun. I suppose there are more surprises hidden in Northwest conifer forests than in many other places where they are sort of right there and hit your eye. Here you have that little, fun game, of trying to look for them first, and then, they are neat when you find them.

Geier: You mentioned a quite a bit about journal articles over the years. Were there other people working in the Andrews that you began to be involved in at this point?

Moldenke: Largely, most of my involvement has been with Jack Latin in entomology, and with Art McKee in botany. Then, for the past ten years, with my interest and research focusing primarily in soil processes, I have been interacting very closely with people like Mark Harmon, Bob Griffiths and Bruce Coldwell. And also Elaine [Ingham]. So those are the main people I would say I have interacted with.

Geier: What was your impression and perception at the time of the purpose of the experimental forest? Had you had previous experience in another Forest Service facility like that?

Moldenke: An experimental forest, no, in terms of the management implications. But in terms of a research locality, where you do interdisciplinary research, you have that from your research sites at Stanford, Jasper Ridge, and then, our international ones, where we set up research sites. So, for that point, that is pretty standard. But, the unique aspect of the Andrews has always been, in the moment certainly, is this interesting, difficult to define interaction, between science and management-policy for these vast, vast areas of government-controlled land. Of course, once you enter that realm of affecting government policy on more than 40 acres, you, by definition, have to enter the public arena as well. Because you are not just looking out at the back forty there, (laughing) you are looking at the whole western United States, and there are a lot of people with diverse interests that interact with that land.

Geier: A related issue here, then. How would you characterize your target audience, people you see as the beneficiaries of your research?

Moldenke: I don't know that there is an audience, *per se*, other than yourself, or a minute speck and 360 degrees times two around you. Then, every day and every week, you get another phone call from another group of people with a totally different perspective that want you to speak to them. And then, each one of us has to come to our own decisions of how to speak to those audiences, to what extent you just talk science, to what extent you are careful in generalizations from your work, which everyone has to generalize, and to what extent you proselytize. Everybody does that too. So, it is a very difficult issue, and I still worry about it all the time. I mean, all the time I still worry about it. But, I say for the first 4 or 5 years we were into this sort of mode, and I say we as the whole Andrews Forest group, I really worried about it. I stayed almost exclusively to science. Period. Just the science. Let other people do the interpretation. But then, I realized you couldn't do that anymore because number one, the people you gave that science to automatically made their interpretations, and being an egotist, one always realizes that their interpretations are wrong and yours are right, so (laugh) you have to give your own interpretations some. So, I think I was ultimately dragged into that kicking and screaming. And I am sure I can be accused of doing a lot of proselytizing, even though I try to think I don't do that, but I think it is important because there are so few people out there who can speak for the non-charismatic [species] diversity. And I think also, because there are different issues involved in non-charismatic diversity than in the other things, like the "cute little spotted owl" and what not. The conclusions you can draw, since you can never separate them from politics, the conclusions you draw looking at a broader scope of organisms, the whole of plants and critters out there, are very, very different than if you just look at vertebrates with a specific preconception. And there is nothing wrong with that, as everybody has preconceptions, but those specific preconceptions are ones that vertebrate ecologists or conservation biologists enter an issue with. So, nobody else speaks for these things, so it behooves Jack [Lattin] and myself to do that.

Geier: Is there any particular science issue that you can see is going to be changing perspectives from the earlier ones, where you thought you were just doing science? Anything that you were involved in particularly, you began to see how it would be interpreted?

Moldenke: No, I don't think there is any one issue. It's not an issue, it's an opportunity in the sense that the problem in the Northwest has been for a decade; everybody is so polarized. Either on one side or the other. You cannot talk in-between. The media won't allow you to talk in-between. But, if your interests are in organisms or processes everybody agrees are important, but nobody knows anything about, they don't have pre-formed opinions about them, then you can speak to an audience or within a framework that doesn't automatically push you to one side or the other. As long as you can sort of be in the middle and talk to people on both ends, then I think that's what makes the difference. And I have found far more static from "quote-unquote" conservationists with a capital C, or green and fuzzy folks, tree huggers, whatever name you want to put on them, than I have from industry or however you want to characterize the far right. I have been very pleased with the way most interest groups

have accepted the science, because I have been able to present it to groups that don't have preconceived notions.

