

## Season 1 Episode 10 Snakes with Schalk 2.mp3

**Dr. Sandra Rideout-Hanzak** [00:00:23] Hello and welcome to A Talk on the Wild Side. Your biweekly tour of all things wild in Texas, I'm your host, Dr. Sandra. Rideout-Hanzak. Rebecca Zerlin, my co-host, will be joining me for our interview later. But for now, I have to Tre' Kendall and Andrew Lowery with me in the studio today. Hi, guys.

**Tre' Kendall** [00:00:42] How's it going?

**Andrew Lowery** [00:00:42] Howdy, howdy.

**Dr. Sandra Rideout-Hanzak** [00:00:44] Hey. So let's just jump right in with our What's Wild and New segment. Andrew, do you have anything wilder new for us today?

**Andrew Lowery** [00:00:52] Yes, there recently was a very exciting development here in Texas with the Texas horned lizard.

**Dr. Sandra Rideout-Hanzak** [00:00:57] Oh, OK. Do tell.

**Andrew Lowery** [00:00:59] Yeah. Texas horned lizards were once fairly common in many areas of the state, but now they are one of more than 1300 species of concern in Texas. So this recent development is pretty exciting. Late this summer, 204 captive raised hatchlings were released into the wild by a coalition of zoos and wildlife scientists. The Texas Horned Lizard Coalition includes the Texas Parks and Wildlife Department, Texas Christian University and zoos in Fort Worth, Dallas, San Antonio and elsewhere. This coalition has been working on these reintroductions for more than 10 years, and the hatchlings were released at Mason Mountain and Muse Wildlife Management areas, where extensive habitat restoration has taken place to make sure the new homes are suitable for supporting these horned lizards.

**Tre' Kendall** [00:01:42] So is there any evidence that Texas Horned Lizard reintroductions are successful?

**Andrew Lowery** [00:01:46] You know, Tre', actually, yes. In August 2021 at Mason Mountain, W.M.A, TWD biologist and graduate students working on the reintroduction project made a breakthrough discovery. They found 18 hatchlings that were believed to be offspring of zoo raised hatchlings that were released there in 2019.

**Tre' Kendall** [00:02:04] That is fantastic news and really exciting to hear!

**Andrew Lowery** [00:02:07] Yeah, the discovery of the wild hatchlings marks the first known time that captive reared horned lizards survived long enough to successfully reproduce in the wild.

**Dr. Sandra Rideout-Hanzak** [00:02:16] That really is great news because those reintroductions aren't always successful, so that's great to hear. And for any new listeners to A Talk on the Wild Side, if you're interested in learning more about horned lizards, take a listen to our episode two, which was all about horned lizard research or mostly about horned lizard research. There's Fred Flintstone and other random stuff in there, but anyway, horned lizards. So I think it's time for our break down now in anticipation of today's interview, and I'm happy because I get to do the breakdown for the first time today.

**Andrew Lowery** [00:02:50] Finally, it's you that's having a breakdown! (Laughter)

**Dr. Sandra Rideout-Hanzak** [00:02:53] It's it's pretty it's pretty well timed, too. In today's interview, we're headed out east to the piney woods to discuss some interesting snake research. Hey Tre', do you know why snakes are so hard to fool?

