

Episode 5 - Thriving with Nature



FULL EPISODE TRANSCRIPT

With your host

Hayley Weatherburn

Episode 5: Ocean Advocate, Emily Penn.

Welcome to **Thriving with Nature**, a podcast that gives you the tools you need to live a modern lifestyle that helps regenerate our planet. And now your host, Hayley Weatherburn.

Hayley: Hello Thrivers! Welcome to **Thriving with Nature Podcast**. We have a very special guest today, Emily Penn. Welcome!

Emily: Good morning!

Hayley: Thrivers, I want to introduce you to Emily. Emily is a skipper and an ocean advocate dedicated to studying environmental challenges in the most remote parts of our planet and definitely remote. She is an international speaker and advisor on issues relating to our oceans and future society. And I first met Emily here in Bali in 2016 when she spoke at TEDx and poignantly connected the issue of ocean plastic back to human health and how we urgently need to shift our behaviors on some fundamental levels. And it was such an amazing, phenomenal speech there at TEDx that it really enlightened something inside of me. And I even went up to you after the talk and just probably babbled on. But, welcome Emily! Thank you so much for sharing your time. I know you're a busy woman and so thank you for sharing your time here with us, with the Thrivers, from Thriving with Nature.

Emily: Oh, it's great to be here.

Hayley: Can you share a little bit about how and what inspired you to become an ocean advocate?

Emily: I guess a lifetime of growing up close to the water probably planted something in my mind. But, that was in the UK having kind of holidays and in depth and sailing, snorkeling. And then, it wasn't until I was 21. I graduated with a degree in Architecture and I landed my first job in Australia. (Go Australia!) Yeah. And I started looking between England and Australia. And I really wanted to get there without taking an airplane. I didn't want to miss everything in between. And so, I've looked at ways to hitchhike on boats, sailboats and all sorts of options. I ended up actually being involved with a project called *Earth Race* which was a crazy looking boat.

Hayley: Yes, look that up.

Emily: Yeah. It's held around the world a record. It still does actually run on biofuel. And I ended up joining this boat as my way to get to Australia. But what I wasn't expecting was to cross the Pacific Ocean and find myself surrounded in plastic in the most remote parts of our planet. So, stopping at small islands and finding uninhabited apples that were covered in plastic debris. Local communities that were struggling with the amount of plastic they were ending up producing because they were relying on the plastics (for) their food and drink. And then even in the very middle of the ocean. So, we didn't have any running water on board. Every morning, we had to jump in for a swim [really?] as a way of having to have a wash. And it was those morning swims every morning when I jumped off the boat when I started to see these fragments of plastic or a toothbrush literally 800 miles from nearest land. [Wow.] It didn't make any sense. That was the moment when I thought I needed to do something about it. But it took years after that to then work out really what that thing was to figure out how to turn that into a career.

Hayley: Yeah. Since then, I've gone on, if anyone really is interested in this area, I definitely recommend going and watching YouTube (where) Emily's got an amazing talk there. After that, you wanted to go and study a bit more out in the ocean with women. You've created sort of expeditions or something. Do you want to explain a bit about what you're doing to find more of that or to get more of that scientific knowledge of what's going on?

Emily: Yeah, absolutely. The more time I spent on these little islands, I realized that so much fast it was washing up and it was traveling thousands of miles across the ocean. And that's when I came across the idea of these *Gyres* or Accumulation Zones which are these areas in the ocean due to the currents...

Hayley: The plastic patches or the garbage patches, they call them?

Emily: Exactly! That's what they mean. So, there's a sort of scientific word we call it as a *Gyre*. Also in weather, you might have heard of the *High*, the center of a *High*? [Yeah.] And it's the same kind of phenomenon that creates that really calm weather. And the reason the plastic ends up there is because it's really calm. So, it moves away from the fast moving currents into those calm patches. [Okay. Interesting.]

I was aware of this idea and they were computer models and scientific papers that talked about it. But the reality was no now had ever actually been out there other than the North Pacific. But no one had been to these other four suspected gyres. I'm to find out if there was any plastic there and how much plastic and what impact it was happening. And so, all of these questions basically popped up. And so, I started to put together a project to go out there [wow] and to do that kind of global study (and) have research on these gyres.

