

Name: David Klein
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Location of Interview: Home of David Klein in Fairbanks, Alaska
Interviewer: Karen Brewster

Brief Summary of Interview: Mr. Klein starts out in this interview talking about a field course trip to Finland, Norway, the Russian Kola Peninsula and the experiences there. He also talks about being on a review board through the University of Saskatchewan for a mining company involving woodland caribou, doing research in Manitoba and Newfoundland, of potential impact on caribou by roading and/or powerlines, and his relationships with students as far as keeping in touch with them and what they are doing now.

KAREN BREWSTER: Okay today is October 23, 2014 and this is Karen Brewster and Dave Klein continuing --

DAVID KLEIN: Yeah, I'm ready to go if you are.

KAREN BREWSTER: -- to do Dave's life story, so let's go. Where are we going tonight?

DAVID KLEIN: We're going to go to northern Scandinavia and Russian Kola Peninsula. And it's all part of a field course that I was invited to be one of the professors or teachers on. It was organized through the University of Lapland in Rovaniemi, Finland. And my connection there had been largely through a professor there called -- an American, Bruce Forbes, who -- he was from -- originally from -- oh, he was a part of the Forbes wealth and grew up in Maine and so his family was extremely wealthy, but he doesn't acknowledge that connection. I met his dad and mother.

KAREN BREWSTER: So he was a fellow biologist?

DAVID KLEIN: He was a biologist who had organized this field course in collaboration with people from the University of Stockholm in Sweden. And one of the women there from Sweden was Russian and she had grown up and been educated on the Kola Peninsula. And was an expert on the pollution of the hexxon [?@1:57] vegetation and reindeer grazing areas and -- from the Monchegorsk and other big metallurgical mining there. Some of it was copper, some nickel, and other chemicals with major air pollution, which swept over into Norway and northern Finland, and Norway, and Sweden. And, yeah, in effect, reindeer grazing areas, too, especially lichens. And so she was involved and her husband was a Swede, I think, and she had her PhD from the work on the Kola Peninsula. And then there was Bruce, was one of the instructors. Then there was a professor, a woman who I knew, had done a lot of work with the reindeer and reindeer, mainly physiology but also nutrition of reindeer in Finland. And she was -- And, oh, there was a woman, another woman, who was a Swede and she was on the faculty at, I think,

Stockholm. And so it was -- and then there were students from Norway, Sweden, Finland, Russia, one from Canada, and one from Netherlands. There had been one, tentatively, from Alaska but it didn't work out for her to come. So it was really challenging and the plan was then to meet in Rovaniemi and spend a couple of days there for the teachers to get to know the students. And they did a good job of sort of dividing -- Well, this field class was going to last about ten days and we'd have a nice bus and a driver from Finland assigned to go everywhere. And they'd already made the deals to go into Russia and cross at a point where they normally would not want people to cross. But to go into all these other countries, as well and involve local people working with, including the Sami reindeer herding people. So we'd sometimes -- And we're doing this the way I like to do field trips. We carried a lot of food with us and sometimes we wouldn't have -- we'd have a place to stay but we'd have to cook the food. Or we would stay at a sort of like a campground where one little tourist in northern Sweden or Finland, where they catered to tourist but that was right after the tourist season so it was September. And then they would say, "Well, you can use the kitchen there if you want." And especially in Finland and Sweden and Norway, they would have cabins that you could rent and they'd put us in these cabins and at reduced rate. And we had -- Oh, I brought my partner along, Heather McIntyre, and she agreed to take responsibility for organizing food and she had experience to do that. And then they had some -- Did they have any other cooks or what? No, I think that we all chipped in especially seemed like women more than men.

KAREN BREWSTER: So what year was this?

DAVID KLEIN: 2000.

KAREN BREWSTER: Okay.

DAVID KLEIN: And so the plan was then we would do this circuit through Finland, northern Finland first, and then I forget whether we did the Norway one first or after the Kola Peninsula. Probably after, but I don't remember that. But at any rate, they'd done, Bruce and the other faculty that were involved there from -- and they were supported by the head of the -- a woman, a Finnish woman at the head of the Arctic Council then. I can't pronounce her last name. She was based right there at the university and they -- She was also a key player in coordinating with other countries. And so it was tied in with connections. And Bruce had had funding, some of it was from NSF [National Science Foundation] and some of it was from -- some support from Russia and some from Finland and Sweden and Norway through work -- He had done a lot of work with -- in the Yamal Peninsula with the reindeer herding people and how the oil and gas, was mainly gas development there, and roads, and railroads and pipelines and how that had all interacted. And they wanted -- from me they wanted me because of my experience with caribou range and habitat and reindeer range vegetation. Primarily for that reason, but also because of my experience with the industrial development on the North Slope in relationship to caribou habitat. So when we're in the Kola Peninsula, of course, we had the usual problems crossing the border and things like that, that we weren't supposed to have. And they had to bribe some of the soldiers with cigarettes to get through successfully, and they had some problems getting out. They wanted to confiscate the

laptop of the Swedish guy who tended to be the kind that they envisioned was a spy of some kind. And at any rate, it was a real adventure in the Kola because we went to this one village, which was where there were some of the reindeer herders living and then they were herding the reindeer close to that. And so the Russian government had taken some pride that these were people that were still doing this. And this was 2000, of course, it was after liberalization and these were people that held out and didn't collectivize. And now the Russian government was trying to make up and treat them reasonably well, which wasn't particularly well, but reasonable. And some of these people were, in this local town, were Saami --were like city council, included some of them. And they were interested in the transition from the reindeer herding culture into an economic culture and still maintain their identity. And that meant education and how education was pulled together and what are the options for things like tourism and stuff in a positive way for the people because the Saami in Finland and northern Sweden and Norway had done a pretty good job in this regard. Although the differences were tremendous between countries and their history. And, of course, then there were economic aspects of raising the meat and skins and what, and processing them etc. So we got to see a lot of this stuff and there's this -- and what the faculty organized in a way that -- about three to four students were assigned to each faculty member and we were supposed to be mentors of these. And the students had assignments to try to produce a semi-technical paper as a result of this trip. And the subject here that they were going to define in a general way before we left, so they wouldn't do it after the fact. They would work through us. And so part of the things we did when we'd stop someplace for the evening, we'd have a gathering usually in the afternoon and then maybe one after dinner where the students would make short presentations on what their objectives were and what they'd expect to find. And as an advisor and mentor, we had some role in interacting. And so I had one Russian woman, who was from Karelia, and had experience with forest reindeer and management, a little bit in that area. And then a black guy from Cameroon, who was working on a PhD at the university of -- in Norway near Oslo. Used to be the Agriculture University but it's been renamed the -- if it's translated to the Norwegian University of Environmental Sciences. And so Robert Weladji [Dave says Walter here, but later says Robert and by googling find that his name is actually Robert Weladji], was his name, the black guy. And then it was obvious that he was older. He had a wife and kids in Norway, and he was surprisingly making this difficult transition from Africa, West Africa, to -- Both he and his wife had training in forestry, but there was no real future for them there. And so, at any rate, then we would bus and stop in places where we could see -- there were wonderful places to stop like this area between the -- in that case Finland and Norway, and Russia, which was literally, there's one crossing point there. But nobody was allowed to live on the Russian side. It was like, there was military had control over that. They did allow some -- I don't know if they allowed hunting or not, probably not. They just didn't want people in there. So they'd forced any of the reindeer herders out of there and it was like no man's land. And it was about -- it was about 20, 25 kilometers. It's just on the Russian side on the -- and, of course, there's a fence there. And it was amazing because without any reindeer, the lichen growth -- It was a wintering area for the reindeer, the lichen growth was super abundant. So here we could stop and we had permission to stop, but we weren't supposed to spend any time stopping. And they checked you as get back out of the zone and, in fact, you didn't -- I think that was the

main checkpoint when you got through that. And there were guards that he wouldn't let us through the first one except that we had this pass. But then there was this big deal of everybody had to be interviewed separately, etc., etc., etc. All these students on the bus, but we got through there. And then we were pretty free to go wherever we wanted that had been outlined in advance. So we got to see this tremendous pollution and this woman, Russian woman, she was terrific. She's super sharp, and she knew the whole system and knew people. And one time we stayed at a like a research center tied to a university, which was really nice because they had a place for us, a bunk house and toilets and things like that, which were pretty upscale according to Russian conditions. Not super but quite passable and nice. And nicely maintained log cabins with a few framed buildings and some of them were reasonably painted.

KAREN BREWSTER: A little more upscale than camping.

DAVID KLEIN: So then -- and they took us out and with some locals to look at some of these big open-pit mines and then the pollution and problems in how they were studying -- have studied them. And this woman had, you know, could take us to these study plots and stuff, and showed us different effects, different wetlands and upland size, different vegetation. And then we stayed in a hotel in Murmansk, which was this one big, not too expensive, hotel that accommodates everybody there. And Russia likes that because they can keep an eye on everybody. But they had a reasonable restaurant and they had upscale restaurants in the town that we'd go out on. One time we got to go out and we could afford to do that. We were warned in advance that you didn't have to do it, but if you wanted to, and there you could get beer and wine and things like that if someone was willing to chip in. And, of course, faculty we're pretty good at that. So that was a nice party night, but also there was entertainment in these restaurants, too, by -- some of it was folk music and dancing and some performance they had rigged with the Saami people that put on a performance for us. Then we drove out to the end of this road to this town that had been a military camp there, but that was shut down after the dissolution of the Soviet Union because they were just too God damn many soldiers there. There were still too many when we were there. And we supposedly had an arrangement where there would be guards to guard the bus, because that was the only secure place. The hotel rooms didn't have any locks on the doors or they didn't work, and we had cameras and stuff like that and some laptops. So it was a typical thing at that time, we got there and the guards said, "No, they hadn't made a deal with them to be guards." And for another \$2,000, I think, they would agree to guard the bus. They didn't have \$2,000, I mean, everything was -- the hotel they had restricted menu for us because they couldn't afford and it wasn't like serious, it wasn't a tourist hotel at all. And so finally the bus driver said, okay, he's going to sleep on the bus and he'll park the bus so the doors are right up against the building so they couldn't get in, and that worked. But they were -- I mean, they were so pissed, you know, they thought they had us and that we had to pay, otherwise they'd think -- they'd rip off things. At any rate, we met at meetings with the people and when there were translators there that we bought as well as they -- Well, we had the Russian woman and others who were fluent in Swedish and everything, Finnish and Russian and English. And at any rate, that was really interesting and we got to stop frequently and got out with the students and I could explain, you know, show the

different levels of grazing pressure. And we got a feeling for this whole Saami culture there, which is so different. Actually, those were the -- they were Nenets people there. Yeah. There was some Saami people, we went through their area, too, in Russia but these were Nenets people. But their behavior and lifestyle and cultures were very similar and reindeer related. And then we went back across the border slowly, and then we went through northern Sweden and Russia down to Alta, which is a --

KAREN BREWSTER: That's in northern Norway, right?

DAVID KLEIN: Yeah, north of Tromsø a little bit. And we got into the reindeer grazing area, and what is it called, the town in -- I forgot the name of the town, that's all reindeer herders and sort of a semi-modern town but not unlike towns here with dead snow machines in the yards of some of them, like Barrow and places like that. And vehicles, of course, because they're on the road system. And shops and Coca-Cola signs. And so we interacted with the people there. And then we went out and visited some of the grazing areas and that was good because we knew the history of grazing on these different areas and that's where Bruce and I were the sort of experts on the lichen growth and what. And Bruce I'd known for a while and he was on the board for ARCUS [Arctic Research Consortium of the United States] at one time, and we worked well as a team with the students. And in a situation like that, you know, sometimes the weather wasn't all that great but a little bit of blowing snow and rain, but we had rain gear and everybody -- the weather never seemed to bother anybody. It was nice to get back sometimes in the bus when it was so miserable, but at least we could get out and see things.

