

The Burden of Algal Blooms



*For all the Change Makers and future
Role Models out there!*

Enjoy Reading!

About the Author



I am Saanvi Rao, a 12-year-old ecoactivist, author, poet, classical dancer and public speaker. I have been the student ambassador for Water Alliance, Ecobee, Emirates Environmental Group and Ahlan Wa Sahlan. I have actively participated in various environmental related activities from a young age. I have composed several poems on the threats faced by our planet and other topics. I have also written books on various environmental issues.

Date: 5th July 2022

Time: 10 pm

Dear Diary,

Every Saturday morning I go for my morning walk around the California Park, close to my villa. I start my day by waking up early as I'm a morning person, then I finish my daily routine and finally, I get dressed for my jog! The California Park is a serene place that is perfect for relaxing the mind and body. It gives you a chance to escape the city's noise and pollution. I love jogging here as it has a lush garden teeming with vibrant flowers and plants. The park is always filled with the scent of blooming flowers. The leaves of the trees rustle in the gentle breeze, making a soft whispering sound. The sun is warm on my skin, and I could feel the sweat starting to form on my forehead. As I jogged along the path, I could hear the sound of my sneakers hitting the pavement with a steady rhythm.

The park also offers a large playground for kids to have fun and a lake located in one corner. The sun always reflects off the water, making it sparkle like diamonds. The lake is certainly a glistening beauty. Each time I jog by this lake, I always see the same elderly woman sitting at the water's edge with a small metal cage beside her. The previous Saturday my curiosity got the best of me, so I stopped jogging and walked over to her.

As I got closer, I then realized that the metal cage was a small trap. There were three turtles, unharmed, slowly walking. She also had a fourth turtle in her lap that she was carefully scrubbing with a spongy brush. Her wrinkled palms rubbed against the shells of the turtles. My inquisitiveness led me to have a conversation with her. "Good morning," I said. "I see you here every Saturday morning and if you don't mind my nosiness, I'd love to know what you're doing with these turtles." She gave a beautiful smile, a certain gleam in her eye. "I'm cleaning off their shells," she replied. "Anything on a turtle's shell, like algae or scum, reduces the turtle's ability to absorb heat and impedes its ability to swim. It can also corrode and weaken the shell over time. Hence I'm helping them out by cleaning their shells." The woman's voice was soft and kind, and I could hear the passion in her words as she spoke about her work with the turtles. "Wow! That's nice of you!" I exclaimed. She went on: "I spend a couple of hours each Saturday morning, relaxing by this lake and helping these little guys out. I consider this my strange way of making a difference. But don't most freshwater turtles live their whole lives with algae and scum hanging from their shells?" I asked.

“Yes, unfortunately, they do,” she replied. I scratched my head with novelty. “Well then, don’t you think your time could be better spent? What I mean is that I think your efforts are kind and this initiative is certainly awesome but freshwater turtles are living in lakes all around the world. And 99% of these turtles don’t have considerate people like you to help them clean off their shells. So, not to be rude but I just want to know how exactly are your localized efforts here truly making a difference?”

he woman giggled aloud. She then looked down at the turtle in her lap, scrubbed off the last piece of algae from its shell, and said, “Dear, if this little guy could talk, I bet he’d tell you that I just made all the difference in the whole world and this means everything to him.” I was really touched by her words!

She told me that the turtles were her friends and that she was trying to protect them from the harmful effects of the algal blooms. She also explained that she had been monitoring the lake's water quality for years and had noticed a significant decline in the water quality due to the algal blooms. Her words left me feeling sad and concerned. I had never heard of algal blooms before, and I realized that I had been taking the beauty of the park for granted.

I thanked her for the information and continued on my jog, but her words stayed with me. I had to do something to help. The next day, I did some research on algal blooms and learned that they were a growing problem in many lakes and rivers worldwide. I found valuable information about the algal blooms. They appear as red tides or in other colours and occur with the rapid uncontrolled growth of algae in freshwater or marine environments. The algae uses up the water’s oxygen, producing toxins. These events brought on by increased nutrient loading due to chemical fertilizers and other human activities have now become an annual event on the U.S. Gulf Coast, killing endangered sea turtles, manatees, dolphins, fish, and countless other marine life. As the world’s waters become warmer due to climate change, and as human activities add more pollutants, harmful algal blooms are going global, with frequently lethal effects on sea creatures, especially sea turtles! Without sea grasses for foraging, the green sea turtles eat more algae, which may be a less healthy diet and in the long run, can make the turtles more susceptible to disease. Massive loss of sea grass beds due to algal blooms has also been reported. Reading about the mess caused by humans broke my heart and it saddened me. Finding out so much about these problems is also concerning and I had the sudden urge to take up this challenge.

