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NA2749 Ron Davis, interviewed by Pauleena MacDougall and Adam Lee Cilli

Ron Davis
University of Maine

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Description: **2749 Ron Davis,** interviewed by Pauleena MacDougall and Adam Lee Cilli, September 13, 2013, in the Maine Folklife Center in South Stevens Hall at the University of Maine, Orono. Davis talks about the beginnings of his career in zoology; coming to UMaine; the beginnings of the Climate Change Institute; his affiliation with the CCI causing tension within his department; his own research on lake eutrophication and acid rain; and his experiences with the CCI.

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Related Collections & Accessions

Restrictions

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Notes

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Narrator: Ron Davis

Interviewer: Pauleena MacDougall

Transcriber: Adam Cilli

Date of interview: September 13, 2013

ABSTRACT: This interview took place in an office in the Maine Folklife Center in South Stevens Hall at the University of Maine. Pauleena MacDougall, director of the Maine Folklife Center, conducted the interview. Her research assistant, Adam Cilli, was also present but did not participate in the interview. In the beginning of the interview, Davis discussed his early career, which began as a faculty member at Colby College and extended to his first years at the University of Maine in the early 1970s, where his affiliation with the Quaternary Institute created some discord within his department for a few years. Later, he talked about several of the research projects in which he was involved, including lake eutrophication and acid rain. He also shared some of his experiences with the Quaternary Institute.

Note: This is the transcriber's best effort to convert audio to text, the audio is the primary material.

MacDougall: This is Pauleena MacDougall. It's September 13. We're at the University of Maine with Ron Davis to talk about his work and his involvement with the now Climate Change Institute, used to be Quaternary Institute, at the University of Maine. So, Ron, can you tell me a little bit about your educational background and how you got started in your career?

Davis: Well, I didn't get involved in quaternary-type studies until a little bit after I had gotten my Ph.D. I graduated in 1954 from Grennell College in Iowa, went to the University of New Hampshire for my masters in zoology, and then to Cornell University for a Ph.D. in zoology. My actual thesis topics, both masters and Ph.D. involved a great deal of botanical work, and animal work as well. I did my master's thesis in the Great Bay area of New Hampshire, in the salt marshes; a descriptive study. And my Ph.D. in Maine, along the coast, describing, in an ecological manner, the spruce-fir forests of the coast. And that's where I first became interested in longer-term paleo and ecological aspects of ecology. Because, in the process of doing my work in the coastal spruce-fir forest, I discovered that pollen analytical work had been done to reconstruct forests in Maine. One of the leading investigators was Potzger and another was Deevey, who was a fairly prominent ecologist in the mid to late 1900s. And I found the pollen were quite fascinating, and I carried that fascination with me into my work when I became a professor at Colby College, where I worked for about ten years. And my interests at that time were broadly ecological any also lymnological. I started work on the lakes—eutrophication histories of the lakes in central Maine. Not going back very far, mainly current lymnilogical work. And I began a study, mainly with NSF support, of the surface pollen, modern pollen, in eastern North America—ranging all the way from, as far south as Tennessee, and as far north as the northern tip of Labrador. Because it had occurred to me, at the time, that the interpretation of pollen histories, in terms of the vegetation they reflect, really required an understanding of the

relationship between vegetation and the pollen rain that resulted from that vegetation. Because, as we know, there isn't a direct proportionality between the abundance of the kinds of plants in the vegetation and their representation in the pollen. And so, I began this large study. And, at the same time, I was interested in other aspects of the paleoecological record. I did some work down at Mount Desert Island on fire histories, and started work with very fine stratographic detail in short course sediments and designed my own core to do that. And that include fine particulate charcoal analysis of the core, and I believe I was the first one in North America to do that. And that led, together with workers in Europe who had started doing the same thing, to a broader understanding of vegetational dynamics, because you could add the fire component to that. And I also started work (in about 1967, while I was still at Colby) on bio-turbation of lake sediments by the creatures that live in it. Because of the detailed stratographic work covering only a few hundred years of the past required a rather undisturbed record of stratographic sequence, without any mixing. And so I started experimental work with tubifesent worms, which live in perfundal lake sediments (deep water lake sediments where cores are sought) to see to what extent they smeared the stratographic record. And so that's how I got into the areas related to the Quaternary Institute, which at the time was interested in mainly glacial geology and paleoecology. And initially the archeological work didn't start; that started happening a small number of years afterward, and that filled out the picture, together with other things like glaciology. So, I was at Colby; I was a little disappointed in Colby because I was interested in environmental aspects of ecology, that is the pollution and that sort of aspects of ecology and wanted to establish an environmental institute, and Colby wasn't interested. They didn't want to distract from the teaching component by getting too involved in research, even though I had planned to involve students in the work. So, I was kind of looking around, thinking I might move, and Hal Borns, who was the founder of the Quaternary Institute, invited me to come up here.

