

## **Transcript for “David Curtis, Senior Vice President of WEST Consultants in Folsom, California”**

Clear Skies Ahead: Conversations about Careers in Meteorology and Beyond

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### **Kelly Savoie:**

Welcome to the American Meteorological Society's podcast series, Clear Skies Ahead: Conversations about Careers in Meteorology and Beyond. I'm Kelly Savoie and I'm here with Rex Horner and we'll be your hosts. We're excited to give you the opportunity to step into the shoes of an expert working in weather, water, and climate sciences.

### **Rex Horner:**

We're happy to introduce today's guest, David Curtis. He's the Senior Vice President of WEST Consultants in Folsom, California. Welcome, David. Thanks very much for joining us.

### **David Curtis:**

Thanks for having me.

### **Kelly:**

David, could you tell us a little bit about your educational background and what sparked your interest in science?

### **David:**

Certainly. After high school, I went to Penn State University where I majored in agricultural engineering and I graduated in 1972, which was in the depths of the recession after the end of the Vietnam War. And had a tough time finding a job in engineering and ended up making milk and ice cream for a year, at a place called Ideal Farms Dairy in Frederick, Maryland. So after a year of coming home every night with a white uniform stained with chocolate sauce and butterscotch and strawberries, I decided that I needed to make a career change and went to graduate school at the University of Maryland in Civil Engineering. And a year and a half later graduated and took a job with the National Weather Service at their hydrologic research lab in Silver Spring, Maryland. And after I was there a couple of years, they decided I needed a little bit more seasoning academically and got an opportunity—a wonderful opportunity it turned out—to be assigned to MIT, to get a PhD in water resources. So I graduated with my degree from MIT in 1982.

### **Rex:**

Could you tell us a little more David, about what opportunities you pursued in high school, college, or your early career that you felt in retrospect were particularly beneficial to securing the job you wanted in your profession?

**David:**

Well, I got very lucky after graduating from the University of Maryland. In my life plan, I had a thing I didn't want to do, and that was work for the government for some reason. I didn't want to do that.

**Rex:**

Was that to do with Vietnam at all and that anti-war sentiment?

**David:**

Not really. It felt constraining was the way my perception was at the time. So my professor, Dr. Reagan came by one day and said, "Hey, there are three openings at the National Weather Service's hydrologic research lab, why don't you go check it out?" So I did and went over there and met a very dynamic group of young scientists that were passionate about water resources. And they all, it seemed like they were in their late twenties and thirties and maybe early forties and all excited about what they were doing. And several of them were the preeminent people in their field at the time. I'd read some of their material as an assignment in grad school. And I said, "Well, maybe I should go here for a couple of years and just by pure osmosis, I might pick up something valuable and that could be helpful later on in my career." And as it turned out, it was, it opened many new doors that I never thought were possible and including the trip to MIT, which was just a wonderful experience.

**Rex:**

Wow. That does sound truly lucky.

**Kelly:**

When you were working at the National Weather Service, I know that a lot of people do shift work, but was your position a Monday through Friday type position or did you have to change shifts here and there?

**David:**

At the National Weather Service, in the research lab, that was a standard day shift, 8:00 to 5:00 arrangement, which was just fine with me. Later, I transitioned to technical position as a flash flood hydrologist at the Northeast River Forecast Center, which at the time was located near Hartford, Connecticut. And that involved a little shift work because floods and weather don't pay any attention to the clock. And typically, what happens, it's a batch of stuff, occurs at night, weekends or holidays. So that was my experience at the River Forecast Center, but it wasn't the continuous stretch of shift work like the typical meteorology office.

**Kelly:**

So you started off on the East Coast and then how did you end up on the West Coast working at WEST Consultants?

