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David Todd [00:00:01] Thing, my name is David Todd, and we are very fortunate to be conducting an oral history with Adam Eyres, and I would like to just give a little bit of a introduction to the details of what we're about this morning with Mr. Eyres' approval.

David Todd [00:00:23] We are planning to record this interview for research and educational work on behalf of the Conservation History Association of Texas, a nonprofit here in the state, and for a book and a website for Texas A&M University Press. And finally, for an archive at the Briscoe Center for American History, which is based at the University of Texas at Austin. And, of course, Mr. Eyres would have all equal rights to use the recording. And I just wanted to make sure that was OK with him and what, what he had anticipated.

Adam Eyres [00:01:03] Yes, that's exactly what I anticipated.

David Todd [00:01:05] Super.

David Todd [00:01:06] OK, well, let's, let's proceed. It is October 11th, 2021. It's about 9:38 in the morning. My name is David Todd, as I said. I am in Austin. I am affiliated with the Conservation History Association of Texas, and we are conducting an interview, as I may have mentioned before, with Adam Eyres, who is the Director of Animal Care at Fossil Rim Wildlife Center, which is situated near Glen Rose, Texas. And in this and other capacities, he has worked with a number of animals, but I guess of particular interest to us today, he's worked with white rhinoceroses since 1989, and we hope to learn more about that work and his background in the time to come. He is based near Glen Rose, and so this interview is being done remotely.

David Todd [00:02:16] Today, we will talk a little bit about his background and experience and training and then focus in on the white rhino and its decline historically and then some of the more recent efforts that he's been involved with to protect and restore it.

David Todd [00:02:37] Well, that introduction, I think you might just ask a first question, and that's just, you know, were there any early events or influences in your childhood that might have introduced you to a concern for nature and an interest in working with wildlife?

Adam Eyres [00:02:56] That's, that's a good obvious question, and it is an interesting one, because as in my role here, I spend a lot of time reading resumes and applications that are coming here and easily half of them say things like, "ever since I was three years old, I've known I loved wildlife". And, you know, "ever since kindergarten, I knew I wanted to work with animals", and I don't really have that story.

Adam Eyres [00:03:19] My, my origin story really wasn't until high school. I did love the outdoors. I grew up in a in a great place to spend time in the outdoors. We had a place not too far from the house called, "the swamp", and it was a swamp. And unfortunately, now it's a housing development. But growing up, it was a great way to get away from the house and go play with salamanders and frogs and snakes and all the things that live in swamps. But it really wasn't a calling, you know, it was just something to do during the day until I went to school. And even even in elementary school and junior high school, I didn't think a whole lot about, I guess, the natural world excuse the conservation animals. None of that stuff was was first and foremost in my mind saying, "You know what? I'm going to do this for the rest of my life.".

Adam Eyres [00:04:08] Interestingly, I have done it for my entire professional career, but it was in 10th grade in high school and I had a great marine biology teacher, a guy named David Webb and 10th grade, what do we know, right? But he really opened my eyes to the marine world around me. I grew up in Tacoma, Washington, so we were right there on Puget Sound. Just had a ton of marine life. I got into SCUBA diving in 1984, so I was, I don't know, 18 or 19 at the time and did a lot of diving, did a lot of work, just, just looking at and hanging out with marine animals.

Adam Eyres [00:04:50] And at that point, I decided I was going to get my degree in biology and go on and get post-graduate work in marine biology. And interestingly, now that I've been in this field, I look back on what I would have done with that, because I don't really know. My biggest, you know, my, my biggest interest was in invertebrates. You know, I was looking at sea cucumbers and starfish and things that I don't know how I would have made a living dealing with. Although I guess with the starfish issue a few years ago, I probably would have been pretty busy with that.

Adam Eyres [00:05:22] But regardless, I ended up going to college, having a professor named Warren Hanson, who was not even my advisor, but certainly a good friend, and did give me a lot of advice. And over the course of those first years...

David Todd [00:05:39] [I'm going to stop you there, if you don't mind, Adam. Is there possibly something going on with your microphone?].

Adam Eyres [00:05:47] [I hope not, but maybe it's just dangling. Is it moving? Am I'm moving?].

David Todd [00:05:55] [OK, it's, it's pretty garbled.].

Adam Eyres [00:05:58] [I haven't moved, I haven't done anything different.].

David Todd [00:06:02] [OK. Sometimes this, this may seem a little bit voodoo, but it depends on which way you're facing. So you might want to just be conscious if you move.]

Adam Eyres [00:06:15] [OK, then I will try not to move.].

David Todd [00:06:18] [Okay. Anyway, I'm sorry that I interrupted.] So you were talking about your, your, your professor, Mr. Hanson.

Adam Eyres [00:06:26] [Yeah, yeah, definitely interrupt me because there is no point made rambling on, if you can't understand what I'm saying.]

David Todd [00:06:32] [Sure, sure. Go ahead. I'm sorry to interrupt.].

Adam Eyres [00:06:35] So, so yeah. So Dr. Hanson sort of steered me into. He was a marine biology professor, amongst other, other courses. And my junior year of college, when I applied for internships, which I needed to graduate, I applied to the Point Defiance Zoo and Aquarium, which was up in my hometown of Tacoma. And, I don't know what I was thinking, you know, I was young and I guess optimistic, and I said I'd like to apply for an aquarium internship. And fortunately, they reached out to me and said, "Well, we don't have an internship in our aquarium, but we do have one in our zoo.".

Adam Eyres [00:07:10] And I was, you know, I was up against the wall since I foolishly didn't apply for any other internship and I said, "Well, I'll take that." And that was where I really got into conservation, that internship, summer of 1987. I was working with American red wolves, which were, they'd only been in captivity for a few years after we realized that they were in big trouble. I worked with polar bears. I worked with Musk oxen. I worked in a building called World of Adaptations. And so my introduction to conservation was pretty diverse. It had birds and small primates and fish and some reptiles. It was, it was a really cool building that just sort of had a little bit of everything. And I really got into conservation.

Adam Eyres [00:07:58] And the interesting part for my career path was, after I graduated, I was offered a job working with primates, which I didn't really want to do. And so I called my former boss at Point Defiance, and I said, "I've been offered this job and I need to get into the work field and I need that, I need a job, but I'll do pretty much anything at Point Defiance to avoid doing this job.".

Adam Eyres [00:08:20] And he said, "Well, I'm almost embarrassed to offer you this position." But he said, "we're getting ready to train some of our elephants to do a demonstration and a ride." And he said, "We need elephant ride loaders." And I said, I said, "Is that what it sounds like it is?" And he said, "Yep, you're going to stand out there and you're going to load people onto our elephants and do it right," back in the days when they had elephant rides.

Adam Eyres [00:08:43] So I took that job and it turned out to be a great opportunity for me. I was taken under the wing of the guys that work in elephants. They taught me every single thing about working elephants. I also had the opportunity to work with some of the other animals in the area. We had tigers, we had a couple of primate species, a few hooved animals. Nothing spectacular. We had reindeer and llamas.

Adam Eyres [00:09:05] But, over my course of that piece of my life, I had an opportunity to come to Fossil Rim. At that time, I was thinking, "Well, I'll go down there for a couple of years, get some experience in a different environment and take that somewhere else", but for what I do and for how I do it and for how we do things at Fossil Rim, this is a really good match. And I've been here for 30-plus years now. And we'll talk about it more as you as you ask more questions, but that was my, that was my origin story, that was how I ended up at Fossil Rim.

Adam Eyres [00:09:41] My tenure at Point Defiance was temp work, so I was allowed to work 120 days a year, covering for someone who was out for medical reasons. At the end of that 120 days, it was almost the end of the year, and so I was allowed to be hired back on for another 120 days in the next year. And because I was a temp, there were assorted things that went along with that and Fossil Rim became a full time job and I took it.

David Todd [00:10:08] And this would have been in the late '80s, is that right?

Adam Eyres [00:10:13] Yep, yep, I started here in April of '89. So I did my work at Point Defiance for pretty much all of '88. Well, that's not even true. I graduated college in June of '88. And then I worked at Point Defiance from June until March of '89.

David Todd [00:10:29] OK. Well, you told us a little bit about your, your childhood and then your, your education, which I understand was at Whittier College...

Adam Eyres [00:10:38] Mhmm.

David Todd [00:10:38] ...where you got a biology degree. You know, for many people, this sort of informal education they get can be very important. You know what they kind of absorbed from the culture, whether it's books or movies or TV shows, and I'm curious if there was anything along those lines that was important to you.

Adam Eyres [00:11:07] Yes and no. So certainly there were there were things that I took in courses. And Whittier College is a liberal arts school, so some of the stuff that really has helped me the most in my life has not had anything to do with biology. In fact, the humor of it is my biology grades were the worst of any grade I had in college. I was getting a degree in biology and I was doing very well in pretty much everything but biology. I was getting Bs and Cs in biology.

