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Description: **4002 Lou McNally,** interviewed by Adam Lee Cilli, April 2, 2014, over the phone, with McNally at Embry-Riddle University in Daytona Beach, Florida and Cilli in his home in Orono, Maine. McNally talks about his early career in weather broadcasting; his graduate training at UMaine; his master's and doctoral research, in which he used the techniques of historical climatology to create a weather map for the entire northeastern United States for year 1785; the Climate Change Institute's role in educating the public about climate change; the reality of anthropogenic climate change; and the CCI's interdisciplinary character.

Text: 7 pp. transcript
Recording: **mfc_na4002_audio001** 34 minutes

Related Collections & Accessions

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Notes

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Narrator: Lou McNally

Interviewer: Adam Lee Cilli

Transcriber: Adam Lee Cilli

Date of interview: April 2, 2014

ABSTRACT: This interview took place over the telephone, with Adam Cilli at his home in Orono, Maine and Lou McNally in his office at Embry-Riddle University in Florida. In the first half of the interview, McNally discussed his early career in weather broadcasting and his graduate training at the University of Maine. He spoke at length about his master's thesis and doctoral dissertation, for which he used the techniques of historical climatology to create a weather map for the entire northeastern United States for year 1785. Later, he considered the Institute's role in educating the public about climate change, shared his views about the so-called climate change debate, and reflected on the interdisciplinary character of the Institute (which he sees as its greatest strength).

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

Cilli: This is an interview with Lou McNally. Today is Wednesday, April 2, 2014. Lou, I'm wondering if we could begin by you explaining how you got interested in historical climatology.

McNally: Well, actually it came from my interest in old documents, old newspapers, diaries, and books. And the study of climate change. Realizing that we don't really have much of an instrumental record going back very far, and we have a number of paleoclimate proxies, which go back considerable distances, I was hoping in my research to make a bit of an overlap between the instrumental records and the proxy records that we got a hold of. Try to extend back the actual observational record, if you will.

Cilli: In what field did you receive your training?

McNally: I've been trained in all kinds of different fields, from television production and graphic design, to theater and interpretive arts, to meteorology and climatology. It's an interdisciplinary life that I lead. The basic training in meteorology I received from my undergraduate at Lyndon State College. And then I went and worked in the television business as a broadcast meteorologist for a number of years. When people started asking me questions back in the late '80s, about this global warming thing, and I didn't have any answers, that's when I started doing some investigations. I was working the evening shift at that time, the six to eleven o'clock news, so I had all day free. The kids were in school, so I decided to go back to school and try to learn a bit about that. And that's what led me to what was the Quaternary Studies Institute at that time.

Cilli: So, when did you first join the Institute?

McNally: It's got to be 1989, 1990. I ended up meeting with Hal Borns, had a nice meeting with him. And he suggested that I wasn't too old to do it, and that I could get started with classes and

we'll worry about the GRE's later. And he actually introduced me to Kirk Maasch, who became the chair of my committee. And of we went.

Cilli: So, you pursued a master's through the Institute for Quaternary Studies?

McNally: I did. And it was a rather interesting thesis. What I proposed to do was reconstruct a surface weather map from nothing but ephemeral evidence: diaries, newspapers, anecdotal evidence. Not quantitative, but qualitative evidence. And it was tricky, but we got it done. And what happened was it took so long for the committee to actually approve the thesis, that I kept taking courses. By the time they approved the thesis I actually had enough courses under my belt that I could matriculate as a doctoral candidate; all I needed to do was the doctoral thesis.

Cilli: And did you expand upon your master's thesis?

McNally: I certainly did, yeah. The master's thesis was basically a proof of concept, showing that it could be done with a few examples from central Maine and diaries from the 40s. But we couldn't immediately prove that, because at the time some of the surface maps were still classified from World War II. But I was able to get ahold of those maps and prove out what I had reconstructed. So that was a proof of concept; so, we decided to head back in time. And see if we could make it work back then. And we decided, Kirk and I, along with Dave Smith and Hal Borns, that based on what we had available for anecdotal evidence, that the year 1785 would survive. We had some diaries that were just ending, some that were just beginning, some that were covering that area. And it was up to me to go forward from there and expanding it out. By the time I finished I had recreated twice daily maps, diurnal weather maps, for all of northeastern North American for the entire year 1785 and reconstructed the upper-level flow as well. And nobody had attempted that at the time. So we had something new and exciting, and that worked for a doctoral dissertation. And in 2004 I finally received an interdisciplinary PhD.

