

## Sidedoor Season 6 Ep. 7 Hot Bird Summer Final Transcription

Lizzie Peabody: This is Sidedoor, a podcast from the Smithsonian with support from PRX. I'm Lizzie Peabody.

Lizzie Peabody: Each spring in Washington, DC, usually around right now in early April, there are cherry blossom trees that bloom all around the city. They're these short, sprawling, trees blanketed in light pink and white blossoms. When you see them all together, it's like part of the National Mall is covered in cotton candy. It's beautiful. For me, and I think a lot of other people around the city, it's a sign that winter is over. There's more sunlight and when I breathe in the air is warmer and it just feels wonderful. And just as the cherry blossoms reach the peak of their beauty, most years tens of thousands of people flock to the city to see them. The landscape around the Jefferson and Lincoln Memorials turn from this picture of pretty pink trees to one that is dominated by people. Blossoms are knocked from the trees as tourists pursue the perfect selfie. Garbage cans overflow on the ground. And by the end of blossom season the DC heat and humidity is cranked so high up that all of a sudden it's like stifling summer is here. So, I always greet these cherry blossoms with joy, but also a bit of dread. And for Sara Hallager, the Curator of Birds at the Smithsonian's National Zoo, her harbinger of spring carries a similar combination of hope and dread, but it's not cherry blossoms. It's a bird.

Sara Hallager: The herons, very much like the swallows of Capistrano, they come back to the zoo every year.

Lizzie Peabody: She's talking about the Black-crowned Night-Heron.

Sara Hallager: We always used to have this contest within the birdhouse team of who could spot the first heron of the season. It was kind of a badge of honor.

Lizzie Peabody: Every year, hundreds of Black-crowned Night-Herons build their nests at the National Zoo. And although they are herons, these birds don't look much like they're leggy cousin, the Great Blue Heron. They're football sized with these yellow stick legs and a long sharp beak. They're stocky birds.

Sara Hallager: With short legs and short necks. And in terms of their coloration, they're kind of blue and iridescent blue and black, and they have these beautiful white feathers that come off the backs of their heads. And kind of one of the more comical features, they have these sort of red eyes that are kind of striking and sometimes a little scary.

Lizzie Peabody: And very much like DC's tourists, the Night-Herons descend on the zoo all at once.

Sara Hallager: So, it's just one day you would come to work and there would be like 100 herons when the previous day they were like none. And they would just be thick in the trees.

Lizzie Peabody: The herons are hard to miss. They all nest in just a few trees where they get down to business.

Sara Hallager: It's a heron rookery... and so, in a heron rookery, what do they do? Well, they breed and make more herons.

Lizzie Peabody: Each heron pair can have two to three babies and pretty quickly there are a lot of herons at the National Zoo. So, what about the baby Night-Herons? Are they cute?

Sara Hallager: The baby Night-Herons, I think, are cute. They kind of look like the comic strip character from Peanuts, Woodstock.

Lizzie Peabody: Oh.

Sara Hallager: Yeah. They're pretty cute when they're little. They do have kind of these spiky head feathers, and they will drive you crazy because they up in the nest all day and they kind of just, now this sound I can't imitate, they're kind of just like, all day long. Like they never shut up, but they're hungry, so they're begging for food from their parents.

Lizzie Peabody: As you can tell, these herons inspire mixed feelings among the zookeepers.

Sara Hallager: I love the Night-Herons. Not everybody does. It's kind of a love-hate relationship.

Lizzie Peabody: On one hand, they've been coming to the zoo since before the zoo was even the zoo so they have a right to be here. On the other, they're really loud and they steal food from the zoo's collected birds. So much food that Sara has resorted to bribing them.

Sara Hallager: So, we started actually feeding the herons in the hope that we could actually take the pressure off our birds to get our birds enough to eat. So, the herons, they really like that. Unfortunately, they still stole the bird food.

Lizzie Peabody: Oh. This huge colony of unruly herons makes Sara Hallager's job of caring for the dozens of birds in the zoo's collections that much harder. Until August when the heron babies are finally strong enough and the flock slowly thins out. Within a few weeks, the herons are gone and Sara and her colleagues look up at the old poop covered heron tree and think-

Sara Hallager: We're glad they're gone, you know? For the season. It's like, "See you next year."

Lizzie Peabody: But here's the thing. For more than a century one question has nagged the National Zoos humans. When they flap away from the zoo's grounds, where do the Night-Herons go? They don't know. So, this time on Sidedoor, we spill the secrets of this very hungry bird, and discover that there's more mystery to the Night-Heron than we ever knew, after a quick break.

