

**Interview with Fred Swanson, by Max Geier, on September 6, 1996 at Swanson's home in Corvallis. Transcribed by Sarah --?**

*After completion of a PhD in geology at University of Oregon in 1972, Fred Swanson began work at Andrews Forest as a post-doc in the IBP era, leading to a Research Geologist position in the Pacific Northwest Research Station. He remained involved with the Andrews Forest program throughout his career, including a period as Principal Investigator of the LTER program. His main activities included research on disturbances in forest and stream ecosystems, work in the research-management partnership with the Willamette National Forest, effects of the Mount St. Helens eruption on forest and stream ecosystems, and, since ca. 2000, engagement of arts/humanities.*

**Max Geier:** I wanted to give you a little feedback on the meeting since you brought up a really good point that I have to think of, instead of talking about. The way you phrased it was pretty good. It strikes me that you're a little more concerned than I am about the importance of striking a balance between academic freedom and guidance and direction of project and at this stage. I'm not really all that concerned about that kind of freedom. I mean, the more input I get and the more direction at this point, the better. The only concern I would have is when the final product is all up and written. That's the point where I would expect people to back off and let me do my thing. By that time, if we've done our job right, we should be approaching the same wavelength in terms of what we're expecting out of the project. From that point on, it won't be affecting it anymore; it will be the kinds of information I'm getting and the interpretation I put on it.

**Fred Swanson:** Okay.

**Geier:** I would encourage you, as much as you can, to get people involved in addressing their revisions of who you spoke with.

**Swanson:** Yeah.

**Geier:** That's how some people approach research work. Kind of their own area, and they don't have any direction at all. My field is actually publishing three stories which really emphasizes the need to develop group involvement in the early stages, and even during the writing stage.

**Swanson:** Uh-huh. [Affirmative]

**Geier:** For the final product, I'm concerned with my aptitude in relation to the total, and how it can incorporate some of that and put it along with some perspectival material. One thing I'm asking for is you write a final letter, a pre-final letter [Introducing history project to participants].

**Swanson:** Yeah.

**Geier:** So, when the final draft comes out, you can keep making corrections up to the last point.

**Swanson:** Yeah, right.

**Geier:** Finally, I'm the one who has the last word on it [Editorial content].

**Swanson:** Right, and we're talking to a group that has to take in closure and freedom, you know?

**Geier:** Right.

**Swanson:** And so, that's just why I want to make sure that I have these issues out in front of the people. I don't foresee any problems.

**Geier:** Okay.

**Swanson:** Yeah.

**Geier:** I appreciate that. That was my next point, to have people be thinking along those same lines.

**Swanson:** Yeah.

**Geier:** It really is an issue, but it's not really something you need to be concerned about.

**Swanson:** Right.

**Geier:** Just wanted to reassure you on that. The other thing that struck me, I don't know if you've seen it, but there's a survey of social scientists studying the birth of forest science and the pile of the directories. They're sort of lengthy and they touch on some of the issues we're talking about. I'll give you a brief introduction things that were part of the survey that they did, and that I was involved in discussions with groups and things like that. One of the things that struck me, was your impression of the nature of doing long-term research that you were going with. You mentioned something about trying to raise the awareness of the Andrews' people to this and related subjects. That's one concern we have as social scientists; trying to get involved at an early stage in timing and policies, so that we don't come in as late-comers. I think what had been your involvement up to this point, and for a while, actually, was as an editor and doing research. That helped a lot on this project. But the desires were a little of the problem in terms of distance between the researcher and the subject, and the more we can review stuff the better. So, if you have any suggestions or things that I might be involved in, we talked about the policy before.

**Swanson:** Well, it came up at our lunch today. We're having a major public discussion on the results of landscape studies, and that's the twenty-first of October. It would be good if you could go and listen in. We are in the early stages of planning a program. It will be a situation where we describe some of the science results from studies-to-date, and raise questions with managers and the public, and maybe the media, about what the implications should be for management, future managers, and from a science standpoint.

**Geier:** Yeah, that would be interesting.

**Swanson:** We would like to have you get involved.

**Geier:** And some things like the LTER meetings. I'm not sure if I need to be all that involved – it might take too much of my time and yours. If something's coming up, some issue that you think is important, let me know.

**Swanson:** You can be on the meeting notes distribution list. We send out information about other meetings or other activities we're working on. You'll probably want to look at and see if it's a useful resource. Those notes may go back ten years or so.

**Geier:** Yeah, that would be worthwhile. Is that on e-mail, or notes?

**Swanson:** No, a bunch of it was generated and stored electronically, but there are paper copies.

**Geier:** That's something I definitely want to look through. But anyway, something that I really liked that you said was about maniacal persistence verses adaptability. That phrase, "maniacal persistence;" I really liked that. That "versus adaptability" in conducting long-term studies, that's something I want to pursue more. One other thing you might mention to the people, because I meant to raise this when Gordon and some other people were there, concerns the question of the purpose of history. The way I view history and the plan of history, is that it provides a kind of institutional memory, where, as long as you're around and Art [McKee] is around, all the stuff [background] to the scene is going to be second nature to people. They're not going to have any question as to how they got to where they are now. But, if you left to go somewhere else, then retired, becoming less accessible, like Jerry Franklin, he's no longer immediately accessible. A lot of that leaves. . . .[institutional memory and experience].

**Swanson:** Yeah.

**Geier:** And it helps ground decision-making.

**Swanson:** Yeah.

**Geier:** But anyway, mainly I'm here to get some background from your perspective. On your view of how things stood at the Andrews at the time of your involvement up there, and your perception of how things have changed over from the particular stages from 1972-1982 or 83 to the present. You mentioned that you came to the Andrews in 1972, essentially clueless about ecosystems and things like that. I think you said that Ted Dyrness kind of brought you up to speed. Would you elaborate on what brought you to Corvallis at that point?

