

KENNESAW STATE UNIVERSITY ORAL HISTORY PROJECT

INTERVIEW WITH WILLIAM E. ENSIGN

CONDUCTED, EDITED, AND INDEXED BY THOMAS A. SCOTT

for the

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KSU Oral History Series, No. 150
Interview with William E. Ensign
Conducted, edited, and indexed by Thomas A. Scott
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TS: Today's interview is one I have wanted to do for a long time with Bill Ensign, a professor of Biology in the Department of Ecology, Evolution, and Organismal Biology.

WE: Very good. You got it.

TS: Let's start with your educational background. I know that you got your bachelor's degree in Zoology from George Washington University up in Washington, D.C. in 1982, which means you are a young guy from my perspective.

WE: I appreciate that.

TS: I'm assuming you were a traditional student, like a 21-year-old, when you graduated from college?

WE: Yes and no. I was actually 22 when I graduated.

TS: That still fits the definition of a traditional student.

WE: However, I was not traditional in that George Washington was my first institution.

TS: I meant to ask, why George Washington?

WE: I actually started at Wake Forest University back in 1977. I was not ready for college.

TS: So you wanted to play. Were you running track and all those things?

WE: No. Although I was really involved in athletics in high school, I didn't carry that through to college. I was still involved in intramurals and played sports.

TS: So you were partying?

WE: Yes. I actually had a scholarship to Wake Forest. Because of my academic performance, I lost it in the first year. I stayed around for one more semester just to show them that I could actually do it. I did pretty well, but I left after three semesters, took about eight months off, and then started back at George Washington in the fall of 1979.

TS: George Washington was pretty hard to get into if you didn't do too well at Wake Forest, wasn't it?

WE: The final semester at Wake Forest was enough to persuade them. I always did well on standardized tests, so my SAT scores were pretty high, which is probably why I got the scholarship at Wake Forest. But there is a level of maturity I think many of us obtain over the course of our life in the way that we approach things, and I was not there yet when I started at Wake Forest.

TS: Are you a native of North Carolina?

WE: No, I grew up in Tennessee, actually in Chattanooga, and went through the public school system in Chattanooga during desegregation. That was an interesting experience.

TS: I bet. You graduated from high school in 1977, meaning you started school about 1965, I guess.

WE: Right.

TS: In Chattanooga, when did they integrate the schools?

WE: Technically, integration occurred in the early 1960s, but only technically, because ...

TS: Freedom of choice?

WE: Freedom of choice, and if there were one African-American face in a school of ...

TS: That was enough?

WE: That was enough. There is actually a classic, landmark case that forced a more realistic version of desegregation to occur. James [R.] Mapp was the individual that brought it.¹ He wanted his kids to go to [an integrated] school. That case started in the court system in the 1960s and was decided I think in 1971.

TS: Okay. So you would be like sixth or seventh grade by the time real integration came about?

¹ Editor's note: James Mapp and others originally filed the case of *Mapp v. Board of Education of City of Chattanooga* in U.S. District Court for the Eastern District of Tennessee on April 6, 1960. On March 30, 1962, District Judge Frank W. Wilson approved a gradual plan of desegregation with all public school grades supposed to be desegregated by 1969. The school board moved slowly to comply with the court order, and much litigation followed. In 1970 the Mapp home was bombed, but fortunately no one was home at the time. In June 16, 1971, the school board, under the direction of the court, adopted an amended desegregation plan designed to eliminate the last vestiges of state-imposed segregation. More litigation ensued. On March 12, 1986, the court noted that the case had been pending for too long and ordered the school board to desegregate faculty and staff in accordance with the 1971 plan so that the black/white ratio of faculty and staff at each school would approximate the ratios for the system as a whole.

WE: Yes.

TS: And you say it was interesting. What made it interesting for you?

WE: I think this is something that has carried through throughout my life. [After integration] I went to school with people from very, very diverse socioeconomic backgrounds, not just racially but [socially and economically]. Before integration, the school systems were based on neighborhoods. You had areas that were primarily middle class or upper-middle class. The grammar school I went to was primarily drawn from people that were upper-middle class to upper class socioeconomically. My dad worked for the Tennessee Valley Authority.

TS: Oh, really? What did he do?

WE: He was a personnel officer.

TS: My father worked for TVA too.

WE: Oh, really? In Knoxville?

TS: Yes. He was an electrical engineer.

WE: Okay. Well, Dad was with the Division of Power, so he worked with a lot of people across the organization. Anyway, the vast majority of students from my grammar school went to one of the private institutions after they left the grammar school, either Baylor, McCallie, or Girls Preparatory School.

TS: In other words, they didn't want to integrate?

WE: Yes, but that was even before integration occurred.

TS: Just because it was a good education?

WE: Right. I mean, Missionary Ridge was an outstanding elementary school. The teachers were excellent. My ability to think and read and write ...

TS: Well, one of the questions I meant to ask later on was why in your dissertation you recognized the entire staff of Missionary Ridge Elementary School.

WE: The fundamentals that I got from that period of time—I was reading on probably a seventh or eighth grade level by the time I was in second grade. The teachers saw that, and they encouraged it. Any student that had any sort of predisposition to an area ... it was an amazing experience. A lot of it was very structured. Our first grade teacher was about as old school as you can get in terms of basic skills.

TS: So you didn't need to go to Baylor to get a good education.

WE: By the time I was in junior high school, I had the tools that I needed to think and write. But back to the original question of what was going on in the school system, as I said, the vast majority of the kids from my elementary school went to one of the private schools. They probably would have done that anyway even if desegregation had not occurred because they could afford it. My parents [Bill and Elaine Ensign] had a strong commitment to public education. That was a very deep part of who they were. So I remained in public schools. I am the youngest of four children. My oldest sister graduated from my high school in 1966. If you look at her yearbook, there is one African American face in that yearbook. If you look at my yearbook in 1977, I am in a 30 percent Caucasian minority by that time.

TS: What was the high school?

WE: Brainerd High School. It used to be the Brainerd Rebels. It is now the Brainerd Panthers. In about 1982, they made that switch.

TS: From Confederate Rebels to Black Panthers?

WE: Pretty much, yes. Anyway, the original question was why was that experience meaningful to me. That experience of seeing the challenges that other people face and in retrospect, the opportunity to recognize that we don't all have the same advantages made me very sensitive to ...

TS: So you knew about white privilege in the 1970s?

WE: Yes, without doubt. I mean, there were kids that were coming into my junior high school that were from the roughest projects in Chattanooga.

TS: Your reaction is interesting because sometimes the opposite happens, and people that are thrown into those experiences become very negative about the other race or socioeconomic group.

WE: There were people in my junior high school and high school that reacted that way. There was violence in both my junior high school and high school related to segregation. When I was a junior in high school, I had a friend that was a senior—a white kid—that took a black girl to the senior prom, and somebody burned a gasoline cross in his front yard.

TS: Oh my goodness.

WE: That was 1976. It was a very important period in my life from the standpoint of how I think about humans and the way that we interact.

TS: I guess the question is, why didn't you go into history, sociology, the humanities or theology and go out and save the world?

WE: I started as a political science major at Wake Forest.

TS: Did you really?

WE: At Wake Forest, yes. Pretty much all the way through my undergraduate career I was headed down that track, primarily with the intention of going into law. But as I began to take courses at the university level, my attachment to ecology and the natural world really became evident. All of my advisors in high school and my family said, “You think well, you speak well, and you reason well. You should be a lawyer because you can argue your way out of anything.”

TS: That’s what everybody else thought you should do?

WE: Yes, and so I went along with that, and part of the reason I had difficulty at Wake Forest is because there was some disconnect.

TS: On the SAT test, did you do higher on the verbal or higher on the math?

WE: I nailed both of them. At that point the top was 800, and I was in the low to mid 700s on both of those. I think my journey through my undergraduate education allowed me to realize not only did I have an attachment to ecological questions, but it also came very easy to me. I took an ecology course at George Washington, and I don’t think I picked up the book more than three or four times the entire semester because I didn’t need to. It just made sense. Part of it, was that my family had property on Chickamauga Lake outside Chattanooga. One of the stories that I tell students, and I’ve used this a number of times when I talk to them, is I was doing ecology from the time that I was four years old.

TS: You were out in the lake or creeks or whatever?

WE: Yes, my dad had me sitting on the bank with a cane pole and a bobber and a worm when I was four years old. That positive reinforcement of seeing the bobber going under the surface when a bluegill took the hook—there was nothing like that.

TS: So you can thank TVA dams, even though you probably don’t care too much for dams anymore.

WE: Yes. Well, I can make a biological argument for why we shouldn’t have dams, but I also appreciate the cultural revolution that TVA brought to the Tennessee Valley.

TS: Well, Chattanooga used to flood away periodically.²

² Editor’s note: The worst flood in Chattanooga’s history was in March 1867. Other major floods followed in 1875, 1886, and 1917, causing millions of dollars of economic damage and contributing to major mosquito-related health problems such as malaria and yellow fever. TVA completed the Chickamauga Dam just north of Chattanooga in 1940 to control flooding, generate electricity, and improve navigation on the Tennessee River. Please see the photos and story by Steve Johnson, “150 Years Ago: Tennessee River Rose 58 Feet Above Normal, Submerging

WE: Oh, yes. The pictures that I've seen pre-TVA of the downtown area are pretty [dramatic].

TS: When did you know you wanted to major in Zoology? I guess you couldn't major in Ecology [as an undergraduate] back then.

WE: Well, you asked if I was a traditional student. I was about as nontraditional as you could get. The reason I've got a degree in Zoology is that was what I had enough credits to graduate with.

TS: You just took what you wanted?

WE: I started out at GW as an Environmental Studies major. I was still going into law, but I was beginning to realize that I had a very strong attachment to the growing environmental movement that developed in the late 1960s and early 70s. ...

TS: And there was such a thing as Environmental Studies in the 1970s?

WE: This is actually one of the reasons I went to GW. It was one of the few schools in the country at that point that had an Environmental Studies major. It was interdisciplinary. There were faculty from both natural sciences and social sciences engaged. It was a fairly progressive approach to curriculum at that time. I think if you look at the rest of my academic career, that pattern of keeping a foot in both worlds—in both the physical science side as well as the policy/human side—has been evident throughout my work.

TS: That's terrific. I recently interviewed Bernie Brown who had a George Washington University connection. Mr. Brown was the administrator of Kennestone Hospital for about 30 years [1971-2001], and GW was one of the first places in the country that had a master's program in hospital administration. That's why he went up there.³

WE: GW was an interesting place at that time and still is. It has some fairly unique programs, but particularly within the Columbian College of Arts & Sciences there was a lot of innovation. There were a lot of cross-disciplinary, interdisciplinary programs going at that time.

TS: Who was Henry [C.] Merchant?

Chattanooga," *Chattanooga Times Free Press*, March 5, 2017; Gay Morgan Moore, "The Flood of 1917," *Chattanooga Times Free Press*, January 24, 2016; and "Saving Chattanooga," Tennessee Valley Authority, www.tva.gov.

³ Interview with Bernard L. (Bernie) Brown Jr., Cobb County Oral History Series, No. 95, Kennesaw State University, Wednesday, 14 June 2017.

WE: He was the ecology professor that really ultimately got me where I am today. Henry was one of the co-teachers in the first course I took in that Environmental Studies program. It was intended to be a freshmen-level course where you were asked to think across the different disciplines that were introduced. The social scientist was a guy named Allan [K.] Fitzsimmons. He was a geographer, and Henry was the scientist in the course. It was interesting because Henry was a classic ecologist. He would work with salamanders. Fitzsimmons was much more of a policy wonk. Even though he was in Geography, he ultimately ended up serving in the Reagan administration.⁴ The whole idea of the course was to force us to face the various user groups, stakeholders, and values that were inherent in any environmental question. I took Henry for that course. He was interesting. I was still trying to figure out where I was supposed to be.

TS: Where would you go to do projects in that course?