[MUSIC]

Lizzie Peabody: Way back in 1902, there was a Smithsonian scientist named Paul Bartsch. He worked in the mollusk department of the United States National Museum, but he liked birds too. In fact, he conducted his own survey of birds that lived around DC and quickly zeroed in on herons. He published a research paper titled aptly, Notes on the Herons of the District of Columbia. And it's a good thing the Night-Herons couldn't read what he wrote about them. Here's an excerpt from his essay.

Paul Bartsch: The young at birth are about as ugly birdlings as can be imagined. They're almost nude, with immense heads and large bills. Weak and limp they lie stretched out in the middle of the nest.

Lizzie Peabody: In order to study the herons who were nesting pretty much where they still do today, Bartsch had to get close to count the eggs and check on the babies. And honestly reading this description it sounds like he was still mad about it.

Paul Bartsch: When one climbs a tree in which the young have passed the second week, he may be sure to receive a contribution of whitewash from the various members. If the climber persists, the birds will even sacrifice their last meal in his favor, or rather disfavor, and a continuance of the climber's efforts will be met by the bird's final resort, which is to launch at the intruder with full force, spreading his wings and opening his cavernous mouth, striking with such violence that were he not securely anchored by his feet, he must surely be carried some distance beyond the nest.

Lizzie Peabody: In today's language, the Black-crowned Night-Herons dive bombed, pooped, and barfed on Bartsch a lot as he studied them. Despite this messy welcome though, Bartsch was determined to figure out where exactly these birds went after they left the grounds of what is now the National Zoo. To do this he attached very light metal bands to the legs of 23 herons. Each of these bands had a unique number, as well as the request to quote, "Return to the Smithsonian Institution." The idea was that once it died, someone might find the bird and stick it in the mail, addressed to Bartsch at the Smithsonian. That way he could learn a little bit more about how these birds lived. This may sound like kind of a message in the bottle approach to science, but at the time it was a big deal. This was the first ever systematic scientific bird banding program done in North America. Over the course of three summers Bartsch banded over 100 herons. And he heard from just six of them. Most of them didn't go far from the zoo, but two gave him some surprising information. After leaving DC, they went north, where they were promptly shot by hunters. One was in New Jersey and the other was in Maryland. It wasn't what Bartsch wanted to know, where they go in the winter, but it was all he could learn. And that's kind of where the mystery of the Night-Herons perched for more than a century.

Pete Marra: I have long been haunted by where birds go throughout their annual cycles.

Lizzie Peabody: Pete Marra is the Emeritus Senior Scientist at the Smithsonian Migratory Bird Center and the Director of Georgetown University's Global Environment Initiative.

Pete Marra: You can't help if you're a migration biologist to ask the question. It's like, "Where do these birds go?"

Lizzie Peabody: For long time listeners of Sidedoor you may remember Pete from went bird watching with him in the episode titled Birds, Birds, Birds, and he knows Night-Herons well.

Pete Marra: I think of them as the Darth Vader of birds.

Lizzie Peabody: Pete says that for some birds he's studied in the wild, like gulls and terns, a day at the beach with a Night-Heron is a short one.

Pete Marra: They'll actually move through a gull colony eating gull chicks or duck chicks or they'll prey on a variety of things like least terns or roseate terns, because they'll move through a tern colony with reckless abandon and just devour the entire colony of chicks. And they'll be complete nest failure.

Lizzie Peabody: No more chicks.

Pete Marra: After a short four or five days of existence. So, they're not underdogs. They are predators.

Lizzie Peabody: When Pete was a young scientist in the 1970s ornithologists still relied on banding to study birds, the same method Paul Bartsch pioneered at the turn of the century. But bird banding has always had its frustrations.

Pete Marra: So, when you put a band on a bird and you let it go, you're holding your breath that you're going to learn something else about that bird. If it's a resident there, you can watch it. But when we watch it, we get a tiny little observation of that bird and then it goes away and we don't see it anymore for days and days and days or weeks and weeks and weeks. And we're trying to infer something about the biology of that bird.

Lizzie Peabody: These days birds still wear leg bands, but they also wear tiny battery-powered satellite backpacks, which is good because to solve the mystery of where the Black-crowned Night-Herons spend half the year, Pete Marra and the crew at the Smithsonian Migratory Bird Center need every modern advantage.

Amy Scarpignato: So, the transmitters we started using for the first year, it was a satellite transmitter.

Lizzie Peabody: This is Amy Scarpignato. She's a researcher at the Smithsonian Migratory Bird Center's migratory connectivity project.