Geier: Can you think of any examples of cases where you were able to play that kind of middle role?

Moldenke: Oh, there are just numerous, numerous examples. I am not a politician at all, and I am the shyest person in the world. So, I don't usually think of myself in those roles, and I try and avoid those roles, and I don't do this kind of stuff too often either.

Geier: Maybe you talk a little about how you began to get more closely involved with the Andrews. And after 1974, what was your level of awareness of the kind of work of that time? You had the earlier perceptions from Art [McKee].

Moldenke: Well, the useful thing about the Andrews, the two useful things about the Andrews: one is, they usually go through the fuss and bother, and that is probably what it really is - fuss and bother - of having annual meetings where everybody talks about what they do and why they do it. And the second aspect is that, with very few exceptions, and I don't really know of any exceptions, other than people. I have to talk about bugs and what not. But, everybody is able to express themselves in common language, and everybody is willing to answer questions like, "Why the hell are you doing that - that's a stupid thing - nobody could possibly be interested in that." Obviously, working on bugs, everybody asked me that, but everybody is able to deal with those things. That is rather unique in most scientific communities, because of that you become aware of what goes on at the Andrews very quickly. And in those days, I was doing a great deal of field work in the Andrews as well. On spider ecology projects, if you live at the Andrews, you interact with these people twenty-four hours a day, and so it just becomes second nature.

Geier: So, this is kind of a rapid immersion.

Moldenke: Yeah, total immersion, largely.

Geier: These annual meetings you are talking about have been kind of a key to that common language. Is that unusual at the other IBP [and LTER] places you worked at?

Moldenke: I would assume that never takes place at the other places, or if they do, there is very real communication and people get up on their stump and say their thing and that is it. Whereas, at these meetings, you get very good "dumb" questions from your colleagues, and it causes you to rethink what you are doing, and it causes you to rethink ways in which interactions may be taking place between what would normally be considered to be totally independent variables, and causes you to then do collaborative research. That is the hallmark of the Andrews scientifically, that is, the collaborative research. And politically or management-wise, it's the hallmark is that incredible sharing of science with management.

Geier: What would you describe as your leading research priority during the '70's and 80's at the Andrews. How did they evolve through that experience?

Moldenke: Just to have fun.

Geier: Fun?

Moldenke: Yeah.

Geier: What is your idea of fun?

Moldenke: Whatever is fun at the moment! (Laughs) Just looking at the world around me and having my mind blown away every time I look at it in new and different ways. Heck, when you are an entomologist, you can have your mind blown a different way every day. It's probably better than drugs. I don't do drugs, but it's probably a hell of a lot better than drugs.

Geier: Did you spend a lot of time on the site down there?

Moldenke: Oh yeah. Oh yeah.

Geier: Where did you stay when you did that?

Moldenke: Well, sometimes I basically lived in my VW bus. Just camping where ever I was doing research, and many times I stayed in the facilities, the smelly, old grubby, old trailers. So, it all depended on what particular research I was doing at the time and whether I was there for a week at a time or a day at a time, that sort of thing.

Geier: Did you tend to have a lot of interaction with other people at the site there, or was that more commonly at these meetings?

Moldenke: I think to a certain extent you do have a lot of interaction, even though I'm rather shy, and I certainly don't go out of my way to find that interaction. But, I would say, even under those circumstances, you do have a lot of interaction, just because you're there. You see somebody drive in with some strange looking equipment in their car, and you think, "What in the world is he doing?"

Geier: Did you have some favorite place for staying? I'm assuming you would put your VW bus close to where you were doing your work. Do you have some favorite locations on the Andrews?

Moldenke: Not necessarily, I just did all sorts of neat spots. All sorts of neat spots.

Geier: Do you have any recreational activities besides the research you are doing here?

Moldenke: I have no life. I just do science. I have no real life.

Geier: That is your recreational pursuit?

Moldenke: Regrettably so, yeah.

Geier: I was curious, when you were not at the Andrews, if you had any interaction at all with people in Blue River or McKenzie Bridge or the larger McKenzie Valley.

