But Why: A Podcast for Curious Kids

What's Your Idea to Clean Up The Great Pacific Garbage Patch?

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Jane [00:00:21] This is But Why: a Podcast for Curious Kids from Vermont Public Radio. I'm Jane Lindholm. On this show, we follow your questions and curiosity wherever that may take us. We're always inspired by the variety of things you want to know more about. And every now and then, one of you lets us know about the way our program has inspired you.

Mary [00:00:43] I don't like to sit still when I know huge problems are going on. I want to do something.

Mary [00:00:50] My name is Mary Elizabeth James and I am eight and I live in Prince George, British Columbia, Canada.

Jane [00:00:58] What grade are you in in school?

Mary [00:01:00] I'm in grade three.

Jane [00:01:02] Tell me a little bit about how you learned about the problems with all of the plastics, big plastics and really, really little plastics in the Great Ocean Garbage Patch.

Mary [00:01:12] Well, I listen to your podcast, and that got me thinking because it's not very good.

Jane [00:01:21] When you heard about all these plastics, how did it make you feel?

Mary [00:01:25] Well, I felt like I should do something because as I said, I'm not someone to sit still and watch something happen, which I don't find the best.

Jane [00:01:38] How did you become that kind of person at seven and eight years old who says this is a problem, but I'm not going to sit still. I can help to fix this.

Mary [00:01:47] Well, I love Harry Potter and Harry Potter is like that. So I kind of inspired by him, Ron, and Hermione and all the other characters trying to do something about Umbridge, Voldemort and all the other problems they are facing.

[00:02:02] The problem that Mary wants to solve is the pollution in the great Pacific Garbage Patch. She learned about it in an episode of But Why. The Great Pacific Garbage Patch is kind of what its name suggests, a huge floating mass of plastic and trash of all kinds swirling around in the Pacific Ocean. It's between the Californian and Mexican coastline and the islands of Hawaii, and it's an area of the ocean that's really big. One point six million square kilometers or 618,000 square miles. That's more than three times the size of Spain, more than six times the size of the U.K. This part of the Pacific Ocean is known as the North Pacific Gyre. A gyre is like a very slow moving whirlpool. It's where ocean currents circulate. There are five gyres in the world and they all collect rubbish that has gotten into the ocean after being thrown away by people. The most famous of these trash accumulation zones is the Great Pacific Garbage Patch. Let's listen to a little bit of

the episode we made about this pollution problem that so inspired Mary. The guest we invited to tell us about it was someone who had actually been there.

Alli [00:03:14] My name is Alli Maloney. I am the news and politics features editor at Teen Vogue, and my pronouns are she and her. I was lucky enough to travel on a ship to the middle of the Pacific Ocean. I was invited by an organization called Greenpeace who does environmental work all over the world, and they're kind of known for their actions in defense of the environment. So they have these ships. They invited me to go with them and it's over a thousand miles from the shore. So we took off from Mexico. And then days and days and days later, we ended up at the Great Pacific Garbage Patch right in the middle of the ocean. It was wild to be there.

Jane [00:03:52] Alli wrote about her trip to the garbage patch in a feature she did for Teen Vogue as part of a series called Plastic Planet. Alli says a lot of people think the garbage patch is going to look like a big island of trash just floating on the surface of the water. But that's not really what it is.

Alli [00:04:09] When you get to the part of the ocean where it is, you can tell that something is different based on the degree of plastic in the water. But it's not just a flat surface. It's not an island like you would think of. So you're not having to break through the plastic with the ship. You're just looking down and you're noticing that, yeah, it is different here. There is more plastic here.

Jane [00:04:30] So describe what it actually looks like once you get there. You're on this boat for days and days. And then you said you notice that something is actually different when you're in this gyre, when you're in this place where all of this garbage is.

