

Interview with Stan Gregory, October 7, 1997, Nash Hall, Oregon State University. Interviewed by Max Geier; Transcribed by Keesje Hoekstra

Stan Gregory arrived in Corvallis from Tennessee in 1971 to begin a PhD at OSU just as the IBP program was getting under way. His initial research focused on primary production in streams, but, as a central figure in the Stream Team, he quickly became integrally involved in full stream ecosystem work and forest-stream interactions, which became a central theme of IBP and then LTER studies. He also played a major role in carrying these perspectives into Forest Service land management and policy, as reflected in the stream and riparian management guidelines prepared under contract with the Willamette National Forest.

Stan Gregory: (tape begins in mid-sentence).... latitude in, what type of research project to start. It needed to be something in the Andrews, and something that helped understand stream ecosystems, something that wasn't already being done. So, I thought about it, and my background was particularly working with fish, but there was a grad student starting a project at that time on fish, so we decided to try to spread things out and diversify, so I ended up working on primary production in the stream, which is the food base for the stream ecosystem. My thesis was looking at a clear-cut section and an old-growth section of Mack Creek up in the Andrews, and looking at the primary production rates and nutrient dynamics associated with that. IBP was a great learning experience because it was one of the first truly multi-disciplinary ecosystem programs. We had people like Jim Sedell and Jim Hall and Jerry Franklin and Dick Waring and Kermit Cromack, and lots of other people to learn from, and the program was constantly getting together and exchanging ideas and concepts about how ecosystems function. So, I learned a lot about a lot of different ecosystem components instead of just learning a lot about streams.

Max Geier: Had that been a focus in your undergraduate work at Tennessee?

Stan Gregory: Yeah, by the time I'd finished up my undergraduate work, I wanted to go into ichthyology, the systematics and the taxonomy of fish, but there weren't many jobs, and so I decided that was a pretty stupid thing to do. I thought, fisheries ecology or fisheries biology had more job opportunities, so I would go into that. But actually, when I first arrived, I was looking at the role of fish carcasses on stream productivity. I decided for some logistical reasons that weren't really tying in well to the IBP project, at least the way I saw it at the time. There were some logistic problems in terms of doing nutrient cycling work but I couldn't really look at productivity, because we didn't have as many carcasses coming back as historically came back. So, I shifted to the primary production study, because it was needed in the project. I was kind of filling need as opposed to sticking with my background.

Max Geier: Did somebody advise you in that?

Stan Gregory: Yeah, it was a discussion with Jim Sedell, Jack Donaldson, and Jim Hall; we all kicked it around. But none of them had expertise in primary production. Luckily, Dave McIntire was on campus at the time, and Dave was developing a stream ecosystem model for IBP. And he was one of the pioneers in primary production work in streams.

Max Geier: What program was he in?

Stan Gregory: IBP. [International Biological Programme, Coniferous Forest Biome]

Max Geier: But on campus?

Stan Gregory: In Botany.

Max Geier: At Tennessee, were any intellectual mentors or people that you worked with?

Stan Gregory: Dave Etnier, E-t-n-i-e-r. He's the fella who did most of the original work on the snail darter back there in Tennessee. He's a taxonomist, but he was also one of these people with diverse background. He came out studying dynamics of sunfish populations, and he was also a great fish systematist. He's written a book I've got it at home right now; *Fishes of Tennessee*. That's just a beautiful text with color plates of all the fishes of Tennessee, so it's a monumental work. He was going to be publishing it about two to three years after I left in '71, but it just came out last year. He was also a good aquatic entomologist. He was great for an undergraduate to be around; he taught me a lot. He liked to go out collecting fish, and so it seemed like every other weekend he was taking us out and we were collecting from some different stream in the Southeast. I got to see lots of streams and learn a lot about fish in my undergraduate work.

Max Geier: Had you started out at University of Tennessee interested in fish?

Stan Gregory: Yeah. When I was in high school, I thought I wanted to go into medicine, wanted to be a doctor. Then I went to a National Science Foundation-sponsored school for marine biology down in Ocean Springs, Mississippi, the summer between my junior and senior year in high school. So, I decided marine biology was pretty cool and that I was interested in that, but I was working my way through school, so I couldn't afford to go to a coastal school. So, I decided to go to UT at least for a few years, and perhaps transfer into the marine biology program. But, while at UT, I got bitten by freshwater systems, and decided that they were my real love, so I got into streams and freshwater work and decided that was just great.

Max Geier: The Ocean Springs program is run by the school system in Tennessee?

Stan Gregory: No. Ocean Springs, Mississippi, is run by the National Science Foundation. It was part of their high school student and high school teacher education programs that they still run. It was great. It was a summer, about eight-week course, at a field lab for a lot of southeastern universities, as they all use this one laboratory facility at Ocean Springs on the Gulf Coast. So,

we spent eight weeks exploring the Mississippi Sound area and making collections. We had a lab with aquaria all over the place, and just kind of constantly dumping aquaria. Anything we got in the field we'd dump it in the aquarium. We were staying at a 4-H club camp across from the lab, across the bay, so our transportation was via these boats. We were just a bunch of high school kids with boats and nets and things let loose for summer.

Max Geier: That sounds fun.

Stan Gregory: It was. It was a blast. It was roughly split, I forget what the split was, but slightly more boys than girls, also our hormones throbbing and everything (chuckle), so it was a great summer. Mixing as well as learning about biology and geology of that area. So, I really enjoyed it. Learned a lot.

Max Geier: So, you shifted your interest from pre-med then to fisheries at that point?

Stan Gregory: Yeah. Looking back on it, multi-disciplinary programs have always fascinated me, or people who can understand a lot about different kinds of systems, are very diverse in their own interests and backgrounds, and who don't just narrow on one specialty. Must be some character flaw or something, that I've always been attracted to that. This NSF program exposed us to a lot of geology and water chemistry and hydrology, and then also to a lot of biology. The majority of it was biology. Then coming in working with Dave, who was that kind of person who was into many different fields of zoology, and then moving from there and landing in IBP, which was just a buffet of these people that knew something about forest and stream ecosystems, and we were tied into the Seattle arm of IBP. They were working on lakes up there, so it gave us a chance to talk to people like Bob Wissmar about lake systems. From a multi-disciplinary point-of-view, it was great. OSU has always been blessed with a diversity of ecologists, and a lot of aquatic ecologists as well. We've been fortunate; it just kind of happened. For some reason or other, and I still don't quite understand it, I think it's a serendipity. OSU has a faculty that puts a fairly high premium on working together and interacting. And most of the multi-disciplinary activities happening across campus, and inter-departmental, inter-college, are happening because people just want to do it, not because OSU says we will become a leader in multi-disciplinary studies. I don't think it was ever programatically deemed the goal by any entity. It was just that people that were here enjoyed doing that and saw that they gained a lot from it.

Max Geier: Was it always like that when you got here?

Stan Gregory: Yeah. As a matter-of-fact, I think one of the greatest risks to it at this campus, and just about any other campus I've seen, I've come to realize, is if you formalize it. If you start building a center, if you have meetings of the multi-disciplinary ecosystems, da, da, da, da, the more you formalize it, the more you kill it. That's one of the reasons we have these gatherings, we call them the "Monday Morning Meetings," that started because the stream types needed to coordinate on just who's going out to the field and who's going to do what. So, we'd just get together every Monday morning and make sure we didn't have a lack of coordination. Then we started having the grad students present their research projects, and

people trying out papers that they were going to giving at meetings. Then we felt, suddenly, those presentations starting taking over the meeting, and we started having them every Monday morning. It was a different kind of presentation, and we still have them. They started back in the early 70's, 72'-73', and they're still ongoing. We get people from all over Oregon, all over campus for sure, to come in and give informal talks. Some of them are well-polished, and others are just grad student research plans and we trying to give them some feedback. Very laid back and easygoing, but we always have about 25 to as many as 50 people show up from all over campus. There would be civil engineers, forest engineering, EPA people, ODFW researchers, grad students, botany; just a real mix.

One of the cool things about it is the attendance shifts. I think one of the reasons the attendance and the interest stay high is that no one has to be there. You're not required to attend, it's not formal, it's not a class. If it's of interest to you and you get something out of it, you come; if you don't, you don't. No one says, "You haven't been here. You've missed three meetings!" I think that's been a really good part of it. To some degree I think that's why the LTER meetings also work. They're not closed, they're not forced. If you really want to stay hooked into the LTER program, it's best to show up, so that way you don't lose track. If you start feeling like you need to touch bases with people, you know at least once a month, you're 'gonna get a chance to connect. It's still not a formal meeting where you just have to be there.