**Tre' Kendall** [00:03:15] No, tell me why?

**Dr. Sandra Rideout-Hanzak** [00:03:16] Because they don't have a leg to pull.

**Tre' Kendall** [00:03:19] Oh no! (Laughter) I love it!

**Dr. Sandra Rideout-Hanzak** [00:03:22] Yeah. But seriously, have you ever really just considered snakes? What's up with an animal that has no legs or wings or fins or flippers? I mean, how is it even a good idea to evolve to have no appendages? How could that be a successful design? And most importantly, am I the only one who wonders about these things? Anyways, Snakes. Actually, they're incredibly well designed to be successful at catching prey and avoiding predation. In fact, recent research indicates that snakes originated over a hundred and twenty eight million years ago in warm, forested environments in the southern hemisphere. And this was the subject of debate for a while. But scientists now believe that snakes evolved on land first, not in the water. Early snakes did have hind limbs, in fact, but they disappeared over time. Those early snakes also made a niche for themselves by being able to eat prey slightly larger than lizards of about the same size and by being able to disperse about four and a half times as far as lizards just by slithering. Turns out, if you're good at it, slithering is a pretty efficient way of making good time. Having no legs allows snakes to move through grass or leaves quickly, but also relatively undetected by other animals because you're not disturbing vegetation like an animal with legs would. Plus, having no limbs sticking out also allows snakes to get into some really tight spaces or go into holes after small prey animals. Sometimes the simplest design is the most effective. Well, various snake species have also developed specific adaptations to allow them to be successful in their environments. In one of these adaptations is keeled scales. What are keeled scales? The word keeled indicates that on most scales on the top or dorsal side of the snake's body, there's a raised ridge running down the center of each scale. A snake with keeled scales has a rougher look and feel than a smooth scaled snake. Say that three times. (Laughter) So what's the purpose of the keel? Well, that is up for debate. Some say the keel helps with crypsis by breaking up the outline of the scale. And you know what time it is. Definition time grips us is the ability of an organism to conceal itself by having a color pattern and shape that allows it to blend in to the surrounding environment. Other people think the stiffness of keeled scales helps prevent a predator from pulling a snake backwards out of the grass. Still, others think that the keel helps snakes move in grassy environments. But that's where it gets a little murky because not all snakes with keeled scales are snakes in the grass. Some are more even keeled than that. Now let's get to our interview about snakes. We have Dr. Chris Schalk with us today. Dr. Schalk is an assistant professor at the Arthur Temple College of Forestry and Agriculture at Stephen F. Austin State University. Axe 'Em Jacks! Yes, Axe 'Em Jacks. Dr. Schalk, thank you so much for being here with us this morning. We really appreciate your time.

**Dr. Chris Schalk** [00:06:51] Yeah, I'm glad to chat with you about some of the work that I've been doing in my lab.

**Dr. Sandra Rideout-Hanzak** [00:06:56] Well, we're excited to hear it! So tell us, just start by telling us about yourself and the work that you do there at Stephen F. Austin.

**Dr. Chris Schalk** [00:07:07] So I'm an assistant professor of Forest Wildlife Management, been here about four years now, and prior to that, well, I got my Ph.D. at Texas A&M University in the Department of Wildlife and Fisheries Sciences. I did most of my work on the tropical frogs, and really questions in community ecology, and prior to that, I was at SUNY College of Environmental Science Forestry Syracuse. And while I was there, I was. Doing work on giant salamanders down in South Carolina, the Savannah River Ecology Lab for a couple of summers, working on ecology and conservation. Uh huh..

**Dr. Sandra Rideout-Hanzak** [00:07:55] Uh huh. So I was just going to ask you when you say when you say giant salamander, how big is that? What are we talking about?

**Dr. Chris Schalk** [00:08:01] So I worked with Siren and Puma. So the two species I worked with, the two toed puma and push upwards of a meter length.

**Dr. Sandra Rideout-Hanzak** [00:08:12] Are you serious?

**Dr. Chris Schalk** [00:08:14] Yeah. So they get pretty big. The largest one I caught was 85 centimeters. And the siren doesn't get as long, but it gets heavier, so one of them I caught, which close to a kilogram and get pretty large.

**Dr. Sandra Rideout-Hanzak** [00:08:34] Wow, that's cool! I did not know that salamanders got that big, especially in the United States, and I lived in South Carolina for a little while.

**Dr. Chris Schalk** [00:08:44] Yeah, they're real secretive, so they're kind of hard to. I mean, they're permanently aquatic, so you're probably never going to see it.

**Dr. Sandra Rideout-Hanzak** [00:08:52] OK. OK, so I didn't mean to interrupt you, so go ahead. After you worked with the salamanders...

**Dr. Chris Schalk** [00:08:57] Oh, well. So and so now you know my background and most of my research training has been mostly in amphibians. But now you're at SFA, a lot of my work is on focus on kind of the ecology and conservation of reptiles, so got several projects going on. You know, looking at snake entanglement, talk to the guys about today. Doing some work on, conservation and ecology of alligator snapping turtles. Also, I do have some some work going on with the Bachman's Sparrow, I ventured into the bird world, so it's kind of a diversity of different studies, subjects and study animals that have students in my lab are kind of working.

**Dr. Sandra Rideout-Hanzak** [00:09:46] Interesting!

**Rebecca Zerlin** [00:09:48] Birds are kind of related to reptiles. Without scales! (Laughter).

**Dr. Sandra Rideout-Hanzak** [00:09:53] Yeah, well, a lot of your work recently, like you said, it has been on conservation and ecology of snakes. Where did your passion for snakes come from?