And so, we set off in 2010 for a 2-year mission to go and kind of find out. And of course, we found a lot of plastic. We found a lot of other things as well. I think, most of all, the realization that actually these patches, they aren't islands, they're not physical vast areas of plastic that you can see from space or that you could easily clean up. The reality is that it's a soup of micro plastic [wow], tiny fragments, smaller than your little fingernail, that you can't see when you look at the water. But that first global study showed us that there were over 5 trillion pieces [wow] floating on the surface of the ocean. [It's insane.] Yeah.

So, that was that realization (that) it was a totally different problem than I first went out looking for. [Yeah.] And then, led to really the understanding that it's getting into the food chain.

Hayley: Yeah. Well, that's something that you show in some of your talks about how you actually went and got a blood test and started to notice the health, our human health, and how it's affecting us. Can you share a bit on that?

Emily: Yeah, exactly. So, I had a blood test for the pollutants that were either used in the production of plastic. (The) things like phthalates make plastic will flexible and brominated compounds make it flame retardant, [right], fluorinated compounds make like Gore-Tex jackets that we wear at sea (that) making them waterproof. [Right. Yeah.] And so, there are lots of chemicals that we use in the production and use of plastic. But when they got to the Marine environment, they were pollutants and they're persistent. They never go away. And what we were realizing is that they were in the sea, in the fish. And so, I then went to do a blood test to see if they also might be in my body. And it turned out (that out) of these 35 chemicals that we tested for all that have all been banned by the United Nations because they're toxic to humans, we found 29 of them in my blood. [That's just insane. Yeah.] Yeah. It was. I mean it's totally not what I was expecting. [No.] I grew up kind of eating vegetables from the back garden. I was kind of that picky kid at school. I had to show up at birthday parties with a bunch of rhubarb instead of a box of chocolates, you know. And (I) figured that I'd had like a pretty healthy

upbringing and then realizing that actually, we all have this chemical footprint. It's just a product of eating and drinking and being human on planet earth today.

Hayley: Yeah. It's (really) where it hits home. It's the fact that you can see the pictures of the garbage patches and they're so far away and we can get a little bit not numbed by those things. But when we realized that this is affecting us. We are nature. As people know Thriving with Nature, I believe that we are all one. But it really, really gets you when you realize that this plastic (is something) that you've got. And so, I guess that's something I was watching recently of yours. Is it plastics from toothbrushes? I think you mentioned even clothes where you just mentioned the Gores. [Yeah.] Do we know what is the majority of the plastic out there?

Emily: So, that's actually exactly what the expedition around the world at the moment is trying to figure out. And the research, I can tell at this point has been reasonably basic but also it's (the) stuff that we didn't know. We were trying to find out how much and where. And that threw open all kinds of interesting, unexpected results. The biggest one (that) we know is 8 million tons of plastic is getting into the ocean every year. [That's insane.] But you are only accounting for a quarter of a million of that floating on the surface. So, it kind of showed us that most of it's likely sinking [wow] to places so deep that we haven't really looked or we haven't really yet measured. All that it's breaking up so small that it's been going through a third of a millimeter wide net. So now, we're looking down to five microns which is a lot smaller than we have before.

So, that's kind of the research to date. But, this next piece of research is (we're) trying to do exactly what you're asking, which is trying to work out of that past account. Let's say, we have on board, an FTIR machine at the moment which allows us to work out the polymer type. [Okay.] Is it PET that's potentially come from packaging? Is it a piece of tire dust that might have come from our cars? [Yeah, wow.] Is it seen from that? Is it fibers that have come from our clothes when we put them in the washing machine? And, is it a pre-production pellet that hasn't even gotten into the hands of a consumer yet?

And the truth is we actually don't know. [Yeah.] I mean there's a lot that we still don't know. But even those chemicals that I let (that) in my body. We know they use it in the production of plastic. But we still don't know if they're getting into our bodies through them being in the environment. Or more likely, are they just getting into our bodies through direct contact?

Hayley: Holding them and yeah, I still don't know.

Emily: Sleeping on a pillow that's got flame retardant chemicals on it all of (your) life. It's more likely those sorts. That's just something important to point out. We don't really know the impact that plastic in the ocean might have on our health. I was really skipping to the end of the chain. Just in your own mind, is there a concern for us? And the answer I found was, yeah. [Yeah.] The question, "how are those chemicals getting there?" We really don't know.

Hayley: We're really in a dire situation. You've been doing this now for more than 10 years. What's the impact on the ocean that you're saying? Is it like (on) the animals? How bad is it?

