

The “New Human Condition” in Literature: Climate, Migration, and the Future

by

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ABSTRACT

This thesis examines perceptions of climate change in literature through the lens of the environmental humanities, an interdisciplinary field that brings history, ecocriticism, and anthropology together to consider the environmental past, present and future. The project began in Iceland, during the Svartárvot Culture-Nature Program called “Human Ecology and Culture at Lake Mývatn 1700-2000: Dimensions of Environmental and Cultural Change”. Over the course of 10 days, director of the program, Viðar Hreinsson, an acclaimed literary and Icelandic Saga scholar, brought in researchers from different fields of study in Iceland to give students a holistically academic approach to their own environmental research. In this thesis, texts under consideration include the Icelandic Sagas, *My Antonia* by Willa Cather, *Tropic of Orange* by Karen Tei Yamashita, and *The Water Knife* by Paolo Bacigalupi. The thesis is supported by secondary works written by environmental humanists, including Andrew Ross, Steve Hartman, Ignacio Sanchez Cohen, and Joni Adamson, who specialize in archeological research on heritage sites in Iceland and/or study global weather patterns, prairie ecologies in the American Midwest, the history of water in the Southwest, and climate fiction. Chapter One, focusing on the Icelandic Sagas and *My Antonia*, argues that literature from different centuries, different cultures, and different parts of the world offers evidence that humans have been driving environmental degradation at the regional and planetary scales since at least the 1500s, especially as they have engaged in aggressive forms of settlement and colonization. Chapter Two, focused on *Tropic of Orange*, this argues that global environmental change leads to extreme weather and drought that is increasing climate migration from the Global South to the Global North. Chapter Three, focused on *The Water Knife*, argues that climate fiction gives readers the opportunity to think about and better prepare for a viable and sustainable future rather than wait for inevitable

apocalypse. By exploring literature that depicts and represents climate change through time, environmental humanists have innovated new methods of analysis for teaching and thinking about what humans must understand about their impacts on ecosystems so that we can better prepare for the future.

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INTRODUCTION

In the late summer of 2018 I had the opportunity to visit and conduct research in Iceland, the “land of fire and ice”. I was accepted in the Svartárvot Culture-Nature Program and participated in the course “Human Ecology and Culture at Lake Mývatn 1700-2000: Dimensions of Environmental and Cultural Change”. Over the course of 10 days, director of the program, Viðar Hreinsson, an acclaimed literary and Icelandic Saga scholar, brought in researchers from different fields of the study of the environment in Iceland to give us students a holistically academic approach to our own environmental research. The course focused on addressing questions of long-term societal resilience in the face of a changing climate and society. Some of the questions that were discussed included, how can we address climate change across the disciplines and what happens if we don’t? And, how do we bring what we learn in this course into our everyday lives and academic studies? These questions were designed to get students thinking about the use of natural resources, the effects of colonization, and anthropogenic transformation of landscapes and ecosystems over time. In addition to Professor Hreinsson, our faculty represented the field of the environmental humanities. We were instructed by literary scholars, historians, and archaeologists which allowed us to explore the reason that more and more scientists and scholars are saying that it will take all the disciplines, including the humanities, to tackle climate change.

At the beginning of the course I quickly realized how little I knew about anthropogenic changes in Iceland and in other parts of the world. But what was most surprising was how I was not alone in my lack of knowledge. In many societies, and clearly from years of unacknowledged climate change, many people around the world do not realize how the damage caused in one place on earth has long term repercussions not only for that place but across the globe. This

effects societies in the present and continuing into the future. The course challenged my understanding of what I knew about my own environment in the US and what I knew about interlinked climate changes both in the US and Iceland today.

It is quite startling to see Iceland's historic glaciers shrinking so dramatically. They now cover a mere 11% of the land. This melting will lead to increased flooding and loss of farmland across the country and ultimately around the world. But these are just a few of the long-term consequences predicted for Iceland. In my city, Phoenix, Arizona, we see quite the opposite-extreme heat. These changes in an already dry climate are likely to cause unpredictable weather patterns and water shortages as climate change accelerates. While in Iceland learning about the early settlement stories of the country, I saw links between the ways in which North America settled the land and the ways the Vikings settled Iceland. Both created irreversible damage to the environment. My course in Icelandic sagas and climate change was the inspiration behind the first chapter of my Master's thesis, "The 'New Human Condition' in Iceland and North America" in which I will compare stories from Iceland to fictional a novel dealing with settler-colonial agriculture changes in the late 19th century Midwest.

My first chapter, "The 'New Human Condition' in Iceland and North America" examines the connected factors between the degradation of land, instilled beliefs about the environment's resources, and how these facets appear across different cultures through time. I use criticism from theorists and researchers such as Orri Vésteinsson, Hildur Gestsdóttir, Willaim Short, Karen Oslund, and Steve Hartman some of which participated in my course in Iceland. By using the Icelandic Sagas and American-prairie novelist Willa Cather's text, *My Ántonia*, I use these texts to show the interconnected nature of the start of a society on new lands and the type of trajectory that was set in motion. Chapter One argues that we must look back to our early

literature and history of settlements to begin to understand the early instilled beliefs about the environment and how we can tackle the beliefs that are still present today. If real measures are not taken into place on to how learn from our past, we may just in fact repeat them.

Chapter two, “Borders and Climate Migration in the Modern World” explores another wave of climate change through literature. I define this next wave of climate change as the forced migration due to climate change. After a land has been settled on and over used for its resources, soon the land can become unusable. I define this next wave as climate forced migration because the exploitation of resources is usually not done by the local people, but from foreign capitalists, capitalizing on local land. This chapter uses a novel intertwined with magical realism and climate change impacts to a large metropolis in the West, Los Angeles, CA. By using Karen Tie Yamashita’s novel *Tropic of Orange*, I connect this text to climate migration. As agricultural engineer and researcher Ignacio Sanchez Cohen describes, “migration follows a complex pattern related to health, job opportunities, the availability of services, family ties, political situations and climate conditions” (Cohen 55). This society that Yamashita’s fictional novel depicts shows how intertwined consumption, immigration, politics, resource management, people, and climate change really are. I use scholarship from Andrew Ross, Joni Adamson, Timothy Clark, and Molly Wallace to support my conclusions. I argue that Yamashita’s novel shows how climate change is a planetary-scale ecological process with implication on a multinational concern and will only continue to degrade environments around the world if all countries do not act soon to make environmentally responsible choices.

