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Dr. Sandra Rideout-Hanzak [00:00:23] 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 [00:00:30] And I am your co-host, not a doctor, Rebecca Zerlin.

Dr. Sandra Rideout-Hanzak [00:00:35] Well, it's kind of sort of starting to cool down a bit here, and I know a lot of our listeners will be looking forward to hunting season this year.

Rebecca Zerlin [00:00:43] Yeah, it's coming right up!

Dr. Sandra Rideout-Hanzak [00:00:45] In honor of this upcoming hunting season and the rut, our interview today is with Dr. Randy DeYoung. We're going to learn about male breeding strategies in Whitetail Deer. I actually never realized that there were strategies before, but apparently they do strategize about this.

Rebecca Zerlin [00:01:02] Yeah, that's right. They have to have strategies to find all the cuties. But before we get to that, we have our own Tre' Kendall with our What's Wild and New segment. Hi, Tre'.

Tre' Kendall [00:01:14] How's it going, ladies?

Rebecca Zerlin [00:01:15] Hello.

Dr. Sandra Rideout-Hanzak [00:01:16] Hi!

Rebecca Zerlin [00:01:16] Tre', tell us what's wild and new right now.

Tre' Kendall [00:01:20] Well, in our fourth episode, we discussed dealing with non-native plants. But non-native species have also become a problem in waterways throughout Texas. According to the Texas Parks and Wildlife Department, the zebra mussel, which is needed to the Caspian Sea, has now been documented in 32 lakes throughout Texas. The Texas Parks and Wildlife Department recently announced that Lake Medina is now fully infested. This is the first time the mussels have been found in the San Antonio River Basin, which really hits home for me considering my family's property is located on the San Antonio River.

Dr. Sandra Rideout-Hanzak [00:01:58] So how are these zebra mussels getting into Medina and the other waterways as well?

Tre' Kendall [00:02:03] The mussels have been moving southward and westward over the years. They are most likely brought in accidentally from one lake to another by boaters, where they caused problems in their new found homes. Zebra mussels caused millions of dollars in damage by coating and clogging waterway infrastructures such as pipes. They also put native fish and other aquatic species at risk by eating native wildlife's food, changing surrounding habitat and choking them out because they tend to spread quickly; overtaking large areas.

Rebecca Zerlin [00:02:37] So what should boaters do to make sure they aren't spreading zebra mussels from one waterway, to another?

Tre' Kendall [00:02:43] Well, boating enthusiasts really should try and be proactive in this matter. To help slow the spread of these mussels, boaters should always clean, drain, and dry their boats before moving them to another lake. Which, I'm sure they're willing to do if they want to continue fishing these game fish.

Dr. Sandra Rideout-Hanzak [00:03:02] It sounds like that would be pretty important for boaters to remember so they don't take these unwanted hitchhikers to their favorite fishing holes. Thank you, Tre'.

Rebecca Zerlin [00:03:10] Thanks.

Tre' Kendall [00:03:11] Thank you!

Dr. Sandra Rideout-Hanzak [00:03:12] Well, we recently started a new semester here at Texas A&M University-Kingsville. So I feel like it's time for our resident graduate student, Rebecca, to have another breakdown. (Laughter) So here's Becca's Breakdown. Take it away, Rebecca.

Rebecca Zerlin [00:03:30] Oh, deer. What have we here? It's another breakdown sponsored in part by the ruminants. Oh, we're already starting with the big words today, aren't we? I think you know what time it is. Definition time! Ruminants are large hooved herbivorous grazing mammals, that are able to get all the nutrients they need by fermenting food in their stomachs before digestion. It's kind of like having your own little winery in your stomach, but for food...and you don't get drunk from it. So, not like a winery at all. Members of the ruminants include cattle, goats, sheep, giraffes and you guessed it, deer. While deer enthusiasts probably are well versed in the term, "rut," many non deer people are not as familiar with it in a wildlife setting; so, let's dig a little deeper into the rut and learn more about what this term means and where it came from.

The root of the word rut comes from a Latin word, meaning "to roar." That's not exactly what it means, but it's part of it for some animals, the rut is just a term for the mating season for certain mammals like our ruminants. But it's not just for ruminants. Other animals, such as skunk and elephants have ruts, too. During the rut, the females will come into estrus, which allows them to be bred. The males of the species go, "Oh baby!," and change their behaviors to try and get the ladies. They often rub their antlers or horns on trees, fight with each other, wallow in mud or dust, and may even become more vocal, as is often the case with species such as elephant and elk. Boys...let me tell you. The rut has even been referred to as bugling season in elk. (Yodeling song playing) Loud vocalizations are part of showing the females how fit and sexy they are, or maybe challenging other males to a fight.