Adam Eyres [00:11:30] But we, the one thing I wish that I had done a lot more of in college was tap into my resources. And this is a message I give to all of our interns, all of our staff. There are a lot of people out there who have a lot of information, and no one should expect to know everything. And I didn't, I didn't do that as well in college as I should have. I had a lot of professors that could have, you know, given me good advice. And Dr. Hansen, of course, did. I mean, he was he was instrumental, but he was one of 100 professors there.

Adam Eyres [00:12:04] So yes, obviously, I read books and watch movies, but, but honestly, it was sort of the full package of the liberal arts education that really has, has been the most influential help, I guess.

Adam Eyres [00:12:18] Once I got into the career, then I've got all my colleagues that I'm, that I'm leaning on, that do know the specifics of what I currently do now.

David Todd [00:12:28] Well, that's interesting, I think that a lot of scientists have very specific training, and it's, it's, it's very focused and, and, and exclusive for, you know, a certain kind of subject, and I think it's interesting that you had this this sort of generalist training in a liberal arts program and that you found that that was valuable to you. Can you give me an example of what you mean by how that kind of exposure helped you in your conservation work?

Adam Eyres [00:13:04] Well, I think, you know, it sort of reminds me of it. It's not a joke, but it's a it's kind of a statement of reality in regard to vet schools. A lot of the vets that I've talked to make comments like, "The straight a vet student is going to be working in the lab or this or the clinic of the C student." And I think a piece of that is that straight-A student is very smart, very focused, very into veterinary care. But that C student has a little bit of balance in his or her life. That C student is going to be able to communicate better with the clients. That C

student is going to have a better understanding of a business sense. That C student, you know, he didn't cram for 18 hours of a very 24 for four years in med school. He's got a little bit of a different thought process.

Adam Eyres [00:13:53] And I think that I bring a little bit. Obviously, I didn't go to vet school, thank God, but I think I bring a little bit of that to the career I'm in. Most of the people who are in roles similar to mine are not postgraduate people. Some are, some are masters, some are PhDs. But many of us grew up in the field, you know, cut our teeth in the business, did our work in the business. We aren't necessarily "school" people.

Adam Eyres [00:14:20] But you can certainly see, and I, and I communicate with some people who are very, very focused on animals. It's all you can talk about. You can't have a discussion about something else because all they can really talk about are animals. And I feel like, you know, I feel pretty good when I can throw out some weird book from my history of being in this liberal arts school, and maybe we can talk a little bit about that, or maybe it applies to something that we're dealing with at the time.

Adam Eyres [00:14:46] You know, animal care has really evolved over the past probably 50 years. In the beginning, it was who has the best menagerie and who got the most animals. And now it's very much an assurance population. And taking good care to make sure the animals have good welfare. And you know, there's a lot more to it than just, oh yeah, we went to Africa, we got a couple of animals. One of them died. We'll go back and get another one. That has changed, and fortunately.

David Todd [00:15:17] Well, that is something we should definitely get into is how the institutions in the field have evolved, as you say, from being a menagerie to more a sort of a conservation facility that provides assurance populations. That's that's of course, a big, big story.

David Todd [00:15:37] But you know, just to, to keep on on track and why don't we just keep focused, if we could, on, on your work at Fossil Rim? So, as I understood it, you arrived there in 1989 and you have a really diverse career there. You work as an animal care specialist, safety officer, hoof stock curator and now you're director of animal care. And I think you told us a little bit about how you arrived there. Can you talk some about how your duties evolved over the last 30 years?

Adam Eyres [00:16:24] Yes. Organically, by necessity. I came in and there were two of us that got hired within a couple of weeks of each other. There were two positions open and we sort of chose what we wanted. The other one was carnivores. And I had worked some with tigers and ocelots. But the other person, she had a lot more experience with carnivores. And so I had worked with elephants and it made sense for us to fall into the roles we fell into, and, and I'm glad that we did. I've been very happy doing hoofstock.

Adam Eyres [00:16:58] So through our training, we worked with other people. Ultimately, I took over the hoofstock piece and was a basically, we don't call them zookeepers here, we call them animal care specialists, but that's basically what we were doing. It was the day-to-day care, feeding, watching, making sure that the right animals were with the right animals for breeding purposes, just all the day-to-day things that you would do taking care of animals.

Adam Eyres [00:17:25] The curatorial position came. We, we intentionally didn't use words like zookeeper and curator, because zookeeper gives the sort of connotation that you're

keeping animals, and we're not keeping animals, we're just taking care of them. So we like that, and we didn't usually use the word, "curator" because a curator to us sort of implies a collection like in a museum. And our collection is a living collection and it has lots of moving parts. And it's not like we can go, "OK, this this week, we're going to curate the art of some, some artist and then next month we'll curate another collection.".

Adam Eyres [00:18:03] But through the course of time and dealing with all the other zoos that we deal with, we needed to have some, some common nomenclature. So we, I was a supervisor for a while, which we were satisfied with. Then we just went ahead and changed names. So my supervisor became curator just to fit in better with the rest of the community so that when I'm talking to someone in another zoo, they know what that means.

Adam Eyres [00:18:27] I did that for a few years and then I guess in 2018, I became director of animal care. So instead of just being involved with the hoofstock, I now oversee the entire collection, which is still a relatively small collection. We have a carnivore curator who takes care of cheetahs, American red wolves, Mexican gray wolves, maned wolves. We have black-footed cats, pretty good collection of black-footed cats and of course, our cheetah program is successful and very large.

Adam Eyres [00:18:54] And then there's a curator of birds. Our main bird program is our Attwater's prairie chickens, which are a Texas endangered species. I can go on and on about them all day, but I won't because I don't think that's the focus of this. But it's a, it's a great project. And in addition to that, we have a few birds in our children's animal center. We've got some psittacines - blue and gold macaws, eclectus parrots. We have emus and ostrich. The people driving through our park, love to, love to hate those animals.

Adam Eyres [00:19:26] And so I oversee all of that. And then I work directly with our, with our veterinary department as well. We have two full time vets in it and a fellow.

Adam Eyres [00:19:36] And the safety officer piece came back in 1995. We were beginning to get busier and busier. We were having more and more guests, and a co-worker and I decided that we would propose to Fossil Rim that they pay for our emergency medical technician training, and we would be trained EMTs for anything that happened here at Fossil Rim. So I did that for about 20 years. I still am involved in that role, but we, we now have a safety and security manager, which we've had over the last several years. But I just, sort of that one just sort of fell into my lap, for better or for worse.

David Todd [00:20:21] Sounds like a very diverse background. You're a man of many hats and skills.

Adam Eyres [00:20:28] And starting to remove some, which is really nice. There's a few things that I'm, that I'm handing off. I'm putting a lot more weight on our safety security manager, allowing me to focus more on what I'm doing. My, my jobs have always had titles, but they've always had other things in the background. And I have an opportunity now to really take a couple of things off of my plate. We just recently hired a new curator of hoofstock and rhinos, which was my, my former job and I have been doing it since 2018, in addition to my director of animal care, and I thought I could and I was, but I think I can do it much better when I have someone else taking a lot of that stuff off of my plate. There are a lot of things that I should be doing as director that I haven't been doing. So I'm looking forward to the opportunity to get involved with, with those things.

David Todd [00:21:16] Well, that's great, I think that's a sign of a good institution that folks can, can move and change and progress and, you know, find new challenges. So it sounds like it, at Fossil Rim, you've worked with hoofstock for many years in different capacities. I, of course, we're mostly focused on, on the work with these white rhinos, but maybe just to give us some context, could you give us sort of a 30,000-foot view of the hoofstock that are at Fossil Rim Wildlife Center and, and maybe just the typical day to day role of a hoofstock caregiver?

Adam Eyres [00:22:10] Sure, sure. So we've got about 30 different species of what I'll call exotic, and all that means is they're not from here, hooved animals. We're predominantly Africa, although we do have a few Asian ones. We've got access deer and we've got black buck, which are sort of the exceptions, but they're also very popular in Texas. They do well here.

Adam Eyres [00:22:36] We've divided up our park into five, well, it's in four, four areas where the public goes and then there are probably another four or five areas that the public doesn't go, where we, where we house our hoofstock. And they're divvied up by which ones get along with each other, which ones aren't going to fight too hard, which ones aren't going to hybridize. And so if you come to Fossil Rim and drive to the park, you're going to go through about a hundred-acre pasture that has wildebeest. We've always done very well with wildebeest. Wildebeest are fun to see. People all recognize them. Certainly, the Lion King helped. And right now we have 52 wildebeest here, so it's pretty awesome to see a big collection like that.

Adam Eyres [00:23:16] And we'll talk a little bit about that here in regard to what our collection is like. We don't have very many species, but we have a lot of the species that we have. Generally speaking, we are a production facility. I mean, for lack of a better word, we're a place that continues to produce animals because if you want to have these animals in the future, you can't just have a collection of non-breeding animals. And so, we do work, and I know that a little bit later on, we'll talk about this some more, but we do work with all the other zoos in the AZA. We work with zoos in the ZAA, which is the Zoo Association of America. And we work with the private sector - people that we know, people that we trust, people that have like-minded attitudes towards conservation.