MacDougall: How did you meet Hal?

Davis: Well, I had met him at conferences previously, because, before I left Colby, I started going to the International Quaternary Association conferences. The first one, I believe, was in western USA, where I met a number of people who shared my interests. And I had begun to publish some of my work (from 1965 to 1970, before I left Colby), and Hal knew I was interested in that, and I'd given some papers at the meetings he might have heard. At the time I think he was forming a group (the Institute hadn't been formally established), but he was in the process of forming an institute. One of his ideas was that members would have joint appointments between their academic departments and this interdisciplinary unit. Which made sense in one way, but it led to a whole series of complications for certain individuals, including myself, in that the demands of the department were quite different from the demands of the Institute. And, so, Hal was a good negotiator and he got around most of those, but not all. So that's how I got started with the Institute.

MacDougall: So, which department did you end up in?

Davis: In what we called botany and plant biology at that time.

MacDougall: You are technically a zoologist?

Davis: Well, no. I wasn't really a zoologist. I was always a biologist. My undergraduate degree

was in biology, although my graduate degrees were nominally in zoology; that's because that's where the professors I wanted to work with happened to be. And from the beginning my work always involved plants as well as animals. And that continued throughout my career.

MacDougall: So, what were some of the difficulties with getting started in the department as…

Davis: Well, space was one. And the Quaternary didn't have its own space at the time. So that was a major problem, which nearly upset my career at that time, because I had no place to work, and I was plunked down in somebody else's laboratory, and I needed a lot of space for cores and other instruments that I used. So that led to a lot of friction in the department, and as a matter of fact the department, by a very close vote, failed to grant me tenure. And I had to go through the tenure process, and the rather unusual result was that the dean overruled the department. Which, because of the nature of the objections, led to my being granted tenure in the department. Which had its origins in a couple of factors, one of which was the department wanted a very different type of person, and through Hal's politicking on campus he was able to get the agreement of a very narrow majority of the department to hire a person of paleoecology and ecology interests. They wanted somebody very different. That led to sore feelings on the part of quite a few individuals. And then this conflict I had over space, which led to a whole lot of little tiny conflicts, which led to my rejection by a small majority.

MacDougall: So, did that ever get resolved so that you were comfortable?

Davis: Oh, yeah. I was comfortable after another five years or so…. And eventually the same people who rejected me became my friends, so it worked out O.K. But there was always a little bit of tension for me, both department and Institute, because many of my interests, and a lot of my time, was spent on research that was not long-term paleoecological research. So, for example, I got involved with a collaboration with Steve Norton (who is a geochemist) in reconstructing lake acidification sequences in Norway and northeastern United States. Using the kind of techniques I started with early on in my career, very high resolution stratigraphic work, which spanned only a few hundred years, to start with the pre-Industrial Revolution for two or three hundred years and then come up through the Industrial Revolution and see how humans had affected lakes, not only from fallout from the atmosphere and lake acidification from acid fallout, but also land use (like forestry and agriculture) impacts on lakes. Which was not a real emphasis in the Institute. The Institute was interested in longer-term kinds of things, and although I was applying the same paleo-ecological techniques to this, it was of interest mainly to modern, European-style cultures in using the land, rather than older archeological emphases of pre-European influences in North America.

MacDougall: And it sounds like you were almost anticipating the Climate Change Institute with that work.

Davis: A little bit, that's right. More emphasis on that now. But, at the time, I did collaborate with Rob Onecson up at Monsongen Lake, and that work never became fully published. But we did come out with some reports, and a couple journal articles, but not very much. And I did some work collaborating with Dave Sanger over at the Hirondo area and a few other places.

MacDougall: How do you think your research contributes to the mission and goals, in a broader sense?

Davis: I think that my work mainly contributes to an understanding of the dynamics of the landscape, and you know that climate operates on a rather large scale, in comparison to the impacts of someone cutting the woods of a watershed in the lake. And so, I'm more focused on the dynamics of the landscape, both from the effects of natural disturbances as well as human influences. And that type of emphasis…now, climate plays a role, too, but not so much on a local scale. And, as you suggested, it did eventually tie in with what the Institute was doing, but… what was your question?

MacDougall: How your research contributed to the goals and mission of the Institute.