Max Geier: But these Monday morning meetings have been going since the early 70's and they're kind of institutionalized now. People expect that they'll be there each week, and they follow it to see what's going on?

Stan Gregory: Right. They've become part of our daily lives, but it's still very informal. As a matter-of-fact, the department head and grad students approached me about setting it up as a seminar series they could get credit for. I decided not to because I didn't want students to start signing up for it, expecting a class. You don't have expectations. I wanted it to be open, so no one had expectations. It could be anything it wanted to be. The other thing is that any program has a certain amount of inherent power in it, whatever you're doing, and that can threaten other programs that are trying to do something and they see it as competition. Our department has a formal seminar series as several departments do. I didn't want ours to be viewed as competition for other seminar series. It was just here to be taken advantage of, but not formalized.

Max Geier: It plays an administrative role, too, coordinating field activities and things like that?

Stan Gregory: Actually we've lost that side of it to be honest, because the presentation side has kind of taken over. But we know that on Monday we will run into people. So that if you've got to coordinate, it's still a good time. We've stuck to the Monday morning meeting time because it helps if you've got to get things coordinated for the week, you can still do it on the side. But we don't have time that says, "Okay, who's going to the mountains, and who's leaving at what time, and this is what we're gathering if you need it," the way we used to take care of all the

field and logistics sides of things. Now, we just assume that people will take care of that on their own.

Max Geier: As I understand it, you were at basically two universities in your undergraduate and graduate period, Tennessee and OSU. Is that right?

Stan Gregory: Right.

Max Geier: Can you talk to me a little bit about the differences about those two institutions in terms of this multi-disciplinary experience?

Stan Gregory: Well, I was an undergraduate, and undergraduates experience universities differently than graduate students do. As an undergraduate, you're pretty much taking classes and under the pressure of completing your degree and taking all these classes. Luckily, I was fortunate that Dave let me work in his lab. I essentially volunteered in his labs for three years, working about 20 hours a week. That actually had me playing around with grad students more than most undergraduates get to, and going to all the grad seminars, and hanging out at the bars with the profs and the grad students. It was multi-disciplinary in a more restricted sense than the IBP program was. The IBP program was looking at both terrestrial and aquatic ecosystems. The multi-disciplinary aspect at UT was probably fortunate for me at the time. It was more like aquatic organisms, and was multi-disciplinary in terms of micro-invertebrates, fish, systematics mycology, ecology, and lakes. There was a limnologist there, Dewey Bunton, who had a major lake program, so there was all this zooplankton, lake fisheries, and lake chemistry work underway. So, it was aquatic and multi-disciplinary, and what I got here was a blend of aquatic and terrestrial.

Max Geier: You attribute that to the IBP program then?

Stan Gregory: Right.

Max Geier: As an undergraduate, had you heard about the IBP program?

Stan Gregory: Yeah, I'd heard about it because Oak Ridge [National Lab] was in the IBP program, and that was part of UT, so I knew of it. I'd gone to some seminars and heard about some of the work that they were doing. I knew of it, even when I was an undergraduate. I was very naive and didn't really understand the full programmatic scope of the IBP program. I just knew it was a bunch of ecologists trying to make sense of different regions, and that's about it.

Max Geier: Back there they had hooked into that?

Stan Gregory: Yeah. Not trying to lead you into this, but we had a really great group when I first arrived here. I was fortunate as a graduate student because in the aquatic side here we had Jack Donaldson, who went on to become the Director of Oregon Department of Fisheries and Wildlife. He actually left the university to start his own aquaculture group on the coast, Oraqua. I think Weyerhaeuser eventually bought them out, and then tried an aquaculture program in Springfield at their plant. I think it finally faded away. With declining salmon

returns, it just wasn't economically viable. But Jack was kind of the leader of the bulk of the aquaculture attempts in Oregon, and he was here. Jim Hall was kind of a guru of watershed studies for fisheries. He had been the leader of the Alsea Watershed Program over on the coast, the first watershed level study of fisheries' responses to land use. He was really kind of the anchor of the whole aquatic program and IBP here. He became my major professor after Jack left, a great major professor. Jim Sedell was a young post-doc on the program and there's no one that can match Jim for ideas. He's just constantly spinning off ideas. Then Dave McIntire, one of the pioneers in primary production work in streams. Jack Lyford, who was in [OSU's Department of] General Science at the time; they've now been merged over into Botany and Biology and Zoology. He taught courses in bio-geography, and he's probably the closest I've run into in my career as a natural historian. He was equally adept at identifying an alga and identifying a tree; his botany was tremendous, identifying a mammal, any organism. He could start telling you about its range and distribution, its ecology and evolutionary history. He was fascinating to be around. Taught me an awful lot.

Max Geier: That's Jack Lyford?

Stan Gregory: Jack Lyford. Then Frank Triska came on as a post-doc in the program in about '74. I think, something like that.

Max Geier: Triska?

Stan Gregory: T-r-i-s-k-a. And Norm Anderson. Norm was quite an entomologist here in the program, and one of the regional authorities on macro invertebrates and streams and has trained most of the people in the region now that are the experts on systematics of aquatic insects. So, they were just really great people to be with, very supportive of me as a student, gave me lots of latitude in terms of what I wanted to study. The good thing about the IBP program was these people. If you could make a case that what you were approaching was sound and well-reasoned, they would give you the latitude to do it. It was a very open environment as opposed to a very controlled one; stepping through the classes, drawing some tables and graphs, get in and get out of here. Anyway, those people I just mentioned all had their own different areas of expertise. But, as a collective whole, they really developed a nice perspective on stream ecosystems and trying to figure out how stream ecosystems work.

One thing I really smile about and enjoy, and I've teased Jerry about this for years, is that one of the things that emerged out of the program here was the recognition of the role of large wood in ecosystems. I think in general, except for Burchard Heede's work in the Fremont National Forest in Colorado, this was the first place that ecologists started recognizing the importance of large wood. That has led to the management changes we see now in the management of large wood in forest ecosystems. The cool thing about it was that it came out of the stream program. Well indirectly, it came out of logging, and then out of the stream program. Hank Froehlich was a veteran forest engineer [at OSU], and he was looking at debris flows and landslides, and one of the things that was being attributed to causing debris flows and landslides was a lot of slash, logging slash, left on the hillsides or in a stream after an [logging] operation. So, it ponded up the water and would cause this mass failure. So, he started doing measurements of how much

logging slash was actually being left out there. He developed some censusing techniques for measuring how much wood was there. In doing so, he kind of needed to differentiate how much came in during the logging operation, and how much was there before. While he was doing this, Jim Sedell kind of looked over his shoulder and started saying, "Hey, there's a lot of wood there." In the IBP program we were looking at carbon stores and carbon cycles. So, Jim started asking him if it would be possible to use his approaches to measure how much wood was present, and Hank came out to the Andrews and showed us how to use his survey techniques.

We started applying this to streams and found there was a huge amount of wood in the streams. We brought it up at a few meetings, and people started saying, "Oh, that's an anomaly, that's just the Andrews, or that's just the Northwest." So, we started going to streams around the country. We went back to the Smokies, and we went up to Heart's Content, Pennsylvania, and a few other places, and measured [wood in the streams]. Any place there was an old forest we found a lot of wood, and any place that there was not an old forest, the wood amounts were about 10% of what there were in forested areas. The thing that was cool about it is that as soon as we started talking about all the wood in creeks, some of the forest types, like Franklin and others, started saying, "Hey, we've got a lot of wood on the forest floor too." So they started measuring wood on the forest floor. I always like the fact that a lot of the wood story came out of the creeks at first.

Max Geier: That's interesting. Maybe you could talk about this nucleus of intelligence at OSU that you found yourself in the middle of and how you got this focus at Mack Creek. You said it was about the time IBP ended, if I remember. Was there a shift in your focus because of that?

Stan Gregory: Yeah, kind of. Actually, right about the time IBP ended, there was another major aquatic program that emerged that had international impact. I was part of it, but not directly. It was kind of interesting. The River Continuum Project was from an NSF grant that Jim Sedell was the PI on, from here. It was with Wayne Minshall at Idaho State working with the Salmon River, Ken Cummins at Kellogg Biological Station working in the Kalamazoo River Basin [Michigan], and Robin Vannote working in the Brandywine system in Pennsylvania. They came up with this idea about rivers being a continuum, from headwaters to large rivers. So, right about 1975-'76, when I was finishing my doctoral research, that program was just coming on. I helped them get started and attended several of the early workshops, and helped them develop their primary production system. I built all the chambers they used across the country, and actually, they ended up using my techniques for measuring primary production at all the river continuum sites. I went out when they first got started, and spent the first half-year working with their field crew getting them going in the field, and trying to finish up my degree at the same time.