WE: In that course it was primarily looking at specific case studies in the environment.

TS: Okay. So you weren't actually going out in the Potomac River or the creeks or what have you at that point?

WE: No. That didn't happen until the Ecology course that I took with Henry. His first course was Introduction to Environmental Studies, a lot of case studies, a lot of reading. I remember we did a point/counterpoint with, if you remember, the Club of Rome group that did *The Limits to Growth* by the Meadows group [Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, and William W. Behrens III, a Report of the Club of Rome's Project on the Predicament of Mankind (a Potomac Associates Book, New York: Universe Books, 1972)]. They did the first computer modeling on when resources would run out. Then the counterpoint to that was Herman Kahn [1922-1983, founder of the Hudson Institute], who was sort of the intellectual godfather for Julian [L.] Simon [1932-1998, professor of business administration at the University of Maryland and senior fellow at the Cato Institute] and a number of the other thinkers that said human technology can solve any problem, and therefore all of you folks that are worried about resource shortages and all of these issues are just being Cassandras. I can clearly remember Fitzsimmons and Merchant getting into some fairly heated discussions about those sorts of things in the course of the class. That is a good example of the sort of thing that we did.

TS: Yes. Were you sold on ecology by that time?

⁴ Fitzsimmons' many publications include *Defending Illusions: Federal Protection of Ecosystems* (Rowman & Littlefield Publishers, Inc., 1999). According to the brief biography in the back of the book, Fitzsimmons spent five years as chair of the Environmental Studies Department at George Washington University and was a senior staffer to policymakers in the Departments of Interior and Energy during the Reagan and the George Herbert Walker Bush administrations.

WE: That was the first semester I was there.

TS: So this would be 1978, I guess.

WE: Actually, that would have been the winter of 1979.

TS: Was your hair longer than it is today?

WE: A little bit, just a little bit. But that year after I dropped out of Wake Forest, I tended bar in Memphis for about five or six months. Then June came around, and I did the classic ...

TS: How did you get to Memphis?

WE: My sister was there. She was in school at Southwestern at Memphis, which is now Rhodes College. But yes, I did the Eurail pass, backpack Europe thing. I started at GW in the fall of 1979. I took Henry's ecology course in the fall of 1980.

TS: As a bartender, I'm sure you met a lot of interesting people.

WE: I did. I did. I was 19. The drinking age in Tennessee at that point was 18, but I had a lot people ask me, "Are you old enough to serve me?" I took Henry's course the fall of 1980, and that is when it really dawned on me. I ended up taking four other courses with Henry, including a summer field course called the Biology of Great Smoky Mountains National Park, which is where I met my wife.

TS: Is that right? So that's Renee [Speenburgh]?

WE: That's correct, Renee. We always joke that we met making salamanders puke. One of the things that we did was stomach lavage to look at the stomach contents of salamanders. But we met in Henry's course.

TS: How about that. So you owe a lot to Henry.

WE: I do. I think in a lot of ways his approach to teaching was very hands on. The labs that we did were very experiential. I think that is a function of ecology. You can make labs that have expected outcomes that students can perform, but in ecology it is not always clear what the outcome is going to be.

TS: Now, I'm assuming at George Washington that anybody that was teaching freshman classes was dedicated to teaching and not necessarily the top researcher in the world.

WE: That would be true. Yes. It is funny. Henry taught both of the freshman intro courses in the Biological Sciences. George Washington had a strong reputation for sending students to medical school, and they used the introductory course as the weed-out course. If you made it through introductory biology with Henry Merchant ...

TS: Were you never tempted to go to medical school?

WE: No, no.

TS: Well, you found out what you wanted to do.

WE: I found out what I wanted to do, but yes, I never had any thoughts of med school.

TS: Were you thinking at this time that you wanted to get a PhD and teach, or were you thinking maybe I want to teach high school, or were you thinking I want to work out in the field?

WE: I still had no clue, Tom. I didn't know. I was still searching. When I finished, I had a longtime childhood friend that had gotten a job in Alaska. He was working for one of the state senators up there. We grew up together. He said, "What are you going to do?" I said, "I don't know." He said, "You should come up. I can get you a job."

TS: So you went to Alaska?

WE: Yes, Renee and I together put everything in the back of a pickup truck, went cross country, and lived in Alaska for three months.

TS: True love.

WE: Well, it was after that. Given that experience, I think we both realized that ...

TS: Okay. It was six years before you got your master's. When does the University of Tennessee come into the picture?

WE: We got back from Alaska fall of 1982. As an undergraduate, I had worked in law firms as essentially a gopher. Renee had strong ties to D.C., so we moved back there. That was the fall of 1982, and we stayed there for another year and a half. I continued to work in law firms. Renee worked at the Smithsonian in the horticultural department.

TS: Wow. That sounds like a good job.

WE: It was horticultural maintenance. It wasn't in the natural collections arena, but yes, she had a great time. She had full access to all the museums. It was a fun couple of years. We had a good time in D.C. Again, I think one of the reasons I do pretty well with students is because I'm not the traditional academic that went straight from their undergraduate to graduate work to their doctorate. I don't like to say that I took wrong paths, but I took a convoluted path. That period when we were in D.C. was a lot of self-examination and thinking about what was right. I went back and talked to Henry a few times while we were there, and he encouraged me to go ahead and pursue graduate work. I still didn't know how all that worked, and I said, "Well, I like the Smokies. I like fish. I should go down there and work on trout in the Smokies." I didn't understand the grad

school application process. We moved to Knoxville in 1984, and I walked into the main office of what at that point it was the Program in Ecology at the University of Tennessee.

TS: What department was it in?

WE: It was a shared program. It was an interdisciplinary program at that point. It had Zoology, Botany, and faculty from the Geology and Chemistry Programs, so it was really very much an interdisciplinary program. Anyway, at that point the director was a guy named Dewey [L.] Bunting.

TS: You cited him in your dissertation for helping you when you were at Tennessee. But he wasn't on your committee at Tennessee.

WE: No.

TS: Okay. So tell me about Dewey Bunting.

WE: Well, you asked me about my hair, right?

TS: Yes.

WE: At that point my hair was probably shoulder length. If it had been today, I probably would have it pulled back into a ponytail.

TS: But no ponytail then?

WE: No ponytail back then. I had a very scraggly beard, torn jeans, tennis shoes, probably a tee-shirt. That was my normal dress.

TS: So you had that hippie look.

WE: Yes. I just walked into the office of the Ecology Program and said, "I would like to speak to someone about Ecology here at the University of Tennessee." It was during the summer, so things were kind of quiet. The secretary says, "Well, let me see if Dr. Bunting is available." He was, and so I went in. I don't remember the exact conversation, but I'm sure it was disjointed because I didn't have much idea. Dewey took the time to talk through things with me and actually explained what the application process was.

TS: Oh, you didn't even know how to apply at that point?

WE: No. Long story short, he said, "Well, you are not going to be admitted this fall. If you want to sign up as a provisional student, you can begin to take courses."

TS: That's right. You can take courses for 15 hours or something like that.

WE: You can take courses, yes. He said, “You need to get all of this material in.” I had taken the GREs, and part of it probably was I had my GRE scores with me. I knew that you had to do that. As I said before, standardized tests have always been a game to me, and I had very high GRE scores. I had done okay at GW. I wasn’t a stellar student. There were some Biology courses that I struggled with, and Organic Chemistry really was not my forte. I guess based on the discussion and what he could see in the record, he was willing to take time to talk with me. He said, “Well, sign up as a provisional student. We don’t have any money at this point for teaching assistantships. You need to talk to faculty within the program to see if anybody is willing to work with you.” I did that. At that point, UT was on the quarter system, so you had one fall quarter and then a winter and spring quarter after December. I signed up for courses. About halfway through the fall quarter, Dewey called and said, “We are going to lose one of our teaching assistantships at the end of the fall unexpectedly. If you’re willing, we can put you on as a Biology TA in the intro biology labs.”

TS: What were your responsibilities?

E: At UT in the Biology Department, the laboratory teaching assistants had full responsibility for the labs. It was a canned lab that we administered. By that point I had identified a faculty member over Fisheries and Wildlife that I was interested in working with, a guy named Richard Strange.

TS: Was that a department or a part of Zoology?

WE: It was actually the Department of Forestry, Wildlife, and Fisheries

TS: Was that in the College of Arts & Sciences?

WE: No. It was on the Ag campus.

TS: I guess there’s no reason you should know, but do you have any idea what I got my bachelor’s degree in at the University of Tennessee?

WE: I do not.

TS: It was in Zoology.

WE: Really? I didn’t realize that. I’m trying to think. Dewey may have been there when you were in undergraduate.

TS: I don’t remember, but one of the few classes I really remember is an Ecology class where we went out to Ten Mile Creek near Knoxville to measure something in the stream.

WE: I wonder, that wasn’t [David A.] Dave Etnier, was it?

TS: I don’t know.

WE: What year was that, Tom?

TS: Well, I graduated in 1964. I could have made a career in Ecology, I think.

WE: I think you could have. So much of what we know and what we think about in Ecology is contingent. You have to know the history of the system more than any of the other sciences.

TS: I think there is a lot of history in it.

WE: And this comes into my work I do here. I can go out to a stream here and with current conditions, it may look wonderful. The stream itself could have reasonable substrates and be clean in terms of the water quality, and yet still be lacking some of the species of fish that we would expect to find. And it is not what's going on now; it's what happened 125 years ago.

TS: Right. That really gets into your master's thesis. Your master's thesis was entitled, "The Importance of Competition for Food Resources in the Interaction between Brook Trout and Rainbow Trout." And you have their scientific names there too. [*Salvelinus fontinalis*) and *Salmo gairdneri*, respectively]. I read enough to realize that brook trout, over about an eighty-year period in the 20th century, saw their range getting narrower and narrower and narrower.

WE: Correct.

TS: Whereas rainbow trout were growing like mad, I guess, in comparison.

WE: They were certainly expanding from the data that was available at that time.

TS: And so your real question was a historical question: is there a cause and effect?

WE: Exactly.

TS: So why don't you talk about that a little, and also about the University of Tennessee when you were getting your master's degree, and Richard [J.] Strange, for that matter?

WE: It was a fun question to ask and answer. I didn't come up with an answer, but it was a fun question to ask. I think the interesting part about that is the two publications that came out of that master's thesis. One of them had nothing to do with competition. It was a completely tangential issue, and it is currently my most highly cited first author publication.

TS: Oh, really? Because what you were really looking at was whether, I guess, the rainbow trout were eating up all the food and driving the brook trout out.

WE: Right.

TS: But they weren't?

WE: Probably not. We can have a long discussion about why not.

TS: But the probability is that it was not the competition for food?

WE: Exactly, but the interesting thing that came out of that line of research is that one of the real questions you have to address when you're talking about competition between two species is whether or not that commonly used resource, the thing that they're competing for, is really in short supply. If it is super abundant, then competition doesn't matter. There is enough to go around for everybody.

TS: Sure. So that may have been the case here?

WE: No, actually the interesting thing that came out of it is that these fish were essentially starving during the summer.

TS: Both species?

WE: Both species were food limited after probably late June, early July.

TS: What was their food?

WE: They were primarily subsisting on terrestrial insects that were dropping into the stream from above.

TS: And there weren't enough insects dropping into the stream?

WE: Well, in most aquatic systems, there is enough production of insects and other things in the stream to support the fish populations. In the Smokies, at high elevations, the streams are very sterile. There is very, very little productivity occurring within the stream itself. The insects that live in the stream that usually serve as the basis for most of the food chains, have a strategy where they capitalize on the available resources, which usually come into the stream late in the fall and persist through early spring. The insects use that as their growth period, and these insects have a lifestyle where they live as immature forms in the stream and then emerge as adults. Things like mayflies and stoneflies and caddis flies. So they emerge into the terrestrial system before the summer comes around.

TS: And so the trout don't get a chance to eat them?