Davis: Well, early on it met the goals by providing information for archeological reconstructions. And, at the same time, it also reflected long-term climate change. With one paper I did, George Jacobson joined me as a collaborator, in reconstructing the map, at thousand-year intervals, starting with glaciation and deglaciation. I don't know if you've seen any of that. It's used now in the quaternary geological map of Maine, showing where the ice was, where different zones of vegetation were… and that's been useful to both workers in archeology and paleoecology.

MacDougall: Did any of your interests change as a result of being part of the Institute?

Davis: I think not. I did collaborate a lot, but my interests were always there. The kinds of things I did were more diverse than most other researchers.

MacDougall: Maybe you could speak about the structure of the Institute and how it has changed over time.

Davis: The basic structure has stayed about the same. Most of the senior members of the Institute (that is, faculty, as opposed to graduate students and technicians) have appointments in other academic departments. And at least half of the members are in the geological area. And that's a close, easy collaboration. And also it's physically close, so that works very very well. The biologist and the archeologist components were a little bit more removed. But I think that generally has worked. I think that my case… early on, during the growing pains of the Institute, and the transformation of the university from strictly a teaching institution to more of a research and teaching institution during the '70s, solved a lot of the problems, at least that I had initially. When I first came in 1970, in my department (where there might have been ten faculty) there were only two or three that were really active researchers, and about half of them were servicing the agricultural industry.

MacDougall: It certainly has changed since then. Hal told us a wonderful story about the first NSF grant. He got the NSF grant, and nobody knew what to do with the money, so he had to put it in a checking account.

Davis: That's how it was at Colby. I was one of the few faculty that got grants. By the time I had gotten here, I think they had their methods worked out.

MacDougall: What are some of the greatest obstacles the Institute has faced since you've been here?

Davis: I don't know, because I was always so busy doing my own thing. And so I don't get involved; I never did, in the administrative aspects of academia. The Institute has been a wide

success, and ever since I became associated with it, it has continued to grow. When I first came the only two members, other than Hal, were George Denton and myself. We were the earliest two members of the group; I don't know if it was called the Institute in 1970. And almost every…I don't think there hasn't ever been a three-year gap when someone new wasn't added to the Institute.

MacDougall: And has the Institute received adequate funding?

Davis: I think Hal has done very well. To what extent it was adequate or inadequate or generous I can't say. But I think that most Institute members, or virtually all Institute members, were capable of raising their own funds. And that was an understood requirement in becoming a member of the Institute faculty from the very beginning.

MacDougall: When you started in the 70s, there was kind of a strong environmental movement going on in the country. I remember there was a lot of discussion about acid rain.

Davis: Well… acid rain beginning in the early 70s, but those were the eutrophication days.

MacDougall: With hindsight now… have you been involved in any of those discussions in a public way, in terms of environmental changes?

Davis: Yes. When I was at Colby I became one of the members of the board of the Natural Resources Council of Maine, and I regularly attended their meetings and participated in their deliberations. After that group got more organized in the mid-60s, its first issue had to do with the Allagash controversy… that was the beginning of the Natural Resources Council. And sense then it has become the leading environmental lobby group in the Maine Legislature. And after it got organized it got to be that different people on the board represented different organizations in the state, because it was a council. And I represented the Nature Conservancy for maybe five to ten years. And when I moved up here it became increasingly difficult to attend the meetings, because Augusta is so far, and there would be a couple of things going on every month. So I gradually slid away from that, but I was always involved in environmental issues—both as an environmental activist and as an academic. So, my research from the beginning had environmental aspects. For example, I started and eventually published a book on lake eutrophication in Maine, which was an important environmental issue in the 60s and early 70s, and continues to be an environmental issue, but others have moved in to share some of that space. And then, when acid rain came along, I applied my paleo-ecological experience to reconstructing lake acidification sequences, because the big debate was, well, we have these acid lakes… lakes seem to be becoming more acidic in the northeastern United States and especially in Scandinavia in Norway, where the landscape was prone to easy acidification due to the absence of carbonate rocks and very granitic type of terrain. And to prove the case that it was humans that was acidifying the lakes, you had to show that lakes were less acidic in the past. But the actual direct lymnological data on lake PH was very sparse. It went back a few decades and that's it. So if you could paleo-ecologically go back and show that the lake was much less acidic, before the Industrial Revolution, and there was a parallel between the inferred emissions of sulfate and nitrate from industrial sources with lake acidification, then that made the case. So, that's what I applied my knowledge to doing.

MacDougall: How do you feel about the progress we've made in environmental conservation?

Davis: Well, I think we make progress, but the opposite trends are going on continuously. And, of course, this is a result of increased expectations on the part of so much of the world. It is a combination of population growth and increasing economic comforts and increasing economic prowess of people around the world. A combination of economic progress (with a quotation around it), population increases, makes it an ongoing give-and-take between people who like to have a pristine, healthy environment and those who, like all of us, are damaging the environment.

