Tracey Peake: [00:02](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=2.51) Hello and welcome to NC state's audio abstract. I'm your host, Tracy Peake. When we picture idyllic suburban living, backyard bobcats don't really factor into the image, but it turns out the suburbia is a little bit wilder than we thought. We're speaking today with Arielle Parsons, a graduate student here at NC state and a researcher at the North Carolina Museum, of Natural Sciences. We're going to talk about camera traps, citizen science and the secret lives of animals in wild suburbia. Welcome Arielle.

Arielle: [00:33](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=33.88) Thank you.

Tracey Peake: [00:35](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=35.2) Let's start off by talking about what your research is about. Generally we're talking about wild animals in suburbia. Why are we studying wild animals in suburbia? What got you into this and what were you hoping to find?

Arielle: [00:48](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=48.34) Wild animals in suburbia are interesting because they live around us. I mean that's kind of, I think the main thing as as a young researcher getting out there, especially with camera traps and starting to see this surprising number of species that we get right in our own backyards. That was certainly, you know, inspiring for me to look further into this and, and we think about what we as humans might be doing that are affecting wildlife and of course that applies to the suburban environments that we've created. And then, um, you know, how then the wildlife are coping with that and how they might be interacting with each other.

Tracey Peake: [01:22](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=82.9) Right. We hear a lot about animals being driven out of their natural habitats by human expansion, particularly in suburbia. Is that really true?

Arielle: [01:31](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=91.81) Well, that's certainly what we wanted to find out with this study or kind of showcase these, this classic idea that these cities are what had once been called biological deserts where there's really not much going on in terms of, uh, you know, wildlife. And if that's true, then the extension of that is then that the ecology of these cities is out of balance. It's not really functioning as it should be. And so that was for this particular study. Our goal was just to simply compare, um, cities and more wild areas, uh, to each other in terms of the mammalian communities. Because this thing gives us some insight into, you know, how in balance or out of balance the ecology of these areas might actually be.

Tracey Peake: [02:13](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=133.841) And you did focus on mammals specifically here. Right?

Arielle: [02:16](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=136.521) So these are fairly large mammals. So chipmunk sized it up. We don't know anything about bats are study doesn't show anything about bats, you know, small mammals like shrews, um, it's just, just kind of the medium sized and bigger guys.

Tracey Peake: [02:28](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=148.6) Okay. So if you have voles in your yard, that is just of no concern to anyone except maybe you.

Arielle: [02:33](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=153.911) Yeah, to be clear, it's of concern to someone, but the way that we gathered our data, we weren't able to, to gather any data on these really small guys or the or the flying flying guys.

Tracey Peake: [02:45](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=165.04) Let's talk a little bit about how you gather your data because that was kind of unique as well. You involve the community at large in some of this data gathering. So let's talk about what is a camera trap. What is citizen science? How are people involved in helping you get your information?

Arielle: [03:01](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=181.06) So these are words that people are probably hearing more and more, but maybe you know, they're relatively relatively recent arrivals onto the scientific scene. And so we, as ecologists, especially when we're thinking about looking at animals across a city, I mean this is a huge area. It's not just one city, it's going out from where we go to suburban to the wild areas. That's a lot of ground that we have to cover and it's a huge challenge because usually research teams are like a handful of people and we just don't have enough, um, you know, time to go out. And so that's where citizens science comes into play. We get volunteers that are interested in the same things that we are and we give them a certain amount of training and we give them the tools and they can go out and collect data for us on these huge scales that we would never be able to do otherwise. So it's a wonderful partnership. And so the tools that we give them are these camera traps that you talked about. These are relatively new technologies. They're digital cameras and when an animal walks in front of them, it automatically takes a picture and then if there are no animals in front of it, it falls asleep so you don't get huge if everything goes well, you don't get huge amounts of pictures of like leaves and blowing grass. You simply get pictures of animals as they walked by, which means that it's less work for us to go through those pictures and it's not particularly disturbing to, to the animals. And the other nice thing is they're very easy to use. So for a citizen scientist to go out and use these cameras, we give them a, you know, about a 45 minute training and then they can go out and be scientists and help us gather our data.

