

TRANSCRIPT

INTERVIEWEE: Nathan Garner

INTERVIEWER: David Todd

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David Todd [00:00:03] I'm David Todd, and I have the great privilege of being here with Nathan Garner. And with his permission, we plan on recording this interview for research and educational work on behalf of a non-profit group, called the Conservation History Association of Texas, and for a book and a website for Texas A&M University Press, and finally for an archive at the University of Texas at Austin, at its Briscoe Center for American History.

David Todd [00:00:39] And I want to stress that Mr. Garner would have all rights to use the recording as he sees fit. It is his.

David Todd [00:00:47] And with that little introduction, I wanted to make sure that's a good arrangement for Mr. Garner.

Nathan Garner [00:00:56] Yes.

David Todd [00:00:56] All right. Well, thank you for agreeing. Let's get started.

David Todd [00:01:00] It is Saturday, August 17th, 2024. It's about, 3:20 in the afternoon, Eastern Time, where Mr. Garner is, and 2:20, Central Time, in Austin, Texas, where I am.

David Todd [00:01:15] And, my name, as I said, is David Todd. And, I'm representing the Conservation History Association of Texas today, and I am based in Austin, as I said. And we're conducting a remote interview with Nathan Garner, who is based in the Mishawaka, Indiana area.

David Todd [00:01:34] Mr. Garner is a wildlife biologist, and he served as a regional wildlife director, and a district wildlife leader for Texas Parks and Wildlife, and also worked earlier as a biologist with the Maryland Department of Natural Resources, the Maryland Department of Health and Mental Hygiene, and the Virginia - Maryland Regional College of Veterinary Medicine.

David Todd [00:01:59] That's probably just skimming the surface, but that maybe gives an idea of his background.

David Todd [00:02:06] Of particular interest today is that he has studied and worked with black bears since the 1980s, including many years in East Texas, where he researched bear status, habitat suitability and stakeholder attitudes. He also was involved in starting and running the East Texas Black Bear Task Force.

David Todd [00:02:32] Today, we'll be discussing Mr. Garner's life and career and his conservation work, to-date, and especially focus on what he can tell us about the black bear, about its challenges and opportunities for restoration, especially in East Texas.

David Todd [00:02:49] So, with that little intro, I wanted to first take this chance to say "thank you" for doing this. I'm really obliged and grateful for you participating in the project. So thank you, Mr. Garner.

Nathan Garner [00:03:03] Yes.

David Todd [00:03:05] I thought we might start by just asking if there were any, people or events in your childhood, that you might be able to point to who got you first interested in wildlife, the outdoors, maybe even bears in particular.

Nathan Garner [00:03:22] Well. I think it started with my mother who instilled in me a love for the outdoors. Yes. And also what influenced me in loving the outdoors so much was my involvement in Boy Scouts in Texas.

Nathan Garner [00:03:48] And I guess as far as just nature in general, it was, you know, I have been through, to many wild places in my lifetime, but probably one of the first, most impressionable experiences I had was my first visit to the Grand Canyon, whereby, I was looking out over the Grand Canyon and a bolt of lightning hit the side of the canyons, started a fire. And that just ... I was just struck with awe and wonder at that, and I've been wanting to be outdoors ever since.

David Todd [00:04:43] I understand. I mean, that's, that's really remarkable when you're just looking out at this vista, and it's a peaceful scene, and then, all of a sudden, a bolt out of the blue, literally, and get a wildfire starting. That is remarkable. What a sight.

David Todd [00:05:00] So, you mentioned that you learned a lot from your mother. And I'm curious if you can remember any particular episodes with her where she sort of imparted this interest and love of the outdoors.

Nathan Garner [00:05:17] Well, in particular, growing up in Texas, she liked to go to the beach and camp out overnight, either in the dunes or on the beach. And so, I found that, I found that, and you know, I liked that. And she, she was very, very willing to do that. And not so much my dad but my mom! And, so, you know, that was a good time, spending time drawing hangman's noose in the sand and all that kind of stuff. And in the moonlight, I mean, you know, I'm watching the creatures crawl out of the dunes at night. And so anyway, it was a very unique and wonderful experience for me.

Nathan Garner [00:06:20] And then you also mentioned that the Boy Scouts was a pretty important part of your young life. Do you remember any camping trips or outings?

Nathan Garner [00:06:33] Well, yeah. Well, you know, it got me out camping and learning how to camp and pitch tents and all that. So, and, you know, building a campfire and so forth, and it introduced me to extended summer camps that we would have in West Texas. Because my Boy Scout troop was stationed or headquartered in Houston, Texas, and they had summer camp they'd go to and I was able to participate in that. And so, that was a wonderful experience. So, yes. And then there were other camping trips in the years to follow. And so, it was just a great, great experience.

David Todd [00:07:40] I understand.

David Todd [00:07:42] So, it sounds like you're one of those lucky kids that actually got to be out in nature, you know, whether it was out in West Texas with your Boy Scout troop or on the beach with your mother and family. I'm curious if you also might have been, you know, amidst of books, magazines, TV shows, movies that you might have seen, that, you know, spurred some kind of interest in the outdoors and in wildlife.

Nathan Garner [00:08:13] Well, I guess one of the first books that I read that got me that I will mention was called the Call of the Wild, by Jack London. And so, I enjoyed reading that. And then you mentioned TV shows and, you know, watching Marlin Perkins, this is going to sound dated, but watching Marlin Perkins on Mutual of Omaha's Wild Kingdom. That was ... I always tried to tune into that when I could, once a week anyway if I was watching TV. And so, yeah, those are the kind of, those are the things that come to mind.

David Todd [00:09:08] Okay. Did your family subscribe to anything like Field and Stream or any sort of outdoor magazines that might have caught your eye?

Nathan Garner [00:09:19] I can't, I can't remember. No. I don't think so.

David Todd [00:09:25] Okay. All right.

David Todd [00:09:27] So another place that people often, I think, catch an interest in the outdoors and in wildlife is in school, you know, whether it's an influential teacher or maybe a classmate or a field trip. Was there anything like that in grade school or when you're at the University of Houston or Montana or Virginia Polytechnic?