It is believed that shorter days can trigger hormonal changes that bring on the rut. The specific timing of the rut for a species depends largely on its gestation period because, the goal is to ensure that young are born during the spring. Ah...Spring...the cold nights are over, rain has begun to fall and wildflowers and grasses are growing. All of this green growth gives Mama a lot of food to fuel her body so that she can feed her young, and newborns are more likely to survive during the transition between winter to summer, where the temperatures aren't as extreme. Spring is like nature's maternity ward. It's the perfect time and place for babies to be born.

But back to Fall. The interesting thing about the rut is that males aren't just wandering around aimlessly hoping to run into a female like people in a bar. The males will be

focused on finding females in estrus. But each species uses a specific search strategy for finding mates. How does a buck get a doe to know he likes her? Well, naturally, he "fawns" all over her! (Laughter) For real, "doe." Researchers have been focusing a lot on these different search strategies. And we'll get to learn about them in White-tailed deer today.

Dr. Sandra Rideout-Hanzak [00:06:39] Well, we're talking today with Dr. Randy DeYoung. He is a professor and a research scientist at the Caesar Kleberg Wildlife Research Institute and in the Department of Range and Wildlife Management, at Texas A&M University-Kingsville. Dr. DeYoung, welcome to A Talk on the Wild Side.

Dr. Randy DeYoung [00:06:57] Thank you. And thanks for having me.

Dr. Sandra Rideout-Hanzak [00:06:59] We're so glad you're here. And I know that our listeners are going to be excited to hear about your work. So let's start with just the basics. Tell us about yourself. What do you do as a professor and research scientist?

Dr. Randy DeYoung [00:07:12] Probably one of the one of the things I'm known to work with is kind of using genetic tools to understand wildlife, whether it's wildlife behavior, whether it's breeding, whose breeding, who, who's related to who, what is a population, those kind of things. And then beyond that, I've done kind of dabbled in some with some other colleagues, some wildlife disease type things, and then also wildlife surveys and some animal movements type of research.

Dr. Sandra Rideout-Hanzak [00:07:41] That's cool. A lot of different things, I think we're going to have to have you back again sometime.

Dr. Randy DeYoung [00:07:46] It turns out that a lot of things have DNA. (Laughter).

Rebecca Zerlin [00:07:49] Wow. Who'd-a-thunk?

Dr. Sandra Rideout-Hanzak That's like a job security for you, right?

Dr. Randy DeYoung [00:07:54] Yes, unintentionally. But that's kind of how it's worked out. (Laughter).

Dr. Sandra Rideout-Hanzak [00:07:57] OK, well, what we want to talk to you about today is whitetail deer buck breeding strategies. You've done quite a bit of work in that. And first, let's start with some basics there, too. Whitetail deer practice what's called, "Scramble Competition Polygyny." And to me, I'm just sort of picturing a chaotic roller derby of mating. Can you explain what the scramble competition polygyny is?

Dr. Randy DeYoung [00:08:26] First, I'd like to have you say it three times! (Laughter) It's kind of a mouthful, isn't it? Yeah. So it's kind of, what it's trying to do is, it's trying to kind of describe this whole kind of, I guess, suite of behaviors. And so let's think about whitetail deer. Where do they live? They kind of live in heavy cover and brush, things like that. And when you're in those type of habitats, vegetation, environments, communities, whatever you want to call them, it's really hard to kind of be in a really big group. And if you are in a big group temporarily, it's hard to maintain that. So in other words, it's hard for, you know, 20 or 30 deer to stay together and within sight of each other. So whitetail's live kind of spread out in small groups, maybe two to four, maybe a couple more plus or minus individuals. And because of that, these bucks have to go out and try to find groups of females. So like during the rut, you know, they have maybe kind of an idea where they're

located and they just kind of go around and try to relocate these does, you know, every couple of days and just kind of trying to assess if any of them are nearing estrus or the period where they might be mating. And so this type of you know, while it might involve some fighting between bucks a lot of time, it's involving searching. And so they need to kind of be better searching and better at assessing estrus than some of these other bucks. And so that's kind of where this scramble competition term comes from, is they're they're kind of going around trying to find groups of does, with one or more does that are nearing estrus and all the other bucks are doing the same thing. And so the successful ones are the ones that can not only find does that are near getting ready for estrus, but also to be maybe big enough in body or antler size to be able to hold off the other bucks temporarily.