Tracey Peake: [04:38](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=278.56) So they're good to go then. Exactly. Now on your most recent publication, tell me a little bit about exactly how big an area you covered, how many people were involved and what types of different terrain did you set the camera traps up in? How many camera traps did you set?

Arielle: [04:54](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=294.97) We had about a 550 citizen scientists over two cities, so Raleigh and Washington DC and in total they said about 1,450 cameras across these two cities, which is a lot. I mean if you look through studies using camera traps, it's usually on the order of a couple hundred cameras. And that's considered great. Well, you know, take an order of magnitude up and you know, we were very happy with the amount of data that we were able to collect and what we wanted to do is compare, as I said, the suburban areas to the wild area. So we had volunteers set cameras along the whole kind of spectrum, what we call the urbanization gradient from the suburban areas, which we classify this by housing density. So it's about a thousand houses per square kilometer or more. And then we go on down to the wild areas which are no houses per square kilometer and we kind of go down that gradient. And so in terms of areas in square miles, I don't have that off the top of my head, but it was the whole triad area. We cover the whole triad area and then we had to go out even further, kind down to some in the sand hills, Uwharrie, Moro mountain state park, Weymouth woods, to get those wilder areas.

Tracey Peake: [06:06](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=366.32) You refer to some of it as suburbia and exurbia is that, is exurbia an in between space between just pure country uninhabited and then housing density. Was that its own unique kind of space?

Arielle: [06:21](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=381.26) Yeah, that's exactly right. We split the gradient into five levels. Um, and so we have the urban, which is above the 1000 houses per square kilometer. Suburban falls in between a thousand and about 150 houses per square kilometer. So it's quite a range. And then x urban is a step down from that. So there are still houses but they're, they're much more spread out. So it's about it. It's a strange cutoff, but 12 houses to 150 houses per square kilometer. Rural is 12 to one. And then, oh well it's actually 12 to zero. And then anything, you know, within zero houses per square kilometer is wild.

Tracey Peake: [06:59](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=419.21) How long were the camera traps out? How long did you collect the data?

Arielle: [07:03](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=423.38) Each individual camera trap was put at a site for only three weeks just to get a little snapshot of what's going on at that site. And then our volunteers, would move it to a new site and that's how we, you know, just kind of in these three week blocks, we got those 1,450 sites, but the entire study actually stretched over several years from 2012 right up to 2016. Our cameras were still going out.

Tracey Peake: [07:28](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=448.94) Okay. So that's a lot of data. And what did you find who's living in our backyards?

Arielle: [07:35](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=455.33) Well, it probably won't come as a huge surprise for some people, for most people to find out that there are a lot of deer, right? There are a lot of squirrels, grace, eastern, gray squirrel, a lot of raccoons, a lot of possums. Those were kind of our, our four main and, and actually red foxes. I would add to that our five main kind of suburban species. These are the ones that weren't just across the board. And then, you know, we, we had some other species that were maybe a little bit more surprising. Woodchuck. Some people see woodchucks a lot, you know, and some people don't and they're kind of, they're very suburban, but people don't see them all the time. Beavers or another one that's somewhat surprising for people. The big one that surprised me with bobcat's I think that was. And, and most of the time when I tell people about this study, I say, do you know that we have bobcats living in suburban areas here in Raleigh? And Durham and people of course have no idea, but they are here. They are. So it's interesting if I can go off on a small tangent about bobcats. They, um, they in the west, um, in areas like New Mexico, California, they are really common in suburban areas. If you go online and Google suburban bobcats, they'll be from the west and you'll see them in people's backyards and driveways just acting very relaxed. But we don't see that here in the east. They are much more of a of a forest specialist, more of a, a wild specialist species, and so to find them in the suburban areas was especially surprising even though we know they're here, it was not the first time we've ever detected them in suburban areas here, but, but the average person will never, ever know they're there.