KAREN BREWSTER: And you said it was in September?

DAVID KLEIN: Yeah.

KAREN BREWSTER: And it was a month long course or -- ?

DAVID KLEIN: No, it was about ten days, I think.

KAREN BREWSTER: Oh, okay.

DAVID KLEIN: And then -- And Alta was nice because then the Norwegian -- one of the Norwegian students was based out of there and so she had connections and we -- she was good as a guide and they pulled in another Norwegian guy who was with the University at Tromsø and worked a lot with native cultures with the Saami. And he was -- it was sort of a little bit of a firebrand, but a really fun guy, and very knowledgeable. And so it was overall a very stimulating trip for me but also for other people that were -- everybody that was on the trip, the grad students. The Russians, it took a while for them to get collective as their -- rather than be -- there's this Russian component of grad students partly because their familiarity with English wasn't all that good. And we had a couple faculty that could speak Russian, but other than that we wanted everything to be in English and they were participants when students -- and they had to make presentations. And I really felt for some of them who -- they were doing really good work, a couple of the guys were really

good. But it was difficult for them to make a presentation in English. It's hard enough for grad students that's their mother tongue to do a good presentation. Some of them were good and I was sure that -- I felt good that this whole concept of mixing students up from so many different countries and different training and they responded really positively to that. And Weladji, the black guy, turned out to be always really knowledgeable about reindeer physiology and wild reindeer, as well as domestic or the caribou. In Norway, he was working on that aspect there and had good people that he was working with. And he got interested in -- it was probably in Finland, when we were talking about insects and harassment and parasites. And he got focused on that, and so he asked me about how to proceed and I told him the key people to talk to that were -- in Finland, were some of the best work on insect harassment and modern techniques and how to deal with that with -- not mosquitoes so much, as the Russians had more experience with mosquitoes. But it was the parasitic flies where they are using a drug and they had to round up the animals and give them an injection and it was pretty effective. And so body weight went way up if you got rid of them. And you got rid of internal parasites at the same time with the gut parasites, which weren't considered very important because they're sort of endemic to all of the animals but they varied in relationship to the health of the animals. At any rate, that was great and then we ended up back in Rovaniemi finally. And it was -- had maybe one concluding meeting with students and what, before they all went their varying directions. And that was great, and we all -- I mean, I could continue to contact this Russian woman by email, as well as Weladji. And then I ran into him again back when I was in Oslo and visiting there. And I got to know his whole family, and it was really a tough one for them because she couldn't -- for a black woman to get a job in Norway was virtually impossible. So all she could do was something like house cleaning or something like that. And then they had these two young boys, and one of them had, was it an eye problem or something. And they were able to get him coverage. In Norway they didn't want to do this at first because he was coming there with this problem and it was going to cost -- pretty expensive to deal with. And the university insurance wasn't normally going to do this. And the guy had some funding but everything was so expensive there. And they were living in student housing but it cost some big bucks to rent that. But they were determined then -- And so then he and I continued to focus in -- he went ahead and -- I suggested because he was making such good progress on the field trip and I was giving him references and telling him what I knew and had him spend time with the -- especially the people that worked with insects in Finland when we stopped there. No, they were in Rovaniemi, that's right, and had a chance to talk to them. So then he suggested that I be a co-author and he was going to put together a paper, and so I continued to interact on that. And, yeah, that paper got published after he got through and there were about two or three papers published as a result of that trip, directly result. But then I kept running into Weladji and then I went to the -- it was like the International Arctic Ungulate Conference, and that was in Finland, I guess. Was it in Finland? Yeah, it was in Finland, I guess. And Weladji was there. And they put together this panel, the conference organizers, with experts on -- from different countries. He represented Norway, a black guy. And there were good Norwegian people there, and they already felt that he was the best choice, which was pretty impressive because Norwegians aren't particularly -- at university they're certainly not racist at all, but immigrants coming down into the cities, you know a lot of the Norwegians are concerned about diluting the Norwegian blood.

KAREN BREWSTER: Yeah.

DAVID KLEIN: And that's true in Sweden to some extent, as well. So here was Weladji doing this. And so then Weladji completed his PhD there successfully. And he had a -- right away they gave him -- got a post-doc position but the pay was marginal for a guy like him with a family and the kids. And they appreciated that the kids were able to go to school and they were learning -- they already were fluent in French and, I don't know whether there was a native language there. French was, in Cameroon, was the language. And, of course, Weladji and the kids all had to learn Norwegian.

KAREN BREWSTER: Right.

DAVID KLEIN: But they were learning English, too, all of them. And so then I kept in touch with him, and he was saying that now the post-doc, they can hardly live on that and there's no -- the funding won't last. And so he wondered about the United States. And I said, "You've got to apply. You've got to keep your eyes open, apply for any faculty positions because you're qualified for faculty positions, in Canada, too." And he wanted to know about Canada versus Alaska and stuff like that. And all I could do was give my perspective. And I said for him either place is the first thing you can do. Once you get into the system and establish yourself, if you're any good, you'll be able to move to other universities in North America, not just in the United States or Canada. And so -- but it was really tough for him. And probably, one would think -- I don't know whether it's any tougher for a black person, but just -- there're aren't that many blacks into Arctic and sub-Arctic ecology and reindeer and caribou. And it's kind of, well, how can this be possible? At any rate, they were pretty desperate to get out and the other alternative, if -- they're have to go back to Cameroon. And there his father was -- had multiple wives, was a pretty influential guy politically, and that's why they both were able to get -- or he was able to get a pretty good education like an equivalent of a master's degree there, at least a master's degree under their system. But there weren't jobs there, so if they went back, I mean, it would be terrible. The worst case was the kids where they needed to have health care and education. And the kids were sharp boys and a lot of fun. And then, I think, they had a third child, a girl. So then I heard that -- Well, he was corresponding with me and asking about positions that were -- he'd seen advertised. In Canada, there was one in a small university which I knew a little bit about in Quebec, near Montreal. I forgot the name of it, begins with an "S". And there was some -- during a good economy in Canada, there were people there doing good ecological work, research funding, but it was primarily, you had to have a heavy teaching load if you're there. So he got the position and he was able to collaborate and do research with other people that relate to caribou, mainly caribou now, and other wildlife-related issues. And the guy is so sharp. I mean, he gets -- and he's got this good background now in ecology. So that was nirvana to get there and it was French-speaking, which they were already fluent and the kids could go to good schools and had healthcare. And then I met him at one conference somewhere in the States, I think, or it might have been Canada, but he was presenting a paper and he was just publishing like mad on his doctoral stuff and others from Norway. So he was doing everything right for a young professor, but it was -- they were entering an era of poorer,

poorer economy and that university wasn't -- research was not their strength and so -- he told me when I saw him he was -- he had a heaviest teaching load, just barely able to make it. And he had to -- he worked as a taxi driver at night to make enough so they could live reasonably well. And then I met him again, the most recently, was last year, in 2013. I was asked to be an external reviewer of a Canadian whatever, it's something like National Science Foundation, the Canadian one. And there was a special research program that the University of Saskatchewan had applied for. And there were two Co-PI's and one was a woman who had been here as a post-doc botanist working with Terry Chapin and just top-notch. And so she got a full-time faculty position there, and the other one was, I don't know whether she was Canadian originally, she might have been. But the other one was a guy who had done his doctoral work on horses, feral horses in -- they live on an island off the coast of one of the maritime providences. I didn't even know they existed. But he did really good research there. A lot of marked and radio collared stuff and aerial surveys and it was a very popular kind of thing because it didn't deal with controversial things like caribou. And Canada can be, especially woodland caribou, controversial. At any rate, the research project was a mega-buck project that would be the focus on woodland caribou and mining development, uranium mining mainly. And the mining companies were going to -- they were partners in this research and they were kicking in a lot of money to pay for the radio collars that would be used and some helicopter time, which were big-ticket items. And the vegetation component of it was designed by this woman who had been here as a post-doc. Johnson, Jill Johnson, I think it is her name. And she -- the committee included Robert Weladji. He's already become recognized as this good guy. He's still at this university and he'd like to move to another one and he probably will eventually. And so here was -- and then were -- there was one guy from Alberta that I had remembered from meeting a long time ago when I was at some conference there and he was an expert on caribou, woodland caribou, I think. And then there were a couple of others, about three, and there must have been about five or six of us. And then the woman, senior woman, biologist, who was working for the -- she was the one who was the examiner for the science foundation. So I was a little suspect when I got there. Oh, they sent me the proposal first, I think, and I looked it over and they paid me to fly down there and put me in the hotel in Saskatoon. It was all there at the University of Saskatchewan. I'd been there once or twice as an external examiner for a PhD thesis, I think, and maybe a conference, one conference there. But, it's a good university. But I hadn't been in Saskatchewan for a long time, and, I mean, the oil wealth there from the tar sands, the big issue. Although this area, the study area was not tar sands area, but it -- where the uranium mines are, and the uranium mines have a good record of -- they're in remote areas where there's no roading to get there and they're happy it's that way. And then they sometimes local roads, and a local road to a Native village. And the Natives there living in northern Saskatchewan in these remote places, they want to maintain their traditional lifestyle, but they need money and they need some income. And so the mines have done a pretty good job of employing young guys and have done a pretty good job of trying to minimize environmental impact. And their whole approach was our footprint is so small that we're not having any effect. And yet the woodland caribou is an endangered species. And it sounded pretty good, you know, here's mining showing that -- and this research will show that the woodland caribou are doing fine there. Mining is not going to have any significant impact. Well, that's sort of a

hypothesis and then the guy doing -- that part of the study, the guy who did the PhD on horses, I mean, he didn't have any background at all with the caribou, woodland caribou or the habitat, that was the worst thing. He didn't have a understanding of the habitat and yet he was coming out on top in terms of the first PI and Jill Johnson probably because he had been there a year longer than her. And it was like, there were -- the two of them were -- we had to meet with them and they answer all these questions. And there was nothing, no Native input in this. And I raised this question and then they said, "No, no, we'll interact with the guy on the faculty that teaches Native stuff and is a good guy. He's got a lot of experience." And I said, "Well, what about the Natives themselves?" "Well, there's no need for input." And this woman who is representing Canada, sort of -- she wanted to give them this approval of this proposal. And we met with her and sometimes without her, and she was -- when we met with her and raising our concerns, I mean, she was pretty good and objective and very knowledgeable woman. But it was like -- this was really, wasn't a serious thing they can build this contact with the Natives in through this one professor. He wouldn't be a part of the project but he would be an advisor and what. I couldn't understand that. And I had to qualify things saying, I realize I have a different bias because I'm used to the U.S. and this is Canada. But I thought that there would always be Native participation when you're in Native lands and doing something like that. And it was like, well, he can probably upscale that thing. Well, at any rate, when it came down to a vote, we all approved the botanical work. It was well designed. It needed some improvement and she needed more independence from the other one. Because it was like she would get second play on transportation and things like that, whereas she needed it and it was preliminary, you've got to do the botanical stuff first. And what good is it to put radio collars on the caribou and you can tell where they are but you don't know what the vegetation is. And they weren't -- he wasn't forward thinking. And Jill said that the budget is so limited for her because most of it was going to his side of the operation. And his argument was, well yeah, but they're paying -- the mining company is paying for the collars and stuff. And he didn't feel that that was any concern. And they were also advisors on the proposal, too, the mining interests. They were sharp guys. They were there when we were discussing these things and they'd come and answer these questions that they -- they had done their homework on the technology of tracking animals, etc., etc. And they were pretty, "Well, if this is a problem we can make another snow machine available." Although they hadn't done much planning for winter work at all. And I -- since I had been a consultant on a project for the government of Manitoba just next door that had to do with power lines and how it'd affect caribou, several years earlier, I had more knowledge of woodland caribou and their use of that area than any of those people did. I couldn't believe that. And the people -- the guys from Alberta, looked like they'd been bought by the, to some extent, by the oil industry. Well, at any rate, when it came to a vote we said we could okay the botanical part but the others was -- and it was mainly me arguing this. And Weladji, I was a little disappointed with him, and then I realized here he was a black guy on this committee in Canada. And he would be going to the same agency to get funding and so he didn't -- he wanted to agree with the agency people as much as possible and didn't want to challenge things. And even in informal discussions if the woman was there and I would be raising some of these issues, and it was like she didn't want to talk about those things. So at any rate, they gave the word back to them, pulled them together, and said that we can't approve it now but if

