

This past summer, I swam with a small school of colorful fish, I held a sea cucumber, touched coral as tall as myself, I sat on the ocean floor and gazed up at the sun through the crystal clear water. I have never felt more magic in my life than I did when I went scuba diving in the Caribbean Sea. I have swum in every ocean that I have ever encountered. I have always loved how powerful and beautiful the sea was as waves crashed onto the shore and the water twinkled, glittery in the sunlight and as far I could see. I swam through large waves in places where I could not stand my ground. There have been times where I thought I would never stop tumbling underwater after being taken down by a wave. I have been stung by a jellyfish. I have collected shells that the ocean gave to the shores for hours on end. I have walked through hundreds of fish in water that only went up to my knees. I have seen a manatee dancing through the water, people running up and down the beach to cheer it on. The smell of the sea, the sound of the waves, feeling the salt water against my skin, the life that the water takes on; it's all so intoxicating. I always thought that floating out in the ocean was the most calming feeling because I can let the water wash over me, carry me, sway me with the tides. At the same time, I can never fully relax because I am thinking about what could be lurking right below me. I imagined that there were great white sharks that were hungry for little girl, giant squids that were just waiting for me to stop kicking so they could grab my feet and pull me under, or angry sting rays. Scuba diving quelled my anxieties. I was alive underwater, at complete peace with the creatures that I had once feared. Granted, I didn't see sharks, giant squids, or sting rays or any other scary fish with big teeth that my anxiety could think up, but it didn't matter. Everything in that coral reef was just as full of life as I am. This life is just as important, if not more, so than as I am, and far more beautiful.

In the distance I saw a net. I saw a dark cloud in the water that could only be a school of fish. I saw the shadow of a boat. I was stunned, I was frightened, and I was appalled. The cloud wriggled and writhed, going further into the net instead of swimming out and away from it. The reef I was hiding in seemed to grow quiet and still. I made eye contact with the instructor underwater and pointed at the net in alarm. I needed him to reassure me that there was a way to help those fish. He looked at me and shrugged with sadness in his eyes and pointed up, signaling the end of our allotted diving time. I swam up as fast as I could because I realized that I had used up almost all of my oxygen. I must have been breathing too much when I was watching the nightmare take place. For the rest of the boat ride back to shore I was quiet and so was the instructor. I had seen, first hand, the way that humans could hack the circle of life and bend it to their will.

Why do humans feel the need to dominate every aspect of our world? Every creature on this planet is programmed to survive. This means we do whatever we can do to have food, water, and shelter. "One general law, leading to the advancement of all organic beings, namely, multiply, vary, let the strongest live and the weakest die" (Charles Darwin, *On The Origin of Species*). Humans have gotten especially good at obtaining those three things, whether we need them or just want them. Technological advancements have allowed us to figure out the fastest way to get our food in bulk. Humans are so good at manipulating and catching our prey that we've become greedy and have forgotten that we are not the only species trying to survive. The ocean and its creatures are powerful, but humans are more powerful. Humans defy the rules of predator and prey in nature with machinery that has only become more powerful with time. What once began as small wooden boats and local fishermen has turned into big government-funded trawlers (big boats with nets that are so big that 6 large planes could fit inside of it) scooping up everything in its path. Humans are the ocean's scariest and most ruthless predators.

Humans have reaped the benefits for years, reaching peak fish in the 1990's at an annual global catch of 90 million tons (The Empty Ocean). If we don't start to regulate our commercial fishing, we are headed for disaster.