Dr. Sandra Rideout-Hanzak [00:10:30] OK, and did you come up with that term scramble competition? Oh, no, no.

Dr. Randy DeYoung [00:10:34] Oh, no! (Laughter) No, it's kind of one of those one of those biology terms that, you know, you have a few terms for things that are easy to define. And when you have a hard time defining something, you come up with a really big word it.

Dr. Sandra Rideout-Hanzak [00:10:47] Really get tongue tied!

Dr. Randy DeYoung [00:10:49] I kind of I think the way it goes.

Dr. Sandra Rideout-Hanzak [00:10:53] So some of your work has been trying to determine the trade offs of scramble competition polygyny for deer, as compared to other breeding strategies. So what have you found so far as far as trade-offs are concerned?

Dr. Randy DeYoung [00:11:09] Yeah, so let me just start out with maybe contrasting whitetail deer with something like an elk or something that might be in really big groups. And so they might be a little bit more in the open at times. And so in a big group of animals, then one male can kind of, you know, prevent a lot of the other competition from maybe accessing all those females. Right. So this might be called like a harem type strategy where this one male can guard maybe 10 to 20 or more females from other males. And so if he's really successful at doing that, then then then he can he can have a lot of breeding. And so to do this, he has to be mature. So he has to be at his peak fitness and body size and have big antlers and be able to do a lot of fighting to hold off all these challengers and rivals and things like that. And so it's a really strenuous type of system, and it really only rewards the very top in terms of body condition, and antler size, and fighting ability and things like that. So let's get back to whitetails kind of contrast that. We have these small groups, you know, maybe we have two to four females and they're kind of in this brushy, thick environment. And so it's really hard to not only herd and kind of protect more than a handful of individuals, but then also to keep them all within sight, you know, all the time. And so while obviously whitetail deer do fight, you know, we see, you know, evidence of that. We see them sometimes if you spend a lot of time out there as a hunter and then also broken antler points and things like that. But fighting probably is not quite as important in the white-tailed deer kind of system. And so one thing that is important, though, is just this time spent searching. And so if we think that, you know, the peak of the rut might be two weeks long and then you might have some does come in to estrus one or two weeks before that, and some one or two weeks after that; these bucks are spending a lot of time trying to search and find these groups of does, assess if they're receptive to mating, and then moving on and finding another group, and then maybe coming back to that same group about 24 to 48 hours later, you know. So, this takes a lot

of time. And, one thing that we found, you know, kind of in conjunction with some of our colleagues here at Kleberg Institute, like Aaron Foley and Dave Hewitt, is that. This time-management is really important. So if we think about what what do deer do most of the day, will they spend a lot of the day eating? So imagine just taking a lot of tiny bites and taking a long time chewing each bite. It takes most of the day to eat. So if you're spending a lot of time eating, you're not going to be doing a lot of mating, right? If you got a if you really if you get rewarded by finding the most groups of females and maybe finding the, you know, the ones that are entering or nearing estrus, then you have to have some tradeoffs there. So what these what a lot of these bucks are doing is they'll try to get in really good condition before the rut, put on a lot of a lot of body fat and then they pretty much almost don't eat for several weeks. And they put all that time that they used to spend eating, into searching. And so because of that, they end up losing a lot of a lot of weight during the rut. And anybody that's a hunter, you see bucks at the, you know, adult bucks at the end of the rut...they look terrible! Well, that's because they haven't been eating for three or four weeks. And then they've also been jogging a lot.

Rebecca Zerlin [00:14:57] (Laughter) So high fitness. Yeah, eating all day sounds a lot like my life. (Laughter)

Dr. Sandra Rideout-Hanzak White-tailed bucks are also considered capital breeders. What is this mean in terms of their behavior?

Dr. Randy DeYoung [00:15:13] Yeah, so that's another one of these biology terms. And really what it means is that they're just trying to put on a lot of like energy fat stores. So fat to us, but also to wildlife is more than just a nuisance for wildlife. It's really important because it's storing energy. And so if they can put on a lot of fat stores before the rut, then they can afford not to eat much for several weeks while they're, you know, essentially living off of that stored energy. And so because they're not stopping to eat along the way, a lot of times they're storing all that energy up in advance and then using it. That's kind of this whole capital thing. And so they they get...amass, this reserve, and then they go as long as they can. And then at some point, if they lose too much weight, they risk kind of getting in too poor of condition, and maybe being susceptible to predators or other kind of diseases or illness or something. So at some point, they have to stop and eat. And so they'll put as much effort as they can, and until they get to a certain point. And then they'll have to stop. And if they're really good at what they do, they can last through the entire rut and then not have to stop until it's over. But if they have to stop early, then bucks, they put on more reserves, then have an advantage over them.