**Swanson:** Some of the roots of the work I'm doing today in terms of interdisciplinary ecosystems and geo/eco work, started back when I was a freshman at Penn State and getting an opportunity to go to the Bermuda Biological Station. As an undergrad, one year into undergrad, to hang out with a group of very interesting, top-notch grad students who were taking a course on organism-sediment relationships in an environment of modern carbonate deposition, which is where limestones were starting to form today.

**Geier:** Okay.

**Swanson:** There were sea-water chemists, biologists, geologists, all there working together, including some really impressive people, like Steven J. Gould, [went on to fame for his science and public storytelling about evolution]. There were about a dozen grad students and a number of faculty, and just little old me. It was very exciting to me to see interdisciplinary ecosystem research going on and to take part in some of it. So, that was a theme that I felt surfaced a few times in my history leading up to my grad student days. Then, I helped lead a project to the Galapagos that involved plant-geology interactions and geologic history and things like that.

**Geier:** Was that at the U of O?

**Swanson:** Right, and when I graduated from there in 1972, then I worked for a couple of other guys. Alan Kayes [UO geology professor], who'd actually worked with Ted Dyrness and Jerry Franklin, earlier. Alan had a small grant from the International Biological Program (IBP) to do some work at the Andrews to map the geology. I worked with UO grad student Mike James on the geology up there for IBP. I was still living in Eugene at the time and was on IBP as a post-doc, partially-funded student who had some other sources, too. I was pretty marginal to the whole IBP thing, topically, and in terms of time scales of interest. In order to try to understand how to relate to the ecologists, I produced a chart of what's going on different time scales in the geological and ecological realms from tens of millions of years to days. I would have this problem of being disjunct in my interest from the ecologists – the youngest rocks we were mapping were 3.5 million years. Guys like Dick Waring were measuring dew-point at minute intervals. So, I was trying to map things out in terms of time-scales to find out what kinds of geological and ecological phenomena were operating at similar time-scales. When we were working on the same time-scale, the linkages were likely to be most strong. Anyway I was living in Eugene, working on that, beginning to make the acquaintances of some of the ecologists, then I connected in with Ted and a few other folks for the first few years there. Connecting with Corvallis came in part through the interest of Jim Sedell in linking the geomorphology with aquatic stuff; he's always a great one to try to link things. I remember he had me come up and give seminars in a stream ecology class, and then in some other ways encouraged linking up. So, my wife and I moved up here to Corvallis in 1975 and then I really started plugging in a lot better. I was a post-doc at U of O, then, I became a post-doc up here and then I got hired by the Forest Service in 1978, I think it was.

**Geier:** Uh-huh.

**Swanson:** I was working with [Forest Service Research Geologist] Doug Swanston. We wrote some papers together in the mid 70's. He has a rather geotechnical orientation, pretty much geology-orientated, whereas I was more working on the interface of ecology. When he moved back to Alaska, from whence he'd come, that opened up a slot that I was able to move into it.

**Geier:** You came in essentially with the thought of getting a permanent job?

**Swanson:** Right.

**Geier:** Okay.

**Swanson:** So then, my work moved from being geological to more geomorphology as it linked to ecology. From studying rocks to studying landslides and woody debris in streams and things of this nature, that had more direct linkage to ecological matters.

**Geier:** What brought you to U of O instead of OSU in the first place?

**Swanson:** Well, from being an undergrad at Penn State, I was given the opportunity to go and work for the U.S. Geological Survey after graduating from Penn State. You could tell them what field you were interested in and what geographic area you wanted to work in and they would do their best to match you up. I was interested in oceanography-marine geology. I wanted to be on the west coast, so I was given a job at Menlo Park in California, where the main USGS

office is on the west coast. Our mission was looking for gold and platinum in beach sands and placer deposits in rivers near the southern Oregon coast, as well as the off shore environment. Some U of O professors were studying the bedrock geology and gold in the streams of the south coast. Some OSU oceanography people were studying offshore, and then, the USGS group I was working in was sampling along modern beaches and uplifted beaches.

**Geier:** Hmm.

**Swanson:** I then got to know these U of O profs, I wanted a break from school, so I stayed out a year and continued to work for USGS back in Menlo Park. Then, I came back for a second field season, and then, went to the U of O because I knew those guys. At that time I was interested in sedimentary geology and did a study in gravel movement on the Elk River on the south coast. Although I sort of tired of that area of geology, it led to doing the Galapagos project because people were very interested in sea-floor spreading at the time, and I went from there.

**Geier:** You said earlier that you wanted to go to the west coast. What was the reason for that? You had been out here before?

**Swanson:** I had been out here before. I had come up to Montana to a geology summer field camp after my junior year. My parents had brought the family out to the west coast, and I had been interested in the west coast because I had followed track closely, so I was reading about Oregon runners. Also, my girlfriend at the time, she and some of her girlfriends wanted to come out to the west coast to work. They got jobs in San Francisco.

**Geier:** So, I'm just sorting out details; were you there at U of O when the [Steve] Prefontaine was running?

**Swanson:** Right.

**Geier:** Yeah, okay.

**Swanson:** I really enjoyed watching that, he and Frank Shorter and all of those guys compete. So, then I moved to Corvallis in 1975, three years into working into the group, and progressively got more involved, although still somewhat peripheral to people like Art and Jerry. Jerry was, of course, the main motivator, and I worked with Dick Waring. Dick and Jerry made an interesting duo. They're quite different personalities and science interests and styles and so forth. I worked with stream folks quite a bit, Jim Sedell and I being contemporaries. He helped provide an opportunity for me to get into River Continuum project, which was one of the major stream themes for a while. Then I participated in LTER and enjoyed that early on and was a participant in some of the forestry interaction work. We had Dick Janda, who was a USGS geologist and worked on geomorphology in forested areas, like I was starting to do. He was on our Andrews advisory committee. I was eager to have him on our advisory committee to try to help stimulate the earth science presence early in LTER. Dick had a big influence on people like me and Gordon Grant. He died a few years back, at age 54. But, he was important to me, he gave up some input in LTER, and he was important in our connections at Mount St. Helens.