Emily: Yeah. I find it pretty horrendous when you look out and it actually looks like a blue ocean and then you pull up this troll and you realize there's hundreds of these plastic in it. And the plastic's so small and it's the same size as the organic matter that you realize trying to extract it and keep the organic matter alive. It's really the kind of biggest challenge. In one way, I kind of have, I guess, a bit quite a negative message that I feel like we can't clean up what we've done. But on the other end, there's two positive messages. One, we can totally stop this getting any worse. [Yeah.] Literally the solutions are on our doorstep. All we need to do is prevent plastic from getting into the ocean. And then the second part of that message is the ocean is so resilient. And the other work that we've done at sea beyond plastics (is) we've done work with coral reefs, looking at ocean acidification, rising sea levels, rising sea temperatures. And time and time again, we see these amazing examples of where 'if you leave the ocean alone it fixes itself'.

Hayley: Yeah. Well, that's much (the same) on land as well in nature. If we just walk away, it eventually comes back to itself. Before this ends, I want to actually talk about what are the practical things that Thrivers can do out there. I wanted to talk about something you mentioned when you went to Tonga. That was one of the islands you went to on your spaceship, *Earth Race*. It looks like a spaceship on the ocean. It's amazing. You should Google it if you're listening. You mentioned that there were three areas that happened and that things that you notice. The Tongans weren't able to fish anymore because the commercial boats were trolling and taking all the fish. So, they couldn't fish. The soil was becoming salty so they couldn't even grow their own foods due to, I think you said, the rising oceans. [Yeah.] And thirdly, what that and ultimately

ended up doing is forcing them to order in imported plastic and tins and things that had these food inside it. We've almost forced these islands to join the problem.

Emily: Absolutely. [Yeah.] And they have no system in place to deal with all of that waste that they're bringing in. And then, the impact it has on their economy is huge as well. Because they then have to exploit their natural resources to find the money to buy the products and it's a downward spiral.

Hayley: I think my favorite thing is that you said that Tongans, when you first went there and you did an amazing situation where you helped them clean up a whole lot of rubbish and plastic. But you said there was no word for rubbish or waste in the Tongan language.

Emily: Exactly. And that was the moment when I realized that it wasn't just infrastructure that these communities needed but a new way of thinking about this, completely new inorganic material. [Yeah.] I went and did a cleanup the first day. I got there with a bunch of kids, just a tiny one on a beach. And we all went out and started picking up all of the plastic and the kids came back with the palm fronds and the coconut husks and everything. Because to them, they felt we were cleaning up to kind of just make it look different, but there was no distinction between organic and inorganic material.

Hayley: Yeah. Well, I find that here in Bali as well because through hundreds of years, they've eaten out of a banana leaf. Men just threw it on the ground because then it just ended up biodegrading. [Yeah.] And what's happened is plastic has infiltrated the system here in Bali and they still do it. They'll throw it down and they'll burn it because they have burnt some rubbish but it doesn't burn. It ends up putting toxins and then, it rains. We just had a massive rainy season and I posted some things on this recently on my Instagram in regards to (this). We had 24 hours of rain and I was on the beach the next day. And there were millions of plastic nappies, lots of single use plastic. It was just insane - the amount of rubbish. They just don't realize (it). They don't realize (it) and they haven't made that connection yet, I don't think.

Emily: No, exactly. And it's sort of like, "why would you think any differently about it if it's something that's kind of so new?"

Hayley: Yeah. If we can go back to this. This is the whole point of Thriving with Nature. If we come back and align ourselves with nature and create (it). We have this modern lifestyle but it's aligned with that theory that everything that is waste, I'm doing rabbit ears for those who are listening on the podcast, everything that's waste should actually be beneficial or regenerative to another part of the ecosystem. Like (for example), a litter off a tree ends up feeding the microorganisms that end up feeding the tree as well. If us humans can close off this loop of the plastic and create new ways of making things so that loop is no longer there. And then, we clean up what we've done. Is that sort of what you see?

Emily: Exactly. Nature lives in circles. Everything is that closed loop and at the moment, we, humans, are living in this real linear way. We take oil from the ground. We turn it into things, whether it's fuel or plastic. We use it and then we let that go. It's a waste. Whether it's carbon dioxide in the atmosphere or plastic that ends up in the ocean or landfill. And those processes are so linear that they are not sustainable. We can't just keep doing that forever and ever because [yeah] we're running out of resources and we're going to clog up (and) pile up with waste.

