

## **Audio Transcript: Songbird accents, eating rats, and why we need the moon**

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**Nate Hegyi: Justine. Are you recording? Would you ever live in New York City?**

**Justine Paradis: Ooh, an eternal question! I would like to say yes... I feel like, there's this idea that you should move to the country when you're retired, but I wonder if you should move to NYC when you're retired... easy to get public transit... lots of stuff going on, you can go sit at the bar pretty quickly.**

**Nate Hegyi: I once heard an anecdote that the average NYer walks somewhere around two and a half to four and a half miles day. Which I think is so cool. Because it is such a walkable city.**

**Justine Paradis: Yeah. I love New York.**

**Nate Hegyi: It's a magical place.**

**Justine Paradis: And this actually brings me to a question we recently got from a listener on our Instagram. Ethan reached out to ask:**

*Ethan Weil: "What would New York City look like in 50 years if everyone left today and stayed out?"*

**MUSIC: blacksona, Neon**

**Nate Hegyi: ooooh! I can imagine lots of pigeons and then lots of peregrine falcons. Cuz I know there are falcons that live way high up in the buildings.**

**Justine Paradis: Mm!**

**Nate Hegyi: And just this really cool ecosystem.**

**Justine Paradis: The ecology of the skies. Yes.**

**Nate Hegyi: Yeah.**

**Justine Paradis: We are not the first people to think about this. This is actually the subject of a book called “The World Without Us” by Alan Weisman, which came out in 2007.**

**Nate Hegyi: K.**

**Justine Paradis: And Weisman took this very question seriously. Interviewing paleontologists, biologists, astrophysicists, engineers, even Buddhist monks, to try to understand what a post-human Earth would look like. And he also specifically focused on this question of what would happen to New York in a hypothetical future without humans. But to do it, he looked at New York City’s *past*.**

### **MUSIC OUT**

**Justine Paradis: Have you ever heard of something called the Mannahatta Project?**

**Nate Hegyi: The Manhattan Project?**

**Justine Paradis: Hah, I think that maybe they were doing a little reference there, but no! It’s the Lenape word for the island of Manhattan – Mannahatta.**

**Nate Hegyi: Oh, that’s where it came from, okay cool!**

**Justine Paradis: Yeah. which means “island of many hills.” And it’s an attempt to demonstrate what the island of Mannahatta looked like before Europeans got there.**

**Nate Hegyi: Yeah, well what did it look like?**

**Justine Paradis: Well!**

**MUSIC Katori Walker, Bias**

**Justine Paradis: [To paint this picture](#), they looked at historical maps, modern surveying, soil cores, tree ring data, all kinds of things. And were able to make these really educated guesses, that like The Upper West Side was a forest, or Times Square was a red maple swamp,<sup>1</sup> probably created by beavers.**

**Nate Hegyi: Cool.**

**Justine Paradis: The Lenape managed the island with fire, and they have a whole fire map<sup>2</sup> of the island. They know that the Lenape grew ceremonial tobacco where Washington Square Park is.<sup>3</sup>**

**Nate Hegyi: Wow.**

**Justine Paradis: And a big takeaway from this project for me: was that underneath all the pavement and the buildings and the concrete, New York is a very, very watery place.**

**Nate Hegyi: Right!**

**Justine Paradis: There are so many streams and bogs and springs that existed and in many cases still exist underneath the city. So, to go back to our question of what would happen if humans just disappeared...**

**The first thing that would happen is that the subway would flood.**

**Nate Hegyi: Yes, which already happens anytime there's a flooding event, right?**

**Justine Paradis: Yes!**

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<sup>1</sup> p150

<sup>2</sup> p126

<sup>3</sup> p154

**Nate Hegyi:** That's the thing that you see on the news is just tons of water pouring into the subways.

**Justine Paradis:** The steel columns that support streets above the subways would "corrode and buckle." So, avenues would cave in and become streams and maybe even rivers.

Pipes would burst when they froze. Buildings would flood. Windows would shatter.

