Climate Closeups – Matt Whitbeck

Full interview transcription

**Matt Whitbeck**: You know, Blackwater National Wildlife Refuge is a, you know, a fantastic place for wildlife, you know. We’re here to conserve and protect fish, wildlife, and plant resources. But honestly, I think one of the most valuable things that we can do is we can be a place where the public can come to Blackwater and they can see the impacts of sea level rise with their own eyes. To see those changing landscapes I think is a real powerful experience, and something we really need to share with people.

*[electronic title music fades in]*

**Olivia Gieger:** This is Climate Closeups. An audio series that brings you the voices of the hose working against the tide of global climate change through their daily work here at the service. It’s an opportunity to look at the individuals behind the work and what drives them. I’m Olivia Gieger.

**Mason Wheatley:** And I’m Mason Wheatley.

**Olivia**: In this episode, we’re joined by Matt Whitbeck. He’s the wildlife biologist at Blackwater National Wildlife Refuge, which, as you’ll hear, is a beautiful expanse of coastal marsh on the Chesapeake in Maryland that’s facing the consequences of rising sea levels and climate change head on. The changes to the landscape are forcing Matt and his colleagues to ask questions about conservation that they’ve never asked before. How do you protect the plants and wildlife on the landscape, when much of that very landscape is slipping underwater? We talk with Matt about how he’s answering that question, how his understanding of conservation is changing in doing so, and how the marsh landscape at Blackwater can be a vivid example of what climate change will really mean for our coasts.

Matt, hi. Welcome to the podcast, it’s great to have you here. So, let’s just start out by having you introduce yourself and your role at Blackwater.

**Matt:** So my names Matt Whitbeck, and I’m a wildlife biologist here at Blackwater National Wildlife Refuge in Dorcester County, Maryland. I’m responsible for a number of different things, you know. Working with researchers to kind of guide research on the National Wildlife Refuge; inventory and Monitoring work; providing refuge managers, the decision makers with the information that they need; invasive species control; forestry work; wetland restoration; all kinds of things. And honestly that’s what I really enjoy about my work, is, everyday is a little bit different.

**Mason:** So Matt, I’m hoping you can kind of walk us through Blackwater a little bit. Walk us through that landscape that you’re working on, and how it’s changing.

**Matt:** Blackwater is really just an amazing location. It’s some of the largest expanses of tidal marsh in the Chesapeake. Thousands and thousands of acres of tidal marsh and really just set in this rural landscape by the Eastern shore, which is just an outstanding location.

But I will say, one of the first things I noticed when I moved here to Blackwater, is the impacts of sea level rise are evident everywhere you go here on the eastern shore, and particular in Dorcester County and Blackwater. Since the refuge was established in 1933, we’ve lost over 5000 acres of tidal marsh to sea level rise and subsidence. And you can see it everywhere you go, if you know what you’re looking for. You see stumps and dead trees in a tidal marsh habitat. Those trees die off and they convert into what we call ghost forests, which is really just the signature on the landscape of seal level rise and climate change, and that is evident everywhere you go around here.

**Mason:** Us three have talked about this off mic, about Blackwater and climate change. I was hoping you could talk a little bit about Lake Blackwater, because I feel that that is such a striking visual example of what is going on at the refuge.

**Matt:** As sea levels rose over the last century, what was a vast expanse of coastal marsh around the Blackwater River, that marsh has essential broken apart and converted to open water, and now we have this big body of open water we call Lake Blackwater, and it’s beautiful. In the river there’s tundra swans out there, and American white pelicans winter here on Lake Blackwater, and Canada geese. You know, it’s alive with wildlife. But if you know a little bit about what’s going on around here, it’s actually, that is the result of sea level rise and climate change.

**Olivia:** So how do you reconcile that for visitors to help them appreciate the beauty, but also really understand the reality of what’s going on?

**Matt:** You know, Blackwater National Wildlife Refuge is a fantastic place for wildlife, you know. And we’re here to conserve and protect fish, wildlife, and plant resources, right? For the benefits of present and future generations of Americans. That’s our establishment purpose. But honestly, I think one of the most valuable things we can do is we can be a place where the public can come to Blackwater and they can see the impacts of sea level rise with their own eyes, you know? I think we can make this more real and tangible for the public. I think a lot of people may, they may hear the news, they maybe read an article and kind of understand the theory of it, but I think a lot of people have trouble really understanding what this means. What does, you know, millimeters of sea level rise over the coming years, what does that mean, honestly? To see those changing landscapes right in front of your own eyes is a really powerful experience and something we need to share with people.

So we have this opportunity to connect with the public on a one-on-one basis. And also we weave the climate change message into essentially everybody we talk to on the refuge to help people not only enjoy these national wildlife refuges and connect with wildlife here, but also to be able to develop that understanding and see the signature of sea level rise all over the landscape around here. And that’s probably one of the most important things that I do even as a wildlife biologist.

**Olivia:** So yes, tell us a little bit more about that role as a wildlife biologist. What are the projects you’re working on, the restoration activities that you’re doing in order to combat climate change directly on the refuge?