**Dr. Chris Schalk** [00:10:04] So originally, I grew up outside Buffalo, New York and in the suburbs, and, you know, we didn't have very many snakes around in our neighborhood, but when we would go down to get some property south of that country, and we'd go out

there, and find these garter snakes and can catch them. And if you've ever handled them, they're actually not... They don't bite, you know? So I thought they were cool. You know, animals just see that I never saw growing up in my neighborhood, so I enjoyed catching them and handling them, and I just thought they were really interesting. But you know, the snakes are particularly challenging to study they have a number of attributes that make them challenging to study. So most of my work has been in amphibians because in terms of sample sizes and numbers and species, you can get lots of them, which makes it, you know, analyzing the data fairly easy. You can actually run stats on them. So, I wasn't able to really. I've always been interested in them, but I've never really had the opportunity because of the challenges associated with them in terms of they have really secret, secretive natural history. Some species occurred in typically low densities or low numbers, so trying to catch them is extremely difficult. And so it's not until recently that I've been able to really pursue some of the avenues of research studying them.

**Dr. Sandra Rideout-Hanzak** [00:11:49] OK. Yeah, it's got to be hard to put a collar on those guys, huh? (Laughter).

**Dr. Chris Schalk** [00:11:56] Yeah, I mean, if you want a radio track them, the best way to do that is to implant radios into their body cavity so it's a fairly intensive surgery. And in terms of marker captures studies, you know, we were on a different project, we were trapping a couple of sites for three summers and we would mark snakes and release them. And I think we only got two or three recaptures during the entire time...captured something like 400 snakes. So, you know, if you're trying to do a population ecology study and you don't get any recaptures. Pretty challenging!

**Dr. Sandra Rideout-Hanzak** [00:12:38] Mm hmm. Yeah.

**Rebecca Zerlin** [00:12:42] So I'm going to ask a question that I'm sure you get a lot when you tell people you research snakes. Why should we care about snakes?

**Dr. Chris Schalk** [00:12:52] Yeah, so there's kind of, I would say, two separate avenues. So, you know, I'm an ecologist by training and so ecologically, you know, snakes are important in terms of their roles within the food webs are just basically who's eating who kind of network. And so snakes are kind of right in the middle of that food web kind of these mid-level predators. So, in terms of what they do, all snakes are obligate predators, so they all they help control pest populations. So eating frogs mice. Insects, things like that, so they help suppress and control and keep up pest populations, the prey populations in check, but also they're kind of these important kind of mid-level predators that are, you know, a lot of energies flowing to these snakes. So they're getting eaten by a lot of upper level predators as well. So in terms of kind of a healthy ecosystem, they're right in the middle where they serve kind of these conduits for energy flow, the prey, and that's upper level predators. So, you know, ecologically, they're really important for the ecosystem health. And then on the other side, you know, especially in terms of venomous snakes, snake venom has, you know, it's basically a cocktail of natural compounds that can be dangerous. But there's a lot of natural compounds that you know from a biomedical side, people are exploring and trying to understand the functions of these biomedical compounds, and they're being used to treat things like heart disease and other basically human ailments. So they're trying to synthesize these compounds in labs, after discovering that snake. So there's a lot of biomedical applications to studying snakes, basically dissecting what's in the venom.

**Rebecca Zerlin** [00:15:02] So you're saying that we should keep snakes around because they're not only good for the ecosystems, but they can benefit us humans as well, right?

**Dr. Chris Schalk** [00:15:13] Yeah, and you know, I think humans also are going to benefit from a healthy ecosystem. So, you know, I think humans benefit all around by having snakes out in the wild.

**Rebecca Zerlin** [00:15:25] I agree, I definitely agree with that. We're going to get to your research. Some of your recent snake research has investigated the risk of snake entanglement in erosion control blankets. Can you tell us a little bit about those studies and what you found out?

**Dr. Chris Schalk** [00:15:42] Yeah, so so what kind of motivated this is... So here in Texas, the Texas Department of Transportation basically mandates that the conclusion of a construction project and now we're all in kind of peak construction season now I'm sure everyone's get stuck in traffic. But basically, if the soils disturb the at the conclusion of a construction project, the Contractor needs to put down an erosion control product, either blanket or a spray to further, prevent any soil loss. And so those erosion control blankets are on what's known as an approved product list. And to get on that list, there's the erosion control product is either evaluated on how well it prevents soil soil from being lost, how well it promotes plants. So those are the only two criteria for an erosion will probably get on that. And so the risk to wildlife isn't really considered and, there's been lots of anecdotal reports of snakes getting entangled in these erosion control blankets.