they could -- this woman said, under this program we have to -- you could have -- if you can modify the proposal to meet our concerns and meet a deadline that was like about 10th of December. And this would give them time to try to take into consideration our concern, put more funding into the botanical studies and support that fully, but try to delay some of this radio collaring until you get some of this more basic stuff done. And not -- well, they did take this and they resubmitted the proposal and went through it. This was all done by email then. And I went through it and she told us that we had to have our vote in by such and such a time and how we should do it. And so I went through the whole thing and I said, you know, it's improved but still is some missing components and the Native thing was one of them. I felt they'd made no effort to get a Native -- to go and talk with Native people or maybe ask for a representative to be an oversight advisor along with other faculty members on the university. And it was this guy, had not enough -- he hadn't followed through on key references, so he didn't have -- it was like that was like the problem nowadays, unless you can go to a computer, internet, and find a reference, any references before those things were accessible at that time -- yeah, there's a lot, especially a lot of the reports were government reports, which aren't going to be there anyway. And you could get them if you go to the government agencies and you could do that through email, but it'd take a lot of effort and time and they were teaching courses also so you couldn't expect them to be spending full time on this. So I said, no, I definitely could not approve it but that I suggested that they approve the beginning of the botanical work and then gave them a chance to resubmit. Well, the problem was that this woman and this special funding that they were doing this under was a good concept because it involves mining people, and they had the money there and let's spend it because if they didn't spend it, it would go to something else and probably not supporting science. So she had a hard time getting other members to vote. And there were, out of the six, I think, there were only three people, three of us that got the votes in on time and she didn't -- she reminded us regularly but she didn't follow up. And so she said, "We'll just have to go with what we have." And then there was some statement that we -- and I could only conclude that the one non-Canadian was the one who didn't approve of it and we'll just ignore that one. I felt like responding but then I thought, no, I shouldn't do that.

KAREN BREWSTER: So they approved it?

DAVID KLEIN: Yeah, they approved it. And, well, Weladji was one of them that approved it and I was disappointed, but on the other hand I realized the awkward position he was in. And then there was a third one but there were -- a couple of the others I don't - - I think they didn't want to vote. And yet -- so they just didn't and they could argue, "Well, I couldn't make the deadline," or "I was too busy." They all had other jobs but she could have pursued it. She wanted the thing to be -- it was obvious, to be approved, period. And she's an intelligent woman but I had a lot of respect for her early on but when it became obvious that she wanted to do that, I lost that respect. I thought, man, they're lucky to have a woman who's so good and good at getting us to work together as a group. But I felt I'd been had.

KAREN BREWSTER: Yeah.

DAVID KLEIN: And I'm sure Jill had recommended me to be on the committee. That's how I got onto the committee, because she had been here and knew her well and I felt good about that part of it. But in talking to them in an informal setting in the evening when they had a dinner and then they took us and showed us their offices. And this young guy was so focused on his PhD work, his office was loaded with hundreds of radio collars and a few horse skeleton material. It was like, he was -- it's like he was a foreigner there in that situation. And he was just -- just bubbled with enthusiasm and if I raised some questions, he'd -- ecological, it was obvious he -- even when he was talking about his PhD studies and in that kind of situation I'd raise some question about this, and he didn't seem to have a good grasp for the ecology there. He was focused on what you read in the Wildlife Society advertisements about radio collars are the answer to everything. And he was convinced they were the answer to everything. They're not the answer to anything unless you have hypotheses that you're going to test and you design a good scientific methodology to experiment and find out what is being done and what you hope to -- what kind of information you get to. Like I would raise questions that -- I said, "Well, the woodland caribou are not going to be in big groups." It seemed like he didn't know that. "Well, they are, in the wintertime." I said, "Yeah, they're going to be in groups of a few animals but not big groups." In the first place, they're endangered because their population is low, but their whole strategy is different than the migratory herds. They live in this country, it's not really forested country, it's open shrub land and it's a transition zone into tundra area. And in some places, yeah, there's woodlands and some places not. And these little isolated patches of woodlands are key places for them to go. And the females, when they're having calves and they isolate themselves from all of the other caribou rather than going to a calving ground, the common calving ground. And then -- and he didn't have any real understanding of predator/prey relationships from what it was known. And that's where there was a lot more known in Manitoba, obviously, than there. And part of it is because they had people on the faculty who were interested. But also the state biologists seemed to be much more knowledgeable. In fact, I never met any of the state biologists. Well, we did when we were doing this other study. I did a study on the co-management with Jack Kruse, which was interdisciplinary. And we visited Saskatoon, then, and Prince Albert, which was a Native, primarily Native community in the north. And, I mean, how you can overlook those Native people? And some of them sure, I mean, the attitude seemed to be the common redneck attitude that all these people are acculturated, they live in the cities and they don't carry on traditional activities. Well, those were the people on the road system, whereas the ones that are in the study area, there's no road system. People were isolated. When we flew into some of those places in a float plane in Manitoba, wow, it was interesting to me. The only interest in tourism was maybe a little bit of ecotourism, if they wanted to fly in, they would be guides, they had good canoes and big canoes, freighting canoes. And in the wintertime, those places are accessible by winter roads. They go across frozen lakes and marshes and what, and that's pretty common in Canada. But in the summer, they're isolated so they have to bring in all the fuel and they have fuel storage bins. And many of them don't have an airport, they just have this -- well, they land on the lake in the winter with ski planes and in the summer float planes.

KAREN BREWSTER: So I'm going to go back a minute to the field course you were talking about and Forbes.

DAVID KLEIN: Oh, sure.

KAREN BREWSTER: Where was he from? He was a professor someplace?

DAVID KLEIN: He was a professor at the University of Lapland in northern Rovaniemi. But he went there under a --

KAREN BREWSTER: But he was American?

DAVID KLEIN: He was originally from Maine and he did a PhD at the University of Montreal. But he did his research on vehicle disturbance on the North Slope of Alaska. Vehicle disturbance on the tundra in the summertime primarily. And so he knew people here fairly well, and then he --

KAREN BREWSTER: So he knew of you from past work and he invited to do this --

DAVID KLEIN: Well, I met him when he was here on a -- I never met him when he was doing the work on the North Slope. But others did. Some people that were working with the Toolik Field Station, for example, and others who were working on the North Slope. When I was up there working, was a little bit before he was doing that work there. And then he won a -- kind of a young scientist award that he and several others toured around to different universities relating to Arctic and their interest areas. And then they visited Fairbanks and UAF, and then he stopped by the office then and that's the first time I met him, I guess. And I was certainly impressed by him then because the guy was so knowledgeable about vegetation in the tundra environment, which I was in the same areas. And then he got a -- what was it, a two-year visiting professor kind of thing at the University of Lapland in Finland.

KAREN BREWSTER: So he was organizing this course and he invited you to participate?

DAVID KLEIN: Yeah, but he -- here he is the son of the Forbes family and then he was -- after he became a professor there and he was doing this work in Russia. And then he got a full-time position there, which was a tough one because he wouldn't have stayed in Finland if he hadn't fallen in love with a Finnish woman. And she was -- she had a -- there weren't many jobs up there in that northern Finland, but she had university training in the south but some of it was up there. She was trained in, somewhat, filming, I think, and she got to advise and review films that were generated for varying purposes, but mostly by small groups that were putting on theatrical-based films. But then when the film industry there grew, she got a permanent position up there. And that's when Bruce met her and they decided to get married. And then he was on a two-year visiting professor kind of thing, young professors, and he lectured in English. So finally a full professorship opened up, because he'd been doing such great research with the reindeer

and had good funding for the Russian work that was internationally funded. And he was a good professor. The students thought he was great. So he applied for that professorship, but he had to be able to teach a course in a year and a half in Finnish. So he had to learn Finnish.

KAREN BREWSTER: It's a difficult language.

DAVID KLEIN: That was tough on him.

KAREN BREWSTER: Yeah.

DAVID KLEIN: But he was persistent and made the grade. And then they've got two children and built a really nice home on a stream. Got a nice sauna there that he -- he wanted my advice when I went there about a sauna. And he'd put something together which was rather crude and it wasn't tight enough, and it was hard to get it up to temperature. But you could -- it was the perfect location. The stream that doesn't flood too much and you could go out there waist deep and right out of the sauna. It was a nice situation. They got quite a bit of land that included that.

KAREN BREWSTER: Now the other instructors, the Russian and the Swedish, do you remember any of their names?

DAVID KLEIN: I can find them out. I've got a report on that whole thing. They put together a really nice report with photographs and everything. I'll bring that the next time and can get the names of everybody.

KAREN BREWSTER: Okay. Because by that point, 2000, you were retired, right?

DAVID KLEIN: Close to it, yeah.

KAREN BREWSTER: Not that you've stopped working.

DAVID KLEIN: I guess I was retired, yeah.

KAREN BREWSTER: Yeah, not that you've stopped working but you were --

DAVID KLEIN: I know.

KAREN BREWSTER: -- not officially employed by Fish and Wildlife anymore.

DAVID KLEIN: No. I mean, I was -- When they asked me I thought, hmm, that sounds like something I'd really like to do. And I talked to Heather, my partner then, who worked for the university in the greenhouse. And I said -- and she had done -- tied in with some Arctic vegetation work because the agriculture and land resource management under a defunct kind of guy who's in charge of the reindeer work got funding to do this study out on the Seward Peninsula. So they sent a bunch of -- he hired a bunch of young -

- well, they were all women, I think. And Heather was then working for them. She was doing editing of publications for the agriculture -- She has a master's in horticulture that she got here at UAF. At any rate, I said, "I'd like to do this. And I'll tell them I want you to come along and you would be willing to organize things." Which she did a good job when she was doing that. She just loved it. They called her mother. And she got along super well with all of these gals, and she's got a nice personality. First, she said, "No, no, I couldn't do that." And I said, "Of course, you could do it. It would be a challenge, but everybody helps out on those kinds of things. And you're just the kind of person they'll need." And so she agreed. And so then I wrote them this long email like saying, "Yeah, this is the conditions I can come under. And I'd like her to come but she would be willing to do all this and that we would pay her way and stuff coming there." Well, she got along well with all of the other faculty, especially the women faculty. And she did a great job. And the students loved her so it was a good deal for everybody. And I felt good about that. And it was nice that she was along. It kept me from falling in love with this Russian woman (chuckling).

KAREN BREWSTER: So other work, you were talking about this proposal process in Canada, so maybe we should talk a little bit about some of your own research that you've done in Canada? You mentioned Manitoba.

DAVID KLEIN: That was kind of an unique situation. And I've done that two times, I guess, once in Manitoba and once in Newfoundland. And that was associated with, in both cases, hydroelectric projects. In one case, it's mainly the power lines, and the other one, the projects and the power lines and the roading in Newfoundland.

KAREN BREWSTER: And so you studied the impacts on the caribou?

DAVID KLEIN: Potential.

KAREN BREWSTER: Potential impacts from these projects?