**Geier:** I'll be leading ahead a little bit into the early 80's, the early LTER era, which there are a few things I want to cover.

**Swanson:** Okay.

**Geier:** It occurred to me when you first started working for this group, you were kind of peripheral to the group for a while. Where you doing field work at that time that got you out on the Andrews? Or were you mainly working in other areas around here?

**Swanson:** Well, I did a lot of work in the field and I really relished that part of my experiences there. I started out walking all through the Andrews trying to map the geology.

**Geier:** Hmm.

**Swanson:** Then, I got interested in landslides. Ted [Dryness] had written up the landslides from the 64'-65' winter. I would start finding other landslides, so I started documenting them, and that led to a paper on the full history of landslides since 1950. We published on that in 1975. Now, interestingly, we're going back and redoing that with a 1996 map, and comparing it with the earlier findings. I walked through forest to look for the rock outcrops and I walked throughout the forest to for the landslides. Then I got interested in the question of, "Hey, we've got all this forest here in a "controlled" [native forest, not plantations] condition, like in our controlled small watersheds, but nature bangs the system up, what about forest fires as disturbance agents?" So, I asked Jerry and Ted what the fire history had been. Well, they had counted a few rings on some stumps that they'd been sitting on to eat lunch one day. They figured there was a 120-year age class, a 450-year age class, and a few other little things and that was pretty much it. So, then I got interested in the frequency, severity and extent of fire. Around 1975, Peter Morrison and I tried to reconstruct the fire history.

**Geier:** Hmm.

**Swanson:** We went around and counted tree rings on stumps, and walked the forest looking for the fire history. I spent a lot of time out there looking at the landscape from different points-of-view.

**Geier:** It sounds like Ted kind of clued you into an interest into landslides and things which drew you to that area.

**Swanson:** I forget exactly how that happened, but I was aware of his work.

**Geier:** Uh-huh.

**Swanson:** One thing happening for me in the mid 70's was I was hanging out with hydrologists, who were thinking about the hydrologic cycle and a systems-approach to thinking about water. Through IBP, I was meeting ecosystem and nutrient-cyclers who were thinking about taking a systems-approach. Where was the nitrogen stored, what processes moved it from one place to another? The small experimental watersheds had been set up, and they were they were treated as black boxes in terms of what went in and what came out. Water, dust and dissolved nutrients fell in, and sediment came out. So, adopting the systems perspective from my ecology colleagues, I tried to apply systems thinking to soil and sediment movement. A few other people have gone the same way before, like Dick Janda. We're doing the same thing at the same time for somewhat different reasons. That led to a small workshop that we held on sediment routing and budgets and forest catchments. So, that was another area of exploring concept development and then drawing on the associated fieldwork collected data and erosion rates by different processes.

**Geier:** Sounds like a lot of research questions and interesting questions drew you out there. I'm curious what were the connections between your first impressions of what you saw and what you anticipated you were going to see once you got out there. In other words, how did the Andrews strike you the first time you went to do work out there?

**Swanson:** I remember going out in the spring of 1972, I think it was. I was about to graduate, I knew I was going to be doing work there, and a few of us went out. I remember not getting very far because it was still pretty snowy, and not seeing very much because of all the damp vegetation. It has been an interesting learning experience for me, because I wasn't really trained to study the things I'm studying.

**Geier:** Uh-huh.

**Swanson:** I think there is no place where you would have been trained to do this work. And we're still in training in some ways, now.

**Geier:** Yeah.

**Swanson:** I went out to map the rocks, and so little of the landscape has exposed rocks, a percent or two along stream bottoms, road cuts, and a few other places. So, I went out to do geology and couldn't see any, so I gave up and joined the ecologists. Then, on the fire history work, I had taken a geologic mapping approach to that. That work had a certain set of motivations, such as learning how fire regimes may influence soil and sediment dynamics. Now we're going back and redoing fire history, expanding the area and applying some different approaches, in part, because of the tying in with people who are sampling-orientated rather than mapping and history- orientated. As a geologist, I'm bringing in historical and spatial perspectives, not an experimental perspective.

**Geier:** So, what you're saying, sounds like you were sidetracked into another area you weren't really anticipating when you started graduate school or your post-doctorate work?

**Swanson:** Yeah, or anywhere along the line, I didn't anticipate the next development.

**Geier:** When you think back to that point in time in your career, coming out of graduate school, you must of had a vision about what you wanted to accomplish, or where you wanted to be in 20 years. Can you recall what you had in mind?

**Swanson:** Well, there were two things there; one was where I was at personally, and two, was a more general issue you might want to explore in the history effort. Jim Sedell and I were talking a little about it the other day, which has to do with letting loose some of your disciplinary roots, which is sort of scary. Just personally, I wasn't real concerned about where I was going, I was just sort of enjoying what I was doing. I wasn't married, I had been married, but I got divorced. I felt pretty free. I didn't have kids to be responsible for. I wasn't strongly aligned to a particular discipline. I mean, I was a geologist, but I'd been doing work in sediment transport and I wasn't very excited about sedimentary petrology and sedimentology. I sort of lost my interest in it. That's where I went off to the Galapagos and did some paleomagnetism work, something in the sea-floor spreading/plate tectonics realm.

**Geier:** Uh-huh.

**Swanson:** I didn't pursue other jobs very hard. I interviewed a little bit a couple times, but I wasn't very aggressive and directed, professionally. It was sort of puzzling to me at the time, and yet on the other hand, I always sort of just cruised along, let things evolve and just relied on trying to have a good, positive energy, and figured that things would work out.

**Geier:** It's interesting as a geologist, going out to an area where there are very few rocks showing, where getting frustrated by the vegetation as you go just a few yards this way or that. In the Cascades region ["high Cascades" east of H.J. Andrews], there's a lot of rocks, so why dig around there [HJA], and keep working in an area that was frustrating like that?