Cilli: I was going to ask you if you had ever worked with Dave Smith, because I recall that that was something he was interested in, was reviewing old historical records for evidence of past climate.

McNally: He was. He was very interested in that, and he was very happy to see my work. By bringing my synoptic meteorological talents to the table, years of making weather maps and working with them every day and hand drawing them, that was what we needed to have to apply to this raft of information that we find (diaries, newspapers, and what have you) in order to get the job done.

Cilli: And what did you do after earning your PhD?

McNally: Well, in my style of doing whatever needs to be done, I had been working in television up until that time, and it was time for a change, so what I did was I had a few contracts with the Bermuda Weather Service as their lead forecaster, and worked with them two or three years. And I did a couple shows on boating, which I've always wanted to do, and all this time I was applying to schools and colleges, and having such a scattershot resume, it was tough to find a job. But one finally opened up where I can actually be teaching not only meteorology and basic climatology, but also broadcast meteorology. So I kind of fit right into that slot, down here at Embry-Riddle.

Cilli: So, when did you land the position at Embry-Riddle?

McNally: I began the spring semester 2007, actually.

Cilli: So, not too long after earning your PhD.

McNally: No, actually not. No. I'll have to admit it was a very specialized kind of jobs that needed a specialized resume to fill it.

Cilli: So, when you became a master's student at the Quaternary Institute, is that also when you became a member?

McNally: Yes. Absolutely. It wasn't really an institute, per se. It was just a cadre a researchers at the time. If you were a student, you were basically in it.

Cilli: Do you maintain regular contact with Institute members?

McNally: I've stayed in contact with Hal in particular, and Kirk Maasch (I've seen him regularly over the years).

Cilli: How do you think the Institute has changed since you first got involved with it?

McNally: Well, it's certainly developed a world-wide reputation. That's for certain. Having Paul Mayewski come up from UNH and all he brought with him to expand the Institute and have it become the Climate Change Institute has been the envy of the world, really.

Cilli: Are you actively researching right now.

McNally: Yes. You kinda have to. I'm often in many different directions. I'm giving a talk next week to the American Association of Geographers on how different groups of people react to weather warnings differently. How the news media can actually help in that situation, as opposed to hindering, [which is] the way it right now. I'm also writing, I'm the plenary speaker for the Institute of Disaster and Medical Health [?] at the University of DePaul at the end of the month. But I've also been publishing all kinds of other things. I did an instructors manual for a textbook. I'm still publishing my forensic synoptic analysis, and that's always fun. I'm also working with some students with regard to the actual broadcasting coverage. We have some publications going and stuff going for that, too. So, yeah I've been researching for sure. I'd love to take the time and expand my 1780s work out. But as I've mentioned there's so few people doing historical climatology in the United States, I mean I can list them on one hand, as opposed to Europe, where there's now second and third generation research. There's dozens and dozens of them. Now, I'll have to admit that they have more to work with. They have ephemeral records going much further back than we have in North America. If I win the lottery I'll become a gentleman scientist and I'll just go ahead and do it.

Cilli: As someone who's trained in historical techniques, it seems to me that probing the historical record for evidence of climate changes seems like a daunting task. Where does one begin?

McNally: Well, if you look at it with the idea of researching the historical record for meteorological information. It's a lot easier to find records for weather than it is for climate. It's

a lot easier to look for records of people saying, "it was very cold today," or "we had twelve inches of snow today," or "I had to take a canoe to get my daughter out because it was flooding," and things like that. Up in Bermuda, we found a number of instances of hurricanes that weren't in the instrumental record but were in diaries. If you do that, then you can get a handle on how climate has changed, 'cause you can look at it over a longer period.