DAVID KLEIN: Right. So what they did to us, they wanted to get -- the environmental consulting firms that were charged with doing this assessment, based in Newfoundland and Manitoba, they had checked around who were the best qualified people in the world to do this. The Newfoundland one, there were two people. One was me and the other was the Norwegian that I had worked with when I was over there on Fulbright on sabbatical deal, Eigil Reimers, who's now -- he just retired last year at 65. But he developed -- well, we published together from the work that I did over there on differential body condition, calf survival, on herds that were closer to the sea versus further from the sea in Norway. That would be in the area between Trondheim and Oslo in those mountains, Hardangervidda and others. And so he was one person that was contacted and I was the other asked if we would do this together as a team. Well, we contacted one another and, yeah, it would be interesting. And I couldn't do this as an individual. I said, I would do it 'cause I was an employee of the Fish and Wildlife Service and head of the Cooperative Wildlife Research Unit. So if I did that, they had to pay my expenses of getting there. They'd have to do the same with the Norwegian. And he was with the university then in

Norway and so it was similar in both cases, except that he was free to take leave and then they paid you some kind of honorarium to do this and cover all your expenses, as well. And I said, I could do it, but I wouldn't accept the honorarium. I would use the honorarium to support student projects through the wildlife research unit. And then I was pretty sure that I would get approval to do that from my bosses in Washington. And I wanted it that way anyway. And so I could feel that I was helping the wildlife unit and support some graduate students that way. So it was like, each time it was not more than a couple of weeks. But it was really fun, and in Newfoundland -- because here a guy that I respected had been a post-doc here and the two of us were invited there and then he invited -- toward the last couple of days, he invited his wife over and so she could -- they could be tourists for a little while, too. And that was great, and I knew her well. So that was nice to work together. And it was good because here we're coming with different perspectives, because Norway, they had problems with pipelines for hydroelectric development and hydroelectric lines and how did that affect building hydroelectric lines through both domestic reindeer areas as well as wild reindeer or caribou areas. And he was just getting started in that kind of research over there. And I had had studies of disturbance effects up and associated with the North Slope oil development and the Arctic Refuge and proposed pipelines and roads and, yeah, not really on power lines but most everything else. And so that worked out well. And then the Manitoba one is -- that was probably partly as a result of the work in Newfoundland, but also they contacted me as an individual to go there and they would be based in -- what's the name of the town in Manitoba, the main town, the capital? I know it so well.

KAREN BREWSTER: Yellowknife, no?

DAVID KLEIN: University of Manitoba is there.

KAREN BREWSTER: Is Yellowknife Manitoba?

DAVID KLEIN: No, that's Northwest Territories. I'll think of it. But at any rate -- and I knew Bill Pruitt who was *Firecracker Boy*. He worked at the University of Manitoba and did some work with caribou in snow. He was getting pretty senior by that time, but still had a chance to visit with him. And then I -- but I didn't have any good current contacts with biologists there in Manitoba. But part of being there, then they -- I got together with the provincial biologists who worked -- and got to know them. And then I did this terrific helicopter trip along the whole route of the proposed power line, and that was about a day and a half, which was terrific. And then the hydro project was right up close to the Hudson Bay. A river coming into Hudson Bay would be dammed and then the power line would come all the way down to Manitoba to whatever the town is. At any rate -- Winnipeg.

KAREN BREWSTER: Winnipeg.

DAVID KLEIN: Yeah, Winnipeg. And that was complex, too, because there were these problems that were peripheral problems like you put in a power line, you have to have some kind of a --especially in the southern part, they're already a problem and here you

got the -- you've got again the caribou. And the main problem they were having with the caribou is they were logging more and more of this northern boreal forest in the northern -- north -- northern -- was when you get off of the prairies it was the northern part of the boreal forest. A lot of lake country. Beautiful lake country and pristine waters and great fishing. There was already this railroad going from Winnipeg to -- all the way up to Churchill on Hudson Bay. And that had been built years earlier as a grain port for Manitoba, so that grain could be the quickest way to get grain to Europe that way, or to the east coast. And they had a power line along that -- from a smaller project up there. But the power line -- Manitoba Hydro was the one that wanted to build this power line. So it was a provincial company and they didn't want to use that same corridor because it was too narrow going between lakes in one place. They have the railroad and one power line. And the reason they didn't want them together is, they said they want them separate because if you get icing and the power goes down, it would go -- and they're right together, they'd go down. If they were wildly separated, especially close to the lakes, you could get a lot of fog and stuff and icing right at freeze-up. Whereas if it was away from the big lakes, Lake Manitoba, then it probably wouldn't be the same kind of weather, which was probably a valid argument. But how serious would this be? Now in history, they haven't had a lot of problem. They hadn't had outages because of that.

KAREN BREWSTER: What year was this you were in Manitoba and Newfoundland?

DAVID KLEIN: I don't know. I'll have to look it up.

KAREN BREWSTER: Still, were you still working for Fish and Wildlife?

DAVID KLEIN: Yeah.

KAREN BREWSTER: So '80's, '90's, '60's, '70's?

DAVID KLEIN: They were probably in the '90's.

KAREN BREWSTER: Okay. And so how did you study this impact? What kind of methods did you use?

DAVID KLIEN: When you're an expert like that, like Eigil and I in Newfoundland, they had to transfer us around. Sometimes by float planes, sometimes by road, sometimes by helicopters. They took us to these -- show us what was being done in the way of -- they were diverting streams and creating canals. And then the questions we were raising was, "Well, what happens when winter comes? Are these canals going to be freezing over or is water going to be moving fast enough that it won't freeze over? And are the canals -- if a caribou gets into the canal, can it get out?" Because they have to blast through rock frequently to do this. And a lot of these things they hadn't taken into consideration. And this information then would be a warning to the companies that if you want approval for this, you had to take these into consideration and have a suitable design to minimize this. It might mean you have to, in the case of the canals, which might be only a few miles wide, but they would be between two lakes and they'd dry up a stream, which we weren't

dealing with fisheries but sometimes we had to think about that. They had black bears and the black bears were predator on the calves, but they didn't -- the provincial government was doing studies then, which were proving that -- one of the first modern biologists there became an expert on caribou and did his doctoral work on that, a guy named Bergerud [sp?], but he got hooked on the idea that only serious predators, no wolves there, on the caribou were lynx. They had introduced snowshoe hares and, I think, I don't know about the lynx, I think they came there on their own or may have been there. 'Cause they did have a native Arctic hare type there and they had ptarmigan and other things that lynx could feed on. And he did studies, which showed that -- when a calf is killed, how do you determine whether it was bears or lynx? Well, the problem with bears is that they ate everything and especially if a calf, they just crunch the bones and eat them up. So you didn't have the bones that were necessary, but sometimes you'd find an animal that was killed but not fully consumed and he looked at the skulls and he could see that the thing -- the holes in the skulls were mostly caused by the claws of the lynx rather than bear teeth. And this wasn't confirmed until they put radio collars on the bears, and it turns out that more bears were killing more than the lynx were. But the lynx were leaving evidence that they killed them whereas the bears weren't leaving any evidence of this. So it was again like here, they were misjudging which were the more serious predators. But at any rate, that was more of an aside, but then the roading was a big issue. I mean you build roads, then people come in hunting and what -- Is that going to remain that way? How will this affect the movement of the caribou and their use of the seasonal habitats? Obviously, if they have a hunting season, hunters will use the roads to get as close as they can even if they're using say, snowmachines. But they would much rather, at those times, much rather use a pickup truck and road hunt if you could get your animals that way. So there were all of these issues that we could bring up and our job was not to draw on conclusions about the project, but to point out the potential problems that had to be addressed from our perspective and recognizing we wouldn't know everything. But we'd know more -- the consulting firm would know where to look and where to put emphasis. And I was impressed by the people that were working for the consulting firm. They were top-notch people and they were even pretty good at modeling populations and extraneous factors and variable factors. And they were good to work for. They respected us, we respected them.

And Manitoba was similar except that was more on my own. And so I could say, which I did at times, well, Manitoba Hydro is paying for this because that was required. If they're going to develop something, they had to pay for the environmental studies. And I said, "I want to be able ask questions to experts with Manitoba Hydro as well as the state or provincial wildlife biologists who are familiar with the -- more familiar with the caribou." And I don't think Canadian Wildlife Service was involved in this, it was all -- I think, it may have been Canadian Wildlife Service people. And we were able to meet when we did this helicopter trip up there near Hudson Bay. We stayed overnight up there and went to these villages where the people were employed through the hydro -- keeping the hydro plant going and they were close to the railroad, as well. And so their living costs weren't all that high because they had electricity, cheap electricity, and food that could come by train like any other Canadian living along the railroad. But they were like Alaskans, you know, they love to hunt and fish and they had some Native interests. Not so much there in those villages, they were mostly non-Natives. But it was down in the --

Well, the problem was the Natives, they were in interior, not on road systems. But then there were other problems in the Manitoba thing is that -- I mentioned this logging and the caribou there in the south were woodland caribou. Up in the north near Hudson Bay, this is one of the big migratory herds that was wintering in that area. And so it was quite a different situation with regard to the caribou up north. And you didn't want these to interfere with the migration, whereas in the south, the woodland caribou, the Native people claimed that clear a right of way and that's going to be more non-Natives coming with snow machines and hunting along the right of way. And they said so would the Natives. So we would use the right of way. But then where the caribou are going to be over-harvested because they traditionally have been only the Natives using the caribou, the woodland caribou. And then when you make it possible -- and there'd be more roading because there were a big emphasis on harvesting the wood. What do they use the wood for? Well, mostly paper pulp because they're smaller diameter trees. But there was a little bit of lumber production. And I think they also harvested and could make pulp out of aspen and birch. They had a lot of aspen there after -- they had fires in that southern part. But the logging had opened up the area, opened up the forest, they had fires because it's a fairly dry area and a lot of the fires were started. After the fire, the logging had occurred and they were started by accidents of the loggers often. And then it would come back into second growth and be good for moose. And second growth deciduous trees were -- made for moose habitat and the moose -- the deer population was so low that there weren't many wolves and they were so scattered. There weren't many wolves. But once you got moose up there, then the moose made it more profitable for wolves to operate in packs and increase and they would not really focus on the woodland caribou except that they ran into them more frequently and then they would kill them. So there was increased predation on the per capita of the caribou. And the moose nevertheless would carry on and can do that because -- and especially in riparian areas where they're close to streams and what. But the moose also had -- No, the deer -- Well, it was the combination of two things. Yeah, the moose brought the wolves that hammered the deer, but the deer also had a brain worm that they had adapted to. And as the deer moved north, then the caribou if they got the brain worm, it was lethal for them. Whereas the deer had evolved with it long enough it hadn't -- they had lived with it. And the moose had problems with the brain worm at first and they adapted to it, but the woodland caribou were slower to adapt because they were so few up there and they didn't come in contact regularly, but they did, and it was something new that if they're going to adapt, they've got to have a whole population clobbered and the survivors are ones that are more adapted to it. So it was a problem of that, which was complex. And the main problem was you can't just open up this country for logging because you're building roads and then, of course, you have the hunters, who are just like here, once you've got road, the hunters are going to go there. You can't keep them out because they're voters and they want to be up there, and they're competing with Natives but they're over harvesting something like the woodland caribou. So you have the hunting and all these other impacts that come with it. And the roading was something that the Native people living in those areas were much opposed to. And even in the north, they were satisfied with the one highway and one railroad and they didn't feel like it would -- they had any need for others because the caribou were migratory and they came down. And agreed that there were winter roads, and it was minor problems with caribou in the wintertime that would use the winter roads

some, and in doing so they might be more vulnerable to predation because the wolves would also use -- as a travel corridor, they would use that if there were fresh tracks they would head off and follow them to see if they could get a kill. So, as usual, it was complicated and the different interests involved and it wasn't just Native/non-Native. It was some of that, but there was also the people who were opposed to excessive killing by hunters and especially for endangered species.

KAREN BREWSTER: So again, you weren't going and looking at the impacts that were happening, you were looking at the questions to --

DAVID KLEIN: Right.

KAREN BREWSTER: -- to see the environmental impact possibilities?