The last chapter “The Postmodern Apocalypse: A History of a Desert Future” takes a step into the future of climate change that many scientists, activists, and authors are predicting as represented in fiction. In *The Water Knife*, Paolo Bacigalupi writes about a potential future

apocalypse in the Western US and how it will impact the people who live in a divided US. This novel shows climate change, corrupt governmental management, and life barely hanging on to encourage readers to accept the irreversible damages humans have caused to the earth.

Bacigalupi shows what could happen if adequate management and acceptance of the irreversible damages we've done to this earth are not put into place. I connect this text to real life examples today as this novel is composed of many landmarks, stores, and other various places/items that are used today by using academic scholarship and journal articles from Annette Magid, Marc Resiner, Lynn Inram, and Giovanna Di Chiro amongst many others. This chapter serves to continue the analysis of climate issues over time by arguing that this novel sheds light on many of the real issues we face in society today to bring awareness of the type of disastrous future that the world is putting in place.

My experience in Iceland taught me that environmental humanist studies are being conducted all over the world and contributing to the ongoing efforts to meet the challenges of climate change. The field of the environmental humanities serves to connect the once science driven study of the environment to show how the humanist perspective can bring a point of view that is not usually considered. As environmental humanities scholar Joni Adamson describes, "business and education leaders are declaring the 'environmental humanities' crucial to addressing the anthropogenic factors contributing to increasingly extreme weather related events" ("Humanities" 135). By using literature that depicts early settlement stories and the environments humans have impacted, literature deals with climate change issues now and helps readers think about future apocalyptic cli-fi pieces of work as well. As emphasized in "the future we want" from the United Nations Conference on Sustainable Development in Brazil 2012, it states that "in order to achieve a just balance among the economic, social, and environmental

needs of present and future generations, it is necessary to promote harmony with nature” (39). This thesis delves in the evolution of human interaction with the environment and the outcomes of the unforeseen impacts on the environment in order to illustrate that the environmental humanities are essential to understanding the human connection to the environment so that we may better prepare and plan for the type of future we want as well as one that we can sustain.

CHAPTER 1

THE “NEW HUMAN CONDITION” IN ICELAND AND NORTH AMERICA

The sagas of Icelanders are oral stories dating back to the early 13th century. As these stories were later written down, they became remembered as some of the earliest oral traditions in Iceland and are argued to be “the most prominent genre of Iceland’s literary heritage” (Waage 179). These stories mark significant times in the past when history was being made. As technology and civilization advanced and curiosity began to boil over in the world, transformations in how things were done were bound to occur. The history of these transformations can be found in the sagas, often told orally and passed down by word of mouth. For locals, they most frequently turn to the sagas for historical references. The sagas depicted the experience of people transforming land into villages and soon, society. Their early Viking settlement showed many of the beliefs they had about growth and opportunity in the world and today provide indications of the beginning of the age of humans, today known as the Anthropocene.

The age of humans, the new human condition, or most commonly known as, the Anthropocene. This geological era, as described by environmental scholars in their chapter “Anthropocene”, tell us that today we live amongst the dramatic environmental changes that have occurred due to the fast-paced growth in human population and economic growth. These increases have resulted in dramatic changes to the world’s natural environment and are proving to be irreversible, “These changes are cause for concern-or alarm-among some and are regrettable if unavoidable side effects of economic growth for others” (Zalasiewicz, Williams, Waters, 14). The world has experienced change at such an alarming rate that humans have now left a

significant geological footprint, a geological footprint that is and will continue to, have serious implications into the future.

In this chapter, I compare the Icelandic sagas to nineteenth century American writer Willa Cather's novel *My Ántonia*. Cather's fictionalization of the story of European settlement and transformations of the Mid-Western US describe the challenges of farming on lands in Nebraska and the experience for new settlers there. While Cather idealizes the future of the Mid-west, she documents a very important perspective of society at this time. Many do not understand the long-term implications of overcultivation on the prairies and the consequences that would later reverberate into the future. As grassland scientist Wes Jackson describes, "We have difficulty focusing on the patterns" of prairie ecologies "and what they might have taught us in more placid times" (60). There was a common belief among early European settler-colonials in America that there was an endless supply of resources. These beliefs are still present today and are driving serious and dramatic consequences in the Anthropocene.

While we might think this phenomenon is a post 1600s occurrence, literature from both the early 13th and 19th centuries show the impact of human exploration and the dramatic ways it transforms an environment in any time, in any place. Prairie scientist and environmental studies scholar Wes Jackson has extensive research in the climate change sector and the relation to the prairies in the US. Jackson describes an extremely important factor in considering the future of our environment "Because of the ideas in our history, we never developed a way of considering when enough is enough. We became material and energy junkies" (Jackson 291). When tackling issues as great as climate change it is important to not only look not only back at the most disastrous events of the past but the early instilled beliefs on environmental regulations and treatment from a society. As Icelandic researchers claim, "long term perspective enables us to

explore how the impacts of realized threats may have played out of the years and decades following notable, system affecting events” (Hartman, Ogilvie, Ingimundarson, Dugmore, Hambrecht, McGovern 3). Human colonization depicted in literature from the 13th and 19th centuries tell us that the idea of what this world could offer them elsewhere was greater than the constraints of the societies in which they lived. In both occurrences new settlers claimed new lands and did with it as they desired. These conquest-like beliefs can be connected to early instilled beliefs that resources would never run out. I argue that by looking at literature from different centuries and from different parts of the world we are able to see that humans are continually the driving factors in any start of environmental degradation and that this historically begins at the time of settlement.

The Icelandic saga *The Saga of the People of Vatnsdal* is one of the many of Icelandic sagas that document the early settlement of Iceland. This saga takes the reader through five generations of a Viking family and the cultivation of their new life in Iceland. Due to some unforeseen circumstances Ingimund, son of the famous Thorstein, fights for his king’s side in a battle during his youth but after failing, “consents only reluctantly to abandon his estate and social position as he looks towards a new life in Iceland” (183). The decision that Ingimund made to travel to the new land called Iceland, was not out of the ordinary. The various countries that once bound a society to its own rules and hierarchy no longer held its people back from new opportunities elsewhere. A new life in Iceland promised new opportunity to the many willing to take the chance of not knowing what the future would hold.

As also documented in various other sagas, the belief in magic or mystical beings was a significant factor when tackling big future decisions. While Ingimund had already planned to leave for Iceland many were excited and eager to hear about his journey across the ocean to this

new land. While Ingimund was leaving, a “seeress” who predicted his near-future in Iceland approached him. This seeress explains, ‘You will settle in a land which is called Iceland; it is as yet not widely settled. There you will become a man of honour and live to a great age. Many of your kinsfolk will be noble figures in that land’ (204 translated by Wawn). The seeress predicts that many will move to Iceland and make claim to the land before it was too late. This new opportunity in Iceland, then verified through magical resources, promised something that their homelands could no longer provide and for Ingimund it only seemed right to take his chance.