Amy Scarpignato: We do a lot of tracking of migratory birds to advance conservation and understanding of animals and where they go throughout the year.

Lizzie Peabody: Amy's job is to figure out where birds go, without having to sit outside with binoculars and just hope they show up. So, in 2013, the first year of the Black-crowned Night-Heron study, she leaned pretty heavily on satellite transmitters.

Amy Scarpignato: What that means is the transmitter that the bird is wearing on its back communicates with satellites that are flying around in our atmosphere.

Lizzie Peabody: When one of the satellites passes overhead, the bird's transmitter tells that satellite, "Hey, I'm over here." Pete Marra says this lets us see where a bird goes and how quickly it gets there, which offers new insight into the inner life of a Night-Heron. Okay, so what other questions were you trying to understand? It can't just be a purely where thing.

Pete Marra: One of the issues we were trying to understand is how tightly did the population from the zoo that bred together in this one site stay together throughout the year.

Amy Scarpignato: And then from there you can look at things like what are their migratory roots? How long does it take them to migrate?

Pete Marra: How do events that are happening throughout the full annual cycle, drive their biology, and ultimately, how do we use that to protect them better.

Lizzie Peabody: To figure out the secrets of the Night-Heron would mean a better understanding of all migratory birds.

Pete Marra: And we're seeing this real massive decline in birds and other species, butterflies, and a variety of things. And most of these animals are migratory. So, these are fundamental questions that we're trying to resolve, trying to understand.

Lizzie Peabody: And the satellite transmitters were crucial to that understanding, as the herons left the zoo for wherever they hide in winter.

Pete Marra: By putting a thing on the back of the bird, we can then, it's an automated way of really tracking its biology, tracking its behavior, tracking things that it's doing. It just gives us so much more intel into the life of that bird.

Lizzie Peabody: But before any Black-crowned Night-Herons can talk to satellites, Amy has to attach a tiny satellite backpack transmitter to the Darth Vader of birds.

Amy Scarpignato: So, the transmitter, gosh, it was about four inches long and about two inches wide.

Lizzie Peabody: Oh wow. So that's like the size of like a Hershey bar?

Amy Scarpignato: A little smaller.

Lizzie Peabody: A Kit Kat.

Amy Scarpignato: Yeah. Two Kit Kat bars.

Lizzie Peabody: Can you tell I'm hungry?

Amy Scarpignato: But that is a good estimate.

Lizzie Peabody: Thank you. I specialize in food analogies.

Amy Scarpignato: Yeah, I'm here for it. Don't worry.

Lizzie Peabody: So, Amy has to get this Kit Kat size computer onto this angry chicken sized bird. Okay, forgive me. But these birds are sort of noisy, stinky, and they seem sort of unfriendly. So, do you just walk over and grab one? What is that process like?

Amy Scarpignato: So, we baited them, really.

Sara Hallager: So, it's not hard because they're so greedy.

Lizzie Peabody: National Zoo Bird Curator Sara Hallager again.

Sara Hallager: All we do is we set up a little catch pen. It's a soft sided pen.

Amy Scarpignato: Right near the colony.

Sara Hallager: We actually took one of our enclosures where we would normally feed them and we just throw the fish in there.

Amy Scarpignato: So, they just flew into the pen and we closed the door.

Sara Hallager: I mean, and we can catch like 20, 30 at a time.

Lizzie Peabody: After they get some hairs into this mesh enclosure, the keeper approaches a heron with a big net and just scoops it up. Then they walk into a different room where a small team helps to gently take the bird out of the net and lay it on a table.

Sara Hallager: Their biggest weapon is their bill. So, they will try and stab at you or bite you.

Amy Scarpignato: Since they have such an incredibly long bill, we would have one person be responsible for the head and keep the bill away from my face.

Pete Marra: And they got long necks, deceptively. They keep them hunched down, but if you're not paying attention, they will go right for your eyes.

Amy Scarpignato: It was definitely nerve-wracking.

Lizzie Peabody: With one person gently holding the heron's head under a thin pillow case and another making sure it lies mostly still, Amy can carefully tie a transmitter to the Night-Heron's back using a Teflon shoelace.

Amy Scarpignato: And so, the transmitter goes on just like a backpack. It sits like between the shoulder blades on the back of the bird. The straps come around the shoulders and they cross the chest of the bird and they loop around and tie to the bottom of the transmitter.

