

Sidedoor (S10E17) – The Birds and the Beans

Lizzie Peabody: Hey there, Sidedoorables. Today's episode is the final story of three we reported from the Smithsonian Tropical Research Institute in Panama. And for this one, we're heading out into the cloud forests of Western Panama. I hope you enjoy.

Lizzie: This is Sidedoor, a podcast from the Smithsonian with support from PRX. I'm Lizzie Peabody. I'm on a remote mountain in Western Panama, about to join in a ritual that people travel from all over the world to take part in—a coffee cupping. It starts with me sticking my nose into different cups of fresh coffee grounds.

Lizzie: This one is more fruity than this one.

Ratibor Hartmann, Sr.: *Mm-hmm.*

Lizzie: Ratibor Hartmann is the owner of this coffee farm, Finca Hartmann. And he's guiding me through the cupping process, which is basically a fancy way of saying a coffee tasting.

Lizzie: Ooh, this one's nice. This one's mellower, less sharp than that one.

Lizzie: Ratibor's son, Ratibor Jr. is cupping alongside me.

Ratibor Hartmann, Jr.: *Dark chocolate.*

Lizzie: Really, this one? Dark chocolate?

Ratibor Hartmann, Jr.: *Yeah. Dark chocolate.*

Lizzie: To me it's, like, green.

Ratibor Hartmann, Jr.: *Green what?*

Lizzie: I'm doing my best to smell, but I'm basically free associating, just saying the color or shape that comes to mind and hoping it makes sense. But standing right next to me are some serious coffee dudes.

Coffee buyer: *That one's exceptional.*

Lizzie: They're potential buyers from New York—young guys with mullets and tattoos and discerning palettes, and they're here to see if they want to buy Ratibor's beans and sell them back in their coffee shops. After we finish smelling the coffee, Ratibor Sr. pours hot water into each cup. As I watch, a bubbly foam of coffee grounds rises to the brim, looking like the caramelized top of a crème brûlée.

Lizzie: *So you just pour the coffee directly on the grounds. There's no filter?*

Ratibor Hartmann, Jr.: *Exactly.*

Lizzie: Then, after exactly four minutes have passed, it's time to "break" the coffee. That means you take a spoon and burst the protective layer of foam and coffee grounds as you stir the cup for the first time. One of the New Yorkers tells me this is the highlight of the entire process.

Coffee buyer: *Everybody wants to break.*

Lizzie: *Really? Why?*

Coffee buyer: *It's the best opportunity to get a big rush of the aroma because it's kind of locking it up, and then when you break it, it releases it all at once.*

Lizzie: After exactly 12 minutes has gone by, it's time to taste. But you don't just pick up each cup and sip on it. Ratibor Sr. hands me a spoon.

Lizzie: *Oh wow, this is a beautiful spoon!*

Lizzie: Everyone takes their spoon, dips it into a cup of coffee and ...

Lizzie: *So why do you need to slurp it? Is it about aerating? Is it about, like ...*

Ratibor Hartmann, Jr.: *Yeah. Aerating for the flavors because you have to combine the air with the coffee to feel all the flavors.*

Lizzie: *Okay. Okay, so you take just the very surface and then go [slurps and coughs]*

Lizzie: There's so much variety in these six different coffees. Some are fruity and light, almost like tea.

Lizzie: *Ooh! This is very different!*

Lizzie: Some are full bodied and dark like a strong cup of coffee that makes your fingers tingle.

Ratibor Hartmann, Sr.: *Pow!*

Lizzie: Professional cuppers like the New Yorkers next to me use something called a flavor wheel to describe coffees. They're looking for things like aroma ...

Coffee buyer: *Flavor.*

Lizzie: ... aftertaste ...

Coffee buyer: *Acidity.*

Lizzie: ... body ...

Coffee buyer: *Balance.*

Lizzie: ... and overall flavor, taking slurp after slurp. The tasting is done blind, so nobody knows exactly which coffee is in which cup until Ratibor looks at the hidden labels. And when he asks me which one I prefer ...

Ratibor Hartmann, Sr.: *¿Cuál es tu favorito?*

Lizzie: ... I kind of freeze in the headlights.

Lizzie: *Um ...*

Lizzie: It's a scary moment. What if I have bad taste and I pick the worst coffee?