DAVID KLEIN: We had the information about the other pipelines that existed where they were along a transportation corridor that was a main highway, the only highway, and the railroad. And there had been problems but those were a long time ago and they either adapted or disappeared.

KAREN BREWSTER: So you were proposing the questions and the issues that might come up?

DAVID KLEIN: Yeah. Yeah. We were saying these are the possible ecological consequences that would develop as a result of the project. And in some cases they might say, well okay, if we do this differently, we didn't build any roads to -- we used only helicopters to lay the power line, which they could do, and they had to in some cases because you couldn't build roads because of so many lakes. Well, they could in the wintertime. They'd do it in the winter, yeah. So if they used winter roads, they could do it and not build a road. They could do that, and so that was an option. But then that's when the Natives said, yeah, but the power line right of way is a cleared lane and it's great for hunting on and there's no reason why the non-Natives can't go to the end of the road and get on the power line. But then the logging produced the roads that encroached further and further into this pristine habitat for some people, some Natives, and also for the woodland caribou.

KAREN BREWSTER: And so were these -- Both of these hydro projects, were they funded and they went forward?

DAVID KLEIN: They didn't build that power line. They built it along the other corridor, I'm pretty sure, yeah. I think they scaled down the hydro project, too, the size of it. In Newfoundland, yeah, they built the projects, but they did a lot of modification to minimize the impact. And the caribou there, it was different because they didn't mostly have big migratory herds there, they were kind of separate herds and the question was are they going to have a big impact on a herd even if it was a non-migratory herd? That was undesirable, but -- And we could recommend things that needed to be done like more studies on bears and how their predation -- and how they might be impacted. And they

use fish, if fish are available. But that means the population is going to be variable, too, in relationship to the project -- the population of the bears. The habitat there for the caribou, I'll have to admit that both Eigil and I -- it wasn't like what we thought it would be but nevertheless, the caribou are there. It was a lot of open tundra but with bunches of shrubs. Sometimes shrubs were -- what species of that was -- ? There was some pine but the small shrubs were alder, I think, which were not food for caribou or moose. And I don't think the moose were an issue there on Newfoundland. They hadn't been introduced there. Newfoundland is so different because of its -- during the full glaciation, a lot of it wasn't glaciated. The glaciers that came down over New England and down to the sea, but the sea level was lowered and so the land extended out and included the fishing grounds, the cod fishing grounds. And so, you know, in the early days the cod fishermen would occasionally hook on something and bring it up and it would be a mammoth bone.

KAREN BREWSTER: Out in the outer banks, out there?

DAVID KLEIN: Yeah, that was dry land and there were these big mammals that were there. It was like south of the ice sheet in the Lower 48 and like Alaska, it wasn't glaciated. And it turns out that the caribou on Newfoundland that migrate up into northern Quebec, northeastern Quebec on the other side of Hudson Bay, they're genetically different, so they were ones that were isolated during the last glaciation and then were able to occupy that area. And there's no brown bears or grizzly bears there, never have been because they weren't able to get there and the black bears were there, apparently. And the black bears there in northern Labrador and Quebec are -- they're bigger and they act -- they go out in the tundra and they kill caribou calves of the big migratory herds just like grizzly bear do up in the north. Whereas if you've got both grizzlies and black bears, the black bears retreat into the forest, and can't be there and survive if you've got a lot of brown bears around. So it's a different part of North America in that regard.

KAREN BREWSTER: And did you do other research in Canada?

DAVID KLEIN: Oh, I should mention one other thing. Indigenous people on Newfoundland, it's the only place in North America where had Native people were totally eliminated by the early settlers here. We were mostly fishermen and these people weren't aggressive, they weren't very abundant. I forget what they were, like Muktak or something like that (Beothuk is the actual name of the original Aboriginal inhabitants of Newfoundland). There were still a few left into the 1800's and they died out. Of course, disease was probably the main thing to finish them off. But the Newfies are a little embarrassed about that. Not much, embarrassed by --

KAREN BREWSTER: So did you do other research in Canada?

DAVID KLEIN: Well, then I had student projects that included work in Canada, so some studies on the Porcupine Herd. I had a woman student who did a master's and she did most of her work in the Yukon. And so I was her major advisor and, see, Bob White, I think, was on the committee and then the other committee member was a Canadian from

the Canadian Wildlife Service. And she has since worked with the Canadian Wildlife Service in Yukon. They did one of the editors for the *Birds of the Yukon*, but she -- then she -- when the caribou guy retired, she took over the caribou, and now I just learned recently that she's moved to another more administrative position. I think she's still in Yukon. She married a geologist who was also working for the Canadian government and they raised their family there. She was a terrific, really good student and did a good job. And a lot of pride in what she did. A tough project. It was insect related. But then I had -- where -- where else? A PhD student from Quebec and he was French- speaking and he wanted to do a PhD here with me, but he wanted to work on caribou in -- in -- no deer, that's right, on deer on an island in the mouth of St. Lawrence River. Anticosti Island, which is really interesting. It's sort of, in some regards, like Isle Royale in the Great Lakes in that it had a lot of deer and I don't think there are any wolves there. They'd been eliminated or something. And Anticosti had a lot of history of humans because right there where early settlers came and they logged the hell out of it and tried agriculture, but it was better on land because there was too -- in the winters if you cleared the land you had too much wind, and snow, and ice. So yeah, I agreed to take him on and I went up with him in the field in the winter. We had to take a ferry there and then we had a couple of snowmachines that belonged to the province and we were able to use snowmachines to get around. The snow would soften up when we got a storm and then it would freeze hard so you stayed right on top. You could go everywhere on top of the snow and snow in places was deep. And the deer had hammered the fir. The fir was a popular species for wintering by the deer and so they couldn't get -- they couldn't start new trees because they were hammering it so hard. So he did a good study and PhD study and then he became a professor at the University of Laval in Quebec City. And he invited me back there another time and he gave some talks and what. And it's French speaking, but I didn't have to speak in French. He was -- he was a terrific guy. We tried to get him to use skis and we finally did here, but he said he was a snowshoe guy and he was a good snowshoer.

KAREN BREWSTER: So other projects?

DAVID KLEIN: Let's see.

KAREN BREWSTER: You didn't do your own, it was all student projects?

DAVID KLEIN: Pardon?

KAREN BREWSTER: You weren't doing any of your own research?

DAVID KLEIN: I was collecting information that could be used in some of the research, especially comparing caribou in Quebec to caribou -- and how their habitat -- difference in how they use the habitat. And yeah, and then I -- when he was a professor there he invited me over a couple times to -- he was working with caribou and they invited me over to go out with them. And then, I did the same for the work in -- Oh yeah, then I had that one -- there was a problem. That one was -- Do you know Maria Berger?

KAREN BREWSTER: Yes.

DAVID KLEIN: Yeah, she did a PhD, I mean, a master's with me on bison habitat in a herd south of Delta, and then she became a specialist in -- in bison habitat. And she's one that worked out at Camp Denali.

KAREN BREWSTER: Right.

DAVID KLEIN: And so, that's an interesting one.

KAREN BREWSTER: So that was in -- she did work in Canada then?

DAVID KLEIN: She started working in Canada. So, she was originally from Canada, from Ontario, and German heritage. And she did an undergraduate degree there. And then she got a job -- She was just a beautiful young woman when she took this job to work in northern Labrador with the Newfoundland government, not the Quebec government, Newfoundland government. And they had a separate team that was working with the caribou there and a lot of their work was -- some of it was related to the hydro development in Quebec as well as mining, iron mining in Labrador. On a visit there, I mean, you're right on the border between Quebec and Labrador. And if you're in Labrador with these Newfies and, well, yeah, where are you going to go for dinner? Well, we'll just go down the road, it's only 15 miles and then you're in Quebec, and oh they have wonderful food there and restaurants. So at any rate, she worked there and she was -- she loved the work and they appreciated she was smart. Did a lot of survey work and she was one of the observers in the aircraft and, you know, was just super reliable. And so, then the director of wildlife in Newfoundland became this young guy who I first met in this hydro. He was a biologist on this hydro project work we were consulting on. But he was a good wildlife biologist and he was doing this caribou -- or he did that study showing it wasn't lynx, it was bears, that were the main predator on the caribou. But he was a good biologist, a good scientist, but he was a sort of typical Newfie that had an ego deal about them being superior to other people. And they didn't have Native people there to be superior over, so the rest of the Canadians. And a real pride in their heritage. But he also was pretty much of a womanizer. He was married, but there'd been problems with hiring females to work with him. Well, he was the one that said, yeah, he could -- he -- she talked to him at one point about the possibility of -- and I think he may have recommended to, initially, that she could do a study on one of these small herds that hadn't been much work done on and was kind of hard to get to. But it was kind of like a helicopter deal but it was a small area, so once you got in there, you could do good work. And it would be interesting to compare it. And, yeah, it sounded like a good project. And so they were going to fund her. Yeah, they had the funding to do it and he wanted her to work with me. He knew me well and I knew him. And so -- And the question was, you know, she had to be admitted into a graduate program here. So she applied and was admitted. And she was so experienced that she was a really good student, but she really lacked self-confidence, you know. She wasn't convinced she had the ability to go on for an advanced degree. I mean, she was just so modest. But she was very social and she was one that just loved backcountry skiing. And she was just top notch doing all those things

and loved it, and so a nice person to have with these student outings. And so, then she went to St. Johns to start this project. And so, this guy, I'll think of his name in a minute, who was head of the -- by this time he's heading up the wildlife program there. But he's still very active fieldworker and doing projects. So he said, "Yeah, everything's on schedule." But he said, you know, "We don't -- we're so busy on these other things right now, the main thing is I have to get these reports in and if you can help us do that, you know, we'll pay you for that time." Or that she'd be covered as part of her -- and it would be a good learning experience for her, and then he'd get her out there. Well, it was one of those deals where -- he was probably very attracted to her as a young female, but she had already had experience with Newfies and knew how to handle herself. She was really good at that. And she had this reputation, too. And the Newfies would go to the bar and drink and here she was a smaller woman than you are, and these big Newfies, and -- and they would swear that she drank just as much as they did, but she didn't get drunk. So at any rate, she was clever obviously in that regard. And so at any rate, then I had a phone call from her or I called her, and she said, well she's getting frustrated because she can't get a commitment as to when she can get into the field and that's her project and -- and -- Shane Mahoney, that was his name. And Shane had her working up some data and stuff from other projects. She was competent in doing this kind of stuff because she'd done it before. And so, in effect, he was taking advantage of her. And so I talked to Shane on the phone, and I said, "Yeah, she's frustrated because she can't get out in the field." And he's a real talker and he said, "Yeah, I'm trying to get out. We've had terrible weather, and I've been so busy I just -- with these other projects and she's been so helpful in getting these done. But definitely we've got it and it won't -- we'll still have time to carry it out." And then I didn't hear anything from her. And then I didn't hear anything from Shane either. And somehow or other, somebody who she knew here said that she just walked away. She went home to Ontario where her father was. And I thought, this isn't the way to behave. So I didn't know what happened, I didn't know the details or anything. And finally, I figured she's going to call me and she didn't. And so I finally found her through a student, I think, a phone number for her father and called and got hold of her. And she said she's so embarrassed that she hadn't called me. She'd become totally frustrated and that it was obvious that she wasn't going to get out in the field and Mahoney was just taking advantage of her. He hadn't, you know, hadn't been harassing her sexually, but he was hoping to break her down, probably. And she knew about his problems in that regard because she knew other people there. And other people were beginning to say, students too, how can you work with that guy? Female students. I don't know. So at any rate, she tried to get him to make a commitment to getting out in the field and realized that was -- and he would say, "Well, next summer we'll be able to handle it. It's not a big deal." That kind of thing. She acknowledged, "But I need you here." So she just walked away, which was probably the best thing for her to do under the circumstances. But I was, "Why didn't she call me? Why didn't she talk to me and tell me what she'd done?" And so then when I got her on the phone, she was apologetic, but she said, "It was too much for me." And she said, "I couldn't take it. I couldn't take it." I said, "Well, I understand that, but you made a commitment and to me and where does that leave us?" And she said, "I'm not coming back. I'm going to drop out completely." I said, "Well look, you were doing good work here. I don't see why you have to feel that way." She says, "Well, I'm not going to go back there." And I said, "Okay, I don't think I

want you to go back there but maybe we can find something else. That creates a problem financially, but we'll work something out. You're already had a -- at least a semester and maybe two." And so, finally, she said, okay she would come back. And I said "Well, we'll look around and see what we can put together." And so before she got back I had talked -- the Fish and Game had mentioned an interest in somebody to work -- a student to work with the bison and it would be heavily based upon vegetation and she had these qualifications. She had a good background in plants, and she was interested in it. So when she came back, we talked about it and I said, "We're still scraping for funding but Fish and Game has agreed to come up with the logistics support and some other support. And the logistics support would include aerial flights and things like that, but she would have to --" And they would provide some of the field gear. Like she had to cross the river with herself and an assistant to work on the other side where these gravel bars where the bison were spending the summer, where there was a lot of grassland. They're hard to get to, but once you get over there you can just camp. It's tricky crossing that river with an inflatable boat.