Alli [00:04:43] So you look out from the ship and you're standing on the deck and you can see in the water a lot of ghost nets. And those are where nets from the fishing industry and ships will kind of all come together into huge masses. So you've got tons of different colors of net and you can see that some are kind of rope and some are just clearly, you know, cut from plastic. But there's buoys of all different shapes and sizes. And then we would actually use a crane, a mechanical crane that would pull up from the side of the ship down into the water and pull out those ghost nets. So we started doing that when we got to the patch because we noticed them first. They're the biggest thing, because the fishing and seafood industry actually is responsible for a lot of the trash, a lot of the plastic specifically in the ocean and a lot of the plastic in the patch. So we could notice these big masses that were clearly all net. And when we pulled them up on the back of the ship using this crane, we had to pull fish out. So we're pulling fish out and throwing them back in the water, just trying to save what we can see. And all the while, little crabs are running out from these big masses. But also in the water itself, you can see, you know, broken pieces of plastic. And we were tasked with keeping count because that was important for Greenpeace's research. So we could see everything from buckets to traffic cones to just odd shapes and sizes to kind of recognizable shapes and sizes. I remember seeing what looked like the front of an air conditioning unit just kind of floating by in the water, but it's more concentrated there. So you can see a lot more. And then when you're closer to the water, they would put us in smaller boats off of the ship. And when you're actually out in the water itself, you notice that it's not just big floating pieces of plastic. We would send down divers and what they said was underneath the water surface, there's all of these teeny tiny pieces, these fragments of plastic. So those bigger pieces I saw floating, they break down farther and farther and farther, but they never fully go away. And the bottom of the ocean,

especially in the great Pacific Garbage Patch, is full of it. They could move their hands through the water and they'd be moving their hands through very small pieces of plastic.

Jane [00:07:08] And in some cases, sometimes people talk about things called micro plastics and they can be even smaller than what you can see with your eye, right? So there's plastic all through the water in various sizes.

Alli [00:07:21] Exactly. And that was what I was just describing, that the divers could see. So all of the plastics that we know and we touch in our day to day lives, if those aren't recycled properly and fully, that means that they're either going to go into a landfill where they seep into the ground and they ruin the soil or they're going to go into the ocean and the water will break it down over time if it doesn't end up on the shore. But if not, it's just slowly chipping away. And those little micro plastics, that's what animals are, you know, when they are going for their actual prey, these sea creatures that we know and love, when they're going to take a big gulp of, say, a fish in that Big Gulp, they're getting tons of micro plastics. So it's not just the big pieces that they're eating or that we see on the shores. It's these teeny, tiny little specks. But that was what Greenpeace was out there doing, lowering something into the water called a trawl, which we would run alongside the ship, we would pull it out, and then we would sort through all of the micro plastics. So we're seeing all of these different colors. There's blue, there's white, there's bright pink like a Barbie car. And it really starts to mess with you after a while because that's thousands of little pieces and those aren't even the big ones that catch your eye.

Jane [00:08:40] Where does all this plastic come from? Well, around the world, more than 380 million tons of plastic is produced each year. Half of all the plastic waste in the world comes from single use plastics, stuff that's just used for moments and then thrown away like a plastic grocery bag, water or a juice bottle or a straw. And if you think about it, most of the plastic stuff we use just gets tossed in the trash. Some of it ends up in our landfills. About nine percent of all the plastic that's ever been made in the world has been recycled and some of it ends up in the ocean. And that's bad. It's nearly impossible to get all those tiny little pieces of plastic out of the ocean. Big and large plastic can cause lots of different problems.

Alli [00:09:30] The problem with plastics is virtually that there's just too much. It ends up in the great Pacific Garbage Patch in the ocean and our streams and on our shores because we've created so much over the last, you know, between 50 to 70 years that the earth can't take it anymore and more is being produced every day.

Jane [00:09:53] OK, so now you know a little bit about the Great Pacific Garbage Patch, thanks to Alli Maloney of Teen Vogue for sharing her experiences with us in that episode from 2019. In just a moment, we'll get back to Mary and learn more about the invention she has dreamed up that she thinks might be able to help clean up all that plastic. Her invention has caught the eye of some engineers.

Jane [00:10:15] This is But Why: a Podcast for Curious Kids. I'm Jane Lindholm. Today, we're following up on an episode we made about the Great Pacific Garbage Patch that inspired eight year old Mary James. Mary heard our episode about this and wanted to do something. And then she discovered a competition for Canadian children to help create solutions to big challenges. It's called the Little Inventors Competition, and it's sponsored by the Natural Sciences and Engineering Research Council of Canada. The current challenge is all about how to address pollution in the world's oceans. Mary drew a picture of an invention she thinks might help, and they liked her invention so much they're going to

develop it further. Mary's idea is called a Mermicorn, and I'll let her tell you how she came up with it.

Mary [00:11:03] I was really interested in unicorns and also mermaids, and so I thought maybe I could combine it to make it into something and it could, and the most successful one would be a unicorn with a tail that's how I was inspired to make the Mermicorn.

Jane [00:11:23] What's special about the tail and the horn of the Mermicorn? Or is it just that you like unicorns.

Mary [00:11:29] Well the tail is so it can swim because it's in the water and the horn is decoration or something.