Lizzie Peabody: They also attach a color band, just a visible strip so they can quickly identify the bird when they see it, and a numbered band like Paul Bartsch did all those years ago. So, in August 2013, Amy kicked off their Night-Heron tracking program by attaching backpacks to three of these herons. And just a couple weeks later, the first of the Night-Herons flapped its way into the sky and out of sight. And thanks to the magic of satellite transmitters, Pete Marra and Amy Scarpignato could follow every single movement. So, in August 2013, what did we know about where these Night-Herons go when they leave the National Zoo?

Amy Scarpignato: We did not know anything.

Lizzie Peabody: Coming up after a quick break, we follow these backpack wearing birds to their secret winter hideouts. Stick around.

[MUSIC]

Lizzie Peabody: Where were we? Ah, yes, it's Fall 2013 and our three Black-crowned Night-Herons wearing satellite transmitting backpacks the size of small chocolate bars have all left the zoo by mid-September. Amy Scarpignato and Pete Marra wait, hoping the herons will show them where they go, how they get there, and what they do along the way. And sure enough, the three Black-crowned Night-Herons start pinging their locations up to a satellite and then down into Amy's computer.

Amy Scarpignato: What's really cool is we focus saw the migration and where they winter, but I also thought it was really interesting about their local movements once they left the zoo.

Lizzie Peabody: All three herons had left the zoo by mid-September, but they hopped around the area for weeks.

Amy Scarpignato: What we were able to see is these birds use a lot of the local residential and neighborhood parks lakes. So, they'll leave the zoo. Some birds will go down to the Potomac. Some will move around in Virginia and Maryland.

Lizzie Peabody: One bird never even left DC. It flew about five miles from the zoo and hung out along the Potomac. But a second bird had had enough. In late September it flew almost in a straight from DC 1000 miles to Southwest Florida, not far from Naples. The whole trip took just six days. And the third bird waited a few months before it flew to Jacksonville, Florida. So, in the first year of tracking, everything was working exactly as they'd planned, until the transmitters died. They had no idea what the birds did next. Did DC bird join its friends in Florida? Did the two Florida birds even stay there? They had no way of knowing unless someone saw the birds leg tags and reported them. Amy and Pete had reached the message in a bottle part of their study. In the second year, the team needed transmitters that would last a lot longer. So, they went solar. The idea was that with mini solar panels instead of batteries, the packs would be lighter and they would last way longer. These new transmitters also use the cellular network like your phone and that year they logged their first round trip. One of the birds flew more than 1000 miles to the Florida Everglades for the winter, and then came right back to the National Zoo. The last time this bird pinged its location was actually from the zoo when it returned in April 2015. Success.

Amy Scarpignato: You release a bird and it's just like, "Bye." And so, the fact that we were able to track a bird to the wintering grounds and then have it come back to the zoo is huge because, one, we found it's wintering location and, two, we know these birds come back. And so, the fact that we got a full migration was a validation and was a relief and got more people excited about the project.

Lizzie Peabody: But the other birds they tagged in that second year were not as generous with their information. Amy says probably because the herons didn't have good cell reception. They also learned the downside of solar transmitters. They need sun and Black-crowned Night-Herons are named that way for a reason.

Pete Marra: Turns out Black-crowned Night Herons don't spend a lot of time in the sun when they're outside the breeding area. And we learned this the hard way.

Lizzie Peabody: So other than their Everglade herons long migration, the other four herons didn't report much data. One flew to North Carolina, where it died.

Pete Marra: So, we actually went it and tried to find the tag. And we actually were never able to find it. It was behind somebody's private backyard. And, yeah, we thought we'd try to recover it to try to understand what maybe killed the bird. But we were never able to find the tag or the bird.

Lizzie Peabody: Another bird stuck around DC. And one last bird went to Florida before it's transmitter stopped sharing data. But Pete says this is all part of science.

Pete Marra: We never know what's going to go wrong, and it often does go wrong. You never know how difficult the animal will be on a particular tag. Some birds turn their head around and can just rip the antennas off. Sometimes the elements of salt and water and over time cause corrosion. It's that interface of where we're working of wild against technology that is just ripe for all sorts of problems.

Lizzie Peabody: Despite the solar setback, the team was eager to get more data because from what little they had seen, these birds were pretty solitary when they weren't at the zoo, and they spend their winters in very different ways.

Pete Marra: We had some individuals that went to Florida, some individuals that stayed on the Potomac, some individuals that were probably feeding in dumpsters behind fancy restaurants. It just was highly variable in when they went, where they went, and probably why they went.

