But Why: A Podcast for Curious Kids

Why Do Turtles Need Shells? Why Do Frogs Hop?

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[00:00:21] (JANE) This is But Why: A Podcast for Curious Kids. I'm Jane Lindholm at Vermont Public Radio.

[00:00:28] This podcast is driven by kids like you who send us questions about all kinds of things, issues and animals big and small.

[00:00:37] If you have a question about anything, truly anything, have an adult record it for you. It's easy to do on a smartphone using a voice memo function or voice recorder app. Then tell your adult to mail the file to: questions@butwhykids.org. Be sure to tell us your first name, how old you are and where you live. Sometimes we get questions from you that we've already answered and we try to send you an email back to tell you what episode you might want to listen to. But we love hearing those questions from you because it tells us we're on the right track. Some others of you are curious about the same things that we have already covered on the show. So we're happy to get any questions you want to send us. In our last episode, we explored the entire universe. This week, something a little bit smaller. (Noise) That was a green frog. If you thought frogs only said “ribbit ribbit”, actually they make all kinds of noises. You have sent us a lot of questions about reptiles and amphibians. Now, amphibians have moist skin that can absorb water. They generally need their skin to stay kind of damp in order to survive and they lay their eggs in or around water. Most amphibians start their life in the water swimming around (think of a tadpole) and then change or go through metamorphosis into their adult form. In the case of a tadpole, that's a frog. Other amphibians are salamanders and toads. Now, reptiles have scaly skin and they generally lay their eggs on land. Reptiles include snakes, alligators, crocodiles, lizards and turtles. Today we're answering questions about frogs and turtles. (CHILD 1) Why do frogs jump?

[00:02:29] (CHILD 2) Why are frogs green?

[00:02:31] Later in the episode we'll hear about a new podcast from Canada that's all about animals and conservation. In one of their first episodes this season, they'll be talking about how frogs go from swimming little tadpoles to hopping adult frogs. But first we're going to go on an adventure. Now you know how I always say that Melody Bodette produces the podcast with me. She generally likes to be the silent partner but last week while I was in Philadelphia working on an episode about fire and firefighters, Melody went on a frog and turtle expedition in Vermont with a group of herpetologists. I really like that word herpetologist. A herpetologist is someone who studies reptiles and amphibians.

[00:03:16] And here in Vermont where the show is based, we have some great herpetologists who can help answer your questions.

[00:03:23] (JIM) My name is Jim Andrews and I teach herpetology at the University of Vermont and I coordinate the Vermont Reptile and Amphibian Atlas.

[00:03:34] (KATE) I am Kate Kelly. I'm a herpetologist and work with Jim at the Vermont Reptile and Amphibian Atlas.

[00:03:40] (MELODY) These scientists are at a pond at the base of a mountain to document the species of frogs and turtles they find. Today we're getting help from Danielle. She's a student. And Nick; he's a former student.
(NICK) We baited some

[00:03:56] traps. These are live traps. It's netting and hoops with a funnel entrance and we have sardines and soy oil that we put in an old sock of mine as the bait. So, turtles like dead fish and rather than just carrying a lot of dead fish around in the back of my car, it's easier to carry cans of sardines. Danielle and I are going to wander out to that first trap there and see if there's anything in that trap and Kate will probably find you a newt while we're doing that.

[00:04:33](MELODY) Kate has a big net on a stick which she uses to dip into the water and pull out the mud from the bottom of the pond. Then she carefully sorts through the mud to see what she can find.

[00:04:45] (KATE) Oh good! We have salamander larvae. Sweet! There's a tadpole.
(MELODY) That's really pretty.
(KATE) This is probably a little gray tree frog tadpole. So, they got this beautiful red tail and they lay their eggs in sort of later in the spring. And then they'll develop just in one year. They develop their legs soon and come out of the pond this fall, head up into the woods and spend their winters overwintering in the woods and then in a couple, three years they'll come back to the ponds as adults and breed.
(MELODY) It's really cute.