Nathan Garner [00:09:53] Yeah, well, one name comes to mind, and that was Dr. Chuck Jonkel at the University of Montana. He was head of the Border Grizzly Project. And he was a teacher and a mentor. And he's the only bear biologist that I knew at the time to have done major research on three different bears of North America - polar bear, grizzly bear, black bear. He had a wealth of knowledge. And he was able to share. And later on, I was able to actually volunteer for a grizzly project at my time at the University of Montana. So. Yeah. He was an influence in my life at the University of Montana.

David Todd [00:10:47] I think you mentioned that you were able to volunteer for a project with him. I'm curious, you know, what that entailed, and what you might be able to tell us about it.

Nathan Garner [00:10:59] Well, the Border Grizzly Project was a ten-year project to try and understand the distribution of grizzly bears in western Montana and their status and so forth. And I would volunteer for parts of the summer to go out in grizzly bear habitat and look for bears sign and so forth to document their presence, whether it be tracks, scat and other markings or signs that they leave. And so, I was involved with some of that commotion.

David Todd [00:11:48] All right. Well, so this may be a good segue into talking about bears and I'm wondering if you can recall the first time you might have encountered a bear, whether it was in captivity or in the wild, a black bear.

Nathan Garner [00:12:09] Yeah. A black bear? OK. It was a black bear in the wild. It was in northwest Montana. It was not associated with any other bear project I was involved with. I was just out, and I saw it and it was up, you know, fairly close range. And so, that was my first time that I saw a wild black bear.

David Todd [00:12:38] Do you recall there being sort of a visceral kind of reaction down in the pit of your stomach when you see a big animal like that?

Nathan Garner [00:12:46] No, I just, I remembered I just keep my distance and just it do its thing and I did.

David Todd [00:12:58] Right. Well, it looks to me like you first started kind of formal work with black bears in the mid '80s, 1983, I think, studying the diet and habitat preferences of black bears in the Shenandoah National Park as a graduate research assistant. And I'd love to hear more about that experience.

Nathan Garner [00:13:26] Okay. Well, I lived and worked with wild black bears in the Shenandoah National Park for over three years. And I was involved with the trapping and tagging of over 100 black bears, and radio collared approximately 50 of them, 50 different individual black bears. And I learned a great deal about their home range dynamics, their food habits, their seasonal habitat preferences in the study area that I was working in the central part of Shenandoah National Park.

David Todd [00:14:13] Well, maybe you can share some of what you learned then, and since then. I'd love to hear your thoughts about the just general life history and the ecological niche that a black bear might fill and follow.

Nathan Garner [00:14:33] Well. I think, well, first of all, black bears are not active predators. They eat primarily vegetation, but they're considered omnivores. They're opportunistic meat eaters.

Nathan Garner [00:14:52] And, but in the spring time, I learned that bears usually eat grasses, forbs, broad, leafy plants. And that graduates to, in the summertime, mainly eating fruits and berries of various kinds, and then a mixture of hard mast, primarily acorns and other hard nuts in the fall. And a small part, like I said, a small portion of their diet is animal matter, usually in the form of insects. Now, I'm talking about colonial insects - wasps, bees and also beetles and so forth. So.

David Todd [00:16:04] That's fascinating. You think of such a large animal eating these very small, you know, beetles and wasps and bees.

Nathan Garner [00:16:16] Well, the food item may be small, but they'll eat as much as they can get of the things they want and can digest. So, if it's apples from a tree, or if it's black cherry on a tree, or if it's some other hard mast or soft mast, they can eat large quantities of it at a time. So, I mean, so anyway.

David Todd [00:16:48] It adds up.

Nathan Garner [00:16:49] Yeah.

David Todd [00:16:51] Okay. So, you've given us an idea about the diet.

Nathan Garner [00:16:57] Yeah.

David Todd [00:16:57] Tell us about maybe some of their other practices, denning or, mating or anything else you might be able to pass on.

Nathan Garner [00:17:07] Well, let's talk about their behavior. They're active mainly in the mornings, early mornings or late evenings, usually. And, but they can be active at night. Feeding activity usually intensifies in the summer. They can leave signs of their presence. And the signs they leave are signs like scat, tracks, overturned logs, or excuse me, overturned rocks, rotten logs, opened yellowjacket nests, matted paths through berry patches that they're walking through, scratch marks from climbing trees, and more signs that have evidence of their summer and fall feeding activities.

Nathan Garner [00:18:08] And as far as reproduction, bears are sexually mature normally at 3 to 4 years of age. Breeding occurs in the summertime. And gestation is usually 7 to 8 months. And, that is from when they're first fertilized and then give birth. Now, fetal development occurs during the late 6 to 8 weeks, due to delayed implantation. And that's a phenomenon of bears - delayed implantation. And so basically that means that once they're fertilized and their fertilized egg floats in the uterus, it does not implant into the uterine wall until they're ready for denning. So, that's a very peculiar adaptation for bears, particularly black bears.

Nathan Garner [00:19:31] And so, but, cubs are born in the winter den, usually at the end of January or beginning of February. Newborns are usually helpless, hairless, and their eyes closed. Normal litter size is two, but three to four are not uncommon.

Nathan Garner [00:20:02] Mothers emerge from the dens in late March or early May. Cubs stay with their mothers through summer and fall, and den with a second winter. And they'll den with their, the cubs will den with their mother, then the second winter as well.

Nathan Garner [00:20:29] Mature females normally breed and have cubs every other year. Not every year, normally.

David Todd [00:20:42] This is great. Now wonderful introduction.

Nathan Garner [00:20:45] Yeah. Well, yeah, let me just finish by saying, secure dens are usually most important because birth and early maternal care of the cub is limited to winter dens. And that gives a safe and usually secure environment to do those things.

Nathan Garner [00:21:10] Bears may enter the dens between October or early January, depending on latitude and available foods, sex and age, and local weather condition. Adult females generally den first, followed by subadults and adult males. Unless disturbed because of weather, people or other animals, they tend to stay in one den during winter.

Nathan Garner [00:21:44] And as far as overall ecological niche, I consider bears as generalist in habitat and food. They evolved in forested arboreal habitats and prefer forested lands. So. Yeah.

David Todd [00:22:14] Would you consider them a keystone species in any habitat?

Nathan Garner [00:22:21] Well, they're not specific in their diet. Because they're generalists, that's difficult to say. I mean, if anything, they're an indicator of forest health. If you have bears, you've got pretty healthy forests, in my opinion. So. Yeah, that's what I got.