Weisman writes, "As the freeze-thaw cycle moves indoors, things would seriously deteriorate."

### **MUSIC SWELL AND OUT**

**Nate Hegyi:** Can you imagine the mosquitoes there in the summertime?

**Justine Paradis:** Oh my god.

**Nate Hegyi:** All that juststanding water from broken pipes and everything else? There'd be so many mosquitoes.

**Justine Paradis:** But also there are all the animals that live both as pets and in zoos that are totally introduced. Do you know about Flaco, the Eurasian eagle owl?

**Nate Hegyi:** No!

**Justine Paradis:** Who escaped from the Central Park Zoo after someone sabotaged his enclosure last year, and lived for a year hunting rats in like urban New York City.

*Seth Meyers clip: That's right. Flaco shawshanked out of that cage, which according to one article was the size of a bus stop. And which he'd been living in for 12 years and he started flying around Central Park. This is the kind of story we need right now!*

**Nate Hegyi:** Did he die after a year?

**Justine Paradis:** Yes, may he rest in peace. He lived as a free owl for a year, but then crashed into a building. And it turns out that he had also a lot of rat poison and pigeon herpes in his system, which might have been a factor too.

**Nate Hegyi:** Yeah. That's sad.

**Justine Paradis:** But many iterations of Flaco would exist should humans disappear. So it'd be all these species, and eroding buildings, and plants and animals, all coexisting, and interbreeding, and becoming this 22nd century novel ecosystem.

**MUSIC:** Bisou, Panda

**Nate Hegyi:** Wow. It's a neat idea to think about. That is a really wild 'what if'!

**Justine Paradis:** Exactly! So this question about New York City without us is just one of many great responses to our latest call-out for questions for our recurring Outside/Inbox listener mailbag episode.

**Nate Hegyi:** PERFECT!

I'm Nate Hegyi, here with Justine Paradis and this is one of those special episodes where scientists everywhere hold their breath — as the Outside/In team answers your questions about the natural world.

But this time: we asked you to send your "what if" questions — speculative, not-quite-answerable questions...

the type of question that lets us be a little playful and think a little differently about the world than we might be used to.

We got so many good ones that we're going to keep answering them in future episodes, and today, we're going to start by answering a couple of them.

We asked our producer Felix Poon to tackle the first one for us.

**MUSIC SWELL AND FADE**

**Nate Hegyi: What's up Felix?**

**Felix Poon: So we got a couple of "what if" questions on Instagram about the moon.**

**Nate Hegyi: Okay.**

**Felix Poon: Kathryn from Portland, Oregon asked "What if the earth had no moon?" and Mande from Lake Villa IL asked "What if the earth's moon was MUCH larger."**

**Felix Poon: So Nate, what do you think would happen if we just, disappeared the moon?**

**Nate Hegyi: No tides, um, it would be really dark at night.**

**Felix Poon: Well, to answer this question, I spoke to Stephon Alexander, he's a theoretical physicist at Brown University. And without the moon, Stephon says...things would be different...**

*Stephon Alexander: without a moon, the Earth's tilt will be destabilized and therefore it will probably completely mess up the seasons.*

**Nate Hegyi: Oh! What, like what, what does he mean?**

**Felix Poon: Okay currently the Earth's axis is tilted at about a 23.5-degree angle, which is what gives us our seasons. But without a moon, sometimes the earth could be a straight 90 degrees... which would eliminate seasons completely. And then**

other times it could just kind of lie on it's side... which would make the poles burning hot and the equator freezing cold.

Nate Hegyi: Oh so we definitely need the moon.

Felix Poon: Yeah, we definitely need the moon, and like you were saying before, the tides would be affected. But they wouldn't disappear completely because the sun's gravitational pull still would create a little bit of a tide.

Nate Hegyi: kind of like the tides you see in the Great Lakes, it's like a tiny little tide.

Felix Poon: I did not know that.

Nate Hegyi: Sorry, Midwestern kid.