Adam Eyres [00:23:59] So of these 30 species, the wildebeest, the black buck, we have scimitar-horned oryx, which I could go on and on about all day about that one, too. That's a reintroduction project that we've been lucky enough to be involved in with the Environment Agency of Abu Dhabi and the Sahara Conservation Fund. We are actually helping put scimitar-horned oryx back into Chad, Africa, where they were last seen back in the '80s. They've been considered extinct in the wild for almost 30 years. And so we've got those in that pasture.

Adam Eyres [00:24:32] We've got some white-tailed deer. Our white rhinos have a pasture within that pasture and we have a Roan antelope, which is an African species of sort of forest antelope. Then you go into our next pasture, which is our smallest pasture. It's only about 20 acres. We've got bongo and kudu in there, a couple of dama gazelles, also a Saharan Africa species that we're working on reintroducing.

Adam Eyres [00:24:57] Then you go into our main pasture, which is four hundred and twenty acres. We've got addax antelope, gemsbok, water buck, axis deer and fallow deer - European species of cervid.

Adam Eyres [00:25:09] And then our last pasture is called, "the game preserve." That's where we've got the giraffe, which are very popular with the, with the guests. And of course, they're in trouble in the wild. We've got mountain zebras, which is an endangered species of zebra in southern Africa. Aoudad - fairly common in Texas, but again a North African species where habitat and poaching and the meat market are all affecting its survival. And some more fallow deer back there. Red Deer, European Red Deer.

Adam Eyres [00:25:41] So yeah, we've got a pretty good collection and they're all free-ranging. And so in regard to what the caretakers are doing, one of the big pieces we have to do is find them. You know, in a traditional zoo setting, that's a small part of your day because they're probably not too far from you. But on 400 acres, you may spend some time looking for 40 addax. And so that's a piece of it. Usually, when somebody is missing, they're missing for a reason. They've, they've injured a leg. They got in a fight. They're off having a baby. All of the things that animals in the wild would be doing, they're, we think and hope, they're doing here. So that's a piece of their job.

Adam Eyres [00:26:16] Feeding. We don't do a whole lot of cleaning up after them, because on 400 acres, it's just composting and actually helping our grass. But we do have some holding areas. We've got pens for if we have injured animals. Those get cleaned. That's normal sort of zookeeper-type work. Our black rhino, white rhino, giraffe all have barns. We have to maintain and keep those upkept.

Adam Eyres [00:26:41] And then, of course, the big, the big piece is just monitoring, knowing who's pregnant, knowing who's got a baby, whose parents are, keeping track of the ones that we need to move in and out of our collection. Obviously, as, as a breeding organization, we can't just keep everyone here. We don't want dads breeding with their daughters, and brothers and sisters breeding. So there's always the management of, of, of keeping our herds correct, and that takes time.

Adam Eyres [00:27:07] And then we're a ranch. So a big piece of their daily, daily work is checking fences and mending roads and doing things that you wouldn't think you'd have to do in an animal career. But obviously, if you've got animals, you've got to have a place to keep them, and that place needs to be maintained.

David Todd [00:27:24] Sounds like a busy life, indeed. And, and just getting to the matter of the day, one of these hoofed mammals that you're dealing with is the white rhino. I was hoping you could describe why and how that rhino first came to Fossil Rim Wildlife Center, which I believe was back in the late '80s.

Adam Eyres [00:27:52] Yup. Yup. We, and they actually beat me here by a few months.

Adam Eyres [00:27:58] And one of the things that happened around that time was Fossil Rim went through an ownership change. And the original owner, the guy who started it all, it was sort of his weekend retreat. It was his place to do some conservation, but also to get away from the city and relax. And he did open it up to the public in 1984, but suffered some financial issues, and ultimately the facility went into the hands of a couple from New York who really wanted to take it to the next level. It was, it was already open to the public and they wanted to make it a conservation facility. They had heard about people like John Aspinall over, over in Europe, and they said, "Well, if he can do it, we can do it.".

Adam Eyres [00:28:42] And so one of the first things that they wanted to do was bring in white rhinos. They knew, even at that time, that the San Diego Safari Park was very successful with breeding. They had been making baby white rhinos since early, early on in the captive management of white rhinos, whereas many other zoos were not. And the theory was, you need a big, you need a big space, and you need multiple animals in order to be successful breeding white rhinos. And so they had the land. They built at a 10-acre yard and another one-acre yard, and they started bringing in unproven animals. They started to bring in the ones that we knew had never had babies, that might benefit from a change of scenery, and change of space, and change of how the, the collection was, was managed.

Adam Eyres [00:29:33] And unfortunately, those first few animals, as we know now, we didn't know it then, but we've learned over the years, if you don't have a baby by a certain age, chances are you've got some, some pathology and you probably won't be able to have a baby. So these animals were all 20, 25, 30 years old when we got them. And so in 1991, or maybe '90, '90, '91, we brought in proven animals - animals that had had babies, because one of our thoughts was, well, maybe they can teach these other ones how to have babies. And again, we know now, even if you knew how to do it, you wouldn't be able to conceive. But then we started having babies and we've had a pretty successful white rhino program in regard to offspring.

Adam Eyres [00:30:16] We've got two three-year olds on property right now. We actually could, could make more, but we choose not to only because of spaces, not just at Fossil Rainbow, but within North America. So we have to manage them intelligently. We can't just say, "OK, well, here's that. Here's a threatened species that needs numbers. Let's just make a bunch of them." Because they do need to have a place to live and they need a place to hopefully go on and pass on their genes. And so if we say, "All right, Fossil Rim has five breeding females, let's just make, you know, five babies every 18 or 20 months." That would not be the best thing for the program.

Adam Eyres [00:30:55] And so they brought in those animals, and we were pretty successful after we got the proven ones. And since then, I have been involved with the white rhino SSP, which we can talk about when you're ready and then also with the Rhino Taxon Advisory Group. So Fossil Rim has played a fairly important role in all things rhinos for the last, well, the last 30-plus years, but certainly the last 15 in regard to some of the management pieces.

David Todd [00:31:25] I see. Well, you know, it might be worth, just to make sure that, that any listeners will understand the background to Fossil Rim's decision to, to work with these white rhinos, to help them understand the circumstances for the white rhinos in their native habitat, and you know what, some of the threats might have been there that that made them a conservation issue, that, you know, was worth the, the work and investment at Fossil Rim.

Adam Eyres [00:32:07] It's been an interesting roller coaster ride. At the turn of the 20th century, they thought that the white rhino was extinct. They, they didn't think there were any left. 1880s, 1890s, they, they found a small pocket of them. I guess that's the 19th century, sorry, I'm off by 100 years. They found a small pocket of them in South Africa and they said, "Oh man, we thought they were extinct. Here's a here's a few. We need to do some real conservation work and see if we can save these animals." And from that small pool of animals, they were very successful. They made lots of baby white rhinos. They actually were able to restock some of the other African countries that had lost their white rhinos. Those animals did pretty well in some of the other places, and the animals that we have here in the United States and Europe and Canada and Mexico. Basically, every white rhino that is in captivity traces its

origin to the southern African population. Kruger National Park was where that, where that happened, a few other parks.

Adam Eyres [00:33:16] And since then, they've had quite a resurgence. They've done well. A lot of places in the wild breed them quite successfully. They have opportunities to reintroduce into other countries. Namibia is doing very well with them. Botswana, I think, ended up doing pretty well with them. So they've, they've done well.

Adam Eyres [00:33:38] And up until about 2000-and. I guess it was 2007 or '8, I want to say, the poaching became an issue again. There was always some poaching. There was always a little bit of, you know, "I need I need some meat on my table." But when the commercial poaching started, when it was rhino horn is so valuable, even though there's no value to it, it's just keratin, like hair. They, they really started to suffer some, some major poaching losses. And so for a number of years, they were losing around a thousand a year. It has reduced over the last few years. But a piece of that we're concerned with is simply numbers. If there's thirty thousand and we poached a thousand, that sounds terrible. But if we only lose five hundred, that sounds better, but not if it was only fifteen thousand. So numbers play a role in how we think about them.

Adam Eyres [00:34:35] Interestingly, we also have black rhinos and greater one-horned rhinos in the United States, and those two species have much fewer numbers than white rhinos. They're both considered endangered. They're both know three to five to 6000 animals, and we should be really focused on preserving them as opposed to the white rhinos. But we have chosen to stick with white rhinos for a number of reasons, not the least of which is there are a lot of them in captivity, but also if this poaching gets out of hand, we may need an assurance population for those as well that we really didn't expect to have to be.

Adam Eyres [00:35:12] When there's, when there's twenty thousand of them in Africa, you think to yourself, "Well, those guys aren't doing too bad," especially when you compare it to five thousand blacks or three thousand greater one-horns. But poaching is a, is a nasty beast, and if you tighten up on a certain area - this is one of our other concerns - if you, if you really tighten up on the poaching issue in, say, Kruger, do those poachers go somewhere else that hasn't had the resources invested in protection, and they just poach them somewhere else? So those are the challenges, and those are some of the reasons why we've focused on white rhino conservation.

Adam Eyres [00:35:48] I see. Well so, I think, if I understood you, there was this relict population that was found and I guess in the 1980s or so...