David Todd [00:23:03] Well so, that's an interesting point. So, I mean, I think about, you know, red-cockaded woodpeckers as being a sign of, you know, there being mature longleaf pine or, you know, Guadalupe bass being a sign of a clean Hill Country stream. But you might say that seeing a black bear indicates that the woodlands are in good shape. Is that fair to say?

Nathan Garner [00:23:31] Well, especially if the black bears are living there and staying there, yes - not just moving through, because they move a lot.

David Todd [00:23:40] Okay. Well, so this might be a good segue to talk a little bit about the males, because I understand that their life style is a little bit different from the females that you were talking about with their breeding and reproduction and, you know, denning and so on. I've heard that the males can be roamers. Is that fair to say?

Nathan Garner [00:24:03] Oh, yeah. Yes. Yeah. Usually, black bear males ... Let's take adult males first. They're all-ranging. Their movements and home ranges are usually, can be, the ranges between three sizes and larger than females, but normally it's three to four, average three to four sizes larger than females.

Nathan Garner [00:24:41] Subadult males are known to, subadult males can move, have been known to move even further, to have even larger home ranges. And males are roamers, that's for sure. And, so. And I guess in Texas or in North America, the average home, the average home range size for males is 100 square kilometers, you know. And I don't know if you can convert that to miles if you want. And females have, like I said, three or four times smaller.

David Todd [00:25:36] Okay. Well, thank you. This is, I think, a nice picture of the life and ecological role of a black bear.

David Todd [00:25:49] This might be a good opportunity to talk a little bit about the last 150 years of black bear. And, I was wondering if you could take us back in time to the 19th century and those early sightings of black bear in East Texas. Is that something you could tell us about, try to help us understand that?

Nathan Garner [00:26:18] Well. As an overview, black bears are extremely small in number and limited range in east Texas around, in 1900, that was safe to say. They were considered extirpated or completely gone from East Texas by World War II, around 1940.

Nathan Garner [00:27:03] Black bear, well, I don't know if that answers your question, but I know that when early settlers got here, first arrived in east Texas, black bears were very abundant. And I guess we'll talk about that later, but, but yeah.

David Todd [00:27:29] So I guess, they were pretty common, you're saying, in the 1800s, but then, started to decline, and then were extirpated around 1940 in east Texas?

Nathan Garner [00:27:43] In east Texas.

David Todd [00:27:44] I see.

Nathan Garner [00:27:45] The last stronghold of Texas black bear for the whole state. You know. But I don't think records show that bears in west Texas, particularly in the Big Bend

region, were never extirpated completely. Small numbers can hang on, which might help explain why they've been able to come back, but we'll talk about that later.

David Todd [00:28:18] Oh, I'd love to explore that. Yeah. Please help us with that.

David Todd [00:28:25] So, should we talk a little bit about the trends in bear numbers? You, you know, you mentioned this decline, that ended with them winking out in around 1940, in east Texas. Why do you think their numbers fell and their range constricted, and then, you know, finally, they disappeared?

Nathan Garner [00:28:51] Well, there were a lot of threats to bears since the first settlers got to east Texas. And the threats still continue, of a different sort. But indiscriminate hunting started their first decline. And because hunting used to be year-round - no limits on how many you could take. I mean, we're talking about when early settlers got here, and that was before seasons were set or anything like that, limits were set. And, so.

Nathan Garner [00:29:48] And then since then, since seasons have been so restricted in east Texas. And actually, I guess the last time you could hunt a bear legally in east Texas was probably in around '78, in the late '70s. And, even with season closures, the other threats, like habitat fragmentations continue to happen. And of course, Texas has gotten a lot of people and so on and so forth. Yeah.

Nathan Garner [00:30:45] And logging started and a lot of forests were cut down initially. So there were disturbances to forestland that the bears had to adapt to rather quickly.

Nathan Garner [00:31:03] And you have to understand that black bears are one of the slowest reproducing mammals not only in the world, but in North America. When a black bear a wild black bear can usually only live, the lifespan of a wild bear is maybe 10 to 12 years old. And if they only start breeding at ages three to four years of age and only have an average of two cubs every other year during their 10 to 12-year lifespan. And they start breeding at age three and four, you can understand the limited amount of litters they can have.

Nathan Garner [00:31:50] So, they're very susceptible to overharvest and disturbance. And so anyway, you know, I just thought I should add that.

David Todd [00:32:04] Yeah, no that really, I guess, magnifies the effect of habitat change or overhunting. I think I can follow you.

David Todd [00:32:15] So, the hunting, is something I'm always curious about because it seems like it was pretty celebrated, I guess is the word in east Texas and, you know, people like, Ben Lilly and others. Can you tell us about any of those sorts of noted bear hunters in east Texas?

Nathan Garner [00:32:45] Well, I'll start out by saying that unregulated hunting was devastating to black bears in east Texas. As far as the famous bear hunters of the past of east Texas, such as Ben Lilly and Uncle Bud Bracken. There are accounts of how many bears they potentially harvested. I think one of them was reported, if my historical accounts are correct, to have hundreds of black bear hides hanging in their barns when they stopped hunting, and they only stopped hunting because they couldn't find bears anymore. Many of the areas were so depleted of bears that they just, there were none left, basically.

David Todd [00:33:45] And what do you think was driving these hunters? Was it the, you know, the oil or the hides, or was it a trophy that they were seeking? What do you think was going through their mind?

Nathan Garner [00:33:58] Well. I mean there's probably a lot of reasons for that, but I think early settlers, to start with early settlers, and, I'll answer your more direct question. The early settlers valued bear meat when they first arrived for cooking oil. They boil ... black bear meat is greasy, and if you boil it down, it creates a cooking oil. I guess at the time that was hard to find and they valued it.

Nathan Garner [00:34:42] So, and then, and as time moved on, I think, I guess the sport of hunting bear ... I mean, I think that some of these hunters that we talk about, famous hunters, bear hunters, that we talk about in east Texas. Some of them probably did use hunting dogs and they would tree bears and then kill them out of trees. Because bears are good climbers, and their instinct, when they're cornered by hunting dogs, is to climb a tree. And then, and then they would sit there and wait for the hunter to show up and shoot it out of the tree. So, so, that occurred, and that was actually an effective way to kill the bears or find them and so forth. And tree them.