**Rebecca Zerlin** [00:17:08] Can you just quickly describe what like a blanket might look like to people so we can, like set the scene for how they might get entangled?

**Dr. Chris Schalk** [00:17:13] Yeah, yeah. So. Well, the thing is, is in, you know, when I started doing this research by erosion control, product and blanket, it can be tons of different things. So it, you know, probably the most common one that you used is there's typically two mesh layers typically comprised of polypropylene or plastic with mesh on either, you know, each of the top and bottom layer. And then in-between those layers, there's typically a filler to further prevent soil loss, or they may contain grasses. So it's typically either straw or coconut fiber. Those are the most common ones. But there's a whole diversity of erosion control products out there, too. So, you know, on the approved products list, there's something like over 140 different.....from those people were so. And they can range from blankets, to spray-on kind of application, to multiple layers, single layers, woven, stitched infused corners, so it gets very complicated in terms of trying to appreciate, I guess, what's out there. But anyway, so you know, we did a little survey here in East Texas, disturbing a recently completed TxDOT construction site. And you know, the areas the area wasn't that big. It was only 2000 meters square across a couple of different sites and just in, you know, kind of a short window. We found 10 snakes entangled in erosion control. So there in the blanket supply, so there's a short window, a small area. We found 10 individuals tangled and majority of them were dead. And in getting entangled in erosion control blanket, it's a pretty brutal way to die, in my opinion.

**Rebecca Zerlin** [00:19:20] I would agree with that.

**Dr. Chris Schalk** [00:19:21] You know, you're stuck there trying to twist your way out of plastic mesh netting and cutting into your skin, which attracts fire ants and the fire ants come and...basically, being eaten alive, and the sun is also beating down. So it's pretty. So, you know, this is just a small area, right? And so we, you know, we were interested in

what is the potential extent of this? Looking on the TxDOT tracking website, and basically, it has a list of the kind current, or proposed projects. And the current or proposed projects are close to 9000 projects, in terms of TxDOT construction projects. The total distance is closest to the 51,000 kilometers. So if you can imagine just a fraction of the construction projects disturb the soil and you have to put down erosion control blanket you may have... You may be putting down products that may potentially be a risk to wildlife.

**Rebecca Zerlin** [00:20:32] That's a lot of potential risk. I'm just thinking about that.

**Dr. Chris Schalk** [00:20:37] Yeah, well, and it's just the state that's just Texas, So, you know, that's just the state of Texas. So we didn't look beyond to see what's going on across the rest of the US. And the reason, you know, there's been reports of snakes getting entangled in like garden netting and things like that.

**Rebecca Zerlin** [00:20:56] Yeah, I've seen that firsthand.

**Dr. Chris Schalk** [00:21:00] Yeah. And those, you know, I think are overreported in that, you know, people are checking their gardens continually and they do think they're getting tangled. But some of those erosion control blankets stretch for miles, right? And after they're installed, no one's monitoring. So we really don't know the extent to which snakes are getting entangled. So we were what we did is we did a couple of experiments. So the first experiment we just wanted to ask the question are what are the attributes of the blankets themselves, and the attributes of the snakes, that may lead to their entanglement? And so what we did is we set up a little kind of arena, a little rectangle with the enclosure. We had on each end of the rectangle, an erosion control blanket. And in the middle, it's bare soil, and so we exposed snakes to different, three different types of erosion control blankets, and as we've rotated them through the different treatments we want to see, do they become entangled? The erosion control blankets differed in their properties. So one was basically that that blanket that I described that had two layers of polypropylene plastic mesh netting, fused corners and coconut straw filler in between. It was real, flexible. Another one was in a format where it's a single layer, but it was woven, so the mesh was actually woven and it wasn't fused on the corners. And then the third one was a plastic comprised of three layers with fused corners and the mesh. And but the plastic itself was much harder. Much stiffer. So what we did, basically, or what we found was that the majority of snakes by far got entangled in that first erosion control blanket. So polypropylene mesh kind of flimsy, flexible plastic netting and almost no snakes became entangled in the other two. And what we found in terms of the snake trait, was basically the larger the circumference, the higher probability of snake getting entangled.