MacDougall: So, it seems like there was more of a national focus in the past, in the 70s, and now there's more of a global look at what's going on.

Davis: I think so, and I don't think the general population (in the United States, at least) is quite as involved on a day-to-day basis in environmental issues. So, President Obama made a landmark statement on Climate Change, in his speech a couple months ago, and it was hardly noticed. You didn't see it in the press very much, and it is a landmark type of speech and the position he's taking, and I think in the coming months and years the EPA is going to be coming out with some directives that will surprise people. But it's still an ongoing battle. And when I came here I started offering a course at that time called Man and His Environment. Now I call it Humans and their Environment, but at that time we called our species the species Man. And that was a very popular course in the 70s here at the university. And then I eventually gave that course up, someone else took it over, and it eventually petered out with the petering out of the environmental emphases at the end of the 70s.

MacDougall: Where do you think the Institute will go from here, if you could see into the future?

Davis: I think it's going to continue to emphasize issues that relate to climate change. And the change in the name of the Institute reflected that. I wasn't happy with that change but I didn't make any noise about it, because I'm more interested in the full suite of environmental dynamics and biological components and more local components.

MacDougall: So you think it has too narrow a focus?

Davis: No, I wouldn't say that. I think it's retained a broad focus…. I'm happy with it, but I don't get involved with it. I just look on from the outside, anymore.

MacDougall: I remember a few years ago you were working in the Caribbean.

Davis: Yes, I was. That's a research project I started too late in my career, but I think other people have gotten involved since then, and I barely got started with it. From up to the point where I retired I was getting new projects, which was poor planning on my part. That was one of the new projects, and the idea of that project was to reconstruct hurricane sequences and their impact on the vegetation in the Caribbean. Because I had been going and doing work at Dominica, which is an island between Martinique and Guadeloupe, in the Lesser Antilles. And they were volcanic lakes atop mountains on these volcanic islands. And so, big eruptions, like Mount Pele in Martinique. That's where Mt. Pele erupted and killed off thousands and thousands of people. So, volcanic eruptions have been important in the dynamics of the vegetation and in the lymnological dynamics, because so many of the lakes are volcanic lakes high in the mountains of these higher Antilles. So, I thought, there is an opportunity to see in the lake sediment record the traces of hurricanes. Because when you get a hurricane you blow down

the vegetation in the watershed of the lake, a lot of it washes into the lake, and also you get more mineral matter, because the soil erosion associated with deforestation, and I did present a paper at an INQUA meeting on the initial results but then I was into the retirement process, so I kinda gave that up.

MacDougall: Like you said, someone else will come along and follow up on that, we hope.

Davis: Well, there has been work done, not so much in the Caribbean but in the U.S. along the eastern seaboard.

MacDougall: Well, I've asked you most of the questions that I have been thinking about, but I thought I would ask you if there was something else you wanted to talk about that I didn't ask you about.

Davis: I think one of the positive aspects of the Institute is the camaraderie. Working with people who are not in your direct field, going on field trips with them, journeying to meetings and things like that. And I think at the university, and maybe at universities in general, this type of interaction, on a personal, very cordial level, among individuals, is exceptional. And that's an aspect of the Institute that I always enjoyed.

MacDougall: Others have said the same thing, that that's been a wonderful experience. And certainly its difficult to do here.

Davis: Yeah, it comes naturally, though, in there. I would never know what geology I know and what archeology I know if I hadn't been associated in working with them.

MacDougall: But what sort of problems does that make for the person in the department? Is it frowned upon by other colleagues that you're doing interdisciplinary work?

Davis: I don't think so. Not necessarily; I don't see that. I think in my case the situation was different in the first few years, because at that time there was really a tension. Many people in the department wanting to do one thing and other people wanting to collaborate on an interdisciplinary effort. But it could be that there's a lot more of that that goes on that I'm unaware of, but I've not been aware, since my situation settled down in the mid-70s, I haven't been aware of any open conflicts. I would think anthropology would be one such discipline where conflict could occur, but I don't know of that.

MacDougall: Well, clearly the Institute has been very successful and it' really a remarkable model; it just seems like such a brilliant idea.

Davis: Oh, yeah. I think it's been copied elsewhere now.

MacDougall: Has it? In the same fields?

Davis: Oh, yeah. At several universities there are quaternary-type groups that function together real well.

MacDougall: Well, thank you very much for doing this. I appreciate it.

Davis: You're welcome. It's been fun.