

TCH CREW: What is a sloth's favorite icy treat?

TCH CREW: I don't know, what?

TCH CREW: A slow cone! [laughter]

TCH CREW: It's time for the Children's Hour, Kids Public Radio!

[MUSIC, Good Day (feat. Kati Gazela), Mega Ran & G. Love & Special Sauce]

[00:02:20]

KATIE STONE: That was Mega Ran from his brand new kid's CD called Buddy's Magic Toy Box, and that song had G. Love and Special Sauce on it. Good day. It is a good day on the Children's Hour, I'm Katie Stone, delighted to be here with so many great kids at the Outpost Performance Space and on Zoom. Who do we have with us today?

TCH CREW: Hi, it is Corbett. Hello, it's Cade. Hi, it's Kodiak. Hi, it's Kaibia. Hi, it's Lucas D. Hi, it's Jo. Hi, it's Nina. Hi, it's Amaya. Hi, it's Thorfinn. Hi. Hi, it's Jude. Hello, it's Amadeus.

KATIE STONE: Well, thanks so much for being here, everyone. Today's show is one we shouldn't rush into, given the topic. We're going to be discussing sloths, those adorable, furry, smiley creatures that Think of maybe in cartoons or in the trees dangling around. We're speaking with Georgianne Irvine from the San Diego Zoo. She's an author and has a new book about Tornero, one of the sloths that lives there. We're going to hear a review of her book, and we're also going to talk with Sam Trull, she's from the Sloth Institute which is all the way down in Costa Rica. And we're going to speak with her about all the things that make sloths, sloths. There's a lot to learn about sloths. And this episode comes with the Learn Along Guide. They're digital now. They meet and cite national education standards, find it at Childrenshour.Org, look for sloths. This is Claudia Robin Gunn, right here on the Children's Hour.

[MUSIC, The Very Busy Sloth, Claudia Robin Gunn]

[00:07:27]

KATIE STONE: Today on the Children's Hour, we're going to learn about sloths, and sloths are a creature that make us think a lot about how they move. They're slow. They mostly hang out all day. The word sloth even comes from Middle English as a way of calling somebody lazy. But sloths were not always these slow tree creatures that we know today.

In Paleolithic times, from about 3 million to just 11, 000 years ago, sloths used to live right here in New Mexico. when they were the size of hippopotamuses. And since then, they've evolved into the little furry creatures we know and love today. Our first guest on the show is Georgiane Irvine. She's Director of Publishing at the San Diego Zoo and author of its Hope and Inspiration Collection. Those are true stories about real animals living at the zoo. The newest is about torn narrow, the sloth. Let's start from the very, very beginning. What makes a sloth a sloth?

GEORGEANNE IRVINE: A sloth is a mammal, and it is related distantly to anteaters and armadillos, but it spends most of its time up in the trees. And you've got the two toed sloth and some scientists call them two-fingered sloth and the three toed sloth. And they weigh about 20 pounds. So they do not weigh as much as an elephant. And they live in the rainforests of Central and South America. The particular sloth that I've written about, Tornero, lives in the Amazon in Brazil. And like I said, they do almost everything upside down. They also can swim, which is my favorite sloth fact, but they've got long curved claws. So the two-toed sloth has two claws on its top paws, but it's got three on the bottom. The three toed sloth has three top claws and three bottom claws and they're different. The three toed sloth actually has a small tail and the two toed sloth does not. So they look similar but they really are pretty, they even have different behaviors.

The three toed sloth, you might notice if you look at a picture, has a mask under its eyes and the two toed sloth does not have that. They have a very slow metabolism, and like I said, they eat leaves, and so it takes a long time for all of their food to digest, so they evolve that way, and because they live up in the trees, they don't need to move really quickly.

I think, in my readings, scientists aren't absolutely sure why they move so slow, but there are lots of theories, and one is that they live up in the treetops, and it's pretty hard to move quickly up in the treetops, and they don't need to, and they move slowly to get their food.

TCH CREW: How does the sloth survive for all this time when it has very little way to defend itself from predators?