Moldenke: I would say no. I would say no, because until recently, any interaction you would have with, with "Joe six-pack," you would have to be careful you weren't shot. Sure, they knew you were a scientist studying biodiversity or ecology. I mean, you would be shot, beaten up, whatever. I mean, it wouldn't be safe.

Geier: Did you have any experiences that were directly threatening to you?

Moldenke: Not particularly.

Geier: They were just kind of a general feeling?

Moldenke: Oh yeah.

Geier: But, you wouldn't say that there was a sense of pride in what was happening in the Andrews in the local community there?

Moldenke: I couldn't comment on it one way or the other, but I assume that, to a large extent, the local community is made up of two sets of people. The people who commute in and out from their second houses, and come out on the weekends from Eugene, and they may be tree huggers, and they would probably like what we were doing. But most of the people living there would see most of what we were doing at that time as negative. I don't know what the perception is now. I think it's probably not as bad now. And personally, I find when I address people, that the most receptive audiences to the kinds of things I talk about, are people in industry. By that I mean a lot of the blue-collar workers themselves. Oh yeah, they love it. I mean, they are out in the forest all the day. They appreciate their environment far more than do the people in the cities. They obviously feel threatened by certain things when societal ethics change up and down from day-to-day and month-to-month. But, I have never had any problems.

Geier: Such a thing as knowledge, from that group, you wouldn't feel threatened?

Moldenke: No, no.

Geier: Is that the group you were talking about feeling threatened about?

Moldenke: Yeah, I would say so.

Geier: Okay, so things have changed in the last ten years.

Moldenke: Oh yeah. I think people now understand a lot better. Well, I don't know what people understand. I won't even answer that question.

Geier: That's okay.

Moldenke: Because in the real world, there is still no communication between one end of the spectrum and the other, in the press. Once you get out of the press and confrontational situations, and you talk to people, then you find there is not really much of a problem. But in the press, which is the way everybody starts their conversations, it's still completely polarized and no middle ground.

Geier: How does this compare with your involvement with people from the district [Blue River] or the national forest [Willamette]? How would you characterize levels of interaction with each group? You can talk a little bit of the importance of integration of retention management as well.

Moldenke: Certainly, I am asked to speak, and it seems like it is a lot more frequent than it is. But I suppose, I am asked to speak anywhere between half a dozen and a dozen times a year for management; either in an educational format to teach other managers why I think the way I do, or why the Andrews crew thinks the way it does. And as just simple entertainment, like camp fire programs and the rest of that stuff. So, it all depends on the situation, but they have treated me royally, far better than they should have, considering the amount of science and originality in what I do. They probably shouldn't listen to me as much as they do.

Geier: You are invited to ranger districts?

Moldenke: Yeah, and other places, too. Probably during the course of the last five years, I have lectured and given my song-and-dance, the soil biodiversity one, basically, probably to more than 1000 managers in the Pacific Northwest and B.C., and northern California. We have huge workshops all the time, anywhere from 20-30 people to 300-400 at a time. They invite me to speak and talk about these things, and people lap it up, which is great.

Geier: When you say we, you are talking about other people in the Andrews group?

Moldenke: Not people associated with the Andrews. At the moment, I usually do things with Elaine Ingham, who's also in soils and food-web biology. She doesn't work that much at the Andrews *per se*, but when she and her husband initially came to campus, I tried to get them involved in the Andrews, and they did to a certain extent. Russ hasn't because his money is basically agricultural, but Elaine, being soft-money, has spent a lot working at the Andrews. She helps out the Andrews folks tremendously. And so, I interact with her under those circumstances, and more lately, we do these other things together.

Geier: Another issue here, kind of related to this, in this kind of outreach work. Are there places besides the Andrews that are a major focus of your research, or sites that you gravitate to?

Moldenke: Well, in the past two to three years, I have been moving into, I guess you might say, a larger or more immediate arena, and that is, agricultural land. Largely because, if I am a “bug hugger” or a natural historian, which I am, I have come to realize through globe-trotting, how unique the Pacific Northwest is in terms of the resources we have here, and how little touched the environment is. But, if you look at North America in general, or any other part of the world, it is those areas that man has converted to agriculture that really have suffered the greatest in terms of species diversity, food-web complexity and sustainability, and that is the real challenge. Eighty percent of the population lives in areas where they don’t see the natural world, and if we can do things that make people aware of the diversity that is around them, and to be able to manage that diversity positively for the farming community, the grazing community, the horticulture community, the backyard gardener, etc., then we can reach a far greater audience of people, make them aware of all the little “fuzzies, furies, slimies, and creepy crawlies,” in their environment.