WE: Well, they eat them during the wintertime, but if the water temperature comes up... in wintertime, they've got plenty to eat.

TS: What were the elevations of the streams for your master's thesis? Was it at higher levels?

- WE: I had three sites that were spread out along the creek, and I think the elevation of the lowest site was around 3500 feet above mean sea level. The next one was at about 3800, and the final site was about 4200.
- TS: In my undergraduate Ecology class in May 1963, I remember I ran in the SEC [Southeastern Conference] track meet on Saturday afternoon in Birmingham, Alabama, and then hurried back to Knoxville for an all-day class trip to the Smokies on Sunday. We got back home late at night, and I had to get up and be out at 8:00 o'clock to go with the class to the Smokies. It was fun, but I was so dead tired that day that I hardly knew what I was doing. I don't know how much I actually got out of it, but I know we were observing changes at like 2000, 3000, 4000, and 5000 feet above sea level.
- WE: It was probably vegetation. Different varieties of trees and plants because that shows the most significant changes with altitude in the Smokies.
- TS: That has to be correct, but I'm not sure that I got a whole lot out of that day, but I was there for it.
- WE: I could tell a similar story about an ecology field trip when I was an undergraduate, but the major difference is the thing that kept me up the night before the trip certainly wasn't a track meet.
- TS: Okay. So, but the paper that is cited so much, you said, wasn't about competition. What was it about?
- WE: It was about the food limitations, that the trout were actually undergoing physiologic and metabolic stress during the summer because of those low food resources. It was really the first paper that had been able to demonstrate that.
- TS: And it is still being cited?
- WE: Yes.
- TS: Wow. That's pretty good after thirty years.
- WE: Yes, almost thirty years because it was a 1990 publication date.⁵
- TS: How about that? Tell me about Richard Strange.
- WE: Richard was actually a physiologist, but he worked with trout, so that's why I picked him. I've had some outstanding mentors in my life, and I've had some where I've had to find

⁵ W. E. Ensign, R. J. Strange, and S. E. Moore, 1990, "Summer food limitation reduces brook and rainbow trout biomass in a southern Appalachian stream," *Transactions of the American Fisheries Society* 119:894-901.

my own way. I had to find my own way with Richard. He's a wonderful human being. I like Richard a lot as an individual, but I think I learned more about what not to do as a mentor to a budding researcher or student than I did about what to do.

TS: I had the same experience at the University of Tennessee. I think I learned more about how not to teach than I learned how to teach.

WE: Yes, and Richard was an outstanding teacher. He did really well in a classroom, but in terms of providing direction, mentoring for research, he had some shortcomings. But he was a really nice guy.

TS: Yes. I understand. If you want to edit any of this out, that's okay.

WE: No, I would say that to Richard's face.

TS: Okay. What about David Etnier?

WE: Dave is legendary. He is probably one of the greatest Southeastern ichthyologists. He is definitely the greatest living ichthyologist in the Southeast. He focuses on systematics and taxonomy of fishes. Do you remember the Tellico Dam controversy [in Loudon County on the Little Tennessee River]?

TS: Oh, the snail darter controversy.

WE: David was the one that described that species, and he was the one that really pushed it.

TS: My father used to say there were darters in every stream in Tennessee.

WE: And there are, without doubt, but at the time that occurred, we thought snail darters only occurred in the Little Tennessee River.

TS: But that's not true?

WE: It's not true now. There was one other population. There is a population that has been discovered in recent years, but at that point in time [in the 1970s, snail darters had not been found in other streams]. To their credit, TVA really wanted to find the snail darter in other streams.

TS: I bet.

WE: And they looked hard.

TS: Well, I remember that my wife was pretty much on TVA's side before they built the dam, and then when she saw Tellico Lake covering all that land [after 1979], she was kind of sickened by it, I think.

WE: You know, Tom, again, we've come back full circle because TVA is not all good and it is not all bad. If you look at TVA's history, from the time it started, Arthur [E.] and Harcourt Morgan [two of the three original TVA board members]. I am sure you are familiar with that story.

TS: Oh, absolutely of the debate over the future of TVA.

WE: Arthur Morgan, you know, envisioned it almost as a socialist enterprise, and [the third board member] David [E.] Lilienthal saw it as a power company. So there was always that tension within the agency for social change versus just providing [cheap electricity]. And I don't think there was a single decision made throughout the course of the agency where you didn't have to balance all of those competing interests.

TS: Yes, by the way, we have a Communication professor, Laura Beth Daws, who is about to come out with a book on TVA and the displacement of folks in northern Alabama.⁶

WE: Well, you and I both know the displacement that occurred throughout the Tennessee Valley with the first reservoirs. My aunt and uncle had property just outside of Vonore [at the confluence of the Little Tennessee and Tellico Rivers], and so when [the Tellico] Dam was formed, they lost about half their property, along with the oldest elm tree in the eastern United States.

TS: Oh my goodness. And yet, those lakes have fabulous recreational value.

WE: And, you know, they've saved many lives. People don't realize that the Tennessee Valley, particularly in northern Alabama, had malaria; and the flood control and mosquito control that occurred probably made a big difference.

TS: Yes, Laura Beth talks about that. By the way, TVA kept fabulous records. Most of the historic records are in Morrow now at the National Archives at Atlanta. But when the case workers went out to tell people they had to move, they reported that many of the poorer residents had malaria.

WE: Yes. You and I are old enough to recognize change. Right? I can remember talking to my Grandmother Campbell. My mother's family was from upper east Tennessee, up around Rogersville and Bull's Gap and that area. She clearly remembered the first naked light bulb they had in their kitchen, and all the changes that occurred because of the rural electrification projects.

TS: Yes.

⁶ Laura Beth Daws and Susan L. Brinson, *The Greater Good: Local Newspapers and TVA Family Relocation in North Alabama, 1934-1939* (Tuscaloosa: University of Alabama Press, 2018).

WE: Anyway, you asked about Dave Etnier. Dave is funny, and he is probably why I do what I do today. I was working on trout, which, from Dave's standpoint, are "aquatic chickens." He would always say, "I don't know why you study those aquatic chickens. There is so much other diversity out there to look at." So it was Dave's ichthyology course where I learned about the fishes of Tennessee, so that I came to appreciate the diversity of flowing streams. The Tennessee Valley is one of the most bio-diverse places in the temperate world in terms of the fresh water fish and fauna. I can vividly remember, when I took that course, that we did a lot of field trips. We went to a site on the Clinch River, just north of the Tennessee-Virginia border. I am trying to remember the name of the shoals. Anyway, in about forty-five minutes of sampling with minnow seines, we collected over sixty different kinds of fish.

TS: Wow, amazing!

WE: And it was. I mean, when your dad said there are darters in every stream in Tennessee, I think we got at least twelve or fifteen different types of darters. So that suddenly made me realize, as an ecologist and sort of an evolutionary biologist, that there were some pretty fascinating questions that could be asked and answered.

TS: Okay. So you got your master's in 1988, and it looks like you stuck around Tennessee for a while.

WE: Yes.

TS: Even before you got your master's you worked for a while for TVA's Office of Natural Resources and Economic Development [May-September 1986], and then I believe you were a research technician [April-August 1988] and later a graduate teaching assistant [August 1988- April 1989] for the Department of Forestry, Wildlife, and Fisheries. But then what got you to Blacksburg, Virginia?

WE: I actually started in the PhD program at UT. The teaching experience I got at UT sent me on the path of where within academia I needed to be. The anecdote that I tell that firmed this up was when I was TAing in the intro Biology labs, about the third quarter I was there. The director of that program came to me and said, "We've got a program that we are starting that is intended to focus on kids from disadvantaged backgrounds."

TS: Oh, right down your alley.

WE: The whole idea was to identify students that were either first in their family to go to college or were coming from schools that might not have had the resources to give the students [the best education]. The whole idea was they identified a cohort of students that weren't doing well in the intro Bio courses because UT had classic, large lecture sections where you had three or four hundred students in a large lecture hall. This program was really forward thinking. They took cohorts of twenty to twenty-four students and had four days of lecture with a single individual who was also their lab teacher. They didn't want to commit full faculty resources, so they got teaching

assistants. There were two of us that were doing it, myself and Dale [Lynn] Vogelien, who is the current interim chair of our Department of Molecular and Cellular Biology.

TS: Oh, you're kidding me?

WE: No, she was a graduate student, working on her PhD at the University of Tennessee at that time [and received her PhD in Botany in 1993]. So Dale was a TA and I was a TA, but the whole idea was you had four 50-minute lectures with the students, and then they also had you for lab. I started out teaching as everyone had taught me and as I had learned. I stood in front of the board, and I wrote on the blackboard and essentially regurgitated the textbook. After about two weeks, there was a point where I turned around and looked at the class, and it was nothing but blank stares. I said, "You guys really aren't getting any of this, are you?" "Nope." Lots of shakes of the head, this was not making sense. And I can't say that I got any better at doing things, but I started trying some different things, started to begin to ask questions, rather than just writing on the board and doing check backs with the students.

TS: So you connected with them, whereas you weren't before.

WE: Exactly, but that was really a light bulb moment. I had gotten where I was because of who I was and the skills that I had, but those didn't transfer to everyone.

TS: Yes, and they didn't need to have somebody read the textbook to them.

WE: No, not at all. So like I said, that first quarter was not hugely successful, but it did start me to think about, "What does it mean to teach? What does it mean to help people?" I've mentioned mentors, elementary school mentors. I mentioned Henry Merchant. Dewey Bunting was very much a mentor for me. Dave Etnier was a mentor. Although Richard Strange wasn't a great research mentor, I learned a lot about teaching from him as well. So it caused me to reflect on what was it about those people and how did they approach things and what did they give to students and how could I do the same thing. That was really a seminal moment for me in getting to where I am today because it made me realize I really got a lot of satisfaction out of feeling like I was paying back. Family is important, and my family had always said, "You're not alone. You live in a community, and it is not about what you get" (although that's important; you have to get the basics), but "for everybody to move forward, everybody needs to give back." So that began to gel in my mind that this is something that maybe I could do and maybe I could contribute to within this area of Ecology that had become very important to me. So that was how I began to think about who I was. The question was how did I get from UT to Blacksburg.

TS: So you started at Tennessee, thinking you were going to get a doctorate from Tennessee.

WE: Right, and it was during that year that I was in the doctoral program at Tennessee that I realized that Richard was not a great mentor. It was that experience, where I looked around and talked with other doctoral students, that I realized what they were getting

from their mentors and what I wasn't getting. With regard to employment, starting in 1986, I had worked every summer in some capacity up in the Smokies with the fisheries' biologist up there, a fellow named [Stephen E.] Steve Moore. He was one of the authors on the article I mentioned. During summer 1989, there was a group there from Virginia Tech that was associated with the U. S. Forest Service [Southern] Research Station.

TS: Oh, and you went to Virginia Tech in August.

WE: Yes. I began working up there early May, and there was a collaboration between the National Park Service and the Forest Service to do some research on trout at high elevation streams. I got to know a guy named [C. Andrew] Andy Dolloff, who was part of the research unit. Andy and I did a lot of work in the backcountry, so we would hike for two or three days at a time, camp at sites, and ...

TS: These had to be young guys from Blacksburg, I guess.

WE: Andy was probably about six or seven years older than I am. He had just started as a research biologist for the Forest Service in Blacksburg at that point.

TS: Research biologist for the Forest Service; so he was not on the faculty?

WE: Yes, he was. They had a cooperative research unit there. Virginia Tech gave the research unit space and some support personnel. The Forest Service paid the salaries, which is a fairly common arrangement in applied programs.

TS: So when you went to Virginia Tech, you were basically in an applied program?

WE: Yes.

TS: And your scholarship has always been largely applied.

WE: Yes.

TS: All of those reports you've done for Paulding, Bartow, and Cobb County.

WE: Very much so.

TS: Fabulous, which is, I think, right in line with the mission of Kennesaw State.

