Dan Seed:

Hello, and welcome to Big Ideas, a podcast from Texas State University. I'm your host Dan Seed, from the School of Journalism and Mass Communication. This month in the midst of beach season, we're talking the Clean Coast Texas initiative with Nick Dornak, the director of Watershed Services at the Meadows Center for Water and the Environment at Texas State University. Nick, thanks so much for joining us.

NIck Dornak:

Absolutely. Great to be with you today, Dan.

Dan Seed:

So let's get to know you a little bit. What's your background? What drew you to this area of study and work?

NIck Dornak:

I grew up in south Texas on a little ranch in a little town, outside a little town of Goliad, and that was probably my roots run deep there and family and agriculture and ranching. Love to run down with my best friend in high school. We'd go down to the coast and fish all night on the pier and do other things. It took a roundabout way to get back here. I went to Texas A&M and received a degree there in agricultural development, then on up to the University of Wyoming, where I received a Master's in range and ecology and watershed management. Was up in Wyoming working for their Department of Environmental Quality for eight or nine years. And we started having kids and realized it was a little bit cold a place to raise kids, decided to get back to Texas.

NIck Dornak:

Since about 2012, I've been working in Texas on watershed protection, water policy issues. I served as a coordinator for the Plum Creek Watershed Protection Plan in Hayes and Caldwell county, and had a great opportunity in 2018 to join the Meadows Center team here with Dr. Andy Sansom, Emily Warren. We have since added Dr. Robert Mace as our executive director. I was given the honor, I suppose, of Director of Watershed Services here for our team.

NIck Dornak:

we oversee numerous watershed protection efforts, hydrologic research, water quality research here at the Meadows Center. We have expanded our territory and our partnerships greatly over the last number of years. One of the great areas of interest across the country and the state is certainly the Texas coast, the amount of research going on there, the need for that research, the need for public engagement and applied science is so great. And that's what makes this program, Clean Coast Texas, such a timely and intriguing and important program for us to be leading here at Texas State University with the cohort of other academic institutions, engineering firms. But that's my roundabout story of heading north and back south and getting to work here on Clean Coast Texas for the Meadows Center.

Dan Seed:

He's been everywhere, man, right? I guess all over the place. So Nick, you touched on the Clean Coast Texas initiative, and we'll get into that a little bit later. And you also touched on the Meadows Center and a brief overview of what you do there. You know, at one time I worked in communications for the Meadows Center for the summer, kind of a part-time gig and it's a real fascinating place. And most people know it probably best for the glass bottom boat tours, but there was so much going on at the Meadows Center that you guys do there. Give us a better picture, just overall for the public, what the Meadows Center does and what you all do.

NIck Dornak:

Absolutely. Well, certainly our roots start here at the headwaters of the San Marcus River. We are the stewards of Spring Lake. We work with the local community and the university to check the lake as both the amazing jewel of the Texas hill country and an amazing place for research and for education. So many people come through the Meadows Center and really begin to understand the value of the springs, the value of rivers for the first time. Many times as kids, but sometimes we don't really touch it and feel it until we're older. So that education that we do with the public here at the lake is really a core piece of what we do, and certainly something we're very proud of.

NIck Dornak:

But as you mentioned, the Meadows Center is so much more than just Spring Lake. We have projects. We've worked internationally at times. We work all over the state of Texas and are really increasing our research products here at the Institute as well. I think that's a major goal for us is to be a leader in the state of Texas when it comes to environmental research, water research. We're actually going to be even hiring a climate coordinator for the Meadows Center, climate director. We're really looking for innovative projects, innovative research. We work all over, really to help advance this field of study in the environment and particularly water, which is our roots.

NIck Dornak:

My contributions typically focus on Texas hill country. We have some projects still in west Texas, and of course the coastal zone, but really centered around water and water policy. That is, we look at interactions between groundwater and surface water and help folks understand that nexus and understand how to better protect those resources. We have a real disconnect here in the state of Texas in how water is regulated and understood. There's a need seems to separate surface water from groundwater, but here in the hill country, and in many cases on the coast, especially with sea level rise, there's so much interaction between the water that flows underground and the water on the surface.