Lizzie: *Three and six. Did I pass? [laughs]*

Ratibor Hartmann, Sr.: *Oh, good cupper! [laughs]*

Lizzie: Someone tells me why Ratibor is laughing.

Katherine Arauz-Ponce: *You like good stuff.*

Lizzie: *Oh, okay. [laughs]*

Lizzie: So what is 'the good stuff?' Drumroll please.

Ratibor Hartmann, Sr.: *[drumroll] This coffee is very good. It's very delicate coffee. It's Geisha natural. Geisha naturally, high altitude.*

Lizzie: Geisha coffee. To some specialty coffee lovers, it's the most prized coffee in the entire world, grown right here in the mountains of Panama. Apparently, I have champagne taste. Coffee. It's a beautiful thing to kick start your day, or pick you up in the afternoon, or with a piece of cake. But have you thought about where your daily cup of coffee—or three—comes from? Well, most coffee comes from a very specific part of the world, and this just happens to be the exact same place that's home to something else: migratory birds. And these birds are competing with coffee farms for habitat—and losing.

Lizzie: This time on Sidedoor, we're taking a fully-caffeinated caper through Panama's coffee farms to find out how these remote tropical mountains became a destination for the hippest coffee buyers in the industry, and whether we can have the birds *and* the beans.

Lizzie: Smithsonian researchers are working with Panamanian coffee growers to make sure we can have it all. We've got more brewing and ready to pour after the break.

[NEWS CLIP: *If you're accustomed to waking up to the sound of them chirping or watching them flock to the feeder outside, you might not realize it but birds are in trouble.]*

[NEWS CLIP: *Birds are disappearing from our skies, a new study finds, in the US and in Canada.]*

[NEWS CLIP: *It says more than a quarter of the entire bird population disappeared over the past half century.]*

[NEWS CLIP: *Three billion in just 50 years.]*

Lizzie: You might remember this report from a few years ago. Some called it the "Birds Crisis." But as shocking as it was for most of us to learn that three billion birds had disappeared, some people had seen this coming. People like Russell Greenberg.

Ruth Bennett: *Russell Greenberg was one of the first ornithologists in North America to recognize that migratory songbirds were going through population declines.*

Lizzie: This is Ruth Bennett, a research ecologist at the Smithsonian National Zoo and Conservation Biology Institute's Migratory Bird Center, which was founded by Russell Greenberg, who died in 2013.

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Lizzie: Ornithologists, also known as bird researchers, started tracking songbird populations in the 1960s. By the late 1980s, Russ and other scientists noticed a lot of birds were disappearing. But Russ noticed something peculiar.

Ruth Bennett: *Resident songbirds that spend their entire life in the United States or Canada were not declining, but birds that fly all the way to Latin America, those were the species going through really steep population declines.*

Lizzie: What was happening? Local birds were doing fine, but birds that flew south for the winter clearly were not.

Ruth Bennett: *It suggested that either something was happening during migration, or something was happening to the birds while they were overwintering in Latin America.*

Lizzie: Russ figured, "Something's up with the places where these birds spend their winters, and I'm gonna figure out what it is." So he booked some flights to places like Mexico and Peru.

Ruth Bennett: *Trying to determine where the migratory birds were located, what types of habitats they were using, and what was happening to those habitats to see if he could find a smoking gun that was leading to the declines of these migratory bird species.*

Lizzie: And Russell *did* find a smoking gun. See, migratory birds spend their winters in very specific parts of Latin America—basically, the tropics. Picture mountains covered in rainforest rising up into the clouds. If you're a scarlet tanager or bay-breasted warbler, that is your jam come January. It's also the exact same type of landscape where your daily cup of coffee might be grown.

Ruth Bennett: *The areas where coffee is grown are critical habitat for migratory songbirds, but also a lot of resident birds, forms of life that only exist in the tropics.*

Lizzie: Russell found that a lot of the tropical forests where migratory birds would spend winters were being turned into coffee farms. But when he looked closer at these coffee farms, he noticed something intriguing: not all the farms were bad for birds.