They brought in at that time, Bob Naiman, as a post-doc for the River Continuum Project, and Dale McCullough and Chuck Hawkins, as research assistants. So, they kicked into another major phase in the aquatic program here. Naiman was here several years, went on to another position, and ended up at the University of Washington. Chuck and Dale both got degrees here after they finished up as research assistants. Chuck is a professor at Utah State, and Dale is a

leader at the Columbia River Intertribal Council, and so we grew up together. Right around '77, when I was trying to get ready to defend my thesis, I took a job with the U.S. Fish and Wildlife Service out of Columbia, Missouri, but was stationed here in Corvallis. It was a field station, and the national fisheries research lab was in Columbia. I was supposed to be looking at contaminant-related issues in the Northwest forests for the U.S. Fish and Wildlife Service. I worked for them for almost four years, and decided that I didn't like some of the constraints in the federal system, and wanted to come back to the university. So, I got a post-doc with Ken Cummins, who had come here in the aquatic program. Jim Sedell left and went to Weyerhaeuser, and Ken Cummins took his place here at OSU. So I came back to be a post-doc with the stream program again.

Max Geier: What were some of the concerns about Fish and Wildlife Service work?

Stan Gregory: The lab itself had always been into toxic substances in the environment, and their impact on fisheries. They were trying to broaden their perspective into ecosystem-related processes and sedimentation. But, they wanted a field person in the Northwest, so that when they had an issue, they could deal with it effectively, whichever end it started on. I was suddenly running streams in Idaho, Washington, California, and Oregon. So, I got to know the Northwest well over that three or four-year period, and that was before I had kids, so I could spend the time on the road and not suffer.

Max Geier: That sounds like a crisis response kind of approach?

Stan Gregory: No, the Fish and Wildlife Service had their own regional crisis approach. This was more from a research point-of-view, what are emerging contaminant issues, kind of getting on the leading edge of them, and deciding what the lab should do about them, and to advise.

Max Geier: Okay.

Stan Gregory: When I first took the job, it was one of these things where, it was going to be a big program, they were getting us on the ground for six months, and then there was going to be an assistant leader and students coming, and there was going to be a major research lab at each of these places around the country. And then Congress cut the funds, so it became us, that was it, and no other funding beyond that. We ended up being more advisory than doing the research part. It was one of those things that had great plans to start with but never developed. They still have them, and they have been able to get funding into them, but when I resigned here, they decided not to replace me and use the funds to help some of the other labs around the country. So, the closest one to here I think is in Davis.

Max Geier: It sounds like an interest in getting back into research, kind of drew you back here?

Stan Gregory: Yeah, particularly academic research. They were still promising us that just around the corner, they were going to get the funds and we'd be able to do field research. We were able to dabble in little projects. We just didn't get enough funding to really make it work. I think it could have worked, but I got tired. I remember going back for training programs, and

they had some different perspectives than I did. I remember the lab director telling us that, in running government contracts, we had to go to a workshop on how to be a project officer. And he said, "Okay, first of all, if you can possibly do it, do a cooperative agreement within some exchange or program within the Fish and Wildlife Service. Failing that, do an intergovernmental agreement between the Federal government, failing that, with state governments, failing that, go to a temp firm, and last and very least, go to a university." "Why?" I asked, and he said, "Well, they're mavericks, they never give you your product, and they always give you something else that you weren't looking for." Then, they would get me back there like once every six months, and we would have this research planning meeting, and they would get people in from D.C., even congressional staff and things like that. I'd get back there and they would always get us in for a day or two, and they said "no" and go out to dinner with these people, sit and talk them at the meetings, but really pump them to see what kind of research Washington wants to support.

After a couple of years, I said, "Wait a minute, this is back-asswards. We're the researchers, we're the scientists. We should be telling Washington what research needs to be done! This thing of, "We'll hear what Washington wants to fund, is crazy!" And they said, "Hey, it may be crazy, but it's the only you stay alive in this business." That there's certain things that are gonna be dead on arrival, even if it's the best research. So, we have to know what they're receptive to, and then take what we think is good research, and try to blend it with what is politically acceptable, or where emerging programs are occurring." I said, "That sucks." There were a couple of research projects I wanted to push on, and they said, "Well that's a good idea, but it just doesn't fit programmatically." I talked to the lab director, lab leaders, program leaders and staff, and they said, "Gregory, what you gotta do is figure out what you want to do, bootleg it within your research program, and you kinda find a way to nest it so that they never see it." Within a year after I left, two of the program leaders got their wrists slapped for doing just that, and had their own interests pulled away from them, and were told they couldn't do it. I remember chuckling and thinking, "I told you guys that wasn't anyway to run a research program!" Universities are better for people that don't like those kinds of programmatic constraints. It's much dicier in universities because you never know when you're going to have support and when you aren't, but you can do anything you want as long as you can convince someone that it's sound and that they will fund it. That's great for people who like that kind of openness, but the risk and pressure of getting the dollars at universities are great. If you like more continuity and guaranteed funding, but with less freedom on research ideas that you pursue, then I think federal or government research is better. The PNW people here like Swanson and others, have been able to have a blend, because of NSF connections few federal researchers have the luxury of possessing.

Max Geier: You came out of [US] Fish and Wildlife and landed here as a post-doc right in the middle of the EER, and the beginning of LTER was kind of based on interagency cooperation. Maybe you could talk a little bit about that, or your perception of the differences there, and why it works here.

Stan Gregory: I think we've been fortunate. I'm not sure why it occurred, but back even in the IBP days, they made a conscious decision, probably Waring and Franklin had the wisdom, I guess, that there needed to be both a university and a Forest Service presence in the leadership of the Andrews Program and IBP. It was interesting because Waring and Franklin were both very strong personalities, and both brilliant in my opinion, but diametrically opposed in their approach to the world. And that caused conflict. It was one of those kinds of dynamic tensions. It was one that, I think served the program for many years, but at times took its toll. Because, Dick was an experimentalist, and Jerry was more of a large-scale observationalist. Quite often, the large descriptive studies of pattern and things that Jerry wanted, Dick just couldn't stand, because experimentally it was weak. So, the early program was infused with both. I think the large-scale patterns give you a context for the experimental approach, so while you can balance the two, I think they were great. But it does cause tension, and while you have limited resources and someone's 'gotta lose, it can cause hard feelings. With that, Franklin was the Forest Service presence and Waring was the OSU presence. Then, when Franklin kind of took the lead in the LTER days, we tried to make the shift with EER and LTER, with it still being joint.

But, there was a point at which Dick was no longer comfortable with the split, and he kind of said, "It's either going to be strongly experimental, or I'm backing out of the leadership role." So, he backed out of the major leadership role, was still a presence, but decided to pursue his experimental approaches, and has done quite well doing so, obviously. At that time it was moving into the early stages of the LTER, or the pre- to early stages of the LTER, right around the early 1980's. Franklin carried the weight there, and helped get the LTER program on its feet. Then, when Jerry left to go to University of Washington, Fred [Swanson] took over. The university side has always been present though it wasn't as visible as the two-headed monster that we had in the IBP days. It's mainly because Fred watches out for OSU concerns and we watch out for Forest Service concerns, and so I think in the people in the research program there has been a great respect for the strength that each group brings to the table, no one wanting to do anything that would jeopardize either the university's involvement or the PNW involvement. Our regional relevance is largely because of the Forest Service link. But our academic rigor and empirical science comes heavily from the university, or at least has that credibility in the public eye, whether reality or not. Because you can have experimentalists oversee the site just as easily as you can here, and you can have the more descriptive studies in the university side, too. But the public perceives there to be a difference; that universities are pinheads and the agencies are all application. So, if that's the way they perceive it, great. They'll see we're doing basic science, but applying it, and we'll kind of take advantage of their attitudes, their perception, and watch out for each other.

To be real straight, I doubt if it's part of your historical accounting here, but we're in a phase that's isn't history right now, it's current events. The PNW doesn't know what the shit it's doing. (Chuckle) Somehow, within the PNW research program there are people that are starting to question contractual arrangements, and a lot of the financial arrangements came through co-op agreements between the university and the Forest Service. I don't even understand where it's coming from. Those are being questioned now, and even being said that,

they're inappropriate. The Forest Service is putting all these restraints or constraints on those co-operative agreements. With the attitude, someone up in the PNW thinks that all of these co-op agreements are just ways for the university scientists to get rich. Well, to be honest, almost all the co-operative agreements we've run have simply been for people like Jim Sedell and Fred and such to get projects done. Sometimes we don't even get anything out of it, it's just that we're hiring people for their crews, to get their projects done. But there's been this perceptions that somehow these funds are being misused. And it's doubly bad because the university, these are U.S.D.A. projects, and the university doesn't get any indirect costs or overhead for running the accounting and everything. But yet, they're starting to require very detailed accounting and the university is not getting paid for it, so it's having to hire a full-time person just to take care of these co-op agreements and not getting any money for it, at a time when the university is hurting because of Measure 5 [state ballot measure limiting taxes, hence state funding], this kind of stuff. Even Fred was being questioned as to whether his being PI on the LTER program was a conflict of interest, that as a Forest Service scientist he should not be in that position.