[00:05:31] How long are they tadpoles?
(DANIELLE) It really depends on what species you're talking about. So our biggest frog, the American bullfrog,

[00:05:40] they can stay tadpoles for up to like three or four years. So, they'll over winter as tadpoles and then not come out of the pond until maybe three years later.

[00:05:49] (JANE) Whoa hang on a minute. This is Jane again. I didn't know that. Did you? I thought tadpoles were only tadpoles for a couple of weeks maybe a month or two before they became frogs.

[00:06:01] I didn't realize you could have toddler tadpoles that were 3 years old.
(DANIELLE) And then anywhere from there down to say something like a spring peeper where they, you know, they lay in the spring and they're out of the pond in a few months by the fall. So just really depends on the species. Some develop a lot faster than others. Generally, the bigger the frog the longer it's going to be a tadpole but not always true depending on what water they land to. Right, if you're a bull frog you need to be in pretty permanent water to be able to spend your multiple winters. If you're in a vernal pool that's going to dry up you've got to develop quickly and get out like a wood frog does.
(MELODY) A little frog just swam by.

[00:06:40] (NICK) Lots of newts over here.
(KATE) A green frog calling!

(DANIELLE) OK I'll come your way. There's just stuff everywhere. A good spot but how deep are we going?.

[00:06:59] (Laughter)

[00:07:02] (MELODY) Jim and Danielle are up to their waists in water. Checking the first trap which turned out to be empty when they came in,

[00:07:09] Jim found a very tiny frog.
(JIM) Some are pretty darn cool! Look at that! See that tiny, tiny frog that would fit on my fingernail. A little tiny spring peeper. These are the guys that make a lot of noise in the spring in the northeastern U.S. This is kind of a sign of spring when these guys call.
(MELODY) Then it's back in the water to check the other trap.
(DANIELLE) Found one.

[00:07:45] (JIM) We did. We found one male painted turtle.
(MELODY) Woohoo!

[00:07:48] (JIM) So this is a painted turtle and it has beautiful yellow stripes on his head and he has two spots kind of about where his ears would be if he had external ears. And then another spot a little bit further down on the neck. And they can bite which would just be a pinch but they can bite. And then you see this beautiful, this is where they get the name painted, on the underside of the shell

[00:08:18] you see these beautiful red and green markings and we have some little yellow spots in here.

[00:08:25] And this turtle is doing something interesting and it's shedding skute. These little square things are called skutes. And so as they grow, the outside edge of the skute comes off and we see the nice new clean skute underneath.

[00:08:44] (JANE) Jane here again jumping in with a little explainer on that word you just heard. Jim Andrews said the word "skute" a couple of times, in this case that spelt S K U T E. Skute. If you think of a turtle shell, it might look like all one piece but it's actually made up of lots of different pieces that are sort of fused together or joined. Each of the bony plates that make up the shell of the turtle are called the skutes. Now unlike a hermit crab which crawls out of its shell when the shell gets too small, a turtle doesn't leave its shell behind for a bigger model. The shell continues to grow and it's actually each of those skutes that's growing bigger and then the outside coating, the keratin, sheds and falls off to make room for the bigger skute.

[00:09:33](JIM) Now here's the cool thing. Being a turtle, it's living inside its rib cage. Think of that. You know you pull your neck in. You pull your arms in and pull your legs in and you're pulling them inside your ribs. And so this is really an extension of the turtle's ribs. And so he can pull his head in, pull his arms in, pull his legs in and hide inside his rib cage so that when Mr. Fox or raccoon comes along, they can chew on the shell a little bit but he's got great protection as a result of living inside the rib cage. You know that's really an interesting adaptation to be able to live inside your rib cage.
(JANE) This is a good moment to share one of your questions about turtles with Jim.

[00:10:25] (PHILLIP) My name is Phillip and I'm seven years on and my question is why do turtles need shells?

