



JULY 2016: SPIRIT IS FED GOAT MILK WITH A TINY SYRINGE

Since 1992, the first advocate
for sloths in Costa Rica

SlothSanctuary.com
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sloth talk

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FOUNDER'S NOTE

Dear Friends,

Rescued sloths are brought to us by concerned citizens, firefighters and the ministry that governs wildlife centers in Costa Rica. Animals arrive injured, orphaned, abandoned, hypothermic, mangy, dehydrated or near death. We assess each case and set a rehabilitation plan for that individual's best quality of life.

Can every sloth be released back to the wild after rehab? No. About 10% of the rescued sloths have a permanent disability. The balance were rescued as infants and lack essential survival skills that can only be taught by a sloth mother. When a baby sloth is not taught how to forage, what risks are worth taking and how to evade predators, they are more likely to perish from malnutrition or injury.

All of the sloths in our care were either raised without their mothers or had been victims of perils caused by humans (e.g., hit by cars, electrocuted by power lines, attacked by pet/guard dogs). We owe it to them to protect them. Setting them free without tracking and analyzing the success rate would be irresponsible.

Recent scientific research about other mammals (specifically pandas and orangutans) indicates that releasing formerly-captive, hand-reared animals to the wild may cause an imbalance in the gene pool—resulting in birth defects, deformities and more. We are monitoring this research to see if the same holds true for sloths. While *Bradypus variegatus* and *Choloepus hoffmanni* are not endangered at this time, we need to be conservative about releases until we know more about long-term effects on wild populations. We are thankful to you—our supporters, well-wishers and friends—for allowing us to continue our mission of humane care for rescued sloths. Happy holidays and best wishes for the new year ahead.

Judy Avey-Arroyo, Founder

UPDATE: SPIRIT

PHOTOS © R RICHARDSON



OCTOBER 2016: SPIRIT PRACTICES CLIMBING

Spirit arrived here on February 20th suffering from aspiration pneumonia, having been fed cow's milk by her rescuers for two days prior. Weighing a mere 272g (0.6 lb.) on arrival, Spirit has steadily gained weight that's necessary for healthy development. At 9 months, she is weaning off goat milk and has regular climbing practice. As of this writing, she weighs 1,440g (3.17 lbs.) and is on track to graduate to the Nursery in February 2017 at the age when sloth mothers in the wild socially wean their young. We appreciate the TLC of our handlers: Yesenia, Andrea and new NICU trainee, Nina. We are also indebted to Head Veterinarian Dr. Francisco Arroyo for monitoring Spirit's wellness.





Most people would say yours is a dream job. How did you end up working among sloths?

Growing up in Costa Rica, I was always fascinated by wildlife: monkeys, raccoons, birds, kinkajous and sloths. In September of 2014 Judy Avey-Arroyo was looking for bilingual tour guides. I knew in my heart that this was what I wanted to do. After my hire, I trained with Judy, *Regente* Dr. Francisco Arroyo and Becky Cliffe. It is a dream job to work with sloths, but the best part is educating guests about how special sloths are and why they are important to protect from extinction.

What surprises you most about sloths?

That they recognize individual humans. They are small creatures with proportionally small brains, yet they remember me and know my voice and scent. They allow me to handle them because they know I will be gentle and respectful.

How can we influence people to stop keeping sloths as pets?

Poaching sloths for the exotic pet trade is inhumane. The sloth does not want to be removed from its life in the wild and held against its will. We have rescued several sloths that we can tell were dumped by former pet owners, because

Tour Guide Marco shares his insights about the role—and what surprises him most about working with sloths.

sloths can't be domesticated and therefore are not good pets. As babies they may be cute, but as they mature, their instinct to breed and establish a territory is strong. That's when people dump pet sloths, but the creature can't take care of itself due to being kept as a pet from infancy. It's a terrible cycle. Don't keep a sloth as a pet.

Has public opinion about sloths changed?

