

The Place We Call Home

The long exhale of compressed air. The feeling of escaping air bubbles flying high, popping at the surface of the water. Long, slow, controlled breaths. I haven't been able to ever physically share this experience with my father, but we can talk about our separate stories. We talk about our excitement, our journey, our exploration. Although respiratory issues have stopped him from SCUBA diving in recent years, we've intertwined our experiences with the marine world here in Hawai'i. Each dive is a new experience. Each time my head breaks surface of the water after a long and enduring dive, I can look out onto the beach and see my dad, standing there, eagerly shouting down at me as I painfully wrestle my fins off, "Heya kiddo! How was it down there?"

In 1974 my father first visited the islands. He took on snorkeling and free-diving as a hobby and started to really enjoy the diversity of our reefs here in Hawai'i. It was something different, something new, a change compared to what he was used to. He found himself quickly growing more and more attached to the idea of SCUBA diving. Upon returning back to California, he completed his dive certification and started diving all over- taking trips all around to places such as the Caribbean, British Columbia, and Mexico. More importantly, he took trips all around Hawai'i, diving and exploring our unique reefs here. Two times a year for 30 years he returned to the spots he feels that are his home. Home in the sea.

I still remember all of the stories he told me as a kid when I first started snorkeling- seeing big basket sponges, going in caves, chasing fish, seeing sharks, diving deeper than I could ever imagine reaching. Through his experiences diving for many years, he always emphasized the importance of coral to Hawai'i and our marine environment. Through both my father's experiences and those of myself, I have truly been able to gain insight on how the marine world has changed over time. Time has flown by extremely fast since those little stories on long car rides or rainy nights. All of a sudden now, I'm an advanced open water SCUBA diver with NAUI, and I somehow have been diving for almost 6 years.

With this gained experience and my love of the ocean and the beaches here in Hilo that my father kindled within me, I recently combined my love for environmental science, marine biology, and pharmacology to do dive based cancer research. Through this, the doors of how I viewed the reefs here in Hawaii have opened widely. I found that I had to utilize the reef, and I had to keep an eye out for the smallest of details.

And that's where I found the true impact and inspiration my father and his stories left on me! I remember having ideas and images of the specific sponges, soft corals, seaweeds, and hard corals he talked about- these were all things I was searching for in my research. I remember being very excited and motivated to continue this research. But on the flip side- I realized that some aspects of the abundant reef he once knew were things that I would never be able to see. Some of our stories, experiences, and references just didn't add up. For example, the abundance of sponges in similar rocky and shallower based waters that he saw all the time took me multiple attempts to even come across a colony healthy enough for analyzation. The soft corals? Even harder to find. There has been a visible decline in the biodiversity and amount of marine species that are the backbone of our reefs. Whether bleached, unhealthy, or losing prominence, the growing rates of pollution and environmental issues have been impacting the composition of our reefs over the past 50 years. I've come to speculate that a lot of the declines in populations like these are a result of rising water temperatures and ocean acidification- slowly creating a harmful environment in which these organisms cannot buffer and regulate on their own- leading towards their death.

One thing I prominently remember about this situation was my father's reaction when I told him all of this. He seemed disappointed. Not in me or my unsuccessful efforts in locating certain species, but of the fact that I was not able to fully experience what he was seeing. It's hard for him to bear sometimes because he can't dive anymore and wishes he could be alongside me in a place he called home for such a long time. The last attempt involved a gear malfunction followed by effects of his respiratory issues- causing a dangerous situation in which I had to abandon our gear, call for a lifeguard while fighting against the strong current and raising tide, and attempt to reach the beach with him safely despite all the problems presented before us. I was only in 7th grade. After this, we were left extremely discouraged.

But these situations have only helped build my character. I've learned to push my boundaries and learn as much about the reefs here in Hilo. I've gone to depths of 115 feet, explored caves, seen sharks, and have been blessed to see the marine life we have here while we still have it. I have pushed myself to study the reef and research it- looking into topics from turbidity to sand grain size distribution in relation to the orbital diameter of ocean waves and its impacts on coral head distribution to collecting marine samples to effectively work on creating anti-cancerous drugs and analyzing compounds. I've learned to analyze the uniqueness and biodiversity of the reefs we have left, and to educate myself on the dangers that have hindered the potential of these reefs.

As I continue on with my endeavors with my father to guide me, I often think about the future. If the changes in the biodiversity of the reef have been this prominent in the past 50 years, what about the next? Currently, the fate of environmental impacts on reefs don't look bright. They're filled with continuing trends and continuing losses. We see the impacts of single-use plastic, the use of Oxybenzone in sunscreens, the burning of fossil fuels, air pollution, sewage run-off, water pollution as a result of commercial boats and companies right here in Hawai'i. It's not the easiest to stop and prevent and retain. With the earth's growing population, I don't think there's a miracle solution that we can implement that will make all of these go away. But instead, we need to take strategic action! Some of these topics aren't talked about as much as they should. Where's the promotion of environmental efforts in schools? Or education on these issues to those in their formative years? I haven't ever experienced any in my younger school years- and even now they are minimal to none. We need to influence and educate the younger generations in these topics and problems that will directly impact their future. The bans on single-use plastics and certain sunscreens? These are issues that are easily avoidable with stricter implementation. Enforcing more Hawai'i based environmental laws? I haven't heard much about that either. We can't bring back the lost biodiversity, but we can compensate for our damages in a number of ways.

I'm hoping everyone can grow some kind of little bud of interest in the ocean. To some, it's a scary place. To others, it's a new opportunity for growth. I hope to inspire someone as much as my father inspired me through his experiences, perseverance, and continuous support.

Even though he can't physically be there, we build off of each other. Our *wahi pana* is the reef-and I'm glad it won't stop being the reef, regardless of where it stands now or in the future. Our *wahi pana* is our home.