GEORGEANNE IRVINE: Keep in mind the sloth has very sharp claws. So if something's trying to pull it, it can hang on really tight and they're very strong. They're really high in the trees. So a jaguar can climb a tree, but if a sloth is higher in the thinner part of the branches, it probably cannot get up that high. However, if it were at the very top of the tree and it had a baby on its back or belly, a harpy eagle could swoop in and grab the baby with its talons.

The problem with most sloth species and many animal species is truly loss of habitat. That is the biggest challenge and roads, homes being built in the Forest being isolated in a tract of forest, and the next forest is 20 miles away. Genetic diversity is a challenge as well. So in a healthy forest, that's not going to be a problem that they're, some of them are eaten by predators, but it's a bigger problem that their habitat is being destroyed and they also sometimes get electrocuted. So when you're living in a neighborhood, even if there are trees and you're adapting, it is possible that they climb up and they can get electrocuted too. So it's really human encroachment on their habitat. That is their biggest issue on survival.

KATIE STONE: That's Georgian Irvine. She's Director of Publishing at the San Diego Zoo, and her latest book is Teaching Tornero. We've got a review coming up in just a little bit. Thank you so much for being with us on the Children's Hour. We've learned a lot.

GEORGEANNE IRVINE: Thank you, it was a pleasure.

[MUSIC, Lazy Sloth, Mr. Nature's Music Garden, Slow Silly Sloth, Dance n' Beats]

[00:17:41]

KATIE STONE: Slow Silly Sloth is dancing beats from Kid Beats Dancing in the Rainforest, and Lazy Sloth was Mr. Nature's Music Garden from Let's Go on an Adventure. In the background, we're hearing Brent Lewis. You're listening to the Children's Hour. [00:18:00] Today, we're learning about sloths. Georgeanne Irvine's book, "Teaching Tornero", gets reviewed by Joe on our kids group coming right up after

the break. And we are headed down to Costa Rica to talk with some scientists working directly with sloths up in the tree canopy. Today's episode comes with a learn along guide. It's digital now, and you can find it at Childrenshour.Org. Look. And oh, by the way, so many cute pictures of sloths are posted there, too. Stick with us, we've got a lot more.

[BREAK]

TCH CREW: Hello, my name is Jo Christopher and I will be reviewing "Teaching Tornero" by Georgeanne Irvine published by Blue Sneaker Press. "Teaching Tornero" is a non-fiction book about an adorable sloth named Tornero who works as an ambassador at the San Diego Zoo. The book explores his life as a young sloth, as well as the many adventures he's had up to this point. It also describes how his trainers taught him to become a good ambassador, and how to love being around people. I loved all the photos, which were very cute and fun. They really helped make the story intriguing. I give this book 4 chilis. The book is recommended for kids ages 6 to 10. The book is called Teaching to an Arrow by Georgeanne Irvine, published by Blue Sneaker Press. This is Jo Christopher from the Children's Song.

[00:20:03]

KATIE STONE: Many thanks to Jo for that book review. Up next, this is Don't Splash Marty with "The Sloth Song".

[MUSIC, The Sloth Song, Don't Splash Marty]

[00:23:28]

KATIE STONE: You're listening to the Children's Hour. We're talking about sloths today. And as Georgeanne Irvine from the San Diego Zoo told us, there's a lot of problems facing sloths today. They're vulnerable to deforestation, injuries, and even illness. And we wanted to talk with somebody who actually helps sloths recover when they're suffering.

That's called rehabilitation. Sam Trull is the co-founder and director of the Sloth Institute. That's in Manuel Antonio, Costa Rica. Welcome to the Children's Hour, Sam. Tell us what the Sloth Institute does.

SAM TRULL: One of the main things that the Sloth Institute does, or at least I would say the most time consuming and expensive, is the actual

rescue, rehab, and release of sloths. And when we first started the Sloth Institute ten years ago, our very first research project, and the big goal was to figure out how to release hand raised orphan sloths. Because at the time, it wasn't actually being done in Costa Rica. It was thought to not be possible. Because the theory was that hand raised orphan sloths didn't know how to survive in the wild.

But after I raised my first set of hand raised sloths, I knew there was no way I was leaving them in a cage for the rest of their lives. But I wanted to make sure and do it in a very careful, scientific way so it could be replicated by ourselves and by other rescue centers. And also, so we would be there for every step of the way in case the sloth needed any help.