Nathan Garner [00:35:45] So. But I think, I mean, even before they probably started using dogs, I don't know if there were any female black bear hunters, but I imagine the males found some pride in that, being able to do that. And, so it was probably fun for them. And so, you know, I can't fault them for that.

Nathan Garner [00:36:17] I've been a hunter all my life, so I haven't ever hunted bears, but I've hunted other things.

David Todd [00:36:24] Do you think, and I guess here it's sort of speculation because, you know, like you say, this isn't maybe your sport, but, I've found that people who work with dogs to hunt deer or other animals, it is a very intense bond between a dog trainer and hunter and his animals. And do you think that that might have been part of what gave them pleasure?

Nathan Garner [00:36:51] It could have been, very, very much so, very much so. Very well possible.

David Todd [00:37:00] Okay. Well, so we talked a little bit about this overhunting, the unregulated hunting. Could we talk a little bit about the impacts of land use changes? I think that you mentioned timber cutting. And I'd love to, you know, get your views of why that would have been impactful for bears, and if there were other kinds of land use changes that hit them pretty hard in east Texas.

Nathan Garner [00:37:35] Well. I think that timber cutting, things like timber cutting, dam construction and farming practices all altered, of course, the landscape in east Texas. And, that may continue. And, I think the best way to approach that in the future is for best management practices to be implemented to benefit bears or to continue to have them, even if it's in small numbers, and be strengthened, you know, the best management practices to be strengthened about the bears.

David Todd [00:38:37] Well, so maybe you can give me an example. Like with timber cutting, do you think that there's a way that silviculture can sort of coexist with a black bear

population, if, I don't know, I'm just speculating, but like less or fewer clear cuts or smaller clear cuts or, you know, some selective-age cutting?

Nathan Garner [00:39:04] Well. I think that if forest management is going to have sustainable harvests in the future, they're going to have that to be. They usually involve keeping certain stream-side zones unimpacted, and also leaving certain strips uncut, like for migratory corridors for bears.

Nathan Garner [00:39:47] And also, you know, clear cutting has an interesting benefit and detriment to black bears. It can open up the canopy and cause berry production, and bears will flock to that and find that because they're so adaptable in their food requirements.

Nathan Garner [00:40:13] But as far as denning sites and being able to den in trees and other things and mature tree fruits and all that, not so much. So, it's a mixed blessing there.

Nathan Garner [00:40:31] But I, I think that the smaller the clearcuts, the better. And, so, you know. I agree.

David Todd [00:40:45] I think you touched on one other land use that I guess has been pretty significant in east Texas, and that's dam construction. And I was wondering if the inundation of some of those bottomland forests with lakes there in east Texas might have had an impact on the bears or would that have come too late to have made a big change for the bear?

Nathan Garner [00:41:19] Well. When you lose, I mean, when you consider what dams in East Texas have created - very large reservoirs - Toledo Bend, Sam Rayburn, and others. So, there's no question that had a detrimental impact for black bears, because that was good hardwood habitat.

Nathan Garner [00:41:55] Now as far as the continued building of dams, it goes through a very rigorous process to do that. And I'm not sure how many more dams in east Texas can be built. But I know that with the advent of being able to transport water from other reservoirs to east Texans, it may actually benefit bears in East Texas, but maybe harm bears elsewhere, I don't know, but, depends on where the dam and the reservoir was built. But, but anyway. So, anyway, that's what I got.

David Todd [00:42:48] Okay. All right. That's very helpful. So, I think you talked about some of these ongoing issues, and I'd be curious to hear what you think about some of the, projects that you read about nowadays, whether it's pipelines or transmission lines or roads, that might be cutting through areas of east Texas. Do you think that they are significant as far as the suitability of the habitat for bears now, or if they might return in the future?

Nathan Garner [00:43:28] Well. Let me comment generally on that. I had the same concerns about pipelines, power lines and roads - more roads being built in east Texas, especially expansion of highways, so on and so forth. And I think, wherever black bears exist, if allowed to do so, the species has a tendency to adapt to the presence of humans. We've seen that time and time again throughout North America. It is by far the most adaptable of the eight bear species of the world. If Texans choose to live with black bears again in East Texas, they're going to have to give them a chance, which means following the laws and regulations to protect them as best as possible.

Nathan Garner [00:44:30] So, you know, it goes back to my message of giving bears a chance, I mean. And I think that, I'm not sure that black bears will ever be as numerous as they once were, but in small pockets of suitable habitat, it's possible.

David Todd [00:45:04] Okay.

David Todd [00:45:05] Well, so I'd be intrigued to hear your views about the more recent days, you know, like, since the '70s, I understand that there have been these sporadic, scattered sightings of black bear, or at least what people say are black bear, in east Texas. And I'm curious what credence you give to those sightings. And if you think they're valid, you know, are you seeing some pattern to those sightings of black bear in East Texas, the putative sightings?

Nathan Garner [00:45:49] Well, that coincides with the time that TPWD, or Parks and Wildlife, started keeping track of black bear sightings in east Texas. You know, I'm talking about late 1970s, they started keeping track. And I believe they occurred. I believe they did occur.

Nathan Garner [00:46:12] So, I don't know how many sightings would be recorded now in east Texas, but I believe in the sightings that were occurring then, and I think that sightings have gotten more and more scrutiny, and I think they're becoming more reliable. But I think even back then they were reliable.

David Todd [00:46:51] And of these sightings in east Texas, I've heard some people speculate that they are subadult males that are just kind of exploring the countryside. And, I'm curious if you think that might be true. And if so, why?

Nathan Garner [00:47:14] Well, getting back to the home range dynamics in areas that I researched and learned about. Black bears are roamers, as I pointed out earlier, especially male black bears. And it's not surprising, especially in border counties close to known bear population, such as Louisiana, Arkansas, Oklahoma, that male bears are moving into East Texas into suitable habitat. So, that's not surprising for me to think that.

Nathan Garner [00:48:08] And what was the other part of your question?

David Todd [00:48:11] No, that's it exactly. I'm just curious, you know why, these bears might be coming into Texas. Is it just proximity, or are they looking for something?

Nathan Garner [00:48:28] Well. Sure. They're always looking for something. But, anyway, you know, I think that's another. Well, I think that one of the things about male bears is that if male bears want to have the opportunity to breed for the first time, they're probably leaving an area where there are already males that have already staked out their territories or their ground for breeding. And so, they're looking for places where the other females may be, and searching for them.