Dr. Sandra Rideout-Hanzak [00:16:38] OK, so they're living off of capital, basically. That's what that term means.

Dr. Randy DeYoung [00:16:44] Yes, essentially. They don't totally quit eating, but they really dial down the amount of time that they spend because, you know, again, just if you're thinking about back of the envelope kind of calculation, it takes so many bites to fill up a deer. And they've got to do that so many times per day, and then they've got to do a lot of chewing. And all of that takes, you know, 16, 18 hours plus a day. And so if they can reduce that down to just a couple hours. And then use their fat reserves, then they have all those extra hours to use searching for mates.

Dr. Sandra Rideout-Hanzak [00:17:19] Ok. So, you said they might lose a lot of weight. Now, I know this is going to vary widely from place to place, but can you tell us just in Texas, just within the state, the different areas, east Texas versus, you know, the

mountains out west or whatever? Um, how much would a buck in good condition weigh, and how much might he lose during the rut?

Dr. Randy DeYoung [00:17:45] Well, let's say like a south Texas buck, an adult, that's in good condition...you know, it could be over 200 pounds live weight. And he might end up losing 20, 25 percent of that during the rut.

Dr. Sandra Rideout-Hanzak [00:17:59] Really?

Dr. Randy DeYoung [00:18:00] Mm hmm.

Dr. Sandra Rideout-Hanzak [00:18:01] Twenty five. Wow! Okay.

Dr. Randy DeYoung [00:18:02] So it's so it can be pretty drastic.

Dr. Sandra Rideout-Hanzak [00:18:05] I wish I could do that in three to four weeks! (Laughter).

Dr. Randy DeYoung [00:18:07] We'll just stop eating for a few weeks! (Laughter).

Dr. Sandra Rideout-Hanzak [00:18:08] And jog a lot! (Laughter).

Dr. Randy DeYoung [00:18:11] Stop eating and just jog.

Dr. Sandra Rideout-Hanzak [00:18:12] That could work.

Rebecca Zerlin [00:18:13] I'm sure that's healthy! I'm sure there's some nutritionists saying to do that. (Laughter).

Dr. Randy DeYoung [00:18:19] But I think they're kind of you know, their physiology is probably a little bit more set up to do those type of things. But like I say, toward the end, they're in pretty bad...pretty bad condition. And, you know, that is also in terms of natural deaths after the rut is the highest risk for these for these animals because, again, they've run themselves down. And so, you know, whether it's, predators, coyotes, something like that, or maybe illness, maybe injury, if they've been fighting some, that's where their biggest natural deaths are going to occur, you know, in that kind of January, February, maybe early March type of time period before they can kind of get green up and get some new food in and start recovering their body condition.

Dr. Sandra Rideout-Hanzak [00:19:08] OK. Now, I want to ask you about some of some terms and things that have been used for different various search strategies, and these search strategies that might be applied to finding food, but they've been applied to these buck mating strategies as well, and some of your work has determined that when bucks are searching, when whitetail deer bucks, are searching for receptive females to breed, they're going to practice what's known as a Levy walk, and that would be opposed to more Brownian motion movement. Can you compare these two types of movement patterns and discuss the advantages of them using the Levy walk?

Dr. Randy DeYoung [00:19:58] Sure, yeah. So this was some work led by Aaron Foley during his Ph.D. work. And Aaron is a research assistant professor for us now. So, you know, kind of some collaborative work. And so Aaron's was really focused on trying to understand these this whole searching type of, you know, behavior. And so, you know, we