NIck Dornak:

So the understanding of that is absolutely critical to protect these resources. We have a great team here in Watershed Services, where we are working to protect watersheds around the state. We have so many impaired watersheds currently in the coastal zone alone, there's over 300 impaired water bodies, but these streams are in rivers, our coastal waters are really feeling the impacts of land use changes, of development over the last a hundred years, and especially the last couple of decades of growth here in the state of Texas. So trying to come to terms with all of that and make sense of it, I think is really what drives so many of us here. That's how we try to engage in grades with local communities, engage with state officials and state agencies. Really, again, just trying to push this level of understanding up a few notches for the state of Texas.

Dan Seed:

So one of those projects clearly that you're talking about here is the Clean Coast Texas initiative. Fill us in, tell us what this is about. What's the basics of this project?

NIck Dornak:

We called it Clean Coast Texas because it's a lot easier to say and understand than the Coastal Nonpoint Source Pollution Protection Program, which is what it has been known as for a number of years. We have been working with the general land office for several years to develop this program as their primary implementation initiative of that Coastal Nonpoint Source Program. Nonpoint source pollution is pollution, basically, that doesn't have a point. You think of refineries or plants where you've got a pipe and water comes out or pollutants come out into the air, and those are point sources. Those are things that are generally regulated with some type of permit and easier to understand and grasp and measure. Nonpoint source pollution is another beast. We have pollution coming from a variety of sources. Think of a city and how many lawns are out there.

NIck Dornak:

You don't have permits for putting fertilizer on your lawns. We don't have ways to really quantify how much pollution is running off, how many nutrients from your fertilizer or herbicides that you place on your lawn, or large agricultural operations that have fertilizer running off of there. Or even things like sediment, which is which happens to be a pretty substantial cause for much of the pollution that we see, just the soil running off the surface because there's not vegetation there all the time to hold it together. All of these things flow downhill. All of these things flow into our creeks and rivers, our tidal streams, our bays, our estuaries, and on down to the coast. So it's really important to understand that and then bring it down together to the Texas coast where we work throughout the coastal zone in Texas, which actually is a pretty large area when you think about it. It's about 8.8 million acres that extends from Orange County down to Cameron County.

NIck Dornak:

We've got a very large geographic area, many different types of land uses, many different communities with different goals, different political approaches and leaders. So trying to bring them all together under this banner of Clean Coast Texas is what we're attempting to do, working and finding best fits for communities. And that's what this program is about. It's addressing nonpoint source pollution. It's about addressing flooding issues and addressing water quality in our coastal areas in Texas.

Dan Seed:

And clearly, flooding issues have been a concern along the coast the last few years with the number of hurricanes and whatnot and building down there, I would imagine as well as that area builds up, it creates issues in that regard. So when you look at the Texas coast and you study it, what are some of the biggest issues facing it in terms of this pollution that you're describing?

NIck Dornak:

I'll give you one example of an area we're working in very closely right now. And that's the Little Bay in Rockport. Little Bay is an area that is a huge economic driver for the community. It is a recreation destination. Over the last several decades, we've seen the natural sea grass in Little Bay completely disappear. Trying to understand why that is and how that is and what we can do to restore that sea grass is really important, because sea grass is indicative of a healthy ecosystem, right? So things are out of balance. There's nutrients that run in from the stormwater, there's wastewater that gets discharged into Little Bay and everybody knows and understands that protecting and restoring Little Bay is such an important part of the economy for that area, for their fishery, for their recreation, really trying to engage with the key stakeholders in the area to come up with solutions that will be driven by research and driven by action is really such a key piece of this.

NIck Dornak:

So that's one small example. But we see up and down the Texas coast impacts from things like sea level rise, where historically, things were built in a way that weren't really influenced by the tides. Septic systems were installed, roads were built, and the tides didn't reach them. Well now we see flooding there regularly, and that flooding has two real impacts. One is of course the amount of water that's coming in, and it disrupts things, it's difficult for the local economies, it floods shops, disables roadways, and things like that. But with that, it picks up many more pollutants than we do. Those flooding issues are what folks really see, and they understand that they can see what's going on when they're flooding. So we try to find ways to both address flooding that actually improve water quality as well, so better storm water systems, better management practices. And that's a couple of key issues that we see, but restoring those bays, restoring those estuaries. That is where our work is really focused right now, along with building partnerships up and down the coast.

