

Preface

I walked up the stairs into the circular room from below. A continuous tank of fish occupied the walls and any reasonable place for a door, hence the subterranean entrance, which added to the magic. Swirling, swimming, blue; the creatures spiraled around me as I sat cross-legged on the gray scratchy carpet in the center of the room. The light was dark blue and glowing, I was underwater with the fish; maybe if I spun fast enough, I could swim with them. This was the California Academy of Sciences, the deep-sea exhibit, where fish swam almost freely; one of my favorite places in the world. It was the wonder I felt amidst this swirling and spiraling that fostered my early connection to the ocean; it is this early connection to the ocean from which I draw much of my spirituality. Growing up in San Francisco, on a peninsula, surrounded on three sides by water. Growing up in the Unitarian Universalist Church, a religious community influenced in part by the earth-based spiritual traditions found in paganism. Growing up with the spirit of the universe, the ocean was the goddess and she was magnificent.

This spiritual connection has manifested in my interest and perceived obligation to understand local marine ecosystems. My mother used to tell me about the spirit of the universe, which happened to manifest herself in the ocean.

I am interested in kelp forests because of their unique presence on the California coastline and their seemingly perfect balance of ecosystems. I connect to the ocean based on a perception of balance within the ocean and the delicate line it forces me to toe, right by the edge of discomfort. As a child, my imagination was underwater, based mostly upon the magical kelp forests of the Monterey Bay National Marine Sanctuary. Seriously, who wouldn't want to live underwater, floating through life? I seek to unpack this imaginary world and insert some truth into my utopian vision of kelp forests and understand the harsh reality of their depletion.

Introduction

“The cure for anything is saltwater – sweat, tears or the sea.”
- Karen Blixen (As Isak Dinesen)

There exists a duality between the reality of a depleted ecosystem within a larger environment and my own personal connection to that environment. I have approached this from two key perspectives, the first being the hard biological truth of the state of kelp forests on the California coast as a microcosm of bigger ocean issues and the way they relate to this specific ecosystem. The other is a spiritual and personal approach to analyzing my own connection to the ocean: through reflection, introspection, and meditation along with research on faith and spiritual traditions involving the ocean. Through my inquiry into these two threads of research, I observe the way that my connection to this utopian ocean will be affected by an increased knowledge about the ocean. My feelings towards the ocean include that of awe and wonder, as well as an overwhelming sense of balance and stability—an imaginary stage set with a utopian underwater scene, ready for the realistic play to unfold upon it.

Chapter 1: Personal

“We ourselves feel that what we are doing is just a drop in the ocean. But the ocean would be less because of that missing drop”

- Mother Teresa

I see my personal connection to the ocean from three angles: through context of proximity, personal experience, and through my experience with spiritual earth-based traditions. I have lived in San Francisco, affectionately dubbed “The City by the Bay,” for my entire life. Surrounded on three sides by water, it was a common field trip and weekend outing to go to the ocean, bay, or anywhere between the two. I often found myself loaded up in the back of my mom’s Volvo, being slobbered upon by over-enthusiastic canine friends and ready to be covered in sand, headed over the Golden Gate to sunnier ocean tides. Every weekend involved a romp with the dog down on the marina green, poking around Bolinas tide pools or flying kites on the barren Ocean Beach.

To say the least, the ocean was a particularly present and relevant entity in my upbringing. One of these entities was the California Academy of Sciences, also in San Francisco, a place where I spent much of my childhood – though drawn to the bugs and famed albino alligator, it was the aquarium that both fascinated and frightened me. The endless tanks enthralled me, yet never shook the sadness for the fish forever trapped behind heavy Plexiglas barricades. Yes, *I was that kid*, the one who cried for the freedom of the fish. The ocean was the closest thing to an alien world there was, and I could experience it in the blue-lit, gray-carpeted, underground world of the aquarium. Sitting on the floor for hours, watching the schools of fish glide gently by was a favorite pastime of mine; frequent visits to this spot, in the round spinning dome of fish, nurtured a childhood desire to live underwater and grow gills.¹