Humans are currently on the brink of the most alarming epidemic the world has ever seen, and the only people we have to blame are ourselves. The ocean that was once teeming with life is now in ruins. Overfishing is shattering our entire ecosystem. "Ocean overfishing is simply the taking of wildlife from the sea at rates too high for fished species to replace themselves. The earliest overfishing occurred in the early 1800s when humans, seeking blubber for lamp oil, decimated the whale population. Some fish that we eat, including Atlantic cod and herring and California's sardines, were also harvested to the brink of extinction by the mid-1900s" (National Geographic). Highly disruptive to the food chain, these isolated, regional depletions became global and catastrophic by the late 20th century. The ocean is large and there are still parts of it that remain unexplored, but so much desecration has been done to the parts of the ocean that we have fished in that we will almost certainly see the effects in our lifetime. The ocean is "exploited at more than twice the level it should be...collapse is inevitable" (The End Of The Line). The idea that there is a finite amount of fish in the ocean and that the aquatic ecosystem is fragile is relatively recent, but the effects of overfishing have been almost immediate. Due to the overfishing that has been done worldwide, many different species of fish like the Codfish and the Bluefin Tuna have gone completely extinct and many others are headed in that direction. Humans fish for the biggest catch, which are usually the bigger predators of the ocean's ecosystem. When the predators are taken out of the ecosystem it causes a domino effect. If humans overfish the biggest fish into extinction, whatever those fish preyed on will overpopulate so humans will fish them, then the same cycle will start over and over again until eventually all that will be left is mud and worms. The world has thirty-five years to go until scientists declare our oceans barren. Humans no longer have the luxury of waiting for the next generation to fix our mistakes. The world is out of time. Humans have to save our fish now.

What does this mean for our future? Scientists predict that at the rate we are fishing there will be no fish left in the sea by the year 2050. Not only will the entirety of the aquatic ecosystem collapse, but so will the 1.2 billion people that heavily rely on fish for their jobs and for their meals. The amount of fishing boats and equipment heavily outweighs the number of fish. The amount trawling that is done is like plowing a field seven times a year; there is hardly enough time for it to replenish itself. The first time scientists really began to notice fish disappearing was in 1992 when the Codfish had been fished completely out of the Atlantic Ocean. Newfoundland's government logically banned fishing in the area to try and let the Cod repopulate, which meant that 4,000 people lost their jobs overnight (The End Of The Line). A few years later some scientists checked to see if the Codfish had returned, but found nothing. "The NEF report, Jobs Lost at Sea, found that current overfishing practices are resulting in a loss of over 100,000 jobs and £ 2.7 billion (4.3 billion U.S. dollars) per year" (One Green Planet). The loss of fish leads to a loss of jobs.



The scientists began to study the fish that were being caught and noticed the same trend over and

over; the number of fish caught were declining every year. Since 1950, the abundance of fish has gone down 90% (The End Of The Line). Our understanding of the sea is rather limited, seeing as how we have only investigated a little under 10% of it, but up until recently we have believed that it is inexhaustible. The Codfish has been one example among the increasing amount of examples of what is to come, yet big industries worldwide are doing virtually nothing about it because they don't want to alter the cash and fish flow. This type of overfishing is called an "open-loop" system, which means that fish are being taken out of the water for consumption but nothing is being given back to the ocean. "Ecologists describe a closed-loop system as one that does not exchange matter with the outside world" (Sustainable Planet). Closed-loop systems are only found in nature because everything is cycled through the food chain, every creature building and benefiting from each other.

The earth is so finely balanced with each other that one wrong move can knock everything out of place. As mighty and expansive as the ocean is, it is also very complex and delicate. Because of the ocean's largeness no one thought about the fact that it could ever run out of fish for us to eat. For a little over half a century we have been plugging away at thinking up better ways to take more fish for ourselves, not thinking about the consequences of other animals; humans obviously think they are the most important creatures on the planet. The earth is made up of 7 billion people inhabit only 30% of the earth's surface. The other 70% belongs to the sea. Not to mention the rest of the land animals and plants that we share our 30% with. We are so tiny compared to what makes up the rest of the planet. Fish are the biggest source of food for so many people worldwide because the ocean takes up so much of the earth's surface, so it makes sense for humans to want to catch as many as possible as sustenance for us. This isn't even a bad instinct—capturing our food is purely how we survive and thrive. Along with thriving because fish are a great source of food, they are also a huge source of income worldwide. The problem, however, is that we never stopped long enough to think about the consequences of our actions. We benefited so greatly from fishing that we never believed that there could possibly be a downside to it. The book *The Empty Ocean* states that "the wealth of oceans, once deemed inexhaustible, has proven finite, and fish, once dubbed 'the poor man's protein', have become resource coveted-and fought over-by nations." Fish are being hoarded because we have become so panicked about the rapid decline of marine life. As a result, we are running out of fish even faster because people think that they need to take as many as they can before anyone else so that when fish become rare or extinct they can be sold for much higher prices.