[00:10:30] (JIM) Yeah it's a great adaptation for protection from most predators. You can just put your head in, pull your legs in and hide and in the case of a box turtle they can actually, there's a hinge here so that they can close the shell and pull their arms and heads in and close it seal it right up tight. So there's just no way anything can get in. Now unfortunately for this guy if, let's say a raccoon or an otter or something catches him, they could take a snack and that snack might be a leg, part of the leg, something like that. So he may lose something but his internal organs are all nicely protected by what is essentially an extended rib cage that he can hide within.

[00:11:19] (MELODY) Here's a question from Simon. He's 5.

[00:11:22](SIMON) Why have turtles stayed here for a long, long time because dinosaurs were turtles and they died too?

[00:11:31] (JIM) I think they've been around so long just because it's a good design. You know it's a design that protects them very well though there are some new threats to turtles that didn't used to exist before. I mean, if you pull in and hide in your shell, that's going to protect you from most of the natural predators. But if you do that in the middle of a road and a truck comes by then you could still get crushed. So. So there's new threats that are showing up that some of the turtles aren't lasting as long as we would like. But back in the day, this was a really good design. It's also a very efficient design because they're solar heated so they don't need anywhere near the amount of food that we do. This turtle, you compare it to maybe a mink or something about the same size- 3 percent of the food, 3 percent of the energy. So they can survive well in Vermont seven months without any food at all. All winter. Yeah yeah they would be in the bottom of this pond for you know pretty much seven months and the water though, in this case, would be so cold that they would be chilled down and being chilled down they would need even less food, you know, because their whole metabolic rate is really really slowed down.

[00:12:58] (MELODY) Sophie wanted to know about the turtle's reputation for being, well, not so fast.
(SOPHIE) My name is Sophie and I live in California and I'm 4 and I want to know

[00:13:11] why the turtles move so slow.

[00:13:14] (JIM) Well, (1) I suppose, look at the length of these legs. They're not particularly long. (2) They're really designed to do most of their moving in the water so they can actually swim pretty fast. But on land they would be pretty easy to catch. When people really think of a slow turtle, they're probably thinking of tortoises whose movement is just in slow motion. On the other hand, they might live 150 years, whereas this turtle's going to burn out a little faster. He's moving faster and he could go faster. But you know he's just so close to the ground, he's actually moving his feet probably as fast as we could. This guy. But he's just not going to get very far. Can we let him go?
(DANIELLE) I think so.

[00:14:12](MELODY) Is he a jumper? What's he going to do?
(JIM) It's gonna wait until he thinks he's safe. And then he's gonna make his move. To figure out where that water is. All right. Time to move.

[00:14:26] (JANE) See you later Painted Turtle. Coming up on But Why we'll learn about frogs and the amazing ways they survive the winter. And we'll find out about a new

podcast called Earth Rangers. This is But Why, a podcast for curious kids. And today we're answering questions you've sent us about frogs and turtles.

[00:14:46] We've already spent some time on turtles so let's move on to frogs. But Why producer Melody Bodette mucked about in a Vermont pond last week with herpetologists Jim Andrews and Kate Kelly and some students of theirs to try to catch some frogs. If you like catching frogs you might want to become a herpetologist. Remember that's someone who studies reptiles and amphibians, and frogs are amphibians.

[00:15:09] (JIM) Now you guys can see better than I do. Is that a big green frog's head over there?
(NICK) Oh, that is a big green frog.
(JIM) OK, Danielle's on it.
(MELODY) So what's her what's her strategy?
(JIM) Well we'll see.

[00:15:23] (DANIELLE) I didn't know there was an official strategy.

[00:15:27] (MELODY) Sadly we missed that frog but we did find another.