**David:**

Well, after working at the Weather Service, toward the end of my time at the River Forecast Center, I got involved with a fancy new thing called microcomputers, and were brand new at the time and for the

first time communities could own and operate a local flood warning system that was automated, based on the microcomputers. Up until that time—literally—data communication processing and so on was done on either mid-range computers or the large standalone computers, which were out of the price range of local communities. But with new technology, miniaturization of electronics, the development of remote operating rain gauges that could communicate by radio to a microcomputer, suddenly it was within the reach of a local community to have a flash flood warning system. So I got involved heavily in that with the National Weather Service and became the leading expert at the time and helped offices all over the Eastern part of the United States, actually east of the Rocky Mountains get started with automated local flood warning systems.

After a while, we decided, a group of us decided that doing that within the framework of the Weather Service, which had tunnel vision around the flood forecasting component, the technology they were using could apply to a variety of things like water quality monitoring, agriculture weather monitoring, fire weather. And every time we went into a community, they said, "Well, can you do this? Can you do that?" And so within the bounds of the National Weather Service, we couldn't do those things. So there were three or four of us that got together and decided that we should form a little company and offer a broader range of services related to the flood warning systems to local communities.

**Kelly:**

So was California the best place to start that?

**David:**

Well, that's where the technology really started in a program called ALERT, which A-L-E-R-T is automated local evaluation in real time. And so that was the focal point across the United States. And it turned out that my partners lived out in California. I was on the East Coast and as our little company grew, we added some people out in the West Coast and suddenly, I was one person on the East Coast, they were all on the West Coast and it made a lot more sense to move me as opposed to moving five or six people the other direction.

**Kelly:**

You were the odd man out.

**David:**

Yeah. So it was a great move. And I love being in California.

**Rex:**

Was that program you were speaking of, did it come out of Silicon Valley as a tech center, or was it a different area?

**David:**

It was the Bay Area, but I wouldn't call it Silicon Valley, which is a little bit south of the Bay Area, but certainly, the electronics firm that was the first manufacturer was located in Berkeley.

**Rex:**

So now you are the senior vice president at WEST Consultants. Could you walk us through a typical day or an atypical day on the job?

**David:**

Certainly, today's experience is a lot different than it was a year or two ago, for sure, with the pandemic, transitioning to video meetings as the primary mode of communication, not only sometimes in the same office with the staff or other offices or with clients, and it's worked out a lot better than I think most of us ever dreamed of. So my day is populated with a lot of video meetings. In fact, my personal record, I think is twelve video meetings in a given day.

**Kelly:**

Wow.

**David:**

Yeah. And aside from that, the aspect of communication, the lack of travel, and we can communicate using video, it's getting in the morning, checking with staff, seeing where they are in their projects, coordinating with other offices that we're working with and sharing projects. At my level, in a company, a lot of the work I do is business development. So that's contacting new clients for potential new projects, following up with older clients to see what they're doing, writing proposals. Since I do a lot with flood warning systems and helping support communities that are operating flood warning systems. Like today, we have an atmospheric river event that's about to hit the Northern Coast to the Pacific Northwest. That's why I'm checking in on clients to make sure their systems are working properly and everything's up to speed. I am responsible for some projects myself and so someplace in that day, I have to find time to actually work on projects.

**Kelly:**

So is it a really large company? Are there a lot of staff and do you have many clients or is it more of a smaller niche?

**David:**

Somewhere in the middle, WEST Consultants has about 70 people right now, we specialize in more sophisticated, high end, water resources applications. For example, we don't do a lot of standard design work like for designing a drainage system for a local development, for example, but we do things like supporting the U.S. State Department and the Army Corps of Engineers and helping renegotiate the treaty for the Columbia River System in the Pacific Northwest. The treaty is coming up for renegotiation between Canada and the United States. The Corps of Engineers is our largest client and we work with the Corps all over the United States. And in some cases, internationally, working on water resources issues associated with flood control, water supply, reservoir management, so on.

**Kelly:**

Interesting.

**Rex:**

And how large is the leadership team at WEST Consultant?

**David:**

I think we have eight offices now. And so the leadership team is basically composed of the office managers.