Tracey Peake: [09:14](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=554.49) This is true. I have not ever encountered a bobcat in my backyard, although I've had a possum on my porch. I have, however, heard a lot of coyotes. So is this something that's new as this increasing in prevalence or we just noticing them more.

Arielle: [09:25](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=565.92) This was another real reason that we wanted to look at these particular cities was because of, of coyotes and they are actually relatively recent arrivals, um, to this area. I would say I would put them in the late nineties, kind of early two thousands as, as kind of arriving and becoming more noticeable in the triangle area.

Tracey Peake: [09:47](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=587.34) Prior to that, before humans, you know, came and got the suburban sprawl going. Were coyotes a native species here, or have they been trying. You always associate them with the West. I guess so did we have a native eastern species of coyote?

Arielle: [10:01](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=601.32) Coyotes have a very interesting story. They are what I would call them. I would call them native. However, they were only in the west and then they actually went up through Canada and they interbred with wolves and we know this from studies on on kind of genetic data, so you can actually trace in the genetic information of these eastern coyotes, some wolf genes, some dog genes, quite a lot of dog genes as they came through to this more populated area in the east. They of course met with more dogs and they said, boy, there are no coyotes around here, so I guess you'll do. And so they ended up being this, this amalgamation of mostly coyote genes, but with these bits of of wolf and dog. They naturally came through Canada and then they came down through New York and they. And they came kind of down the eastern seaboard at the same time. There was a radiation more up from the south and so they've kind of met here in the southeast relatively recently. But I, I would, I would still call them native, I would still say this was very natural, but you'll notice that these coyotes here in the east tend to be bigger than the ones in the west. They tend to be more, uh, you know, robust, kind of like you would think of a wolf, but they are much smaller, still much smaller than wolves. And you'll also notice here that they get some weird coloration. I don't know if it, a lot of our volunteers on their cameras will say, well that looks like a German shepherd, but it's running with something that looks exactly like a coyote. Well, it's probably a coyote. It's just picked up some of those genes.

Tracey Peake: [11:33](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=693.6) So it's like the AKC for coyote basically, except the wild version. That's interesting. So with all of these animals here, um, what does this tell us about their species? Like what does this tell us about in a human expansion and our impact on sort of their habitats?

Arielle: [11:51](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=711.75) So what we found in our study, we looked at things like diversity. So the number of species and exactly what species were getting in the suburban areas versus the wild areas and it was really, really similar. And so that tells us that for these species that are here right now, for most of them, they're doing pretty well in these suburban areas and they have been able to adapt. You have to remember, some people don't realize this, but actually there were very few deer, for example, even raccoons, certainly coyotes as we just talked about, even a hundred years ago because the forest was all actually had been cut down during the 18 hundreds, right when, as we human beings swept through here and it started growing back. And so now we have all of these species and they're having to contend with this urbanization with suburbia, and they're doing a pretty decent job. Those species that we call, especially those species that we called generalists. So those are like your foxes, raccoons, possums. These are species that can eat just about anything. Um, they seem to adapt pretty well to humans being around and doing the things that humans do. And so this is a, seems to be a good enough environment for them as compared to wild areas, but it is also important to remember that there are very sensitive species that are, you know, either rare or they have a very specialized diet, for example, this doesn't apply to, to here in the United States, but giant ant eaters, for example, in South America, central and South America, they wouldn't probably, they wouldn't do very well in a suburban area because they have a very, very specialized diet and they need, you know, these areas that are protected that, um, you know, offer areas for them to, to eat their ants and termites.

Tracey Peake: [13:39](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=819.64) Do we have any of those species here that we would normally expect to see that maybe would prey on possums or raccoons or foxes, but that we don't see because they're not generalist enough to survive. Do we have kind of like the analog to the ant eater for southeastern U.S.?