People used to think sloths were pests that carried disease, so they would chase them away or kill them! But conservation-minded people like Judy and her late husband Luis Arroyo have helped Costa Ricans understand that sloths are unique, have a special function in the ecosystem and deserve our respect.

Now there is even a sloth on our 10,000 colones bill!

What about the problem of human encroachment on sloth habitats?

I am well aware how roads and power lines adversely affect wildlife. While people need roads and electricity, sloths need large tree-dense territories. Drivers need to expect wildlife on local roads and slow down to avoid hitting animals. Petitioning for insulated power lines in forested areas could help. Or perhaps add spike strips to dissuade sloths from climbing power poles?

Direct contact with sloths is prohibited for tour guests, but why are you allowed to hold them?

I'm a trained handler and live locally so I don't carry foreign germs that can make sloths ill. I handle the animals regularly—many from their infancy. They know me and trust my interaction with them will be safe, so they aren't under stress when I handle them. I take my tour guide responsibilities seriously and present information to increase guests' curiosity about sloths and the desire to protect them from harm—without having to touch the animals directly. 



RESEARCH UPDATES: SCIENTISTS RYAN HAUPT & BECKY CLIFFE



Ryan J. Haupt is a PhD candidate at the University of Wyoming (USA), studying the paleoecology of sloths, wolves, and crocodiles.

It's hard to believe that giant ground sloths the size of elephants used to roam far and wide, but they did. Fossil sloths are found all the way from Patagonia up through the Yukon Territory and across the Caribbean. My goal as a researcher is to connect the ecology of modern sloths to their extinct relatives. Because there's still loads to learn about living sloths, generating data that can be applied to fossils also teaches us about what's going on in the modern world.

I'm looking at the ancient sloths' diet on an atomic level using stable isotope analysis on the samples I have collected from sloths at the Sanctuary. Depending on a number of factors—digestion, metabolism, body temperature and others—the ratios of heavy to light isotopes shift relative to what the value for the food initially was. For a lot of mammals, we have a pretty good idea of what those shifts look like, but not so for sloths. Because sloths defy mammalian norms in so many ways, I'm trying to double-check the isotope values and shifts as compared to other mammals.

The Sanctuary receives and cares for sloths with all types of injuries. Unfortunately, some succumb to their injuries and pass away. But because the Sanctuary understood the research value of the deceased sloths, they kept them frozen until someone like me came along and said, "Hey, there is a lot of science that I can do with these!" I am able to collect more tissue types than would be ethical to take from a living animal. Why

is this important? Because the fossil record of sloths mostly include bones, though occasionally skin, fur and coprolites (aka, fossil poop). Being able to collect and analyze things

like bones in modern sloths will make the data that much easier to compare to fossil sloths, while also still teaching us about the feeding ecology and digestive physiology of modern tree sloths. Even as a paleontologist focused on the past, I strive to make sure my research is applicable and useful to the here and now, toward the ultimate goal of making sure we can conserve sloths for eons to come. Contribute to my work and follow my podcast at ryanhaupt.com.

Sloths defy mammalian norms in so many ways.



Becky Cliffe, PhD candidate at Swansea University (UK) has had a productive year. In addition to processing and analyzing the data collected during her 6 year stay at the Sloth Sanctuary, she launched her own non-profit, The Sloth Conservation Foundation, to "bring together all people, partners, and institutions working globally with sloths to achieve lasting and targeted conservation solutions."

Recently we've seen an increase in the number of rescued infant sloths presenting birth defects, so we are especially interested in the genetics research Becky is doing. Her conclusions will be informative regarding release strategies—a sensitive topic for wildlife rescue centers worldwide. We applaud Becky's initiative to centralize sloth research for the shared goal of protecting this fascinating species. She even published a 2017 wall calendar to fund her foundation. Follow Becky's progress at slothconservation.com.



PHOTOS © R CLIFFE



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