So, the last two years have been very troubling for me. What has always been very good teamwork between PNW and OSU, suddenly, there's this glitch, and I hope it just passes. I know that Fred and Jim have had to spend enormous amounts of time dealing with policy level questions with the PNW, but I hope it doesn't start affecting the history of where we go on the Andrews. I think eventually they're going to have a tough time, because the National Science Foundation brings a lot of weight and credibility to the university link with the Forest Service, or even larger scale memoranda of understanding about NSF and Forest Service working together in research. If PNW subverts that, it seems like it's not going to go over too well at a national level.

Max Geier: You'd mentioned earlier, kind of in passing that, there's virtue in a loose organization, and lack of formality. Dick Waring and Jerry Franklin talked about that, too. Sounds like what you're saying here is that there's more of the focus now on these formal agreements and what the details are?

Stan Gregory: Not from anything we're doing, and only slightly from OSU. OSU, because of the budget cuts, has gotten more persnickety about things. Particularly in response to this move that emerged out of the PNW, we can't even trace its roots back to Washington. It's something that came out of the PNW that's a contractual kind of thing. None of the scientists want it. It's nothing that anyone here is supporting. It's just something that everyone has to pay attention to. People have been hesitant to make much of it, and I've been uneasy because I'm willing from the university side to keep quiet, and not challenge the PNW on it. Because of working together, the partnership has been so important, I don't want them to think that we're suddenly badmouthing them. At the same time, there's a point at which we have to stand up and say, "Hey, we've spent all this time and emotion trying to deal with these hurdles that are being placed in the way. And from what we can tell, they're only be placed there out of some ill-defined interest in the PNW, and they're getting in the way of the research." And so, trying to decide when to finally make an ass of myself and jump up and down, or do that with the

university, where I've had openings I've tried to get across some subtle messages, but this isn't constructive, and I've been able to at least talk to Fred's supervisor and say, Hermann Gucinski is immediate supervisor, and say, "What's going on here Herman? This is crazy?" and Herman is struggling with it himself.

I think the kind of self-regulated, co-operative nature of the team of people that work on the Andrews, has been what has held it together through the years, and still will, I think. Programmatic constraints can only start damaging it so far before people will say, "No wait a minute, this isn't right and we've got to do something about it." The interesting thing about the research program on the Andrews is there's a certain core, a fairly small core, of support for the research. People get this idea that there's some big fat check that pays for all the research in the Andrews. But, if you look at the numbers, the majority of the research comes from other grants that people get and bring through the Andrews, and add to the LTER program, and before that, EER, and before that, IBP. The NSF-base funding from the Forest Service-base funding together provide the nucleus, a real powerful base for people to build research around because we have long-term records. We have expertise in many different areas, so, if suddenly you need someone with soils expertise, you can go to Phil Sollins or Kermit Cromack or Bob Griffiths. If you need some terrestrial plant expertise, you can go to Jerry or Art McKee, or whomever; you need geology, you go to Fred. You can build on that so well, and we all count on it. From time to time you'll notice that, if different programs are going strong, they'll get a grant. They have a big push and so it changes. It just always kind of bubbles. There'll be a certain part of the team of scientists working the Andrews and have a big push going and then they'll diminish, and they'll go down to a kind of lower level of operation, and then another one kind of picks up. So, it's always kind of changing and a new grant comes in and it will be hot for a few years, and then something else takes. It's kind of a research succession.

Max Geier: In 1978 there was a kind of a formalization of this agreement between OSU and the Forest Service, as I understand, that had to do with the facilities out there. There was a need to upgrade them and sorting out who would do that. That kind of coincides with when you started your post-doc work, is that right?

Stan Gregory: Right.

Max Geier: Maybe you could talk a little bit about your resource needs at that time and the scientists on the Andrews, and what's your perception of the Andrews as a resource scientist?

Stan Gregory: That was an interesting time of change around 1978, from my point-of-view, just my perspective on things. In late 1977, I went to work for the Fish and Wildlife Service. For that three or four-year period, I had no formal ties to the Andrews program because I was at the Fish and Wildlife Service. But, there was a research grant we had from NSF that came in during that time that I continued to work on, even though I was with the Fish and Wildlife Service. Jim Sedell also left, I think in 1978, and went to work for Weyerhaeuser up in Washington, heading aquatic research for Weyerhaeuser. Ken Cummins, one of the world's leading stream ecologists, came in right around that time, I think '78, to replace Jim. With him came a couple of other researchers, Milt Ward, and Amy Ward. Milt was Ken's student at

Kellogg, at Michigan State, and he came as a post-doc, and Amy came as a post-doc. Suddenly the research team kind of changed. There were still people like Norm Anderson around, and Jim Hall, but still, Cummins and Milt and Amy Ward. Cliff Dahm was a graduate student I was working with. He and I were both graduate students together, he was in oceanography, and we actually supported his graduate program for a few years working dissolved organic carbon in streams. He also finished up his degree and became a post-doc in the program. So, the aquatic program kind of shifted right there in the late 70's, early 80's, particularly the early 80's, we had kind of a new cast of characters. I didn't see an abrupt change in research needs, it was just kind of a growing need. As the Andrews was being used more and more, the old system of two trailers and a warehouse just wasn't cutting it. So, it was a matter of finding some funding opportunities, both within NSF and Forest Service that were aligned, and it was the right time to make a move to develop a centralized facility there at the warehouse site, what we used to call the warehouse site.

Max Geier: Had there been much change up until that point from when you first started working at the Andrews?

Stan Gregory: As a matter-of-fact, I did all my research out of a camper on the back of a pickup that we would take off and put on cinder blocks. The pre-1980's days quickly get into stories of the old days. Occasionally we'll hear some of the students griping about facilities or something. You don't want to go there, because you'll get me back into the old days (laughter), when all we had were two trailers and were suckin' a hose that we used to provide water from a creek, and I ended up suckin' a rotten giant salamander. It was plugged one spring and we were trying to get it going again, and I sucked on it and this funky fungused-up salamander shot into my mouth. It took me about three days to get the taste out of there. (Chuckle)

In those days there was a trailer up on the hill above the Blue River Ranger Station, and there was a trailer at Rainbow on up the river. The Forest Service people by-and-large, used the trailer above the Blue River Ranger Station, and the IBP researchers, university researchers, used the Rainbow trailer, though there was some exchange. I stayed up at the other one a little bit, some of the Forest Service people stayed down at Rainbow. But it was jammed, it was everyone using the Andrews packed into two trailers. A lot of times you'd just end up camping, because you didn't want to be in the trailer. It was just too jammed and not enough space. So, we had to improvise more. We didn't have nice lab facilities. To do some of our analytical work, we'd have to go down and work in the chem lab in the Blue River Ranger Station, at night. We used a water lab in the base of the Ranger Station for processing samples sometimes. And we used the warehouse. We had a warehouse put up at the site that's still there, that green warehouse right as you drive in. So, we would work out at the warehouse sometimes when we had to process big batches of samples. We'd work there. But as I saw it, the facilities needs just kept growing and finally there was some funding opportunities that lined up and it was right around the time that I was getting ready to ship back to the university. So, I kind of saw it from a slightly remote vantage point, but was still involved in it.

Max Geier: Now when was that you shipped back?

Stan Gregory: Right around 1980.

Max Geier: '80?

Stan Gregory: Yeah, '80-'81. Right around the start of the LTER program is when I remember it. I could be wrong on the exact years, but roughly.

Max Geier: So, you finished the Ph.D. in 1980?

Stan Gregory: '81.

Max Geier: '81. Okay.

Stan Gregory: It was actually finished in '80, but the way the dates went on, it was dated according to when I could go through commencement.

Max Geier: And that was based on work that you did while you were at the Fish and Wildlife Service?

Stan Gregory: No, actually, it was late '77. I went to work for the Fish and Wildlife Service intending to finish up my degree. Suddenly, it stretched out for three years, and I defended in 1980, delinquent.

End of Side A, Tape 1 (of 1)

Begin Side B, Tape 1 (of 1)

Max Geier: You spent a fair amount of time up there. Were there places you went for relaxation, leisure time, recreational places, while you were working at the Andrews?