Felix Poon: And weaker tides would have an effect on wildlife, like sea turtles that lay their eggs with the tide for example.

Even land animals could be impacted.

*Stephon Alexander: predators need a little bit of moonlight to hunt.*

Felix Poon: So some studies show that predators could have a harder time hunting prey. (study1, study2, study3, study4 ) But other studies show just the opposite: that some predators do *\*better\** with no moonlight (more studies that go both ways)

Nate Hegyi: Okay so, freaky seasons, tiny tides, no moonlight. No thank you!

Uh, what about the other question? What would happen if the moon was bigger?

**Felix Poon: Stephon says a lot could change. Low tides would be lower, high tides could be much higher.**

*Stephon Alexander: you might have waves that are like*

*Stephon Alexander: as large as...apartment buildings*

**Nate Hegyi: Woah, like in uh, Interstellar, when they get crushed by that wave.**

**Felix Poon: And Stephon says a heavier moon could make the earth tilt even more, which could make seasonal extremes and weather more intense.**

**And... get this, the moon would either have to be faster - in which case the lunar calendar would speed up, and we'd get full moons more often - or it would slowly get pulled in and crash into the Earth.**

*Stephon Alexander: for the moon to remain in a stable orbit around the Earth, if it's more massive, it has. It has to move faster.*

**Nate Hegyi: Oh like, the movie Moonfall. That's terrible. So what you're saying is: even freakier seasons, tremendous tides, and the absolute destruction of the earth potentially.**

**I want to stick to the moon that we have.**

**Felix Poon: And there's a lot in the world that's aligned to the lunar cycle, whether it's just coincidence or not. Biologists have found the reproductive cycles of sea creatures align with the lunar cycle for example. And there's even studies on the moon's impact on human sleep patterns, and menstrual cycles – though**



the jury is still out on that one (e.g. Clue research vs. Science study).

**Felix Poon:** At the end of the day, you know we can try to imagine a moon-less world, or a bigger moon. But all we can really say is that OUR moon looms pretty large on life as we know it.

*Stephon Alexander: so much of of the cycles of the moon, um, modulates the physiology, actually, of living beings on Earth, including, I believe, humans.*

**Nate Hegyi:** So moon, very important, perfect size, don't need it bigger, still want it. Keep it as is.

**Felix Poon:** Exactly.

**MUSIC SWELL AND OUT: Young Community, Synthesized Dreams**

**Justine Paradis:** I really like that as Felix was answering this question for you, you just kept thinking of different sci-fi films that related to the various ...

**Nate Hegyi:** That's my go-to. I watch too many sci-fi movies.

**Justine Paradis:** I mean, it kind of speaks to the fact that the "what if" set-up is kind of how it feels like a lot of science fiction probably starts out that way for the writer, you know?

**Nate Hegyi:** Absolutely! I'm sure screenwriters starts out with questions like that... what if the moon crashed into earth... call up Gerard Butler... the actor who starred in that movie, he's kinda cheesy.

**Justine Paradis: I look forward to your novel, break-out sci-fi novel that you eventually write, based on one of these ‘what if’ questions.**

**MUSIC SWELL AND OUT: Brightarm Orchestra, Satin Slipper**

**Nate Hegyi: These “what if” questions also had us reaching out to very highly specific experts to answer them. That is definitely the case for our next question. Outside/In editor Taylor Quimby answered this one for us with the help of Rebecca Lavoie, NHPR’s director of podcasts. It’s about climate change – and before you hear it, remember: to reach the targets of the Paris Agreement, climate experts say [we need to keep the atmospheric CO2 concentration under at least 400 parts per million](#), or ppm for short.**

**Okay, so here’s David in Fairbanks, Alaska with the question.**

*“What if Earth’s atmosphere reaches a CO2 concentration of 1,200 ppm? My understanding is that this will be a critical tipping point for life on Earth. I’d like to know what changes in our behavior will be absolutely necessary for survival. Thanks!”*