Jane [00:11:37] Yeah it looks cool.

Mary [00:11:39] The horn doesn't do anything too much.

Jane [00:11:41] So you had this idea about a Mermicorn and I'm actually looking at your picture of it right now.

Mary [00:11:46] You are?

Jane [00:11:46] Yeah, your mom sent it to me, but all of the people listening won't be able to see it. They won't know what it looks like. So could you describe the Mermicorn to us?

Mary [00:11:55] So it's a tail. I think it's red it has a green purse a horn that's white, and it's attached to a boat the rope. In the picture, there's lots of micro plastics, which I've labeled. So if you ever if you guys know what a unicorn looks like, looks like a top of a unicorn, but waist down it's a tail like a mermaid.

Jane [00:12:23] And then you mentioned it has this green purse. What does the purse do?

Mary [00:12:28] Well, the only those micro plastics are the Great Pacific Garbage Patch. But there's also there is chunkier ones. So it puts the chunky one of its purse. So when it goes up out of the water, they can, like, empty the purse onto the deck of the ship those are the big plastics.

Jane [00:12:49] And the smaller plastics go in its mouth?

Mary [00:12:52] Yeah, like it digests the smaller ones, because anyone could digest them, that's how small they are.

Jane [00:13:00] So the Mermicorn you mentioned, it's connected by a rope to a boat. So is that how it gets out there? And then they drop the mermaid corn in from the boat and it swims around eating and collecting these plastics.

Mary [00:13:12] Well, sort of like it would be moved by like by the wind and stuff, but it would. Yeah. Probably should be someone on the boat to pull it up like once a day and the boat would probably go back and forth to land to collect food because people could not survive without food and water. That makes sense. So it would be collected by a rope and it would be pulled up every so often.

Jane [00:13:40] So you had this idea, you drew this picture and you submitted it to a competition. Do you know what the competition is called? Can you tell me that?

Mary [00:13:47] Little Inventors I think?

Jane [00:13:50] And it's this competition from the Natural Sciences and Engineering Research Council of Canada with the idea that young people in Canada can submit their ideas for ways to clean up the ocean. Did you think that your Mermicorn was going to get to be named one of the ideas that they're actually going to make a model of?

Mary [00:14:12] No, because, well, the oldest was twelve so my mom told me that I'm probably not likely out of five hundred, about ten are picked. So its not good chances that you always would be picked, like two in a hundred.

Jane [00:14:30] Whoa. How cool it must feel to have your invention picked up by the competition. So what's going to happen is that some of the engineers and researchers and designers who've been looking over all these invention ideas are going to turn a few of them into prototypes. A prototype is when someone makes a model or a sample of what a design looks like to test if it might work. In this case, Mary's dad told me a student from the Ontario College of Art and Design will be making an animation of the Mermicorn. As Mary told us, the Mermicorn looks like a cross between a unicorn and a mermaid, and it swallows micro plastics as it swims around and then collects bigger plastic garbage in a purse around its neck. Mary says she wants the design to look cool, but the most important thing would be how well it works.

Mary [00:15:19] I prefer it to move perfectly and look ugly then look perfect, but not be very good. So it's more the goodness of it, then painting. But kids would like it more and it would be valuable if it was a nice. So I would think it would be good for both, but I would prefer it to have robotics than art.

Jane [00:15:41] And what about the problem with pollution? Now, that is not a problem that you and people your age made. It's a problem that's been a long time in the making and it's more of a problem that adults like me made. But it sounds like kids like you are actually going to be the ones that fix it. Do you have anything to say to us adults?

Mary [00:16:01] Well, I would know you would want your children to be happy. So how do you try to change your behavior? So a little less plastic? If you could give your child a plastic cup like a reusable plastic cup, whether that those like those ones with first time use, please try to do so.

Jane [00:16:23] That is good advice. We should all think about the amount of plastic we use and how to use less of it, especially the kinds of plastic that only get used one time and then thrown away. Thank you so much, Mary James, for telling us about your Mermicorn. We can't wait to see if it ever gets a chance to swim around in the Great Pacific Garbage Patch. If you'd like to learn more about the Great Pacific Garbage Patch and how to reduce the amount of plastic you throw away, go back and listen to our full episode from February of 2019. We'll have a link in our show notes. And what's your idea to clean up the Great Pacific Garbage Patch? You can download our Learning Guide on our Web site and draw or write about your own invention.

Jane [00:17:08] That's it for this episode. If you have a question about anything, have an adult record it using a voice app, then you can send the file to questions@butwhykids.org.

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