So that's when we started our tracking program, and we track sloths using little collars with batteries that go around their neck. They're very non-invasive. We make sure they're very small, less than 2 percent of their body weight. And that's how we were able to create the first and the best successful protocol for how to release hand raised sloths.

And then at the same time, we're simultaneously studying the behavioral ecology of wild sloths to make sure that they are, in fact, doing well in the wild. And then, to tackle long term issues with sloths, habitat destruction is the biggest threat that they face, so we work with landowners to help them better trim their trees or try to convince them not to trim the tree if it's a really important tree. But if it is a tree that they have to trim, we work with them to make it not so horrible for the animals.

And then we also put up rope bridges throughout the forest to try to prevent sloths and other animals from even getting to the roads to begin with. We call those sloth speedways. And then we have multiple different research projects that we do to study the behavioral ecology, the wild health of sloths, so all different things like that.

TCH CREW: How many species of sloth do we know about?

SAM TRULL: Currently, there's seven species of sloths recognized by science. So, two two-fingered species, and then five three-fingered species. They actually just recently discovered another species in Brazil like a few months ago, so this is like a newer thing. It used to be six, now it's seven.

So, the two different types of sloths are separate genres. The two different types of sloths have been evolving separately for at least 40 million years, making them the most extreme example of convergent evolution in mammals. Their closest ancestor that they ever had that was similar. is at least 40 million years ago, whereas our closest ancestor with chimps, for example, is four to six million years ago.

So we're way more closely related to chimps than the two different kinds of sloths are to each other, and I think that that's really cool.

KATIE STONE: Since sloths mostly hide in the trees, how do we know how big the global population is?

SAM TRULL: It depends. So, for example, the most critically endangered sloths, like the pygmy sloth, which is only found on one little island off the coast of Panama.

They think that there's only a few hundred of those guys, but they're only found on that island. And so, it's easier to census them, because you only have to look on that one island. As far as, like, in the country of Costa Rica, there's not really a good ballpark figure. We have a ballpark figure for Manuel Antonio of probably around 3,500 sloths, so like 3,000 ish of both kinds, like together. But then also the density of the sloths varies. So there's – a lot of them really like to be near the beach. So Manuel Antonio has a higher density. As soon as you start going inland and higher up in the mountains, that density goes way down.

That's one reason it's really important to protect biodiversity hotspots. And then of course, I'm specifically talking about sloth hotspots and with emerging diseases, for example, if you look at koalas in Australia, 10 years ago, nobody was worried koalas were going to go extinct, but now they are. And it's a combination of wildfires and a seriously infectious disease.

So even if a species isn't considered technically endangered, that doesn't mean they're not still in danger and sloths, sloths definitely fall under that category because they're not only susceptible to all the same things all other terrestrial animals are with climate change, but they're also susceptible to diseases, to habitat destruction. So it's important to save sloths now.

KATIE STONE: That's Sam Trull from the Sloth Institute in Manuel Antonio, Costa Rica. We've got more questions for her in just a moment. You're listening to the Children's Hour.

[MUSIC, Sloth, Mr. T & Friends]

[00:31:25] **KATIE STONE:** That's Mr. T & Friends right here on the Children's Hour with the sloth song that is just called "Sloth". It's actually an anthem of sorts for the Sloth Institute. They're our guests today on the show. We're with Sam Trull, who's joining us from Manuel Antonio, Costa Rica. Sam, your organization does rehabilitation with sloths. Why do sloths end up needing rehabilitation?

SAM TRULL: That can vary around the country as well. One of the most common reasons we see injured sloths in Manuel Antonio is electrocution, especially with adult two-fingered sloths.

KATIE STONE: Yeah, I had read about that, that there's just bad transmission lines in Costa Rica that aren't insulated, and so the sloths just touch a transmission line in electrical wire and they get electrocuted. What else do you get?

SAM TRULL: Orphans is another huge one and with orphans, the reason why they're orphaned is very varied and sometimes we don't know, but electrocution is for sure, I would say, the number one issue along with habitat destruction. Those two obviously go hand in hand, but the thing with habitat destruction is that there can be all these secondary losses.