**Kelly:**

So it sounds like you do a lot of different things. What do you like most about the job in particular?

**David:**

What I like most about the job is the impact that it can ultimately have on people. When I applied to University of Maryland, for my master's degree, turned out it was a last minute thing and they required an essay to be submitted. And I had to submit the next morning and I hadn't prepared an essay. So I literally pulled out a small piece of paper and it was a small piece of paper and wrote two sentences. Number one, I wanted to learn about my environment and number two, I wanted to teach two other people about my environment.

**Rex:**

Two?

**David:**

Two, and I teach them to do two. So I got accepted and the week later they offered me a position as a research assistant and off to grad school I went. And that really speaks to the passion that I have about learning about the environment and communicating about the environment to other people. In my world, the environment is water resources and specifically river forecasting and flood forecasting.

**Rex:**

I think it's really interesting in your essay that you focused on teaching two other people, where teaching one person is a net gain, where you teach one person and they teach one person and they teach one person, and so on. However, teaching two people is an exponential gain...

**David:**

Exactly.

**Rex:**

Where the first two that you've taught, teach two more each and so on and so on, and the number climbs quite high, but it's also humble because you're not trying to teach 10 people yourself, you're passing on the knowledge. And it's very humanistic and altruistic, I think, so I wanted to commend you for that approach and those wise words in your essay. So now, in the present day, what do you see as some of the biggest challenges in your field of water resources and river forecasting?

**David:**

Interestingly enough, finding the next generation, finding the new people, finding the new people with communication skills. We may talk about this and some other topics in a minute or two, but I've found that communication skills are the single most important determinant of long-term career success.

**Rex:**

And why is that?

**David:**

Well, in college, particularly engineers and the same is true with meteorologists, they never tell us that we're going to spend our entire careers communicating. And most of the time we're not prepared for it at the undergraduate or graduate level. I mean, we know math and physics and all that good stuff, but rarely do they actually emphasize the need for communication. If you're working in the field, you're communicating with your colleagues, explaining what you've done. You're communicating to clients and proposing new projects. You're briefing other people, briefing senior management on progress on reports, you're presenting at technical conferences. So it's just constant communication throughout your career. And so that I think is an absolute key.

**Kelly:**

I think it's interesting you say that because we've heard that a lot on these podcasts, and I'm surprised that some of these universities who have these degree programs in engineering and science don't catch on that maybe some of the requirements of the major should be public speaking, presentation skills, other types of communication courses, because that seems to be, like you said, a crucial skill that is going to be needed in the future.

**David:**

There are some that do. University of Iowa makes a point of doing that. I was really fortunate because I had a newly minted PhD assistant professor at the University of Maryland by the name of Dr. Richard McEwen, He just recently retired. And he would have been the longest tenured professor in the civil engineering department's history at the university. He was a stickler for communication. Now, this was the time before word processors and easy typing and we had to hand write weekly 30 page lab reports, and they would come back, mine in particular would come back, filled with red pencil markings about correction, correcting the English, correcting grammar, everything. I was convinced that he held stock in the red pencil company and that he was responsible for their profits on an annual basis. We hated the class. Absolutely hated it because it was so much work.

So fast forward, about 25 years and I had the opportunity to be invited back to the university and speak to a joint meeting of the entrepreneurship program, which was jointly administrated between the department of civil engineering and the business school. So 150 people in a room, including my old professor. And I told the story about how much we hated his class. But at that time looking back 25 years, we recognized that it was probably the single most important class that we had because of his emphasis on communication.

**Rex:**

So how often do you use a red pen David or red computer type, when you're working with your fellow colleagues trying to improve communication?

**David:**

I don't restrict myself to red. It's whatever pen and pencil I can grab, but it's really interesting too, because our profession we're blessed with so many people working from overseas that come here to the United States. So my staff, I have a woman from Brazil, I have a woman from Iran, one woman just left from India. And so for the most part, English is a second language. So that's another layer of being able to get people introduced to this really difficult, complex language that we have and getting verb tense and all that right for communication. So there's that element, but even English speakers like myself, it's just basically constant learning and constant reminder to pay attention to grammar, it counts.