Nathan Garner [00:49:36] And we have no evidence, to my knowledge, that we have breeding numbers of female bears in east Texas. So, I think that the male bears come here, hoping to find female bears to breed with, and don't find them, usually return home, or get killed in their process of being in Texas, road-killed or some other way.

Nathan Garner [00:50:19] And plus female black bears, as mentioned before, are not roamers as much, because usually they're anchored to the ground where they have cubs, as cubs are very limited in mobility, and cubs stay with their mothers for a while after they're born. So, you know, it's less likely that a reproducing female would make it, or want to come to east Texas. Because you have to remember that females are receptive to males and, you know, so they don't have to leave their areas' home ranges to breed, but males do. So.

David Todd [00:51:30] Okay. So, I think that the experience in east Texas with these roaming bears, but no breeding bears, makes me ask the question of why was Big Bend different. And, you know, this natural colonization happened. Was it because, I think you mentioned, that maybe that area was never truly extirpated of bears? Or what makes west Texas different from east Texas as far as recolonizing?

Nathan Garner [00:52:11] I think there's multiple reasons for that. The Big Bend region never had black bears completely extirpated, as you mentioned, and as I said earlier, and that helped them have a bit of a comeback, at least in Big Bend National Park. And plus having Big Bend National Park there as a large protected area of suitable bear habitat also has helped.

Nathan Garner [00:52:54] And also, we have to understand what's around the Big Bend region of west Texas. There's evidence to show that there are, you know, thriving black bear populations in northern Mexico. That is also helped by large private ranchers and landowners who protect black bears in northern Mexico. And I think that that's helped facilitate their movements into West Texas. So, yeah, that's one of the main, main contrasts.

David Todd [00:53:51] Let me float a theory that somebody mentioned to me, and maybe you can help me understand, is that there might have been climate-related issues - that evidently there was a drought in the '80s in northern Mexico that made it difficult for bears to stay there. And so, they were not just drawn up there, but they were kind of forced into Big Bend, and that in east Texas, the climate there is pretty much similar to Louisiana, and, you know, there haven't been those kinds of climate or weather-related pressures. Is that something you could buy?

Nathan Garner [00:54:38] Yeah, I think that's certainly possible. I think what helps bears is that if they can't find food they're going to move, they're going to go to where they can find it. So, I mean, and in that open Chihuahuan Desert country of west Texas, around the Big Bend area, I mean, they certainly have the ability to get there.

Nathan Garner [00:55:04] You know, them crossing the Rio Grande is not, is not a problem for them. In fact, it's not a problem for most bears because, I mean, even bears with transmitters on research projects, in other parts of the states have shown the bears don't have a problem, even swimming the Mississippi River! So anyway.

David Todd [00:55:31] That's amazing. That is amazing. Okay.

David Todd [00:55:38] So, I don't know if this is the time to talk about it, or if we should talk about it later, but, I'm intrigued by this sort of contest of ideas where some people feel like it's better to allow natural recolonization and others are more aggressive, you know, more proactive, and say, "Oh, no, we have to do reintroductions. You know, people need to intervene." And, I'm wondering about your view as far as returning bears to east Texas, if it needs to just happen naturally, or if people should intervene.

Nathan Garner [00:56:26] Well, we have to understand the magnitude of reintroduction. In the past, the most successful large reintroductions of black bear that have occurred in other states, that occurred in Arkansas and Louisiana using source populations. So, and very successful. It's helped establish those populations at the time they were done. And. So.

Nathan Garner [00:57:06] But in the case of Texas, in the case of east Texas, I don't think we're gonna want to do large reintroductions, active reintroductions, of black bear. But, if we can find a limited number, particularly of adult females, since we don't have any in east Texas, not breeding adult females at this time, to my knowledge, I think that there are methods and research ways to do that successfully, as long - because we've got the habitat, suitable habitat.

Nathan Garner [00:57:48] And as long as bears... and we can use the methodology that's been successful for limited releases of adult females. Usually, they're captured in the den in the winter time, before they give birth, and brought to their re-introduce areas and provided some kind of good protective nesting and denning material to have cubs in, and emerge as a family group.

Nathan Garner [00:58:35] So, I think it's possible. I think that, I think the habitat is not so limiting that we can't have a successful event, an active reintroduction, happen. And the habitat suitability of east Texas allows for a variety of different denning opportunities for bears and for females that want to give birth to cubs. But I think so long as certain protections are put in place and the right areas are chosen, I think it can work, as long as, I mean, we're talking small numbers of bears I think would have a better chance of living if put in the best areas.

David Todd [00:59:49] Okay, well, speaking of those areas, I know you've thought a lot about habitat suitability, and have done some modeling work in that regard for black bears. And, I was wondering, you know, if you had your druthers, where are some of the more, you know, suitable kinds of country in East Texas where bears could be successful?

Nathan Garner [01:00:21] Well, let me start out by saying that there's approximately 12 million acres of forested habitat in east Texas. That's a figure from the Texas Forest Service. Approximately 1 million acres of that is most suitable for black bears, determined by habitat suitability research projects. And those areas are in the Sabine River basin, Little Neches River, the lower Neches River, lower Trinity River, and in northeast Texas, the Sulfur River. So, I think there's areas for that to happen and there's certainly some suitable habitat for it.

David Todd [01:01:24] And so, when you're trying to model what's suitable and what's not suitable for a black bear, what are some of the key things that you might look as being attractive and supportive for a black bear?

Nathan Garner [01:01:45] Well, the availability of food, the availability of cover. Because bears need to cover; they need to conceal themselves. And the road density, if it's too high. I mean, low enough road densities - well that would be a major concern. And let's see. What else? The modeling projects that I have used have a ranking scale of those kind of variables. And so - low, medium, high suitability. And I'm talking about those 1.2 million acres are considered high suitability. So, they usually have a good score on rankings.

David Todd [01:02:59] So, one of the factors that you mentioned, brings up a question for me, and that's road density. And I'm wondering if it's just the kind of disturbance, or if it's actual roadkill that makes it, you know, inauspicious to put a bear where there's high road density.