[00:15:31] (JIM) So we got a little green frog here and this is probably the frog that most kids in the eastern United States anyhow are most familiar with; little green face and a greenish back mottled with black. And this is the frog that spends most of its time either in the water, right at the edge of the water, or on rainy nights travelling on land looking for food but always coming back to the pond and sitting along the edge of the pond. So like when I was a kid, you'd walk along the edge of a pond and you'd be looking for these guys and trying to catch them. The green frogs, and this is one of those, it's depending on camouflage to hide and not be seen. And so it's a pretty good jumper too. And these are the guys that make a really nice summer night. "KUNK, kunk" make those little noises and those are the males trying to attract the females into their territory. So this is a permanent water frog and by that I mean, it's a frog that you can't have a pool that dries up occasionally. That's not going to do for them because, as a tadpole, as a little tadpole, they don't get big enough in one year.

[00:16:48] up here in Vermont to transform and go on land so they have to be able to live underneath the ice one year, maybe two years, as a tadpole before they come out so that they require permanent water. I should mention, when we're handling these things, when they start to become a little sticky, they're getting dry. And they need to go back in the water.

[00:17:12] (MELODY) So that's something to keep in mind, if you're catching frogs, once they get sticky they need to get wet again. That's because they take in oxygen through their skin. So when they get sticky, let them go. OK here's a question a few of you had.
(NATHAN) My name is Nathan.

[00:17:31] I'm six years old. I live in Fairfield, Connecticut. My question is, why do frogs hop?

[00:17:38] (ISAIAH) My name is Isaiah. I'm 4. And my question is, why do frogs jump?

[00:17:47] (MARY) Hi my name is Mary. I'm 4 years old and I live in Attleboro, Massachusetts. And my question is, why do frogs always have to hop?

[00:17:56] (JIM) Well a lot of frogs don't have a lot of defenses. They don't they don't have that shell like a turtle has. They're not going to bite in defense so they just got to get away. And those frogs with the least toxin in their bodies, so they don't have that defense, have to be able to hop fast and far and sometimes change in direction.

[00:18:23] They'll hop a few feet in one direction and then they'll change 90 degrees and hop a few feet in another direction and another direction.

[00:18:29] And that is an easy way to lose a fox or a raccoon or a blue heron or whoever it is that that's after you. And so you'll notice that those frogs that are least toxic, have the least other defenses, are the ones that jump the farthest and the fastest.

[00:18:50] Then on the other hand, if you're a toad and you've got some toxins in your skin, you just kind of hop. Things like toads, which are a kind of frog, will also walk. So when they find food and they get close to food, they'll slowly sneak up on the food in a little walk but if they really think they've got to be in a hurry, they'll hop
(MELODY) Two of you had questions about the color of frogs.

[00:19:21] (LYDIA) My name is Lydia. And I want to know why frogs are green.

[00:19:34] (NICKELE??) Hello. My name is Nick and I am 6 years old. I live in Norwood, Massachusetts and I have two questions. Why are colorful frogs poisonous and are green frogs poisonous too? Thank you.

[00:19:54] (JIM) Well they're getting at it right there, is that that green would be a good camouflage color so that you could blend into the grass or the cattails or the sedges around the edge of a pond and if they don't move it should be really hard for a predator to see them and catch them. And so you've noticed that when we're looking for them, we're moving through this grass trying to make them jump, because if they don't jump we're a lot less likely to notice them. And so they're going to hold still if they can and that green color is going to help, that pattern is going to help them hide. But if they have bright colors then they're advertising toxins. So if they have, let's say, we have gray tree frogs here and underneath their legs they have this bright yellow. Now they're going to try to hide first. But if that doesn't work and snake gets too close they'll kind of stand up on their legs and they'll flash that bright yellow at the predator and that is why these colors are called Flash Colors because they flash the predator this bright yellow. And that's supposed to tell the predator, "You remember this bright yellow stuff. You've seen it before, you tried it before and it was very unpleasant." So hopefully that would convince him not to do again. Pickrell frogs have some yellow underneath and they have a higher toxin load. So and then of course, when you go to Central America and you get maybe bright red, you want to be careful not to lick those though clearly you don't lick any of these guys. But different colors are just kind of different methods of defense and if you have bright colors, you're warning the predators not to eat you.