Cilli: So, you want information about weather. How do you decide what journals or what diaries to probe, and what diaries maybe aren't worth the effort?

McNally: Most diaries are. For some strange reason most diarists start off by mentioning the weather. Now, I don't know if that's the ink flowing, or to get the connection between the brain and the hand under way, but most diarists will mention the weather. And virtually diarist will mention a severe weather event, and in great detail. So, it's not a matter of figuring out which one to look at; it's more how much information can you get out of anything you research.

Cilli: And so it seems that one of the goals is to gather a great deal of evidence from a number if different diaries.

McNally: Exactly. Remember now we're not looking for specific observation data, though it's great if you can find that. We're looking for just people mentioning the weather. And with this technique of forensic synoptic analysis I developed, you can take that information and you can plot it on a map just the same way you can plot a station map for a meteorological observation. And with things like trend analysis you can basically recreate a weather map from that. With that you can determine how far the polar cell has advanced or retreated, where's the polar front, what's the jet stream doing? That all comes from applying forecast methodologies in reverse. That's the principle of forensic synoptic analysis that I'm working with…. So, if you get a number of observations of people saying, "we've got heavy, heavy snow," then you can infer, hindcast, that the 500 milibar flow was oriented this way, and the 800 was this way, and on and on. But by doing that you can infer other things, like where's the basic weather gone, where's it going. This 1785 is also a pretty good proxy for the middle of the "little ice age." And now we're seeing, just this past winter, the same kind of up-level flow that was seen in 1785. Happening this year. What does that tell you? Are we headed back to a "little ice age?" Something to think about. The most important thing that came out of all that work was I was able to actually hypothesize that the polar cells, that big yarmulke of cold air on the top of the earth, if that moves in one direction or another, or expands, that says something about climate change. I was actually to show it actually slid preferentially towards North America, instead of just expanding. And people think that might have also been what happened at the beginning of the last ice age. And it did jive pretty nicely with some of the broad brush results that Paul Mayewski had gotten out of the ice cores, which was very nice to see. When you can get scientists to arrive at the same conclusion, using two different testable methods, that's huge.

Cilli: Why does it tilt towards North America?

McNally: Well, that's a great question. See what I mean? You answer one question, it gives you two more. Now that I've been appointed a research system [?] professor at the Institute I'm looking forward to working with boys and girls up there to further educate [?] on these ideas.

Cilli: How do you see the Institute's role in affecting public opinion about climate change?

McNally: Well, just by virtue of its existence and the success of its work, that's going to help. What I think the Institute may need more of is communication mentoring. Having people in charge of getting the word out and getting these people who are coming up with the results interviewed more often. The fact that abrupt climate change is the latest, hottest research field, people need to know that. And in terms of communication, where I do have considerable experience, there's a 24 hour news cycle out there. And you can get one small segment of a partial study, and that's going to receive the same shrift as a six person, six-year-long study and its results, so you have to keep hammering away at it, to stay ahead of that 24 hour news cycle. I would say the Institute is in a great position to develop that, and I look forward to perhaps helping them with that, too.

Cilli: What do you think has been the Institute's most important contribution to our understanding of climate?

McNally: It's wide, interdisciplinary focus. There are a number of schools around the world where you can get people to focus on pollen analysis or deep-ocean cores, there are a few schools that work with ice cores in the Arctic and Antarctic. The fact that the Institute has expertise in all of the various paleoclimatic and climate proxies, gives it a real advantage. And I think the fact that they developed that early, under the auspices of the Quaternary Studies Institute, has put them way ahead of other places.

Cilli: So, the interdisciplinary focus, is that advantageous because it makes it easier to do interdisciplinary research?

McNally: No, it's advantageous because good interdisciplinary research will come up with a result that you couldn't get if you just studied one of the disciplines. You could be a crack historian and find all these things that appear to relate to weather, but if you don't have a good understanding of how the weather works, you're not going to be able to apply that information. I'm not saying everybody has to be an expert in both fields. On the contrary, that's the beauty of the Institute. You've got people in all these different fields who collaborate, and it makes it a lot easier to see a result that might not come out of just working in just one single discipline. Climate is a very complex scenario, too. You need that kind of ability…to be able to see the bigger picture and how things work.