just kind of talked about that, you know, during the rut, essentially, these bucks are trying to find does, because they can't you know, they can't see very far through the brush. You know, they don't have social media, Facebook or anything. So they've got to physically go out and walk around and try to find, you know, OK, I know some groups of does are hanging out over here. I need to go kind of see, are they getting close to to maybe getting close to being able to mate. OK, yes or no then I'm going to go on and maybe try to locate another group. And then, you know, all of this takes time to find them to, you know, assess essentially assess their status and then go find another and then you'll find it and then maybe return to that first group the next day. And it just kind of keep doing this. And so just trying to understand, are they just randomly going around out there, or do they kind of have a you know, an idea where they're going to be finding other deer? And so this whole levee walk is kind of a it's kind of a search strategy that you can tell from movements. And so, like, let's say we have GPS radio collars on these bucks. And if they're making a type of movement where they have really long, you know, essentially movement paths; so in other words, they might move almost a straight line for a long time and maybe a series of of GPS points. And then finally they might, you know, essentially stay in a pretty localized area. So there's this long movements followed by a bunch of really short movements. That's kind of characteristic of what you don't know, the location of a resource and it's kind of, you know, thinly distributed. And you might have to do a lot of searching to finally find this. And so you can kind of contrast this with a whole bunch of short movement links, which would be this this other or this Brownian way. So that might be more of a...you kind of have an idea where this this resource, in this case, groups of does are located. And so you don't have to move very far. And once you do, you're mostly OK. I know they're around here somewhere. Let me kind of search around locally and spend some time assessing their status, and then I'm going to go and do the same with the next group and so on, and then maybe return to this other site later. So, you know, again, long straight movements. Interrupted by short local movements versus a whole bunch of short local movements. So that's kind of what we're looking at. You know, essentially, how does this look at a big picture in terms of how the bucks are moving and how they're spending their time and how much area they are covering?

Dr. Sandra Rideout-Hanzak [00:23:08] OK, now, you haven't used this word yet, but and it might be really impossible to assess, but how much does memory play a role? Do you have an idea of their memory of where things are?

Dr. Randy DeYoung [00:23:25] I can't recall! (Laughter). No, that's a you know, that's something that really came out of this, is that, you know, I kind of when we kind of started, it was pretty descriptive, you know, and Aaron was really taking the lead in trying to find out, OK, what are these animals doing? And then after a while, it became pretty apparent that they're not moving randomly. They are in portions of their home range and they are really focusing on these portions and then returning to these over and over. Again, that's where we believe a lot of these doe groups are located. And so they're they remember, you know, they remember where they're going where they expect to find other deer and they're going to come back then not five minutes later, not an hour later. That wouldn't be very efficient, but maybe a day or maybe two days. And that kind of time period there the doe's estrus status may have may have changed. So if you check too frequently, then you're kind of not spending your time very wisely. You know, but if you check too infrequently, then you might miss a mating opportunity. So, then they can probably get an idea if these does are going to be receptive, either from, you know, maybe scent or chemical type of indicators from smell or maybe behavioral type of indicators, by the way the doe is behaving maybe 24 to 48 hours before she's ready to, you know, be receptive for mating. And so, again, if you're checking too frequently, it's not very efficient. But if

you're checking infrequently, then you might miss an opportunity and another buck might get there. So a lot of them seem to be on about a 24 hours in between and, you know, in between, you know, essentially trying to find these groups of does and assess their receptivity for mating.

Dr. Sandra Rideout-Hanzak [00:25:18] OK, now there's an old idea, this might be an old fashioned idea, but I think it's a common idea that there's a small number of mature, large, most dominant males in a whitetail deer population that do almost all of the breeding of the does. You've looked at that with your genetic work, is that right?

Dr. Randy DeYoung [00:25:40] Mm hmm.

Dr. Sandra Rideout-Hanzak [00:25:41] What did you guys find out?

Dr. Randy DeYoung [00:25:42] Yeah. So that was that was long believed to be the case. And, you know, a lot of this is based on comparisons with other species. So, you know, again, animals that are kind of in the open and easy to study, you know, so things like elk or, you know, real close relatives, red deer, you know, they live in the open, they have these big groups of females, they have one dominant male can essentially monopolize all the mating opportunities for that group of maybe up to 15, 20 or more females. And so it was kind of assumed this is what's going on with whitetail deer, but just kind of out of our sight most of the time. And, you know, there really wasn't a good way to study this until kind of technology caught up and we were able to apply some of these kind of genetic just kind of the parentage methods. I mean, it might be the I mean, it's the same technology as the 1-800 who's the daddy kind of, you know, the paternity suit type of things. (Laughter) It's the same technology just being able to apply that to wildlife. And so once we got the tools to be able to do that, then it was pretty quickly that that became apparent that, oh, wow, there's a whole lot of different bucks that are breeding. And it's not just the the oldest and the biggest bucks, because, again, in this in this type of thing, it might just be that a buck gets lucky and finds a doe just at the time where they're receptive or nearing receptivity. And if we think about it, too, you know, during the run, how does this look? You know, we have maybe a two-week period that most of the does come into estrus and are bred. And so during that time period, if most of the does are ancestors and one of these bucks can only be essentially with one, though, at a time, then at some periods of time there's a lot more those in estrus than there are adult bucks. And during that time period, sometimes some of these younger bucks, you know, even one or two year old bucks can sometimes, you know, obtain some mating opportunities. And so, you know, just it's kind of a time management kind of scenario. But then it's also kind of opportunities and there's some search time involved to find the next doe. And most of this is kind of happening in the brush again. So one one male, even the biggest...biggest antlered, baddest, you know, fighter or whatever, he can't see what's going on 50 yards away. And so there's nothing he can do about, you know, some of these other interactions between other deer.