Hayley: That's it. We can't have any ways. I think you mentioned that only 10% of plastic can actually be recycled.

Emily: Yeah. The global statistics at the moment is 9%. It's gone down. Not that it can be recycled, but that it is recycled. [Oh, wow.] That 9% is recycled. Technically, and the thing can be recycled, but there's not a system for it. And then, when we go and do things like stick different types of materials together, like a toothbrush actually has three or four different plastics. The bristles, the main kind of handle, (and) the grip are all different plastics. And that's what then makes it non-recyclable.

Hayley: Because it's challenging to pull it apart.

Emily: Yeah, exactly. This is all glued to get there and you've got to pull it apart. Technically, it's just bits of those plastic (that) could be recycled. But of course, we don't because there's no value in it. And also, if you have hundreds of different types of plastic, just the sorting process and the different streams and machinery is madness.

Hayley: Where we're saving time now in creating these plastics, I'd like to know systems. And if you think you're saving time here, look at the other end of the scissor. That's where the time is going to have to be cut both back.

Emily: Exactly. And everyone says it's more convenient. We use plastic because it's convenient. And then, I find myself standing on a Pacific Island with 56 tons of waste and no landfill and no way to get rid of it. And I think, I literally couldn't imagine the less convenient issue right now. It's so inconvenient. It's all being done for convenience and it's its payback. It's convenient now and you're going to pay for it later.

Hayley: Exactly. You can't escape that. It's like black and white. You just cannot escape it. And that's something (that), I think if you're listening, is to really take that away. Where (do) you think you're saving time? Where (do) you think you're just, I'm just going to grab it because it's easy? (You have to) know that there's a consequence of that. And it will come back almost like *karma*. And we are. The human race is paying comically right now for (it). I don't blame us. Human race is growing up and we didn't know what we didn't know. But, we know now. We have no excuses.

Emily: That's so true. It's the same page I have with big companies. It's very easy to say to kind of demonize these big companies. At the moment, I have (another) approach to say (that) a lot of these chemicals, when vented for really great reasons, have saved lives. They've had amazing medical applications. They've completely transformed the quality of our lives. No one will set out to try and kill people. It was done with the best of intentions. But now, we know. [Yeah.] And now that we know, we need to react and we need to shift and we need to actually take things in a different direction in that window at the moment.

Hayley: Exactly. (Change in) the next ten years.

Emily: Yeah. And now, we need this great innovation and we need big businesses working with us to do that innovation so that we have the solutions available to take us in a different direction.

Hayley: Yeah. I feel that if companies now (consider), if it becomes a law or how it works out, that if you are a product creator that it doesn't end at the product, you must finish that it is a cycle. (That) what happens at the end of the life of your product that

you're creating; that the product creation has to complete the whole circle when you're creating. And I think that's where we have to move towards.

Emily: Yeah, exactly.

Hayley: Yeah. I also had a question. I'm currently studying Soil Advocacy, (We are soil advocacy and ocean advocacy) with Kiss the Ground. It's an amazing course. We're all talking about regenerative agriculture helping carbon. Because right now, we have an insane amount of carbon. We all know climate change. We hear about the climate change situation and that there's an excess of carbon from fossil fuels and a lot of it from agriculture, the conventional agriculture from monocropping. We've only got 60 years left of topsoil that we can grow in which is a UN statistic. Something that I've learnt recently is that because of the insane amount of carbon, what the ocean does because it's so amazing and beautiful, is it ends up trying to suck that carbon to help to keep an equilibrium (or) the balance to keep the planet going. And what that causes is acidification, right? So, I'm wondering what have you witnessed? You've been out there on the ocean. Have you seen any evidence of this acidification?

Emily: Yeah. This is something that we were studying around the coral reefs. So yeah, basically that carbon dioxide is getting absorbed into the ocean. And the ocean has an amazing ability, I mean, the amount of carbon that it's absorbed since the industrial revolution. It's just terrifying. But it has consequences that turn into carbonic acid. It lowers the Ph of the water. And that has a huge impact on everything that lives in the ocean particularly species that have sort of shell in them because it almost dissolves essentially (that shell). It has the big impact of mollusks and that sort of thing. But it also has other impacts. It affects how sound travels under water, for whales and dolphins who rely on that. (There are) a lot of unseen impacts, too.