**Swanson:** I was being facetious when I said I was frustrated by the vegetation. I was quite interested. When I tried to learn the species of plants out there, and I had taken some ecology at the University of Oregon, there wasn't much offering interest to me [individual plants/traditional botany]. But, I was interested in the linkages [ecological] and how the system worked together, and that's what helped me to stay. And I liked the people I was working with. In fact, maybe the absence of good rock outcrops accelerated my engagement with the ecology community.

**Geier:** Yeah, sounds like you're not that committed to geology or you weren't, is that what led to you keeping your options open?

**Swanson:** I was committed to it personally in terms of what was intellectually stimulating, but I hadn't charted a career path. I hadn't said, I'm going to be a professor, I'm going to do my work as an assistant prof, in five years I would like to write these papers. I hadn't charted a course. I knew I didn't want to work for an oil company in Texas, but that was still an option at that time.

**Geier:** What did you think about the quality in terms of access? I was talking to Roy Silen about the road systems and how those were put in. Obviously, you spent a lot of time there, you were getting access to something you were after. Did the infrastructure or the road system that was there, strike you at all? What did you think about the facilities?

**Swanson:** Well, at that time there weren't any facilities as we know them today, no buildings out there. I camped out or stayed in the trailers sometimes, which were off the forest. The roads themselves, I appreciated the amount of roads, just for getting around, looking at different things, including the road-cuts, and of course the landslides. I was interested in all the routes. I drove a lot of the roads and sure used them to get around.

**Geier:** You didn't have any problems or any concerns about the way the place was, the way the infrastructure had been laid down?

**Swanson:** Well, I was interested in forest management and roads in general, not actually the forest landscape much, yet. I think for the most part I was just taking it as a given, whereas somebody like Roy wanted to know what's good management and what's bad management, and he had direct input on how management progressed. At that time, I expect I was feeling like quite the outsider, and I wasn't familiar with logging systems and road systems.

**Geier:** Sounds like it didn't make that much of an impression on you. It essentially did what you wanted it to do and that was it. It got you where you wanted to go and didn't get in your way too much.



**Swanson:** Yeah, that is my recollection.

**Geier:** If you think back to the way you worked with Ted, Jerry, and people like that at that time, would you consider them to be “avant-garde” in the work they were doing, or was this something that just was of more interest to them? Was there something that struck you as unusual? Who out there would you consider to be most avant-garde in that kind of work at that time?

**Swanson:** Part of it was that we were moving in a direction that not many people worked in before. I just wasn’t familiar with the field. I had audited one course in ecology, but only a little bit of it. So, I didn’t have a real sense of what was cutting-edge and what wasn’t. What was being done, seemed to me like it was real reasonable to do. It didn’t take great leaps of creativity to see what needed to be done. I do recollect that I had the feeling that a critical thing we were contributing, was putting these pieces together. People could go do a post-clear-cut succession study like Ted [Dyrness] was doing, and probably other people were doing it. I think he did a more thorough job than most, but it was in an experimental watershed where you could link the vegetation story with the nutrient cycling and soil erosion stories. I recollect feeling that some of the work was way out there, like the tree climbing [canopy work], and stuff like that. It evolved in the later 70’s, but a lot of it seemed pretty straight-forward to me. The key to me is to try and put it together, rather than seeing the individual pieces.

**Geier:** It kind of strikes me that the people you’re talking about here, like Jerry Franklin, who doesn’t come out often, it sounds like at that point of your career, he wasn’t making that much of an impression on you, at least what you were involved in then.

**Swanson:** That’s an interesting comment. For some reason, I tended to connect pretty strongly with the stream people. They had flowing water moving sediment, and I’m working on sediment. I have landslides, and they’re worried about landslides. I was involved a lot in the woody debris and streams theory, but not woody debris on land. So, I think some of it was a matter of personality, and linking with Jim Sedell. A lot of it has to do with the stream environment being the one that’s most active. I’ve done quite a bit on fire history, but I’ve never had the strength or linkage with the regular plant people in our group, with all that fire history stuff. I’m not sure why. I haven’t really thought about this stuff quite this way before, but Jerry is a tremendously important person, to me and my whole development. Professionally, I consider him a really good friend and very important influence on me, as I said today. He helped us all. He’d say we can stand up and talk to [Senator] Mark Hatfield about this stuff. You know, he’d just stand up and do it. You look at the Andrews facility, say 10 years ago, and say this is what you’re going to have at this site. It’s sort of like, have a dream, make it happen. It can happen where that attitude is there, and although we may be fairly common folk, we’re good. We’ve got good ideas, and we can make this thing happen. I got nervous when we talked about moving the crane, Jerry’s canopy crane down here when it was getting too [politically] hot for the Olympic Peninsula. I thought, wow! It’s going to be like an “ecosystems scientist theme-park” down there, with all these toys. We had a debris flow flume [USGS project on HJA EF] and all that stuff. I was concerned about too much luxury of infrastructure, and drawing negative reactions because of it. My general point there is --

**Geier:** I’m sorry, back up just a minute; drawing negative reaction, meaning public perception?

**Swanson:** -- Public perception and other components of the science community that were struggling to keep a \$5,000-a-year study going. You know, those guys are getting a \$500,000 crane. We could spend that money a lot better. In a lot of cases, I would sort of have to agree. On the other hand, if you don't go out there and make some bold moves, you may miss important discoveries. It isn't money that would of gone somewhere else in the science arena, or it would of just gone to parts of some aircraft carrier. My general point though, is that Jerry has been a really powerful influence on me personally and on the whole group. I've been reflecting on that a little bit recently when it was time to put in nominations in the Forest Service category of scientists for awards, and just how well-staffed we are with potentially high-level award winning scientists. People who can receive the distinguished or superior science award for the whole of Forest Service Research. We've got two nominees in now and a number of folks that have gotten it before, and I see a few more coming up in the ranks. We've just been really blessed with good people, and it's a bold move on the science front that they're willing to step up when it counts. Jerry set the model. And we had powerful linkages when we worked on things together.