This round aquarium fostered a feeling of balance and infinity that I found to be consistent with my feelings when I view the sea; this sensation, I have found, is familiar to many people. In an artist statement about his body of work *Seascapes*, the photographer Hiroshi Sugimoto writes: “Every time I view the sea, I feel a calming sense of security, as if visiting my ancestral home; I embark on a voyage of seeing.” With this, he captures my own connection to the ocean very well, as a calming presence brought about by the idea that evolutionarily, we all came from the sea and thus find it familiar and safe. The pieces referenced in this artist’s statement are atmospheric photographs that capture “water and air” which are “so very commonplace...they hardly attract attention—and yet they vouchsafe our very existence” (<http://www.sugimotohiroshi.com/>). So on this topic of our finite existence, why don’t we look at the ocean from a biological perspective as well.

Chapter 2: Scientific

Here, I have chosen to look at kelp forests as a microcosm of larger oceanic trends. According to the National Oceanic and Atmospheric Administration (NOAA), kelp forests are comprised of “dense canopies of algae [which] generally occur in cold, nutrient rich water.” So what is kelp? We may know it in dietary supplements and gardening, but what is it really? Kelp

¹ Through extensive research, I have since learned the impossibility of this.

is a form of algae that can grow to form vast marine forests that are home to entire ecosystems of aquatic life. Kelp can grow to be anywhere from 2 to 30 meters tall (<http://oceanservice.noaa.gov/facts/kelp.htm>). Kelp forests are home to a host of marine life, from crustaceans and sea urchins to fish and otters. The Kelp forest ecosystem is a contained environment within the ocean that sustains itself and creates a complete cycle of life. In an article about the threats to kelp forests, NOAA's Sanctuaries Web Team confirmed this idea of a sustainable cycle, because "as in all ecosystems, a balance exists in this complex environment, and predators such as sea otters generally contain [grazing] sea urchins or grazing fish enough to limit damage" in this way. This balance is harmed when predator counts decline because of oil spills and extreme weather conditions.² How extreme can weather get? Some weather in the ocean manifests in the form of harsh waves and tides which churn up underwater ecosystems, casing sand and bottom dwelling creatures unnaturally upwards. Extreme weather is not the only thing that harms this balanced ecosystem, as NOAA states, "the health [of the entire ecosystem] is proportional to the number of adverse conditions to which it is exposed" (<http://sanctuaries.noaa.gov/about/ecosystems/kelpimpacts.html>). Unfortunately, these adverse conditions are rapidly increasing.

What are threats to kelp forests? For starters, we'll look at commercial kelp harvesting. In 1919, during World War I, 400,000 tons of harvested kelp were used to make potash (a water soluble salt that contains potassium) for gunpowder and fertilizer. The usage of kelp continued on an industrial level throughout the 1930's with the food, pharmaceutical, and scientific industries extracting align—a thickening agent found in kelp, causing kelp to be present in everything from toothpaste to dairy to paint. In 1980, the commercial kelp harvesting industry was worth \$40 million dollars and our dependency on the marine resource continued (<http://sanctuaries.noaa.gov/about/ecosystems/kelpimpacts.html>).³ Today, there are harsh regulations on commercial kelp harvesting, permits are needed and access is allowed only in kelp beds designated for harvesting. These regulations however, do not affect non-commercial harvesting, where there are no closure seasons and the regulation is maintained via restrictions of location (mainly sanctuaries, parks and reserves). In the official language of the CA Department of Fish and Game Kelp CEQA it is stated that "every person engaged in harvesting kelp or other aquatic plants for profit in the waters of this State shall have a license for that purpose." Even these permit restrictions aren't always followed.⁴