Dan Seed:

All that stuff that you're talking about, this idea that now we're seeing it, now we're feeling it, now we're the general public, stakeholders, politicians, businesses are now maybe coming to grips with this idea. You know, we hear a lot about this with climate change and just changes to the environment that we get to a point where this stuff happens. It becomes visible. Are we at that point where we're really truly at a tipping point with this, where now it's visible, but if we don't do something it could get and worse?

NIck Dornak:

I think that's accurate, and another key piece of this program that I haven't touched on yet is resiliency. Coastal communities, they've been hit over the years. Now there's not really a community I can think of on the Texas coast that hasn't been spared some pretty significant disaster over the last hundred years, whether hurricanes or other types of flooding issues. So these communities understand this need to rebuild and rethink, come together after a major event. The problem is, is as you know, we are seeing these major events more and more often. So the type of flooding events that might've taken place once every 10, 20, 50 years before, we see those on a regular basis now. So these communities really have to rethink how they are going to survive, much less thrive, in the next century.

NIck Dornak:

And that's where we come in, I think, with working on sustainable practices that can help them develop their communities, develop their economies and fisheries in a way that works with the challenges that they're going to see in the 21st century, and that's going to be sea level rise, it's going to be the climate change. So building more resilient communities is absolutely integral and reducing the impacts of how they grow on the Texas coast and other communities. When you incorporate practices that we call green infrastructure practices, things that slow storm water down, allow it to soak in slowly, and it reduces the amount of pollutants that are carried downstream.

NIck Dornak:

Unfortunately, it's not an easy sell. People, engineers, developers, we're used to pouring concrete, the same old type of systems that have quote unquote worked for us for the last hundred years. Those are the seemingly easiest, cheapest ways to do things. So changing that thinking, that's certainly the biggest challenge, I think, is changing the way people think and the way that we approach and prepare for the next disaster and reduce the impacts that we're seeing more regularly, that we just didn't see before.

Dan Seed:

And looking at the project itself. There's a lot of that kind of education going on. Not only the data, the research that you all are going to be doing in this collaboration, but working with communities, Texas Stream Team, part of the Meadows Center, getting out there and working with citizens to better understand the environment. So I guess when you look at all this stuff, what are some of the areas for the public consumption, when they're listening to this and they hear it, and it's this idea of the sea level rise and changing things, what are some tangible things that you would point to that the public can point to or look at and say, I see that happening, or this is the way that they're going about this process.

NIck Dornak:

That's a great question. It really comes down to a multi-pronged approach for us because we recognize the importance of building a sustainable program. The Clean Coast Texas program, and the Clean Coast Texas collaborative that we lead, we see them both as long-term programs, 10, 15, 20, 30 years, perhaps, of engagement. But in order to build any kind of sustainability into a program, to build that kind of grassroots change that we need to see, we have to win hearts and minds of the communities and of the citizens along the coast. You know, those folks have salt water in their veins, that's the cliche for a reason. They're a salty bunch, very passionate about their communities, certainly don't like to be told what to do. So by design, our program is non-regulatory and incentive-based. I'll throw that in as well. Everything that we're doing is incentive-based and voluntary for our communities.

NIck Dornak:

But getting back to your question in terms of what folks can see, and you brought up Texas Stream Team, which I think is a real key part of this. So public education is huge in this, increasing the understanding of these problems. These communities see it, they know when they're driving down roads that didn't used to flood, or when they're getting water in their homes on small storms. So I think these folks are seeing that and seeing the problems they've seen, the folks that have lived there, they've seen the sea grass disappear from Little Bay. They've seen the beach advisories go up. I mentioned we work with the General Land Office on this. They're really the guiding light of this program. They have a program called Texas Beach Watch, and whenever bacteria levels in our coastal bays in the Gulf get too high, we put up beach advisories and those communities see dramatic drops in the amount of tourist money coming in, their beaches empty out, it impacts their economy.