It is for that reason that I have become pretty heavily involved in terms of research, government-sponsored research, in agricultural areas the last several years. That goes hand-and-glove with the work with education, secondary and primary education. I think that in the long run, that’s the way that we have to go. I’m not a great scientist with a capital S. Nobody is going to give me the Nobel Prize. But it seems to me if I can do anything positive for all of the methane I generate on this earth, it may be in trying to make people more aware of the beauty and intricate-intricacy of the environment that they are in. And logically, you don’t go the wilderness areas for that, you go to the areas right around where people are. And in the long run, no matter what kind of tree hugger you are, you are still only entering the forest once every century to cut the trees. In the Willamette Valley, you are going out there once or twice a year to harvest crops, and you can imagine the difference in levels of disturbance and everything else in the environment.

So, if you can actually make a difference with species diversity in an anthropogenic environment, that’s going to be interesting. I mean, you can go to any number of these Forest Service planning meetings and the rest, but the forest is going to take care of itself no matter what Andy Moldenke says. (Laughing) But, a lot of the other land is not. The grazing land east of the mountains is not, the farm land west of the mountains is not. So, I think you can make a real difference, especially in terms of the economics of the use of that land, while you are then preserving what you think, or what I think is important about the biotic components of those lands, and that is the real challenge, obviously. And that is what we have been involved in.

Geier: I gather this is a coming involvement focus of your work?

Moldenke: Yeah, sure.

Geier: When you get into that arena, are you dealing with a different group of researchers?

Moldenke: Totally. The only people, I think, that stay similar, are people who had a watershed vision. They are the people who realized everything in that landscape is connected, and that the further downstream you are, the more connected you are to your landscape. The kinds of people that, ultimately, we will be more connected with than we are now, would be people involved in the watershed group, like the “Stream Team” and folks like that. But, at the moment, this is a new arena, and we do most of our collaborative work with the people in horticulture and soil science. Instead of working almost exclusively with the Forest Service and the BLM, we are now spending at least half of our time working with the NRCS, which used to be called the Soil Conservation Society, but now whatever it is now, the Natural Resource Conservation Service.

Geier: It is interesting to me, because my background in agricultural history, and my goal, too, was to explore agricultural development in the valley here, how communities moved in different directions. Do you have any examples of people moving that direction? I am assuming Stan Gregory is one of the people.

Moldenke: I would assume that Stan, or the group. I mean, just because Stan has the loudest mouth doesn’t (laughing) mean that there aren’t other people in the group. I like Stan, but I am thinking of people in the EPA, and more importantly, I suppose Corvallis is a hot bed for eco-activism to a certain extent, because of the Willamette River, because of the Mary’s River, and I think in the next ten years there is going to be a tremendous interplay between a number of different groups. First, in the public and in the government regulatory agencies, and in the university in respect to landscape management, and this whole notion of the Willamette Valley as a whole. And so, I don’t think that it’s really Stan Gregory and the Stream Team at the Andrews Forest. I think it is a much larger group of people. But again, I think what makes that larger group possible, is historically the fact that there has been a very good Stream Team at the Andrews, and those people, primarily Jim Sedell, have broadened their perspective and interacted with far more groups in the public and other government agencies, and have brought this whole broader perspective into view. So again, the Andrews is probably seminal in that whole process, yet it is not really the center of that process, but it is what developed those collaborations. It is what developed those viewpoints, which have been sold, if you wish, to the community-at-large. That is the value of the Andrews right there; it’s that kind of thing. There may be other little historical threads that you weave into that, which I, as a non-stream person, don’t know, but the fact that the Andrews Forest existed, probably had a good deal to do with the fact that the EPA built this building in Corvallis. Which then, has a lot to do with the fact that the public-at-large is very interested in a number of these interdisciplinary environmental concerns. And all of these things get traced back, all of these alternate universes and what not, to the past. If somebody hadn’t been there 30 years ago, it would be different now.