WE: I would agree wholeheartedly. Anyway, I met Andy early in the summer, and we talked about what I was going through at the University of Tennessee. He essentially poached me. He said, "We can do better. Why don't you apply to Virginia Tech?"

TS: Fabulous. It is nice to be wanted.

WE: Well, the interesting part about that is Andy thought he was going to be able to generate money that would allow me to continue the trout work that I had been doing. He was fascinated by the bioenergetics, the food limitation things. My paper had not been published yet, but he saw a pre-publication copy of it and thought it was fascinating work. So he essentially said, “Come. I’m sure that we can find money in the Forest Service to support your research.” I got up there and, at that point, the Forest Service had just started a huge program to diversify. And by diversify, it meant both gender and racial diversity because if you looked at the Forest Service at that time, probably 95 percent of the personnel were white, European males.

TS: Yes. So you were in the 95 per cent.

WE: And Andy couldn’t find any money for me.

TS: But you were TAing, weren’t you?

WE: Yes, I TAed the first year that I was there and fell into a project that ultimately, if you look at the rest of my work, was what funded me. It was a study of an endangered species, the Roanoke Logperch (*Percina rex*). The project that funded my work was looking at the effect of a channel modification project in downtown Roanoke on a federally endangered fish species, the Roanoke Logperch. About halfway through my first year at Tech, it became obvious that Andy couldn’t find money. Another new faculty member, Paul [L.] Angermeier, who was my committee chair, was working with the cooperative fisheries research unit, which is out of the Department of Interior—again an applied program. There are cooperative fish and wildlife research units at a number of different land grant institutions throughout the country.

TS: I saw something that said, “VA co-op.” What does that stand for?

WE: The Virginia Cooperative Fish and Wildlife Research Unit. There is one over at [the University of] Georgia. Tennessee Tech [Tennessee Technological University] has got one. Auburn [University] has got one. So if you look around the country, most of the large land grant institutions have one of these units. It was a program that was established back in the 1930s to assist state wildlife agencies with their research. The whole idea was that the state pays part of the salary for the researchers and the feds pay part of the salary for the researchers, and then they can carry out programs.

TS: Well, it sounds like you were getting a very practical experience early on in how to raise money for your research projects.

WE: Yes. Yes.

TS: This sounds wonderful to me that you had this close cooperation where you were actually doing something practical for whatever state and federal government agencies.

WE: It is an outstanding program. I think if you look at the history of what we know particularly about game species and non-game species, both fish and wildlife, some of the deepest and best research in those areas has come from those co-op units. Anyway, long story short, Paul was associated with that unit. He had just gotten a contract to do this research. The city of Roanoke flooded a lot because, over time, they had continually filled the banks in of the Roanoke River to create new land.

TS: For development?

WE: Yes. Yes.

TS: So the development was causing problems downtown?

WE: A river has a natural flood plain. Roanoke kept squeezing and squeezing the river, and a river is going to do what it is going to do. When water comes down, it has got to go some place. As they narrowed and narrowed the channel, the only thing the river could do was to move out into those areas that had been previously flood plain. So the whole idea behind this cooperative agreement between the city of Roanoke and the U.S. Army Corps of Engineers was to go back through and recreate these flood plains—essentially, cut back into those banks and widen the channel to allow it to have storage capacity within the banks. It was a great idea. It actually worked, but the problem was the area where they wanted to do the project had populations of this federally endangered species. So before they could begin the project, they had to demonstrate that the project would have minimal effect on the populations of the Roanoke Logperch. They hired Paul, through the co-op unit, to do this study. The money came in quickly. He didn't have time to recruit a student. I was kind of hanging out there, without money, without a project, so he said, "Are you interested in doing this?" I was like, "Sure."

TS: Were you hired by somebody that wanted you to find that the logperch wouldn't be endangered by this project?

WE: Correct, we set up a monitoring plan that allowed the [U. S.] Fish and Wildlife Service, which is the other group involved, to assess whether or not the project did have some effect on the populations of the fish. So the focus of what I was supposed to do was to set up this long-term monitoring project that could be used to assess the relative level of impact that this overall project had on the fish. Originally, we were supposed to do two years of pre-construction monitoring. Then there was supposed to be four years of monitoring during and following the project, which obviously would have extended beyond the period of time that I was a doctoral student. But the whole focus of my work was to set up this monitoring plan and begin to develop the data set that would be used to assist the overall project.

TS: All right. So how did it go?

WE: Well, they gave us the money to begin the pre-construction monitoring, and they had a timescale set up that they were supposed to begin the construction. After the first year,

the city of Roanoke and the Corps realized that one of the problems that they were going to run into when they began to cut into these banks was many of these were old industrial sites. Many of them had been created at a time where if you had industrial waste, one of the things that you probably did was just to bury it. So the lawyers got involved in who was going to be responsible if they began to dig into the bank and suddenly hit a barrel full of PCBs [polychlorinated biphenyl, an environmentally toxic compound banned by federal law in 1978], or whatever else. So they turned around to us and said, "Oh, well, we thought this project would be going for the next four years, but we are going to be on hold for at least a year probably to work this out. So that funding that you were expecting, we will give you one more year to fully establish the protocols, but after that, we are not sure when we are going to start funding again." So, serendipity, about the time that that happened, a dairy farmer in the upper end of the Roanoke Basin accidentally discharged 300,000 gallons of liquid manure into a tributary to the Roanoke, which proceeded to create a fish kill that killed about five miles of a tributary stream, and affected another probably six to eight miles of the Roanoke, which, as it turned out, had populations of the federally-endangered Roanoke Logperch.

TS: So were there any Roanoke Logperch left after that?

WE: Well that is what I got paid to do next. Paul and I quickly got together and wrote a funding proposal that was set up to monitor the re-colonization of this reach by Roanoke Logperch. So we did an initial survey. The Logperch in the reach that was affected were gone. They were dead.

TS: Oh, okay. So did you get more fish from somewhere else?

WE: We didn't actually place fish in the reach. What we wanted to monitor was the natural re-colonization rate. We know that the fish community had been pretty well eliminated in about a four to five mile stretch of stream. The question that we proposed to ask and answer was; "How quickly will this stretch be recolonized?" And, "What are the characteristics of the fishes that recolonize?" So if you look at my list of publications, I think there is one in there that addresses that question.⁷ That is the results of what I ultimately ended up getting paid for.

TS: And you got a publication out of it.

WE: And I got a publication out of it, yes. The interesting part about that is we continued to monitor the reaches within the Roanoke River that were going to be affected by the construction project, because we had established the protocols. There was some advantage to having continuous data sets. The monitoring associated with that project just finished up about two years ago. There were four doctoral students that followed me

⁷ William E. Ensign, Kevin N. Leftwich, Paul L. Angermeier, and C. Andrew Dolloff, "Factors Influencing Stream Fish Recovery following a Large-Scale Disturbance," *Transactions of the American Fisheries Society*, Vol. 126, Issue 6 (November 1997): 895-907.

that had their research assistantships paid off that project. There is actually a faculty member at Georgia Southern University now, Jamie [H.] Roberts, who was a final doctoral student on the project. Jamie did an outstanding retrospective that looked at the development of the information in the course of that.

TS: Well now it looks like you stayed there another couple of years after you got your doctorate [in 1995], one year as an instructor, in the Department of Fisheries and Wildlife Sciences, and then you were a research associate for the U.S. Forest Service working with the Coldwater Fisheries Research Unit in Blacksburg. So was that a continuation of this project you're talking about?

WE: Well, no, at that point they had already hired the next graduate student into the Logperch project. I worked with him the first summer that he was there. Interestingly enough, he is now the project coordinator for the Non-Game Division here, with the Georgia Department of Natural Resources, a guy named Brett Albanese. I think there should be at least a couple of publications that we were co-authors on.⁸

TS: Okay. So was the job market really, really tight at that point, or did you really want to stay there?

WE: Renee and I were trying to decide if we wanted to stay in Blacksburg. The first year was actually a sabbatical replacement position. One of the faculty in the department went on sabbatical, and they hired me to teach his courses. The second year was really a split position between the Forest Service Research Unit, and the Department of Fisheries and Wildlife. And a lot of that was primarily curriculum development. I worked together with some of the faculty there to develop a freshman level course that integrated across all of the programs in the college.

TS: So you were thinking they might find you a place in the department to stay there?

WE: I knew that I would never be hired as a tenured-track faculty member. At that point in time, they would not hire from within. And to the best of my knowledge they still have not. They have hired people back after they've gone out and made a career for themselves. The question was could I stay there on soft-money positions? I probably could have working with Paul and Andy. I think we could have been creative.

TS: So how did the Kennesaw State job come about [in 1997]?

WE: One of the things about soft-money positions in science is you will never be a fully respected colleague if you stay where you are. You are always going to be appreciated. You will be valued. But your ability to really determine your own path is pretty limited.

⁸ W. E. Ensign, P. L. Angermeier, and B. W. Albanese, 1998, 1999, and 2000, Roanoke River Flood Reduction Project Pre-Construction Monitoring of the Endangered Roanoke Logperch (*Percina rex*), Final Report to the U. S. Army Corps of Engineers, Wilmington District, Wilmington, NC.

You are always going to be working as an associate for somebody else. It is almost like a lifelong post-doc position. Which is fine. It can be exciting.

TS: Well, you are learning a lot.

WE: And Blacksburg was a wonderful place to be. It was probably one of the best academic communities I've ever been associated with. But I think after the first year I realized, if I wanted to establish my own full identity, I needed to go elsewhere. So I applied to positions. During the year that I was hired at Kennesaw I had five or six different interviews for positions, everything from Research 1 institutions—I interviewed for a position over at Mississippi State that year—to some comprehensives, and then a couple of schools like Kennesaw.

TS: We were just one year into being a university at that time.

WE: Yes. I had really enjoyed and appreciated the curriculum development work that I did in that final year. The course that we put together is one that is still being offered at Virginia Tech. I had learned a lot from the faculty I was engaged with in developing that course. Kennesaw at that point had received a grant from the NSF [National Science Foundation] to develop Kennesaw's integrated science courses [Scientific Principles and Process I and II]. Gail [B.] Schiffer [professor of Biology], Gary [C.] Lewis [professor of Information Systems and Physics and director of Digital Instructional Development], Ben [R.] Golden [professor of Biology], and Diane [L.] Willey, [professor of Educational Psychology and director of Educational Research and Assessment] worked on the NSF grant.⁹ Anyway, that was a very different type of course, and it was one that appealed to me because it was set up as a non-majors course. The idea was not necessarily to overwhelm the students with scientific content, but to develop scientific literacy, and the idea of scientific thinking. If this is a terminal course for students, this is our last chance to help them understand what it means to think as a scientist and how science interacts with society. That was one of the courses that was listed in the job ad, and I did some research on it. That was back in the infancy of the Internet, when you could actually begin to search things out.

TS: Still pretty early for the Internet.

WE: Yes, it was, but there was enough information out there that I could get at least a little bit of the flavor of the course. You probably remember when [Edwin A.] Ed Rugg [vice-president for Academic Affairs] didn't want us to have a laundry list of options for the core curriculum. So the Introduction to Scientific Principles and Process was the course that all of the non-science majors used to fulfill the science requirement.

⁹ Ben Golden, Gary Lewis, Gail Schiffer, and Diane Willey, co-directors, "Connecting with Science: A Proposal for Engaging the General College Student," National Science Foundation Grant, 1994-1996, \$124,903.

TS: So students selecting a General Education science class didn't have a choice among [the introductory courses in] Physics, Biology, and Chemistry?

WE: You could. Any student could have taken introductory Biology or Chemistry. But we stopped offering the non-majors version of the biology introductory course at that point.

TS: Oh, I see. So people who were afraid to take the courses that science majors took could take Scientific Principles and Process for non-majors.