Nathan Garner [01:03:24] Well. I think sort of the litmus test for that is less than 0.5 kilometers of road, whether it's paved, gravel, dirt, whatever - less than 0.5 kilometers of road per square kilometer of habitat. So, using that as a litmus test helps guide the rankings.

Nathan Garner [01:04:00] Yeah. So? Did that answer your question?

David Todd [01:04:07] So, I guess the idea is that they're sort of correlated. If you have lower than 0.5 kilometer of road per square kilometer of country, then you start to see more bear. Or is it that when it gets above that density, you start to see dead bear on the roads?

Nathan Garner [01:04:30] Not necessarily, it's just that the bears are less likely to survive long term. And habitat is just not suitable to sustain them over a longer period of time. So.

David Todd [01:04:50] Okay, well, let's shift from the suitability of habitat to the attitude of the public, which I guess is another big factor. And I know you've thought about this and written about a variety of aspects of public attitudes, whether it's, you know, residents or hunters or other stakeholders, and, you know, how socioeconomic factors weigh in, or where you are in East Texas. I mean, can you talk to us about how receptive people are, or how hostile they are to the black bears coming back to east Texas?

Nathan Garner [01:05:40] In my opinion, in my experience talking to the public, talking to hunters, talking to sportsmen, I think Texans are generally supportive of the return of black bears in east Texas. I think more public attitude surveys are needed. So, but that's, generally speaking, I think what I said was true. And so, I think that's a future need for research to also explore that.

David Todd [01:06:26] You know, I'm curious about whether the people you spoke to had realistic views of what black bears presented, you know, or if they were sort of confusing them with grizzlies or polar bears. Do you feel like they had an accurate understanding of what a black bear next door might entail?

Nathan Garner [01:06:56] Well, I think, yeah, generally I think black bears are misunderstood, starts with information and education to try and get people to learn about black bears and their behavior and their tendencies. I think that, you know, starts with how they evolved. I mean, you mentioned grizzlies, you know, how they contrast with the behavior of grizzly bears and so forth.

Nathan Garner [01:07:31] When grizzlies evolved in the Great Plains of North America, normally a more treeless environment, big, you know, large, expansive grasslands and so on and so forth - the Great Plains. And when confronted with other bears, wolves, Indians, whatever, their tendency was to fight back, and to hold their ground. And as a result, they became more aggressive.

Nathan Garner [01:08:08] If black bears were confronted with the same dangers in an arboreal forested environment, they have the ability to climb and hide and run. And they do, when confronted with danger normally.

Nathan Garner [01:08:25] So they're less aggressive, and less willing to take chances if they don't have to. But people, people still say, "Well, he's still, bears are still a problem. Bears are still a nuisance."

Nathan Garner [01:08:46] So, there are ways that people and bears can coexist, as long as people also take the effort to take care of their garbage and take proper precautions if they see a bear, and so on and so forth. There are ways through information and education campaigns to help people understand bears and understand nuisance bears and problems that may occur.

David Todd [01:09:21] Okay. Well, so, one thing I'm always curious about is how, you know, a rose is a rose is a rose, but people are not all the same.

Nathan Garner [01:09:35] Yes.

David Todd [01:09:35] And, I'm so intrigued about the difference in attitudes in different places. And it sounds like, you know, you worked in Maryland and Virginia. Did you find the attitudes about bears were different there? You know, I think, I'd also be curious about just how Louisiana and Arkansas managed to pull off a bear reintroduction. You know, is the attitude about bears different there than in east Texas? What do you think place means for attitudes about bears?

Nathan Garner [01:10:29] Well, first of all. In Virginia, for example, black bears could be hunted. And hunters and sportsmen supported their ability to be able to hunt them where possible. So, that's a big difference than what we're currently facing in East Texas, for example. In Maryland, mainly in the forest of western Maryland, black bears occurred, or black bears occurred but were not hunted, not yet. At the time I worked there, the hunters and sportsmen I talked to, and surveyed, were eventually supportive of black bears' return to Western Maryland.

Nathan Garner [01:11:24] In Texas, more current research and surveys are still needed to better determine if Texans support the return of black bears in Texas. And I don't know. You know, the wording has to ... you know, any surveys that are done and questionnaires that are sent out, that I've been involved with, have to be worded correctly and so on and so forth. And it's not a matter of whether we're going to hunt bears again. I think it's just a matter of will we allow them to survive? Will we allow them to be? Will we allow them the space and time, the space and tolerance to live here? So, so I think with additional surveys and research to get public opinion surveys on that would be helpful.

David Todd [01:12:32] Well, I get by the drift of some of the things you've said that you think that, you know, with the proper education, coexistence between people and black bears in east Texas would be possible?

Nathan Garner [01:12:53] Well. I think Texans, if they can be, need to be open-minded and give black bears a chance. I think, like I said before, getting educated about black bears, and supporting conservation efforts and supporting black bears and their recovery will be helpful. And I guess you know that... I mean, Texans are going to have to support black bears living here again. And we need to involve them in the process and the decision to make that. Because if they don't want them, there's nothing, I mean, they're not going to give them a chance to live and they're going to ... So. Anyway, that has to happen before. People and bears need to coexist.

Nathan Garner [01:14:07] And I think, I think the last time I checked, there were nearly 40 states in North America, in the lower 48 states, where black bears and people coexist. It can

happen: places like in New Jersey, places like in New York, places like, I mean, New York State, I mean, I mean not the city or anything like that - the state. I mean, New Jersey state and all that. But they can coexist and there are plenty of examples of that. And, you know, so I think it could happen here, but people are going to have to get involved and they're going to have to want bears to live.

David Todd [01:14:58] You know, one of the things I think is interesting about your life with bears is that you've tried to, I guess, bridge these different communities and concerns and industries, stakeholders, to, I guess, find some common ground. And I understand that you helped found the East Texas Black Bear Task Force back in 2005. And I was wondering what drove you to do that and what the goals were and what some of the sort of highlights were of that effort.

Nathan Garner [01:15:39] Well, East Texas Black Bear Task Force started in 2005 to develop a public-private partnership to recover the black bear in east Texas. It was the right time because bears were moving into east Texas, naturally, from bordering states. It was a proactive approach to the management and conservation of black bears in east Texas. It provided public input in the process. And ultimately, it involved over 30 organizations and it helped to conduct black bear conservation and research efforts in east Texas. It helped support information and education efforts in support of the black bear, the return of the black bear. And it helped develop funding partners and more, I mean. The main thing is it was a public-private partnership, which not only was it timely, but also needed.