**Geier:** Was he someone you were working with on fire history research?

**Swanson:** I never really interacted with him that much in those capacities. Once the research-management linkage really started to bubble along, then we went out a number of times. Quite a few times, on field tours. I always appreciated his commitment to the partnership. I really liked the guy.

**Geier:** How would you describe your understanding on long-term research in 1972, in terms of potential problems that were presented? Were you personally the researcher and for the kind of science you envisioned?

**Swanson:** I don't recollect much emphasis at all on long-term research at that time. Except that the watershed studies had been going, Watersheds 1, 2, 3, and some new ones [WS 9-10, WS 6-8, all in HJA EF] were getting going. In 1975, the treatment [clearcutting] of Watershed 10 occurred. Also, some of the vegetation plots [reference stands] were being put in, but I just don't remember much discussion really focused on long-term. I do recollect some feeling that the expectation of IBP was that we already know a lot about these ecosystems, and we don't really have to collect a lot of new data. We just need to develop our systems model along the lines of what Odum and others have done for energy budgets and nutrient budgets. We just need to develop these big models and they would explain how ecosystems function. There was a little bit of a feeling that maybe the business would be sorted out in that context. There's an interesting question here of what is an ecosystem, and what is an ecosystem study. I think that some people who view ecosystem studies as sort of nutrient-modeling studies and nutrient-cycling studies and microcosms and watersheds. To me, an ecosystem and an ecosystem study includes disturbances banging all around, and all that kind of stuff. I haven't really tried to define it very explicitly, and I don't recollect much of a focus on long-term. When IBP ran out [1970-76 at HJA] towards the end of the 1970's, I know Jerry in particular, from our group, was instrumental in working with others and nationally to get a LTER-like thing set up. The Andrews ultimately bridged its way into that through a temporary Experimental Ecological Reserve

[1977-79 at HJA, funding/admin. bridge to LTER]. That is when long-term really became prominent in our thinking.

**Geier:** So, you were setting the stage for that, but it was not a conscious effort at that time?

**Swanson:** My take on it, and I most certainly was not in the mainstream, was that Jerry was very much in the mainstream nationally, and people like Art were more in the mainstream, locally. IBP had been successful in developing a cadre of scientists that could work together, infrastructure around field sites, databases in particular, as we have the Forest Science Data Bank [FSDB] and some important commitment to long-term infrastructure. What is the expression of the knowledge we have accumulated? It's in publications and databases and things like that. Anyway, those developments were occurring in IBP, and NSF said this is a good thing, and we just didn't want to cut it off. It's really a tremendous investment, but its manifest in its infrastructure. Places, publications, records, and databases; we try to find a way to keep it going.

**Geier:** If there was no conscious turn toward, at least in the beginning, toward long-term studies, what was being done? What I'm really asking about, is how were projects and decisions on study sites and projects made? Who was making the decisions and on what basis?

**Swanson:** Well, people like Jerry could give a much clearer answer. I was more on the receiving end of decisions, and my subject matter was somewhat marginal. I took the early push to be to develop the systems models and the collect data that was necessary to make them go. In the erosion realm, the part I was working in, we were pressed to develop an erosion model.

**Geier:** You say you were pressed. Do you mean other researchers were looking for an answer to that, or just you?

**Swanson:** People like Dick Waring were encouraging us to do that. I guess money was being invested in doing that, including contracts with some people at Utah State that involved hydrology modeling. I think other IBP sites were probably more heavily invested in the systems modeling than were we. Jerry, for example, is someone with a much more intuitive approach and descriptive approach to understanding ecosystems. So, he had a strong influence on the how we conducted ourselves. I'd say that we had a mix of ways in setting our course. There was some direction that was universal across IBP, then there were some local leadership influences, like Dick and Jerry. Then there were also some opportunities for individual investigators to perpetrate what they wanted to do.

**Geier:** You said earlier, and casually, that you were on the receiving end where it implies you were making decisions based on a limited range of options or choices. Is that accurate? Other people, in other words, were making larger decisions and then, you got some freedom within that framework.

**Swanson:** Yeah, I think that's a fair way to put it.

**Geier:** Okay, and that was largely driven by the availability of funding for work?

**Swanson:** Yeah.

**Geier:** What kind of staffing were you working with? Did you have students or support staff that were helping you with your work at that point?

**Swanson:** Well, I was a post-doc and there was a student, Mike James, who was funded to do a particular soil study. He and I worked together on a bunch of field-mapping [of HJA EF]. Then, by 1975, I remember having some ability to influence work, such as fire history. I got some summer students to work on fire history or on some other topics, like woody debris in streams, which Jim Sedell and I conspired on. I had George Lienkaemper, who is now our GIS leader, work on wood in streams. So, by the mid 1970's, I could gain access to small bits of funding.

**Geier:** Can you recollect the rough proportion of your funding went towards staffing and what went towards logistics and equipment?

**Swanson:** It would probably boggle my mind if I actually went back and really thought about or looked at some of those numbers. I remember doing a contract for USGS for \$3500 dollars for geomorphic mapping in the Elk and Sixes rivers country [southern Oregon coast mountains]. I was a post-doc and I didn't get paid full-time. I was working with this one student for the most part, and he has his own project as well. We just had really limited resources. I didn't have expectations that were that much bigger, so I wasn't feeling deprived.

**Geier:** You never felt pinched by the budget you had available?

**Swanson:** I don't recollect feeling that way. I didn't have bigger expectations. The type of science staffing in the infrastructure we're trying to feed now, we didn't have then. Look at the computing scene we support and the field facilities we support. It is mind boggling!

**Geier:** That's something I haven't actually included in some of these materials and I probably should be talking about it more; the changes that take place in computer technology and how that influences the work. I think for a broader study in general.