**Rebecca Lavoie: Oof, that’s dark.**

**Taylor Quimby: I know. So the Intergovernmental Panel on Climate Change has outlined a few different climate futures. And the worst one is called SSP5.**

*[shared socioeconomic pathwa*

**It’s basically the scenario that says “here’s what emissions will look like if governments do literally *nothing* to curb fossil fuel usage.”**

**And in that scenario, there’s a chance we could see atmospheric carbon dioxide doubling, hitting the scary numbers our caller mentioned... 1200 parts per million or more.**

**But ironically, we don't actually have a very precise picture of how much warming that would actually lead to.**

*[00:30:55-00:31:00] currently worst case scenarios are dangerously understudied.*

**So this guy is Luke Kemp, he's a research affiliate at the Center for the Study of Existential Risk, in Cambridge, England. (You gotta wonder what the staff parties are like there.)**

**[reax]**

**Luke says there isn't a lot of incentive to focus on these higher emissions scenarios, and the ones we DO have are super theoretical.**

**But there is a fear that this much carbon dioxide could kick off these feedback loops that raise average global temperatures by 7, 10, even 12 degrees celsius.**

**And that kind of worst case scenario makes for a...**

*[00:20:33-00:20:41] fairly silent, life depleted, hellish landscape made up of purple oceans and a slightly green tinged sky as well.*

**So for humans to survive, how would we have to adapt?**

**First, this world is so much, much hotter... so you have to imagine we'd migrate to places like Canada, the Arctic, maybe even Antarctica.**

**But we're not sure whether the soils in those places are going to be any good, so we'll have to rethink food production.**

*[00:25:20-00:25:35] The wackiest thing one can imagine is that we actually start relying upon other staple food sources, in particular things like algae, seaweed, and potentially even actually growing mushrooms en masse. [00:25:57-00:26:01] and potentially as well as eating things like rats, much more kind of hardy species.*

**Me and Luke were spitballing, and we talked about people living in bunkers, cybernetic technology to survive extreme heat, de-salination plants to make fresh water... I mean, we're in science fiction territory.**

**And if you've seen Mad Max or The Road, you might think humans will be pretty much at their worst in this scenario.**

**Luke disagrees.**

*[00:28:21-00:28:34] I think that's unlikely, and I think particularly based on my study of previous societal collapses, if anything, there's a good chance that you might even see more pro-social democratic forms of governance happening.*

**But while scientists generally agree that climate change is happening - there is a LOT of uncertainty about these more extreme hypotheticals.**

**And the most important thing they can do is push us to make changes, so that's all they'll ever be.**

*[00:33:36-00:33:53] with better science, we can actually have better discussions about these worst case scenarios. Right now, people often revert to this doomsday talk because they*

*can't rely upon good evidence and good studies. So I think this actually improves the discourse rather than just reverting back to climate doomerism.*

*Taylor Quimby: Another cheery Outside/Inbox.*

*Rebecca Lavoie: Gonna go practice with mushroom soup tonight Taylor. So thanks a lot!*

**MUSIC: Diamond Ortiz, A to the O**

**Justine Paradis: Nate, what do you think your role would be at the Center for the Study of Existential Risk? My job might be Director of Deep Breathing Techniques.**

**Nate Hegyi: My job would be the director of Only Thinking About Things Six Inches from Your Face. That's what I've been trying to do anyway lately. Don't think about the past. Don't think too far in the future. What's in the Six Inches in Front of You?**

**Justine Paradis: Co-Chair of Trying to Only Worry about What's Under Your Control?**

**Nate Hegyi: Yeah, exactly. Exactly. Which is increasingly not much.**

**MUSIC: Kevin MacLeod, Amazing Plan**

**Nate Hegyi: Okay, we still have a couple more questions on deck today. Coming up, we'll be pondering the mysteries of turtles and chickadees. But first, I want to remind you that you too can submit a question to the Outside/Inbox. You can call our hotline and leave a voicemail - the number is 1-844-GO-OTTER. You can also record a voice memo and send it to us. Our email is [outsidein@nhpr.org](mailto:outsidein@nhpr.org).**

**BREAK**

**Nate Hegyi:** Hey hey. This is Outside/In. I'm Nate Hegyi, here with producer Justine Paradis. We are opening up our listener mailbag today, and for the rest of the show, we're gonna be thinking about wildlife.