WE: Right. It was a course that had a different flavor. This was also about the same time [in the early 1990s] that [Kennesaw State mathematics professors] Nancy [E.] Zumoff and [Christopher B.] Chris Schaufele received an NSF [and a FIPSE—U. S. Department of Education Fund for the Improvement of Postsecondary Education] grant to develop Earth Algebra [to teach algebra to non-majors by having them solve environmental problems]. So it was a time at Kennesaw where there was a lot of discussion about how do we change teaching and how do we approach pedagogy? That attracted me. That caught my attention that here was a traditional science college that was thinking differently about the way that we teach and the way that we approach undergraduate education. So that appealed to me. Plus Kennesaw is close to Chattanooga where my parents were. Renee's parents were up in Ringgold, Georgia, at that time. So it was a family tie.

TS: [Ringgold was] less than an hour away.

WE: Right. One of the stories that R. C. [Robert C.] Paul [professor of Biology and KSU's first director of Sustainability in 2008] always told about my interview bears on this. We were eating lunch [during the campus visit for the job interview], and R. C. asked, "Why would you want to come to Atlanta?" I've been a lifelong Braves fan, and the first thing that came out of my mouth was, "Well, I'll get to see more Braves games." He said it was such a non-traditional answer, that he figured anybody that was willing to say this in an interview [laughs] ... But anyway, I think that the curricular side of what Kennesaw was trying to do with that program [attracted me to Kennesaw].

TS: Well, you know by that time too he was raising a ruckus over the destruction of natural areas on campus as we built residences halls.

WE: That was right after I got here [in 2002].

TS: I forgot what the plant was that was threatened by the construction.

WE: Pink Lady Slipper.

TS: Yes, right.

WE: So that was one of the things that really drew me here. I actually had two offers, from Kennesaw and from a comprehensive up in Pennsylvania. Ultimately, I think it was the chance to engage undergraduates in a real way that drew me here. I could sense [that

passion] in the Biology department even in the [job] interview from the way people talked about their teaching—[P. Edward] Ed Bostick, [Kathleen Ann] Kathy Fleiszar ...

TS: And both of them had won the Distinguished Teaching Award [in 1997 and 1984, respectively].

WE: Exactly. I didn't know that at the time. But the way that they talked about what they did in their classrooms—it was clear that this was a community of people that really thought about what they were doing in a different way from what I had experienced.

TS: So a place that you could come to teach and also continue your applied research.

WE: I didn't get that strong message.

TS: About the research?

WE: The message I got was, "If you can do things with students, that's great. But make sure that you get your teaching credentials down. And make sure that you are performing well in service. Now if you can fit research into that, that's great." I mean, that was about the time [Joseph M.] Joe Dirnberger [professor of Biology] had just finished up the Allatoona Project [as co-principal investigator, 1992-1993, and principal investigator, 1993-1996, for an Environmental Protection Agency (EPA) Clean Lakes Study of Lake Allatoona, in Northwest Georgia].

TS: Oh, yes, that's right!

WE: They were just wrapping that up, and so there was suddenly this realization that, yes, that could contribute as well, but people still weren't too sure. I mean [Herbert L.] Herb Davis was still the dean of the College [of Science and Mathematics] when I interviewed, and Dorothy [D.] Zinsmeister was the chair of the Department [of Biological and Physical Sciences]. In the course of talking to both of them during the interview process, the message I got was that, "The first couple of years here, make sure that you develop your teaching, your classroom credentials, and that you do well at service. If you can fit the research in, that's good." Right?

TS: Yes. Well, that was really the next question I was going to ask you, about your perception of the culture and intellectual life of KSU when you got here. And you've explained it. You came into a position that was defined primarily as a teaching position.

WE: Now that's what I was told in the spring [of 1997], when I was hired. When I came in the fall, [Laurence L.] Larry Peterson was the dean, and Ralph [J.] Rascati was the [acting] department chair.

TS: Okay. Where did Dorothy go?

- WE: Dorothy went down to the Board of Regents, and Herb retired [as dean, but continued to serve a little long as associate vice president for academic affairs]. I actually got wind of that that summer, because I came down to begin to look at housing opportunities, and I ran into [Ronald H.] Ron Matson [an associate professor of Biology at the time]. There were still labs being offered in the old Nursing Building, which is now the Mathematics and Statistics Building. That was before it had been renovated, obviously.
- TS: That was the original Science Building.
- WE: Yes. Ron was teaching one of the open labs, where students could come in. I wanted to touch base with him real quickly. Ron had been very helpful. I walked in, and he asks, "So what do you think about the new dean?" I went, "Excuse me?" So, yes, he related that there had been a change in the administration and that Dorothy had also departed.
- TS: That can be disconcerting.
- WE: It was. It was. I knew enough about academic politics and the way things change that what I had been told by Herb and Dorothy might not hold true.
- TS: Okay. So what was the message from Larry and Ralph?
- WE: Ralph said pretty clearly, "You need to begin to think about research. It needs to be student-centered research. You need to think about projects that you can do that would engage students."
- TS: Well, that's interesting because that is one of the questions I was going to ask you. How did you get into all your research work with undergraduates? I know by at least 2001 you were doing lots of things with students. So that was the message you got then?
- WE: Yes. That was from Ralph. Larry's message changed pretty consistently over the ten years that I was engaged with him. I don't even remember exactly what Larry told me. I don't think Larry knew what he expected. Anyway, Ralph said, "Do student research." Ralph had been involved with Joe on that Allatoona Project, so I think he had some image in his mind of the role of research in the sciences, and particularly in Biology. Ralph was very supportive of that. There was still resistance to it. I got mixed messages from some of the faculty about what I should do in terms of my time distributions. One individual said, "You need to make sure that you are deeply engaged in service and seek leadership roles. If you are not on at least three committees and contributing, you are going to have difficulty when it comes to promotion and tenure." Which was incorrect, but they could not know that at the time because that had been their experience. They were basing it on what they had observed in the past. As we both know, Kennesaw is a constantly changing, constantly moving organization. And the pace of change, I think, had quickened. You have much more perspective than I do, but from what I have been able to reconstruct about the institution, in the early to mid 1990s, things began to change fairly rapidly.

- TS: So you were wondering, “What am I doing here?”
- WE: Well, I did. But even though I had not got the message that researching was important, I knew that experiential education was important. That having students get hands-on experience was important. My own experience had been I really didn’t understand who I was until I got out there and did things. I mean, we talked about the sort of circuitous path that I have been through, and in most instances it wasn’t until I had gotten the chance to truly engage in something that I said either, “That’s right,” or, “That’s wrong for me.” It took me a long time to figure that I wasn’t intended to be a lawyer. And a lot of it was in watching what lawyers did, and watching the way that they interacted.
- TS: Yes. I just think that this sounds fantastic. If I were a student in a Biology program, and somebody said, “Let’s go out and do this project on a creek in Bartow County, and we’ll do a paper together,” I mean, that would have been heaven.
- WE: I like to think so. Everybody has their own view, but I really think that too often we expect students to already know who they are when they get here. I didn’t know who I was when I walked in the door of my first institution. There are students that certainly are ready to go full-force.
- TS: Right. Well, the worst thing that can happen is that they find out, “This is not what I want to do.” Better to find out by doing a project than spending four years going through a program.
- WE: I have told more than one advisee that, “One of the reasons you’re at a university is to see if things are right [for you], but don’t tell your parents I said that.”
- TS: I was wondering what your parents were thinking all those years when you were trying to find yourself.
- WE: I had wonderful parents, Tom. I had the most supportive parents anybody could have ever wanted.” [Two-minute break] “My parents were always very supportive. And it is that passion and that commitment that I got from them that has allowed me to do many of the things that I have done. Particularly my father—his humanity infuses everything that I do. So yes, they were very understanding and very supportive throughout my life.
- TS: Well, I know that you got your promotions on a regular basis after you got here. So Kennesaw must have been happy with you. You were promoted from assistant to associate in 2002, and then to full professor in 2009. This may be a little bit off of where we are going with the interview right now, but in January 2015 your home Department of Biology and Physics split into the Department of Ecology, Evolution, and Organismal Biology [EEOB], the Department of Molecular and Cellular Biology [MCB], and the Department of Physics. The change came about with the consolidation of KSU and Southern Polytechnic State University. So can you talk about how the consolidation affected your department, and you personally?

WE: Obviously, it affected the biologists by resulting in a split between two areas.

TS: Yes, and Physics—Kennesaw didn't have a bachelor's degree in Physics before consolidation, but Southern Polytechnic probably did.

WE: Exactly.

TS: And so that was probably wonderful for the physicists.

WE: It was. It was long overdue. We should have had a Physics degree many, many years ago.

TS: It's amazing we didn't.

WE: Yes, so that was a very positive change.

TS: What about Biology?

WE: Southern Poly had a Biology degree, and they had just established a degree program in Environment Science, so they actually had two degree programs that were linked to the biologists at Southern Poly. They had begun a program in Biotechnology. I'm not sure if it was a degree program yet or not, but they were taking steps to establish that. At the time of consolidation, we had two undergraduate degree programs within our department as well. We had the regular Biology degree and Biology Education, and then we had already established our Master of Science program in Integrative Biology. So we had three degree programs in Biology here at Kennesaw, and Southern Poly had two degree programs within the biological sciences. Then you had the degree program in Physics, as you said. The physicists, for the most part, very happily got together with a degree program that they could call their own now.

The Environment Science degree program was retained, and that came into the Department of Ecology, Evolution, and Organismal Biology. The Biotechnology program was discontinued. Two years before consolidation we [Kennesaw] actually had a degree in Biotechnology as well, but for a number of reasons it was decided to discontinue that program. The Biotechnology program at Southern Poly disappeared. We currently have an undergraduate degree program in Biology that is administered jointly by [the Departments of] Molecular and Cellular and EEOB. The Environmental Sciences Program is strictly within EEOB, and then the master's program is shared between the two Biology departments. That is the administrative structure right now. The reason the split occurred between EEOB and MCB was that if we had stayed as one department, we would have had well over fifty full-time, tenure-track faculty members.

TS: Too many for a department.

WE: Exactly. Administratively, it would have been far too cumbersome.

- TS: Are you thinking about becoming a School of Biology?
- WE: There was a discussion of that. I don't think that will happen anytime in the near future. I think, looking down the road, what is more likely to happen is that the general Biology degree program will probably be broken up into some other components. Currently, we have, I think, six separate tracks that students can pursue within that general program with curriculum diversity in each one of those tracks. I would anticipate sometime in the future that we will have ...
- TS: Each of those tracks becoming a degree?
- WE: Or some subset of them becoming a degree program and those programs being administered through whatever the most reasonable department is.
- TS: Do you still have the Master of Science in Integrative Biology?
- WE: Right, and that is still shared across the two departments. I don't see that shifting. The one thing I think might occur sometime in the future is for MCB, and particularly the biochemists, to come up with a shared master's program because there is a lot of shared lab space, shared questions. Biology is the integrative science. We need to know chemistry. We need to know physics. So to begin to try to break out these individual programs, we still have to maintain the overall integration that occurs. Even if you are doing Molecular and Cellular Biology, the principles of evolution and genetics still apply. Even if I am doing ecology, things that are happening at the cellular level inform what I do. So we have to maintain that discussion. We have to maintain those ties. I think that is probably the challenge that people in the Science Building will face going into the next decade or two—how to maintain that sense of integration while still developing identities that they can call their own.
- TS: How many people from the Marietta campus are now part of your department?
- WE: In our department we've got [Matthew] Matt Weand [associate professor of Organismal Biology] and [Daniel R.] Dan Ferreira [assistant professor of Environmental Science], who are both full-time, tenure-track faculty. Marcia Hesser is one of our lecturers [of Organismal Biology]. I think those are the three that are remaining. We actually had three other faculty members that were here at the transition who have since left for other places.
- TS: Are they all in the Science Building here [on the Kennesaw campus] now or are some of them housed on the Marietta campus?
- WE: Pretty much everybody in Biology is here [in the Science Building]. We do teach courses down on the Marietta campus, but it is usually just the introductory Biology courses. The vast majority of disciplinary courses are up here. I know that we teach sections of some of the integrated science courses, the Science 1101 and 1102 [Science, Society, and the Environment] down on the Marietta campus.