**Dr. Sandra Rideout-Hanzak** [00:23:28] That makes sense. Yeah.

**Rebecca Zerlin** [00:23:31] Yeah! So were you able to...I was just going to ask if you were able to create like any recommendations on how to use these controlled blankets or any specifics about the blankets themselves based on this?

**Dr. Chris Schalk** [00:23:45] We basically highlighted the fact that it looks like these blankets that have this polypropylene mesh netting that are most prone to snake entanglement, but. We only tested three products out of the 140, so it's just something to give contractors, maybe a heads up. You know, there's meshless alternatives out there, which there are, or if there's something where the blanket it has woven material, you know, woven corners instead of these fused corners, maybe that may be more wildlife friendly. So we're able to make some general kind of observations with that. The other thing we

noticed is we did another experiment where, you know, with with the entanglements on this blanket, we noticed the majority of them were happening on the edge of the blanket, where the two layers were kind of frayed up, kind of open, almost like a mouth. And so we noticed that snakes were kind of going between the layers and popping their head up, and that's where they were becoming entangled. So we did a second experiment where basically what we did is just buried the edge of that blanket all the way around. So the no exposed edges. We ran snakes in two treatments: exposed edge and buried edge. And we found that that basically entanglements were almost down to zero in the buried edge treatment. So, if we were able to find, at least one or two of these experimental conditions, okay, if you have this blanket that may be a risk to wildlife in terms of entanglement. Well, if you bury the edge, it may mitigate the risk that it may pose.

**Rebecca Zerlin** [00:25:32] So I'm going to ask kind of a dumb question. I'm a very full of them. So can you just explain a little bit exactly about this study because you keep saying running snakes and I've been down here in Texas enough that when I think of like running an animal, it's like running cattle. And I'm assuming y'all aren't just like running the snakes like cattle outside. Was this done indoors? Was this done in an enclosure somewhere?

**Dr. Chris Schalk** [00:25:58] No, no, so this was done at the Stephen F. Austin experimental forest. So we had a couple of arenas kind of built with aluminum flash kind of a sheet metal that we rolled out and set up these basically little pens or arenas that were about eight meters long by two meters wide, and we would stake down the erosion control blankets on either end and introduced snake, and basically we just let the snake explore the arena and kind of poke its head around and just move through the the enclosure and just observe their behavior for three minutes or so, or until they became entangled.

**Rebecca Zerlin** [00:26:44] Gotcha.

**Dr. Chris Schalk** [00:26:44] And so, you know, some species we would have to coax into interacting with the blanket so you use a snake hook to nudge it along. Let them kind of explore the area.

**Rebecca Zerlin** [00:26:57] Hmm, that's interesting. So you guys weren't on horses running your snakes around? Like the cowboys? (Laughter).

**Dr. Chris Schalk** [00:27:02] Nope!

**Rebecca Zerlin** [00:27:02] Next, next project, right? (Laughter).

**Dr. Sandra Rideout-Hanzak** [00:27:09] Yeah! (Laughter).

**Dr. Sandra Rideout-Hanzak** [00:27:11] I have just a serious question for you when you were doing the study where you were looking at actual erosion control blankets that had been used on construction projects, did you find other species other than snakes or did you really only see snakes?

**Dr. Chris Schalk** [00:27:28] So we found. During our field surveys, we found amphibians entangled, some bronze frogs. There were also some (inaudible) beetles, are these really large beetles that were caught up in the mesh layer? There's been reports in the literature of things like box turtles getting entangled. So and lizards as well. So it's not just snakes, but. Snakes were by far the most frequently found in kind of reported really in our survey and in the literature as well. That's why we went with them.

**Dr. Sandra Rideout-Hanzak** [00:28:10] OK, I guess, because they can't use their little hands to get out. So, that doesn't work very well...

**Dr. Chris Schalk** [00:28:14] Yeah. You know, some of them have, you know, things like, we didn't work with any venomous snakes because when a snake becomes entangled, it has to. You have to cut it out. And so but. Fibers in particular, be strongly keeled scale that are rough. So if a snake tries to back out the keeled, the scales will get hung up on, and catch. So there were reports of a lot of, like the copperheads in other places, but I decided, you know. Maybe it's not a good idea to have an undergrad trying to snip out a snake.

**Rebecca Zerlin** [00:28:58] Everyone needs a little excitement in their life. (Laughter).

**Dr. Chris Schalk** [00:29:02] You got to suffer through the science! (Laughter).

**Dr. Sandra Rideout-Hanzak** [00:29:07] Right! All in the name of science. So let's change the subject a little bit. You've recently started a project, a citizen science project on iNaturalist, called Road Kills of Texas. What's the objective of this project?