Geier: So, the collaborative effort on the ecosystem management ethic at the Andrews, is basically diffusing into other areas.

Moldenke: I assume so. Now, you're the historian, you'll have to tell, but I assume that is the case. And because of the Andrews Forest being a premier, if not the premier integrative environmental entity around, everybody has looked forward. Many of these other organizations would never have gotten started in this part of the country, or they'd never be funded once they were here.

Geier: The point about the EPA is interesting. I hadn't heard much.

Moldenke: I have no idea about the politics of how it was here. It probably has to do with the fact that certain senators and governors, that sort of thing. But I suspect part of it, and part of the success of that EPA office, has been because of that legacy at OSU. Of that integrated work, I guarantee you.

Geier: Are there people that you work with at the EPA?

Moldenke: Yeah. I work primarily with Paul Rygielwicz and Dave Tingey in their global change program.

Geier: Dave Tingey?

Moldenke: Dave Tingey, yeah. But, they have been very interested in global climate change and conifer forests, and of course, most people don't realize it, but you can take it from me as gospel, that what happens in the fall is really what drives what happens anywhere else in the ecosystem. And, of course, they then wanted to talk with us about it, and have us do research with them about what might in fact be happening as you change these variables in the soil.

Geier: When did that collaboration start?

Moldenke: That started about three years ago now, three-and-a-half years ago. And they supported a graduate student, a Ph.D. student, collaboratively between me and the EPA.

Geier: Who is that?

Moldenke: That's Nancy Bowmeister.

Geier: Okay.

Moldenke: Yeah, Nancy. But again, it's fun because it's interactive and interdisciplinary.

Geier: I wanted to ask you if you could just comment on how you might characterize your levels of involvement in the decision-making process governing the LTER?

Moldenke: Zero.

Geier: Do you tend to go to the meetings?

Moldenke: I did for a number of years when my life wasn't totally, ridiculously, complex. But, now, I don't even have time to go to sleep at night, let alone go to meetings. I always do what I do because it interests me, and I figure if other people are interested in it, they will come talk to me. I think the only, if there is one down side to the Andrews and LTERs, how they work and all the rest of this, everybody probably has their pet downsides, but from my perspective, my training and research over 30-40 years now, it has been that too much of the funding of an LTER, no matter what LTER, is driven by what is politically-correct at the moment, "scientifically politically-correct," and so many of the fundamental processes don't get attention.....

End of Side A, Tape 1 (of 1)

Begin Side B, Tape 1 (of 1)

Moldenke:...Which is one of the things we laughed initially at the LTER, for not being interested in anything but primary productivity of Douglas-fir. A lot of those fundamental processes like, herbivory, like pollination, like seed predation, all these very fundamental things that are important in any ecosystem in the world, have never ever been looked at simply, because they're not politically-correct at the moment, so there is no way you could ever get them funded by NSF. Now, that is not a fault of the Andrews team in placing priorities, it's not the fault of the NSF in setting priorities, because those are set by the community-at-large. It is only sort of regrettable in the sense that NSF can't commit more of a base fund to each one of those LTER sites to do some of the basic, boring, descriptive cataloging of information that really is important if you are going to compare one ecosystem to another in the country. Until the last four or five years, there's really been practically no cross-site LTER work. Now that is changing, and there is funding for that. But again, it is funding for the high profile, PC sorts of things, so that is really the only fundamental flaw with the system, at least as I would look at it. It is sort of frustrating and I am sure that everybody in every field would say about their own little thing, that there are certain important things that you need to quantify in order to understand systems across the world, and there is no money for basic, boring data-gathering. And, you always have to couch whatever it is you are interested in these other terms. You do that other research for the reasons of doing that other research, and the information you then assemble is on the side.

Geier: In general, what might you ideally want to research, but is not always possible because of the funding?

Moldenke: That's right, but that's true of any kind of research anywhere. But, I think that it is a fundamental law of the way that LTER system was set up. I don't think there is any solution to it, but I think it is still a fundamental flaw, and I am sure everybody regardless of their discipline, probably feels the same way. Just as an example, one of the unique things about the Andrews relative to other LTERs, is there is this little book on all of the critters that live in the Andrews Forest. It is held up as this wonderful example because it's a list of 4000 things that live there.