Ruth Bennett: *So one of the things he found in that research is that shaded coffee farms were full of migratory birds. Often more species, more abundance of birds than were found in nearby forests, and definitely more migratory birds than any other agricultural land use.*

Lizzie: These shady coffee farms seemed downright great for birds! And it makes sense: birds live in trees, and if you clearcut the forest to grow coffee, those birds have no homes. But if you grow coffee

under and around the existing trees, you've got birds *and* beans.

Ruth Bennett: *He was really the first person to recognize that working with farmers to conserve that critical habitat on their coffee farms would be one of the ways to stop the decline of migratory birds and then actually start to bring those birds back.*

Lizzie: Russ went to his bosses at the Smithsonian and said, "All right, I've got an idea. What if we work with coffee farmers to preserve bird habitat?" And they were like, "Great! Go see if you can get coffee farmers on board." But it's like the economist Adam Smith once said: "It is not from the benevolence of the butcher, the brewer or the baker that we expect our dinner, but from their regard for their own interest."

Lizzie: In other words: money, money, money. Coffee farmers have to make a living just like everyone else. And they were struggling to make money at this exact time. Because in the late '80s and early '90s, coffee was having its own sort of crisis.

[NEWS CLIP: *The International Coffee Organization suspended all export limits today, foreshadowing a drop in coffee prices worldwide. After the announcement, prices of coffee futures collapsed to an eight-year low.]*

Lizzie: This is from the *New York Times* in 1989, one week after Russell published a report about the decline in migratory bird populations. See, up until then, the International Coffee Organization basically controlled coffee prices worldwide by limiting how many beans each country could export. But in the summer of '89, it did away with those restrictions, and it was a 1980's-style free market free-for-all. Coffee-producing countries cranked up production to the max, the logic being: grow more coffee, sell more coffee, make more money.

Lizzie: But that is not what happened. Coffee beans flooded the market and prices collapsed. Big commodity coffee buyers like Folgers and Maxwell House bought up the cheap beans and made huge profits. And I want to pause for a second and flag this term "commodity." Commodity coffee is the most basic level of coffee. Nothing fancy. It doesn't matter which farm the coffee comes from—all the beans get thrown into the same pot and sold together. So while bird populations were going down due to coffee farming, these same coffee farmers couldn't even make enough money to support themselves. Small coffee farmers around the world were going out of business. And Panama was no exception.

Maria Ruiz: *Forty percent of the total area of coffee went down because nobody was paying anymore.*

Lizzie: Maria Ruiz is the owner of Ruiz Coffee Distributors in Boquete, Panama, and she remembers the coffee crisis which put many small family farms out of business. She says coffee growing tends to be a family business because it takes so long for coffee plants to grow. The most successful farms develop over the course of generations.

Maria Ruiz: *This is already a five-year-old tree.*

Lizzie: *Ah, okay. And it's about to my shoulder.*

Maria Ruiz: *Four, four feet maybe? And it's full of leaves.*

Lizzie: If you're like me and you have never before thought about what your coffee looked like before it arrived in a bag full of little brown beans, Maria is showing me some coffee plants—or technically, trees. Coffee is called a bean, but it starts as a fruit growing on a tree.

Maria Ruiz: *This one is a red fruit. That's why we call them cherry. Because they look like a cherry.*

Lizzie: *Oh, they look more like cranberries to me, actually.*

Maria Ruiz: *Oh, yes?*

Lizzie: *Yeah.*

Maria Ruiz: *Well, these are very ripe.*

Lizzie: Fresh coffee plucked off the tree really is like a little cherry. It's bright red with a tender outer flesh.

Maria Ruiz: *But if you squeeze it, you can taste the sweetness of the fruit. Can you taste the sweetness there?*

Lizzie: *Ooh, it tastes almost like a fig. It's so good!*

Maria Ruiz: *This one is good. This one is becoming a good one. Good variety.*

Lizzie: *Wow!*

Maria Ruiz: *And it's so sweet.*

Lizzie: Inside that sweet cherry is a seed, which will become the coffee bean. I won't go into all the steps, but after you dry it, roast it, grind it and mix it with hot water, you get the coffee we all know and love—unless, tea is more your thing.