Harvesting however, is not the most destructive, as storms can rip up entire forests, which endanger marine animals, which seek shelter from harsh weather and waves within the sanctuary of kelp forests. Storms however are not the only weather related conditions that can harm kelp forests. The repercussions of El Niño Southern Oscillation events also harm the health of kelp forests. El Niño is not a storm but a weather pattern that reoccurs every five years and changes the temperature of air and water in the Pacific tropics, drastically warming the waters that California kelp forests inhabit. El Niño causes floods and droughts on land and also damages the cool, nutrient rich water conditions that kelp requires in order to grow. In 1997 and 1998, severe

² Another threat to the sea otters, the most prevalent of these predators, is the fur industry, as they are now an endangered species because of this hunting

³ In 1993, 4,700 wet tons were extracted from Monetary Bay Marine *Sanctuary*. Seriously, from a sanctuary? This is not like pruning a rose bush; it does not increase the health of the forest.

⁴ None of these regulations apply to those under the age of sixteen so many fishermen exploit the labor of children and youth in order to avoid permitting restrictions.

storms in winter and warm weather were primary sources of kelp depletion merely because the kelp shoots were unable to grow in the unfamiliar condition. (<http://www.elnino.noaa.gov/>)

If there are so many adverse conditions threatening our California kelp forests, why do they still exist? Because of the conservation and protection effort put in by organizations and people looking out for the health of our marine ecosystems.

There are five marine sanctuaries along the west coast.⁵ NOAA and the California department of fish and game regulate the management and coordination of laws and conservation efforts in these sanctuaries, as well as some site-specific managing organizations that are better versed in the nuances of each specific sanctuary. In 1999, the Marine Life Protection Act (MLPA), with a goal to redesign the 1100-mile California coastline, joined these organizations. This bill streamlines resources and regulations into one act aiming to “increase coherence and effectiveness in protecting the state’s marine life and habitats, heritage, as well as to improve recreational, educational and study opportunities provided by marine ecosystems subject to minimal human disturbance” (www.dfg.ca.gov/mlpa). In keeping with things in fives, this manages the five marine sanctuaries along the California coastline and re-assesses them every five years in order to maintain a dynamic process of protection, keeping with the initial goal of the bill.⁶

In summary, despite the many safeguards for marine ecosystems and kelp forests, there is still a need for increased public knowledge, conservation acts, marine sanctuaries and regulation, in order to maintain kelp forest health and slow the depletion of their accompanying ecosystems.

Chapter 3: Spiritual

*“Set sail, set sail,
Over the dark of the sunless sea,
You are free, you are free.*

*Set sail, set sail,
Guiding the ship of the rising sun,
You are the one, you are the one.*

*Set sail, set sail,
Into the raging wind and storm,
To be reborn, to be reborn.*

*Set sail, set sail,
Over the waves where the spray blows white,
To bring the light, to bring the light.”*

- Starhawk and Mara June Quick Lightning

⁵ These five marine sanctuaries are: Channel Islands, Cordell bank, Gulf of the Farallons, Monterey Bay, and the Olympic coast.

⁶ Check out the California Department of Fish and Game website for more information than you could ever want about Kelp Forests (<http://www.cadfg.gov/>)!

The ocean is a large part of spiritual traditions all over the world, including my own. I have grown up influenced by a spiritual community where water is an important metaphor for our lives. This earth-based tradition is the San Francisco Reclaiming pagan community. Though I do not call this community my spiritual home, it has greatly influenced the way in which I relate with the natural world. Through ritual, we celebrate life, death, and the world around us. At the Winter Solstice, we hold a ritual on Ocean Beach and watch the sun set into the waters of the West. The cardinal westward direction is associated with water, autumn, the womb, and reflection. Altars depicting the West are used in every ritual (along with the other three cardinal directions) and are often used to represent and celebrate sea goddesses. Watching the Winter Solstice over the westward sunset is a way of methodically and metaphorically turning the wheel of the year to the coming of the light and the longer days to come. We celebrate this ritual using a bonfire to burn mementos of the year past and renew for the year to come. Then, we jump into the ocean, cleansing ourselves for the new year. Thus, the ocean is used as a calming, renewing force and a base of my spiritual grounding. *We all come from the goddess, and to her we shall return, like a drop of rain, flowing to the ocean.*