Adam Eyres [00:36:02] 1890s.

David Todd [00:36:04] 1890s.

Adam Eyres [00:36:05] Yeah, yeah, I said 20th century, but I should have said 19th century.

David Todd [00:36:08] I see. So. Well, can you sort of reel it back to why rhinos might have had problems prior to the late 1800s? What was the stress on them then?

Adam Eyres [00:36:24] You know, that's a good question that I don't know. I certainly don't have the answer, and I'm not sure anybody paid much attention. You know, back in those days, certainly we were doing some hunting, but it was nowhere near what, what it should

have been to actually make a species extinct. I don't know what all the, the key pieces were that caused them to be in trouble. It may have been as simple as no one's paying attention. You know, it's I can't imagine, you know, we're so spoiled these days with internet and phones and communication. In 1880, if some guy went out and said, "No, I was just out here for three weeks and I didn't see a single rhino." How long does it take for that information to get to somebody who goes, "Wait a second? That's the fourth guy I heard say, 'there's no rhinos out there.' What's, what's going on?" So I don't I don't have the answer for what the first problem was.

David Todd [00:37:18] I see. Well, and I think you, you mentioned that part of the, and I hope I'm not, you know, filling in where, things that you didn't mean to imply, but it sounds like one of the dilemmas with the white rhino is that that may be the full wild population number is not entirely well known, and so it's not clear if the losses are significant or not, from, from poaching or other kinds of take.

Adam Eyres [00:37:56] It's, it's been a bit of a challenge. There are certain countries who have very few animals and they give us a [excuse me] a pretty good idea of what those numbers are. I think part of the challenge with South Africa, which is obviously the place that has the most rhinos, I think it's probably hard to count. It's probably hard to know exactly what you've got. And of course, you know, the layperson, and myself included a lot of times, when you think about doing these surveys. I've always thought when they say, "Hey, there are 17,825 rhinos," they've gone out and seen them. But it's a mathematical equation. They go out into regions, they find animals, they extrapolate those numbers, assuming habitat and climate and, you know, generalities are all similar. They can say, you know, we didn't see 17,820 animals, but we suspect that's what we have based on X, Y and Z. So in doing that, there's a bit of a fudge factor, no matter what.

Adam Eyres [00:38:55] And then the other controversy is. Do we all get the right information, or the accurate information, because there are a lot of factors that might that might play into that? Is my country embarrassed by the fact that I have fewer animals than I should, or thought I had? Do I want to tell you how many I really do have because I don't want the poachers to come here and say, "Oh yeah, I just heard that. Mozambique has 10,000 rhinos." Well, guess what, we don't want a bunch of people going into Mozambique and trying to poach. So there are some fudge factors where we assume the number who are getting our accurate. But there are a lot of reasons to give us inaccurate numbers if they want to protect the animals, they don't want to tell us what they really have because it's not as good as we think it should be, or whatever the case may be.

Adam Eyres [00:39:42] So, I don't think anybody is going to step up and say, "You know what, we thought we had 20,000, but we only have a thousand." I don't think that's going to happen. But did they say, "We had 20,000 and we only had 15,000? Maybe. Or did they say they had 15,000 and they have 20,000? That'd be, that'd be great. But I suspect it goes that way less often than it goes the other.

David Todd [00:40:06] Well, it's good to know, you know, there is some, some haze and fudge factor here. So maybe we all, you know, as you said, in modern days, think that censuses and surveys are totally accurate. But, but there's probably some, some room, some error range there.

David Todd [00:40:28] So, I guess we should move ahead and think about the white rhinos once they have arrived at Fossil Rim. And can you talk to us a little bit about, you know, both

the life history, as you've learned about it, as the rhinos have been at the Center, and, and how they are fed and cared for?

Adam Eyres [00:40:51] Sure, sure. So all of the rhinos that we've had at Fossil Rim, save one, have been captive-born in the United States. The one was an import that went somewhere else out of South Africa. He went to another facility and then he went to another facility and then he came here. He's actually turned into a really good breeder. He's, he's produced offspring. But mostly it's a collaboration between all of the zoo community to make sure that our animals are the most genetically diverse as possible. You know, any time you're working with small populations, it's a challenge.

Adam Eyres [00:41:26] And I guess you think about going to a small town - Glen Rose - a couple of thousand people. If the town of Glen Rose had a couple of thousand people and all we could do was marry within our own community, it would be challenging to keep track of how to keep that as diverse as possible, for as long as possible.

Adam Eyres [00:41:49] And we've kind of done that with many of the captive animals we bring in. Yes, it sounds great that there's almost 300 white rhinos, but of those 300, we've got dads and moms and daughters and brothers and sisters and things that we need to keep from breeding with each other. And so we keep track of a, of the entire population in a computer program.

Adam Eyres [00:42:10] And there are a number of people who work on that program so that when we say, "Hey, you know, Fossil Rim needs a new ball and San Diego needs a new bull." Well, what do you think about just trading? How does that look? And then they can pull up this computer program and they can say, Well, the bull at Fossil Rim looks great at San Diego. The bull at San Diego looks terrible at Fossil Rim. The bull at San Diego has two sisters and an aunt living at Fossil Rim. So then we look for another bull. And so that's sort of how how all of that works.

Adam Eyres [00:42:39] And of course, the, the life history of the animal helps and hinders. They have a very long life. We just had one in the population die at about 54 years old. That's very, very long-lived. And so the animals stay in our collections for a long time. They also have a long gestation period of 16 to 18 months, depending on how many calves they've had. It tends to start out a little longer and gets a little shorter as they have more and more calves. And then, of course, once they have a calf, there's a, there's an interval where we're not trying to give them bred back again. Fossil Rim's intervals tend to be longer than most, but even at best, if I said, "Hey, I want to animals out of that animal as fast as possible," we'd be looking at three and a half years, give or take. And so for us, we're looking at four or five.

Adam Eyres [00:43:31] So the whole life history is, is tricky. And now the bigger trick is, now that we know a non-breeding female will end up with pathology and ultimately may not be able to breed, we want to focus on getting these younger animals - six, seven, eight, nine years old - bred. But then can we wait for a while, because we can't breed every single female, every single two- or three-year interval because the capacity isn't there. So we're doing some experimenting. The older females, you know, if you're 20 or 22, and you haven't had a calf yet, chances are pretty good you're not going to. But you may take up space for the next 30 years. And so these are some of the challenges that we, that we face.

Adam Eyres [00:44:17] It's, it looks good when they live for a long time. And the genetic diversity looks good when we've got animals that are 50 years old because they're

representing genes that may not be getting passed on, but at least the genes are still in the population. So when I took this role on first back in 2007, I did do sort of a deep dive into the population and looked at how many animals we have, how many of those are female? And how many of those females have had babies? How many of those babies have gone on to have babies?

Adam Eyres [00:44:50] And it was an interesting, it was an interesting view, because if you're just looking at it from that 30,000-foot level, hey, this is great. We have 300 white rhinos there and a lot of zoos, people like them, people recognize and identify with them as the public. They tell a good story. They offer an insight into the habitat so that when we say things like, "Hey, you know, we're losing some of the grasslands in X country," they can say, "Oh yeah, I saw rhinos grazing that's interesting. That's going to be a bad thing if they lose grasslands to pavement developments, roads, oil rigs, whatever the case may be." They can identify that much more than they could with certain other species because they're so identifiable.

David Todd [00:45:37] Well, so, I think you pointed out that if there is a breeding female that is, you know, young and, and that's, that's a vital piece of your, you know, breeding program, but, but if you have a 22 year old, that hasn't reproduced here and, and yet is holding, you know, a valuable spot at the Center, which has limited acreage and so on. What, what do you do? I mean, do you, does that animal go to another AZA member? Or, you know, is just, is put on display? Or does moving an animal upset the herd, you know, I guess the emotional ties between these animals?

Adam Eyres [00:46:31] Yeah. Good points. Good questions. Fortunately, there are a number of facilities that are set up just for displaying animals, and that works great. You know, we need those places. We need facilities that can only have one or two or three rhinos. We prefer not to have any single rhinos, but there are a couple of facilities that have them and they make up for that by by doing a lot more enrichment and a lot more training and a lot more time spent between people and animals. And we haven't seen really negative, any negative attributes forming in that animal. But we still prefer to have two or three. And certainly the breeding facilities have 10 or 12 or 14.

Adam Eyres [00:47:10] So yes, we could take a non-breeding. We've got one here. She was born in 1999. She's never had a calf. We could theoretically send her to another facility where she could be an ambassador for her species and she could be a great, you know, great zoo exhibit. We have chosen to keep her here because, A, we have the space to provide for that. Yes, we probably can't have a baby because we're taking up her space, but she does play a role in the herd. These are very social animals, and so she is out there performing a a specific function, which we could do without. We could make that change.

Adam Eyres [00:47:46] But, I still, I'm still optimistic about her, we, we had a female come in here - actually her mother - and she had her first calf at 24 years old. That was the exception to the rule. Disney just had a calf within the last few months. That was the result of a lot of assisted reproductive technology, where they, they did a lot of work, gave a lot of different kinds of drugs and timing and all sorts of things and artificial insemination. And they actually got a calf out about 25, 20-plus, 22, 24, 26 year old. So it's not a total loss cause, it's just, it's more the rule than the exception that they don't have babies.

