



Transcript for *Life in the Ocean: The Story of Oceanographer Sylvia Earle* by Claire A. Nivola (Farrar, Straus and Giroux, an Imprint of Macmillan)

Introduction (approximately 0:00 – 4:24)

Hi everyone! It's Colleen from the KU Natural History Museum, and I'm so excited for today's Story Book Science! I do want to wait for some folks to join us. So while we wait, let's talk about what the book is about today.

So this book is about the ocean, and we're going to talk about an ocean explorer, or an oceanographer, Sylvia Earle. And Sylvia Earle has studied and investigated so many different things in the ocean: from really big animals to really small living things, to things that live near the water surface, to things that live far down below.

Now there are lots of different animals and living things in the ocean, and we'll talk about this after the reading. But while we wait, I want to show you one of the specimens we're going to look at. And this is the specimen. So I'm going to flip it so you can see it a little better.

Now this is from some big marine mammal like a blue whale or a humpback whale. Because when I think of ocean animals, I immediately think of whales! Now this specimen, I'll let you know, it's only a piece of a much bigger structure that a blue whale or a humpback whale would have. And I'm not going to tell you what it is just yet. I want you to look at it and think to yourself: what is this from? What is this a piece of? And after the reading, we'll look at this and talk about it a little more.

But it looks like folks have joined us. So I'm going to put this down, and we're going to go ahead and get started! Alright.

So, first and foremost, we need to go over our expectations for Story Book Science. What that means is, even though we're not in the museum, we are going to follow museum rules. So that means if you ask a question or you write a comment, you should feel free to do so; but you need to make sure that you use kind and considerate words. If you respond to someone's question or comment, you need to make sure you use kind and considerate words too. We're not in the museum, but we are going to make sure that we follow museum rules. We use those kind and considerate words to make sure that this space is welcome and inclusive for all. So can you make sure to use those kind and considerate words for me? Excellent! Thank you! Alright.

So welcome to today's Story Book Science! Today we are reading the book *Life in the Ocean: The Story of Oceanographer Sylvia Earle*. And you can see that Sylvia Earle's picture is on the wall, one of which is her diving. So we know that this is about exploring the ocean! Now this book is by Claire A. Nivola, and it's published and being read with permission from Farrar, Straus and Giroux, which is an imprint of Macmillan. Now I really like this book. I love reading about all of the amazing things in the ocean that Sylvia Earle has had an opportunity to study and investigate. And I really like this book because it reminds me that it's not only important to study the ocean like Sylvia Earle does, but it's also important to share what we learn about the ocean. And Sylvia Earle has made it her mission to teach us about the ocean and all of the amazing things that

it does for the planet because she told us, if you don't know, then you won't care. So it's important that we learn about the ocean, so that we can care about it too.

Now I have two other things that I need to say. One is if you have a question, please feel free to ask that, just know I may not be able to see it until the very end. And if you need a partial transcript of this reading it will be made available a little later today on the museum's website. But I think we can go ahead and get started. So let's get started!

Life in the Ocean: The Story of Oceanographer Sylvia Earle.

Reading from *Life in the Ocean: The Story of Oceanographer Sylvia Earle* (approximately 4:25 – 18:27)

Life in the Ocean: The Story of Oceanographer Sylvia Earle includes copyrighted materials, and we do not have permission to include the written text of the book in this transcript.

Conclusion (approximately 18:28 – 28:07)

The end. And this is just an author's note talking a little bit more about the ocean, and we're going to talk about the ocean together!

Now I had such an amazing time learning not only about Sylvia Earle and all of the amazing things that she's seen in the ocean from near the surface to very, very far down in the depths of the ocean, but I also liked learning about the different organisms and the different creatures that she's investigated and studied. So we talked about whales and coral reefs, and we briefly talked about algae. And I want to talk a little bit more about algae.

Now normally when we talk about algae, we use the word seaweeds to describe them. Seaweeds are macroalgae. So they're these really big plant-like creatures that live in the ocean. And when it comes to macroalgae, there are different types. There's red algae, green algae, and brown algae. And I want to talk about one species of brown algae together. And that is the giant kelp.

Now I have a model of giant kelp right here. So it's not real. It wouldn't do so well in my apartment since it lives in the ocean, but we can look at this model to better understand how giant kelp and macroalgae like it are plant-like.

So the first thing I want us to look at is this structure at the very bottom. So this is called a holdfast, and a holdfast is like a root. So it helps anchor the kelp in the ocean. So these structures wrap around rocks on rocky ocean floors, and they keep the kelp in place, which is very important because the ocean has currents. So if there was nothing to anchor the kelp, it would just kind of float away!