Stan Gregory: Yeah. Two major places that I would go were back up in the Mack Creek watershed and Lookout Ridge. That whole block of the southeast corner of the Andrews, it's kind of been my favorite spot back in the Andrews. Every year I like to try to squeeze in a hike back up through Mack Creek, all the way up to the ridge, and there's some nice snow melt ponds that sort of source from Mack Creek, and then go on around that little ridge. Then Lookout Creek itself, skinny dipping in Lookout Creek, things like that. It kind of varied according to where we were staying. Back when we stayed down at Rainbow, we did a lot of things down on the McKenzie. Now that we're staying up in the Andrews, I don't do nearly as much stuff down on the McKenzie, rafting and floating down, getting in a dry suit and floating down the river. And now, to be real honest, the recreation is not as regular as it used to be, because we'll go up and have this bout of field work. You've worked hard all through the day, you get in about six or seven at night, you're kind of tired, you sit down and have dinner, then play cards and drink beer. A lot of it's right there in the admin site [HJA], to be honest. You work hard in the field during the day, and you relax around the admin site, occasionally, go pick mushrooms or something for the evening's meal. I know folks up there that do mountain biking and kayaking or fishing and things, and you can always tell when they get a second,

they're off and doing those things, and I don't do that as much as some other folks. I used to do a little fly fishing around the McKenzie, Deer and Tidbits [Creeks], but I don't do much of that anymore. Our crew ends up doing things together, so I don't end up going off and doing things by myself as much as I used to.

Max Geier: Maybe you could talk about your involvement with the local community in Blue River? Has that changed over the years?

Stan Gregory: Yeah. It's interesting. The town of Blue River has changed over the years. It's been going through some sociological changes, and the Andrews has never been a tightly knit part of the Blue River community. It's always been, "Those strange folks working up in the woods." The only people that I see really getting tied into the community are people who live up there in the community as opposed to living in the Andrews. Art McKee or a few of the other people that live there year-round, and their kids might end up in the schools and things like that. Art lived in Blue River and he was on the school board, so he became part of the community for several years there. I don't see him being nearly as closely knit in the community as he used to be. Many of the Forest Service people obviously are more closely knit into the community than the university types are. The university folks work out of Corvallis, and show up there, but the main Forest Service people are stationed in Blue River. But I've noticed, and this could be wrong, but it's just my perception, that now more of the Forest Service people are not living in Blue River. They're living in Eugene or elsewhere down river and commuting.

Max Geier: Yes, some others said that.

Stan Gregory: In the old days I think the majority of them lived right in Blue River. So, when I would talk to them, you'd get into a little bit of the flavor of the local politics and things. The town also had more active bars back in those days. My connection to the community was in the Blue River Tavern or the Cougar Room. We'd get to know the locals by having a beer with them and shooting pool. The Cougar Room went through all kinds of changes, becoming a restaurant, this, that and the other thing [topless], finally burning down. The Cougar Room had disappeared when it burned down. It was called the Forest Glen when it burned down, but it still had a back bar called the Cougar Room, I think. The Blue River Tavern kind of struggled for years, and it kind of expanded and contracted, and now is a flea market, I think. It's not a tavern anymore. There's no reason to go into Blue River, except to pick up groceries or get gas, so you don't kind of cruise in the evening and shoot a little pool and drink some beer. You can still go up to the Log Cabin Inn. You can't shoot pool there, but you can get a beer there in the Calico Room or whatever it's called up at McKenzie Bridge.

Max Geier: This place that you bop in on at the end of the Andrews day, it sounds like you would come down there at the end of a working day maybe?

Stan Gregory: Right, yeah. We wouldn't really stop on the way in. It was just a matter of after the working day, particularly when I was younger (chuckle), I would go down and close down the bar at night, and in doing so, meet more of the locals. At that time in the '70's, it was a

weird mix. Blue River was kind of on the fringe of Eugene, so they had a lot of young counterculture people, and then, old traditionals, the logging culture. It was a real interesting blend sometimes, not getting along. There was a little bit of a drug culture up there for awhile because they were planting down in Eugene, and so people came to the periphery. There was an interesting blend going on at the time, and we got a little bit of it at the bars. I remember going in and playing foosball once, and a couple of us thinking we were pretty good, and a couple of locals come up, put the quarter down and challenged us. So, we're sitting there and they're chatting with us as we were playing, and we could tell from the questions, you know, "Who are you? Where are you doing? Where do you work?" After we told them we were collecting fish up in Mack Creek and da da da da da, they pretty much knew that we weren't narcs (chuckle), they boom, boom, boom, boom, just cleaned us out (chuckle), and said, "Thanks for the game!" and walked off (laughter).

So, there was that side of things that I don't see anymore. It may still be out there, but I just don't get a glimpse of it the way I used to. And Blue River seems to be aging a little bit. The counterculture is still up there, the logging community is still up there, but it's all aged a little bit, and doesn't seem as dynamic as it used to be. Economically I think they're struggling. It's becoming more of a summer home type community for Eugene than a mountain community in its own right. I think they kind of know that the Andrews is there, but it's peripheral to their life and social structure. It's never a big deal and the only people that notice it are the Forest Service types that interact with it. It's interesting. The Andrews is right on the boundary between the McKenzie District and the Blue River District. There's always been a strong tie to the Blue River District, and there's never been antagonism. At times, I've sensed a tiny bit of resentment on the part of the McKenzie District for the Blue River District getting all this credit and kudos for things happening at the Andrews. That's probably incorrect, but I still kind of sense it from time-to-time. It's always baffled me why they're haven't been stronger support from both districts. I mean, the Andrews could easily be viewed as a part of both programs, but because it falls entirely within the Blue River District, I guess that never has happened.

Max Geier: Who do you work with most commonly at the district? People there that you've been closer to?

Stan Gregory: John Cissel and recently Jim Capurso, but he just left. He was a fish biologist there on the district.

Max Geier: What was his last name?

Stan Gregory: Jim Capurso. And Michelle McSwain was the hydrologist for the district. And then, Dick Bickford. He's still there as a fish bio. And Karen Geary in the, kind of GIS shop, and Terry. I forget her last name, in the GIS shop. And Monty Wilson, who was head of the timber operations. And there was a Brad. I forget Brad's last name. He'd been there for a long time and unfortunately was one of the pink slips things, he got a transfer to another place. But he'd been up on the district for about 20 years, or 15 years. Brad Levitt, he was more in terms of general operations. I'm not sure what his official title was, but a lot of the programmatic things we'd have to do, Brad would give us a hand. And then Jim Mayo on the Augusta Creek work,

things like that. Actually, I've never had a negative interaction with any of the Blue River-Forest Service staff. They've always been supportive of what we've been doing, at the very least tolerant, and in most cases enthusiastically supportive in trying to help us with what we've been doing. The only thing that I can remember is back when I was a grad student, first here, right around '74-'75. I forget who the district ranger was at that time, but he didn't like all these university types swarming all over the district. And I remember he sent out a memo about "Naked hippies driving cars at high speeds on the Andrews, and this was going to have to stop!" So, we always talked about the naked hippie memo. (Chuckle)

Max Geier: Was there a lot of that going on? (Laughter)

Stan Gregory: Not naked! (Laughter) We may have been driving too fast. I will probably 'fess up to that. So, that was about the only negative interaction I can remember. Generally, the district rangers have been great. Lynn's [Burditt] always been supportive. Steve Eubanks before her, Jim, what's his name, before Steve? I think it was Caswell, I can't remember now. But it's been good, compared to the early IBP days when I think there was a little bit of friction. I don't think the district ranger was thrilled with things, so Jerry and Dick Waring got to deal with him. So right in the early '70s, it didn't seem like it was as chummy as it has been since.

Max Geier: Were there check-in procedures or anything when you were working out there, or things you had to do or people you had to see, before you went and started working on a site at the Andrews?

Stan Gregory: In terms of the safety concerns that we have now, no. But in terms of before we could start doing projects, I remember as a grad student, I had to do a project where we actually released radioactive tracer into the stream. We had to go through all this approval up through the PNW, and get authorization to do so. I remember doing that. In IBP as well as the LTER, it was the general understanding that you didn't do anything that would permanently alter a site or greatly disrupt a site, without running it by the overall group and getting approval. So, even in IBP days, if I wanted to do something where we started clipping vegetation or chopping down vegetation in Mack Creek to do an experiment or something, I would have to get approval of the whole IBP group. Same thing with the LTER now. Any kind of destructive sampling that we might do, we've always had to get approval because it's one of the big challenges

Max Geier: So that was an informal process?