Nathan Garner [01:16:57] So, I mean, it became evident to me a long time ago that it's not just up to the state or it's not just up to the agencies to determine a future of black bears in east Texas. It needs to be a collaborative, cooperative approach. And the East Texas Black Bear Task Force helped to make that happen.

David Todd [01:17:30] Can you recall any of the sort of projects that you were most proud of that the Task Force was involved in?

Nathan Garner [01:17:39] Well, it collaborated in research with Stephen F. Austin State University. It collaborated with other research partners. It collaborated with timber companies. It collaborated with, you know, other agencies. Like I said, 30 organizations were involved, over 30 organizations, including industry and so forth.

Nathan Garner [01:18:21] And as far as just the cost share, we helped to, the Black Bear Task Force, helped to fund and support incentives for landowners in cooperative habitat projects, and things like that. And, so I mean, I'm trying to think of other specific projects.

Nathan Garner [01:19:00] I mean it helped develop information, education materials. It helped to develop outreach events to benefit and raise awareness on black bears, and in other conservation research efforts were also, that I didn't mention, that I can't remember, frankly, that were involved.

David Todd [01:19:33] So yeah. Well, this is good. So, let's talk a little bit about the black bear and government. I think you made the point pretty clearly that it's not Parks and Wildlife's responsibility by itself, or maybe even primarily, their job to figure out a future for the black bear. But, I'm curious what you think the agency's attitude has been about the recovery of black bear over the years in east Texas.

Nathan Garner [01:20:21] Well, I think Parks and Wildlife Department has taken steps to protect bears in the past from hunters, for example, and by closing down the season when they did, and through enforcement of poaching laws where bears were illegally killed and so on and so forth.

Nathan Garner [01:20:53] We have to remember that Texas Parks and Wildlife supported the East Texas Black Bear Conservation Management Plan, covering 2005 to 2015. The agency is still in discussion with the Texas Black Bear Alliance, for example, about whether it supports active reintroductions or natural recolonization. And that conversation should continue and will continue, I think.

David Todd [01:21:39] You know, one thing that's always struck me about Parks and Wildlife and almost any wildlife agency is it's a very big and diverse job. Lots of animals out there, lots of factors. And you served as the regional wildlife director for Parks and Wildlife in east Texas, and supervised, I think, 50 staff and were active in 55 counties. And, I was wondering what sort of priority you could find for black bear work. I imagine there were a number of distractions. But, on the other hand, the black bear is a pretty charismatic species. How did you, you know, sort of parcel out the importance of the animal's future in the state?

Nathan Garner [01:22:39] Well, it was part of the job. It was basically other duties as they came. It received a priority, whether it was a call from someone who said, "There's a bear on my property. Can you investigate?" And we would send someone out, the first chance we got. Or, if it was somebody that needed help with a dead bear on a roadkill. You know. any way we could help in law enforcement. Any way we could help investigate bear sightings. Any way we could also... You know, those kinds of things. And, so, you know, other duties.

David Todd [01:23:45] I can imagine this is like juggling, maybe juggling, you know, fire, trying to keep up with all these things.

David Todd [01:23:57] So, this made sort of go into the realm of speculation, but I'd be curious of your viewpoint, having spent a lot of time in Texas in that region. I'm curious why Arkansas and Louisiana seem to have the political support or, I don't know, the agency independence or whatever, to manage introductions of black bear in their states, but that hasn't been the situation in Texas. And I'm not sure why that might be. You know, we're adjacent states, similar cultures, I would think. But, it sounds like the black bear policies have differed. Why do you think that is?

Nathan Garner [01:24:55] Well, I think that there's a couple of differences between those states and ours. First of all, at the time of large, active translocation of black bears into other states like Arkansas, like Louisiana. As I said before, Minnesota had the bears available. And those states had large, unoccupied suitable habitats. And there was support to do it in those states back then.

Nathan Garner [01:25:47] So, I know these are different times, but I don't know if we'll ever see those kinds of large translocations of bears ever again, anywhere in North America. Maybe. But, as I said before, in east Texas, active reintroduction involves translocation of bears. But for east Texas, it's going to be in a limited fashion. And we still have the habitat for it, suitable habitat for it, if we take the proper safeguards.

David Todd [01:26:40] Well, so if I'm following you right, you're saying that part of it was the amount of available habitat in Louisiana or Arkansas. Also, if I'm hearing you right that you

say it might have been just a difference in the time, and do you think it's because some of these introductions were done before the Endangered Species Act and it was less politicized?

Nathan Garner [01:27:18] That's, that's part of the answer. But, but I think that... Yeah, that's part of it.

David Todd [01:27:33] Maybe you can elaborate. I'm curious about how the Endangered Species Act might have had a role there. What do you think?

Nathan Garner [01:27:45] Well. I'm trying to interpret your question.

David Todd [01:27:52] Please. Yeah.

Nathan Garner [01:27:55] There's no question that the Endangered Species Act has affected bear recovery in east Texas, but I don't think, I don't think. I mean, the Endangered Species Act is not. I mean, a lot of these large translocations we're talking about in Louisiana, from the state of Minnesota, were before the Endangered Species Act was even voted for in Congress.

Nathan Garner [01:28:32] So, there's no question that, in our particular situation, especially because of our subspecies issue with Louisiana black bear in east Texas, it would influence whatever decision made, and create great, great caution with federal officials and state official to approve them. And states like to be in control of their own regulations and their own outcomes. And less government, so... So, I can understand less federal government intervention, so I can understand the reason to do that.

Nathan Garner [01:29:31] But I guess, you know, Louisiana and Arkansas, when they brought in, I think I think the totals that Arkansas eventually ended up bringing over the course of two years was 254 Minnesota bears. I guess they varied sex and age and everything. So, and, as far as the number of bears, types of black bear, but they were all American black bears, and it was not, there was no speciation problem, no endangered species issue, so forth.

Nathan Garner [01:30:14] In Louisiana, I think the number of bears brought in from Minnesota was not quite as large, but it was still in the hundreds of bears. So. And that was before, also, I think, before the Endangered Species Act was an issue.

Nathan Garner [01:30:35] So it was a different time and a different, a different era of America.