Adam Eyres [00:48:29] So, we have moved animals. We had an older female here for years that was never going to have a baby and we sent her to a zoo to be an exhibit animal. And that worked great. But you're right, the herd dynamic changes. These, because these animals are

social, they do know when somebody comes and goes. But they do adapt well too. So we've not seen, and of course, who am I to say, but we've not seen negative impact of moving animals into and out of. And obviously it's a, it's a necessity. We have to do it. Like I said earlier, we can't just have every baby that was born here, live here forever.

David Todd [00:49:07] Well, that's really intriguing. So I guess a lot of the, the care that you give these animals is focused on ensuring that they reproduce. Can you tell us any other sort of aspects of the day-to-day care for a typical white rhino at Fossil Rim?

Adam Eyres [00:49:27] White rhinos are surprisingly easy. They're out on 10 acres, so they have some grass that they can eat on their own. But we also offer them hay. And depending on the, the quality of the grass and the weather conditions, that number goes up and down based on several factors. But we give them at least a couple of bales of hay every day. There's, let's see, there's five out in that pasture right now. So, so a couple of bales in the morning, a couple of bales in the evening. They get pellet feed once a day, but they're similar to horses. You know, you're not feeding. You would think a 5000-pound animal would be eating just a gazillion pounds of food, but we only offer them six pounds of pelleted diet every day. There's barely eat pellets. And they've just, they've, they've evolved to function on eating grass. And so they do well on that.

Adam Eyres [00:50:13] Ours are all happy and healthy. We've got a fairly skinny one right this minute. But she's 43 years old. She's getting up there in years. We're maintaining her. We're keeping track of her. We're watching her every day. But generally speaking, white rhinos are pretty easy, pretty easy keepers.

David Todd [00:50:33] "Easy keeper." I like that. So is there much medical care that you need to get for them?

Adam Eyres [00:50:42] Not too much. That same female I was just talking about being skinny. She also has some, some injuries, just some, I think in a human, we might call them bedsores, just from being down and sleeping on a very thin body. You know the fat helps us not not put our bones right next to our skin. And so, yeah, we've been treating her. She gets treated twice a day and we're right now just given her some antibiotics and just keeping it clean. We've had this over the last few years and we always fix it, and then it comes back later and we fix it again.

David Todd [00:51:19] Interesting. And I, I guess you sort of referenced this earlier when you explained that sometimes these white rhinos need to, you know, go to another facility. Can you talk about how you transport? Well, I guess first of all, capture and then transport a white rhino, you know, 5000-pound animal. I'm sure it's not simple.

Adam Eyres [00:51:44] I would love, I would love to say that it's a, it's a really hard thing to do. And there's only five of us that know how to do it, and blah, blah, blah. But you know what? They're pretty easy in that regard too. We... they live out on that 10 acres, but certainly when it's cold, they live in a barn. Our barn is very well designed, and we can, when we do need to move an animal out, we have a stall that's designed specifically for that. And we put the animal into that stall and that's where they eat. It's a, it's a normal stall, but the door is designed to attach a crate to.

Adam Eyres [00:52:16] And so if, let's see, our most recent move, we sent an animal up to New York, to a zoo in New York. We sent them a male. And we brought him up in the barn, and

he got his food and his water, just like every day. And then when it became time to start what we call, "crate training", we put a crate in front of his door that goes outside the door that he goes through every single day. And we started putting his food in that crate and within about 10 minutes, he would walk into that crate and eat his food. We did that for, I don't know, a week, 10 days, two weeks. And one day, we closed the door on it, and we picked him up with a crane and put him on a truck and strapped him down and sent him to New York.

Adam Eyres [00:52:58] So it's actually it's one of the easier animals to move in in this industry, as far as ungulates go. As far as you know, hooved animals and such. Certainly easier than elephants. I think easier even than giraffe. They move pretty well and they tend to move. They tend to move well too. They, they eat and drink en route. They tend to be pretty calm. And of course, in the U.S., I mean, the worst move you're making is Seattle to Miami, and we almost never do that. So they're still on the crate for a day or two or three, depending on where they're going. And honestly, that crate isn't a hell of a lot smaller than some of the spaces they might be in for their lives.

Adam Eyres [00:53:40] So it's not, it's not terrible. It's not, it's nothing that I ever get too concerned about. And obviously, we like the people to move them to have experience moving them. But they, they do well. And it's, and it's pretty easy, if you've got the right equipment and that's the, that's a tricky piece. Anything's easy if you got the right tool.

David Todd [00:54:00] Well, I think I've read a little bit about one device that ya'll use for trying to control these rhinos. I think it's called a free-stall chute.

Adam Eyres [00:54:12] Yeah.

David Todd [00:54:12] Can you explain a little bit about that?

Adam Eyres [00:54:14] Yeah. So the free-stall chute was sort of an evolution that we came up with here back in the early '90s. When you train animals, and in this case, rhinos, to do something, it's a learning experience. They say, "Oh, this is what you want me to do. OK, I'll go do this." But what we found was that it took a lot more time to train them in what we would call it, closed-off chute, a place where they actually can't physically come back out of there, as opposed to a free-stall chute. If I train you in a free-stall chute and you come in and I give you your rewards, which is white rhinos is really mostly just tactile reward. They like to be touched. So there's a few places on a rhino where if you scratch them, or rub them, or put a brush on them, they're pretty, they're pretty happy.

Adam Eyres [00:55:02] And in that free-stall chute, if they can leave whenever they want, they often come right back in again. And so what we found was that we were doing a lot of ultrasound work back in those days, and we found even with the ultrasound, they'd go into the chute, we, we'd give them the reward and they would stand quite a while. And if they said, "You know what? I don't feel good about this," they would back out. They had to come out backwards. That was how it was designed. It was a three-sided stall with a front and two sides, but no back. They would walk out the back. They'd kind of look around and go, "I don't know what I was worried about, I'll come back in." Whereas with the closed-stall chute, if they couldn't get out, they just, it just took a lot longer to train them to be comfortable staying in there.

Adam Eyres [00:55:42] So we use that free-stall chute for a lot of stuff. In fact, we're still using free-stall chutes 99%. But the closed-stall would be in the case where whatever I

needed to do with that rhino was a little bit more than they're going to let me do by training, but not enough to make me feel like I should immobilize them. So that was a nice middle ground. But the free-stall chute, man, we use that, we use the heck out of that.

Adam Eyres [00:56:07] I bet we, well, for one of our rhinos, we followed their estrus cycle every day. Another couple rhinos, we followed the estrus cycle every other day. One rhino, we followed pregnancy almost every other day for, you know, 17 months. So we were doing all of this in free-stall chute with ultrasound.

David Todd [00:56:28] Well, I guess that's, that's always a big challenge and opportunity for you to make sure that your reproduction program is working well for the white rhino. Maybe you can talk a little bit about, you know, how you use, I guess it, I think I read that it was urine-testing that helps you understand where the female is in her cycle. And then it sounds like I've done some interesting work with ultrasound as well.

Adam Eyres [00:56:55] Yeah, yeah, we, the urine was, was pretty important back in the old days, but they've actually figured out they can see a lot of what they need to see in feces, and feces is a whole lot easier to collect. So a lot of what we do now, we just go collect poop every other day for a week, two or three weeks, depending on what we're trying to determine. And they can they can tell us, "Yes, she's pregnant; no, she's not pregnant. Yeah, she's cycling. No, she's not cycling." So the fecal collections has made life a whole lot easier. And of course, they had to do that through a lot of sort of applied science. OK, this is what the urine looks like when they're pregnant. This is what the feces looks like when the urine looks like this. This is what the blood looks like when the feces looks like this, and the urine looks like that. So they had to they had to put it all together to say, "OK, now I see what I'm looking at in this in this fecal ball. This fecal ball shows me X and X means this."

Adam Eyres [00:57:46] And so that's been nice. The ultrasonography work helped us pave that path as well, because we could, we could collect fecal - this is what we did, we collected fecal, would go in and do the ultrasound. This, this follicle is this size, or this corpus luteum is this size, or this thing just ovulated? And then we could compare that to the fecal, and we'd say, "Hey, you know what, this is..." It was real time. You know we might not do the test that very day, but the test was collected that very day. So we would go in and say, "OK. This this is what we saw." We'd have a video recording of what the, what the ovary is doing when the poop looks like this, and that was pretty pivotal in determining how to test things by poop, because obviously not everybody has the time, or the, or the ultrasound machine, or the expertise, or whatever to do all of that. You can go out and get a poop and go, "OK, this is what, this is what this ovary probably looks like right now." That was that was pretty meaningful.

Adam Eyres [00:58:48] And it really helped pave the way for a lot of the artificial insemination, things like that. Although when you're really trying to do an AI, you're still using the ultrasound, you're still going in that, because that's a big commitment. You want to be spot-on.