Upon discovering the severity of the conditions of our oceans, humans have reacted in fear. This fear has presented itself globally, taking on different forms. Aquafarming is an industry that has sky rocketed, "the United Nations' Food and Agriculture Organization reports that the aquaculture industry is growing three times faster than land-based animal agriculture" (PETA). This aquafarming will become even more important as we further debilitate our oceans. PETA also states that "more than 40 percent of all the fish consumed each year are now raised on land-based or ocean-based aquafarms where fish spend their entire lives in cramped, filthy enclosures and where many

suffer from parasitic infections, diseases, and debilitating injuries.” The industrialization of aquafarming is relatively new and most people do not understand how poor the conditions are for these fish or even that there is a distinction between the health benefits of farmed and wild fish. Farmed fish lack the proper nutrients that we would normally be getting by eating fish that live in the wild. The health benefits are not the only thing to be concerned about, either. The process of farmed fish also doesn't make much sense because we are taking small wild fish (perfectly good food for ourselves) and mashing it up into paste to feed to the farmed fish. “Studies have shown that it takes more than 5 pounds of wild fish to grow 1 pound of farmed salmon” (Huffington Post). So basically the whole process is counterproductive because humans have to catch more fish to feed and sell less fish. It would be so much easier to just eat the smaller fish like anchovies (which are actually great for you anyway.) We don't like to eat them because they are smaller than what we are used to eating. The bigger the fish the more satisfied the customer.

The Japanese have dominated the world market place of fish, catching all of the most sought after sea creatures. The government is aware that they are running out of good fish and fast, so they use any and all meat that they can, mislabeling it, and then sell it back to Japan's uninformed citizens. Since 1986 there has been a ban on whaling because the world's whale population began to shrink. “In 1982, with the species on the brink of extinction, the nations of the world agreed to a moratorium on commercial whaling, and this magnificent animal got a reprieve” (Save BioGems). Whaling was a large source of fishing that the Japanese did



because whales provided so much more meat but since the ban they have moved onto catching Dolphins and selling their meat instead. Of course, since most people would not willingly eat such intelligent and human friendly creatures (who, by the way, contain dangerously high rates of mercury), they labeling the dolphin meat as other fish like the rare “Bluefin Tuna” and selling it to citizens. All of the Dolphin slaughtering that goes on is causing the dolphin population to decrease and Japanese scientists deem it okay because “Japan has cited scientific data blaming the decline in global fisheries on dolphins and whales” (The Cove). Japan views them as pests, like flies, which is why they are being killed in such large numbers. Some of the people that have tried to save these dolphins have been murdered.