Stan Gregory: It varied in formality. There were actually times I was even responsible for requests to make it more formal, and we adopted some policies. But we've always strongly discouraged the people from doing anything that permanently alters the site, and, if it does, to get approval from the general group. So, if I submit a proposal to NSF, the policy of the LTER is to have it approved. You have to describe it at the LTER meeting, and if it's 'gonna be something major, it has to have the approval of the PI and site manager. Our group at least has to know that, and they can decide whether it needs a vote or discussion or appoint a committee to look into it. People coming in from outside the Andrews have to run their

proposals for whatever they're doing by Art McKee and Fred Swanson at the very least, and maybe more as needed. Practically all those requests get circulated to all of the leadership teams. The co-PI's on it, so in case there's any concerns and it gets brought up in meetings so they can say, "Speak up, if you've got a problem with this." Because cumulatively over the years, we can destroy those 16 thousand acres, so that all we do is study the effects of scientists, and don't really study the ecosystem any more. I think most of us really work hard to try to make sure that our projects don't cause permanent loss of the research potential of the Andrews. But, there's still a challenge. You still find what we call "science garbage" out all over the Andrews. Stuff left over from studies 30 years ago that someone just never cleaned up. Even on our own sites, about once every year or two, we have a two-day clean up where we just go out on site and try to clean up some of the flagging and posts and things that have been placed around and are no longer active.

Max Geier: It sounds like a lot of that is still at the discretion of the project leader.

Stan Gregory: Yes. Pretty much. It's still largely informal. We expect people to act responsibly and think about the best interests of the Andrews program, and if they don't, we deal with it. There's very little chance of causing great permanent damage without someone noticing, but it's always lurking out there. We are living in fear of someone going out and permanently poisoning a site or something like that. I can't imagine anyone being stupid enough to do it, but all it takes is one person.

Max Geier: Maybe you could talk a little bit about your philosophy or strategy for recruiting and hiring staff or assistants out there?

Stan Gregory: That's been an interesting one over the years and watching how our program has done it, and then also, how my personal philosophy has evolved. When I hire research assistants or students, besides looking at their experience, academic record and skills, I also look at their people skills and call their references, and talk to them about how well they get along in group settings, and ask if are they team players. Occasionally you run into people who can't even sit in a room by themselves without having an argument, and they're just destroying any kind of group effort. Occasionally, you run into people who are brilliant and well-focused, but they're totally self-serving and self-centered in the way they approach their research. While that can be quite successful in a team setting, it destroys the trust and confidence that team members have in one another. So, for a summer temporary position to a permanent faculty position I apply that standard very heavily, and it weighs equally to their ability and experience and productivity. I've been very fortunate, as I've had great people in the program, though you do run into personality conflicts. There are people who can't get a long from time-to-time. But having the majority of people in a group that can work together very well, even helps through those tough times. We've bumped into a couple of them. There have been personality conflicts within our group. But I think people look at the Andrews in general and the large number of people that are up there, the 30 to 75 researchers that are up there at any one point-in-time, people get along amazingly well. There are very few outward conflicts, and people resolve their problems fairly effectively. You know, you get that many people in one

small place you're going to have conflict. We've generally been able to take those issues on and deal with them constructively.

Max Geier: One issue that's come up in interviews is the difference between hiring post-doctoral or graduate students to help on projects. I was curious what your philosophy was on that?

Stan Gregory: I worry about that from time-to-time. I've kind of let the research itself dictate what the most appropriate hiring is. For a variety of reasons coming out of IBP and the River Continuum Project, we've had some research assistants that we've put a lot of responsibility in their hands in the aquatic program, unlike some of the others. And we've gotten some very effective research assistants over the years. That's been one of our strengths. One of my philosophies has been, in a research team, if you get constructive people on the research team and make a long-term commitment to their careers, I try to make a commitment to them as well, to the degree possible. It means there's a continuity, but you don't change and suddenly abruptly decide, "Well, maybe you don't need a research assistant, maybe we need a grad student, or maybe we need a post-doc." That means you're terminating someone, and they have a livelihood. So, I've tried to balance what the research needs are versus what I consider the academic needs are for the research program, versus personal commitments to people. I think you see that running through the Andrews programs, and in some cases, some decisions, both on the Forest Service side and the academic side, have been personal commitments to people. There are people who've had long-term presence on the Andrews, and their position wouldn't necessarily be the most effective or efficient at any given point-in-time, but over the years they've been tremendously important in the success of the Andrews. And the fact that they have that continuity gives them a base that you don't get unless you do invest in that, but it does mean you have a little bit less flexibility.

There have been times, because of research grants, that we've gone with post-docs. We've had post-docs like Gary Lamberti, Donna D'Angelo, and Dale McCullough, who were post-docs a little while. I was a post-doc. And we had Milt and Amy Ward who came on as post-docs, and then Chuck Hawkins. They all were post-docs. So, the aquatic program over the years has had, easily ten or twelve post-docs. At this point-in-time we don't have any post-docs. We've got either grad students or research assistants. So, I don't have a fixed structure that I generally tend to go for. I get concerned when we don't have enough grad students, and we start going toward research assistants and post-docs. I get concerned when we don't have the continuity, that if it's just graduate students, they have short-term interests they need for their program, but they don't have the continuity and expertise to help with that. From my point-of-view, often just in terms of administrative research, it makes it extremely efficient to have experienced research assistants over long-term post-docs. Long-term post-docs in the long run, that's not a good thing, because it's a disservice to a person in that position for their career to be a long-term post-doc. They need to be moving up in the academic ranks, so they tend to be more transient; moving on to another position. To be honest, I try to take a look at the research that we're doing and the balance in a program, what the needs are. I don't dictate it specifically on, "I want a certain mix." But, if it starts heading toward one end of the spectrum

or the other, it starts making me feel a bit uneasy, and so I'll probably start writing proposals that allow me to move back towards another direction.

Max Geier: Is there a deterrent to heavy reliance on graduate students in case of funding cutbacks, or the Forest Service?

Stan Gregory: It's part of the funding scene to go for a full post-doc, unless it's a trainer-ship kind of a program or something. If you just put a full post-doc in the proposal these days, it means that suddenly you're talking about a chunk of probably seventy-five thousand dollars a year by the time you pay fringe benefits, overhead, and things like that. Yeah, seventy-five to eighty thousand dollars and dedicate it to a post-doc, that's a big chunk of a research proposal. You can't write too many of those in unless you've got mega-money coming in. We have one person, Judy Li, who's in a research assistant professor position, kind of the next step up in promotion from post-doc. So, we go into the soft money research, professorial, or academic positions, and most of my post-docs have moved into those before they actually moved out of the post-doc position. We do still have Judy Li as one of those in our program. She's getting so senior that I have trouble thinking of her that way anymore, she's just one of the research professors in my opinion, but she came up through the ranks.

Max Geier: How long has she been here?

Stan Gregory: Let's see, probably '84, something like that, early 1990's, mid 80's. She was first Ken Cummins' grad student, then she became my student when Ken left. She finished her Ph.D. with me, and then has been post-doc-ing on a couple of my grants, and now is research assistant professor, and also teaching. From time-to-time I've talked to Fred, and Fred's had concerns and interests about the overall balance in the Andrews program. Do we have enough young people? Do we have enough post-docs? Do we have contacts? Because some of the principle investigators have very busy schedules and getting them is tough, so sometimes people like seeing post-docs around. We've had discussions about that. But, I think any kind of fixed policy or fixed goal of a certain distribution, isn't going to work. You have to kind of be opportunistic and just pay attention to the strengths and some of the emerging weaknesses as they occur, and use opportunities to shift those around. But to be honest, watching it over the years, I don't think there's any perfect blend. We've had graduate students that essentially function almost as faculty members. They've had such strong and aggressive leadership skills. We've had doctoral members that didn't really exercise a major influence. You get lots of different interactions. I don't think there's a magic answer there.

Max Geier: What proportion of work do you try to get done up there using graduate students and post-docs as compared with the Forest Service technicians or their employees? What's the manpower/need ratio?

Stan Gregory: My program or the overall Andrews program?

Max Geier: Your program in particular, and what you know of the overall.