David Todd [00:59:00] Huh. So, so I guess that your goal is to have monitoring be as, well, the least invasive route possible. But, you know, back when you were doing the ultrasounds more frequently, was the idea that you'd go in through the vagina or is this a rectal exam or what is it.

Adam Eyres [00:59:22] Trans-rectal. Yep, yep, you don't want to, you don't want to introduce anything vaginally because that's a sort of a sterile space. But going in trans-rectally, you

know what comes out of that, it ain't clean. So it was it was pretty easy to do. And of course, if you've ever seen one of these guys poop, there aren't very many people with arms bigger than a big poop ball from one of these guys, so it wasn't even terribly invasive. In fact, there were often times when they, they never even cared. I mean, we might be doing an ultrasound for 10 minutes. They'd just be standing there, you know, eating sweet feed and getting petted. And they don't even... I don't know if they didn't notice, but they certainly didn't care.

David Todd [01:00:06] That's great. So this sounds like a a work in progress - that you all have have learned as you've gone. I'm wondering if, if you had any mentors or models of, you know, how to to better understand white rhinos' need, you know, whether it was in diet, or reproduction, or other aspects of their life?

Adam Eyres [01:00:33] Absolutely. Absolutely. And this is one of the things that I love about where the zoo field has taken us. You know, we talked earlier in this about my, my zoo does this, my zoo does that, I have these species. And really, it's much, much, much more collaborative now. Everybody is working for the betterment of the animal. Everybody is putting their egos aside. Everybody is saying, "Hey, you know, we had this problem. Who out there can help us solve this problem? Who's seen this problem? Or what did you do to solve this problem?" And I love that because that's the only way you're going to, you're going to save these species, it's the only way you're going to win.

Adam Eyres [01:01:08] And so personal mentors? Absolutely. I mean, there was a number of people whose footsteps I'm walking in and shoulders I'm standing on. There are obviously lots of models. I mean, even 1988, when we brought our first rhinos in, we were modeling it after San Diego. They were much bigger. They had about 90 acres. We were only doing 10. But the, the model was there. It was, you got to have more than just one boy and one girl. And you got to give them some space, and you got to have another boy to sort of have that first male, your breeding male, who needs to get motivated to do his thing. So we did model our program after that.

Adam Eyres [01:01:49] Others have modeled their programs after what we're doing, and we have made modifications to what we're doing based on what other people are doing. So it's really nice. We're, we're all communicative. There's actually a group called the International Rhinokeepers Association, which is made up of, I'm not sure what their membership is right now, but I'd say around 200 rhino-handling people that communicate a lot, and ask each other questions and have a board of directors and do some really good conservation stuff. So everybody, everybody does a lot more communicating now than I think they did and even in the 19, early 1980s.

David Todd [01:02:34] One of the things I thought was interesting, when I was trying to learn more about your work, is to get a better sense of the diversity of institutions that are involved with captive breeding and assurance populations, you know, ranging from traditional urban zoos to large-landscape facilities like Fossil Rim, to private ranches, and that there is this sort of collaboration among all the different institutions, but that they're each quite independent and different. Can you talk a little bit about the variety that that is involved?

Adam Eyres [01:03:19] And everything you said is exactly right, there's a huge a huge array of people that are working in this. And Fossil Rim is uniquely positioned to communicate well with all those people. You know, we started out, we were a private guy's private ranch. We had really nothing to do with zoos. We had nothing to do with ranches, because we weren't running cattle or goats or sheep, we were running exotic animals. He did get involved with

zoos, because he wanted to expand on his conservation and bring in some other, you know, more endangered species. He was, he brought in Grevy's zebras. He brought in some with scimitar-horned oryx. He brought in the first cheetahs, through his collaborations with zoos.

Adam Eyres [01:03:59] And so, like you said earlier, there's an opportunity for zoos to do lots of great things. They have many, many visitors that come through, and they can learn about what's happening in the world. Having rhinos in those facilities is hugely beneficial. Some of them do very well at breeding. They, what we've learned is that most of them need to be dedicating a little more space to rhinos if they want to breed. But there are facilities - the Phoenix Zoo was notorious, or famous, I guess, for breeding with a pair. That was the exception. Nobody had one boy and one girl making babies. They did it for a number of years. Now the Fresno Zoo is doing that. They've just got 1.1 animals, a boy and a girl, and they're making babies every three years or so. But most of the traditional-type zoos are holding facilities. Ambassador animals tell the story, get the information out there to their hopefully tens or hundreds of thousands of guests at each zoo.

Adam Eyres [01:05:00] The ranches are an interesting one. The really interesting thing with white rhinos is that a private person can own them. If you have the connections and you have the resources, right now, you can import rhinos to your place. Now there are some, some hoops to jump through. Not just anybody can do it. You can't get on the phone with me today and go order yourself a couple of rhinos, but it's a unique one because there's a lot of species you can't do that with. Most species you can't do that with. But rhinos are one of them.

Adam Eyres [01:05:33] And so I have made the choice, the decision, to collaborate with everybody who might play a role. I don't, I can't tell them what to do. Those are their animals. They can do whatever they want. But if they're successful, if they do a good job, they're going to want to be involved in an organized breeding program because, how else are you going to swap out your bull? How else are you going to send young males to other facilities? And so we really do want to collaborate with them.

Adam Eyres [01:06:00] There aren't big imports happening right this minute, but there are a few in the, in the queue, and it could happen, and if it does, what we don't want is for a number of animals to come into the United States, breed successfully, fill spaces with animals that, like we talked about earlier, weren't important to the conservation of the species. If we end up with a bunch of inbred animals or a bunch of animals that we don't know who their parents are, you know, a lot of our quote unquote genetic diversity is through pedigree, and once we lose pedigree, we lose everything right now. So we like working with the private sector.

Adam Eyres [01:06:38] We have some people who we trust and who do things very, very well. The challenge in the private sector, and I was just at a meeting last week talking about this in regard to giraffe, the problem is the ones you usually hear about are the crazy people. You don't hear about the guy doing a great job because he's just quietly doing a great job. What you hear about is the guy in Ohio who releases his 48 carnivores and then kills himself. That's a problem.

Adam Eyres [01:07:04] You hear about the guy who, you know, goes to Africa. We haven't heard about it here in the country yet, but somebody hunts a rhino and then all of a sudden people are up in arms about the fact that how did this happen? How did this become a situation where this guy had the opportunity to do that?

Adam Eyres [01:07:19] And so, unfortunately, it takes some work to vet the people and find out who's doing what. The ACA is great because the Association of Zoos and Aquariums has a very strict vetting process. And if somebody says to me tomorrow, "Hey, you need to send this animal to this AZA facility," chances are, I'm going to say, "OK." But if we say, "Hey, I want you to send this to Joe Blow's ranch down in Texas," then I'm going to call up Joe Blow, and I'm going to go visit his ranch, and he and I are going to have a conversation about what he's doing with his rhinos, and what his long-term plans are, and what he thinks he's going to do when he starts having babies, and how he's going to manage his collection and, you know, the whole, the whole shebang. And ultimately, if he's one of those good guys will send him a rhino. If he's not one of those good guys, we'll not only not send him one, but we'll advocate strongly for noone to send him one.

David Todd [01:08:13] I think you mentioned, as you were discussing this collaboration, coordination, among different institutions, the possibility that some rhinos might still be imported. And I was curious if that happens, how do you establish the pedigree of those new animals since you don't really know who, what their parentage is, and how they would contribute to the diversity of the breeding stock that you have here in the United States?

Adam Eyres [01:08:45] Excellent point. And the way we do it is we call them, "founders". And so everything that comes out of Africa is considered a founder, and they are unrepresented in the population. But, we've all realized that that's kind of a BS statement. There's, there's no way that every single animal that comes into the United States is not at all, in any way, shape, or form related to any of the other animals that came in. And so in an import that we may, oh gosh, I don't know, maybe, it might be close to 20 years ago, about 15 years ago, we actually did some genetic work, and I haven't talked about genetics or genomics at all on this conversation, but I will at, at this point, I guess. So, we say we're, we're reading for genetic diversity. But what we really mean is we're breeding for the least relatedness as our known pedigree.

Adam Eyres [01:09:36] Now, we have had some opportunity to start doing some genetic testing on these animals. We can actually go in and say, "I don't know who your mom is. I don't know who your dad is, but I can genetically test you, and your blood, or your, or your tissue sample, or whatever we're testing, and I can get a picture, sort of like we see on TV." You know, all the, all the crimes are solved by this DNA fingerprint. We're getting better with that.

Adam Eyres [01:10:04] And so in this import 15 or so years ago, we said, "All right, all of these animals are going to the same facility." I think there were nine of them. And they drew blood, and they did some genetic testing, and I was pleasantly surprised that there was a cousin, basically the equivalent of a cousin, and I think there might have been a mother / daughter, or a father/son, or something like that, out of all those animals, which makes sense, right? You're not going to go, you're not going to go all the way to Africa and go find a group of rhinos and go, "OK, I'm going to catch one rhino here, and then I'm going to go 100 kilometers away, set up my whole camp again, set up all my crates, and immobilization, and all this stuff, and catch one more." You're going to take a few from the same place.