**Rex:**

I have an incredible amount of respect for scientists who are communicating often very complex ideas into their second language, often English and bring that message to an audience. It's a true skill and it deserves commendation.

**David:**

I mean, I feel like I barely speak English at times. I have no idea. I mean, there's one woman that works for me is from Brazil and she literally came and went to the University of Iowa having never really spoken English before and, in graduate school, learned how to speak and write English.

**Kelly:**

So David, you talked a lot about water resource planning and management, and it's importance, and when it comes to climate change, what are some ways that States can incorporate that into their planning?

**David:**

Well, first is recognize that climate change actually exists. It seems like half the States, for largely political reasons, seem to ignore science and ignore the basic facts about what's happening around us. And so I think getting over that hurdle where we have agreement across the political spectrum so that that message carries down to the populations that we're actually trying to lead. This is really critical. I mean, that lack of acceptance gets in the way of a lot of good policy and good decisions that could be made around our future regarding the climate. So we have the technology, we know things can be done, we're seeing surges of solar power and wind power and even geothermal power and other alternative sources and advances in battery storage and things like Tesla automobiles and so on. So we know that these things can be addressed, but to really get the momentum shifted, it will take a political shift to do it. And that means that there's a whole bunch of folks that have to recognize the science around them.

**Kelly:**

Well, let's hope 2021 is a bit better, heads in the right direction, at least.

**Rex:**

Do you have any optimism, David, that the political climate will improve and benefit the environmental climate in the future?

**David:**

Yes, I do. [I have] eternal optimism and quite frankly, in the last four years, it's been a little hard to keep that generated, but I'm buoyed by the apparent direction that the new administration's taking the applaud their efforts to do it. And I'm optimistic about the future.

**Kelly:**

I think there's going to be a point where it just can't be ignored anymore and hopefully, it won't be too late.

**David:**

Interestingly enough, I had a friend, Chris Milly, who I went to school at MIT with, and he was at the Princeton geophysics lab working in climate modeling. And twenty years ago he told me, we talked about climate change, and he told me that at that time, the signal hadn't emerged from the noise. He said, "But it will and when it does, it's gonna be late." And I always remember that it really rang true, especially now.

**Rex:**

I've heard that it's not so much about prevention anymore as it is about mitigation.

**David:**

I think you're absolutely right. I mean, there's so much momentum built into the climate change in terms of the thermal heating and the changes that are occurring in the polar regions of the country, which are warming much faster than the rest of the globe. And there is a tremendous amount of momentum behind that that is not going to be shut down anytime soon. So I think we are in the mode of mitigation now as opposed to prevention.

**Rex:**

So David, this is a career podcast, so I'd like to ask you, what advice do you have for our student listeners or job seekers or other folks who are looking to establish their career in water resources or hydrometeorology or related field. And then, second, what would you look for in a resume from one of these job seekers, if you were hiring?

**David:**

Good question. First thing for me is to learn the basics. Our world is changing so fast that it's really hard to pick a current topic and expect that will be there for the rest of your career. I've had maybe five or six different markets that I've been involved in that did not exist the day I walked off the campus of Penn State University, when I graduated with a bachelor's.



**Rex:**

Could you list a couple of those just for our curiosity?

**David:**

Climate change, automated flood warning systems, radar rainfall estimation, using the Doppler radar, for example, none of those existed when I was an undergraduate. So for me to be prepared for that is learn the basics, the math hasn't changed, the physics haven't changed since 300 years ago, learn that and develop an instinct for what the equations mean and what the physics actually mean. Be incredibly open to new opportunities. Don't wall yourself in to a certain mode of thinking, be open, be absolutely committed to lifelong learning. And also, we talked about this before, but build your communication skills and the communication skills are an element that I look for in the resumes. We, as a company, look at the master's degree as the entry level, that is a minimum standard, next thing I'm looking for is the ability to communicate.