As these Vikings had never been to this new land before, many had various hopes and predictions of how this new land was going to best function for their new society. Grim, another Viking character in this saga was on his way to Iceland and claimed, “that the livestock feed themselves during the winters, that there are fish in every river and lake, and great forests” (205). It was clear that they were used to the reliability of their past environment and expected the same for any new place they conquered. This type of ignorance to the lands resources and how they should be handled is a problem that has continued through generations of mistreatment and overuse of once plentiful lands.

While the Vikings most likely had little idea of the environmental future, it is important for humans today to understand such early stories of settlement so that we can understand our planetary process are changing. By analyzing these early settlement stories, we are able to understand how through generations of mistreatment of the land had effectively created irreversible damages to the earth. The era of the Anthropocene poses very important factors that only today are beginning to be recognized on a world-wide scale. The fact is that “Humans may be considered as geological agents, and anthropogenic environmental change may be compared with events in Earth’s deep history” (Zalasiewicz, Williams, Waters14). By looking at the ways

the earth has been transformed and also the stories of the people who first started the transformation of a new land, we are able to see linkages in beliefs and actions that have carried on throughout history.

The exploration of Iceland, as documented in the sagas, show some earliest literature of humans searching for more land as many were outgrowing their societies. While these sagas cannot necessarily be fact-checked the “sagas remain part of the bedrock of Icelandic culture in modern times, with abundant references in place names, personal names, street names, and corporate names and identities” (Short 212). Much like the Westward expansion in the US, Iceland went through a similar movement from surrounding countries to the island. Settlements on new lands in the world’s history seem to continually inspire people to document these times as if they knew how significant they would stand into the future.

Historically, Icelanders have documented their history in different written sources and have developed writing traditions in their culture that are still alive today. As a visitor in Iceland it was extremely prevalent that the most highly regarded and referenced literature, when speaking of Icelandic history, are the famous Icelandic sagas. The sagas dating back to the early 13th-14th centuries, still stand today of great importance in Iceland’s documented history. While many dispute the accuracy in the history described in these stories “they certainly bear witness to the language of the times when they were written, which makes them valuable to exploring the conceptual meanings of terms used at the time” (Waage 2012). In these collections of stories some document early life in Iceland and what it was like for the families that settled there while some tell stories of bravery, adventure, and magic. However the sagas began, they started a tradition of orally and physically keeping stories of the past. Today these generations can look

back to the time of early settlers and see how important this history was as transformations occurred.

This dream of creating a better life by moving to Iceland was realized for many settlers. However, for foreign settlers in the US, less happy outcomes occurred. The idea of the “American dream” was promised to many settlers in the US during late 19th century-early 20th century. People from all over came to the US to try and make this dream a reality. Willa Cather’s fictional novel *My Ántonia* follows the generations of a family who immigrated from Bohemia to Black Hawk, Nebraska in the 19th century. This Bohemian family, the Shimerdas, had distant family connections to this rural town in Nebraska and sold everything they had to move their family onto this “new” piece of foreign land. The hope for a better life in the US was stronger than trying to make it on their own, a theme prevalent in both stories of movement to new lands.

The novel is narrated from the perspective of Jim Burden, an American boy who moves to the Nebraska prairies to live with his grandparents. During his time on their farm he sees people from around the world taking their chances by moving onto the prairies. While going to a town-wide dance Jim notices the eclectic group of people who would participate, “Sometimes there were Bohemians from Wilber, or German boys who came down on the afternoon freight from Bismarck. Tony and Lena and Tiny were always there, and the three Bohemian Mary’s, and the Danish laundry girls” (107). The diverse population of the people in this town and those from nearby clearly were a part of the push from the American media to move west. The diverse population not only transformed the people it transformed their traditions on how they treat their environment.

Most new settlers were there solely to make their fortune off the land and begin a new and better life. As Jim notes of one of the older men in town, “In every frontier settlement there are men who have come there to escape restraint. Cutter was one of the ‘fast set’ of Black Hawk businessmen” (102). Cutter, a Russian immigrant, had come to make a business out of this new mid-western world and would do anything to make money off of its assets. While the land was unknown to many who settled there, Cutter would sell the land, charge interest, even knowing that foreign hands on this land could only mean disaster and coming to him for more money. But Jim has a very important point in noticing a man like Cutter, Jim sees this man doing what any other man in his position would do. For Jim, he grew up with the notion that this land was meant to be owned, sold, and profited from by any man wise enough to do so.

Like the Viking sagas, literature of the US’s westward expansion describes generations of families searching for their chance at better life. The sagas show how the desire to expand, a type of imperial ego, is an idea that humans have exhibited through centuries of treatment to the world’s environment. As English professor Ashley Dawson explains in an essay titled “Imperialism”, “imperial ego was founded by entertaining jealous thoughts about other men who might as ‘mann’ this colonial terrain” (Dawson 140). The expansion to the Mid-western US seemed to be more about who could better “man” the land than those who knew how to take care of and preserve such a plentiful place. By comparing seemingly distant human expansions in the world history we can begin to understand the important questions that need to be asked about environmental treatment today to help create viable a world for the future.

Early in Jim’s story there was Bohemian family who moved in next door to his grandparent’s farm. This Bohemian family, the Shimerdas, had uprooted their once prosperous life in Bohemia due to the promise of a greater and safer life in the US. After the Shimerdas had

finally made it to Nebraska they found themselves with very little money and goods to survive off of. Due to a higher than anticipated cost to emigrate this meant they would need to live off the smallest of means until they established their farm and could really begin to live off the land. Jim's family noticed how their family was struggling in the middle of the winter and Jim's family, experienced in life on the prairie, went over to help. The father of the Shimerdas family explained, "He wanted us to know that they were not beggars in the old country; he made good wages, and his family were respected there. He left Bohemia with more than a thousand dollars in savings, after their passage money was paid" (39). After buying land, materials, and converting their money the Shimerdas saw that there was much more they needed in order to survive. With such great stories in the media/journals documenting a better life in the Mid-western US many took this chance believing that they could make their families future prosperous as well. But the Shimerdas were not alone in their failings at the beginning of their move to the US.