So with electrocution it's very obvious this animal was burned. But with habitat loss, it can be something as simple as one tree was taken out of the home range of a recently weaned sloth. That weaned sloth is very small when mom weans them, which means she stops giving milk and leaves the baby on its own. And mother sloths will lead their babies in the natal home range, so it's at all the places where she showed them where they could find food. So when one tree is taken out of that habitat, they all of a sudden don't have enough food to grow up and to survive. So they can slowly get sick from being skinny and having a weakened immune system and things like that. So that is caused by human encouragement in their environment, but it's not obvious. It'll just come in as like a skinny, sick sloth. And so every time we rescue a sloth, we can

never say that it definitely isn't connected to human encouragement in some way. It most likely is. Also, dog attacks is a big problem.

TCH CREW: How do you figure out what care a sick sloth needs?

SAM TRULL: So the first thing we do is we do a health check exam. That includes taking measurements, like the weight of the sloth, the quality of their skin. We check their eyes, their ears, their nose, basically like a full, full examination of how healthy the sloth is.

And then based on what they've been through, then we start a treatment plan. So for orphans, they go into our sloth school system. They start being raised based on what age they come in at. So newborns start at elementary school. And then if it's an older sloth, like let's say one that was already weaned by its mom, but, you know, it lost a tree in its natal home range, and so it's not doing so well, but it's already weaned. So those guys can go straight into high school, for example, and it doesn't take quite as long to get them fully graduated and back into the wild and free. With injured sloths, depending on how critical they are, like, you know, if they're on IV fluids versus being able to be hand fed.

Sometimes our vet needs to do surgery. A lot of times, unfortunately, electrocutions will immediately kill and completely fry one of their limbs, which the only thing you can do in that situation is remove the affected limb because ultimately the sloth would die, but luckily sloths are, as sensitive as they can be, they also can be very, very strong and can survive incredible trauma. So, we have a pretty good success rate, even with all of these horrible injuries that we see.

KATIE STONE: So you've got this great process for helping the animals, but I would imagine it takes different amounts of time to rehabilitate a sloth. How long can that take?

SAM TRULL: So sometimes sloths, when they're dispersing, so they've, they've gone through their natal home range, they've gotten to the dispersal way, and so then that's when they leave the natal range to go find somewhere else for them to permanently live. And most mammals have some sort of dispersal, or animals in general, so that they don't accidentally inbreed with their relatives.

KATIE STONE: Oh wait, their natal home is their birth home area, and then dispersing, you mean spreading out, like they move out as young adults, kind of like humans.

SAM TRULL: But when a sloth does this, it's the most dangerous time in their life because they're going into a period of food uncertainty and also in a human encroached environment, just general safety uncertainty.

So, and so when that happens, we get called out, we rescue the sloth, and we notice that they're really dehydrated, really tired, and they have a bunch of ticks. And when that happens, we give them a few spa days because their immune system is really depressed at that point. They're very hungry. But after like three or four days with us, they're ready to go.

They just need like a good meal, maybe, you know, help getting the ticks off, and then we find them a really nice place to live and we take them to a much better forest than where they were found. So that's the best case scenario. The longest amount of time we've, we have sloths with us would be two-fingered orphans because they take two years to fully finish growing up and be released with us if they come in as a newborn, so – and three-fingers take about a year. In the wild with their mothers, it takes about half the time that it does with us. So a three--fingered mom spends about a year with gestation and then post birth time with the baby. Two-fingered's, it's much longer. So gestation for two-fingers is 10 to 11 months.

Even longer than us. And then they're with their mom for a whole year after they're born. So, there's a lot of maternal investment with sloths and their moms. So, for sure, the orphans are with us the longest. Or somebody who's severely electrocuted. That can take maybe like six months for, or a broken limb, that takes a really long time to heal as well.

KATIE STONE: Oh, ouch, poor sloths. We're talking with Sam Trull from the Sloth Institute in Manuel Antonio, Costa Rica, and you're listening to The Children's Hour. In the background, it's the "Sunny Sloth Song" by Monster Rally from Flowering Jungle. You're listening to The Children's Hour. We're learning about Sloths today on the show, you can learn along with us and learn even more or bring the Children's Hour into the classroom. This episode comes with a learn along guide.