**Dr. Chris Schalk** [00:29:21] So it's really to try and understand how you know, how road kills are distributed across space and time. And you know, the thing with with roadkill surveys is that if I, you know, if I was doing them as just a scientist, here in Nacogdoches. It's a lot of it's really intensive and it's, you know, expensive and it takes a lot of time. So those, you know, the systematic surveys are good. And that you can really get fine scaled detailed data. But to really answer, you can only cover so much ground, it's too many miles on the ground. So really, the citizen science approach really has more eyes on the road to document these roadkill where they occur. So basically, I naturalists citizen science app, where every time you take a photo of an observation has a time stamp and it has a location. Mm hmm. So when you upload it into the website, the website extracts those data and we can see when and where did that roadkill occur on a highway? So, you know, I just started it in 2018, I believe. I think we're either past or close to 10000 observations of roadkill.

**Dr. Sandra Rideout-Hanzak** [00:30:57] Really, wow!

**Dr. Chris Schalk** [00:30:58] That short period of time, so TxDOT is start is starting to work with it, and integrate it into kind of their planning for mitigation structures and things like that, so so that really the goal is to try and mitigate and minimize the kind of wildlife vehicle collisions happening on Texas roads.

**Dr. Sandra Rideout-Hanzak** [00:31:19] So just just to clarify is, is it just for snakes or are we talking bobcats, raptors, anything?

**Dr. Chris Schalk** [00:31:28] Anything and everything? So we're uploading. Insects, bobcats, everything.

**Dr. Sandra Rideout-Hanzak** [00:31:35] Uh huh.. OK. Yeah, that seems like really useful information because you could find out, you know, places where a lot of things are dying and look to see what's going on around here is that the vegetation or or what?

**Dr. Chris Schalk** [00:31:51] Yeah, yeah, it's you know, we're starting to really explore the data now and try to understand and are there certain habitat features associated with



where we're finding a particular species at a certain time of the year? And then also accounting for things like, you know, the citizen science survey effort isn't perfect, but it may be overrepresented in urban areas underrepresented in areas like the Panhandle with just fewer people. So taking into account things like that and also the other thing is just, you know, people may tend to over report really rare or interesting animals like, Oh, there's a dead timber rattlesnake. Another take a picture of that. Mm hmm. Oh, it's just another raccoon flown by that. Yeah. So there are biases, but it's really useful data, especially now that we've amassed so much of such a short period of time.

**Dr. Sandra Rideout-Hanzak** [00:32:55] OK, so just quickly for people who aren't familiar with iNaturalist, it's an app, right, that there that they can download and then how do they get to your project there? How can they participate in your project?

**Dr. Chris Schalk** [00:33:06] Yeah, so that they can download the app. And then there's a joint project link that they can type in the photos, the Texas project, and it should pop up. There's a bit of a deer crossing logo sign, and they just click that to join. And then there's other data they can input like it's raining out with the temperature, you know, the age of the animal. They can estimate it. Things like that.

**Dr. Sandra Rideout-Hanzak** [00:33:38] Okay! Easy enough.

**Rebecca Zerlin** [00:33:41] Yeah! Download...well, I have iNaturalist, I'll have to look at your project now and, send you my road kill, not my road kill. I do, but the road kill I find... (Laughter) All right...I'll Stop digging myself into a hole now. Let's let's lighten things up. So would you consider yourself a herp. guy?

**Dr. Chris Schalk** [00:34:03] Yeah, yeah. I love studying herps. And and, you know, I had them as pets growing up. Always, you know, in college, I always had something probably not allowed in my dorm room.

**Dr. Sandra Rideout-Hanzak** [00:34:19] Don't tell anyone.

**Dr. Chris Schalk** [00:34:20] Yeah, I always enjoyed them. Really interesting.

**Rebecca Zerlin** [00:34:24] OK, so this is one of my go to ice breaker questions. What is your second favorite reptile and why?