Lizzie Peabody: By 2016, the fourth year of their project tagging Black-crowned Night-Herons, Pete, Amy, and the heron team knew pretty well what not to do. So, they found some fancier transmitters and tagged three more birds. And that year was the big one, because they got to watch a heron fly all the way to Cuba. The next year a different heron flew 2000 miles to Nicaragua. So, of all the really conclusive winter location data that you received, you saw that one stayed in DC, two went to North Carolina, six to Florida, one to Cuba, and one to Nicaragua.

Amy Scarpignato: Yes. Yep. The bird that went to Nicaragua was in Cuba for a while. And then Hurricane Irma struck Cuba that year. And after Hurricane Irma, it flew to Nicaragua, which was really interesting. And then last year, one of the keepers saw this bird in 2020 back at the zoo. So, we know it still lives.

Lizzie Peabody: Because the Black-crowned Night-Herons all arrive at the National Zoo at the same time, it was easy to imagine that they all travel somewhere else together, as a group, that maybe there's this golf course in Florida that's home to their own rowdy bunch of herons all winter. But that doesn't seem to be the case. The Night-Herons may summer together, but then they go off in separate directions, everywhere from DC to Nicaragua. The only difference appears to be what the individual birds choose, like it's a matter of personal preference. Is this just about who likes to hang out where?

Pete Marra: Yeah, that's one hypothesis and I would love to know if that bird always goes to Cuba, and if it had ever been to Nicaragua before then. I don't know those answers and this is sort of where we need to start going is understanding the repeatability of what these individual birds are doing, because in some cases, this could be something like a personality question.

Lizzie Peabody: Yeah. Night-Heron personality.

Pete Marra: Like this bird just happens to like Cuba, or maybe it gets there and it's developed a real taste for wrens or whatever they happen to be eating there. So, the fact that Black-crowned Night-Herons are showing so much variation is, in some ways it's a head scratcher. My guess is there's just no cost. These birds can go wherever they want. They can get up, and if a hurricane's coming, they can go ahead and fly to Nicaragua. and it doesn't really cost them anything. They'll still survive and they'll come back. So, I'm guessing that's why we see so much variation.

Lizzie Peabody: Every year Pete and Amy get better at tracking the Night-Herons to their wintering grounds. And every year the herons teach them something they didn't know before. And Pete says he feels an urgency in tracking these migrating birds, because technology is quickly transforming the types



of questions we're able to answer about these birds, but climate change is transforming the reality of their lives just as fast.

Pete Marra: And that's one of our biggest challenges right now as conservation biologists is that because the world is changing so rapidly, and it's not changing the same everywhere, this makes for very complex issues to be resolved for migratory animals.

Lizzie Peabody: And the National Zoos Night-Herons are one piece of that conservation puzzle, offering clues where otherwise Pete and Amy would be left guessing. These days in DC, the cherry blossoms have just passed their peak bloom, which means Sarah Hallager is keeping her eyes on the roosting tree, and getting ready for the hundreds of noisy birds that will form the soundtrack to her summer.

Sara Hallager: So, we look up this time of year, we look up in the trees in the morning and kind of await the first heron, with hope and with a little bit of dread, because we know what's potentially coming.

Lizzie Peabody: That's kind of the way I greet every new morning these days.

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Lizzie Peabody: You've been listening to Sidedoor, a podcast from the Smithsonian with support from PRX.

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Lizzie Peabody: If you want to see one of the Black-crowned Night-Herons you can check them out at the National Zoo. It's not currently open, but hopefully it will be soon. In the meantime, we'll put some photos on our Twitter page and Instagram. You can find both under the handle @sidedoorpod. And if you like our show, please leave us a review in apple podcasts. One thing people have spontaneously started doing is naming their favorite episodes in the title. It's fun and it's also super helpful to know what types of stories you like to hear.

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Lizzie Peabody: Special thanks to Dan Rauch, Pete Marra, Amy Scarpignato, Sarah Hallager, Antonio Salas Mareo, Jen Zoon and Emily Cohen. Our podcast team is Justin O'Neill, Nathalie Boyd, Sharon Bryant, Ann Conanan, Caitlin Shaffer, Jess Sadeq, Tami O'Neill, and Lara Koch. Extra support comes from Jason and Genevieve at PRX. Our show is mixed by Tarek Fouda. Episode art is by Dave Leonard. Our theme song and other episode music are by Breakmaster Cylinder.

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

Sara Hallager: So, all birds are smart. You know, the term bird brain is actually a compliment because the more we understand about birds and how intelligent they really are. Chickens they believe have the intelligence of a four-year-old child.