Lizzie: Maria is a fourth-generation coffee grower here in Boquete. And people have been growing

coffee here since the 1850s. It's easy to see why: the whole area is green and fertile, mountain peaks disappear into the clouds in every direction. Rivers wind through the valleys and canyons. Songbirds clamor in the trees. It is an ideal place to grow coffee. But Maria says the coffee crisis hit this region hard.

Maria Ruiz: *Because we didn't have a lot of land. Basically, Costa Rica, the central plateau of Costa Rica is like 10 times bigger than what we have here.*

Lizzie: Panama is a small, narrow country, which is why the Canal cuts through here. So Panama couldn't compete with neighboring countries with large commodity coffee farms. To stay in business and feed their families, coffee farmers in Panama had to find a new direction.

Maria Ruiz: *So what is the option? The option is specialization.*

Lizzie: See, Maria had been paying attention to a niche fad popping up in California. Something called "specialty coffee." She even traveled to the US to learn more about the budding specialty coffee industry. And to be clear, "specialty" coffee is like the opposite of "commodity" coffee. It totally matters where the beans came from, and what conditions were like on the farm where it was grown. It's gone through rigorous tasting or cupping standards. You remember the cupping from Ratibor's farm, right? Well, Maria learned how to cup.

Maria Ruiz: *I was the first person from Panama when I got trained in cupping in the United States.*

Lizzie: Learning about coffee cupping was the first of two big steps toward putting Panama on the map for specialty coffee. The second was—well, more of an unexpected stumble.

Price Peterson: *It was not the result of hard work, patience, da da da. We just kind of blindly stumbled on it.*

Lizzie: Price Peterson is the owner of Hacienda La Esmeralda Coffee Growers. But coffee's not the only thing on his farm.

Price Peterson: *We got ducks coming out our ears.*

Lizzie: *[laughs]*

Price Peterson: *Because they're reproducing like crazy!*

Lizzie: I'm hanging out with Price next to one of his farms. We're perched in a gazebo overlooking a pond, and every so often he stops the interview to tell me about his ducks.

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Price Peterson: *Those babies are only about four days old.*

Lizzie: *Oh my gosh, they're so sweet!*

Price Peterson: *They're just incredible. They are! They're fluffy, they float. And from day two, they've been out there swimming around.*

Lizzie: *Oh my gosh, they're so bright, too!*

Lizzie: Price is American, but he's been living in the Boquete area and growing coffee here for the last 50 years. He says around the time of the coffee crisis, he'd just bought a new plot of farmland high in the mountains. Most coffees couldn't grow that high because overnight temperatures dropped too low, except for this one kind of coffee tree that was kind of gangly and ugly looking.

Price Peterson: *And for some reason, we thought it would be more resistant to cold. And the upper end of the farm was actually quite cold, so we planted it up there.*

Lizzie: Four years later, which is how long it takes a coffee tree to grow, Price harvested the beans, processed them, roasted them and tasted them. And right away, something was clear: it did not taste like other coffees.

Maria Ruiz: *It tasted very weird.*

Lizzie: *Weird?*

Maria Ruiz: *Yeah.*

Price Peterson: *To me, it tasted almost like a kind of a fruity tea.*

Maria Ruiz: *You will smell lemongrass, you will smell peach, you will smell bergamot.*

Lizzie: *Hmm.*

Maria Ruiz: *Tangerines.*

Lizzie: *Hmm.*

Maria Ruiz: *That don't belong to coffee.*

Price Peterson: *Suddenly, we all knew this was really different. It was different bad or different good.*

Lizzie: Price thought, "Okay, we need someone to tell us if this is different bad or different good." And he was in luck.

Price Peterson: *Because during that year, some kind of legendary guys were all traveling together from the States buying coffee, and they came by here.*

Lizzie: One of those guys was Ric Rhinehart, who would later become the executive director of the Specialty Coffee Association. And Ric just happened to be in Panama leading a training for coffee roasters. So Price's son went to him and said, "Listen, Ric. We have this weird kind of coffee. Can you try this coffee and let us know what you think?" And Ric said, "Yeah, I'll taste that stuff."