Stan Gregory: In my program, we've had cooperation with Forest Service, but we haven't really counted on it as part of the research. The one exception would be the last, not this summer, but the previous two summers, 1995 and 1996, we did have for a four-week period use some of the Forest Service fish crews on our electroshocking sampling crew, but that was kind of a first. So, on any of our restoration experiments, we usually use the Forest Service to carry out the contracting and installation, with us advising them. For installing some of the equipment that require contracts and things, we've worked together on those. Otherwise, we've pretty much relied on our students, technicians, and post-docs to get the research done. We may coordinate with them, but we don't count them in doing the work. In the program overall, I'd make the distinction between the Forest Service PNW researchers versus the Forest Service district people. Obviously, the Forest Service researchers have a major presence on the Andrews. Without thinking, I'd put it roughly 50/50, without the difference is going to be slightly skewed either way. Regarding the district people and their involvement, I would say that their presence and their involvement has grown in recent years. They are playing more of a role particularly the application of the research into policy. Things like the Augusta Creek project, and now the Blue River AMA [Adaptive Management Area] Landscape project. The district's [Blue River R.D.] providing a lot of leadership in that end of the research. And, there are some notable exceptions. People like Matt Hunter working on amphibians and streams, and so there are research pieces that are done from time-to-time by [Willamette National] Forest Service employees.

Max Geier: How about work away from the Andrews? What portion of your work do you do away from the Andrews?

Stan Gregory: It varies. There'll be years that it will be 80% plus. I would say this year, probably 80% of our work is in and around the Andrews. There are other years it may only be 30% or so, like when we were working up at Mount St. Helens or over in the Coast Range. Next summer, we're going to have a project going on the Willamette River, the question is, does that count as Andrews or not. It really won't directly be the Andrews. We'll probably work out of OSU instead of going up to the Andrews to do it. It's related, but somewhat distant. I'd say it ranges between 30-80% being in the Andrews, which is a function of what research is coming in.

Max Geier: Please talk about the evolution of your ideas about plant/herbivore interactions between ecosystems and how that's evolved over the last decade or so?

Stan Gregory: I guess that my research focus has evolved. I'd say my interests and concepts of stream ecosystems have changed or grown as the research has added more information, but it all grows from trying to understand how stream ecosystems work and the landscape context of a river network. Right from the first when it was just studying primary production, to going into looking at plant/herbivore interactions, to nutrient dynamics, to large wood, to fish assemblages, to disturbance and restoration approaches, it's still trying to figure out how a stream ecosystem ticks, and how that river network fits into the landscape. There'll be times a particular research project gives me the ability to focus on a piece of the puzzle. At one point, I

may look at plant/herbivore interactions, and try to see how they compare to plant/herbivore interactions in other ecosystems. But then, as that research winds down, other research opportunities, such as looking at fish communities, may come up. So, I'll start looking at long-term fish assemblage dynamics and habitat relationships. Now, we're shifting into some even landscape-level restoration analysis, how we screen the landscape for restoration potential. It may look like it's going from process-level work, up to community-level work, and up to ecosystems and landscapes. The scale my research focus has been growing, but actually from my perspective it's been the same. It's just addressing opportunities to look at different pieces of the puzzle. There'll be in grants and things that come by in competitions, and they'll focus on certain types of research. I've to some degree been opportunistic.

Max Geier: So that opportunistic approach means availability of funding or other people doing similar kinds of research?

Stan Gregory: Both. Availability of funding for the most part, but also a chance to cooperate with others on particular projects. All of it still having, on my part at least, the same focus of trying to understand the stream ecosystem, and it's part of either the multi-disciplinary or the jack-of-all-trades characteristics of my research. I don't like to just be known as a fish ecologist, or just a plant ecologist, or a water chemist. I like to be known as a stream ecologist who is knowledgeable of everything, from water chemistry to geomorphology to ecological processes to community dynamics to landscape processes. That's what I enjoy, trying to figure out how it all works together.

Max Geier: Do you look at any work or any centers of research elsewhere that are kind of models for what you'd like to build in your research programs?

Stan Gregory: There are research centers around that I admire, and I frequently check out what they're doing because I admire their work and to see which directions they're heading in. Examples would be the Coweeta program in Georgia and the Arizona State program with Stuart Fisher and Nancy Grimm, and the New Mexico Sevilleta program with Cliff Dahm and Jim Gosz and those folks. I guess programmatically, those would be the three. Then there's just the larger community of stream ecologists. There's a society called the North American Benthological Society. NABS meetings each year have the most current aquatic research in streams around the world. So, you watch what's happening in the field in general in terms of ideas, and note things that you feel you have the expertise to start to step in and grapple with some of the issues.

Max Geier: If you look at your practical research, are there any particular studies that are problem solving methods that you're particularly proud of? That you made a major breakthrough in your ability to understand these systems?

Stan Gregory: There are no landmark pieces that I would necessarily jump at. I think a lot of the work we've done on forest/stream interactions, riparian work, is synthetic and has provided a context for a lot of research in streams. So, a lot of the riparian research, would be one. And I'm interested in the emerging research we're doing that deals with disturbance and

restoration, and how that fits into ecosystem processes, like the large wood and geomorphology and vegetation work. I like the way the riparian research is moving into landscapes and disturbance and restoration. The only one that could be pointed to as kind of a coherent product that stands alone, would be the riparian research. And one of the cool things about the riparian research is that I see it as a nice blend of basic research, and then, application to land management.

A lot of riparian research in the 80's led to an unfortunate problem that the Forest Service was running into, that allowed us to develop the riparian management guidelines for the Willamette National Forest. Back in the late 80's, the Forest Service was suddenly challenged with coming up with a new forest plan before the Northwest Forest Plan [developed in 1980s, culminating in Willamette National Forest plan of 1990]. I had been asked to sit on a committee to review their riparian guidelines for the national forest, and suddenly, the entire committee got eaten alive doing this forest plan. A couple rangers asked me if I would take a stab at writing the guidelines myself. Rangers Herb Wick and Steve Eubanks asked me if we would be willing to, and Linda Ashkenas and I wrote up some guidelines. They were really open, saying, "If you see any things you think should be changed, just note them and we'll take a look at them." So, for about a year-and-a-half there, we developed riparian guidelines for the Willamette, and they approved them.

I still remember, it was amazing, we called for no harvest in any of the riparian management zones, we called for all floodplains to be included within those riparian management zones, and we called for 200-foot widths on the large streams and even on the ephemeral streams, the class 4 streams as they're called, having buffer strips along those. So, we went on this field trip at the end of it, and it had gone out for draft. We sent it out to all the districts for comments, and I was surprised, as I expected the timber beasts to just go crazy when they saw this. And the only comments that we got back were how to strengthen it, and how to put more meat in it. I remember being out in the field and a couple of things blew me away. We had this thing about no harvest in the riparian management zones, and I expected a bunch of the timber types would not be happy with that. It came up for discussion, but Monty [Wilson], the timber operations leader for the Blue River District who had just been there for about a year at that point, stepped up and said, that he'd seen a number of riparian zones that were gone into for partial harvest, and almost none of them had the final product what they were really shooting for.

He said, "Until we know that we can go in there and do what we say we're doing, we shouldn't be messing around in there." I was kind of blown away. He was very supportive, other people were supportive, and finally, we got to the very last stop of the day, and Mike Kerrick, the supervisor at the time said, "Wait a minute. These little ephemeral streams, leaving buffer strips on every little ephemeral stream, there's a lot of them up here. What's your reasoning on that?" The cool thing was, he wasn't saying, "This is crazy!" or "This is bullshit!" He was saying, "What are you thinking? I mean, *why* would we do this?" So, we explained about landslides and debris flows coming down and the large wood stabilizing that and slowing down the runout distances. So he said, "Well, then that sounds to me like, if it's a stable part of a

watershed with an ephemeral stream, and you've got a lot of understory vegetation over the creek so it doesn't get hot, you don't really have to have that for your functions that you've described?" We said, "No, I guess that's right, if it's stable." He said, "Well then, how about going back to the drawing board and just rewriting this one section so that you can deal with all the functions you've identified? But don't make an across-the-board buffer strip." So, we ended up with a classification of unstable lands as well as moderately stable and stable. We said, "Okay, you have to have this 25-75 foot, no-harvest buffer strip on ephemeral streams, if it's in an unstable category. There's an intermediate practice for the moderately stable, and you don't have to have any special precautions on the stable class four streams." That was the first time that I know of in this region that they were leaving buffer strips on little streams that dry up in the summer.

They adopted them, and they had been in place for just a little bit less than a year when the Timber Summit occurred with Clinton [1993]. Suddenly, with the Northwest Forest Plan, they [Forest Ecosystem Management Assessment Team or FEMAT] were considering these broader conservation strategies across the region, and they looked at what we'd developed for the Willamette, used it as a starting point and built on it. In essence, it eclipsed the Willamette's plan by going even broader. There's a real cool thing we did there, because it made it more scaled to the system than just an arbitrary distance. But they were able to use the Willamette as a reference point, saying, "Now, in addition, this is what we need." As a result, the Willamette plan didn't get as much visibility in and of itself, but it helped the evolution of the Northwest Forest Plan. The cool thing about all that; it was a direct application of basic research into on the ground application and at the National Forest scale, that came about very constructively and without very much antagonistic interaction and conflict, which then led, very productively, into the Northwest Forest Plan. From my point-of-view, it's a great success story of basic research working with co-operative land managers and the agencies leading to a regional strategy. I would consider that one of the real success stories of the last few years.