Cilli: Within the scientific community, there's no debate about the human role in climate change.

McNally: Absolutely none, and there hasn't been for a long time.

Cilli: But outside the scientific community, in American political culture, it's still hotly debated. And I'm wondering if you can speculate as to why that is the case.

McNally: It's strictly political. Entirely political. Same public relations and legal firms that did tobacco. Same thing. I'm too terribly worried about it and I'll tell you why. If you look anywhere outside the United States and perhaps Australia, everybody knows what's going on. Everybody's concerned about it; people are already deep into mitigation and adaptation techniques and plans. We're really the only country where we're dragging our feet. And it's very obvious. It's a very Amerigo-centric thing. It's all very political. It has a lot to do with money. I spent a lot of time doing a television show called *Made in Maine*, on public broadcasting. 19 years as a matter of fact. And we went out and visited dozens and dozens and

dozens (hundreds, actually) of different small business. And a business man will, if they can make a couple of bucks, they'll change a process, if it doesn't affect their quality and what have you. I went down to what used to be the S.D. Walling Company, a big huge paper mill in western Maine. I ended up interviewing this chief officer down there about the environmental award that he'd been given over the past few months. Now this was a mill that was stinking up the air, polluting the river. What happened was one of his engineers came up with the idea to close the water system on one of the paper machines, and recycle some of that water in other machines, thereby saving some dollars. So, the chief officer said, "fine, great. We'll just do that." And then here come the environmental awards because they're not polluting the river any more. And he didn't have a clue what was going on. He just made a financial decision. And that's what needs to happen. If we can find ways for people who are doing these emissions to make more money by doing something else which reduces the emissions, they'll do it. No amount of brow beating is going to do that. That's where having the information, solid information, would help. If there was some other interdisciplinary focus, then I imagine it would be connecting the business community and the engineering community and finding ways to reduce emissions that saves the capitalist money, and they will do it….

Cilli: So, I'm wondering if you can walk me through, once again, how you think the Institute can better get its information out to the general public.

McNally: Well, there's a number of ways. More publication in popular magazines and newspapers and articles, more outreach to the public, more short television productions, more affiliation with television and radio programs, more interactivity on the web (there's plenty now, but more). That's the way to do it. Than anybody can have a question answered and know why. There's lots of little things that could be done to spread the word. But the Institute as a research base is not set up for outreach, but it's going to happen. People will find out. They'll start coming for all kinds of answers. Hopefully I can help with that.

Cilli: So, back to an earlier question I asked, you were a weather broadcaster here in Maine for a number of years.

McNally: Yeah, for a long time. And radio for even longer. I'm still doing radio; I'm still on Maine Public Broadcasting every Monday through Friday morning. Except tomorrow, because tomorrow is pledge day.

Cilli: How do you envision the remainder of your career unfolding?

McNally: It probably will end up just as it has so far. I want to continue researching and publishing. I look forward to collaborating with other people in the field, here in the United State and abroad. And continue to play music and see my kids and grandkids, and do some teaching, and whatever. [laughs]

Cilli: Well, Lou, that's all the questions I have but before we conclude the interview I do want to give you a chance to add something I didn't think to ask you about.

McNally: Having the Institute, and the welcoming attitude that Hal Borns had for me at the very beginning, as a nontraditional student; it had been years and years since I'd gotten my undergraduate degree. And for him to say, "no problem. Come on and we'll get you started right away." That was just a godsend. It was a godsend. One of the turning points in my career,

no doubt. And to see where it's gone since them, and to be affiliated with them as a professional, and not just as a student, it's a wonderful thing. I look forward to having that be another turning point in what's left of my career. Other than that I'm looking forward to all these histories. I'll be very interested to see what you plan to do with the results [of your interviews].

Cilli: Well, Lou, thank you very much for participating in this interview.

McNally: You're very welcome, Adam. Best of luck to you in the future.

Cilli: I wish the best for you as well. Take care.

McNally: O.K. Have a great day. Thanks, Adam.

Cilli: O.K. Bye.