Maria Ruiz: *So when he tasted that coffee, his eyes were open.*

Lizzie: *[gasps]*

Maria Ruiz: *All like, "This is amazing!" And then he said, "You know what? Stop here." And they just stopped the training.*

Lizzie: *It was amazing enough to just, "Stop everything. I need to find out more about this bean?"*

Maria Ruiz: *Yes. And you could see it was a different bean. But the taste? Wow! Wow, wow, wow!*

Price Peterson: *And these guys just went crazy. They said, "This is the greatest coffee we ever, ever cupped!"*

Lizzie: Price thought, "Well, I'll be darned. Maybe we've got a winner here." So he entered the coffee in an international competition to see what others thought.

Price Peterson: *And it walked away with everything. So we realized we really did have a winner.*

Lizzie: So what was this crazy bean?

Maria Ruiz: *Well, the crazy bean was the Geisha coffee.*

Lizzie: Geisha coffee. The same coffee I tasted at the start of this episode. It's a strain from Ethiopia, the birthplace of coffee.

Maria Ruiz: *And everybody was just crazy about the Geisha.*

Lizzie: All eyes in the specialty coffee world were now on Geisha. An online auction for Geisha coffee crashed because a bidding war overwhelmed the website. That was one minute after it started.

Price Peterson: *You've seen the prices that these coffees are selling for. It's insane.*

Lizzie: Geisha could sell for as much as 50 times more than other coffees. Price has sold it for \$5,000 a pound!

Price Peterson: *\$10,000 for two pounds of coffee!*

Lizzie: And Geisha was also shattering cupping scores left and right. One person turned to Price Peterson after tasting it and said, "I have now seen God in a cup." The discovery of Geisha coffee completely changed Panama's coffee industry. Before Geisha ...

Price Peterson: *Typical coffee buyer was a 200 pound German gentleman in a blue suit and a necktie.*

Lizzie: *[laughs]*

Price Peterson: *And he would show up here, and he wanted to see the coffee, to see the color. And then he would smell it to see if it was rotten. And if it was this year's coffee and it wasn't rotten, you sat down and you discussed the price. You never tasted it.*

Lizzie: But now, Panama is a specialty coffee mecca. The typical coffee buyer looks more like our mulleted friends from Ratibor's farm.

Price Peterson: *With more tattoos and piercings than you can imagine.*

Lizzie: *[laughs]*

Price Peterson: *And his boss has given him a million dollars and said, "Go out and buy the very best coffee in the world."*

Lizzie: *That pretty much describes who we met yesterday at La Finca Hartmann.*

Price Peterson: *Did you?*

Lizzie: Yes.

Price Peterson: *Generally, they have incredible palates. They don't want to see the farm, they don't want to see anything. All they wanna do is cup the coffee.*

Lizzie: Panamanian coffee farmers were no longer fighting for their survival, but actually thriving. So now that they were flying high, would they be open to working with Russell Greenberg to protect migratory birds? Or does the profitability that comes with specialty coffee like Geisha, have to come at the expense of sustainability? We'll have more on that after the break.

Lizzie: We're back. And here's where we are: the coffee crisis of the early 1990s transformed the coffee industry worldwide. The quality of commodity coffee started to decline as big coffee companies sought out cheaper and cheaper beans. Meanwhile, high-quality specialty coffee was starting to catch on—especially in America. More and more people were seeking out specialty coffees, fueling the specialty coffee movement through the 1990s. But this wasn't the only coffee movement percolating at the time.

Lizzie: In 1996, the Smithsonian brought together major players for the first Sustainable Coffee Congress.

Ruth Bennett: *In that congress, Smithsonian brought together players from Rainforest Alliance, the newly-developed Organic Certification, the newly formed Fair Trade Coalition.*

Lizzie: And this coffee congress took place in Panama. Ruth Bennett says it was there that Russell Greenberg's idea for a bird-friendly coffee program became reality. Surrounded by environmental activists and coffee lovers, the Smithsonian made the case that great coffee didn't have to come at the expense of birds.

Ruth Bennett: *So Smithsonian really helped to lead that birth of sustainability, the sustainability movement in coffee.*

Lizzie: Russ's contribution was the Smithsonian Bird Friendly Certification. Basically, if coffee growers keep at least 40 percent tree canopy on their farms—among a few other rules—they get a label that says "Smithsonian Bird Friendly Certified" right on their bag of coffee beans. It's just like the ones you see on a chocolate bar that says "Fair Trade," or a bag of bread that says "Certified Organic."