Why, though, you might be thinking, should I really care about what we're doing to the fish in the sea? We're capturing hundreds of thousands of fish and even farming our own fish; doesn't that ultimately feed our ever-growing population? You should care because what was once a beautiful and thriving terrain, almost entirely untouched by man, is on its way to becoming a desolate wasteland. We will see this in our lifetime. People can no longer sit back and wait for our children to grow up and do something about it. We have to actually fix it ourselves. No more fish means whole fishing communities are out of jobs and food. "West Africa, which used to have one of the richest seas on the planet, has declined massively in the last 50 years" (The End Of The Line). The local fisherman in West Africa aren't to blame, either. It's the western world's government funded trawlers that are pushing people out of jobs and, at the same time, destroying the oceans. "Fishing is one of the worst practices on earth. Every year more than 7 million tons, more than one tenth of the world's catch, goes back over the side, dead. This includes hundreds of thousands of turtles, sea birds, sharks, whales, and dolphins" (The End Of The Line). All of those other animals that are dying are called "bycatch". Bycatch is the 'extra' or 'unwanted' haul that is dredged up by the trawlers. Some of the more common bycatch include: rays, eels, flounder, butterfish, redfish, batfish, starfish, sand dollars, urchins, crabs, turtle grass, seaweed, sponges, coral, and sea horses. In 1990, Japan caught 79 million squids (the target) and a bycatch of 82,000 blue sharks, 253,000 tuna, 10,000 salmon, 30,000 birds, 52 fur seals, 22 sea turtles, 141 porpoises, and 914 dolphins (The Empty Ocean). A local activist in West Africa was interviewed for The End Of The Line, a documentary about overfishing, said that "man is not going to change and the sea is going to be dead because man is crazy." Now, this is a pretty negative opinion, but it comes from a man who has watched the coasts of West Africa be robbed of it's ocean's fish by big governments in Japan and the West for over 30 years. So, what can we do? We still have time to fix our impending aquatic catastrophe, but we have to start fixing it right now. Action has already started to be taken. Alaska's government has set a 200-mile fishing limit. New boats are not allowed to fish in that limit and the amount of boats allowed out to fish at once relates to the population of fish since they aren't allowed to overfish. They are only allowed to fish 10% of stock a year versus the North seas 50%, and fishermen have a limited amount of time to meet their quotas (The End Of The Line). Governments enforcing fishing restrictions and rules like Alaska is a great way to help the fish repopulate. Giving fish the time to repopulate now may be a hard living adjustment, but it will help everyone in the long run. You may want to know what you can do to help this cause. As consumers, we should be aware of where our fish come from and if they are an endangered species prior to purchasing them. Guides are being implemented in restaurants and fish markets that identify endangered species and labels are being added that show the sustainability of each fish. If less people buy endangered fish then there will be less of a demand for them (which will, in turn, decrease the amount that they are fished). A lot of places have also made plans to only sell MSC (Marine Stewardship Council) certified fish, which means that the fish are coming from sustainable fisheries. Walmart has made plans to sell MSC fish and over 90% of fish sold at McDonalds already comes from a sustainable source (The End Of The Line). Another important mode of conservation that has started are creating marine reserves. They are necessary to this process and we must have lots of them. "Wherever people have protected certain areas in the past, there have been great results" (The End Of The Line). We currently have about 4,000 marine reserves of different sizes globally. They cover 0.6% of the ocean. The other 99.4% is still fishable. 12-14 billion dollars would have to be funded to protect the right amount of ocean. The same or less cost that the industries that promote

overfishing need. The protection of the ocean would also create a lot of jobs worldwide (The End Of The Line). We really don't have to do anymore research of the ocean to know how and that we must start acting now. If you think "*one tiny human like me can't make an impact,*" then call and write to your politicians. Get some serious momentum going and make everyone understand what must be done.

I am growing up in possibly the last generation to know that there is beauty and life under the sea. To see great and mighty ecosystem crumble at the hands of a species that is so much younger breaks my heart. We are wrecking 70% of our planet before we were even able to explore it in its entirety. We have only actually discovered what makes up a little under 10% of the ocean, yet we never question governments and fisheries around the world; boats got bigger, nets and hooks grow in number and size, and entire species of fish going extinct. We have done some irreparable damage (most famously for the extinction of the Codfish) and gotten ourselves out of some other marine mishaps just in time, like putting the ban on whaling as their population number was quickly decreasing. Governments and big businesses around the globe either don't seem to understand the severity of what a lifeless ocean would mean for us or they don't care because, for the most part, there has been no stance taken, laws made, or fisheries shut down. Maybe they just continue full steam ahead because they don't know how to stop it without a food shortage, sudden loss of jobs, or dip that the global economy will take. Whatever the reason, we have to remind big businesses and governments how important the ocean is to our long-term survival and that we must work towards saving something that is bigger than ourselves.

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