**Justine Paradis:** Which is a pretty good theme for early spring, which is the time of recording.

**Nate Hegyi:** Mhm.

**Justine Paradis:** I'm not sure everyone listening knows, Nate, but you recently moved to a ranch in rural Montana and started raising pack goats, am I right?

**Nate Hegyi:** A "ranch" is a stretch of the word. Let's call it a log home on five acres of land in the Rocky Mountain Front. And yes we do have pack goats.

**Justine Paradis:** Yeah. Not a joke.

**Nate Hegyi:** Which are two goats which carry your stuff in the back country. Was it impulsive to buy them? Uh, yeah it was. But do we love them? Yes we do.

**Justine Paradis:** You know, your classic impulse pack goat purchase.

**Nate Hegyi:** We've all been there, right Justine?

**Justine Paradis:** We've all been there! I am curious if there are any early spring rhythms that have to happen with pack goats? Like, do you need to do any shearing?

**Nate Hegyi:** No, they're very resilient. I don't have to do anything with them. But when it comes to early spring, living out here. Here's

something I've noticed that's actually really cool, is that right now we are in the middle of a snow goose migration...

Justine Paradis: Oh!

Nate Hegyi: so we have literally thousands of snow geese flying over our home every day.

Justine Paradis: Wow.

Nate Hegyi: Landing in the river, in the reservoir near us,. Yesterday I saw an eagle chasing a flock of snow geese. I pulled over. The eagle did not catch one. I was like, this is amazing. I feel like I'm in the throes of spring right now.

Justine Paradis: That's like a wonder of the world level event.

Nate Hegyi: It's really cool.

Justine Paradis: That is lucky. I think early spring is one of my favorite times of year. Because it's so delicate. The peepers are coming out. There's tree flowers. Everything is very electric I feel.

Nate Hegyi: Do you know that Tom Waits song? [sings] "You can never hold back spring."

Justine Paradis: I think my new goal for any tracking session is to get you to sing Tom Waits.

Nate Hegyi: I like it. I'll accept that challenge as well.

**MUSIC: Walt Adams, Perpetual Transit**

Justine Paradis: One of the very early signs of spring here in Maine, where I live, is that the [chickadees are starting to get some action](#). Black-capped chickadees are pretty widespread and they're mostly

permanent residents wherever they are – they don't migrate too much. Which is highly relevant to our next question, which was submitted by a listener named Ange. Ange asks: "Do birds that are the same species have "accents" if they live in different regions...?"

**Nate:** ... That's a great question.

**Justine:** Isn't that fun? Because obviously humans display regional dialects. So, if you were to apologize to me for instance Nate, you're from the Midwest and British Columbia, what would you say?

**Nate:** I'd say sorry. I'm so sorry.

**Justine:** I'm so sorry, that's how I would say it.

**Nate:** yeah. That's classic. I think that's the Canadian sneaking out is the sorry vs. sorry.

**Justine Paradis:** There we go. So answer this one, I talked to Chris Sturdy, at the University of Alberta in Canada.

Chris Sturdy: Yeah... we study, uh, birdsong, or more specifically, we study songbird communication and behavior and cognition.

**Justine:** About 10 years ago, Chris and a Phd student were researching black-capped chickadees. Nate, are you familiar with the typical chickadee songs?

### [Chickadee alarm call](#)

So that one's their alarm call, and then there's the two or three note song – which can be both territorial or a mating song. It's sometimes described as "hey, sweetie!"