Dr. Sandra Rideout-Hanzak [00:28:27] OK, are there any other myths that you've sort of found to be untrue in your work?

Dr. Randy DeYoung [00:28:35] I don't know about necessarily myths, but one of the things that maybe we didn't anticipate that would happen at such a you know, such a frequency is that, again, using some of these genetic heritage techniques, we found that there are these deer are really promiscuous. So in other words, if we if we you know, a lot of these white-tailed deer does are going to have twins. And so we can sample the does

and a lot of twins, then we can kind of get an idea, well, how many dads are there in this these groups of twins and up to half of those sets of twins have different dads, same mom, different dads! (Laughter) So there's a lot going on that's probably out of our sight that, you know. And certainly, you know, those are some you know, I think it's kind of it's kind of easy to say whitetail deer are one of the most studied animals...there's nothing new to find in this group...but there's a lot going on this whole mating strategy continuum. Like, for instance, we don't really have a good idea...what the doe's role is in all of this, it seems kind of, you know, naive to say that she's just a passive participant and some studies have found that does make some big movements prior to the rut. So they may be trying to find, you know, doing a little searching of their own and kind of getting acquainted with some of the other potential suitors in the area, maybe. So there's a there's still a lot out there that, you know, that's left to be, you know, left to be uncovered.

Dr. Sandra Rideout-Hanzak [00:30:20] Yeah, that's great that you have the new tools, all the DNA and stuff to get at these deeper questions.

Rebecca Zerlin [00:30:27] I have another question regarding twins, because we use that a lot with animals that might have two offspring, and they're not necessarily twins, as we would say, or identical.

Dr. Randy DeYoung [00:30:39] Most of them. You know, in fact, I could probably put a number on it, an exact number, but off the top of my head of essentially getting some genetic data on...at least several hundred sets of twins, we have not found a set of identical twins.

Dr. Sandra Rideout-Hanzak [00:30:59] Really?!

Dr. Randy DeYoung [00:31:00] The human and the human scheme of things, it's fairly rare, too, to have identical twins, so. Oh, so I'm not saying it doesn't happen, but it's not common.

Rebecca Zerlin [00:31:12] So why is it important for us to understand buck breeding strategies? Does it help us understand how to manage their habitat better, or make us better hunters?

Dr. Randy DeYoung [00:31:21] Yeah, well, from a science perspective, yeah, it's pretty interesting. But from in terms of management and hunting, you know, I think it helps a little bit in terms of like first in some harvest strategies are dedicated to try to, you know, improve antler size and populations. And so you may be wanting to remove certain classes of individuals that don't have good at the development, you know, in the hopes that some of these others will do more breeding and then they'll pass on their traits and so on. And so if breeding spread out quite a bit, then there's only, you know, wild situation, there's just only so many does that an individual buck can breed with, and since antler size is not a big premium for breeding in wild deer, it helps, but probably it only helps if you can find does at the right time. And then the antler size thing kicks in to some extent where you're trying to guard the doe from other bucks, and potentially the doe might be selecting a little bit on that side, too. So that's again, one of these things we don't understand too well. But, you know, just kind of saying, oh, this big antlered buck is going to be the big breeder. Well, not necessarily, you know, and so and sometimes, you know, it just kind of turns out that that the large antlered buck, none of his sons have large antlers, you know, for whatever reason, you know, so sometimes it doesn't it doesn't always translate to to the next generation. And I think for in terms of management or hunters, things like that,

you know, just kind of understanding how these bucks are using the landscape, how they're, you know, probably repeatedly, you know, returning back to some of these areas where they're looking they're trying to encounter other deer. You know, if we catch a glimpse of a deer, we might see him again at some point. Even though we don't see them for several days, he might be, you know, off, you know, either sequestered with one or more does, or you might just be resting up a little bit at some point. And then I think finally at the end, you know, just being able to, you know, provide some good nutrition at the end of the rut to let some of these bucks recover and so on. I think it kind of helps with some of the management. And then also kind of, you know, keeping the ratio of bucks-to-does kind of reasonable, you know, ensure that most of these does are getting bred on their first estrus and then and then also kind of keeping, you know, a range of age classes in a population, you know. It's going to help as well, especially for having adult deer around tends to tend to result in a lot more compact, you know, mating season, which means fawns are born at the similar time. And so, you know, that kind of helps our survival as well.