KAREN BREWSTER: This is the Delta River?

DAVID KLEIN: Yeah, And multiple channels so you have to be prepared to drag the canoe down on the gravel bar until you can find a place where you can safely get across quickly, paddle across, and then get out and you've got boots and so you can get out. And you've got to know something about the river and things like that. So I think they got her over there once with a helicopter the first time, but she said, no, she has to be over there and camp over there if she's going to do this, which was reasonable. And she was eager to do that and so we equipped her and got a female student that was top notch and they worked well together. And they were super good at handling the river crossing and stuff. The second summer we had a volunteer from Norway, a young guy. A student. He was a, I think, a senior. He had volunteered to come and do work at the wildlife unit. Well, normally, we'd use our own students if we had them, but we didn't. We asked Maria if she could use another person. She said, yeah, they could definitely use it. But it wouldn't be all that exciting because there'd be a lot of vegetation work and stuff. So this young Norwegian came and he was frightened about crossing this river. And was trying to give advice and didn't want to cross, and Maria said, "Look, we can call out and have you get picked up, but we have to get across and we know how to do it. But you have to take instructions on where to paddle." And this was hard for this guy to take instructions from a woman. And they got across okay. And then it was the same in the field. At first, you know, he would -- thought he knew a better way of doing things than they did. Especially then she did. "No," she said. "I'm in charge here." He thought he was lucky to go out with these two attractive women and his macho-ness didn't pay off.

KAREN BREWSTER: No, he was put in his place, it sounds like.

DAVID KLEIN: When they came back, he came into the office and he sort of apologized a little bit. There was some humility there. And he said, he'd really like to go out in the field again. And I said, "Well, would you go out with them again?" I'd already talked to Maria, and Maria said, "Yeah, if he's willing to come out and work, that's okay, we can

handle it. But we really don't need him." So he finally decided not to go out. And I think he got out for a few days on another project and then he decided to go back to Norway. But it was interesting. And she certainly proved herself again, but she had -- to get her to make a presentation in the class about her project when all -- it was like a seminar class that I was responsible for and all the students, they weren't all mine but some of them were, and she was. And they had to do a presentation on their project and, "Oh, I can't do that. I've never done that in front of people. I can't do that." And I said, "Well, that's part of the project. Others are doing it." "Okay." But she got so uptight that the last minute, about a week before -- she was so good at socializing with other grads and we had a kind of unique guy, grad student, who was a senior, almost a senior guy. He had worked for the Montana or Idaho Game Department and he'd done a lot of bear handling. And he was just a -- he'd been married and divorced. He was bordering alcoholic. And he decided he wanted to come and get a master's here. And I think he wanted to kick the alcohol, too, which he pretty much did. And not without some help. But at any rate, everybody -- the other students loved him. But he loved to go Friday afternoon after the seminar to go down to the Pump House (restaurant) and have beers. And the beers were pretty mild for him. But the other students loved him, but they wouldn't -- once he'd get drinking he wanted to stay there and have everybody drunk and students fortunately, both sexes, would say, "No," or "We've got other plans for tomorrow." You know, to go out in the field, and enjoy things and what. So when Maria had her chance, or her time to make her presentation, the word came back to me by some of the students that she said she's not going to do it. She's not going to do it. She can't bring herself to do it. And so I left a note for her to come in and talk to me. And she said, "No, I don't think I can do it. And it's just the way I am." And I said, "But look, you've got everything going for you. You're doing a fine job and a terrific job on the research, and your grades are top notch, and you like it here." And she said, "Yeah, that's all true, but it's just the way I am." And so, I said, I tried to say well, practice and practice and make your presentation in front of other people, other students. Which I recommended to the others to do it, too. And so, the day of the deal, she had told the students she decided it was too much stress for her to handle. But it was this older guy, drinking buddy, he sat her down and he said, "You've got to do this! Sometimes I go through the same thing myself when I was younger, and you've got to do it! And you do it once and -- You're never over it completely." And I told her no, I get nervous when I'm up talking, it's just -- And he talked her into going through it. And she did a reasonable job, you know. When she started in, you know, the color was -- getting this color coming all over her neck and everything, and -- but she kept going and then finally she got into and she did a fine job. And afterwards she came back and thanked me and thanked him very much that he had helped her get through that. And then I realized how much the students support one another and how important it is. And this guy -- eventually, we had two PhD students coming from Norway from a university, this agricultural college where we had good connections. And Bob White was teaching a course in stable radioisotope use for tracing animals, experimental animals, and they would be the potential to do that over in Norway. One was part Saami. One quarter, I think. And so could -- sort of identified herself as a -- and they're both beautiful Norwegian woman. The Saami woman, dark hair, and the other one a beautiful Scandinavian, tall, big, beautiful woman. And he fell in love with the Scandinavian. And another, a PhD student of Bob White's, fell in love with

the other gal and he was -- he did a master's and then he went to Rhode Island. And then I think when that happened, she decided, the Saami woman, that no she was going to go back to Norway. Well, the other one, she was going back to Norway and this guy went back with her, married her. They started a family, and he had to learn Norwegian. He got a job at a Norwegian sort of high school and working with -- training they got in Alaska as well as his other experience. And I visited them a couple of times and they hit it off great. And he was very supportive of her and she got her PhD and got a good job.

KAREN BREWSTER: It's amazing how much you stay in contact with your students, and you know what's happened to them since and where they've gone and the families. And you still see them.

DAVID KLEIN: Well, and I have to explain that to people like, well like Miranda who was here with her husband. Yeah, I mean, I was in love with her just like I'm in love with my daughters. It's like a filial love. And I had to rationalize that myself. I mean, as a professor. Especially, because I was attracted to them as women, too. But then when you're a professor, you've got to face up to the fact that it's inappropriate to have sexual love affair with your students, which is very easy to do with such beautiful young women. And, of course, our wives were very concerned about that, too. And didn't like the idea that more and more women were coming into wildlife. And well, even Fred Dean was -- same thing. I mean, he took on, I think, the first woman grad student in wildlife.

KAREN BREWSTER: Because the concern was you'd be going out in the field with them, as well?

DAVID KLEIN: All of that, yeah. And also, you know, in those days, you know, what are they going to do in the field when you -- How are you going to do field trips with guys and gals? Dale Guthrie went through that, and he had this beautiful woman that he obviously was attracted to and he had divorced, but she knew her way around. But he's always -- he's like me you, know, he's always interested in social behavior of humans and when you went out with a bunch of students or at a faculty meeting, Dale and I would be, you know, we would be looking at the behavior of all these other faculty. And we'd see everything, you know, that they wouldn't see. The ones that were [tapping his foot].

KAREN BREWSTER: Tapping their feet.

DAVID KLEIN: Yeah. And they didn't realize that we were doing this analysis. And any rate -- and we were interested. And Dale especially, he was very interested in the evolution of human behavior. And he wrote books on that. And we discussed a lot of that. And at one time there were some guys in -- two guys in the psychology department, I think it was, that we had some interaction through the faculty senate or something. Dealt with one of -- that may be me or maybe -- probably both of us. And they were interested in human behavior, too. And they were also doing research with behavior of pigeons and things like that. And these guys were -- they thought, well, maybe we can get

some funding. We got to one of these conferences where there's mostly wildlifers or biologists, and then we collect data on how these people respond behaviorally, differently, humans to -- differently, etc., etc. And they asked us about this because they knew we were interested. And we said, "Yeah, yeah, there's no reason why you can't do that. And these aren't closed meetings." And Dale and I had done something similar once when we were new faculty members. We got interested in -- at that time, here we just made the assumption that most faculty in the biological sciences believed in evolution. And, of course, this was back in the days of male dominance. And that -- it was like nobody likes to be -- no humans like to be studied. They don't like to be -- especially behavioral studies. I mean, biologists are out in the field studying the behavior of all these animals, and some of them the students come and they definitely want to study animal behavior. Well, humans are animals, but they wouldn't -- somehow that's not right. Well, it's not right if you're religious at all. And if you're religious at all, you have a hard time dealing with evolution. And so I just don't talk about it. So Dale and I started, at this time, before these two psychologists did their study. But we thought, "Well, let's do a survey of attitude of faculty on the sciences versus the humanities." And, you know, we sort of speculated what we'd find here on UAF campus, but we said we can't do that kind of study here because they all know us and they're not going to be free to answer questions. So we did this -- we contacted -- we wanted to do another state university similar to this but they were all bigger than us in terms of faculty, which was okay. And so, but you can't do that kind of thing without getting approval of the administration at that university. So we wrote to, I think it was Montana State at Missoula, which had similar offerings in the humanities and the sciences. And we developed this questionnaire. And we had a couple other people look at it, but it was very long. You know, you had to be able to sit down and probably take you, if you did it well, 30 minutes minimum. But we tried to make it interesting, and tried to not put any of our own biases in there. And we knew that if it's going to be objective and it's talking about human social behavior, there's going to be a problem. But let's give it a try. And so we -- In those days you had to do a mimeograph and things were you didn't have the printing operation. But we put this thing together. And I've still got a box with it somewhere will all of the returns we got. And I forget how many we sent out, but we sent it to all of the faculty there at Montana State. And I guess they had to be regular faculty. And we had all these questions, and we started out with just questions about their education and training and background, and then toward the end we started getting into whether they were church goers or their family had been church goers. And then finally, then we're asking them how they felt about -- did they believe in evolution, and what else? We didn't have -- I think that was mainly the evolution thing. But, of course, a lot of the questions were lead up, and including ecology and understanding natural selection. And then, actually, questions do they really believe in evolution. Or do they believe in it, but are they still believe in their church beliefs or what -- Trying to find out what their church belief was, whether the church accepted evolution. At any rate --

KAREN BREWSTER: What were the results of the analysis?

DAVID KLEIN: Well, it took a while for -- And we had some kind of follow up that we sent. I don't remember the percent results. It was about 25%, I think. I'm pretty sure it was about that.

KAREN BREWSTER: Twenty-five percent what?

DAVID KLEIN: Twenty-five percent returned.

KAREN BREWSTER: Oh, okay.

DAVID KLEIN: Questionnaires. Because it was strictly up to them whether they wanted to answer.

KAREN BREWSTER: Right.

DAVID KLEIN: And nobody responded in saying, "I'm not going to answer anything like this." They just don't answer. They just push it aside.

KAREN BREWSTER: Right. So of the ones returned, do you remember what your results were?

DAVID KLEIN: Well, what we found was that there were a surprising number of people in the biological sciences that didn't believe in human evolution. But I don't know what that was -- the proportion. And, of course, so that still meant that the highest number of people of faculty were in the biological sciences. In the physical sciences, it was very low. In the social sciences, well, we didn't -- it was low. It was low in everything. And the humanities, the lowest. And I don't know whether we had much in the social sciences.