TS: It sounds on the whole that the consolidation didn't change that much for you personally.

WE: No, not for me personally. It hasn't. I think the one thing that has changed, and this will filter out over time, is the faculty that came over from Southern Poly were faced with a fairly abrupt transition. I think, as a senior faculty member, it is contingent on me to help them with that transition and to do things that allow them to understand how the environment has changed and what the expectations will be of them as they move forward.

TS: I know a lot of them had the fear that suddenly they were going to be evaluated for promotion and tenure by a different set of standards with more demand for research in particular.

WE: There is that expectation. I think the ones that really and rightfully should be most concerned about that are the faculty that were pre-third year review that may have been in the first or second year. I think there has been some consideration given to people that were within a couple of years of the tenure decision, with the recognition that they did not have the run-up time to that decision that other faculty may have. The faculty members that were in their first or second year [in 2015], I think, are the ones that are coming up for tenure now. I hope that the realization will be that they should be given some consideration about how to change their career because they were recruited [to Southern Polytechnic when it was] a place that was like Kennesaw in 1995.

I actually interacted with colleagues from Southern Poly before there was any discussion of consolidation. There was a fish biologist on the Southern Poly campus that I knew pretty well, and they really were who we were in 1995 or 1996. There was beginning to be some recognition that research was an important component of teaching in science. The Southern Polytechnic dean of Arts and Sciences during the transition, [Thomas] Tom Nelson, had been up at North Georgia [College and State University] as department chair [of Biology] and then had come down here as dean about three years before consolidation. He had begun to work to make space in the faculty schedule to pursue more research and was making funds available. But it was nowhere near where we are. I am watching what happens this fall very closely because I hope we still honor the difficulty of making that transition for the faculty that were there.

TS: So do you see your role as mentoring those people to the extent they want to be mentored?

WE: I do, and also as a voice that continues to remind people that they were not hired in as first-year assistant professors with the startup packages that we are currently offering faculty in our college. I'm trying to think of when we first started doing it in a significant way. It has probably been five to six years. How long has Mark [R.] Anderson been the dean [of the College of Science and Mathematics]?

TS: I think he arrived at the same time as [Robert H.] Robin Dorff [dean of the College of Humanities and Social Sciences, 2012-2018]. So they came in here six years ago.

- WE: In 2012-2013. One of the first things that Mark did is he began to push for some fairly significant startup packages for faculty coming in as assistant professors. The faculty that came from Southern Poly didn't get that. So if you look at somebody that started at Southern Poly in 2013 that is coming up for promotion this year versus a faculty member hired in 2013 at KSU, there is a significant financial commitment that was made to the Kennesaw campus faculty that was not offered to Southern Poly faculty.
- TS: Pity those who started teaching at SPSU in the fall of 2013, and then on November 1, 2013, suddenly found they were consolidating with a different, larger university.
- WE: Yes, so I think I also feel obliged to maintain the dialogue with administrators and decision-makers that all things are not equal. As we assess faculty, even though our guidelines may say one thing, if we are really truly interested in professional development—because that is supposedly what the tenure and promotion process is—we need to think about the standards that should be applied.
- TS: I hope you will be on the promotion and tenure committee and have some influence that way.
- WE: I am on the departmental promotion and tenure committee this fall. I have been on promotion and tenure committees almost non-stop since I was tenured at every level from the departmental level to the university oversight committee.
- TS: The most pleasant thing about being retired is that I'm not on committees anymore.
- WE: I envy you. Every time I see you at the Employee Fitness Center I think about all those things that you don't have to do that I'm doing [laughs]. At one level it can be frustrating. It can be time consuming. But getting back to what I said about my parents and the recognition that we live in a community, that is part of why I do that and why I don't try to avoid those activities because it is part of making this a place that I want to be.
- TS: Great! Well, I noticed a paper in 2002 by Joseph M. Dirnberger, William E. Ensign, Heather Sutton, and Donald McGarey, "Comparing abiotic and biotic parameters within a geologically diverse area (Bartow County, GA), *Proceedings of the Watershed 2002 Conference*. This publication is one of the early ones that shows your applied scholarship approach to working with the rivers, streams, and creeks around this area.
- WE: Really, that was a publication that came out of the Bartow County watershed assessment project. Do you remember [Harold K.] Harry McGinnis [former director of the A. L. Burruss Institute of Public Service and Research at Kennesaw State]?
- TS: Oh, yes.

- WE: Harry was the driving force behind that. He was the one that got the funding for that and all of those collaborators. We essentially looked at everything in the watershed—water quality, physical habitat parameters, aquatic invertebrates, fishes ...
- TS: Okay, so that 2002 report grows out of the technical report you did for Bartow County in 2001, I guess? [Dirnberger, Ensign, Sutton, and McGarey, 2001, “Status of Water Quality and Biological Integrity in Major Watersheds in Bartow County, Georgia,” 227 pages]
- WE: Exactly. Yes. Actually, there were five of us because Mark [W.] Patterson over in Geography was also engaged in it. He did some GIS [Geographic Information System] work for us. I am not sure how many students Mark had; but Joe, Heather, Don, and I had at least twelve or thirteen undergraduates that were supported. We actually paid them as summer field assistants to do that project.
- TS: That’s great!
- WE: That really was the first time we all had a bunch of students out and engaged. That is what Joe had done with the Allatoona project. He had student assistants that he was able to pay, but there was a gap between the Allatoona project and the Bartow project. That got us going in that arena. Some of my ability to get the ongoing projects with Paulding and Cobb County that I’ve had since 2003-2004 was because of the activities that we did with that project. I go back and look at the students that were involved in that, and just off the top of my head I can think of seven that either went on for graduate degrees [or are working in the field]. There is at least one that went on for a PhD, and a number that got master’s degrees. At least four are currently working in the environmental field with environmental consulting firms. That really set the tone for a lot of the things that I have done since then.
- TS: Well I know that you received the College of Science and Mathematics Distinguished Scholarship Award in 2001 and got it again in 2010. Was that for what you were doing with students on these technical reports?
- WE: Yes, primarily. I carried some of my research over from Virginia Tech, and so I was getting publications associated with that. I think there are a couple of publications around that same time period. There was a transitional period where I was still engaged with the work from Virginia Tech, and I didn’t really engage the undergraduates too much because I knew that it was ultimately going to end. It was really just finishing up some bits and pieces.
- TS: And it wasn’t local anyway.
- WE: Yes, so the Bartow project was what really began to establish the local activities. I think that 2001 award was primarily built around those publications. I had begun to do work with undergraduate students. I had, I think, three or four directed study students that were associated with the Bartow project or another project just before that.

TS: Most of your publications since then have had an undergraduate coauthor. But I think even more than your publications, your presentations are co-delivered, particularly at the annual meetings of the Association of Southeastern Biologists [ASB]. It looks like just about every year you've done at least one presentation with a student.

WE: Yes, I may have missed one or two years.

TS: Not many during the last seventeen or twenty years.

WE: Publications are great if you can get them. But in terms of a student's development as a scientist, it really gets down to communication. Can they relate the understanding that they've developed of the question that they've attempted to ask and answer? I think more than any other organization I've been affiliated with, the Association of Southeastern Biologists is probably the most welcoming and probably the best place for an undergraduate student to have that first experience. I mentioned that when I got to Kennesaw, I saw a community of people that were really engaged with undergraduate education and mentoring. ASB has that same feel. It is a cross-disciplinary group, so you have everything from molecular biologists to ecologists like myself. At some of the national organizations people can be pretty snooty and pretty cutthroat, when it comes to presentation of science. The folks at ASB understand that for many of these undergraduates, this is the first experience.

They are not going to give them a break on the science, but they understand how to ask, and they understand how to engage to help the students realize what it means to communicate. It's a wonderful group of people. That's why you've got so many of those spread throughout my vitae. That's what we're supposed to do. We're supposed to be educators, right? If we're really looking to allow the students that we work with the opportunity to think about and experience what it means to be a scientist, we need to put them in circumstances where they're going to have the best possible experience.

TS: Well, the biggest honor that you've received, in my mind, is when you were honored in April 2015 at the Association of Southeastern Biologists' annual meeting with their Meritorious Teaching Award. Maybe you could talk about how came about and what it meant to you to get that award?

WE: Personally, it is by far the most meaningful award that I've ever gotten because it really does represent a culmination of who I am and what I do. Obviously, it is an organization that I have strong attachments to given what I just said about it. To receive that award from that group is an affirmation. The way the nomination process works, you don't put yourself up for it. Someone else does. Don McGarey, who was the interim chair at that time, nominated me. Don and I have worked together. I was on the committee that hired him back in 1998. He and I have had a wonderful working relationship ever since then.

TS: Did he come from Jacksonville State University [Jacksonville, Alabama]?

- WE: He was at Jacksonville State before he came here. We poached him from Jack State. Don and I have worked together. We've developed curriculum together. We've worked together on a number of projects. So, anyway, Don was the one that nominated me for the award. The basis for the nomination is a letter from Don, a copy of my vitae, and then letters from both peers and former students that form the packet. When they present the award, they give you the packet. Reading those letters from the students that Don was able to find lets you know that you are doing what you set out to do. The students were spread everywhere from academia to private industry. Some were high school teachers. They go back fifteen years. It let me know that this thing that I've tried to do has produced the results that I had hoped it would. That people have found paths that have been meaningful to them and that I helped them in some way, shape, or form along the way.
- TS: I think that this whole concept is fabulous of doing research with undergraduate students, because we can teach and have influence on large classes of students. I guess we have minimal influence, at least, on them. At least they remember us maybe twenty years later. But it is different. Somebody the other day was saying, "I was in your class back during 9/11," and I didn't remember. It was just in a class. But when you are working with somebody this closely, it is almost like the relationship between a coach and an athlete, where you work very closely together, and you want them to succeed, and they want to succeed to please you.
- WE: Yes, and I think to continue that sporting analogy, the best coaches are the ones that recognize the strengths and weaknesses of the individual that they are working with. In your running, I am sure that there were things that you didn't do well, and your coach probably came up with ways that you could work on those. Or work to your strengths, whatever it might have been. I think as educators, it is contingent upon us not to do this cookie-cutter approach to what we do because not all of our students have the same strengths and weaknesses. I think part of the mentoring process is coming to understand your students in a way where you can help them build up those areas where they need to improve, and also help them capitalize on their real strengths.
- TS: I was just at a reunion up in Knoxville in May. All of our old track and field and cross country guys from the University of Tennessee in the 1960s get together about once a year. Our old coach is still around. It is a tight, warm relationship, and this is over fifty years ago that we're talking about. It's amazing how many that have been highly successful in their careers will offer testimonials to how important that athletic experience was to them. Well, being out on Raccoon Creek, I think the same thing must be happening.
- WE: Ultimately, education is about self-realization and self-understanding. If we give our students nothing else, understanding who they are and at some level where they fit into the world is what we should be doing. If it means that, "I don't want to be a biologist because I hate getting dirty," then I've been successful. I've allowed that student to realize, "That is not who I am." I've had that happen. I've taken students out with me

for one day, and they'll come and say, "Dr E., I don't think this is what I need to do" [laughs].

TS: Don't want to get dirty? Well, they can do molecular and cellular biology.

WE: Exactly, finding where they fit into that range of possibilities.

TS: Right. Well, you have done an incredible number of these technical reports with the three counties in this area. In most of them you were the principal investigator or co-principal investigator. I'm sure you're well known in certain circles in Cobb, Bartow, and Paulding County. Why don't you talk about Raccoon Creek and the history of those wildlife management areas, Sheffield and Paulding Forest? Talk about that because it has a fascinating history, I know.