Arielle: [13:58](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=838.37) It's an interesting question for the southeastern us. Um, there are a couple more sensitive species that I can think of. Some members of the weasel family, like a minx. Um, some of the, of the rare weasels that, that we have around the state, I could see, you know, being a little bit more specialized in terms of being, um, you know, very carnivorous. The bobcat would also, to a certain extent that would apply to the bobcat. They are entirely carnivorous and they don't, they don't eat a lot of the different things that a coyote or a raccoon would who could eat just about anything.

Speaker 2: [14:34](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=874.3) So we would expect them to be a little bit more sensitive. Um, we don't, you know, we have a course red wolves which are sensitive for another reason because they're so rare. Elk would also again be sensitive for another reason because they're, they're so rare, but nothing to the extent of, of, of the anteater example of that I gave.

Tracey Peake: [14:56](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=896.99) You may or may not be familiar with this, but a few weeks back there was a story in the news about a ups delivery driver who failed to deliver a package to someone. I believe it was in Virginia, but southeastern United States because there was a bear in the driveway. Did we have any evidence of large mammals like bears running around in suburbia or is that just a crazy outlier?

Arielle: [15:19](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=919.46) No, we definitely. So in our study in Washington DC, we had bears in the excerpt in area of the gradient, not in the suburban, but they were getting, you know, uh, you can imagine some of the neighborhoods and the outskirts of Raleigh that, that they could, you know, be very happy there. In Raleigh and in the triad, so bears as part of the bear management plan of the state, the State Wildlife Resources Commission actively discouraged as colonization of the Piedmont by black bears. And so we didn't have any black bears in the, in the North Carolina portion of our study, but we do know from an ongoing study of bears in the Asheville area that they are very capable of colonizing and, you know, doing very, very well in suburban, um, and you know, it's more exurban, some, some of the lower level suburban areas and they will happily swim in your pool and your trash and, you know, um, for obvious reasons, um, you know, there are there practices that the wildlife resources commission encourages in terms of discouraging behavior because we can coexist with bobcats and we can coexist with bears, we can coexist with coyotes, but we need to kind of think about how we're approaching those animals. For example, we never want to feed them or encourage them to, to approach us further than just kind of looking at them from a distance and enjoying them.

Tracey Peake: [16:41](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=1001.56) And I'm very happy to look at a bear from a distance. Swimming in a pool that would be quite disturbing. Are the findings for this study good news for us in terms of conservation efforts or what is it telling us about what we need to do?

Arielle: [16:58](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=1018.46) Yeah, it's, I think it's telling us that we are doing a good job of providing. So one of the main things that we found in terms of some of these more, what we would consider sensitive species like bobcat's or even coyotes to a certain extent in terms of them being able to colonize some of these suburban areas is green space and in terms of conservation in our cities, especially in these two cities, Washington and Raleigh, um, we're doing a pretty good job of providing green space and allowing these animals have the ability to navigate some of these more, you know, tough areas where they might not be able to. Um, but again, you know, it's important to realize that these are, for the most part generalist species, meaning that these are the species that would be expected to easily adapt to things like urbanization and that it doesn't mean that we should stop conserving, you know, our national parks or state parks are game lands and places like that where we're more sensitive species, more rare species might, you know, would still need that space to kind of survive and if there are species that haven't adapted that may over time allowing them this, this green space and these, these protected areas could give them the time to be able to make those, those adaptive leaps.

Tracey Peake: [18:19](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=1099.89) What would your advice be to the normal suburban dweller who may walk out onto his or her back porch and encounter a raccoon or a possum or a fox or some species of wild animal that they are not expecting to see. Are there certain precautions we want to take? We obviously don't want to feed our domestic pets to these animals and they would completely eat them. Some of them.