KAREN BREWSTER: You mean the humanities, it was the lowest number of people who did not believe in evolution?

DAVID KLEIN: Pardon?

KAREN BREWSTER: So the humanities had the lowest number of people?

DAVID KLEIN: Don't quote -- this isn't anything we would put in a book.

KAREN BREWSTER: No.

DAVID KLEIN: Because we didn't do any more follow up on this. I think -- I mean, I wanted to at least do an analysis, but that would have taken quite a bit of our time. And if we're going to do anything with it, we had to deal with the small return of the questionnaire and then how much value can you put on this. Were there people that believed in evolution didn't return it because they were busy? And some faculty members

are, I'm one of them, that questionnaires are too time-consuming and I've got these other things that I'm working on.

KAREN BREWSTER: Right.

Or also maybe the ones who believed in evolution were offended by the questionnaire and wouldn't answer it?

DAVID KLEIN: Yeah.

KAREN BREWSTER: There was all kinds of factors.

DAVID KLEIN: I didn't think we should be asking about religious beliefs. Sure, there's a lot of -- all kinds of reasons that could do that. And this was too damn much social science for both of us. We figured, well, it was a good exercise, and we had some satisfaction of doing it. But let's get on. And both he and I were super busy. And Dale was going ahead and writing a lot on -- starting to write a lot on primate behavior leading up to humans as higher primates.

KAREN BREWSTER: Well, but it's interesting back to about your students. And is it typical for faculty to stay so connected to their students and follow their lives and their careers?

DAVID KLEIN: It's different. It varies. Some other faculty do that, but they were faculty who didn't have as many students as I had. So I had like 66 students that actually got degrees under me. And more of them, some, a few didn't make it or dropped out of their own accord. And I was on graduate committees for hundreds more. So that -- in Sam Bishop's write-up, you know, it makes the point of the 66 students and that included master's and some -- about ten PhD's.

KAREN BREWSTER: Is that a lot for a faculty person to have had that many?

DAVID KLEIN: It's unbelievably high because the uniqueness I had was I was full-time employed by the Fish and Wildlife Service. Most faculty in those early days had 9 months' salary. In the summer, they were without salary, unless they brought in funding. Well, if you're teaching, it's hard to write proposals to justify funding. And the funding would have to include your summer salary. Well, some people were employed, at that time, by the research institutes and they were full-time research, but they were good at bringing in research and so the topic was a hot ticket item. And they were fully funded. They didn't have to teach. Well, some of them wanted to teach. If they were fully funded, they could buy out their --

KAREN BREWSTER: Their teaching time.

DAVID KLEIN: Buy out the -- if they were fully funded, yeah, they could buy out their teaching time, but even that they could say, you know, postpone the research or move it if they wanted to teach. But frequently they could buy out because some of them did want

to teach and some of them had to teach fulltime and work in the summer teaching summer sessions and stuff if they wanted to -- if they were raising a family and trying to build a home and get settled in.

KAREN BREWSTER: So what you're saying is you had more time to get to know your students? You were more connected?

DAVID KLEIN: That's part of it, but it was my job to advise students and take them on and I -- As a wildlife unit person and as a unit leader, I had administration for the unit, which I wanted to minimize as much as possible. I had a secretary who handled the accounts at first, as well as being a secretary. And I then had -- there was just one person at first and then I had an assistant unit leader coming later with the same constraints on them. And then my job was to help bring in money to support students. Some of it came in as part of the agreement. The Fish and Game contributed about \$25,000 at that time to support strictly for students stipends or student research.

KAREN BREWSTER: So you really got to know the students and their research projects?

DAVID KLEIN: Well, as an advisor I believe that I wanted to -- if it was in the field, I wanted to get out and the first time they're out in the field. And especially students, a large percentage of them didn't have the experience in Alaska. Most of our students were coming from outside of Alaska or the ones in Alaska were -- might have some outdoor experience and a little bit of understanding but in the winter they didn't have much winter understanding because they were in school themselves. And I took over some of the questions on winter ecology that other faculty couldn't take, and they had this attitude that -- including the Wildlife Unit at first when I was first here, was the Unit leader -- his specialty was wetlands and waterfowl and some furbearers, wetland furbearers. And so, he was -- I was one of the first students who didn't --- fortunately, I was accepted as a grad student without funding for the first year but I wanted to come back so bad that I was accepted by the then Unit leader, which was Neil Housley [sp?], and he was only unit leader for two years and then they offered him the deanship.

KAREN BREWSTER: Right.

DAVID KLEIN: And he had -- He was a senior guy who had done a lot of good research in Michigan on Upper Peninsula on moose habitat relationships. So he understood my interests, but when he accepted me it was just accepting. He didn't nail me down to anything. So then when I arrived, the guy that he had hired -- the university had hired to teach wildlife courses, John Buckley, when Housley [sp?] moved to the deanship, he then became Unit leader. And he was a good person to do it because he had two years of experience in Alaska and he had started research out at Minto Lakes. And he was -- he was a young PhD, but he had some experience and he rose to the occasion. But --

KAREN BREWSTER: It sounds like you had such good mentors as a student that you wanted to do the same for your students? Is that what you mean?

DAVID KLEIN: Yeah, but I was just finishing this deal about -- I wanted to study -- Because when I first came, I worked down on the Kenai and I was interested in Alpine flora and fauna and especially the mountain sheep and mountain goats. And mountain sheep and mountain goats were down there, there was moose down there, and there were no deer. And I was working mostly for the refuge (Kenai National Wildlife Refuge), but the refuge was supporting one of the biologists with the Fish and Wildlife Service. They would partition things on the basis of species. So the other guy that I -- that had me do some work down there was Bob Scott, who was a mountain sheep specialist. And he actually had started a PhD at the University of British Columbia that he never finished because he was so busy. And he had a master's degree from Oregon State. And sheep was -- He was fascinated and he was a brilliant guy. And so I worked for him. And then after that, spoiled me from wanting to work with anything else. But I had given up a full scholarship at -- with a likely -- I was told I was a finalist. It looked like I was going to get an offer at Idaho State on sage grouse studies. And I thought, well, I could live with that in Idaho but sage grouse wasn't what I was interested in.

KAREN BREWSTER: Alaska's better.

DAVID KLEIN: And after I had spent the summer on the Kenai doing mountain sheep work with-- for Bob Scott. Oh man, then you didn't -- wildlife unit students didn't tackle anything that was one of the subject areas of the Fish and Wildlife Service biologist unless it was a segment of it, like moose. And then you could do some, say, where you look at here in interior Alaska, what about this mining and how that affects winter browse activity and things like that. Could do those kinds of things. And, of course, I was spoiled, too. I wanted to do wildlife work in the wild. So it was obvious that mountain sheep -- I was so fortunate to be able to do this and continue to do it as a grad student, but then I figured mountain goats. Nobody was working on mountain goats. There was only one thesis done on mountain goats and that was in Idaho, I think. So I figured, well, that would -- I could do that. I could handle that. Because when I first came, I was pretty naïve about the master's degree, and most people didn't go on for master's. And at the University of Connecticut there might have been one or two going on, but I think they were -- You could get hired with a bachelor's degree and move up pretty rapidly. There were one or two in Forestry, I know, who got -- and then there was that other university then, the University of New York at Syracuse had a couple of students who were doing master's. At other wildlife units, doing, yeah, master's. Maybe a rare PhD. But if you went, like Brina Kessel, she did a PhD in biology and ornithology at Cornell. But she taught mammalogy and ornithology and wildlife-related courses. And then, they hired the writer from Homer. Now lives in Homer.

KAREN BREWSTER: Oh, Rearden.

DAVID KLEIN: Rearden.

KAREN BREWSTER: Jim Rearden.

DAVID KLEIN: Jim Rearden, yeah. And so at any rate, now we can go to where you wanted to go.

KAREN BREWSTER: Which was just to conclude the topic about the students, and that it seems like you really are attached to your students and care a lot about them. And is that typical?

DAVID KLEIN: Okay, yeah. These are things that I -- that were happening to me, so now in retrospect I can say these things but I may not have thought of it this way. I'm sure I didn't at the time. When I was here and everything went so well for me, in terms of my own education, that when I came to be and get this job as Wildlife Unit leader, it was sort of like it's my goal in life and how did it happen that I here. I was very modest and I still am. And I didn't think -- I felt, "Oh man, this is a real challenge for me because I have to rise to the occasion." I was working sort of borderline. When I took that position, I still hadn't finished writing up the thesis on the deer ecology work for the University of British Columbia. I took the job starting in '62 and I defended the thesis in '63, so I had to finish writing here. So I didn't have the confidence of having completed the PhD. And there was some, could I handle it as a married with two young kids and the third one just about started. And, I mean, so here I was, having the opportunities that I never thought I would have when I was in Connecticut. But it was more than that. Can I rise to the challenge? And then I realized that -- early on, I mean, I obviously had support of other faculty, and as members of the committees. But since I was the one, even as a brand new faculty member, which most of them were, too, and that weren't through the Unit and they were envious that I had a full-time job. And some of them didn't want to take on grad students. There wasn't much of a graduate program. Because they didn't get salary for teaching graduate level courses. They only got salary for teaching undergraduate level that led to the bachelor's degree. And so the Wildlife Unit program sort of broke the ice and I was a major player in the development of the graduate program. But I was not only the major player, but after a while and I got more self-confidence, I realized that I could have more influence on the development of the program, the graduate program. And so I could work for money that maybe another -- the topic that was not in my field, which at the beginning, I took on all these projects, student projects that were sometimes duck-related, sometimes marine mammal, and sometimes vegetation because there was nobody else to take them on. And then you could get other faculty to be committee members, but they didn't have the job of handling all of this and advising the students. And the Wildlife Unit was strong in requiring students to do -- early on it was like monthly reports for students. That's what I had to do. And sometimes -- and they had to put out a quarterly report. It was quarterly reports, I guess. And then finally we broke that down to yearly reports for the students so that we'd have some record of progress, because there was no graduate dean or graduate program through set standards and progress for graduate students. Now it is in the university and it's not so much on the shoulder of the professors. So it was easy for students to not make any progress if the professor was busy doing other things. While they were funded, the students were funded and taking courses, there was this attitude it only took -- you automatically got it after you've been here for a while. But then there's still this degree situation. We couldn't -- Then early on, only a master's we couldn't -- we didn't offer PhD's because it was not qualified. The university

wasn't. In biology and wildlife or any programs at the university. There was an occasional oddball one through one of the -- Geophysical Institute, for example. Like the Japanese guy that was retired from --

KAREN BREWSTER: Akasofu.

DAVID KLEIN: Akasofu, right. And they actually were one or two done through the Institute of Arctic Biology. And they were at odds with the biology and wildlife department, because they didn't want to have to go through the standards for the department. And it was sort of like the whole European system where you work in research for so many years, then you write a thesis and then you award them a degree. And it wasn't unique to this university, it was common in other state universities.

KAREN BREWSTER: So when was the PhD program started for wildlife?

DAVID KLEIN: I can't tell you that, but it was probably about -- Probably wasn't until about the late '70's or early '80's.

KAREN BREWSTER: Okay.

DAVID KLEIN: And so then -- but that's like a minimum of three years without a master's. Well, and right away the department felt insecure, and the best way is to require a master's in wildlife, a master's first and then the PhD. Well, nowadays it's not -- outstanding applicants with outstanding background can go on to a PhD. The problem with that is that the master's was sort of training ground if you're going on for a PhD and your chances of doing a good job are much better. And some of the students who did master's, people would say, well, they produced such a wonderful master's and did excellent fieldwork, etc., etc., and announced it's at a PhD level. Well, they'd say we ought to apply and see if we can get an expectation and get the PhD instead of the master's for that student. I said "No, what kind of precedent does that set? And why shouldn't other faculty be able to do the same thing for their students?" And then if you have -- if it's just a faculty member, major advisor that's doing that, that's not the way graduate programs should work. That's too much favoritism. And that's leading back to why -- were there any other faculty like the guy who taught -- who married a woman, an Inupiat from Barrow.