But there has never been a single project to actually go out and catch things and document things, for any reason or another. These are all things that were collected incidentally, because of other individual research projects, and they are all wrapped together at the end. You slap a cover on it and say, here's the list. There are 4000 things there. What does that mean? Does that mean there are 4000? Does it mean there are 8000? Does it mean there are 40,000? Nobody has any knowledge, but when you look at any other part of North America -- Canada, United States, Mexico -- it's probably one of the best documented sites for what lives there, certainly one of the top three or four. And yet, there has never been any research on it. It's just accidental, and it just sort of comes out. And a lot of the science and what I think are some of the most important science and generalizations and realizations, sort of happen that way. They happen by accident because things have to be driven by what is politically-correct in the science community -- capital S, capital C -- at any given moment. I think that's probably what makes the Andrews so unique, is that they have been able to come to those fundamental realizations a lot easier than most other interdisciplinary groups. And I think it is just an artifact of personality. I don't know if anyone else that you'd interview would say this, but I would certainly say that 80% of that credit goes to Art McKee, because he is the one element who is really responsible for the way different people talk to one another in different disciplines. He is what holds, he is the glue that holds it together. I can't say enough for that role, and I think that is what makes the Andrews successful - McKee.

Geier: Any insight into what puts him in that position? Or personality?

Moldenke: No. I am a hermit, I don't know how people work. All I can say is that it seems to me, that is what makes the Andrews work. And I don't think he ever gets any credit for that, because all he gets is shit for everything that goes wrong. A little bit here and a little bit there, but I don't think people really sit back and say what really makes that work. I'm not saying that it is all Art, there are other people, obviously, that have been involved. But I think that perhaps the most crucial element long term has been Art.

Geier: How would you characterize his role in comparison to someone else, like Jerry Franklin or Fred Swanson?

Moldenke: They are very different people. Jerry is an empire-builder. That is what he is more interested in, once he learns his science, and I don't argue anything about how smart he is, how good he is at learning things, and how good his experiments are, or his observations are. Perfect. I can't argue that at all. But still, he is not the kind of person that joins people together that easily from totally different disciplines. He is good at it, but he does it on a different level. And Fred again, is just this wonderful, nice guy, and he is extremely receptive to everybody's ideas and personalities. And I think like Art, he has been very critical, especially these last years, when Fred has been in charge, because that is when the politics has been the hardest, too. I mean you never know from week-to-week whether the Andrews will continue, but, it gets worse and worse politically, but I think that the challenges that Fred has faced are very different than the challenges that Jerry faced, which are different than the challenges before that.

Geier: One last question. Maybe you could comment on how you might characterize the effectiveness of the Andrews group collectively in conveying information about what they are doing and the success of the Andrews' program.

Moldenke: All you have to do is look at the world around you. Almost everything that people are talking about now in terms of ecology, biology, ecosystems, everything. There are few seminal events and seminal areas. When you think you are at the middle of things, you think it revolves around you. But I think it has to do largely with the first pictures from space of the planet Earth, then Rachel Carson and all of the different historical trends that went into making what she said acceptable when she said it. A lot of that has to do with people like my dad, but when you look at what's happened, and the people who have been the movers and the shakers in the past ten years, and where people have actually got something done, and implemented, not just talked about in the newspapers, but actually done – it has been in the western United States.

And 85-90% of the science and the politics and the hard work of actually convincing people, and probably the hard work brow-beating them as well, has been generated by the Andrews group. Including the managers, and I mean, including those managers. Just look at the United States. Everything west of Denver. Almost all of that is government land, and it is now managed today in a completely different way than ten years ago. That is due to the Andrews Forest crew. And, the perception of the public throughout the country is greatly changed, and I mean, a lot of that, I'll admit it. Jacques Cousteau and folks like that. A lot of it is the incredible intelligence and personality of the people involved in the Andrews Forest, and each person has a different gift. Jerry's obviously has been with Washington, but many other people have worked in other arenas, and it just blows my mind away how powerful that group is. I mean, you think about it, it's scary, that this little group of people, I mean, we are all weird people, and that so many of our ideas and concepts have gone out there, been chewed around in the public for better or worse, and have actually been implemented. That's scary.