I have also been influenced by my spiritual home in Unitarian Universalism,⁷ where we perform rituals of gathering waters as a metaphor for the places and people that are important – congregants bring water from their lives and we pool them all together as a an affirmation of community and sacred space. Unitarian Universalism draws from six sources, one being earth-based spiritual traditions such as neo-paganism.

The ocean is uniquely present in many different cultures and religions apart from my own. In Judeo-Christian teachings, baptism is an important part of the beginning of a person's life, speaking to the sacred power of water in many spiritual transitions and traditions. In Sikh scripture, in an excerpt from a meditation that affirms the sacred life force within each of us, Guru Arjan tells us "You are the Ocean of Water, and I am your fish. Your name is the drop of water, and I am your thirsty rainboat." His reference to "you" as "the ocean of water" while he is "your fish" is a reference to human proportion to the encompassing power of the ocean. This piece of scripture also touches on the nourishing power of the ocean and the renewing qualities of the ocean through his usage of "thirsty." This is but one of the ocean's many appearances in religions of the world.

The ocean also appears in literature, as both a calming force, a dangerous force, and everything in between. Twentieth century Austrian poet Rainer Maria Rilke wrote of his relationship to the ocean: "When anxious, uneasy, and bad thoughts come, I go to the sea, and the sea drowns them out with its great wide sounds, cleanses me with its noise, and imposes a rhythm upon everything in me that is bewildered and confused." With this, he explores the calming force found in the overwhelming vastness of the ocean. I find this particularly relevant to my feelings about the ocean as a centering force and an all-encompassing sedative presence.

Chapter 4: Connections

My spiritual and personal connection to the ocean has been affected by my increasing knowledge of the ocean. I both admire it more for seeming so strong when it is being harmed and I am torn with a sense of instability stemming from this crashed ideal of a utopian underwater

⁷ Unitarian Universalism is a liberal spiritual tradition that draws from many sources and welcomes people from all belief systems, encouraging never ending spiritual and personal inquiry and fosters a community in which to grow.

world. As I have explored and learned more about the depletion of the natural resource and ecosystem that is the Pacific Ocean off of the California coast, my idealized, perfect vision of the ocean that I connect to my spirituality through my grounding and balance has been shaken and changed. This change came about based on the fact that I am now struggling with my source of balance. One of my largest sources of awe and wonder that I see as balanced, vast, majestic and unwieldy is just as in danger and as broken as I am—nothing is stable or perfect forever. So how can I find stability and balance from something that is not so balanced? How do I rely upon something that is not stable for stability?

Despite these questions, my awe and sense of wonder for the ocean is, if anything, increased, as the ocean is struggling and unbalanced yet can still inspire immediate awe and wonder and a sense of safety in me. The fact that I know it is not perfect and is, in fact, being harmed by human presence and environmental impact, has strengthened my connection to it; I feel less insignificant and small because I know that it too has imperfections.

Conclusion

How *do* I rely upon something that is not stable for stability? Though I can still idealize the ocean, without such a perceived notion of stability, this inquiry has brought up something larger. Where do I find stability? The idea of stability hints at something that is unchanging and thus it is often a comfort to find oneself grounded in that which will not change. Personally, I find that in order to rely upon something that is unstable and thus changing is to become *comfortable* with change. In context of the ocean, I find myself still able to rely on it for stability, mainly because of the awe-inspiring calm that it fosters in me. I have also become comfortable with my changing knowledge of the ocean and thus I can find spiritual solace in that balance of change. I have found that it is that which is constantly changing that is in balance—constantly adjusting is the most stable way to approach the world.