### Chickadee two note call

**Chris Sturdy:** people characterize it as, characterize it as either a Phoebe or a cheeseburger.

**So, Chris and his team were looking for acoustic markers in birdsong to see if there was a difference between dominant and subordinate birds.**

**So they did an analysis of a bunch of recordings of chickadee songs.**

Chris Sturdy: our dream was or our prediction slash dream was that we're going to put these, these in. And then ... there would be like a cluster of birds that would be dominant and a cluster of birds that would be subordinate and it'd be like, aha, it did it.

**Justine: Instead, they got the data back, and it did not reflect their hypothesis. Which at first was a little discouraging.**

**Chris Sturdy:** I mean, this is, this is why I and others always tell their students to not be afraid of the data, because the data did not follow our predictions or our predictions were not supported by the data. But because we were actually open to it after a bunch of head scratching, cursing and all the rest.... We figured it out but it took a left turn into this whole idea of geography.

**The issue was: they'd recorded chickadees from very different parts of Canada - and these different groups of birds had regional accents that were messing up the data.**

**Nate: Okay, so birds DO have regional accents.**

**Justine: Yes. And it WAS known that *other* songbirds had regional dialects – so, species like white crowned sparrows or chaffinches in Scotland.**

**Nate: Wow.**

**Justine: But people thought that chickadees sang the same song across the North American continent, except for a couple isolated populations.**

**So, Chris and his student rallied. And they set off with a new focus: studying two groups of birds around 1500 miles apart. And they tested them to see if those birds could discriminate between the different accents.**

**And it turns out – while the human ear couldn't pick up the differences... other chickadees sure could.**

Chris Sturdy: you know, that's their livelihood. They use songs for attracting a mate, defending a territory, communication. And it's, you know, highly biologically relevant.

**Justine; It's like their whole job to distinguish between those songs.**

**Nate: So they could tell. Western Canada doesn't have as strong of a "Canadian accent" as eastern Canada, so I'm just imagining these chickadees going 'eh eh eh eh eh.'**

**Justine: Well, actually one of the things that their evidence suggested is that chickadees can hear is how long they hold the notes in the fee-bee song, so you're not far off.**

**Nate: That's so cool.**

**Justine: And actually funnily enough - the isolated populations, one of them is off Cape Cod, Martha's**

**Vineyard and Nantucket, so I like to think that those birds have a bit of a Cape Cod accent.**

**Nate: What is a Cape Cod accent?**

**Justine: Oh, it's like 'chowdah.' That's the caricature of a Cape Cod accent.**

**Nate: Classic.**

**Justine: We don't really know why birds have regional accents - but Chris explained one reason may be because songbirds learn their songs.**

Chris Sturdy: Even though birds will copy the song [00:17:30] patterns from their models, usually their fathers or another male living nearby, at least in temperate North American species, um, there might be slight errors in the copying. And then those errors are propagated... through subsequent generations.... that's thought to be one, uh, one mechanism by which, uh, the dialects actually arise.

**Nate: It's kind of like a game of telephone.**

**Justine: A grand game of bird telephone.**

**MUSIC: Tellsonic, 1978**

**Nate Hegyi: Let's talk about another really cool moment in early spring. This event is known among naturalists as "Big Night."**

**It'll be one of the first warmer nights in early spring. Ideal conditions are above 45 degrees Fahrenheit. Maybe a little rainy, a little wet.**

**And that's the kind of thing that gets all the frogs and all the salamanders in all the land... in the mood.**

[Peepers from FreeSound.org](http://FreeSound.org)

**This can mean hundreds of thousands of amphibians, hopping and crawling along, in a single spring night.**

**But for a lot of them... getting to the spring ponds where they'll breed – means crossing a road.**

**And that leads us to our next question, answered again by our producer Felix Poon.**

**Felix Poon: Hey, so, we got an email from Mariah in Lebanon, New Hampshire.**

**Felix Poon: She tells this story about how her mom had just seen a deer get hit on the road. She pulled over, turned her hazards on, and called 911, and while she waited, she watched the deer, which was still alive, get hit *two more times* by different vehicles, before it finally died.**

**Nate Hegyi: Ugh, that's terrible.**

**Felix Poon: And so she contacted New Hampshire's Department of Transportation about getting one of those yellow deer crossing signs put up, but they basically said no.**

**Nate Hegyi: Really? Why?**

**Felix Poon: Because there isn't any evidence these signs do anything. I mean, do *you* slow down when you see one of those wildlife signs?**

**Nate Hegyi:** No I slow down when I actually see the wildlife. I kind of honestly just ignore them, unless it's cool wildlife, like I remember when I was in Alaska you'd see, like caribou crossing.