KAREN BREWSTER: Oh, Steve MacLean.

DAVID KLEIN: Steve MacLean. Steve MacLean, he graduated from, was it Berkeley, I think. And so he -- there was sort of this attitude that that was the top notch school for ecology and biology in the U.S. In some ways, it was justified. And he graduated and it was in ecology. And he did a lot of -- a lot of his research was shorebirds and insect productivity up on the tundra. He was an excellent scientist. And he's one of the best ecology teachers we had, although he occasionally got real poor student evaluations if the level of the understanding of the students was low. They never connected with him and he wasn't good at connecting with people that weren't very bright. And it's a problem at

a state university. But the students that were bright, he treated them super well and the graduate students he had, he did a good job. He frequently had some research funding but sometimes he would take on others if they were through the Wildlife Unit. But he had a really close relationship with his students. And so they were sort of like me, I mean, he was like me in some regards, He saw them as some young, like -- he wasn't old enough to have his own kids that big, but he was treating them almost like son or a daughter. And he certainly favored the son approach, but he changed with time, too. And so he would, instead of doing -- when I'd do a potluck that was a potluck for essentially all the grad students who wanted to come. And some of these were students who would go out on the ski trips that were not -- they weren't in the wildlife program, they were in biology mostly. Even occasionally there was somebody, especially overseas students, that were maybe in some other area. And so to me it was good to mix students, not just your own students. Steve tended to -- a potluck or dinner or his handful of students there in his home, which it was nice to do that. He did it a lot. Whereas some faculty members wouldn't do it. And I remember maybe one fairly young faculty members that thought that there was something wrong with the salary system because they don't give you enough to put on these dinners for the students. And early on, yeah, if you'd -- the potlucks, it was hard to do, couldn't do potlucks when students -- when -- at first because the students had no way of dealing with the food. We would maybe do peanut butter and crackers in their -- If you were staying in the dorm, you didn't have potlucks. And the major advisor invited the students, but it was the leader of the Wildlife Unit, he didn't discriminate against, and only favor his own students. Any wildlife students were then -- they were the only graduate students at the time and they were there. And there was like a wildlife club, which included all of the -- and some of the undergraduates, but the faculty would be involved including Ivar Skarland and Otto Geist. They just loved us. They were bachelors and they enjoyed us coming to a game dinner, which we enjoyed putting on. And it was open to families and the whole works. And so it was a good environment, and part of it was a small university.

KAREN BREWSTER: I think some of it may be also a testament to you that your students appreciated you and found you to be a good mentor, and so it was a mutual back and forth relationship.

DAVID KLEIN: It is, it is. And I'm sure that's part of it, but it's also that when I was advising students that were doing a study on seals off of Kodiak Island, or sea lions in Prince William Sound in a rookery there. And I had to learn as much as I could. I wanted to, because how could I advise them if they came to me and had questions about what they're finding. And if I was familiar with it, especially if I was going out in the field with them. I never felt like I was giving them all I could, but then I realized in retrospect that we talked about it and that's what they needed. And everybody should have the humility to be in a learning environment. And so I've always felt that, you know, I've always been a student myself and I want to learn as much as I can about the world. Like, if I go out for a walk by myself, I mean, I come back having learned something that I didn't expect to learn. And I feel good about that because I'm curious and ecologically curious. And the two concepts of ecology and evolution go so much together. I mean, why are these birds that I see out here doing these things that they do, that are very

strange, and how can they do it and why? I have to come up with a hypothesis, and then through further observations I either sort of strengthen my hypothesis or I change it. But I've been watching one of the chickadees has this over long beak on the top, and it looks so helpless. And it's so flimsy. And it's been a problem in Anchorage a lot, coming to bird feeders. And I had all these different hypotheses, and asked Audubon people, friends and former students of ours down there. They just didn't want to accept that maybe it's related to being fed so much artificial food. And they just said, "No, it couldn't be that." And I said, "Don't say it couldn't be. You haven't found anything else that you can --" Well, isn't that a hypothesis, it should be tested. And, well, it's something you could test but not easily, but you could do it. And at any rate, now I just saw this one -- I saw one last year. I don't know whether it's the same one. But I saw this one and I thought, "Oh man, that's probably not long for this world." And then I looked at it and the feathers and everything, it looked okay. If the feathers get kind of gruffly looking your figure it might be having a hard time, but it looked okay. And then I saw it coming there and, well, how's it going to feed there, in taking up a --

KAREN BREWSTER: Sunflower seed.

DAVID KLEIN: Sunflower seed. Now a lot of people are feeding shelled sunflower seeds, so the birds don't have to do that. And I'm saying, look, come on, the birds have to use their beak and pecking away. And what about the woodpecker, you want to stop them from pecking away? So at any rate, I saw this thing. It comes with others, so it must not be too bad off. And I saw it going to that feeder and turning its head sideways because it couldn't pick up a sunflower seed. And it did pick up a sunflower and flew away with it. Well, I don't know how it got into it. I thought, well maybe it's got strong jaw muscles like the redpolls can keep squeezing it and finally it'll crack. But they've got shorter beaks and strong jaw muscles. And chickadees don't seem to be built that way. And they peck away and then they finally get it to crack and they can get into it quickly and do it, but they have to have it against a hard surface. Well, it's hard to do that with this curved beak. But then it comes -- I put the suet up. It came to the suet more frequently than the others. And I saw that thing tearing away in the suet and it was using that curved beak to drag it out. Where the other chickadees -- it was getting much more effective than the other chickadees in getting the suet out. Almost better than the gray jays, you know. They're not as big, but -- And there was no weakness there. I mean, it was just powerful and it wasn't breaking it.

KAREN BREWSTER: It's adapted for eating suet.

DAVID KLEIN: Well, it could be. You can come up with hypothesis of adaptation. Maybe it's species change we're seeing. What are chickadees adapted to do? They've got these much more pointed beak than say redpolls and grosbeaks that are obviously seed or fruit eaters in the wintertime. And the chickadees don't go for fruit and stuff like that. But what are they doing when they're not coming to the feeders and they were here before we started putting the feeders up. Well, what they do is they're mainly mining insect larvae or overwintering mosquitoes, adult mosquitoes, under the bark of mainly white spruce. But some of it's under others. But bark of white spruce is more shaggy, and they reach in

there and grab these overwintering mosquitoes. They're in there, and they've got antifreeze in them so that if they don't get eaten by a mosquito, they'll be coming out in the spring. And then there's all kinds of pupae of other insects that pupate over the winter in that form and they're in there, like the spruce budworm, I think. So they're playing an important role and this is high quality food. And you think one mosquito, but no they're - that's going up in the trees and they don't peel the bark off, they reach in there. And what other birds that do that are the brown creeper. It has a curved beak, so it's even more adept at pulling out, but it doesn't do as well here as the chickadees with shorter beaks on average. But they're here. And it's the one that goes up the tree whereas the nuthatch goes down the tree when it's feeding. And they're both have -- and the nuthatch has stronger beaks, too. They're both doing similar things but not quite the same.

KAREN BREWSTER: We'll have to see what happens with that curved beak one.

DAVID KLEIN: Oh yeah, definitely. But I probably won't see what happens because it'll be gone. So this -- I don't know whether I told you this, but I told it to somebody else. Seeing this kind of snow this deep, voles are doing very well and it hasn't been all that cold.

KAREN BREWSTER: 'Cause we only have about three inches of snow.

DAVID KLEIN: Yeah, but they're living under the snow mostly. And they can go through the snow because it's not crusty or what. And they excavate, and they're digging, excavating quite a lot.

KAREN BREWSTER: I have voles underneath my bird feeder.

DAVID KLEIN: Yeah. And that's what they're doing. And I had one on the windowsill feeder, a little guy. And I figured it was the last of the litter. But he didn't have much fear. I figured it was a male taking high risk. And so at any rate -- and I see him down on the ground and I could identify him for a while. He's a risky one and I saw him taking a real risk. I think they're hearing the chickadees when they come. I can't hear the chickadees, but there's a high pitch. In the snow, I'm sure they can hear them. And they come out when the chickadees are there. Well, that makes sense because chickadees come in numbers. If a hawk comes they scatter and the hawk has a helluva time getting them. And they're going to be -- they're joining in. It's like when chickadees come, frequently nuthatches if they're here, they'll come with them or other birds. And they do this. They get together because predator avoidance. And when I see one vole, usually three or four are out at the same time while the chickadees are there. If I'm looking, sometimes if I just go out and look, and I think, well, a vole will come up pretty soon, sometimes one will. But it's usually when chickadees -- I'll look, and they're down there. Well, you can say they're out because the chickadees are knocking seeds down, that's not the main factor, I think. It's because --

KAREN BREWSTER: It's a predator -- ?

DAVID KLEIN: Yeah, and they're more brave. They're out on top of the snow and they're going through tunnels and coming around and having a great time. And this one of them was working, it was just a little one again, working its way directly under the deal and the red squirrel came doing the same thing. Because here were all these -- and they were picking up white spruce seeds that settle down, too. So they're down there and you see they get one and for a chickadee they don't mostly go on the ground to do this, they mostly -- Occasionally, they would but rarely, whereas the redpolls used to do that a lot. But the voles are -- this one vole was working underneath and it seemed to be preoccupied with finding something and then it'd go on. And this red squirrel is coming from this direction, and out of the corner of my eye, and it's coming out because if the chickadees are eating something there must be food available, too. They're not after the chickadees, they're after food just like the vole is. But it's on the ground and this vole is working there, and it's not paying attention to this squirrel that is not paying attention to it probably because the vole figures, "Well, I'm going to leave before it gets close." And the squirrel figures it'll never stay there. I mean, it won't have a chance. "All I'm after is seeds. And feed the seeds that I can get that are dropping off." And so I'm reading, you know, what they're thinking. And they are thinking. And so, then he gets close and finally the -- just as the vole looks and starts heading away, the squirrel is so close there's something like 'click' and becomes a carnivore. And it tries --

KAREN BREWSTER: Really?

DAVID KLEIN: It tries to go for it and get it. And I figured it had it. I figured this thing couldn't get away, but it immediately dived into the snow.

KAREN BREWSTER: The vole did?

DAVID KLEIN: The vole did. And the squirrel grabbed and it missed it because it probably went diagonally when it --

KAREN BREWSTER: Right, into its tunnel or something.

DAVID KLEIN: And then it tried to find it again, but by this time the squirrel -- the vole had stayed under the snow.

KAREN BREWSTER: But yeah, squirrels are not predators.

DAVID KLEIN: They can be predators. It's sort of like ground squirrels on the North Slope. They get run over by the truckers or on the Haul Road and they come out there and eat the -- I mean look, that's good protein.

KAREN BREWSTER: Right, but they didn't kill that.

DAVID KLEIN: Pardon?

KAREN BREWSTER: The squirrel was being a scavenger in that case, but to have a squirrel actually go out after --

DAVID KLEIN: That's true.

KAREN BREWSTER: -- and kill.

DAVID KLEIN: That's true. And they would be cannibalistic, which usually is avoided. But once the thing is dead and run over --

KAREN BREWSTER: Yeah, but to have a squirrel go after a vole seems very strange.

DAVID KLEIN: If you're interested in high quality food, then after it's run over and doesn't look like a squirrel anymore, it's not squirrel.

KAREN BREWSTER: Right, that makes sense to me, but a squirrel going after a live vole.

DAVID KLEIN: Okay, then I have to tell you other observations I had. Once Ned (Rozell) told me about --

KAREN BREWSTER: Maybe we should turn this off.

DAVID KLEIN: Yeah.