[00:21:34] (MELODY) Michael wants to know why frogs bury themselves in mud over the winter.

[00:21:40](MICHAEL) I am 4 years old. I live in California, San Diego. My question is, why do frogs go underwater and bury themselves down in mud?

[00:21:50] (JIM) That's a really cool thing, isn't it? This far north, we have a really cold winter and some frogs will actually overwinter. And this relates to one of your other questions. Some frogs will actually go under the ice and just tuck in under some leaves or under a stick or in a crayfish tunnel down there and they'll spend the winter under the ice. And that could work for some species of frogs. But others spend the winter on land. And you think, well how can they do that without freezing to death but they tuck in. Maybe if say a wood frog, they tuck in into the leaves and then they have antifreeze in the cells that make up their body and it keeps the cells from freezing. But there's water between the cells so maybe you can think of this as maybe a brick wall, with the bricks being the cells and the mortar, the stuff they put the bricks together with. In our bodies, there's a lot of moisture in between the cells and that moisture between the cells can freeze, that's fine. So they'll feel hard frozen like a frogsicle. You know, frozen hard and their heart stops and their circulation stops. But the cells can't freeze. And so they need that antifreeze in the cells to keep them free. If it gets too cold, the cells will freeze and if you think of a coke bottle or a milk bottle when it freezes, it expands and it breaks the bottle. And that would, same thing, would happen to these cells. They would expand and break and that would do damage to the cells. And so they would be injured that way and it might kill them.

[00:23:31] So they've got to make sure that they're in a place and they have enough antifreeze in their cells. And then of course, if they have a nice layer of snow on top, that's insulation. You know it may not sound like insulation, but if they're down there under the snow, it's not going to get nearly as cold as it is up here on top of the snow.

(MELODY) And their heart really stops?

(JIM) Yes. And then so in the spring, they thaw out. You know, the first early rains they thaw out and heart starts beating again and they hop to the ponds and lay their eggs.

[00:24:08] (MELODY)That's amazing. Their hearts start beating again. But not all frogs can do that. Some frogs like green frogs will tuck in under a leaf or a log to stay warm.

[00:24:19] (JIM) So lots amphibians like to have ponds with soft bottoms and turtles, so you can go down there and hide. They get down there in mud and otter can't find them and they can survive. But there's not a lot of oxygen down there. They're trying to get oxygen out of the water and there's not a lot of oxygen down there so they're better off when they're just kind of tucked in somewhere; tucked under a rock or under a leaf or under a log. So they could still get more oxygen.

[00:24:52] I'm 7 years old and my question is, why do frogs inflate their throats?

[00:24:59] (JIM) Well that helps them make noise, sing, and that's the males and that essentially it's making a sound chamber bigger when they inflate the throat.

[00:25:11] Think of maybe the box of a guitar. You know, and it's bigger so they can be louder and they can make more noise. And the males are trying to impress the females and they want those females to hear them and so they inflate that throat to make as much noise as they can. And some of the females are impressed by noisy males. So if you're a bullfrog, if you have a really deep voice, then you're more likely to attract the females. Now if you're a peeper, you don't have to have a really deep voice. But if you're just noisy as heck and you keep talking and you never shut up, then that might attract the females and that's what they're trying to do.

[00:25:57] (MELODY) Abby and Molly from Hinesburg, Vermont wanted to know what are some of the biggest threats to reptiles and amphibians.

[00:26:04] (JIM) Number one threat, loss of habitat or fragmentation carving our habitat up into smaller and smaller pieces with roads and other things that we do to meet our needs. Chopping the habitat up. And then of course we should be concerned, we should be really concerned, about global warming. That's got to change the environment. Humans are going to try to adjust as best they can as the temperature increases but it's going to be harder for some of these wildlife species to adjust to a changing climate. Whereas say thousands of years they've had a climate that was relatively predictable and now it's becoming more and more unpredictable.