Ruth Bennett: *So we say with certification, you can be certain by buying certified products.*

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Lizzie: Hundreds of coffee farmers signed up from places like Honduras, Guatemala, Columbia—countries with lots and lots of coffee farms. And the Smithsonian certification was a great way for them to stand out from the crowd. But Panama? Well, those Geisha growers were proving one tough nut to crack.

Lizzie: Not far away from the Boquete valley in Panama is another valley. It's on the opposite side of the area's towering volcano, Volcán Barú. And this valley is known quite aptly as the Volcán valley. It's here that I met Aliss Hartmann, Ratibor Sr.'s sister.

Lizzie: *You have so many dogs!*

Aliss Hartmann: *Oh yes, we have a lot. In my house, two. In Ratibor's house, four.*

Lizzie: *[laughs]*

Lizzie: I'm touring one of Aliss' coffee farms. We stop on top of a hill.

Lizzie: *It looks like looking out onto the jungle.*

Aliss Hartmann: *Uh-huh.*

Lizzie: *I mean, you would hardly know it's a farm.*

Aliss Hartmann: *Exactly. Exactly. And so many birds and butterflies.*

Lizzie: *And dogs.*

Aliss Hartmann: *And dogs, of course.*

Lizzie: Aliss grows coffee in the shade of native trees. Her logo has a toucan on it with the words "Shade-Grown Coffee. Bird Friendly." She says it was her father who started growing coffee this way back in the 1950s because he loved birds. People would come up to him and say, "Why don't you cut down these trees? You can grow so much more coffee!"

Aliss Hartmann: *And he said that, "No. Like this, I can have my animals, my birds. And if I do what you are telling me, I will have to go to the Amazons and look for what I have here."*

Lizzie: Even though Aliss' coffee is branded as "shade grown, bird friendly," it is not Smithsonian certified. In fact, no coffee farmer in all of Panama is certified. And Aliss thinks she knows why.

Aliss Hartmann: *It doesn't guarantee that you are going to receive more money than if you are not.*

Lizzie: See, in the land of Geisha coffee, there's a lot of money to be made. And coffee farmers, they want to make money. They need to make money because they've got families—and dogs—to feed. And, well ...

Aliss Hartmann: *Normally, most of our buyers, 90 percent of them don't believe in certifications.*

Lizzie: *Huh!*

Aliss Hartmann: *They don't care about that.*

Lizzie: In general, specialty coffee buyers *do* care about sustainability and certifications. But this is Geisha coffee, the most coveted, award-winning coffee in the world. Certifications are not the priority for people buying Geisha.

Price Peterson: *None of our clients ever ask us about certifications. These people only, only, only want to cup the coffee.*

Lizzie: Price Peterson isn't opposed to getting certified, but he has no real incentive to do so. If he's gonna grow the world's best coffee, he wants to grow a lot of it. And you can grow more beans in the sun.

Price Peterson: *I will put my coffee trees under shade the day the Kansas farmer puts his corn under shade. Because photosynthesis requires sun!*

Lizzie: To be clear, you can grow coffee in the shade—I mean, Aliss does it. But you do get fewer—although some say tastier—berries per plant. To be bird-friendly certified, you also have to follow organic farming practices. And this is something Aliss and Price agree with in theory, but ...

Price Peterson: *There's few coffee farmers in Central America who can live without some sort of fungicide.*

Lizzie: Price says he can live without the insecticides, herbicides and fertilizer, but he has not found a natural, organic way to keep fungus off his coffee.

Price Peterson: *Coffee just loves fungi.*

Lizzie: *[laughs]*

Price Peterson: *And fungi loves coffee.*

Lizzie: And coffee farmers can't afford to have an entire Geisha crop wiped out by fungus. Ruth Bennett and the Smithsonian bird researchers are well aware of Price and other farmer's concerns, but this creates a conundrum for the certification. If you ease requirements too much to help farmers increase yield, the certification becomes a lame duck. Birds aren't protected. But if you're too stringent with your requirements, coffee farmers won't sign up—and birds aren't protected. So what do you do? Well, as Matt Damon says in the movie *The Martian*, "It's time to science the—heck—out of this."