With little knowledge of the land and its resources many did not understand the cost, monetary or otherwise, that would go into the cultivation of the prairie lands. The American mid-west for so long has been misunderstood and miscalculated for its capabilities for large societal growth, as American writer Richard D. Lamm describes, "The American West also teaches that we must adapt to nature and be acutely aware of its fickleness and limitations" (Lamm 63). While a look through history will detail the many repercussion of uncalculated decisions on a new land, as we continue forward into the Anthropocene it is more important than ever to learn from the irreversible damage done in past. It is clear from a look back into the world's history that we created issues that may never be undone, "we are surrounded with evidence that increasingly shows that something is fundamentally wrong with our historic ways of looking at

the world” (Lamm 63). While so much of the damage cannot be reversed, in the future we need to create decisions in the many aspects that effect the environment.

Wes Jackson emphasizes in his research on natural systems in the US that due to climate change and land degradation in the US we are encroaching upon a time where we may need to consider a time where our agricultural systems no longer exist. As Jackson notes, “Ninety percent of US cropland is losing soil above replacement rates. Loss is 17 times faster than the formation on average. At this rate, during the next 20 years, the potential yield of good land without fertilizer or irrigation is estimated to drop 20%” (“Natural systems agriculture: a truly radical alternative”113). With this research that Jackson provides, it is just another indication that the climate change impacts are having serious effects on the very lands we use to feed our nation. If once natural agricultural systems are completely degraded from the overconsuming behaviors of our society, we will have to have to find new ways to produce food, jobs, and all items related to agriculture.

What is significant about the time period that Cather is fictionalizing is that there was a lot of unorganized growth happening in the Mid-West. There were stories published in railroad newspapers that were “full of so-called testimonials from alleged Kansas farmers who were raising a hundred bushels of corn to the acres, from settlers who had traded rags to riches in five years” (Reisner 38). Due to this type of falsified information many new immigrants had no idea how to cultivate a land that had not had settlers like them on it before.

Cather also implies that this falsified information, most likely told to the Shimerdas, contributed to the struggle they encounter in their early years of settlement. The Shimerdas made the big decision to move from their home country because of the promise of growth and wealth for their families. As Jim reflects back “During the first months the Shimerdas never went to

town. Krajciek encourages them in the belief that in Black Hawk they would somehow be mysteriously separated from their money” (18). With what seemed to be open and expansive land ready to be claimed, many did not understand the type of climate, soil, and weather that this relatively newly cultivated land had to offer. While the Icelandic sagas show how lucky the Viking settlers were in finding land seemingly plentiful of resources, many in the mid-western US did not find this same luxury.

These texts mark significant points in history that can help readers understand the early instilled beliefs of how settlers viewed and treated the land they settled on. These early instilled beliefs can be seen through the ways new settlers conquer land and the after affects that seem to always be a surprise. Both texts demonstrate the human tendency to conquer new places for opportunity and the unintended consequences that always follow. Time has been the only indicator of how these events can transform a nation and the environment in which it takes place. Today we are beginning to see the accelerating environmental change that results from the continued beliefs about how an environment can best serve people and how challenging these beliefs are crucial to creating a viable world for the future. The acceptance of the changing environment in which we live is quintessential for growth and opportunity for the future of the world but possibly more important is accepting and learning from our past mistakes so that we may be able to provide better actions going forward.

Thinking back to my time in Iceland in the late summer of 2018 it appeared as if this country did not face the same implications as the US did in the Anthropocene. There were vast ranges of grass, mountains, and farmlands that seems like they were untouched by the greedy hands of humanity. But through a closer analysis I saw that while this environment does not present to be degrading it has changed through time through slow but disastrous human hands of

world-wide climate change. through a slow but effective destruction. As scholar Rob Nixon writes, it is the slow violence, small but many acts against the environment, that do the most destruction, “By slow violence I mean a violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all” (Nixon 2). These are the very slow acts that have blinded society today into not noticing the great impact humans have had on this earth until a point at which they are irreversible. While the large environmental disasters draw our attention to environmental crisis happening around the world, what is really hurting the world is the continued small acts of violence that could lead even the purest of countries like Iceland into destruction.

These types of settlement stories all link to bigger issues of climate change in the world. These big issues can be linked to the idea that land across the country was only meant to function so that it could provide for its settlers. While Iceland is claimed to be leader in sustainability practices, they too are struggling with the degradation of their environment. Though Iceland has a significantly smaller population and uses much less of its resources, many Icelanders today want to take and sell more of their natural resources so that they may advance and grow the economy of their country. This again supports early instilled beliefs that we should always try to find a way for the environment to support the economic growth of people. This directly links to the early instilled beliefs of Viking settlers that created a butterfly effect of beliefs into future generations.

This analysis of settlers moving and conquering to new parts of the world only briefly touches upon the many factors that can be connected to early settler beliefs. Both texts show how the instilling of the belief that an environment was only there to serve the settlers who claimed

it and the destruction that reverberated into the future because of it. Using the Icelandic sagas, being some of the earliest known literature from Iceland, shows how even the most “green” or sustainable of countries also deal with these early instilled beliefs about the country’s environment. Though the US may deal with environmental issues at a much larger scale, due to its scale and population, this belief has not been changed and is still continually shown through the actions in society today. To challenge the belief that environments were only created to be conquered, cultivated, and profited from could drastically change the daunting future that many predict. But more importantly the analysis between these two texts shows the interconnectedness of the world and how to make a significant change we must challenge the ways we one once thought about the growth of the world.

In my next chapter I analyze a novel that is similar to the saga’s reference to magic, Karen Tie Yamashita’s novel *Tropic of Orange*. Chapter Two discusses the impacts that the Anthropocene can have on migration, trade, and environmental injustices. While this chapter discusses people choosing emigrating for a chance in a new country that has more resources and opportunity, Chapter Two discusses how climate change could take this choice away. Climate driven migration is an unforeseen effect of climate change will geographically begin to displace communities that do not have the resources to relocate.

CHAPTER 2

BORDERS AND CLIMATE MIGRATION IN THE MODERN WORLD

Due to decades of mistreatment to the environment and the people living in it, dramatic climate change in the Americas is beginning to show its impacts in society today. In her novel, *Tropic of Orange*, Karen Tei Yamashita draws attention to a changing climate in the American hemisphere by illuminating the interconnected impact on nations and the communities in this geographic region. As physicist Shaun Lovejoy explains, “Most people have an intuitive understanding of the weather as referring to the state of the atmosphere at a given time and place and the climate as a kind of average weather. A popular expression of this dichotomy is ‘the climate is what you expect, the weather is what you get’ (Lovejoy 1). Climate, in its most simple definition, is the pattern of weather conditions over a long period of time in a certain geographic region. With this historical data, scientists are able to give different geographical regions across the world facts and predictions of what their climate is and has been throughout history. However, what has started conversations around global warming and climate change is the fact that these historical patterns of the earth’s climate are changing exponentially by human impacts to the earth’s natural environment. Yamashita’s novel sheds light on how the world’s changing climate and unpredictable climate patterns will encourage greater migration for countries being depleted of their once natural systems.