**Swanson:** The whole evolution of infrastructure is a very important point. It's important in terms of what you can actually do out there, what is directly supported by the infrastructure. This level is the most direct level [for "x" funding/support to = "a"]. Another important role of infrastructure, is that when you compete for large competitive grants, like from the USDA and NSF, you have to define your infrastructure, and if you have a good reputation for that infrastructure generating quality information and making it really accessible, and you've got the computing and the support like that, you're going to be more competitive. You have to have good science, but you have to have the where-with-all to do it. So, that's number two, and that's a really important part of infrastructure. A third thing that I think is quite important, but is sort of subliminal, is I think people take you more seriously if they go to the Andrews headquarters, it's a bunch of nice looking buildings, it's busy and you go look at the debris flow flume. The message is, "Hey, this is a serious undertaking. These guys take this seriously."

**Geier:** Yeah.

**Swanson:** I know we got reactions from [Deputy Chief of Forest Service] Jerry SESCO, when we had a bunch of junker trailers. He said, "Why'd you guys let it get like this?" I said, "Hey, this is a big improvement over what we had, and we're not spending our research dollars on facilities."

**Geier:** Yeah, I was talking to him about that. He said that he got really angry when they [Congressional members and staff] asked him many questions.

**Swanson:** Right. Another thing is you go out and look at Mark Harmon's log decomposition study, and you say, hey this guy is really serious about this work [taking role of dead wood in ecosystems seriously]. This is a major investment, the scientific community is serious about it. This work has passed through peer-reviewed proposals to be undertaken as a 200-year study. I think a lot of it comes down to the subconscious level of, "Hey, these guys aren't just out here spinning yarns. They're taking this seriously." Also, you have a big research machine to feed, an infrastructure system to feed. I've had periods of high level frustration within the station [PNW], when it gets reorganized and there's talk about being responsive to client needs and stuff like that. In the narrow sense, you could say that we have to support this infrastructure, and the station reorganizes that in some ways. When we reorganized, I was very concerned we were going to lose the commitment to the infrastructure. We've survived so far, but it's sort of a constant battle and there is a constant erosion of support. Not due to conscious decisions, but just because the leadership up there is thinking about this other stuff and forgetting about the things over here. Then there's also that aspect of maniacally sticking to it, and yet being agile.

**Geier:** Can you identify some turning point or "critical mass" you have to approach before you can do that. You build up the trailers out there, and you had people working out of tents. Then, all of a sudden, boom, you've got money coming down a chute. Obviously, a lot of that was because of the influence of what had been done out there. Did you see, from the seventies to the nineties, a kind of curve where you reached the point of a sudden take-off and new expectations?

**Swanson:** There was an abrupt change, and it would be easy to pose some very interesting interpretations. I haven't thought it, but you know we built up with the junker trailers. Meanwhile, our science was building up and the issues we'd been working on for a long time, different people, spotted owls, watershed, old growth; they became more prominent. More people were coming to the Andrews to go see the product of the science, to stop and take a leak in our crummy facilities. I know some of our station directors, and this was a flagship place for the station and the Forest Service. I've never met a Congressional person, a staffer or Congress person in the FSL (Forestry Sciences Lab-Corvallis). We've had dozens to the Andrews. Forest Service Research, what is it? You go people in Congress, there have been a bunch of them that have started thinking, well, of places like that Andrews. I think there might have been some motivations like that. A triggering event, the precursor, was the "ghetto on the meadow" joke coined by a National Park Service ecologist in reference to the Andrews headquarters site [decrepit trailers-lodging and research]. We had a field trip with Congressman Les Aucoin [D-OR], when he was on the House Appropriations committee, and Mike Salsgiver, when he was lead staffer for Senator Hatfield, who was on the Senate Appropriations Committee. We had those two guys out together, we were not talking about facilities, we were not making a pitch. We were talking about changes in forestry practices and policy. They went to work getting us an earmark for facilities improvement so the place could look worthy of the valuable science emerging from it. Aucoin used the quip [ghetto in the meadow] in budget hearings. So, that "ghetto on the meadow" quip triggered getting the

money that's built the place up. A part of the ghetto story was when the bathtub fell through the floor in the owl crew trailer, because the floor had rotted out. That was a pivotal event, as after, the station director said, "Here's fifty grand, let's get this place going." That was a key piece to get going on the first bunkhouse. In a way, you could say that owls have had a pivotal that role in Andrews' infrastructure development, not just regionally in terms of the policy changes that have occurred. For issues that affected policy, old growth and natural ecosystems were important, but the owl was the hook.

**Geier:** Now, these things are all pretty recent. This was in the late eighties, early nineties.

**Swanson:** Yeah, right.

**Geier:** By that time, the science was built up and the Andrews had built up its reputation. What's shocking people is that this place that has turned out such high-quality work living in these junky trailers. I guess the question is, at what point does the infrastructure become a burden? Were there some advantages to not having all that material?

**Swanson:** Oh, sure there were. It is a constant challenge now, and the institutional commitment to it, in my mind, is still vague. Is this a research team (our little team) responsibility? Is it a program responsibility within the station? Is it a station facility, such that a lot of it should be funded at the director's office level, skimming off the top? At what level do we support it? That's just in the PNW or the university [OSU] realm. Is it a sub-departmental entity? Is it a departmental entity? Is it a college entity? We've got a lot of different colleges within OSU that are involved. Is it a university entity? In the National Forest [Service], is it a district thing, or is it a Willamette National Forest thing? But, a lot of the implications of Andrews' science go way beyond the Willamette, so, is it a regional office responsibility? You get the buck passing up and down the line in each of these institutions. So, it's a constant scramble, and sometimes you come out fat. Like on this 1996 flood work, we didn't come out fat, we've been busting our asses, but we got a bunch of money to try and rebuild our stream gauging facilities. Other people cry the blues because they would have used it other ways. That's a funny thing about this whole deal. It is easy for me to get overwhelmed by the challenges, problems, frustrations, and personal issues down here. You weren't there when we had to deal with Watershed 3, and you can't reconfigure it because of this landslide and this sediment wedge. It was screwing up our gauging.

**Geier:** I think I came in on the end of that.

**Swanson:** Yeah, you just deal with these little things, one after another. That's why, people like me, I can get off on this history, because that backs me off the scene. Wow, we've really done some deep thinking. So, the facilities are both a triumph and a sorrow.