NIck Dornak:

So business owners certainly are feeling it. And that's why I think this program can be successful, because if they aren't feeling that impact, they're not feeling these things in their daily lives, it's very difficult to want to change. So I think that we have that there, just the basic understanding that we've got to do things better is there. And so I think our goal is really to paint a picture, give them a vision of what their communities can be, but we're not going to do it for them. Every piece of this is working with stakeholders, working with your local elected officials, community leaders, and experts on the Texas coast to help find best fit solutions for these communities, because not every community has the same problem. There's nothing ubiquitous across in Gulf Coast, other than hurricanes, maybe, but we have a lot of different, we have small communities, we have big communities. We have growing communities. We have shrinking communities. We have educated communities, communities where we've seen some real, real problems with environmental justice and social equity and all of these kinds of things.

NIck Dornak:

So it's real important for us to get to know the folks in the communities, which is how our program is designed with that education piece, but also just with sitting down with them and asking a lot of questions and finding out what do you guys need and where can our program fit in with your needs? And then we'll make a plan and we'll work on it together. We'll bring you the resources that you don't currently have. That's what I think we really bring as a program.

Dan Seed:

So certainly a very collaborative approach. And earlier, Nick, you talked about the five tenets of the program. Would you mind going over those and just explaining what they are and how they fit in?

NIck Dornak:

As I mentioned earlier, Clean Coast Texas is working with communities to facilitate these non-regulatory incentive-based approaches in five tenets of our program. Those include building better from the start, re-imagining existing development, so things like revitalizing downtown areas to improve stormwater management and beautify existing spaces, managing wastewater at the source. So sharing resources and guidelines for things like septic systems, how they can be installed and maintained, reducing roadway runoff pollution, designing and maintaining roads and highways and bridges to improve the runoff quality and make transportation and commerce easier in the communities. And of course, working with residents, so that's providing educational resources and incentives to improve water management on a backyard basis. Those are the key tenets of our program. There are many ways to address that in the many diverse communities across the state, as our coastal zone.

Dan Seed:

And what's interesting about that, Nick, those things that you're bringing up are things that are very out of sight, out of mind for the average person, right? I mean, stormwaters, roads, those things that exist. We see them and we just don't think about it. And I think that's why conversations like this are important, to let people know all this stuff affects the environment, the water that we drink, the water that we recreate in. And it's just kind of a very eyeopening look at the world around us and how what we do and the way we do things affects these other areas that we just, again, for most of us, it's a very out of sight out of mind thing. Nick, we're running up against the time here, but I wanted to give you one last opportunity. Anything that you'd like to add or say? I know you guys have a website and some figures that you'd like to throw out there here at the end.

NIck Dornak:

Sure. Well, I'd like folks to realize the importance of the coastal zone to the state of Texas. I think it's really key to understand that, to understand why we are putting so many resources into our work with the coast and why we're choosing to do this in a very collaborative fashion. This is not something that one university, one academic institution, one consulting firm can really manage. So it's very important to develop our partnerships. And we have partnerships with Texas A&M AgriLife Extension Service, which has arms all over the state, but particularly the Texas Community Watershed Partners Program and Texas Sea Grant, as well as an engineering firm that we've worked with on a number of projects, Doucette Engineering, and they were actually the real technical expertise behind our sustainable stormwater manual that you can find on our website.

NIck Dornak:

We have a great team of folks. We have a local presence, which is very important as well for building trust and understanding in these communities. And I'd really invite anyone to check out our website, to learn more about our program. That's cleancoasts.texas.gov. And I'm sure that we'll have that link available with this podcast. The coastal zone, we're talking 8.8 million acres, we're talking 6.7 million residents, two and a half million jobs, 300 impaired water bodies. There's no shortage of work to be done, and certainly the impact that a program like this can have, can be tremendous with that community support. So we are really looking forward to expanding our network or partnerships with those local communities. And I think we've got a great team put together to address that. Really appreciate this time and opportunity to speak with you today.

Dan Seed:

Of course, thank you, Nick, for joining us. A fascinating discussion, very interesting, and something that is very eyeopening, hopefully for the public at large, to think a little differently about our coasts and the way that what we do impacts that area and impacts our environment. So Nick Dornak, from the Meadows Center for Water and the Environment, thanks for joining us to discuss the Clean Coast Texas initiative.

NIck Dornak:

Thank you, Dan.

Dan Seed:

And until next time stay well, stay informed, and we'll talk with you next month.

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