Now from the holdfast, growing up all the way to the top – you can follow my finger as it goes all the way up – that structure is called the stipe. And it's very similar to a stem that you would find on a plant, but unlike a stem, the stipe is not sturdy. In fact, it's very floppy. Look how much that flops! It's very easy to move. So the stipe can move very easily in the water, but what's important is it needs to be able to go upright. So you'll notice that attached to the stipe there are these leaf-like structures. These are called the blades. And then attached to the blades are these kind of, like, bulb looking things, these balloon-like structures, and these are called air bladders. Now air bladders, they're like balloons. They have air in them, and they keep the kelp upright. But the air bladders are filled with gases like nitrogen and oxygen that keep the kelp growing upwards. And it's important for the giant kelp to have these features, these plant-like features, because the

giant kelp needs to grow upwards so that it can reach light; and so that it can use the sunlight to photosynthesize and make energy using the sunlight.

So this giant kelp and other macroalgae, they're plant-like. They have a lot of similar features to plants. They can photosynthesize like plants, but they're not plants. They're macroalgae. Alright.

So that's just one example of something that Sylvia Earle has studied, something that she's investigated while she explores the ocean. And in the book, we read about some other animals too. We read about whales like humpback whales. And we even read about creatures like coral, like the bamboo coral.

So let's focus now on those whales! Now earlier, I showed you a museum specimen, and I'm going to grab that again. I'm going to show it to you. So this museum specimen, I said earlier that it could come from a humpback whale or a blue whale. And I also told you that this is only a piece of a much larger structure from those whales. Did anybody guess what this is, what its function is, and what it does? Take a moment. Alright.

So I'm going to let you know that this structure comes from whales like humpback whales, like blue whales that are categorized as baleen whales. So this is a piece of baleen. Now I have a photo of baleen because I couldn't fit an entire piece of baleen in my apartment. It would go probably from the floor of the apartment all the way to the tip-top of the ceiling. So instead of having a real specimen, I have a photo to show you what baleen is. So here it is. It hangs from the roof of the mouth of baleen whales. So does that give you some idea of what baleen does and what its function is? Baleen is used for eating! So how is something like this, which again is just a piece of a much larger structure, how is that used for eating?

Well. What happens is a baleen whale, it takes a big gulp of water. And then it pushes the water out, and it goes through the baleen. But these tiny, tiny creatures like krill and plankton get stuck in the baleen. And that is what the whale eats! So once those creatures get stuck in the baleen, the whale licks it off the baleen and eats it! So baleen is used to eat!

Now whales. Some of them are baleen whales. Some whales are not baleen whales. So they have teeth like you and I have teeth. And those whales, there are many of them! A really great example, though, is the sperm whale. And I have a photo of a sperm whale. That is a sperm whale. And that is an example of a sperm whale's tooth.

So some whales have baleen. Other whales have teeth. And I just want to remind you that whales, they're mammals. So, like all mammals, they have hair in some sort of form or fashion, and they also feed their babies milk. And if you're wondering where the hair is on a whale, especially a baleen whale, baleen like the one that you're seeing, this is made of keratin. So this is made of the same stuff that the hair on the top of my head is made out of, the hair on the top of your head is made out of. Baleen is made of keratin. Alright.

Now I had such an amazing time talking about the ocean with you! And even though I live in Kansas, I know that the ocean is important. And we read about all of the reasons why it's important and why we should study and learn more about it because we need to care about it! So my question for you is what did you learn about the ocean? What amazing things did you love about the ocean? Alright.

Well, I hope you join me next – well, I hope you join us next week! Next week, one of the KU student and Public Education team members, Prakriti, is going to teach us how to build a model of giant kelp. So she has a STEM challenge for us. And if you are up to the challenge, you can follow along with Prakriti's instructions and build a model of giant kelp for yourself. And then you can join me next month for a new Story Book Science theme. Since it's October, we're going to be talking a little bit about spooky science. And we're going to start it

off by reading the book *She Made a Monster: How Mary Shelley Created Frankenstein*. Now *Frankenstein* is a very popular science fiction tale. So what that means is that it's based in science, but it's still fiction. It's not a true story. But we can learn a lot about science from *Frankenstein* and Mary Shelley's work. And the important thing we can learn is about ethics and doing what's right versus what's wrong. And we can also learn about taking action when we do things and knowing that our actions have consequences. So I hope you join me in the month of October to read books like *She Made a Monster*.

I had such a fun time during Story Book Science, and I'm so glad that you could join me. And I hope to see you next week and to see you later! Bye!