**Geier:** Art was getting signals there was concern now that this Forest Service facility is being managed by the state [OSU]. It struck me that the more impressive the facility becomes, the more attentive the bureaucracy gets about status, prestige, and who's in control. You get a sense that back into the 1970's, people were not that tuned in and aware of the Andrew's being there.

**Swanson:** I think there was. I think that was true, especially on the PNW and the university fronts. I heard that the PNW leadership would say, "I don't think I want to know the details of what you're doing, because it's probably not legal." Then we were the [OSU] College of Forestry, which was heavily into production forestry on nonfederal lands. You know, it was set up to serve private forestry and state interests. Makes sense. We weren't real central in these different institutions. I think we've become much more so for a variety of reasons. Accomplishments and just the profile are up, and also, we've tried to be good citizens of our home institutions, and not be the odd duck. Things have changed in ways that have gotten us more central to forestry issues of the day. The interpretation that Art has is one that could be made, that is, that the Forest Service sees this as a good thing and will want to take more credit.

**Geier:** I'm not sure if he was exactly saying that, but he was speaking more in terms the problem right now, where somebody in the Forest Service has issues. He's concerned that he's in charge, but not a Forest Service employee, and there's a control issue involved.

**Swanson:** There are some issues that are emerging. We do have a problem where the business end of the deal is wagging the dog in a number of respects. It mainly comes from some people who, for justifiable reasons which are not at all convenient or attractive or of interest for us. For bureaucratic reasons, they are trying to get the Forest Service house in order, so if we're doing something, such as having the university collect fees for using the Andrews, that's done in a way that meets federal regulations, because it's federal property. Lynn [Burditt] and I were talking about it at lunch today. We think things are working fine. Our view of the world is different from the business people, but they are trying to follow the rules and are motivated by the hope that we might think along those lines. So, we're working through some administrative changes. It is impossible to get the national forest system business managers to understand that information is our product. They look at dollars and cents accounting for running the facilities; who's staying there, they consider it like running a hotel or a campground. I'm thinking, hey, I just spent PNW money to engage a university scientist, who's going to go out and get a grant and bring in grad students, and do interesting work that's in the interest of the Forest Service. Look at all they are contributing, so we should be able to give them a little room for free.

**Geier:** I like that information is a product. What struck me really when I was speaking to Art was this is something new. Which is more important for the history project I suppose since we are going through 1998, that's when the project officially concludes. This is something you could probably keep an eye on. What strikes me is that it didn't seem to be an issue until recently. Is it unusual for a major experiment forest to be operated, essentially, administered by someone who is part of university not associated directly with the Forest Service?

**Swanson:** Well, I think it is, but I don't think that's really what's happening. In our NSF correspondence and elsewhere, he and I are called co-directors. A lot of the management of the Andrews is conducted by people like Al Levno and people who report to him. He reports to me, and on the Forest Service side, I'm called a scientist-in-charge, and NSF wanted a university person to have substantial responsibility for management of the property, because NSF was pumping all this money into it. The National Science Foundation, especially back when the

issue arose 15 or however many years ago, they didn't want to actually or be perceived as supporting research by another federal agency. They were there to support academic research, for the most part. So, Art isn't a soloist for leadership of the place. There other leaders such as myself. I supervise a lot of budgetary decisions related to management of the infrastructure. Also, there is distributed leadership within the group.

**Geier:** I'm not directly going with this, but I do find it interesting and it really came out of my discussion with Art when I was down at the Andrews. There's an interesting situation, I'm not sure if I can find it here, which directs me to something unique about the Andrews. Check and see if I made it too strongly in here. I recognize the joint administration, and it strikes me that now it's an issue. There's something about that arrangement that's unique and has worked. I think that is important.

**Swanson:** I want to be careful to not get tangled up with issues that are very proximal issues. Art has a different view of what's going on than I do, and a different view of how to deal with it. I do think that if you go anywhere – I think you may have found it in Alaska – there is a constant kind of bickering between the science cadre and the leadership. You probably find this kind of thing in any bureaucracy in some senses, and then, in science doing bureaucracy, you probably find the same kinds of things. In fact, there are cartoons on the wall of our office about higher levels of the organization being well-funded while the lower levels where the science takes place, coming up short. There's one where there's three people sitting around a table, one of them has a huge plate of food, another one has a smaller one, and another one has a bone. You have administration and science, you know the science is the bone, and administration is the big plate.

**Geier:** That's a real good insight, and it's not something that's unique here. What is interesting in some settings, is that this kind of bickering becomes debilitating. I don't see sight of that at the Andrews. I've heard philosophizers calling those kind of rumors back, but it seems at the Andrews it didn't have that kind of impact. That's what I'm trying to get at here. In the 1970's and 1980's, you had this period of an emerging move toward long-term, integrated studies, with a number of people getting involved. In 1972, when you came on, and 1983 or thereabouts, when the transformation was taking place [to LTER], what would you identify as the most remarkable successes, and some of the problems the people of the Andrews were uncovering at that stage?

**Swanson:** From 1972 to 1983?

**Geier:** You mentioned one already, which was the NSF funding and the concern about granting funds to another federal agency, as opposed to a university.

**Swanson:** With the inception of LTER, which is the local scene of the 1980's, I think we really made the transition from the early IBP days, when I did not perceive long-term research as our major focus, to the early LTER days, when it was the focus. In 1983, some of our infrastructure was substantially improved as we continued to develop information management and data management systems, and development of the Andrews field facility on-site was beginning. The early parts of LTER focused around a series of long-term experiments, and we were beginning to implement those. I think we were trying to communicate with land managers and



having some summer short courses at that time. We were also in the early Mount St. Helens period. Mount St. Helens blew up May 18, 1980, and that had taken some energy off the Andrews just as LTER was beginning. The alliances we had built through IBP and the Andrews, were really critical in going after the Mount St. Helen's opportunity. We had an aquatics group; lakes, thermal environments, and streams, with Jim Sedell as the point person, Jerry leading on terrestrial vegetation, and overall, I was a contact on the geo front and erosion and linking with USGS. We learned a bunch of things in the gray forests there that we brought back to the green forests and Andrews. So, those were some of the things that developed over that time period.