Max Geier: Did the Willamette Forest Plan publication come out at some point in there?

Stan Gregory: Yeah.

Max Geier: You wouldn't have a copy of that I can borrow, would you? So, you finished the work on this in 1990?

Stan Gregory: Right.

Max Geier: When did that start? What was the time frame for this?

Stan Gregory: I started in late 1988.

Max Geier: Did you have much involvement with the Northwest Forest Plan yourself?

Stan Gregory: Not directly. That was more, Jim Sedell was in there, Gordie Reeves, a lot of people, and Fred [Swanson] and Gordon Grant. All those guys were in the day-to-day, living in

the “bowels of the beast.” I was lucky, they wanted only agency people. They decided, in general, not to include university types. I was on the panel reviewing some of it, but only took a couple of days worth of work up there, then reviewing documents for it. I was peripheral to the Northwest Forest Plan. But it was cool, it was fun watching it, and I spent a lot of time talking to Fred and Jim and Gordie and Gordon, saw what was happening, and kind of kibbitzing and kicking around. But, they were the ones who paid the cost, Tom Spies and Mike Collopy and all those guys, Bob Anthony in the department here. I had lots of contact through people I work with to what was going on day-to-day. They were the ones that were sacrificing their lives. It was amazing the sacrifice those folks made. That’s why when people ask, I say I was involved, but didn’t have to pay anything like the cost they had to pay in their professional and personal lives to make that thing happen. That’s something that no one in this region acknowledges, and it still irritates me. And the Clinton administration didn’t acknowledge it either. It was just this thing, “We want a regional conservation plan, period. We want you to drop everything you’re doing, and we want you to spend all your time in Portland developing this regional conservation plan that we know is going to be controversial.” So, a three-month project turns into a six-month to nine-month to a year, but they got the product out. Those folks were on I-5, everyday, either that, or living up in Portland. They’d get an apartment and stuff. So, their families didn’t see them for months on end, except for, they’d get in, sleep, have breakfast with them, then leave, and then, you’re exhausted for the weekend. They paid a hell of a price that I don’t think anyone has ever acknowledged or thanked them for. And I get really pissed off when I see people in the region badmouthing it, and I don’t think they realize what these people contributed.

Max Geier: I was wondering if you could talk a little on your ideas about the relative importance of teaching and communicating the results of your research. In other words, who you view as your audience, or who should be the audience for scientific research, the kind you’re involved in.

Stan Gregory: Well, it obviously comes down to both the public and to scientists, and the public being in a broad sense. Well, I guess, public resource managers and scientists, and there’s obviously some blends in all of those. I don’t think my research would be successful, if it left any one of those three out. It has to be a balance between those. I think one of the strengths of the Andrews program is that it has contributed very effectively in all three fronts. There are a number of cases, obviously, with all the tours that we do on the site, where the public comes up and sees what’s happening in research. We get out and talk around the region in just endless presentations. I’m sure each and every one of us average three to four presentations a month to schools and public groups and conferences and whatever. There are times it gets more intense, and times it gets less intense. Also, within the agencies, workshops for professionals, and field tours for professionals, and large numbers of those. Then, the scientists going to ecological society meetings, ESA meetings or NABS meetings, or American Fishery Society meetings, and presenting the results there and publishing. It’s got to be all three, and at any point-in-time certain ones kind of overwhelm you for a few months, and you shift it around.

One of the things I've just started noticing in the last year or two and would like to do something about, is the role of the Andrews in education at OSU has not been as direct as it could be, I fear. I see that's a place where we could make some significant contributions. It's a new area that we could move into. We've always been part of education. We've had classes and field trips at the Andrews and things like that. Researchers at the Andrews have taught classes, so there's been that kind of exchange, but the academic role of the Andrews has never been really aggressively pursued. To say, "We want an active presence on this campus. Here's a program that can provide something to students." I mean, students know it, they hear about the Andrews when they get in their classes, but nothing that's that visible. And we've been cautious, we don't want departments to think we're trying to step in as a super department or something like that, to have our own academic program. But, it seems like we could do a little bit more. From time-to-time in the LTER meetings, I must admit, as an academic, I get a little bit frustrated because it's assumed that we're spending our every waking moment on the research side of the Andrews. When you say you can't make a meeting because of classes, it's like, "Oh, you've got to teach a class? Good grief, what a pain, what a hindrance!" It's like, "Wait a minute. No, this is a university!" Teaching should be viewed as a real positive thing, so I would like to see teaching within the university reviewed. I think teaching in a broader sense to people coming in to the Andrews like public groups and school groups and things like that, that's great right now. But I don't think we view ourselves as teachers in the university setting.

Max Geier: How do you compare it to say Oakridge and Tennessee?

Stan Gregory: Same general problem. I think they face the same problem. I don't see any of those programs that have taken on a major teaching leadership within the university. I could be wrong, but I haven't seen anything that just says, "Now that's what we should do like!"

Max Geier: Are there any reasons why the group hasn't consciously moved more strongly in that direction in the past?

Stan Gregory: It doesn't receive any direct support to do that. It gets support to do research, and then to transfer findings from that research. The most notable exceptions are the R.E.U. [NSF's Research Experience for Undergraduates] program and the IGERT [NSF's Integrative Graduate Education and Research Traineeships] program that Julia [Jones] just recently got. Those kinds of programs do have an educational mission and it's a program funded with an educational mission. But even in both of those cases, its educational mission is to give research opportunities, not to teach classes. Even in recognizing an educational mission, it's kind of a research application. And maybe that's exactly the way it should be. This issue is just right off the top of my head, just something I've been mulling over the last year. That I'm not sure that we recognize the educational side, and I'm not sure that those of us that are paid to teach in the university have done a good job of inviting others into that role. We have them give guest lectures and things like that. Fred has taught some classes. He's taught Forest Geomorphology. He was actually the one who got that started originally. But, by-and-large, people in those research positions aren't paid to teach classes, and their performance evaluations aren't made on the contribution they make to teaching. It's a bit of a challenge, so I'm struggling. I'm trying

to figure out how we could have the academic side of the university be more central in what we do as an LTER site, where it's a collaboration between the Forest Service and the university.

Max Geier: Are there any guidelines from LTER and NSF on that?

Stan Gregory: Not other than to stimulate research and opportunities and information for education. Like I say, it's just something I've been grappling with, but I notice it from a personal side when I feel that my responsibilities to teaching are not valued or recognized, you know, it's just kind of a hindrance. Then somebody may say, "Well, wait a minute. What does that say about us as a program?" Maybe it's just a little bit of over-sensitivity on my part, but it's making me think about it either way. And I would say it in a positive way, it's kind of like we're always looking for ways that our program can grow and become better, and I think this might be one. I've got to think about it some.

Max Geier: Several people have mentioned the Andrews group is in some ways not as visible as it could be on campus, that people don't know about it and what's been accomplished.

Stan Gregory: Having FSL as a center. [Forestry Sciences Lab, a U.S. Forest Service research facility] Many LTER sites would give their eyeteeth to have a central facility so close to campus, because they're spread among multiple campuses and they have a hell of a time just getting a committee meeting together. Here we've got them right on the periphery of campus. Yet, as a result of that, it's not the same as if they were right in the heart of campus, so there was that visibility. I mean they can go through a year of doing a lot of great work, and the only time they'll be on campus is to get a sandwich at the MU or pick up some supplies. That's a little bit harsh. I don't mean that the way it sounds, but it is a bit peripheral. And when we have meetings, it's over there, and so all of us at campus, go to the edge of campus for an LTER meeting. Maybe we need to think about that part of visibility is just being there. If we had some of our activities in the heart of campus, then people would see us, and people that are on the edge would feel like they're part of the campus, as opposed to conveniently located on the perimeter.

Max Geier: Were you ever located in that building over there?

Stan Gregory: Uh-uh (negative).

Max Geier: Always over here?

Stan Gregory: Always over here. Like I say, luckily, if that's as bad as our problems get, we'll be quite fortunate, indeed. Still, compared to many programs, we've got very close ties and high visibility in the university compared to some LTER operations. But, at the same time I think there's some opportunity for improvement in that area.

Max Geier: Well I better let you get to work here. I appreciate your time.

End of Interview