Through the paths of seven protagonists in this novel living on both sides US-Mexico border, characters experience disasters that all connect back to Anthropogenic factors. This leads the reader to better understand the conditions that are leading to increased migration from drought-stricken lands to more temperate lands of the United States. The novel’s ecocritical aspects critique the existence of climate change and how the world is reacting to it. This novel

suggest that climate is not one issue, one country, or one person, but the multitude of all combined actions that have created a wave of climate related disasters. Throughout the novel Yamashita poses many “magical” moments, in fiction-known as magical realism-which play on twisting or inverting reality and mixing it with impossible factors that would or may never occur in society. This alternate reality that Yamashita creates draws attention to a similar reality that society today could face. Authors like Yamashita use this type of writing to discuss hard issues that our world faces by shedding light on these issues but inverting them to suggest that we need to adjust our perspective on the reality of society today. I argue that this novel shows how climate change is a planetary-scale ecological process with implications on a multinational concern and will continue forced migration from continues that are no longer suitable due to environmental degradation.

Tropic of Orange takes place in two cities, one in a border-town in Mexico and the other in Los Angeles, California. This story describes life on either side of the border and the environmental injustices that take place on both. Throughout the novel the environment in Mexico is described as a degrading land and facing unreliable patterns in its weather due to climate change. Rafaela, a Mexican woman house-sitting an American’s retirement house in Mexico, sees first-hand the type of dry climate this land was slowly turning into. While Gabriel, the American owner of the house is known for trying to plant various trees/plants while visiting, Rafaela finds it silly that he would try such things in this environment, “Gabriel was insistent on planting trees that couldn’t survive in this climate” (10). Gabriel, an outsider to Rafaela and her bioregion, didn’t understand that in this type of climate, you couldn’t just plant anything you wanted and hope that it would grow. Gabriel’s actions speak to the very common notion among modern people that all lands and environment can produce the same outcome and resources.

The unreliable weather patterns in Mexico are first represented through the unexpected sprouting of an orange tree in Gabriel's yard. Before it produces any fruit, Rafaela notes how sad this tree looks, not expecting anything to come from it. One day while going about her daily chores she notices something strange sprouting in the yard, "Rafaela knew it was an orange that should not have been. It was too early. Everyone said the weather was changing. The rains came sooner this year" (11). This orange sprouted at a time in the season that was uncommon, but Rafaela accepted that this was the future of her climate, unpredictability. Rafaela's neighbor attributed the orange sprouting on the tree to what she claims, "global warming" and seemed to express that either there was nothing to do about it or that there was nothing *they* could do about it. Here, Yamashita represents the ways that ordinary people are discovering issues related to a changing climate and its small but growing impacts to come.

Rafaela's reaction to the so-called global warming is also common in society today, especially in impoverished communities. While greater attention and examples of climate change have presented themselves in the media today, her reaction represents many beliefs and actions of those in impoverished societies. For it is those in impoverished societies who lack access, availability and communities that support sustainable development. However, these are the same communities who are the most vulnerable to environmental injustices from outside countries. As scholar Rob Nixon describes, the growth of some of the biggest country's in the world rely heavily on "offloading rich-nation toxins onto the world's poorest continents" (Nixon 2). By doing so they assume they will help deter environmentalists in their own countries and let another society deal with the "unforeseen" environmental impacts. The after effects can be disturbing and many of the times unsafe for those communities affected.

Due to rich countries off-loading onto the poor, this has caused a type of environmental exploitation by large American business on the land of impoverished countries like Mexico. As Environmental Humanities scholar, Joni Adamson critiques, “First World nationalists exploit the ‘commons’ of other groups and nations through activities such as big-game hunting, tourism, mining, logging, and oil extraction while poverty draws the economically disadvantages into participation in the exploitations of their own environments” (“We have never been Anthropos” 22). When large corporations from first-world nations come into countries like Mexico it is all too common that they are exploiting these countries for cheap labor, little regulation, and an “escape” from environmentalists in their home nation. By doing so, it sets the precedent that companies should want high profits over the establishment of safe, fair, and sustainability developed factories in these countries. Profitability, unfortunately, has been a driving factor rather than the sustainable development of a country. As these companies impact the land and contribute to the loss of once natural resources, many locals have very little options when it comes to living in a healthy and safe environment.

While the US may have established environmental regulations, those who do not want to follow them simply relocate to countries close by like Mexico. By relocating a business or factory in Mexico many companies can increase their profits due to different regulations. Not only are business able to profit from the little environmental regulation countries like Mexico have, they also don't have to worry about the health and wellbeing of the communities they take over. As environmental critic Joni Adamson explains, in the 1880s border towns near the US began to experience resource deprivation “the region began experiencing long periods of drought; with the construction of the railroad, a logging town, and the Bluewater Dam in the 1930's, there was only enough water for very few people to continue farming” (“Simon Ortiz's

Fight Back: Environmental Justice, Transformative Ecocriticism, and the Middle Place 59). The growth of large businesses seems to always connect back to environmental injustices, especially impoverished countries. This has caused a great impact to Mexico's environment which in turn, only contributes to the world-wide issue of human-induced environmental destruction and climate change.

Yamashita also focuses her novel on oranges to show how connected the environment is to people she implies that as one is impact so is the other. From the unexpected sprouting of the orange at Gabriel's house in Mexico to the truck of oranges that was stalled on the highway, and the reason for the massive car pile-up on the freeway, all over them relate back to the orange. The car pile-up on the highway was caused by a driver overdosing on oranges that were laced with high amounts of cocaine and accidentally distributed to the public, originally shipped from Mexico. This example of foreign trade into the US wreaking havoc in one of its biggest cities in the US, points out how destructive unregulated environmental regulation can have. These big US companies that go to foreign southern countries that have littler regulation on environmental impacts can easily put so many people at risk due to these "unforeseen" outcomes of society.