Dr. Sandra Rideout-Hanzak [00:34:18] So down here, we have a lot of wildlife ranches and they might invest very heavily in a nice, expensive buck. If they're doing that, but we know that these other bucks are also getting their genes into the mix. How do they how do they manage to make sure that they're getting the most out of that buck that they invested so heavily in?

Dr. Randy DeYoung [00:34:44] Right. Well, it kind of depends on the, on how they're trying to introduce this animal into a population. You know, they can there's some intensive management permits that are available that allow, you know, essentially a landowner to put in maybe a dozen or 15 or so does in a temporary enclosure with one of these bucks. so you can kind of ensure that he does sire a lot of offspring, but just kind of putting them out with some wild deer. You know, it's probably not a very efficient strategy, unless maybe it's, you know, kind of a long term type of expectation. But it's really hard to monitor how that, you know, how it may or may not be successful in those conditions.

Dr. Sandra Rideout-Hanzak [00:35:29] Sure.

Rebecca Zerlin [00:35:30] So here's the important question, we've talked about antlers, does size matter?

Dr. Randy DeYoung [00:35:35] Well, it depends. (Laughter).

Dr. Sandra Rideout-Hanzak [00:35:38] That's always the answer, right? (Laughter).

Dr. Randy DeYoung [00:35:39] Yeah, well, you know, when we when we looked at, you know, essentially we can take like let's say we'll go out...maybe this year, and we sample all of these fawns that are born, and if we have an idea of how many bucks are available out there, we can just kind of say, OK, of all the fathers of these bucks, you know, how many of them have big antlers, medium or small antlers? You know, what we find is it's not necessarily that all the fathers have the biggest antlers and the smallest deer don't sire any. We just find this kind of range in there. So, you know, again, that's kind of one of those things that, you know, we still need some follow up on is you know, antlers are kind of expensive and costly. You know, why bother? So it's not that they're unimportant. It's just that exactly what premium are they playing? So, again, it may not be that a buck needs to be the biggest antlers in the entire population. It might only be two or three other bucks that have found this one doe that's ready to mate. And so you don't have to be the

biggest buck in the entire county. You just have to be the biggest one of those two or three. Right. Or maybe while those two or three are fighting, maybe you can sneak in. (Laughter). So there's a lot of things going on there that, you know, that. So some individuals that don't have big antlers and obviously wouldn't be very competitive in a fight. Well, they're not going to fight. They're going to try to do other things to, you know, essentially get some breeding opportunities. So it probably represents to some extent some different strategies as well. You know, to the extent that we can say, yeah, I mean, they're not sitting out with a pen and pencil and paper and kind of plotting out these...but that's kind of the activities that seem to work. And so sometimes being sneaky can be important. Sometimes being lucky is probably good. Being persistent is probably good. Just surviving to live another day can also be good.

Rebecca Zerlin [00:37:47] That's kinda my motto! (Laughter).

Dr. Sandra Rideout-Hanzak [00:37:48] That's got to increase your odds a bit there.

Dr. Randy DeYoung [00:37:50] Well, the one thing we've proven is that deer that have been shot don't sire a lot of offspring. (Laughter).

Rebecca Zerlin [00:37:55] Oh wow. (Laughter).

Dr. Sandra Rideout-Hanzak [00:37:57] I am learning so much about deer! (Laughter).

Dr. Randy DeYoung [00:38:01] and DNA told us that, for sure! (Laughter).

Dr. Sandra Rideout-Hanzak [00:38:02] Sure. Yeah. Wow.

Rebecca Zerlin [00:38:06] On that note, we're going to change the subject now. Working outdoors as we do, things don't always go as planned. So we're asking all of our guests to share an entertaining biology blunder with our listeners. Do you have a funny biology blunder you'd be willing to share?