Arielle: [18:47](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=1127.03) Yeah, some of them certainly, you know, a coyote would, would be capable of eating something like a cat or a small dog. A raccoon could certainly, you know, fight with a cat and, and you know, cause some injury. So obviously, yeah, we would keep our pets inside if, if, if that's, you know, you kind of walk out or you look at one day and there's a coyote in your yard or something like that. For the most part though, most people will never see these animals. It is relatively rare if you're not feeding them, that's the really the main message. You don't want to encourage them to come into your space by providing them food intentionally. So you know, you don't ever want to put a cookie out for a raccoon because that raccoon will come back and bring his friends. So if you're not intentionally feeding them, they'll generally just pass through your yard. Occasionally. If you have things like track open trash, so you're not intentionally feeding them, but you might be accidentally feeding them open trash. Sometimes gardens will, will attract especially, um, rabbits and deer which are not particularly offensive to anyone, but it'll sometimes attract your raccoon or your possum. And so I'm just kind of limiting that as much as possible. And then if there is one, uh, you know, just kind of give them as much space as you can and they will move on, especially if there's nothing enticing like food available.

Tracey Peake: [20:13](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=1213.28) What are the next steps for you in terms of this work?

Arielle: [20:17](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=1217.46) What I'm really interested in next is looking at the interactions between species and how those might be affected by levels of urbanization. A lot of these species, especially the more sensitive ones are using green spaces in these suburban areas. And because they're suburban areas as green spaces tend to be pretty small, you know, we're talking about a neighborhood woodlot or even just, you know, your wooded backyard. And so if they're all kind of funneled into these green spaces than we would expect the interactions between them maybe to different than in wild areas where they have kind of more choices in terms of where they go, so maybe they're more tolerant of each other or maybe there's more kind of aggressive interaction. And so that's something that we'll be looking into, um, as a followup.

Tracey Peake: [21:02](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=1262.86) That would be interesting. So if predators and prey or squeezed into a smaller area that could be interesting.

Arielle: [21:09](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=1269.82) Right. And there are some thoughts that that prey species actually use humans as a type of shield so they actually like our, our rabbits and squirrels and even deer will come closer and closer to humans because they know that the bigger predators are more reticent to do so. Um, but as we're seeing kind of this, you know, pretty strong level of these predators being tolerant of the suburban areas, then it's unclear whether that, that shielding effect is really is really effective or not.

Tracey Peake: [21:42](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=1302.97) Will there be a citizen science aspect to the future projects as well?

Arielle: [21:47](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=1307.32) Yeah, absolutely. So this project, this particular one we've already kind of finished collecting the data on, but we actually have an ongoing project across the entire state of North Carolina, which is called North Carolina's candid critters and so that we are definitely inviting volunteer citizen scientists from around the state to help us. We have another year and a half or so on that project and it's going to cover multiple cities across the state. Um, and just, you know, multiple wild areas and we're just trying to, to get a really, really well rounded picture of what's going on.

Tracey Peake: [22:23](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=1343.53) So if anyone listening wanted to participate, they could just google candid critters.

Arielle: [22:28](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=1348.061) So the website is NC candid critters that o r, g. okay. And they can sign up right there and find out more about the project.

Tracey Peake: [22:36](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=1356.76) That's wonderful. So to leave us on sort of a final note, what to you is the aspect of this research that is the most exciting?

Arielle: [22:48](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=1368.25) Well, I think the mere fact that we share our cities with so much wildlife is really amazing. I mean, you might not be able to walk outside and see a bobcat or a coyote, but they're there and they're around us and that is is pretty amazing that we actually live in wilder areas than we think.

Tracey Peake: [23:10](https://www.temi.com/editor/t/XtezPr6ipxYfyDWw3QJfz7osjtnGmegASCi0QQafrHcwu_zaaTnLu2Yo-DeSN_PWKSshbmYZ-RL_DeGG_QQxGhskMYE?loadFrom=DocumentDeeplink&ts=1390.06) I think that's amazing too. I liked the idea of wild suburbia or not so cut off from nature just because we live in a neighborhood. Exactly. We have been speaking with Arielle Parsons, a graduate student here at NC state and a researcher at the North Carolina Museum of Natural Sciences. This has been audio abstract. I'm your host, Tracey Peake. Thank you so much for listening.