Environmental Justice scholar Giovanna Di Chiro highlights in her article "Acting Globally: Cultivating a thousand community solutions for climate justice" that there is litter awareness many people have when thinking of making sustainable choices or recycling, and the labor third-world countries that goes into having a "sustainable world". Di Chiro explains, "In many cases, recycling dismantlers are poor women and children from countries in the Global South who are not protected by worker health and safety laws nor supplied with protective equipment" (Di Chiro 233). It is a common misconception that while making sustainable choices are helping the environment, that we are not affecting other communities across the world. The

Global South's labor and resources are commonly exploited by big businesses until there is nothing left for these communities. Due to this exploitation, many locals in the Global South find themselves needing to emigrate to other countries with opportunity and better resources availability.

This is a forceful type of emigration as locals are often left with no other choice once resources and opportunity are depleted. While there are many factors related to the emigration of Mexican citizens to border-cities and into the US, emigration is also directly connected to the land degradation and the loss of once ample resources. This forced migration can be seen through the example of historical patterns of drought in Mexico and the increase in Mexican immigrants in the US. As agricultural engineer and researcher Ignacio Sanchez Cohen analyzes, migratory patterns in Mexico have varied throughout time and at one time seemed unrelated to the changing climate. However, Cohen has found linkages to human caused drought in the country and in turn, significant patterns of emigration out of Mexico during these times. As drought factors increased, Mexico's population decreased with many trying to find new life in the US. The reason US was such a popular destination was not only because of its convenient location, "economic differences in incomes, in labour and social conditions, and in the degree of desertification and the extent of land degradation between the two countries make the USA a primary country of immigration for poor rain-fed farmers, due to the loss of livelihood, poverty, greater environmental threats and the dream of a better life" ("Forced Migration, Climate Change, Mitigation and Adaptive Policies in Mexico: Some Functional Relationships" Cohen 54). There was much greater optimism living in a country like the US than continue to try and make in a degrading environment.

Ignacio Sanchez Cohen also uses historical data to connect the environmental issues that plague the Mexican environment and have forced Mexican migration northward. Cohen describes that not only have natural disasters increased, creating many issues for Mexican citizens, “uncertainty in rainfall patterns related to climate change has severely affected the fourth most biodiverse country in the world, and anthropogenic land degradation has contributed to soil erosion, loss of natural soil fertility and desertification” (56). Unpredictability in the once reliable seasons and climate patterns, will only continue to hurt impoverished countries like Mexico. Residents of Mexico rely heavily on the exportation of their farming and goods and do not have the economic stability like first-world countries to protect them against irregular farming, production, and exploitation from large corporations.

As presented in this novel and as well in Mexico’s factual history, Mexico used to be one of the most biodiverse environments on the earth. But due to irresponsible uses of the land, the people in this country and novel are now facing hard realities of what their future will hold. Mexico’s geological history marked this land as the fourth most biodiverse region in the world. Having great biodiversity, like Mexico once did, created highly functioning ecosystems which in turn created a better functioning and fruitful environments for all the species in the system. This highly functioning environment provided Mexican citizens with the all necessities they needed to survive, however, “The uncertainty related to climatic phenomena increases the threats to human security for people who are seeking to fulfil their basic needs” (Cohen 54). With such uncertainty in the climate these societies have little reliability in knowing if they will have the necessities they need to survive. The people living in these once fruitful lands now face the reality of having to leave what they have behind so that they may find new lands that can support them and their families.

But to provide awareness of how climate issues are impacting societies today it is important to note that all people don't emigrate for the same reasons. Cohen explains that "this lack of definition of environmentally induced migration is the difficulty of isolating environmental factors from other drivers" (Cohen 55). There are many factors that drive people to relocate themselves from Mexico. But so often the factors that many of encouraged them to leave have environmentally infused factors. As Yamashita's novel emphasizes, climate issues can be traced between many unseemly related issues, and the resolutions to these issues are just as unrelated.

While in LA, the residents in this novel are experiencing the growing pains as their city tries to expand its highways and communities. Manzanar, a homeless character who could always been found at the top of the highway "conducting traffic". He saw everything from above and recognized patterns or irregularity in the way the city flowed. As he describes, "Now human civilization covered everything in layers, generations of building upon building upon building the residue, burial sites, and garbage that defined people after people for centuries" (171). Manzanar's thoughts bring an important realization for the type of world we live in. While his point is bleak, it is very true. Once an important landmarks or pieces of the land can easily be built over with little consideration to any meaning this place may have ever held. Manzanar provides this dark and dreary perspective of what the environment is treated like, but it also brings into question if this is how we are really supposed to be treating it. It brings into question if our environment is only here for our economic and political functions.

In this novel, the city of LA saw the need to build over so that they could expand the freeway and build easier ways to navigate around this growing city. Due to this expansion it caused the very bureaucrats who wanted to proceed with the project, to buy up as many homes

that stood in its way. Buzzworm is an African-American man and former US soldier who roams around the LA neighborhoods soliciting advice on addiction, insight on the LA neighborhoods, and time. For Buzzworm, an LA neighborhood-like protector, he believes that the growth of the LA freeway wreaked havoc in any neighborhoods that stood in the way of this project.

Buzzworm describes these bureaucrats' actions as "Futile gestures without a master plan. Leave it crumbling and abandoned enough; nothing left but bulldozers. Just plow it away. Take it all away for free" (83). Buzzworm has such disgust with the actions in the LA communities due to the fact the expansion was only contributing more issues to the city for those who already had enough to worry about. Not only did it put people out of their homes, it encouraged more cars on the freeway creating more emissions, creating a higher likelihood of car accidents, and more irreversible damage to the LA environment.

This type of expansion to the highway was deemed necessary due to an increased population and increased trade in the country. Yamashita's novel shows how multifaceted forced migration can be through Rafaela and her son Sol's stories. While living in Mexico they soon see how they're environment has become tainted by the contributors of illegal trade. While Rafaela was at her neighbor Doña Maria's house, she hears Doña Maria's son on the phone speaking about the illegal human organs he was in planning on selling 'A heart. It's hard to believe they're so small. The size of a golf ball' (118). Doña Maria's son speaks extremely nonchalantly about the black-market trade of human organs, showcasing how common this type of work is. This type of illegal activity that Rafaela sees first hand speaks to one of the many driving factors that have forced people out of their homes. One factor, forcing them out due to fear of becoming victim to the horrific events in their country, while this interaction also proves in showing how new methods of profit will emerge when there are no longer ample natural resources to provide

economic stability and growth in a country. People will go to great lengths to make money, and when a country has nothing left to provide, many will find this as an easy way out of current or future poverty.