Adam Eyres [01:10:48] And, by life history and natural history of the species that still probably works out, not too bad, because if you had a son in that herd, a bull is going to kick him away, or his mother will kick him away. And that's how they avoid inbreeding naturally. We have to fake it here in captivity, because we don't have the opportunity for mom to kick the son out to another park. So chances are a herd, a good, healthy herd in Africa probably

isn't a lot of related animals. Probably some mothers and daughters, but the boys are gone. The males that are going to breed their sister or their mom have been kicked out of the herd, they've gone off and formed a bachelor group. And when they get to be nine or 10 or 11 years old, big enough that big enough to kick some butt, they'll go find their own harem of females.

Adam Eyres [01:11:38] And, and so, so it wasn't as bad as we thought it was going to be. When we bring in new animals, we can do some testing. It's getting better and better. I don't think they've done the genome for white rhinos yet, but we have done the genome on a number of species. You know, it was big, it was big news when they did the human genome. And I think it was, I don't know, $3 billion or something like that. Well, genomics have come way, way down. We're doing the genomes of species for three or four or five thousand dollars now.

Adam Eyres [01:12:09] And what that can tell us is here, here's what this thing looks like. Here's what this animal looks like genetically. And if we wanted to try to breed some animals, we could say, "Hey, here's one that I don't know anything about, but this is what his gene looks like. And here's another one that I don't know anything about. But its gene looks different enough from this one, that this would be a good pairing." And that's, that's going to be a game changer when we get to that point, because it is difficult with pedigree.

David Todd [01:12:34] I see.

Adam Eyres [01:12:36] And pedigree, I mean, anything. You know, one of the things that we're probably doing as a mistake in the captive environment is that we're, we're intentionally not breeding animals that are closely related. But are we losing genes? Are we losing alleles that we want in that population? We don't know. So maybe with this genetic testing, they can say, "Hmm, yeah, that's, you know, that's a fairly close relationship, but this gene doesn't exist anywhere else, and you better capture it because it's a good gene for resilience in the species or whatever the case may be that makes it a positive.".

David Todd [01:13:12] I see. So the alleles can really give you a diversity that's maybe more meaningful for resilience and long-term sustainability of the breed, I guess, for the species.

Adam Eyres [01:13:24] We don't know.

David Todd [01:13:25] Yeah, well, gosh, all this work, you know, whether it's feeding them, or breeding them, or monitoring, and testing them is expensive. And I'm curious how you make the pitch to donors to invest in the white rhino program? How do you convey the importance and potential of the work?

Adam Eyres [01:13:53] It's, it's challenging. It is a trick. And we, we I think we have a fairly good group of people here who are pretty good at asking for that. We don't base our budget on donations. The way we work here is we have earned revenue. Obviously, the people who come through the park, the people who go on a guided tour with us, they buy lunch at our restaurant, or a gift shop item. We have some overnight, overnight facilities. And so when we put our budget together, it's based on what we think we're going to earn, not what we think we're going to earn, well, let's say somebody's going to give $200000.

Adam Eyres [01:14:35] So any money that people come along and give us in regard to donations is usually earmarked for something specific. We just recently had North Texas Giving Day. And it's a huge, I don't know if you're familiar with it, but it's a huge thing

throughout the entire region. I mean, it's probably all of Texas now. They call it North Texas, but it's probably spread out more than that, and any non-profit organization can be involved. The organization itself does some PR work for you. You can actually put together your own sort of fundraising pages in relation to Fossil Rim.

Adam Eyres [01:15:12] And so what we did this year, we said we are going to do some work on the rhino stuff. We made it dedicated to rhinos. We're going to plant some new trees. We're going to build a new shade structure. We're going to repair some work on a barn that's just getting old and need some work done to it. And so we actually raised about 55,000 dollars through that, and that can be through a $10 donation or a $10,000 donation. You can give whatever you want. And we dedicated that to rhinos.

Adam Eyres [01:15:40] So to go to someone and say something specific about rhinos. We make it very, I guess pointed. We don't just say, "Hey, we really have, you know, we really like rhinos, they need help. Would you like to kick in?" We do have some of that where it's like, "OK, it costs us X amount to feed them, it costs X amount to heat the barn, it costs us X amount to do these things." But what we really want to do is say, "Rhinos need conservation. Conservation costs money. You like rhinos. We know you like rhinos because you, you come to us saying you like rhinos. So here are some things that you could do. Here are, here's, here's how your money would be useful in the conservation of these rhinos.".

Adam Eyres [01:16:23] And it's a tricky one because, you know, you look at people like Bill Gates and you say, "Well, good grief, there's a guy who donates a ton of money to things. Why don't you just call Bill Gates and have him give you some money?" Well, he has a focus, and his focus is not rhino conservation. His focus is medicine and education, and that's what he's chosen to dedicate his resources to.

Adam Eyres [01:16:41] But, there are people out there who choose to dedicate their resources to the things that we do at Fossil Rim, and we just need to find those people, and form a good relationship, just like we do with these private-sector ranches, and have them fall in love with what we do here and say, "You know what, you guys are, you guys are good, you guys are smart, you're doing good stuff. I like the way your animals are taken care of. I like that you're tied in with the conservation of the species on the whole. Here's 10,000 a year for the next ten years." Awesome.

David Todd [01:17:14] Well, I guess another sort of aspect of, of your relationship with, with the outside world is this, I guess, interplay with, with animal rights advocates and their concerns. And I gather they come from a similar place where they are concerned about wildlife, but they may not see eye to eye about, you know, animals in captivity or other aspects of what Fossil Rim does. How do you deal with those kind of critics?

Adam Eyres [01:17:50] I think we've been very fortunate in how we in how we present our animals, and how our animals live their lives. I don't think we're as big a target as some of the more traditional zoos where the guest can come in and actually say, "You know what? That's a really small area. I don't think that's fair to that animal." Our animals are in captivity. There's no doubt about it. Our animals are all, they, they can't go anywhere they want. But they're on bigger spaces, and they're living pretty natural lives. We don't have to do nearly the kind of enrichment that traditional zoos have to do to sort of fill the gaps of the fact that they're not getting to act in a normal, you know, truly normal sense of breeding, fighting, and making babies, and going out and hiding in the woods when you have a hurt foot, and all the things that these guys do.

Adam Eyres [01:18:36] So I think I think, A, we're not a big target to the animal rights people. I think, B, we are animal rights. You know, as far as Fossil Rim goes, and we want, and this is the challenge, you know, animal rights, animal welfare, animal well-being, animal management, all of these terms have slightly different connotations. And the challenge with the animal rights people is the same challenge we kind of talked about with the private sector. You don't hear about the animal rights guy who just wants the animal to be happy. You hear about the animal rights guy who says, "I'd rather have that animal be extinct than be on a ranch.".

Adam Eyres [01:19:13] And for those people, we have no answer. We're not going to do that. We've, we've caused a lot of the problems that animals have. We've caused some extinctions. We're going to do what we can to try to solve that problem. So saying to me, "Just kill all your scimitar-horned oryx. Don't have them [excuse me] be in captivity," is the stupidest thing I've ever heard. So we don't even try to talk to those people. And we're not, and we're not getting abused from those people.

Adam Eyres [01:19:40] The ones who drive through the park and have a concern, or a question about how we're doing something, I have sent a number of emails to a number of people over 30 years to, to explain it. I had a, I had a call one time where the person was, was lambasting us about the fact that we were full of shit in regard to having white rhinos, because she knew for a fact it was only three left on the planet. Well, I told her that was the northern white rhinos, and we have the southern white rhinos, and we chatted for a bit and it turns out she was a professor at Baylor University. So she and I actually kind of became friends over that conversation.

Adam Eyres [01:20:18] But what happens with a true animal rights person is they'll go through Fossil Rim, instead of sending me an email, they'll post it to their Facebook page and talk about what a terrible place fostering is. And we're doing terrible things with, you know, with these poor animals that are in jail. And fortunately, we haven't been subjected to that. Fortunately, we, we don't get the same kind of stuff that you see at some of the more traditional zoos. I know friends at Oregon, at the Portland Zoo and at the Woodland Park Zoo in Seattle. And of course, the local folks are, are animal rights people. And they get picketed, I guess there's another word I'm looking for, but they get, what is the word I'm looking for?, where they come out and talk to their guests before they go in and tell them what a terrible place they are.

Adam Eyres [01:21:05] We don't have to deal with that here. And I hope we never do. And I think part of why we don't is because we do do a good job with our animals. Our animals are, you know, quote unquote, living natural lives.

David Todd [01:21:17] Sure. Well, thanks for explaining that. I know it's a ticklish issue.

Adam Eyres [01:21:25] And like I started to say, I mean, we are very concerned about our animals' welfare. Our whole, our whole staff, not just the animal care staff, but everyone, well, if they see an animal that they don't think looks right, if, our animals fight, if somebody's got a little blood trickling out of their nose, we go out there and, you know, we've got three full-time vets. We go look at it. We figure out if it's injured, we deal with it. We're taking extraordinarily good care of these animals. So that helps us in our, in our fight against the animal rights people as well.