**Geier:** That's interesting, as that was brought up in workshops with Art. One of the key things about the Andrews is that it became a kind of go-to place, where there was a cadre of people working together already on projects. So, when something came up that was of public interest, it attracted attention. Some of what you're saying is that Mount St. Helens was a natural event that sparked the consciousness of this group.

**Swanson:** Some of us gravitated to it strongly. I sure as hell did, and capitalized on my U.S. Geological Survey contacts to get to go in there early. Then, as I recollect, it was our initiative, and Jerry got fifty grand from NSF to help provide access for other scientists. Access was a big problem. The Forest Service was presenting a lot of obstacles with the concern for safety. Costs for getting in were high because you needed a helicopter or four-wheel drive in a lot of areas. For access, you needed permits, radios on USFS frequencies, and all kinds of stuff. So, in a way the Andrews was a go-to place even there, although people didn't come and tell us to go do stuff, as much as we would go out to do it out of our own interest. It was also a go-out-from place, as some people accused us of hunkering there and putting too many eggs in one basket [reference to big research investment at the Andrews]. Yet, we've gone out of that geography in many different ways; through pulse studies, through extensive vegetation plot work across the region, on a consulting basis, and through the LTER network, nationally. We go out and test our ideas elsewhere, and then come back and edit concepts.

**Geier:** That's kind of interesting picture raised there. You drew on your networks to get into this area that was difficult to get access to. How many people were involved in the effort from the Andrews group, besides yourself?

**Swanson:** Well, many people.

**Geier:** So, you were kind of one way of getting into that area, you had some networks and other people had things they could try.

**Swanson:** Yeah. We built social networks as we ran pulse programs up there for two weeks each in the first two summers [of LTER era].

**Geier:** Was that 1981 and 1982?

**Swanson:** In 1981 and we had one hundred and sixty people go through, up to a hundred at a time. The external media were represented. We had USGS and Weyerhaeuser, the University of Washington, our own people, but a lot of other people, too. Our people helped staff it, and then, when it came time to write the management plan for the National Volcanic Monument,

or even give input into how the monument geography might be designed to provide representation of the geological and ecological features of interest, they came to us. So, part of the point is we go out and tend to new jobs or explore new things, and come back and infuse that into our concepts.

**Geier:** That's kind of the rejuvenation thing you were talking about earlier. Bringing it back. How exactly do you mean bringing it back? Bringing it back with ideas or new insights on how to approach questions you've already had before on the Andrews?

**Swanson:** Yeah.

**Geier:** Or people that you involved outside, that you bring in to the Andrews?

**Swanson:** Yeah, all of the above.

**Geier:** Do you have any examples of a particular experience?

**Swanson:** There are some particular things through LTER, for example, where we see what others are doing and see opportunities to implement similar experiments. There was a nutrient addition experiment on the Kuparuk River at the Toolik LTER site on the north slope of Alaska. Stan Gregory, who was working on that topic, picked up on that and implemented a similar experiment examining trophic cascades of nutrients through food webs with new NSF funding on the Andrews. I think that spring-boarded more sites to get interested in that experimental approach. Now, there's a larger inter-site project going on, not with that specific experimental approach, but on questions that can be addressed through nutrient additions in streams. So, we borrowed some stuff from elsewhere and brought it to the Andrews and worked it out here.

Then, our folks participated in efforts to develop experiments across a larger set of sites, and do comparative analysis. Another example. Mount St. Helens was pivotal in the legacy concept which then had a big role in New Forestry, an alternative approach to forestry promoted by Jerry Franklin. We went to Mount St. Helens, and initially thought the landscape has been blasted, sterilized, and ecosystem responses would be starting from scratch and be protracted. We're talking about primary succession, but right away, we started seeing surviving organisms. In the lakes, streams, upland forests and meadows, all kinds of different survival mechanisms allowed species to survive. Buried plant parts which would sprout, were liberated when small gullies cut down through the new deposits to the old soil surface. There was a big role of surviving plants and animals in much of the landscape. And that was a time when the clear-cut controversy was chugging away. By the late 1980s, Jerry was advancing the concept of biological legacies and arguing for retention of live trees and more dead wood in cutting units – New Forestry concepts. He'd say, "Let's focus on what we leave on a logged site, rather than on what we take away." Mount St. Helens really stimulated that because it was such a stark landscape, and that when something survived, you were surprised and noted it. There is documentation of those ideas.

**Geier:** Yeah, that's something I would like to take a look at. I hadn't really focused on that, but I think you mentioned that earlier.

**Swanson:** Yeah.

**Geier:** Was it you and Jerry Franklin walking up the hill, this is the way it appeared on the internet anyway, mainly if you have some documentation or is there a report filed on that?

**Swanson:** Yeah, I think some of the key ideas are represented in the article in *National Geographic Research*. Then, there had been some subsequent things. Also, I think we could find some of the other literature that does talk about the link back to New Forestry. Actually, I think it's discussed in the *Journal of Forestry*, article; "Toward a New Forestry." No, it's in *American Forests* – and many other of his [Franklin] writings of the late 1980s.

**Geier:** *American Forests* article?

**Swanson:** Yeah, it discusses carrying the ideas from Mount St. Helens back to green forests.

**Geier:** We should probably call it quits for the day.

**Swanson:** The general theme though, and this is something which you might want to consider, is how to deal with networks. These networks include networks of sites which may one time or persistent experiments elsewhere. We conduct research in networks of natural areas and other experimental forests. The Andrews sits in a whole series of nested webs and networks.

**Geier:** Yeah, this is what we were talking about in some of our earlier meetings, isn't it? One of the more interesting things about this project.

**End of Interview**