Lizzie: I'm riding in a little Suzuki Samurai with Katherine Arauz-Ponce. She's a PhD student at the University of Georgia and a fellow at the Smithsonian Tropical Research Institute. She's studying migratory birds on coffee farms in Panama, including some Hartmann family farms.

Katherine Arauz-Ponce: *I'm deploying tags on birds.*

Lizzie: *Oh, this is where you're tagging these birds?*

Lizzie: Katherine grew up around here, the daughter of coffee farmers. Her dyed blue ponytail is sticking out the back of her Smithsonian baseball cap. Smashmouth plays on her radio as she expertly steers her little four-wheel drive SUV down a gravel road past coffee farm after coffee farm. We stop at what I thought was the edge of the forest.

Katherine Arauz-Ponce: *Yeah, we're going out and walk from here. Give me this.*

Lizzie: *Okay.*

Lizzie: But when I get out, I see it's actually another coffee farm. Tall trees tower over much smaller coffee trees, which are about my height. Their dark green, waxy-looking leaves and red berries are a dead giveaway.

Lizzie: *These coffee plants are growing on hills. They're like—it doesn't have to be flat like most farmland. It's very hilly.*

Katherine Arauz-Ponce: *It's very hilly. And this part is one of the most flat. [laughs]*

Lizzie: *Really? Oh my gosh! I'm, like, falling down this hill.*

Lizzie: This is one of the farms where Katherine is doing her research.

Katherine Arauz-Ponce: *We want to be able to see the amount of yield of the coffee related to the bird diversity that they have, depending on the arrangement for the shade or sun that they have in the farms.*

Lizzie: Katherine is actually comparing the difference in yield between sun-grown and shade-grown coffee farms, and comparing that to the amount of birds on each type of farm. The idea is to find the best growing conditions for both birds and beans. Measuring how many coffee beans are grown in each farm is the easy part. The hard part is tracking the birds. She has to actually catch them so she can put little trackers on them.

Katherine Arauz-Ponce: *So these mist nets, the birds cannot see it.*

Lizzie: Katherine shows me a "mist" net. It's spooled between two poles like a volleyball net, stretching all the way to the forest floor.

Lizzie: *It's so, so fine. Is that why it's called a mist net?*

Katherine Arauz-Ponce: *Yeah. Because the mist, like you cannot see it much.*

Lizzie: *Yeah. Yeah. It's almost invisible.*

Katherine Arauz-Ponce: *Mm-hmm.*

Lizzie: *I see. They fly into it and kind of fall into, like, a little pocket, almost.*

Katherine Arauz-Ponce: *Exactly. And then we are able to extract them and put it in a bird bag.*

Lizzie: Once she catches a bird, she quickly puts a little tracker on its back and releases it back into the wild. And then the second part can begin. We walk to another part of the farm, and Katherine shows me some tall poles with orange flags on top.

Katherine Arauz-Ponce: *That's one of the nodes.*

Lizzie: *Oh, I see! Yeah, it's very subtle. It's like a little receiver box on a thin pole, about the same height as the coffee plants.*

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Lizzie: These nodes are essentially receivers. They're spread across this coffee farm in a grid, and any time one of Katherine's tagged birds comes near one ...

Katherine Arauz-Ponce: *They're gonna be detected by the nodes.*

Lizzie: Like a bird E-Z Pass. And there are toll gates—well, I mean, receivers—like this one in farms and forests in various parts of Central and South America. And not just different coffee farms, but surrounding forests and other types of agriculture as well, like cow pastures.

Lizzie: As we head back to the car, Katherine tells me there's still a lot more research to be done, but based on her early findings, there may be a win-win solution because if coffee growers can preserve the native forests around their farms, that can sometimes be as good as persevering the trees on the farms.

Katherine Arauz-Ponce: *Some of the farmers, maybe they're just gonna stay with the sun coffee, but if they maintain the forest pasture, they're gonna have maintained a lot of bird species.*

Lizzie: *It's just as good as if they were doing shade-grown coffee for the birds.*

Katherine Arauz-Ponce: *Yeah.*

Lizzie: Ruth Bennett says thanks to research like Katherine's, the Migratory Bird Center has found an approach that could work for birds *and* farmers, and that's a menu of options, taking into account the type of environment not just on the farm, but around it.