**Matt:** Gosh, it was probably ten years ago now, we wrote this sea level rise adaptation plan, that was something that we did with the Conservation Fund and Audubon Maryland D.C., and we had all kinds of partners supporting us. And it’s probably one of the most important planning documents that I’ve ever been involved in. We took a good eyes wide open look at the science and what it was telling us about the changes that are taking place and expected to take place on Blackwater, and came up with a series of strategies to try our best to meet our establishment purposes of the refuge, right? So how does the refuge not only provide those benefits for our people here today, but the future. My children, my grandchildren. And that’s essentially what this plan did. It outlined a series of strategies to try to meet our establishment purposes in the long term given everything that we know about sea level rise and subsidence.

**Mason:** Okay, so you can kind of take us through the, I guess the nitty gritty details of what’s in that plan?

**Matt:** So essentially, we came up with three different strategies. First and foremost, we identified areas on the landscape where large expanses of tidal marsh are likely to be created because of sea level rise and subsidence. A lot of people talk about this now, but when we did this document, I think it was 2011, 2012, it was a real game-changer for us. Not just to think about where these tidal wetlands are now, but where are they likely to be in the future as sea level rises and land subsides. What currently upland areas are likely to be inundated and converted to tidal marsh, and that was huge.

And then we started thinking about strategy number two, is – okay, what we can do as land managers to try to encourage the establishment of these native marshes? Non-native phragmites is a huge, huge challenge for us here in the Chesapeake, and many of these marshes that are being created through sea level rise and subsidence are dominated by phragmites. Which is better than no marsh, but if you’re a black rail, if you’re a saltmarsh sparrow, it appears that there’s no place for you in these phragmites dominated marshes.

**Mason:** And Matt, for the listeners at home, can you describe what phragmites is?

**Matt:**  Yeah, so phragmites is a species of wetland grass, tends to have kind of almost a bamboo-ish look to it, can be fairly tall. Actually, the species phragmites is native to North America, but there’s a non-native strain – a European, Eurasian phragmites that is highly, highly, highly invasive. So if you look at the Eastern shore of the Chesapeake, the vast majority of phragmites you see just running across the landscape is the Eurasian, the non-native strain. It is one of the best invasive plants – or most challenging invasive plants – that I’ve ever had to deal with.

 So what can we do as land managers to try to manage those changing habitats to encourage the development of healthy native species dominated marshes?

And then the last thing is try to hang on to the best of the best for tidal marshes as long as we can. You know, working with dredged material to try to enhance the elevation of existing marshes, to try to hang onto enough habitat to sustain species of real high priority, wildlife like saltmarsh sparrows, like black rails. So those are really the three prongs that came out of that planning document.

**Olivia:** So you said that was ten years ago, right? I’m curious if you could tell us a little bit more about what you’ve learned and how you’re thinking has changed since then and through that.

**Matt:** My time here at Blackwater has really kind of shifted the way that I think about managing these coastal landscapes. When I was in college – not that long ago – the gold standard for managing a lot of these habitats are kind of pre-colonial conditions: What did this look like historically, before Europeans arrived and started altering these systems so radically. And that’s kind of always been kind of the benchmark for how we manage these systems. And you know, that made a lot of sense.

But being here at Blackwater really drove home the point that at least in some instances, that really may not be the best idea anymore. Those historic conditions are still an important benchmark, but they may not be a relevant target anymore, at least for some parts of the refuge. So if we look at Lake Blackwater, the forces of sea level rise and subsidence are just so great out there that trying to try to force that back to historic conditions may not be the most productive strategy. And the idea of thinking about where these habitats can be created because of these same changes may be a much more productive way of thinking about managing these systems.

And that’s really kind of the “a-ha” moment that came out of that 2012 sea level adaptation plan that we did with the conservation fund and Audubon. That was the thing that really changed my perspective on how to manage these systems. We still want to provide these habitats for fish, wildlife and plant resources, we still want to provide these ecosystem services, but they don’t necessarily have to be in the same square foot that they were historically. As long as they’re on the landscape, that is a much more productive way of thinking about these things given the impacts that we’re seeing with sea level rise and climate change.

**Mason:** So Matt, you’ve kind of had your whole, you know – your very recent – [laughs] college experience regarding conservation and land management, that’s all kind of been turned on its head. So what do you see as the path forward now, and how does that excite you?

**Matt:** So what’s particularly exciting about working here is that it’s a place that we can try to develop these tools for responding to the challenge of sea level rise and climate change. The changes that we’re seeing are dramatic, but it’s an opportunity to rise to the challenge, and that’s what I really love about being here. We’re essentially taking every old tool out of the management toolbox, and we’re reevaluating it under this new light and thinking “how do they now apply, given the understanding of the changing climates?” And hopefully even develop some new tools. We’re trying to figure out, how do we meet our establishment purpose, meet our goals and objectives, given these challenges. And that’s really, that’s the path forward, because trying to force it to what it was is not gonna work, and that’s the one thing we know for sure.

**Olivia:** Man, it’s pretty incredible stuff. Thank you so much, Matt, we really appreciate it. It’s always so great to talk to you.

**Mason:** Yes, thank you so much Matt, we appreciate it.

**Matt:** alright, you all take care. Bye-bye.

**Olivia:** Bye.

*[soft piano music]*

Thank you again to Matt Whitbeck for joining us in this conversation, and thank you for joining us too. Editing and interviewing for this episode have been done by Mason Wheatley and me, Olivia Gieger. We’ll see you next time on Climate Closeups, where we take it to a very different stretch of Atlantic coastline – next time, on the rocky shores of Maine.