00:00

So what do you think of when you think of the ocean? Maybe you think of a visit to the beach or whales or sharks or coral reefs? I think of this. This is the San Juan Islands in Washington state. They jut out of an expanse of deep dark water, and they're filled with life and mystery and opportunity. But whatever you think of, the ocean is much more. It is a complex physical, chemical and biological system that takes up 70 percent of our planet. And yet we're still really just beginning to understand it.

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What we do know is that the ocean is a vital part of our life support system on the planet. It produces at least 50 percent of the oxygen that we breathe. So more than one in every two breaths. It also regulates temperature for the planet. So without the ocean, the poles would be unbearably cold and the equator would be unbearably hot, and it would be a lot harder to live here. Now we think about saving the ocean from plastic or from oil and oil spills or from overfishing. But really, we should be thinking about how the ocean is saving us. And what is it saving us from? It's saving us from the climate change that we are creating. Essentially, ourselves.

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And so what does that mean? Basically, what we need to do is think about not how to save the ocean, but instead how the ocean can actually help us in this fight against climate change. Already, the ocean is absorbing 25 to 30 percent of the CO2 that we release into the atmosphere. It is the world's largest carbon sink. The ocean has also absorbed 90 percent of the excess heat trapped by greenhouse gases. So it is basically helping to keep the planet habitable, at least for now. And yet, when we think about climate action and climate strategies and climate plans, we often overlook the ocean and leave it out, because somehow we think that saving the ocean is something else we have to do, not a core part of our climate strategy.

02:03

And that's what has to change because the ocean is a core part of our climate system, and so it has to be a core part of our climate solutions. So what does that actually mean? Well, for starters, we know that the ocean is already doing a lot for us. So the first thing we do need to do to save the ocean to save ourselves is to actually reduce emissions. I don't think anyone here would disagree with that. But that still sounds like the ocean is a victim in the story, and really the ocean can and should be a hero in this story. The ocean can provide us with solutions to help us reduce those emissions, and it can also help us to adapt to this new climate reality that we've created. So how does that happen? Well, essentially the first thing we need to do is to make sure that we keep all of these systems working and protect the systems that are protecting us. Because

all of that CO2 and heat that the ocean is absorbing is actually coming at a cost. The ocean is warming and rising and acidifying, and we even have evidence now that we're changing the basic circulation of the ocean, which changes the way it regulates temperature. So the first thing we need to do is really just protect those systems that are protecting us.

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But how do we more actively engage the ocean in our climate strategies? What can we do to really use the ocean to help us reduce emissions and to adapt to the impacts of climate change? What does that practically look like? Well, we know that coastal ocean ecosystems like mangroves or seagrasses or salt marshes are some of the most effective carbon sinks on the planet. Acre for acre, they can absorb 10 times more carbon than a forest on land. And that carbon is very deep in the soils so that it can stay there for thousands of years if we leave it undisturbed. The problem is that we're not leaving it undisturbed; we are destroying these places. We've lost 20 to 50 percent of them already, and we lose more every year. And all of that is creating emissions. But if we protect those places, then those emissions stop. Just like if you shut off a coal-fired power plant. And if we restore those places, then we can actually absorb even more carbon. But the power of the ocean isn't limited just to reducing emissions. The ocean can also help us to adapt to the impacts of climate change we already feel and that we know will be here with us for decades. Those same mangroves can actually protect coastal communities by buffering them against more intense coastal storms and slowing wind and waves. Another example, oysters. In New York City, they're using oysters to help reduce the risk of major floods and flood damage like they saw during Superstorm Sandy in 2012. The idea is that these reefs form dense places that force water through nooks and crannies that slow it down. So by the time it hits the shore, it actually has less power and therefore can do less damage. And at the same time, they're creating aquatic parks and places where people can gather and be with nature. Because the truth is that in this new climate reality that we've created, we will have to learn how to live with water and with the ocean in new ways. And so what better ways to do that than with the creatures that actually have evolved to live in these land and sea interfaces?

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And these are real solutions that are being implemented in real places based on what we know about the ocean now. And yet the National Oceanic and Atmospheric Association of the United States estimates that 80 percent of the ocean is unmapped, unexplored and unobserved. So there is so much more out there that we could be doing and thinking about as climate solutions, and so much that we're just still getting our imaginations around. For example, what if we could actually harness the power of the ocean's wind and waves and tides to produce power? The International Energy Agency estimates that offshore wind alone could produce enough energy for the Earth and 17 other planets, carbon-free. And at the same time, we could actually be providing power to coastal communities and islands that don't benefit from our current grids and systems. And if we're really smart about it, we can plan and design these systems so that we're creating artificial

reefs that could support wildlife and aquaculture and help us grow food and sequester carbon and actually help the ocean instead of harm it. Or what if we could harness more of the ocean's biological power to help us in this fight against climate change? For example, kelp. Kelp is one of the fastest-growing organisms on the planet. It can grow two feet per day. What if we could actually restore the world's kelp forests and actually grow kelp at a scale that we could use all of that growing power to help us sequester carbon? Now, that's likely to be a lot cheaper than trying to deploy human-made technologies out into the middle of the ocean to sequester carbon. And it's likely to be a lot less risky than changing the ocean's chemistry or engineering the ocean, because we'd actually be working with the natural systems instead of against them. And we'd probably have a lot of kelp left over that we could use to feed ourselves and feed animals and create plastic alternatives that would also help us to lower our footprint on the planet.

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And this is just a sampler of the types of solutions that the ocean has to offer for the climate crisis. The key is that we have to think about the ocean as a source of solutions that we can be using and enlist it in this fight. And these aren't easy solutions. The time for that has passed. We don't have any easy solutions left. And these aren't excuses for not doing other things, these are not silver bullets.

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So we still have to do the hard work of reducing and getting rid of fossil fuels, and we still have to do the hard work of making sure that the most vulnerable among us will be able to adapt and thrive in the new climate reality. But the ocean is a powerful source of solutions that we've overlooked for far too long. And so we need to think about how we really integrate it into our strategies now. And that comes down to a fundamental change in mindset, which is instead of thinking about how we save the ocean, we should be thinking about how we can help the ocean save us.

08:39

Thank you.

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(Applause)