Mostly, the way we saw it was how it was impacting the corals. And actually, the particular piece of research we were doing was we're going to (a) very remote atolls in South Pacific. I'm trying to understand why there were some corals that had survived that hadn't everywhere else because of the acidification. It turned out it was due to having cool nutrient rich water that was upwelling on one side of these islands.

Hayley: There was this maintaining it instead of keeping the carbon.

Emily: Exactly. But basically, although there was one pressure on the coral, it was reducing the other pressures which are lack of nutrients and too high temperature. We are certainly now seeing that impact globally. And also, you then start to get this kind of positive feedback loops which aren't a good thing in that. The more carbon that is absorbed by the ocean and it impacts those exact species that absorb the carbon. And so, the worse it gets, the worse it gets. [Yeah. Wow.] Well, and once you start going on those cycles, it's very hard to then recover from them.

Hayley: Well, yeah. I will tell them more of this later in other episodes, but there is switching from conventional to regenerative agriculture immediately start sucking the carbon back in, which then relieves that pressure and can ultimately reverse the acidification of the ocean as well. And so, (for the) solutions. Let's give people hope. How can we turn off the tap in plastic? In the 10 years, what are maybe one, two, three things or what you think is the most important that every one of us listening, every human can do to help this issue?

Emily: The easiest thing we can all do is think about our own consumption of single-use plastic. It's those everyday items: the bags, the water bottles, coffee cups, the disposable cutlery, the packaging. It's all those things. Actually, we can get through life easily without. And, it's scary how many of those items we find in the ocean and on beaches. If you use a single-use (plastic) in your life for half a day or less, you really can do without it. Even if it's your life for weeks, you can do with that as well. But certainly, those bits that we only use for a moment and yet that plastic lasts forever.

Hayley: Yeah. These days I have a bamboo set (which includes) a knife, fork and spoon that I can handbag with me everywhere.

Emily: Exactly. There's loads of beautiful solutions out there (like) really lovely coffee cups. I so much prefer drinking out of my coffee cup (than) some disposable thing. It's nice to use because plastic is cheap (but) that doesn't kind of feel as good. Make the switch [like now, like immediately, right?] Yeah. Even online, find your favorite brand. There's so many beautiful products out there to choose from. And so, that's something we can all do overnight. And then beyond that, it's no simple answer and very much kind of my philosophy with this whole topic is that there's no silver bullet solution. There's no great cleanup solution.

And, there's also not one prevention solution but there are hundreds and that's the good news (in) whatever sector you're working or whatever skillset you have. In the

eXXpedition, we talked about superpowers. The fact that we all are brilliant and unique at something, whether you're a great chemist or you're a great teacher or you work in policy or you're an engineer or you work in industry, you're designer and you're just really great at making cool little Instagram videos that people like to watch. Whatever it is that you're good at, where does that intersect the issue of (plastic)? And is it coming up with a new biodegradable material that's going to completely change things? Is it working on policy in your local council where you live? Is it teaching others to sort of think about this as well or shifting their mindsets? Is it rallying your community together to sort of prevent that? So, there's literally hundreds of things that we can do. And really, I believe (that) what it's going to take is all of those things than another. We've just got to pick the thing that works for us and get started together.

Hayley: Together we're better, right?

Emily: Exactly. And we need the approach from every angle. And so, once you've reduced to own single-use plastic, I then would ask you, "what's your superpower? What's your sphere of influence?" It's the household that you run the school that your kids go to, the community that you live in and the company that you work for. Thinking about taking that to the next level, "Where do you have influence? Where do you have an opportunity to create change? How do you turn that into something amazing?" [Yeah.] We're getting a tribe of women from around the world to ask themselves every day. [Yeah.] You had a doctor on board on the boat on the last leg and she's now looking at how you can reduce single-use faster in hospitals. [Amazing.] And that's her piece. We're only a piece. And if we all go for it like that and then collaborate, share ideas, work together, keep connected, I really think we can solve it.

Hayley: I really do believe that. I believe that within the next 10 years is the window. That's it. We've got 10 years to change the behaviors of 7 billion people and each of us can do our own part. And I love how you say that, the *superpower*. Find what you're passionate about and how that can align with nature. How can we bring ourselves back to nature in whatever industry you're in? Because I was going to ask how can (you) viewers at home influence companies. But it's like, maybe that's not your superpower. Maybe it's something else is but maybe it is. Yeah, I love that. I love that.

Emily: Yeah, turn to your strengths.