While the novel does not specifically claim to take place during a certain time period it can be assumed to be after the North American countries opened up their trade. While highly controversial today, in 1993 North America opened up their trade through an agreement called the North American Free Trade Agreement (NAFTA). NAFTA started a shift in this part of the world that was aimed at creating a way for all countries involved to promote their own economic growth between trade with other nations. While the intentions of this agreement were clear, this does not necessarily mean it worked out the same for all. That is why it is important to note that “NAFTA cannot be conceived outside of the larger question of globalization of capitalism and of culture” (Wallace). Creating a way for more countries to contribute to international trade was seen as a way for smaller countries to grow their economic status and stability in the world so that they could catch up to other larger countries growth. But this idea has only seemed to help countries like the US thrive through an exploitation of land and resources in those less economically sound places like Mexico.

For countries like Mexico, agriculture production has been one of their biggest industries. As the NAFTA created this shift in the world, agriculture was Mexico’s way of participating in this new solution of promoting economic growth in their country. But by opening up trade this only increased agriculture production in Mexico at a rate too extreme for the land and caused irreversible degradation to the land, “dryland areas cover half of the ground surface of Mexico, and 93 per cent of the deterioration of land is induced by human activities” (Cohen 65). The need that the Mexico saw in increasing production to their agricultural trade was inspired by the

opening of the trade hoping that they could soon equally compete with larger countries. Due to now depleted aquifers and lack of resource availability in Mexico the trade that Mexico once saw to promote this country now faces the search for new solutions to a degraded land. Due to the desertification of Mexico's land it has again forced the migration of citizens to new places in and outside of their country that have potential for a better future than where they came from.

Yamashita's novel touches upon the many problematic issues of this "free" trade agreement and the disasters it has enacted in impoverished communities. As Molly Wallace critiques, *Tropic of Orange* "offers critique not only of the politics of NAFTA and of globalization, but of the politics of the discourses surrounding these phenomena" (2001). In her novel, Yamashita critiques the presence of NAFTA through the mystical archangel who changes into the wrestler El Gran Mojado (translated as "the great wetback") and his fight between his biggest competitor, SUPERNAFTA. This wrestling fight encompasses characters with very symbolic names representing the final fight between Mexican immigrants, derogatorily identified as "wetbacks", and the great NAFTA agreement that seemed to only help the economic growth of the US. But as this fight plays out, there are no winners in the end. This ending to the great fight between these countries proves that there are no winners or losers in the fight against climate change. It is a fight that no one could win if not all participate in its efforts to change how we protect the environment for future generations to come.

The city of LA also faces many human-caused issues that are slowly but surely destroying the environment and lives of people who live in it. As Elisabeth Mermann-Jozwiak critiques in her article on *Tropic of Orange*, this novel "shows how these populations have significantly reshaped the landscape of the city, though, for instance, the availability of products, services, and identities" (2). In Yamashita's LA, the expansion of the highways is creating havoc

in communities that are being torn down and only stand to promote greater destruction to the environment that cannot be taken back. This critique challenges readers to understand the great impacts that humans have on the environment they are on. By doing so we can understand how interconnected a societies actions affects the environments all over the world.

These issues that these characters experience relate back to environmental injustice issues that many face in society today. During Los Angeles's peak growth, it was expanding at a rate faster than it could not keep up with. This in turn caused the city to make decisions on how the city would function and who it would best function for. These decisions were commonly politically driven and most likely not in favor of those from lower class communities. What is significant is that so often lower-class communities are targeted for their contribution to climate change as they do not have access to making better decisions on their purchases or actions. However, environmental scholar Di Chiro explains, "Focusing on population growth as the major cause of climate change places the blame on the world's poorest people, particularly women, who are the least responsible for global warming, and it conveniently shifts the blame away from the inequitable and ecologically destructive consumption and production patterns of the rich countries" (Di Chiro "Acting Globally" 234). By rethinking the way we deal with climate change issues, we could see that it is more than just finding the root causes from the past, it is recognizing the choices that were made and who these choices are really helping.

Due to powerful groups who cause theses injustices, this type of exploitation of land and resources are still extremely prominent in impoverished parts of LA and Mexico today. As scholar Rob Nixon describes, these actions contribute to the idea of slow violence. Nixon's analysis proves to show how environmental injustices are "a violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space" (2). These

types of actions are some of the biggest contributors to the environmental problems in the world today. This is due to the fact that unjust actions appear so small at first, and society does not notice how big of an impact such a small action could reverberate into the future.

The relevance of the unexpected orange that sprouts from Gabriel's tree also catalyzes a great car crash on the LA highway. This occurs when a driver unknowingly ingests a high volume of cocaine through an illegally imported orange. These oranges imported from Latin America traveled to the US and wreak havoc through the entire LA area. In the process of importation, illegal drugs were inserted into the oranges as a way to transport drugs through unsuspecting means. Due to unforeseen circumstances these oranges were ingested by the general public and caused people to die all over town from overdoses, with one who happened to be driving on this highway. This chain reaction of events causes mass impacts in the lives of people and the environment in LA.

This type of chain reaction of events all connects back to the larger issues of environmental injustice in LA and Mexico. Being that the land in Mexico is being diminished of its viable resources, the illegal drug and black-market trade provided a greater monetary opportunity than relying on the unreliable farming patterns of agriculture. Since trade in Mexico created extreme degradation to its land by its resident and those from first-world countries, locals must find other ways to make a livelihood in this society. While the illegal black-market has many hazardous implications, many are willing to sacrifice this chance if they believe this is the only way to provide for themselves and their family.

The connection the car crash has to the LA environmental injustices is also through the big expansion projects the bureaucrats believed needed to happen. Manzanar, a homeless character in the novel, was going about his daily business "conducting" the highway from above

when he witnesses the giant car crash on the LA highway. Not too long before witnessing the car crash on the highway Manzanar thinks to himself about the growing population on this LA highway and how this must be coming from some other outside factors. While climate related changes were happening all over the world Manzanar thinks, “As noted by many others, climate change in L.A. was different from other places. It had less perhaps to do with weather and more to do with the disaster” (36). Yamashita uses Manzanar’s realization to speak to the idea of how climate related disasters are all deriving from the extreme mistreatment of the environment by humans. This mistreatment is shown through the many disasters that occur, as represented in this novel, and how they all come from the miscalculated or unforeseen reactions to events that happen throughout characters story lines.