It's going to have a longer effect, probably than me and the rest of those folks, who have a big effect for a little bit, but I think it is very important. Here again on a political horse, I think it is a very, very important that the people at the Andrews Forest, and none of us have any time for this, to broaden their interactions with the public now. Get into education, especially in primary and secondary schools. And at least through the Cascade Center, establish certain mechanisms, either through the web or through hiring people who take traveling shows around. But, I think the opportunity is there, and people need to act on that. I think we can pat ourselves on the back on what we have done in other arenas. But I think there is still a tremendous area where we could have an immense effect for different reasons, and I think that is in the educational arena. I would like to see the Cascade Center have far, far more impact in that area, than it has had historically.

Geier: Certainly, there are other sites where there are quirky scientists working together on things. What is your perception about why this group has had unusual impact?

Moldenke: Random luck.

Geier: Why is that?

Moldenke: Pure, plain chance. Again, I think it has to do with the right people having the right personalities at the right time. Random chance. You needed people like Jerry, you needed people like Fred, you needed people like Art etc., etc. At those particular times they were there. Who knows, five years from now, what kind of person are you going to need and whether that person is going to be there. Well, who knows if the Andrews will be there in five years? But, I don't think you can predict these things, in the future, what kind of person you will need. I think you have to seize on whatever the perceived role the Andrews Forest can play at a given time and just run with it, and then see what happens. That's why I am saying we need more emphasis on education. We need more emphasis on getting the public involved. We have done a magnificent job with science, managers, politics and flag-waving. Now, we need to go out and include the public in that as well – in a different way than we have done it in the past.

Geier: Sounds like what you're saying, also, well, the Andrews is 50 years old, and that this blind luck your talking about is relatively recent?

Moldenke: I would say so. I would think before the '70's, it was just another place that did its thing. And I don't say that in any way (laughing) derogatory, even though I chuckle about it from time-to-time. It had a different role at that time, and probably at that time, it was doing wonderful things in its own way. I just didn't participate in them, and so, I can't speak to it.

Geier: In terms of the physical site itself, from what you say here, it was a good place to work. Does it strike you as that Andrews site itself is it an unusual place?

Moldenke: No. Nothing unusual about it at all other than the fact that it had a little more old growth than most other places. And if you actually start looking at the other microbiome habitats that are in the close vicinity, it's got a good share of them, but again, the nice thing in the past five to ten years has been the fact that people have taken their research focus away from just the Lookout Creek watershed. Once you do that, my God, you've got the Three Sisters out there, you've got the Pacific Coast, you've got more geography, more biology, and more ecosystems, within a stone's throw of the Andrews, than you could have at another major research site anywhere in the country. And people have just barely started to milk that and to use that. But it's right there. I mean it's just right there.

Geier: Geographic location and general context of being in the west.

Moldenke: And it has had the potential, it still has the potential, to work closer with other academic groups, Eugene for instance. Eugene early on, had a much larger role in the Andrews than it does now. I mean, the U of O. And there is very little collaboration between Washington State [University] and the HJA. And of course, the collaboration with UW is really

just Jerry Franklin. Plus or minus, so there exist potentials for considerable more academic research with a capital R than currently takes place, but even so, the hallmark of the Andrews is its openness for different ideas and the ease to which people from other enter the Andrews community. Institutions can sort of just mingle right in and join and find their own place. It's amazing. But, if you are looking for some other things that might help it, I would say again, would be more emphasis from perhaps other centers like that. That wouldn't hurt.

Geier: What you were saying earlier that focus on education, and more public involvement. How does that relate to an effort to build more popular support for the kind of work? What next?

Moldenke: Well, I think that is always useful, because, I mean all of us scientists are parasites on society, right? I mean, we only get our money to do research through the largesse of society, so we always have to educate society that what we are doing is worthwhile and heck, we got to do that one way or the other. Doesn't hurt. And again, one of the things that the Andrews has done is that a lot of what you see out there, the physical plant and everything else, is because McKee and Swanson and Franklin have gone out of their way to talk to representatives, talk to senators, talk to governors, etc. And if they hadn't done that, a lot of what you see would never be there. Again, of course, usually academics never deal with that kind of stuff. So, they have done a good job on that and probably have to continue to do that even more.

End of interview