Dr. Randy DeYoung [00:38:24] You know, it kind of reminds me of an experience. I don't know if it's necessarily a blunder. It was more like kind of a I don't know, maybe a close encounter or something that. It was kind of back when I was working on my PhD research, you know, which again, was trying to, you know, understand buck breeding and so on. And so I was out on King Ranch with Mickey Ellickson, who was the chief wildlife biologist for King Ranch at that time. And we were shooting some deer to take samples for research. And we happened to shoot several deer kind of in a you know, you know, within maybe 20, 30 yards of each other. And so we were just going and doing our sample collection and other kind of things just, you know, on the ground right there before we loaded all the deer up. And so it takes it takes us a little while to do all our measurements and collect our samples. So we go from one and we go, you know, ten feet over to the next one and we go 20 feet over to the next one. And this whole time, you know, we're talking we're doing stuff, you know, we don't hear anything. We don't have any other indication when we get to the last deer, that's, again, maybe 30 feet away from us. We see that half of the deer is gone. And by gone, I mean it has been consumed. (Laughter) So there have been coyotes working on eating half of that deer the whole time that we were just right nearby. (Laughter) We were kind of shocked! You know, we kind of made a few jokes about Chupacabras. But, you know, it was clearly that they had somehow, one or more coyotes had gotten in there. And while we were never over 30 feet away from these animals, we were kind of maybe screened out by a little bit of brush or something. We never heard

anything. We're talking, like I said, the whole time and never noticed any of this until we went right up to it...and WOW! Half of the deer is gone. I mean, I'm not kidding, half of the deer was eaten.

Dr. Sandra Rideout-Hanzak [00:40:23] Oh, my gosh. Sneaky little devils!

Dr. Randy DeYoung [00:40:25] No kidding!

Dr. Sandra Rideout-Hanzak [00:40:25] So that makes you wonder how often they're just there watching you. (Laughter).

Dr. Randy DeYoung [00:40:30] Yeah, no kidding!

Rebecca Zerlin [00:40:30] Oh, they're there!

Dr. Sandra Rideout-Hanzak [00:40:33] Well, Dr. DeYoung, thank you so much for visiting with us today. I really did learn a whole lot about a whitetail doe/buck breeding strategies, and a lot of things that I never thought about before. I never even thought about the idea that that, you know, the biggest buck might be standing there, but if there's 50 yards of brush in between him, you can't see what the next guy is doing. I never even really considered that. (Laughter). I feel a little naive here.

Dr. Randy DeYoung [00:41:00] Well, and if it's the next guys, you know, that whoever the next guy is, it doesn't pay to just sit around... They're all putting in as much effort as they can. And then the ones that don't, don't become ancestors.

Dr. Sandra Rideout-Hanzak [00:41:18] Well, thank you so much. I hope you'll come back sometime and talk to us about your just DNA use in conservation, because I'd be really interested in hearing about that.

Dr. Randy DeYoung [00:41:29] Great. Well, thanks for the invite. I sure enjoyed it. And be glad to come back anytime.

Rebecca Zerlin [00:41:39] I am not a deer person...

Tre' Kendall [00:41:41] I am a deer person!

Rebecca Zerlin [00:41:42] Yes, you are! (Laughter) And that was really that was kind of cool to hear about. And now all I'm going to think about the rest of the day, and probably randomly throughout the next couple of weeks is Deer Tinder. (Laughter).

Tre' Kendall [00:41:59] It's not always about looks, but sometimes it is.

Rebecca Zerlin [00:42:02] Yeah, just can you imagine animals if they were on Tinder.

Tre' Kendall [00:42:08] Oh God. I hope we don't get to that point. (Laughter).

Rebecca Zerlin [00:42:10] Yeah, that'd be cool. Well, on that really weird note, I think it's time for us to sign off. So remember to like us on social media, give us a nice rating on all of our podcast channels, and we hope to hear you next time. Or I guess we hope you hear us next time.

Tre' Kendall [00:42:31] Thanks for tuning in, guys.

Rebecca Zerlin [00:42:33] And remember, don't feed the wildlife.

Dr. Sandra Rideout-Hanzak [00:42:35] A Talk on the Wild Side is a production of the Caesar Kleberg Wildlife Research Institute of Texas A&M University-Kingsville. Funding for this project is provided by the Harvey Weil Sportsmen Conservationist's Award, by the Rotary Club of Corpus Christi. Editing was completed by the talented Gabby Olivas, Andrew Lowery and Tre' Kendall. We thank the TAMUK Distance Learning Lab for all their help and cooperation.