Lizzie: Aliss, Ratibor, Price and Maria welcome changes to the Smithsonian Bird Friendly Certification. Price says when it comes to protecting the land, nobody is more invested than the farmers themselves.

Price Peterson: *Farmers more than most people look to leaving their land to their children, their grandchildren. And it's gonna be sustainable and produce year after year after year for 200 years.*

Lizzie: Ruth says Russell Greenberg would be proud of how the bird-friendly coffee program has grown, with more than 5,000 coffee farmers certified, and researchers like Katherine taking it to a whole new level.

Ruth Bennett: *But I would say our program still has a lot of work to do. Most coffee drinkers in the United States still don't know that bird-friendly certification exists.*

Lizzie: And yes, it's a privilege to be able to buy specialty coffee. Not everyone can afford \$20 or more for a pound of beans, or a \$6 latte. But next time you're staring at your coffee maker as the carafe slowly fills, or you're waiting for the barista to call out your name, or you're sitting in a meeting and a warm cup of brew is the only thing getting you through it, take a moment to think about where your coffee comes from—and the birds that might live on that farm, and the farmers who grow the beans. Farmers like Katherine's mom.

Lizzie: *So is your mom's certified bird-friendly coffee?*

Katherine Arauz-Ponce: *No. [laughs] Unfortunately, I couldn't convince her. She is like still in that learning process, but she's so proud. I have to say that. Not because she's my mom, but it's good coffee. [laughs]*

Lizzie: You've been listening to Sidedoor, a podcast from the Smithsonian with support from PRX. To learn more about bird-friendly and Geisha coffee, check out our newsletter. You can subscribe at SI.edu/Sidedoor. We'll also share pictures from our visits to the various coffee farms in Panama. It was a wild, caffeinated ride, and you have to see the pictures to get a sense of how beautiful that area is.

Lizzie: The easiest way to get certified bird-friendly coffee is by visiting the Smithsonian's website. We'll share a link in our newsletter. And if you're trying to find a local bird-friendly coffee roaster ...

Ruth Bennett: *That information should be available on our website. If not, feel free to reach out to our program and we'll be happy to find the roaster closest to you that offers bird-friendly certified coffee.*

Lizzie: This is the final episode from our trip to Panama. Did you enjoy our reporting from the Smithsonian Tropical Research Institute? Is there somewhere else you want us to go to find stories? Share your thoughts right in the Spotify app. And if you like the show, leave us a review on Apple Podcasts. It does a lot to help other people find us—and it just makes us feel really good.

Lizzie: If you want to know more about the Smithsonian's migratory bird research, check out our episode, "[Birds Birds Birds](#)."

Lizzie: For help with this episode, we want to thank Katherine Arauz-Ponce, Ruth Bennett, the entire Hartmann family—but especially Aliss and Ratibor Sr. and Jr. Thanks also to Price Peterson and Maria Ruiz. Special thanks to everyone at the Smithsonian Tropical Research Institute for their help, especially Melissa Mazurkewicz, Beth King, Linette Dutari and Olivia Milloway.

Lizzie: Our podcast is produced by James Morrison, and me, Lizzie Peabody. Our associate producer is Nathalie Boyd. Our executive producer is Ann Conanan. Our editorial team is Jess Sadeq and Sharon Bryant. Tami O'Neill writes our newsletter. Episode artwork is by Dave Leonard. Extra support

comes from PRX.

Lizzie: Our show is mixed by Tarek Fouda. Our theme song and episode music are by Breakmaster Cylinder.

Lizzie: If you have a pitch for us, send us an email at Sidedoor(@)si.edu. And if you want to sponsor our show, please email Sponsorship(@)prx.org.

Lizzie: I'm your host, Lizzie Peabody. Thanks for listening!

Price Peterson: *These bright yellow ones are actually a different species, and we can't figure out how their eggs got under the mama.*

Lizzie: *Oh my gosh!*

Price Peterson: *I'm sorry.*

Lizzie: *No, no. Please.*

Price Peterson: *I didn't mean to distract you from more important topics.*

Lizzie: *No, we're here to talk about birds. Ducks are birds, too.*

Price Peterson: *Anyway ...*