**Dr. Chris Schalk** [00:34:34] Second favorite,

**Rebecca Zerlin** [00:34:35] yeah,

**Dr. Sandra Rideout-Hanzak** [00:34:36] it's usually third favorite, so yeah, you got lucky,

**Rebecca Zerlin** [00:34:39] yeah, it is usually third or second. We'll go with the second favorite today.

**Dr. Chris Schalk** [00:34:43] All right. So I think my second favorite, the yeah, because my first favorite are ones that I can get lots of data off. So I think just in terms of being cool reptiles, so what's next? So there are these permanently aquatics. There's these aquatic snakes that are distributed across the southeastern U.S. and they're, you know, they have this iridescent sheen to them and on the underside there, it's bright red belly and kind of black iridescent back. And they're really interesting because when you have one in hand,

they're most docile snakes you'll ever handle. Never get bit, but they're dietary special, so they only eat siring and ampiamente, which I studied and I've always wanted to see it. But it don't do that at battle because what snakes are so docile and pumas are kind of. I don't know, I wouldn't want to handle one ingredient. I think they're just really interesting and they're really hard to study. They're secretive.

**Dr. Sandra Rideout-Hanzak** [00:35:57] But so what's it called again?

**Dr. Chris Schalk** [00:36:02] A mud slinging mud snake.

**Dr. Sandra Rideout-Hanzak** [00:36:04] Okay. Yeah. All right. I don't typically think of water snakes as docile. So that's interesting.

**Dr. Chris Schalk** [00:36:12] Yeah. Well, it's in a completely different genus. So they're okay. They're they're influences. So all the water snakes that you're mentioning are a rodeo that are real, feisty and they're rodeo. Yeah, yeah, they're angry all the time.

**Rebecca Zerlin** [00:36:29] I would be too if I had to swim all the time. Just kidding. What's the most surprising thing you've learned in your research?

**Dr. Chris Schalk** [00:36:38] Just how complicated this problem is in terms of trying to. Implement things on the ground, conservation mitigation, because there's so many roads and blankets out there and we don't know what contractors are applying on the ground in terms. What they're actually using, and it's not really worded. So just how complicated this question is of trying to know what it leads to snake entanglement, but we just don't know how much of that is actually out there. And so it's. It's kind of just the wild west of flying the. The mitigation efforts on the ground, right? So. Trying to navigate through all the the information available, but a lot of it's not there. What contractors? So that was in learning about just how many different types of erosion control products are out there. Hmm.

**Dr. Sandra Rideout-Hanzak** [00:37:51] Yeah, that's interesting because, you know, we think we're well, we're doing this great thing for the environment. We're witness erosion control, blowing it down and then we walk away and we don't think about the, you know, it's almost like in the environment, anytime we do one thing, you know, good for one thing, but it's not so good for something else. Butterfly effect. Yeah.

**Rebecca Zerlin** [00:38:12] So we're going to ask you, I guess, a fun question and what we hope will be a fun question, possibly for you to relive some trauma in biology fields. We commonly find ourselves in awkward situations where our plans for the day don't quite pan out. So we're asking all of our guests to share their greatest biology blunder with our listeners. Do you have any funny or fun or even traumatic biology blunders you would be willing to share with us?

**Dr. Chris Schalk** [00:38:40] Yes. I had a lot of trauma in Libya, mostly on the logistics side, so to. Get to my field site. It is normally just a 12 hour bus ride out to the field Typekit Digitas. And. You know, I boarded the bus and four seats open for most migrants. Oh, that's great. And then we're driving out there and the windows open and it starts to rain in a tranquil window window won't float. Then I realized why that boat? But then when we get out to the actual field site, the road is so muddy and torn up that we're basically stuck and my job is kind of. You know, be, you know, Ringo, you know, on the totem pole, I have to crawl on the beat the bus to start bailing out the mud. And so we can actually clean the, you know, clear the mud and push the boat. So. You know, the mud out, clear it out and

get behind the bus, push it. And we did all that work for maybe a hundred meters and get stuck again. We did that for three days.

**Rebecca Zerlin** [00:40:02] Oh my God.

**Dr. Chris Schalk** [00:40:03] And while I was doing that, I didn't pack any food because I thought I was going to be there for 12 hours. So I don't. I bought a can of Pringles night, a rash and a camera angles across three days of pushing the bus going every 100 meters or so. So that was. Were you ever a Boy Scout?

**Rebecca Zerlin** [00:40:23] Yeah. Yeah. Oh, come on.

**Dr. Chris Schalk** [00:40:25] But, you know, it's been a while. Yeah, so that's probably one of the more traumatic experiences. I mean, it's. Fun looking back on it, but at the time.