David Todd [01:30:42] Well, when you would talk to people about black bear reintroduction, did these Endangered Species Act issues come up where people were worried that the federal government was going to limit the way they could use their land because a rare species was being brought in?

Nathan Garner [01:31:05] Yeah, well, not so much if you're in east Texas, but I think Louisiana had to deal with that issue. And I think they got a lot of help and support doing that through the Black Bear Conservation Committee that was in place at the time. It was another non-profit group that helped them.

Nathan Garner [01:31:30] And so, I mean, once again, it's about people learning more about bears and what they can and can't do, and so on and so forth.

Nathan Garner [01:31:49] Some landowners are resistant to change, and so forth, and don't want to deal with having to mess with bears at all. And that's their choice.

Nathan Garner [01:32:07] But anyway, like I said, it's more difficult to do that now than it was for the reasons I've mentioned before.

David Todd [01:32:21] Okay. That's really helpful. Thanks for your insight there.

David Todd [01:32:26] You know, to bring us up to more current issues. I understand that in 2016 the black bear was removed from the threatened list, federal list. And then I think just this year, Louisiana reopened a hunting season for black bear in its state. And I'm wondering what you think about those changes. Do you see that as success in that the black bears are more common, or does it leave you with qualms because, you know, there's less protection for the bears?

Nathan Garner [01:33:12] Well, there's concerns, but I think with the proper safeguards, Louisiana can make it work. I think that if they ever want to hunt bears in those areas, where bears have been protected by the Endangered Species Act, I think they're going to have to be very conservative in their harvest quotas. They're going to have to take adaptive harvest management principles. They're going to have to... they're going to have to limit what kinds of bears can be shot or killed.

Nathan Garner [01:34:06] And so, I'm a supporter of additive mortality in bears, in bears that are being taken, of any kind. For example, if Louisiana were to establish a quota that only X number of bears can be killed each year in Louisiana, whether it be from road kills, whether it be from farm machinery, farm machinery running over them in sugar cane fields, or whether it's for whatever reason, at the start of any hunting season, they'll have to subtract that amount from the quota of bears to allow to be killed. And not treat it separate.

Nathan Garner [01:35:16] So, say, for instance, by the time a hunting season comes into effect in a newly established hunting season, say they can take 20 or 30 bears legally now, but already there's been documented 15 or 20 have been killed already. They would need to subtract that amount from what they would normally allow.

Nathan Garner [01:35:46] So, but that's the term: additive mortality.

David Todd [01:35:54] I see.

Nathan Garner [01:35:54] So, anyway. So, there's ways that can be done. To where bears being killed again in Louisiana can occur to maintain a stable population of black bears in the future, if those kinds of measures are implemented.

David Todd [01:36:24] All right. I see what you mean. But just rather than having sort of two columns in your general ledger, you know, one where it's road kills and poaching losses and sugar cane equipment, and another your hunting quota. You've got to pull those together.

Nathan Garner [01:36:44] Right. This is many bears we can take each season or each year. So yeah, you got treat it in total.

David Todd [01:36:55] I see. More holistic, I guess. That helps. Thanks for explaining that.

David Todd [01:37:01] Well, let's, move on to sort of the last chapter here. I'm curious about ... you know, we talked about state policies and, and, you know, big sort of universes of bear questions. How about if you just look back on your own personal life in nature? What do you think stands out as important in your view?

Nathan Garner [01:37:38] Well, I've been blessed with the ability to work outdoors most of my life, and in many ways maintain my curiosity and open-mindedness about bears and other wildlife. And I'm grateful for that. And, I'm grateful for the outdoor experiences I've had. And I'd like to leave it simply at that.

David Todd [01:38:22] Yeah, I think I can follow you. It's not everybody who gets to work outdoors, as so many of us who are trapped near a Zoom screen. And, it's not as enriching, I'm sure. So, thank you for taking some time out to be in front of your computer.

David Todd [01:38:42] Well, let's narrow down a little bit more and just talk a about the values and importance you see in wildlife, and bears, for that matter. You know, I've heard people talk about animals as having value ecologically and how they make nature work, and then others saying, well, we have some sort of an ethical, moral call to look after our fellow creatures on the planet, and then other people, it's very personal. It's spiritual or something. And I'm wondering, how do you see, you know, wildlife conservation. Why do you think it matters to you?

Nathan Garner [01:39:31] Well, in the case of black bears in Texas, not only east Texas, but Texas, period, black bears are part of our natural heritage of Texas. They were here when the early settlers got here. And they are very adaptable. And they are maintained surprisingly well in the presence of human if the bears are not overharvested, and suitable habitat areas that provide refuges are available. And I am glad I had a part in some way to help make that possible. And I think that in Texas and maybe elsewhere in the world, whether it's bears or wildlife, people just need to be thankful that we still have the opportunity to be exposed and be able to witness wild animals, wild bears, and do what we can to cherish that and protect it and conserve it in any way we can.

David Todd [01:41:13] So I've got ... That's very well said. But, let me ask a sort of a leading question here, which makes a lot of scientists like yourself, it can make you really uncomfortable. So, apologies in advance for asking the question, but, I'm curious if you think bears have a soul.

Nathan Garner [01:41:38] Well. I'm not going to get into that debate, but I can tell you, based on my experiences, they're very intelligent, in my opinion. They care for young. They're very curious. They're very inquisitive. They learn from their mistakes, most of the time. I mean, so I appreciate, I appreciate an animal like that even more. And whether it has a soul or not, I'm not qualified to say.

David Todd [01:42:29] Fair enough. Fair enough.

David Todd [01:42:31] Well, I just have one more question, and it's very open-ended. I hope you'll take advantage of it, since you've been so accommodating with my more directed questions. Do you possibly have anything you'd like to add? Something that we skipped over, you know, gave short shrift to that you'd like to mention?

Nathan Garner [01:42:59] No, not really. I mean I appreciate the opportunity to talk to you and but I don't have anything else to say.

David Todd [01:43:13] Okay. Well, we can leave it there then. And, all I have to add is, is, gratitude. Thank you very much for taking time to do this. And, hats off to your wonderful daughter for making this possible. My technical skills failed, and she came through in the clutch. I'm very grateful to you both.

Nathan Garner [01:43:39] Okay, well, enjoyed it.