[00:26:45] So climate change we really have to be concerned about as well.

[00:26:49] (JANE) That was Jim Andrew and he runs the Vermont Reptile and Amphibian Atlas. And I want to thank Jim, Kate, Danielle and Nick for showing us those frogs and turtles. So cool. Now if you're concerned about protecting wildlife, we have a new podcast recommendation for you. Earth Rangers is a non-profit kids conservation organization in Canada. They do all kinds of programs in schools across the country and they're just about to launch their first podcast.

[00:27:18] Turns out they have an episode about frogs too. So we thought we'd give you a little preview of Earth Rangers to whet your appetite. Here's the host of the show Earth Ranger Emma.

[00:27:33](EMMA) I hear that shiny green frog just leaped into the water right in front of me. That was so cool. And that frog got some big air. I guess they weren't lying when they said frogs can jump 20 times their own height. Can you imagine? That's like me jumping as high as a ten story building. I mean forget Spiderman. Here comes frog lady!

[00:27:59] I'm Earth Ranger Emma, by the way. Wildlife biologist and rolling reporter for the Earth Rangers podcast.

[00:28:05] Hey you know what I just realized, frogs had lungs just like us, so how can they breathe underwater?

[00:28:12] I know I can't go longer than like a minute without taking a breath. Ready. One minute on the dot.

[00:28:25] So how can stay underwater for so long? (Music) Time to assemble an animal investigation squad!

[00:28:35] Oh wait wait I remember now. They can absorb oxygen through their skin. Yeah. And I think they can also do the same trick with drinking. I mean, when was the last time you saw a frog take a drink?

[00:28:46] Probably never because they don't need you. They just absorb water through their skin. Pretty cool.

[00:28:53] Now let me see if I can find where that little guy went. Nothing. Oh wait. What's that? I've got a bunch of little tadpoles. Oh it looks like they're already transforming into little frogs.

[00:29:08] I can see some small legs starting to develop. The process where a tadpole turns into a frog is called metamorphosis and it is an amazing transformation. Almost every organ has to change so that the tadpole can go from living under water to living on land as an adult frog. It is such a difficult process and the time when a frog is most vulnerable. So why do they do it? Why don't they just get born as tiny baby frogs and grow up like other animals do? What's up with the Transformers? Let me see if I have a signal and maybe I can dial in an expert. (Telephone ringing)

[00:29:50] (CHRIS) Hello.
(EMMA) Hello. Is this biologist Chris?
(CHRIS) Yeah this is Chris.
(EMMA)Hi there. This is Earth Ranger Emma.
(CHRIS) Hello. Nice to meet you.
(EMMA) Nice to meet you too. I have a bunch of questions about frogs. You think you can answer them for me?
(CHRIS) Yeah absolutely. I love frogs.
(EMMA) Ok first question, why are frogs so happy?

[00:30:09] (CHRIS) Why are frogs so happy?

[00:30:12] (EMMA) Because they eat whatever bugs them.
(CHRIS) That's a good one.
(EMMA) No that wasn't my real question though. I have a real science question and I hope you can help me answer it.
(CHRIS) I will try.

[00:30:25] (EMMA) Why do frogs go through metamorphosis?
(CHRIS) Frogs go through metamorphosis for a couple of reasons. One of the main ones is that it's important for them to have different life stages to spread out the competition so that the juveniles don't compete with the adults and the adults don't eat or compete with the juveniles.

[00:30:43] (EMMA) So the babies eat different food than the adult frogs?

[00:30:47] (CHRIS) That's right. You'll find that baby frog tadpoles will swim in ponds and they almost exclusively eat plants and algae and then when they turn into frogs, they pretty much just eat bugs.

[00:30:58] (EMMA) Why don't they just get born as tiny baby frogs and grow a lot like other animals do?