**Felix Poon:** So anyway, Mariah's question is:

*Mariah Cleveland: Are there any effective solutions to wildlife collisions being explored in New Hampshire?*

**In other words, if we're not putting up signs, then *what are we doing?***

**Nate Hegyi:** You did a whole Outside/In episode about this, and if I remember correctly a lot of it was about building wildlife *crossings*, right like is...is New Hampshire building any animal-friendly infrastructure?

**Felix Poon:** Well, I talked to Sandi Houghton, she's a wildlife diversity biologist at the New Hampshire fish and game department. And she said we do have crossings for wildlife in New Hampshire, we just don't see them because they're underneath the road.

**Nate Hegyi:** Oh cool.

**Felix Poon:** Yeah Sandi says there are over 20,000 points in New Hampshire where roads go over a stream or a river – some of these are bridges where wildlife can simply pass underneath. Others might look like a normal road to your average driver, but underneath it there's a culvert, which is basically a water tunnel

**Granted, most culverts aren't designed to be used by wildlife. But when it's time to fix an old culvert, biologists like Sandi often try to get the transportation department to replace them with ones that wildlife can cross through.**

**Nate Hegyi: Are these culverts like, big enough for deer to walk through?**

**Felix Poon: So these culverts are typically used by turtles, salamanders, and fish. They do make culverts big enough for some mammals. I'm thinking of one in Stratford that was pretty cool, they made it to mimic a natural river habitat, so fish can pass through, but it's also got these bigger boulders that bobcats and black bears can use to cross and stay dry.**

**The Stratford culvert isn't tall enough for deer, but there is a culvert in Newmarket that is tall enough for deer, as well as other culvert projects in the pipeline.**

**Nate Hegyi: That's pretty cool. So is there anything like, people, just like regular people can do as well?**

**Felix Poon: Yeah, so Sandi suggested a website called Taking Action for Wildlife, which has lots of suggestions for things you can do.**

**Stuff like donating land for habitat conservation, or reporting wildlife and roadkill through a citizen science website run by UNH.**

**Felix Poon: There's also these salamander crossing brigades...the Harris Center for Conservation Education organizes some every spring time, when salamanders, toads, and frogs are trying to get to vernal pools to breed. Basically volunteers go out at night and carry them safely across the road.**

**Nate Hegyi: That sounds pretty fun actually, I'd like to do that.**

**MUSIC: ProleteR, April Showers**

**Justine Paradis:** You know, Nate, I too have thought that helping out amphibians like that sounds really fun, and this question actually inspired me to finally get my act together. So this spring I signed up as a volunteer for Big Night in Maine.

**Nate Hegyi:** Whoa!

**Justine Paradis:** I adopted a little road site and I'm gonna go save some salamanders!

**Nate Hegyi:** That sounds so much fun.

**Justine Paradis:** I'll keep people posted. I'll post on our Instagram + newsletter + let people know how it goes.

## **CREDITS**

**Nate Hegyi:** This episode of Outside/In was produced and reported by the whole team: Felix Poon, Taylor Quimby, and Justine Paradis.

It was edited by Taylor Quimby and Rebecca Lavoie, NHPR's director of podcasts.

Music in this episode came from Walt Adams, blacksona, Katori Walker, Bisou, Young Community, Diamond Ortiz, Brightarm Orchestra, Kevin MacLeod, Tellsonic, and ProleteR.

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Our theme music is by Breakmaster Cylinder.

**Outside/In is a production of NHPR.**

*One more moment for the peepers.*