It meets and cites national education standards, and you can find it at Childrenshour.org. Look for this episode, "Sloths". Let us know what you

think of the show while you're at our homepage. We'd love to hear from you. We've got more with Sam Trull from the Sloth Institute in Costa Rica coming up right after this break.

[BREAK]

[00:40:00]

KATIE STONE: "Animal For The Day" is Penny Pom Pom from Believe in Your Magic. That's a little clip from it. You're listening to the Children's Hour. I'm Katie Stone. We're on the line with Sam Trull from the Sloth Institute located in Manuel Antonio, Costa Rica. Sam, how do you feed all the sloths in your care?

SAM TRULL: One of our team members, the large chunk of his day is collecting leaves for the sloths every single day because it takes a lot of time to collect enough food to feed these guys, and they're very picky eaters, so you can't just collect anything.

And then we also try to collect a well rounded diet, so we don't collect the same leaf every day, and there's a whole science behind feeding these guys, and that's certainly, I think, one of the big pieces of why our program is so successful, is what we feed them. I liken them to Goldilocks, because the leaf can't be too young, and it can't be too old, it has to be just right.

And you can't give them the same leaf too many days in a row or they stop liking it and they want something different. And sloths would rather starve themselves than eat something they don't want to eat. Like, they don't just eat because they're starving and hungry. Like, it has to be the right thing.

Like, some of the leaf species that they like, for example, are some things that we know. So, like, two-fingered sloths, they like the leaves from mango trees. They like the leaves from beech almond trees. They like the leaves from water apple trees. Three-fingered sloths are really well known for eating this one type of tree. It's Cecropia, but here, the local name is Guarumo.

But for three-fingered sloths, you cannot feed them anything that's purchased from a grocery store. Like, everything has to be collected from the wild. With two-fingered sloths, they will eat some vegetables, if

needed. That's not really the best thing for their diet, so we only supplement their diet with veggies a little bit just to make sure that they have all the right calories and things.

Two-fingered sloths are slightly omnivorous, so they can have some animal matter. Like, in the wild, they'll actually collect and eat bugs, like moths and things like that, and they can eat eggs. The vast majority of their diet sleeps.

TCH CREW: How long can a healthy sloth live?

SAM TRULL: We don't really know exactly how long they can live. In captivity, there's been some two-fingered sloths that have lived into their 50s. But three-fingered's don't do well in captivity at all, so no one really knows how long they can live, and they have a 31 percent slower metabolism than two-fingered sloths, meaning there's a decent chance they could live even longer than two-fingered sloths.

But of course, in the wild, they have to deal with predators, disease, especially in a human encroached environment, so no one really knows exactly how long sloths can live in the wild, but for sure, multiple decades, at least.

TCH CREW: Are sloths social with each other?

SAM TRULL: They are pretty much solitary. But they will interact, of course, with each other when they come across each other. They will get into arguments sometimes. The two-fingered males especially are extremely territorial and will fight each other and their fights can look pretty scary. And pretty much the goal of a sloth fight is to get the other sloth out of the tree that you're in. So they swat and they bite each other's hands and feet and they just want the sloth to let go – the other sloth to let go and get out of the tree, but three-fingered's are much better at living in close proximity to one another.

They don't necessarily hang out or touch or anything like that, but it's not uncommon to see a group of three-fingered's in the same tree. So, like, multiple females are usually good in the same tree together, but males, again, are very territorial, so multiple males you wouldn't normally see, but we've definitely seen, like, a group of females and one male hanging out in a tree together, and hanging out, it just means resting within a few meters of each other. But that's about as social as they get, but when

you think about sloths and their strategy for survival in the forest, they can't really risk being too social because social animals are usually louder animals. Being gregarious comes with making noise. And sloths survive in the forest by being invisible and being quiet.

KATIE STONE: More with Sam Trull from the Sloth Institute, based in Manuel Antonio, Costa Rica, in just a moment. You're listening to the Children's Hour.

[MUSIC, Super Slow Sloth Song, Hugo F M]

[00:45:03]

KATIE STONE: That's Super Slow Sloth by Hugo F M right here on The Children's Hour. Sam Trull is with us from the Sloth Institute in Manuel Antonio, Costa Rica. They are a sloth rescue organization that does so much more. And Amadeus has a question for you.