[00:31:03] (CHRIS) Well there are a lot of frogs that have changed the way they go through metamorphosis. So lots of frogs actually have what they call direct development. So in that case, the tadpole turns into a frog while it's still inside the egg and then hatches out on land. A lot of frogs do this if there's places where there isn't a lot of good water around or maybe if there's lots of fish or predators in the water that they want to avoid. And then they'll still spend their lives near the water because they are frogs. They have to, but then they behave quite differently.

[00:31:36] (EMMA) How long does metamorphosis usually take?

[00:31:40] (CHRIS) While the process of metamorphosis itself only takes a couple of days but depending on the frog, they may stay as tadpoles for only a month or two but some frogs stay as tadpoles for years and years.
(EMMA) For years and years?

[00:31:53] (CHRIS) That's right. So it's just an advantage depending on what kind of other animals are around, where you want to spread out your life stage.

[00:32:01] (EMMA) Is it the same thing as when an insect goes through metamorphosis like when a caterpillar turns into a butterfly?

[00:32:07] (CHRIS) It's similar but not exactly the same. So with insects they'll form a hard Chrysalis or pupate and then inside, the animal gets completely digested essentially and then reformed into its new adult stage. Frogs aren't quite that dramatic. So they go through a couple of changes where there's stomach changes to adapt from a plant based diet to a bug based diet. Their brain will change. So now they have to learn how to hop on land and find different types of food. They grow legs and arms. They eat their tail essentially as they..
(EMMA) They eat their tail?
(CHRIS) Yeah they eat their tail. I mean they don't chew on their tails but it gets digested by the body and then the energy stored in that becomes the fuel for the whole process.

[00:32:53] (EMMA) Wow that is so neat. I feel like I know a lot more about frogs now.
(CHRIS) I'm glad.
(EMMA) I'm kind of curious, what exactly is your job?

[00:33:01] (CHRIS) So I'm a senior aquarium biologist at the Vancouver Aquarium. So specifically my specialty is the frogs. So I'm one of the guys who looks after all the frogs at the Vancouver Aquarium.

[00:33:12] (EMMA) Awesome.

[00:33:13] What would you say the best part of your job?

(CHRIS) The best part of my job is definitely the fact that I get to work with endangered amphibians. When you get to breed them and release them into the wild and know that you're helping make a difference and keep them alive or otherwise they might not be, it feels really good.

[00:33:29] (EMMA) Well that's so important. Out of those endangered amphibians, which one is your favorite?

[00:33:35] (CHRIS) My absolute favorite frog in the world right now is this little frog from Tanzania in Africa called the spray toad. They were actually only found when they were trying to build a dam. And this frog was found in just this small little spray zone at the base of a waterfall and it's really neat because it doesn't have a tadpole stage. So it does have live birth so it doesn't even have eggs that it lays that turn into frogs. It just gives birth to little frogs which is pretty rare for an amphibian.
(EMMA) Just like mammals.

[00:34:06] (CHRIS) That's right. It's just like a mammal and so it's pretty neat.

[00:34:09] And the sad thing is once they built this dam the frog actually went extinct in the wild. But luckily, some biologists saw that that would happen and they took a bunch of animals out of the wild and they were able to breed them. And so they built a big sprinkler system to recreate what the waterfall was doing and they've been releasing them back into the wild for a few years now and it looks like they're doing well.

[00:34:30] (EMMA) I'm so glad that biologists were able to save them.
(CHRIS) Yeah
(EMMA) Well thank you so much for answering all my questions.
(CHRIS) No worries. Nice talking to you to. Take care.

[00:34:43] (EMMA) And another one of nature's mystery solved. Man, I love science.
(Earth Rangers theme music)

[00:34:55] (JANE) The Earth Rangers podcast launches on August 7th. And thanks to Earth Rangers for sharing some of their amazing information about metamorphosis with us.

[00:35:04] That'll do it for But Why. Our show is produced by Melody Bodette and me, Jane Lindholm, at Vermont Public Radio.

[00:35:11] Our theme music is by Luke Reynolds. We'll be back in two weeks with an all new episode. Until then, stay curious.