**Rebecca Zerlin** [00:40:40] Yeah, I think we call that type of fun where during the experience it was not great, but looking back at it, you're like, Oh, no big deal. That was

**Dr. Sandra Rideout-Hanzak** [00:40:47] hilarious. Yeah. And have you eaten Pringles since?

**Dr. Chris Schalk** [00:40:53] Yeah, I've indulged. But the. But there's the paballo response rate of the Trump.

**Dr. Sandra Rideout-Hanzak** [00:41:04] Can you open a can of Pringles without thinking back to that time?

**Dr. Chris Schalk** [00:41:07] Mm hmm. No, I always remember back

**Dr. Sandra Rideout-Hanzak** [00:41:12] good

**Rebecca Zerlin** [00:41:12] times getting psychological.

**Dr. Sandra Rideout-Hanzak** [00:41:14] Right? I know. So is there anything else you'd like to share with us today?

**Dr. Chris Schalk** [00:41:21] Not really, I mean, I'm just, you know, happy at the opportunity to chat about research and kind of. Have more people think about this when they are stuck in traffic, seeing all the construction going on and maybe pushing for a blanket?

**Dr. Sandra Rideout-Hanzak** [00:41:38] Yeah, yeah, it's definitely something to think about.

**Rebecca Zerlin** [00:41:40] I'll be thinking about it more.

**Dr. Sandra Rideout-Hanzak** [00:41:43] Thank you so much for sharing your work with us. I learned a lot today to.

**Dr. Chris Schalk** [00:41:48] Great, yeah. Thanks for the chance, Joe.

**Dr. Sandra Rideout-Hanzak** [00:41:51] Yeah, well, we're we're glad you could spend time with us. And I think our listeners will enjoy it.

**Rebecca Zerlin** [00:42:02] That's amazing.

**Dr. Sandra Rideout-Hanzak** [00:42:06] Absolutely, absolutely amazing.

**Rebecca Zerlin** [00:42:13] I can firsthand attest to having had to pull a snake out of one of those mesh erosion and metal netting, not Mets netting before. I really yeah, I was up in Wisconsin working up there and one I don't know if was necessary early in erosion control. I think it was because it was. It's just how he described one of those and we just happened to be walking outside and there is a little little snake that was tangled up and had to cut, cut him. I'm assuming it's a him, him or her out. So that's a I feel like what he was talking about really struck. Yeah, struck a chord with me. I'm like, Yeah, I've I've actually seen that problem firsthand. And honestly, if like, it wasn't the right place, right time, I don't think I would have ever thought about it.

**Dr. Sandra Rideout-Hanzak** [00:43:03] That little guy would have died.

**Rebecca Zerlin** [00:43:05] Yeah, probably would've been very sad.

**Dr. Sandra Rideout-Hanzak** [00:43:08] Very sad. Yeah. Well, that was really an interesting episode, the Army interview, though, because I know I learned a lot and I did, I did accidentally catch a really pretty bird one time in the garden in which I was afraid was going to happen, so we were really checking it vigilantly. But yeah, there's they're just not, they're not adapted to that sort of thing.

**Rebecca Zerlin** [00:43:32] So they're not. So we all get the the links to the AI naturalist group that you can join or that project you can join posted either in Arlington or on our bio. So people are interested in doing that. Please check that out. And for those of you who are listening who don't follow us on social media, we have Facebook, Instagram, we have Tik Tok on the wild side now. So follow us on all that and make sure to tell your friends and you can subscribe and like us and smash that like button because we're going full YouTuber here right now. So I'm trying to relate to the youth because I'm trying to grasp the young people I know. I don't want to come to terms with becoming older now, so having a quarter life crisis at the moment,

**Dr. Sandra Rideout-Hanzak** [00:44:27] it's all right. It beats the alternative. Yeah, that's where I'm at.

**Rebecca Zerlin** [00:44:30] Oh, it's a good attitude. We're getting stuck in a erosion control net.

**Dr. Sandra Rideout-Hanzak** [00:44:37] Yes, it beats the hell out of that. Yeah, especially in Texas, right?

**Rebecca Zerlin** [00:44:44] Yeah. Well, I'm in that case. I guess I'll sign off after that weird outro. Remember, don't feed the wildlife.

**Dr. Sandra Rideout-Hanzak** [00:44:56] I'll talk on the wild side is a production of the Caesar Claver Wildlife Research Institute of Texas A&M University Kingsville. Funding for this project is provided by the Harvey White Sportsman Conservationist Award by the

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