David Todd [01:21:52] Gotcha. Here's another issue that that occurred to me, and I'm sure you've thought about it a lot is, you know, what is the ultimate end goal of captive breeding, if the prospects for release of rhinos back in their native habitat is, as you know, problematic, given, you know, just the situation in some of these countries, and you know in the rhino's case back in Africa?

Adam Eyres [01:22:23] Yeah, I think that I think the best statement I ever heard was, we don't really know what's going to happen in the future. There's, there's, nobody has a crystal ball. But, if the challenges that we're currently facing went away - poaching, habitat loss, you know, whatever, whatever you want to consider, the driving force behind the extinction or the endangerment of a species - if that went away and we put animals back, wouldn't it be a shame if we didn't have them?

Adam Eyres [01:22:56] And I think that's, you know, I think that's the key piece. The scimitar-horned oryx reintroduction project was only successful because we had scimitar-horned oryx to put back in the wild. If they went extinct in the '80s and the North American zoos and the European zoos and the, and the sheiks from the Middle East who are kind of running this party, if none of us had scimitar-horned oryx, guess what? They're extinct on the planet. So, yes, I'm not going to send rhinos back to Africa today, because there's a good chance they're going to get poached.

Adam Eyres [01:23:25] But in 20 years, if somebody finally says, "What are we doing? This is just hair. Why? Why do we think this is so big, such a big deal? Good grief. Stop, stop killing rhinos." We'd say, "Yep, we've got rhinos. We've done very well breeding rhinos. We have rhinos left in our population. And how many do you want?". But if we don't have them, we can't say that.

David Todd [01:23:49] Gotcha. Here's another dilemma, which I guess you'll probably think about. I think at the outset of this interview, you said that the Fossil Rim has has chosen to work with a limited number of species, but have relatively large groups of those. How, how do you make the call about which animals get your love and care and attention? And how do you balance, you know, pitching in for a large, charismatic animal like a rhino, versus, you know, another animal which may be smaller or less celebrated?

Adam Eyres [01:24:31] So we have what we call an institutional collection plan, and within that plan, we have a questionnaire. And the very first question is a yes or no. Does this fit our mission? Does this fit the mission of what Fossil Rim is trying to do? And our mission is a number of things, you know, we're obviously we're trying to preserve species, but we also have an education component to it. We have training of professionals in the industry as a component of it. You know, we've had, we were just talking this morning: we've had over 700 interns go through Fossil Rim since we started our intern program. That's a lot of people who now know what it is that Fossil Rim does, and how we play our role, and how we fit in with all the other facilities. So the very first question, if it's no, we're done.

Adam Eyres [01:25:20] I can't even think of a good example, but something that might be like a polar bear or a killer whale: you know, that doesn't fit in within Fossil Rim's mission. It doesn't fit in with our expertise. It doesn't fit in anywhere in our program. I think that it's fine that those exist, but this isn't the place to do it.

Adam Eyres [01:25:38] So if that question is answered by a yes, then there's a number of weighted questions that follow. And those questions are: does it make sense for this animal to

be at Fossil Rim? Is it, is it, does it fit into how we do things - large landscape, fairly free ranging? Those kind of things.

Adam Eyres [01:25:58] Do we have the expertise to work with that animal, or are we going to have to hire staff that comes in with that expertise? I don't know - four or five other questions. So we have a very strict protocol for how we bring in new species. And we don't bring that many new species in. And we're, we're lucky in that regard too. People come here because they love the space. They love seeing the animals sort of free ranging, interacting with each other.

Adam Eyres [01:26:21] Traditional zoos tend to feel like they always need to be doing a new exhibit, bringing in new guests. I was talking to a director not too long ago where he said, "Every year we're either designing a new exhibit, opening a new exhibit, or planning a new exhibit." There were three, there were three things. So, he always had something new on the horizon. So that, every year they either, they either have a new exhibit, or they'd be talking about what their new exhibit is going to be, or they'd be building that exhibit.

Adam Eyres [01:26:50] So, we haven't been faced with that kind of a challenge yet, which is nice. People come through. They largely see the same animals every time, but they never see them doing the same thing or in the same place or acting the same way. And I think that's a big benefit to us.

Adam Eyres [01:27:07] Do we have some kind of weird ones? Absolutely. Atwater prairie chickens. What, what, what can we possibly be doing with Attwater prairie chickens that falls into our, our forte? Well, we're very, very good at it. We've been doing it for over 30 years. Our staff got involved back in, good grief, 1990, maybe '91 as a result of a conference that we hosted here at Fossil Rim called Private Texas. There was a opportunity to bring in a lot of people to talk about a lot of things that weren't necessarily in our wheelhouse. We had the American red wolf, and that was why we hosted it. But we talked about things like ocelots in South Texas, coatis, also in South Texas and very common in Central America.

Adam Eyres [01:27:53] The Attwater prairie chickens, because our statement at the time was, we're doing all this amazing stuff for things that are on the other side of the world, what are we doing for what's in our backyard? And so we got involved in the Attwater's prairie chickens, and we pretty much kick butt in Attwater's prairie chickens. So it was a species that we chose to hire specialists for. We had the land, but we certainly didn't have the, the brain capacity to deal with this very different type of species. We were we were just talking carnivores.

Adam Eyres [01:28:26] The question about Texas, Texas horny toads, horned lizards. It's the newest species we've been discussing. Here's another species right in our backyard. The timing is perfect because Texans all know these. You know, if you're if you're 30 or younger, you probably don't. But if you're 30 or older, you've got a story about Texas horned lizards. And so we want to capitalize on that. They do need our help. There's a really interesting breeding program and release program for, for them through Texas Parks and Wildlife department and a few other zoos that we work closely with. It makes sense for us. It's not a large, charismatic animal like a rhino, but it's definitely an animal that is endangered. Its, its habitat needs to be protected. It's had some challenges, like red imported fire ants, which we figured out how to kind of work around. I think it could be the next success story for Fossil Rim, and we're all pretty excited to go down that road and figure out what we can and can't do with them. We're going to start small like we do with some of our things, and ultimately we

like to be big. You know, we're one of the two biggest players in Attwater's prairie chickens. I'd love to see us do that with Fort Worth Zoo and the Dallas Zoo and the Caldwell Zoo and the San Antonio Zoo. I'd love us to step in, learn how to do what they do, and then take it to the Fossil Rim level. You know, we'll start with eight and someday we'll have one hundred. Who knows?

David Todd [01:29:58] They'll multiply!

Adam Eyres [01:29:59] They'll multiply and will release, and we'll expand our program and then hopefully make a difference in their, in their success and survival.

David Todd [01:30:09] Well, this has helped me understand, I guess, a lot about what makes Fossil Rim distinctive and, and the sort of contribution that it can make in this whole sort of Noah's Ark field. Encouraging to hear.

David Todd [01:30:28] Is there anything that you'd want to end with? Any sort of remarks that you'd like to add?

Adam Eyres [01:30:35] You know, I think I think your questions were, were very global. I think, I think you did a great job of piecing out the parts that were significant.

Adam Eyres [01:30:47] I don't know that I have much to add. I definitely love the challenges. And, you know, I think, I think if conservation was simple, it wouldn't be a necessity. Obviously, if you can conserve things with just going out and saying, "Hey, you know what? Let's consider this." Well, then it would be conserved and our work would be done now. That would be nice, but that's not how it works.

Adam Eyres [01:31:10] And we didn't talk about it today. But I know that, you know, we've been we've been communicating for an hour and a half and we've, we've skimmed the surface of a lot of things. But in the, in the conservation world, there's a whole ton of species we haven't talked about. We didn't talk about anything reptile or, well, we did, but not globally, you know, rainforest things and stuff like that.

Adam Eyres [01:31:32] But the challenge for conservation is that people want it to be a sound bite. Tell, tell me what you do between the third and seventh floor of this elevator ride, and it's not, it can't be. Way too many moving parts. Way too many complications. Way too many players involved, both for better or for worse.

Adam Eyres [01:31:53] And in one of the things that I think Fossil Rim does very, very well is communicate conservation, communicate internally and externally, all of the things that are required to be successful at conservation. And again, we're, we're a tiny piece in a big, big puzzle, but we're a tiny piece that I think has a lot to offer.

David Todd [01:32:20] Well said. Well, thank you very much, Adam. I certainly learned a lot, and I'm so glad that we can contribute this to the archive. It's, it's really valuable to hear what you've been doing and what the Fossil Rim Wildlife Center has accomplished to date, and I wish you the best with the future of your Texas horned lizards, around the corner, and future challenges as well.

David Todd [01:32:51] So with that, thank you so much. I hope you have a good day and that our paths crossed at some point in the future.

Adam Eyres [01:32:58] Absolutely, absolutely. I appreciate all your time and, and you are invited to Fossil Rim whenever you get up this way. We're only about two and a half hours from you.

David Todd [01:33:07] Well, that would be a delight. That would be a treat. Thank you so much for the invitation.

Adam Eyres [01:33:11] All right. Take care.

David Todd [01:33:13] Yeah, you too. Bye now.