TCH CREW: What inspired you to become a sloth expert?

SAM TRULL: My background is all in primatology, my graduate work is in primatology. And I first came to Costa Rica with the intention to work with spider monkeys, because I love spider monkeys. They're really great. And I was volunteering at a rescue center, and they handed me a baby sloth. And they literally said, "Don't get attached, but do whatever you need to do to keep the sloth alive, because they always die."

And I was like, "Uh, okay." And I'd raised baby primates before, lemurs and various monkey species, so I just treated the sloth like a baby primate. Not with the type of milk: luckily, I knew that, for example, they drink goat milk. But everything else I pretty much had to figure out. And so that baby sloth survived, and then the next one, and then the next one, and then the next one.

And I knew that I was not gonna leave them in captivity for forever. That's not why I woke up every two hours for two years, raising them. And so, the Sloth Institute was really born out of the need to figure out how to release hand raised orphaned sloths. But, of course, we've grown from there, and there's still so much more to learn, and so many different ways that sloths need to be saved, and different ways that sloths really need a champion, because their conservation is definitely not assured. Yet.

KATIE STONE: We're just about to end our time together with you, Sam Trull. Thanks so much for being on the Children's Hour. But before we go, for all of us listening across the world, what can we do to support sloths in our own communities?

SAM TRULL: I think one of the biggest things that anybody can do from anywhere that they live is focus on being a responsible sloth tourist. Because one of the big problems that sloths face all over the world, and that includes in the US, at a lot of different captive facilities, is sloths are extremely popular and people want to be close to them. They want to touch them, they want to take pictures with them. They think that because they love sloths, they need to have these close encounters with them, but in actuality, they don't. That is a huge, huge problem for wild sloths. Sloths are literally being taken from the wild, purchased from the wild, and brought to the U.S. to be sold to lots of little tiny private facilities, where they'll offer like, hold and feed this baby sloth, or take a picture with this baby sloth. So it's really, really important that tourists, even in the U.S., do their research about where they're seeing sloths. So like, big zoos like San Diego Zoo, for example, is a great place to go and see all kinds of animals because you know they're going to be well cared for and you know that they're accredited. Basically, any place that lets you get too close to the sloth probably does not have the sloth's best interest in mind and has probably purchased that sloth from the wild.

And then when you go to visit sloths in places like Costa Rica, you also have to be careful with rescue centers, places that pretend to be rescue centers, but really they're just trying to collect animals to have people come and see so they can make money. So it's just, sloths are really being exploited for their cuteness and their popularity and so it's just really important to be really careful and cognizant as someone who loves sloths that you're not paying for participating in activities that actually hurt them.

That was Sam Trull from the Sloth Institute. She spoke with us from Manuel Antonio, Costa Rica. We've got a link to their website and pictures of these adorable sloths that they take care of at childrenshour.org. Look for this episode, "Sloths". There you'll also find a learn along guide that meets and cites national education standards. It's digital now, so you don't need to print anything unless you want to. Check it out at childrenshour.org/sloths.

[MUSIC, Sloth, Hang Out In Trees]

KATIE STONE: In the background, Hang Out In Trees is the name of the band, and that's their "Sloth Song". You're listening to The Children's Hour, I'm Katie Stone. You can learn more about sloths and see cute pictures and so much more at childrensHour.org. Look for this episode, "Sloths". But giant Paleolithic mega sloths came up in our conversation recently for our fossils episode. We were talking with La Brea Tar Pits and there, they have found the Paleolithic sloths preserved. There have also been sloth footprints found at White Sands National Monument. We talk a little bit about that in our Brief History of the American Southwest series. That's in episode one. You can find all of this at ChildrensHour.org or reach out to us. We'd love to hear from you. We're going to go out with one more. This is John Long from John Long's Lost and Found. With the mean ol rootin ground sloth. And remember, they've been extinct for nearly 11,000 years.

Thanks for listening to the Children's Hour. We hope you enjoyed learning about sloths. We'll catch you next time.

[MUSIC, Mean Ole Rootin' Ground Sloth]

[CREDITS]