**Kelly:**

So what types of things could students do to help improve their communication skills? Would you be looking for people who did internships, where they were able to present or train people, or would you be looking for public speaking or someone who was in debate club or something like that?

**Rex:**

Or a blog?

**David:**

All the above. I mean, any opportunity to build that skill set, opportunities to speak, opportunities to write, whether it's a blog or doing a paper presenting at a technical conference, all of those things. Quite often, and definitely for a little bit older applicants we'll ask them to do a presentation for us. It's real easy to do now with Zoom and some of the other video platforms. So we'll ask them to do a presentation and just to test that.

**Kelly:**

That's definitely some good advice. So thank you for joining us, but before we end the podcast, we always like to ask our guests one last fun question. And I wanted to ask you, what is your all time favorite book?

**David:**

Well, I have several, but one book that I just really love and it's a little known book titled appropriately enough *Storm* by an author whose name is George Stewart. Stewart was an English professor at the University of California. And he wrote this account of a 1935 Pacific storm that originated near Japan, now the book was published in 1941, as the forecasters track this storm and the two characters were a junior forecaster and a senior forecaster. And together, they decided that they would name the storm and they called the storm Maria and the storm transcended across the Pacific, hit California with wind and heavy rain and floods. And it was just a marvelous story about the whole process of forecasting,

which rings true today. I give that to my staff to read as an example of the complete picture of the forecasting.

Now, the technology is different. What existed in California in 1941 is different than what exists today, but all the elements are remarkably accurate. That story called *Storm* later inspired several cultural, iconic events. And one is they inspired a song called, "They Call the Wind Maria," which was part of the hit Broadway show *Paint Your Wagon* in the early 1950s later made into a movie in 1969 with Lee Marvin and Clint Eastwood. And the guy that sang that song stole the show from the superstars that were in the movie. Even today, 75 years later, not quite 75 years for Maria, but Maria Carey, her name was selected based on that song by her parents.

**Kelly:**

Interesting.

**Rex:**

Wow. That's a lot of star power.

**David:**

The song has been covered by dozens of artists over the last 75 years and it's a remarkable song. And if you ever hear the version by Harve Presnell, who did it in the 1969 movie, it's worth listening to. I didn't find out that book until later in my career, but I remember there was a Disney movie or Disney episode made about the book and depicting a big storm. The Kingston Trio covered the song in the early 1960s as part of the folk song craze at the time. And I remember vividly those songs and today, I credit that for at least an initial inspiration for what I'm doing in my career.

**Kelly:**

Well, it sounds like a really interesting book. I'm going to go look for that one at the library. I'm very interested in that.

**David:**

It's worth a read. Yes.

**Rex:**

You sound like a music lover, David and you're in Folsom. So I have to ask, are you a Johnny Cash fan?

**David:**

I have a Johnny Cash cycling jersey because we have a Johnny Cash bicycle trail that goes right past Folsom Prison near our house, so yes.

**Rex:**

Good to hear. Well, David, thank you so much for joining us and sharing your work experiences and all your other stories with us. It was a true pleasure. Thank you.

**David:**

Thank you so much. I enjoyed it. It was a great time. Thank you.

**Kelly:**

Well, that's our show for today. Please join us next time rain or shine.

**Rex:**

Clear Skies Ahead: Conversations about Careers in Meteorology and Beyond is a podcast by the American Meteorological Society. Our show is produced by Brandon Crose and edited by Peter Trepke. Our theme music is composed and performed by Steve Savoie and the show is hosted by Rex Horner and Kelly Savoie. You can learn more about the show online at [www.ametsoc.org/clearskies](http://www.ametsoc.org/clearskies) and can contact us at [skypodcast@ametsoc.org](mailto:skypodcast@ametsoc.org) if you have any feedback or if you would like to become a future guest.