WE: Yes, it does. I think there are a number of ways I can get us into this, but I'll start out with the students' story. My second directed study student was named Tim Pugh. He was born and raised in Paulding County. Tim was in my first Ecology class that I taught here. Tim like myself had sort of a checkered academic background. He bounced around from a couple of majors, and didn't have a very high GPA [grade point average] at that point. I had these writing assignments that I gave out that were one page, answering a specific question. Tim didn't even use the full page. He only used about two-thirds of the page, but it was the most succinct, concise answer that I got from the entire class. No crap. I mean, it was just what I needed. Right? It was like this guy has got something. So I began to try to pull him out of his shell. He was kind of a shy, introverted kind of guy. I got to know him. He worked on the Bartow project with me. He kept talking about, "Dr. E., you have got to come out to Paulding County. There's a creek I need to show you. It's not like anything else around here. It's called Raccoon Creek." We finally got out, and I immediately thought this is a pretty interesting place.

Fast forward seven years. Tim by 2006-2007 was directing the environmental monitoring program for the Paulding County Water System. He said, "We need to do watershed assessments like the one we did for Bartow. Do you think you could come up with a contract and a bid for Paulding to do the fish work?" I said, "Yes, we could probably do that." So we started talking about it in fall 2006 and started watershed assessment work out there in 2007. The first year we did Raccoon Creek, and Tim was right that it is a beautiful stream. The story I always tell about Raccoon Creek is fish diversity. The Columbia River Basin covers about 450,000 square miles in the Western U.S., right? Oregon, Washington, parts of British Columbia, and parts of Idaho.

TS: Lewis and Clark Expedition [1804-1806].

WE: Yes, all those great people. Across that entire basin, there are thirty-one native species of fish. Raccoon Creek has about forty-two square miles total area, and it has forty-five species! So it is a pretty diverse place. Unlike a lot of the other areas around here, it has been lightly touched. Because of the topography, there wasn't any row crop agriculture in most of the basin, other than maybe some of the bottomlands.

- TS: Because of the steep topography that went up and down?
- WE: Yes. In most of this area [of Georgia] you had some of the larger plantation style tracts. Raccoon Creek was very much like Appalachia where you had small landholders that were just trying to scratch out a living, eking out a hand-to-mouth sort of existence. So because of that you didn't have the same sort of long-term impacts on the landscape. There was logging, but it was fairly limited. Following World War II, most of the small landholdings were purchased by larger timber companies, the [B. M.] Jones Company, which you may be familiar with. They purchased a lot of the land. There was another company called Forestar [Realty Group, Inc.] If it had already been logged, they planted it in loblolly pine [*Pinus taeda*]. A lot of it that was still remaining was deciduous forest. So you never had the same problem with sedimentation and erosion in that watershed that you had in most of the other watersheds in this area.
- TS: Because of lack of row crop agriculture?
- WE: Yes.
- TS: But the logging didn't cause environmental problems?
- WE: It was small enough scale that it wasn't. Again, it was small individual landowners that might cut out [small tracts]. There are still plots of land out there where you can find oak and montane longleaf pine [*Pinus palustris*] that are easily one hundred years old.
- TS: Is that right?
- WE: Beautiful place—Tim and I enjoyed working there. About the same time the Nature Conservancy, Georgia Department of Natural Resources, U.S. Field and Wildlife Service, and to a lesser degree Georgia Power, began to do some projects. Nature Conservancy and Georgia DNR realized the potential. The Fish and Wildlife service wanted to protect the area because there are two federally endangered species of darter. Back to the darters [laughs]—we started out a long time ago with the snail darter controversy, right? The logperch that I worked on is actually a darter.
- TS: Oh, it is? Why do they call it a perch?
- WE: Long story, but it is in that same group of fishes. Now we're back full circle to a watershed that has not one, but two, different kinds of darter that are federally endangered. Fish and Wildlife Service said that, "Raccoon Creek is unique. It is a lightly touched watershed. If we can work together with private landowners, the Nature Conservancy, and Georgia DNR, this can be an important area where we can maintain a level of diversity that is unusual." So they started working together back about that time on land acquisition. Forestar and Jones Company had done about all the logging that they wanted to do. They were willing sellers, starting 2008-2009.
- TS: So that's where those wildlife management areas come?

WE: They were already in place. Both Sheffield and Paulding Forest had been wildlife management areas, but much of the land had been leased at that point from the Jones Company and Forestar. That is a pretty common pattern where in some of the larger landholdings, the landholders will lease those areas to allow hunting, and then Georgia DNR will manage them. But the lease is short-term typically, and they can always revert back to the landowner. In the case of these leased areas, Georgia DNR and Nature Conservancy started negotiations and said, "Listen, you don't want to be long-term landholders. Why don't you let us buy the lands?" Over the course of the last decade close to \$70 million dollars has been spent in that watershed to purchase land.¹⁰

TS: By DNR?

WE: By DNR, by the Nature Conservancy, and by Paulding County. In 2008 Paulding County actually passed a special purpose local option sales tax [SPLOST] that purchased about three thousand acres that are currently contained in Paulding Forest. There was a combination of people who were interested in this.

TS: Good for them! The voters voted for the local option sales tax?

WE: Yes, yes, it is a wonderful story. If you go back to the 1940s there was a group of landowners that actually began to manage those lands for deer and turkey.

TS: Was that E. F Corley and his neighbors?

WE: You got it. The Corleys. Did you get a chance to look at that article?¹¹

TS: I did.

WE: That's a neat piece isn't it?

TS: It is. Where they wanted to stay closer to home to go deer hunting.

¹⁰ See for example, Request by the Department of Natural Resources to purchase approximately 391 acres of real property from the B. M. Jones Company LP at Paulding Forest Wildlife Management Area in Paulding County for a consideration of \$2,500 per acre, not to exceed \$977,500, SPC # 831.36; and Request by the Department of Natural Resources to purchase approximately 500 acres of real property from the Forestar (USA) Realty Group, Inc. at Paulding Forest Wildlife Management Area in Paulding County for a consideration of \$2,714.76 per acre, not to exceed \$1,357,380, SPC # 831.37, unanimously approved, Minutes, State Properties Commission Board Meeting, December 15, 2016.

¹¹ Daniel Chapman, Public Affairs Specialist, "A Wildlife Gem, in the Shadow of a Booming Atlanta," U. S. Fish and Wildlife Service, June 7, 2017, <https://www.fws.gov/southeast/articles/a-wildlife-gem-in-the-shadow-of-a-booming-atlanta/>.

- WE: Yes. They got tired of driving up to the Blue Ridge Mountains for deer hunting.
- TS: So they pooled twelve thousand acres and agreed not to hunt on it for five years?
- WE: For five years to allow the deer herds to expand.
- TS: And they imported deer in that time.
- WE: And same thing with wild turkeys and fingerling rainbow trout.
- TS: And the cynics said, “They’ll shoot the deer as soon as they get off the truck.” But they didn’t.
- WE: Right. But they didn’t. I think the other part about this project is that there is a land ethic in Paulding County that differs from what I’ve seen in some of the other counties in the Atlanta metro area. There is still a fairly strong support for what Aldo Leopold, one of my favorite all-time authors, would refer to as the land ethic. Have you ever read Leopold’s book, *A Sand County Almanac*?¹²
- TS: No.
- WE: You have got to read that. Easy read. He proposes a land ethic, which says, “Yes, we need to use the landscape, but we also need to recognize the integrity of the biological community that lives there.” The things that we do, ultimately, yes, they should serve our needs, but they also have to serve the needs of this larger community.
- TS: That’s really the big debate, historically, I guess, about environmentalism, whether the Theodore Roosevelt approach of we want to preserve things to use them, or the John Muir approach of we just want things to be untouched.
- WE: Yes, and I think Leopold ... it’s funny in Biology we always talk about the Grand Synthesis between genetics and evolution, and that occurred back in the 1940s and 50s when Mendel’s understanding of what was going on with chromosomes was combined with Darwin’s understanding of natural selection and evolution, and that was referred to as the Grand Synthesis. I like to believe that Aldo Leopold’s land ethic proposes some synthesis between the views of Muir and Roosevelt. I think if we pay more attention to Leopold’s worldview, we would make a lot more progress than we have. That’s why I think you should read *A Sand County Almanac*.

Anyway, back to the Raccoon Creek project, those groups started working together in 2006-2007. I got engaged about the same time. We had a big planning meeting out in the county where we got county administrators and representatives from a lot of the other

¹² Aldo Leopold, *A Sand County Almanac: And Sketches Here and There* (Oxford University Press 1949).

groups and began to talk about what might happen. I always felt like there had to be some educational research component associated with the management side. So early on we began discussions about how that could develop. It's had sort of a slow burn until about the last two or three years. Starting 2016, it really has begun to take off. Currently, we are in discussions with Paulding County to build an environmental education center in Paulding County, associated with Richland Creek Reservoir Project. They built a water supply reservoir. It's a very small watershed just to the east of Raccoon Creek watershed. They're going to build a water supply reservoir there. Initially, they were talking about just building a small visitor center kiosk. I think we've convinced them that they need to do something a bit more expansive.

TS: More educational?

WE: More educational. They have also agreed to purchase a small tract of land, about one hundred acres, that is directly adjacent to Raccoon Creek, down in an area that would serve as a wonderful central location to take students and faculty and others out to talk about things that are going on in the watershed. They just agreed to that about two weeks ago.¹³ The idea there is to build a combination of a center that the [Georgia] Department of Natural Resources, Nature Conservancy, and educational groups coming in could use for some of their work. So that's in the works. We've got five Biology faculty members, including myself, this summer that are working with secondary science educators in the Paulding County School System that are working on hands-on research projects on the ground in the watershed.

TS: With the high school kids?

WE: They are working with the teachers right now, and the teachers are essentially serving as co-researchers on these projects.

TS: And then they're going to get their high school kids involved?

WE: And they are going to get their high school kids engaged.

TS: That's fabulous!

WE: Everything from ridge tops down to the stream—we have people that are doing research with amphibians and reptiles; we've got a faculty member that is looking at the montane longleaf pine and the way that the controlled burns that they do in the watersheds influence it.

¹³ Contract between Paulding County, GA and B. M. Jones Company, LP to purchase approximately 112 acres for \$3,500 per acre in the 3rd District, 3rd Section of Paulding County, GA along Raccoon Creek ... with the closing date expected to take place within 60 days, unanimously approved, Paulding County Board of Commissioners, June 26, 2018, Board Meeting Minutes.

TS: That is a good thing they're buying up all that land now, because I know that the population pressure must be immense in Paulding County right now.

WE: The thing that really encourages me, Tom, is that we ... and I will continue to use the term "we" in this because it really is a true collaboration among public partners, private non-profits, educational institutions, and management institutions ... we took the members of the Paulding County Commission out to the watershed over the last three months. There are four county commissioners [for Posts I-IV], a chair of the county commission [David L. Carmichael], and the county administrator [Frank Baker]. They have all been out there. David Carmichael gave his State of the County address to the Paulding County Chamber of Commerce about three weeks ago [June 7, 2018]. He gave four goals for the county for the coming decade. His fourth goal was to make Paulding County a research and recreational mecca built around its natural resources. He had a Top Ten list of his projects going forward. The Raccoon Creek educational and environmental center was the fifth on his list of projects.¹⁴

TS: Fantastic!

WE: I think there are just huge opportunities to integrate education and research from our master's program. We've got master's students who are working with the teachers all the way down to elementary school and serve as a catalyst for some really good things to happen.

TS: Tell me about the Raccoon Creek Symposium that you held at KSU in January [January 26-27, 2018].