Hayley: Tell us a bit about (it). It's called *Round the World*. I know you've had eXXpedition for a few years now, but this sounds like something even more effects. It had like 10,000 women apply for (that).

Emily: Yeah. So, this is really the scaling up. We started eXXpedition in 2014 sailing across the North Atlantic and we've done a few voyages in different parts of the world each year since. But off the back of the North Pacific expedition in 2018, we just had so many women write to us saying, "I want to be involved in whatever is next." But we thought, [wow] "we really need to scale this to another level."

So in October, we set off for eXXpedition around the world. [Wow.] We had 30 voyage legs over two years sailing to four of the gyres, the accumulation zones and an arctic. [Wow.] On every leg, we have 10 women joined us as guests crew from different nationalities and different skills and backgrounds to do scientific research that I talked about earlier. (They are) really understanding what plastic is there. Therefore, where's our opportunity on land to prevent it And also storytelling and getting more eyes on this remote part of our planet.

But then, really, the legacy is the women. These 300 women that come back home to their communities with experienced story to tell, having really understood the problem, seeing it firsthand and most importantly understood the role that they can now play in solving it.

Hayley: Yeah, a ripple effect, but using their super power like you said.

Emily: Exactly. Because I really do think (that) it's going to take an army of people to do this.

Hayley: It is, I want to find a really good word for army like warriors or peace-ers, I don't know.

Emily: I keep using the word army but it does have other connotations. That kind of factor that we need to thrive. We need a community but we need one if it's got a bit of a [mission].

Hayley: Definitely. Exactly. How can the viewers or people get in contact with you?

Emily: Yeah. There's the eXXpedition [website](#), that's with a double X which is representing the women and pedition.

Hayley: It's like the chromosomes or something. [Yeah. Exactly.] I'm just wondering what the X was. How fantastic!

Emily: The website, social media, follow along. There's still some spaces left for the last section of the voyage to 2021. As you say, we have had a lot of Africans, but we're sort of allocating places in phases so everything's still up for grabs [that's amazing] until the end. And definitely check that out. This is also my website and social media channels that are *Emily Penn* with two N's and to see the other projects that I've got going on. One of which is actually based here in London. We're running monthly events called *Shift Sessions*.

Hayley: Tell us about that.

Emily: This sort of started actually with a group of friends in a park about six years ago when I was kind of struggling just to kind of keep in touch with the ocean community while spending most of my time at sea. We (just) come back to the lesson and just gather everyone in one place. And it grew and grew to become *London Ocean Drinks*. And what we've done in the last year is rather than just this quarterly networking event, which we still do, we've introduced panels, speakers, workshops really is a way to kind of delve deeper into different aspects of these issues. Because even a half-hour conversation here could spin off in so many directions. [I know, right?] The panel that we have on Monday was actually (about) looking at microfibers. And we had six people on the panel who are all coming up with different ways to solve this problem using their *superpowers*, their different approaches to fixing it. And so, really just unpacking these issues in a way that we can all really understand, figure out how to kind of harness this energy, and work together. It's a great community growing in London.

Hayley: Awesome. How could someone get involved with the *Shift (Sessions)*?

Emily: If you had to go to my [website](#), that's got all the upcoming events. [Fantastic.] Yeah. Sign up on Eventbrite.

Hayley: That's so exciting. I'm just so grateful for you sharing your wisdom and knowledge. I remember actually when I first watched you at TEDx, I thought, "Oh, I'd love to do that, but I'm terrified of the ocean." I have a deep respect for the ocean. I'm very much a land baby. [Yeah.] But for those of you who are out there who [thought] this is really cool. This looks like one of the most amazing life changing expeditions. If you can get on to one of those end trips, I think it would just be fantastic. Yes. I really want to thank you so much for your time. I think, as dire as the situation, there is hope. And I think, with all of us using our superpowers, we can shift this quite dramatically in the next 5 or 10 years. So, together we're better and maybe one day there will be no use for the word rubbish in the English language. [Yes, great point.] I think that would be fantastic. We could have rubbish in the museums and tell our great, great, great grandchildren how stupid we once were. [Yeah, that is a great goal.] Yes, I think it is. Thank you so much for your time, Emily. So, head over to emilypenn.com.uk. If you want to find out more and Thrivers, thank you so much for listening. I'm just so excited by what we can all do together.

Emily: Thank you.

Hayley: Thanks a lot.

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