So I contacted the elderly lady and soon we got acquainted. I informed her about my research and explained to her step by step how algae are killing sea turtles. I also got to know that not only does algae affects a turtle's diet but also its shells. Algae grows on turtles' shells naturally. Excessive buildup can get in the way of the turtle's ability to absorb heat while basking. In rare cases, algae will start to grow under partially shed scutes (shell scales), and then the shell may rot. This shell rot can cause diseases and becomes severe. I made a big mind map of all this to help me figure out the solution to this crisis. One problem leads to another and then to another and the root cause of these problems is algal blooms!

I and Mrs. Carol (the elderly woman) planned meetups and discussed solutions for preventing the turtles from going extinct. We learned that unfortunately, harmful algal blooms are a natural process. However, there is an increase in the intensity of algal blooms in modern times due to environmental changes caused by humans. We humans are destroying so much life and we don't even realize it. Even if we are mindful about these things, we don't seem to care! Well I guess that's human nature. Anyways, back to the story. I also found out ways to minimize the impact of algal blooms on lakes and freshwaters, however we

cannot permanently remove them as they are an important part of the ecosystem. Real-time water quality monitoring helps prevent algae problems. Common methods to prevent algal blooms also include aeration, chemical/biological additives, or ultrasonic technology. However, these solutions are to be implemented only on a larger scale as these jobs require a huge government company. People like myself and Mrs Carol can't execute such things.

So we thought why not advocate about this to our community about some other simple ways which everyone can implement and help reduce the impact of algal blooms in lakes. We made flyers and posters that informed people about limiting the use of fertilizers on farms, gardens or yards. This will then reduce the amount of nutrients running off into nearby water bodies. We also mentioned about maintaining their septic system to keep wastewater from leaking and seeping into nearby bodies of water. Wastewater is full of nutrients that can help algae and bacteria grow. With all this information in hand I bet people will start to worry. We soon distributed our flyers and posters to the neighbouring societies. I also gave them to my office colleagues, family, and friends. I requested Mrs. Carol to do the same. We were both so happy and proud of ourselves to have achieved this much!

But we both knew that this wasn't the end and the journey was not over YET. Knowing that social media platforms are the best way to interact with more people, I soon started posting information about these algal blooms and turtles on Instagram and Facebook. As I predicted people started taking an interest in them and started following my page. We went from just a few followers to a thousand and now that's a huge deal! So Mrs. Carol and I celebrated on our achievement. I also contacted local environmental organizations and asked if they were working on this issue. I was thrilled to find out that there were several groups working to address nutrient pollution in the area. I joined one of the groups and started volunteering my time to help with their efforts. Soon a majority of people were finally aware of these dangers and started taking part in these initiatives. To further increase participation, I also gave a presentation to all my office colleagues. This then gave me the idea of conducting workshops for students across all the schools and colleges in California. Mrs. Carol suggested that we visit a marine biologist and request him to help us in conducting these workshops. It was a great idea and certainly worth a try! We soon contacted Mark Hartley, a famous marine biologist who has been working in this field for the past 10 years!

Mark assisted us and together we were successfully able to carry out these workshops. We were so pleased to see all the students actively participating. It was also really fun interacting with them and knowing their opinions on the problem we were addressing. Mrs. Carol was working very hard and supported me throughout. I'm grateful to have her besides me in this journey. Maybe we couldn't remove the algal blooms from the water bodies but that's alright because at least our small actions have made a huge difference in spreading awareness to people. I thanked Mrs Carol for opening my eyes and making me realize that anyone can make a difference. If not today then maybe tomorrow. All we got to do is stay truly focused on whatever we are trying to achieve and continue working hard. Now, every time I go for my Saturday morning jog, I think of the elderly woman and the turtles. I'm grateful for the conversation we had and the impact it had on my life. I'm also proud to be part of a community that cares about the environment and is working to protect it. My message to the future generations and all the change makers out there is to always believe in yourself! Be the inspiration and be the role model! I guess that's all for now Diary. I hope you enjoyed listening to mine and Mrs. Carol's fascinating journey. Well, like I said before this is not the end but just the beginning. Stay tuned for more! I need some rest now!!

THE END....

An Eye-Opening Adventure

THIS IS THE STORY OF BEN, AND AN ELDERLY WOMAN MRS. CAROL

BY SAANVI H. RAO