WE: Mark Anderson, my dean, has been very supportive of this work. He allowed me to really work hard on that starting last fall. I was given a Science and Mathematics Faculty Fellowship with a little bit of course release time and a little money. The major objective was to put the symposium together. The idea was to bring participants in from, again, all of these different groups [Paulding County Government, Paulding County School System, Georgia Department of Natural Resources, and the Nature Conservancy] to talk about where we were on the project and also to bring new participants in that may not have been engaged. We brought faculty in from at least seven other colleges and universities in the metro area. I think, overall, there were seventy participants representing thirty different organizations. The Friday morning session presented a background history on Raccoon Creek, the ongoing activities and things that have been done so far, and future projects that we hope to do. Then the afternoon session was a series of breakout groups that focused on specific ideas of projects where people could talk with each other and brainstorm ideas. [Field excursions to the Raccoon Creek watershed occurred on Saturday]. It worked out very, very well.

We have a good example of the outcomes. Just two weeks ago we had students and faculty from the Georgia Gwinnett College and from Dalton State College that came

¹⁴ A YouTube video of Mr. Carmichael's State of the County address is available online.

down. We did a series of field experiences for them for a field techniques course that they were doing. I was contacted by one of the Georgia Gwinnett faculty members who is engaged and wants to do something similar this fall and, ultimately, begin to develop quantitative research projects where his students can get engaged in the sort of work that we are doing. I think that's a win-win for everybody because these are students that could potentially continue on in our master's program. I think we hope to do the same sort of thing as we push this idea down through the Paulding system. If we have high school students that get engaged, and they realize the opportunities that are at Kennesaw, they may come in as undergraduates to get engaged. I think that's one of the concrete things that came out of the symposium.

The other concrete thing that came out of that is that one of the presenters was a high school faculty member [Marc Pedersen] that I've worked with at Paulding High School. We've done some pilot projects. He is just an outstanding teacher [Paulding County School District Teacher of the Year for 2013; Georgia Teacher of the Year finalist for 2015; Georgia Bio Biotechnology Teacher of the Year for 2017]. Marc is amazing in the things that he does with his students. Marc summarized the work that he and I have been engaged in. David Carmichael, the County Commission Chair, and Frank Baker, the County Administrator, were in the audience. I was watching them as Marc's talk went on, and they were whispering to each other behind their hands and nodding their heads. Marc got to the end of his talk, and he said, "The thing that we really need is a physical space that we can begin to expand." He goes, "A research and education center is just critical to really making this work." Frank and David looked at each other, and they nodded their heads. At that point, I knew that Marc had given me the hook that I needed to really begin.

TS: That's great! Now, it's official, I guess, with that speech.

WE: Yes, I guess so. The symposium was great. I think there are going to be a whole lot of positive things that come out of it.

TS: Fantastic! We've probably talked about your favorite courses, but what is your favorite course to teach?

WE: I don't have one, Tom.

TS: I thought that would be the answer. There are some neat titles for some of your classes. I notice that you have taught graduate classes such as Stream Habitat Management and Habitat Selection and, of course, standard undergraduate courses such as Vertebrate Zoology. Aquatic Biodiversity sounds like a neat course.

WE: That was one that Joe Dirnberger, Heather Sutton, and I developed just a couple of years after I got here. We all have skills in aquatic sciences, and we really wanted to give the students something that they could use. Both the Aquatic Methods course and the Aquatic Biodiversity were part of a triad of courses that were essentially, "Who lives in streams and lakes and rivers?"—the Aquatic Biodiversity. "How do you sample?" That

was the Methods in Aquatic Biology. And, “How does it work?” That was called Aquatic Ecology back then, I think. We really encouraged students that had aquatic interests to take all three of those. I mentioned that a lot of our students have gone on to be successful. Some of our most successful students took all three of those courses. When we started for the first time, we had a cohort of four students that managed to take all three courses. We wanted to do something that would recognize them, so we came up with what we called “The Aquaholics” Certificate.

TS: The Aquaholics!

WE: One thing that happens in field courses is you have a lot of unique experiences that you may not have in the classroom, some good and some a little strange. Anyway, this pantheon of stories associated with the courses has developed. What we would do for each student is put their name on a certificate that said, “This is to certify that (such and such) is given the recognition that they are now an Aquaholic. This is based on their performance.” We would relate some of those stories. We had that cohort of four students that had done that. They were all in class together, so, at the end of the term, we put our academic robes on. They didn’t know we were going to put our robes on; we came marching into the classroom. We asked them to come up to the front. I can’t remember if we were playing *Pomp and Circumstance* as we presented them with these documents. Every single one of those students is hugely successful. There is one, Erin Feichtner, and Tim Pugh was in that course. I can’t remember now who the other two were. Anyway, they’ve all gone on to careers in the aquatic sciences. Erin was one of the students who wrote one of the letters for me for the ASB award.

TS: That’s fantastic.

WE: Those are the courses I love because the students get the chance to really think about and be who they think they want to be. You mentioned the camaraderie and the sense of community that developed with your track group. I can promise you that I could get a lot of those students together from those courses today, and they could pick up as if nothing had ever happened.

TS: You need to have a reunion.

WE: I think it would be great fun.

TS: We often act as though teaching, scholarship, and service are three different, separate areas, but what you have shown is how you integrate teaching and scholarship together. I’m wondering too about service.

WE: That’s part, too.

TS: I know you’ve been vice president of the Association of Southeastern Biologists. Are you going to be president?

WE: Well, I won't be president. They've got an interesting structure. There is a president-elect and a president. I've managed to dodge the full title. But I think there is this false trichotomy that teaching, scholarship, and service exist in their own spheres. They don't. If we really want to do our job, we have to integrate across those. That's true with internal university service. It should be true with what we do with our professional societies. We should be integrating all of those. I hope I've been able to do that in my work. I consciously chose service activities within the department that allowed me to integrate my teaching and my research. Very early on, there was a committee in our department with the full title of the Novel Experiences in Work and Training Committee.

TS: Oh my goodness.

WE: You can figure out what the acronym is.

TS: NEWT?

WE: It was the NEWT committee, which came into being shortly after...

TS: The Newt Gingrich course. Yes, he taught a controversial class here [entitled *Renewing American Civilization*] in fall 1993.

WE: There is a biological significance too because newts are [salamanders]. Anyway, the NEWT Committee was the one that was engaged in overseeing directed study experiences. The committee reviewed student proposals and then gave a thumbs-up or thumbs-down, or made suggestions, much in the same way that the Honors Council reviews Honors projects. When I got here, the structure was fairly rigid. Students got four credit hours for one semester. The vast majority of students either failed to complete it or they took incompletes. The structure was not conducive to completing projects in a reasonable manner. As soon as I got on the committee, I started working to reformulate how we did directed studies and have continued to do that ever since then. That service informs my teaching. It informs my research. I think that idea that they have to be separate is crazy. If you have a passion for something, you can find ways to do all three of those in a way that allows you to work to that passion. At the point we stop feeling strongly about what we do, we are not going to do a good job. When you stop getting affirmation from what you do, at a level that really speaks to you, then you're probably not doing it right. Why simply serve on a committee just because somebody needs to serve on a committee?

TS: Yes, I understand completely. As a concluding question, I usually ask people what has kept them at KSU. Related to that, maybe you can talk about how the campus has changed in your twenty or twenty-one years here.

WE: Yes, it is my twenty-first year.

TS: Why don't you talk about what keeps you here, and how you have evolved as the campus has evolved?

WE: The best way to answer that question is to tell you that there are times when I tried to leave here. There are times where I probably could have left here. During the first decade, I was not fully satisfied with the way that our College of Science and Mathematics was changing, without going into details.

TS: You had some turnover there.

WE: Yes, I did not always agree with the direction that Dean Peterson wanted to take the college or with his approach to doing that.

TS: Well, he ran off [Patricia H.] Patti Reggio among others [former professor of chemistry, recipient of Kennesaw's Distinguished Teaching Award in 1987, and first recipient of Kennesaw's Distinguished Research and Creative Activity Award in 1997].

WE: Very quickly. He ran off a lot of people. I probably would have left if there hadn't been some personal things that kept me tied.

TS: Like your parents and family?

WE: Yes, that was a big part of it. Without going into detail, there were aspects of my personal life where it wouldn't have been right for me to leave. The most important thing in my life, Tom, is my family, and that includes my wife and my parents and my siblings and her family. There were times during that period where I could have transitioned out of here. Since that would have made it difficult for members of that circle, I chose not to.

TS: Lucky for us.

WE: Well, I hope so. Having said that, I did stay. I continued here regardless of the way that I viewed the decisions that were being made in my college. I continued to work on the things that we've talked about. I continued to advocate for things that I thought were important. It has worked out. With the transition away from an administrator who I think made some bad decisions, I think we have administrators now whom I may not always agree with, but can talk with, and feel like they listen, and feel like they are at least giving a balanced view of things. That keeps me here. The programs that I have developed keep me here. The students keep me here. In my faculty performance agreement, I have said multiple times that I would like to retire at the age of 60.

TS: Okay, well, that's not far off, is it?

WE: February 2019.

TS: You can't retire in February.

WE: Don't tell them. If the Raccoon Creek project had either developed more rapidly or if there were signs that it was not going to develop, yes, I would retire.

- TS: But Raccoon Creek is going to keep you here?
- WE: We'll have to see. I have discussed with Mark and with Chris Sanford [Christopher P. J. Sanford], my department chair, that I am getting tired. There are aspects of being a faculty member that become physically and mentally demanding. My ability to be in the classroom at the level that I feel obliged to be is much more difficult now than it used to be because I've got these other things going on. I can't short-change students. I can't walk into a classroom and just wing it.
- TS: Right.
- WE: If I am going to be in the classroom, I have to be there. I can't do that and the Raccoon Creek project and mentor faculty in the way that I need to. I need to discuss ways that I can change my working life.
- TS: It sounds like your passion is the Raccoon Creek project, so you have to let something else go?
- WE: I have to let something go. There is too much. It is coming full circle. I think being a human being is wanting something to live after you, right?
- TS: Yes (affirmative).
- WE: I know that I have created some level of legacy in my teaching. As I said, that ASB teaching award allowed me to finally feel fully affirmed. I know I've done that. I know I've got a cohort of human beings out there that have found something in their lives because of what I've done. There is another legacy that I think can be realized through this Raccoon Creek project that is even much deeper. It has the potential to touch many, many more lives than I ever could have touched just as a faculty member. I want to see if I can make that happen. It may not be with Kennesaw. There may be something as this project evolves where I transition to some other place, but right now I know that the place I can have the biggest influence is as a member of Kennesaw State University.
- TS: Do you have any research faculty positions in Biology?
- WE: That's a possibility. That is something I need to discuss with Mark and Chris.
- TS: What is your teaching load?
- WE: We have a teaching-scholarship hybrid model. In that circumstance, it's nine contact hours [per semester], which usually ends up as one or two course preps. To do the Raccoon Creek project correctly, I might be able to teach a graduate course or a single section of a lab. But I'm getting tired. There are things that are happening with this project now. Combined with my summer research, I have three courses in the fall. I'm teaching the undergraduate seminar. That's more administrative. I just need to arrange things as people come in. I'm teaching Vertebrate Zoology, and I'm teaching a graduate

course in population estimation. There is prep work that I need to be doing for that. I've got my graduate student. I have the summer watershed assessment project. There are things that need to be done on the Raccoon Creek project, and I don't have the time. I know if I can get to those things, the project will move ahead at a very rapid pace. I've got a wife that I love deeply and want to spend more quality time with.. We travel quite a bit. I'm not going to give that up, Tom. That is the person I want to spend the next twenty-five or thirty years of my life with.

TS: Right, fantastic! I'm sure it will work out. Good things happen when good folks are doing good things.

WE: I hope that's true. I hope that's true.

TS: I'm really out of questions.

WE: You and I have always had good conversations, Tom. I can remember talking with you, and you may not even remember it, when they did the new faculty orientations, and we came down to your house. You had just begun moving into your house.

TS: Yes.

WE: We talked just briefly, but I remember thinking, "This history professor has some interesting comments." I was right. Every time we run into each other, it has been enjoyable.

TS: This has been fantastic this afternoon.

WE: Yes, I've enjoyed it. Thanks for taking the time.

TS: Thank you.

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