While this fictional novel has many “magical” components, there are many aspects that are connected to the actual environmental processes taking place in the world today. Due to the anthropogenic changes in the world, like the desertification in Mexico, LA has become a destination for immigrants coming to make a better life for themselves. But LA faces many environmental challenges of its own, they just seem to be hidden behind the money that temporarily fixes the problem. This novel shows how the degradation of one environment is only leading people to create the same issues and problems just in new one. Andrew Ross predicts how these climate changes will play out into the future: “In the ‘climate wars’ to come, the threat of global warming will increasingly be used to shape immigration policies around a vision of affluent nations or regions as heavily fortified resource islands” (39). *Tropic of Orange* confirms these predictions as the characters in this novel already have harsh judgements to the diverse population and the environmental injustices that occur. With many predictions about the future to be uncertain, it is no wonder people cannot fully grasp how their everyday actions are

contributing to a larger issues of climate change. Yamashita's novel offers readers the opportunity to think about how and who will be hurt by climate related disasters and see that it will be those with ample resources and strategies who will be able to support themselves the greatest.

The future that Ross predicts is illustrated in the novel by the Tropic of Cancer and LA merging. As Rafaela and her son Sol travel north from their city located on the Tropic of Cancer in Mexico, they meet a man who is in possession of the very mystical orange that disappeared from Gabriel's yard. Sol, Rafaela's son acquires this orange and travels farther and farther north to the US, his home in the Tropic of Cancer is no farther away as it was when they left. This example of pulling the tropic with him represents the merging of two geological zones in the world. As Wallace critiques, "This orange, a terrestrial representation of the overhead sun and now an anchoring point for the hemisphere, makes a circuitous journey northward from Mexico to L.A., in effect, towing the sun, and the entire southern hemisphere behind it" (Wallace). This symbolic journey represents the fact that as environmental threats increase the idea that two historically known geological zones could face the reality of a great ecological emergence. While this merging also signifies how the environmental impacts that occurred in Mexico could and potentially will happen in the US if better management is not put into place.

The degradation of lands and the effects it has on people speak to the type of chain reactions that society can create. The idea that one small action can create a reaction of large disasters derives from meteorologist Edward N. Lorenz. Lorenz who claimed even the smallest actions can have the most momentous of effects in this world. This concept can clearly be seen through *Tropic of Orange* as the story line takes the reader through many seemingly unrelated actions and the type of large impacts, they all contribute to. While the major car crash caused by

the oranges seem unrelated, the progression of the story proves how a community can all be involved in a chain reaction that could have resulted in this.

By positioning the novel in two different but bordering counties, readers are also able to understand how connected our countries and communities are. The only thing separating Mexico from the US are the political lines that we have drawn distinguishing different societies. As environmental disasters exist on one side of the border the environment doesn't distinguish one side of the border from another. It is important to recognize how even though we are separated, we are still so closely linked by our environments and natural disasters that impact us. We must use this novel as a tool to show how interconnected our worlds are. With environmental disasters and dramatic changes soon to come it won't matter what side of the border one lives on, climate change effects everyone. By understanding how multifaceted these issues relating to the contribution of climate change are, we may better prepare ourselves for the type of future that we are on a path for.

Using novels like Yamashita's it is important to understand how the multifaceted issues of climate change all work together. A scholar Matt Henry describes, cli-fi novels like *Tropic of Orange* "focus on pollution, rising sea level, the decimation of natural resources, and global warming, indicating heightened awareness that we live in the Anthropocene" (1). This heightened awareness is extremely important for our society today so that we may better understand how people view the current society we live in and how some predict the future. While some see that is easy to understand environmental issues from a quantitative perspective using numbers and data, novels like *Tropic of Orange* show how all issues in the environment interconnect. This interconnection can be seen through the everyday lives of just everyday people experiencing the slow but impactful aspects of climate change.

Yamshita's novel *Tropic of Orange* is an example of how one seemingly small action in a society can reverberate into larger issues into the future. Using Rob Nixon's concept of "slow violence" this provides an easier understanding to how these multifaceted issues can come together and create some of the biggest impacts on earth while going seemingly unnoticed. But it is important to recognize these slow but great impacts so that we may be better prepared to the types of disasters that they can create. The environmental justice issues in this novel represents how impoverished people on both sides of the border can be easily taken advantage of in a capitalist driven world. While this novel has many issues and events that can be seen to relate to larger global issues, this analysis speaks to the wrongful actions of those unable to represent and protect themselves from powerful and large industries. These very industries and powerful people are commonly the ones to take the greatest advantage, most of the time on those in impoverished places and societies. By understanding how issues like environmental injustices can impact the greater society, we may better prepare ourselves for the future as climate related disasters and degradation will only continue to occur if realistic changes do not occur on national and global levels.

In Chapter Three, I connect Chapter Two by showing another future reality to the potentials of dramatic environmental change. As chapter two discusses the shifting borders between countries due to climate change this chapter also signifies the early beginnings of a time where borders will no longer exist. In the novel *The Water Knife*, the borders that once separated and controlled countries and states will soon signify just a line in the sand. Habitats will be forced to move where ample resources are available. This next chapter continues the depiction of the environment through an analysis of a future apocalyptic novel also known as cli-fi. This novel brings reality to the many fears we have about what life could be like when we stop

making responsible choices about how we treat our environment and the implications that could come. *The Water Knife* draws the picture of a future Western US and the environmental disasters that have occurred and will continue to occur as the actions that we were warned about in the past were not taken seriously.

CHAPTER 3

THE POSTMODERN APOCALYPSE: A HISTORY OF A DESERT FUTURE

For decades, human caused climate change has been accelerating and today we are beginning to see the scale of its destruction. In Paolo Bacigalupi's *The Water Knife* readers are shown a future with scarce access to water and rising temperatures due to the "unforeseen" consequences of not fully tackling climate change issues. This novel takes place in a crumbling, apocalyptic Phoenix, Arizona in which "Big Daddy Drought" has separated the U.S. in what is called the "Continental Divide". Each state in this future-world has been transformed into sovereign countries. Although set only 50 years in the future, water scarcities in the Western states cause state-wide sickness, starvation, and disease. Most of the survivors live in places where water no longer flows and face extreme brutality from border control in order to meet their basic needs for food and water. The everyday lives of people in this fictional Western U.S. foretells a future-reality if serious changes do not occur today.

Throughout the novel Bacigalupi shows how little today society cares about the environmental future of the world by showing what happens when we no longer believe predictions about life when the environment can no longer provide once reliable resources. As displayed through the eyes of the novel's characters, Bacigalupi is clearly disappointed in the ways in which our world tackles climate related issues, "This was the Phoenix after everyone stopped giving a damn. This was Phoenix with a murder rate that approached Cartel States' births. This was a Phoenix where people just gave up and sold their children" (138)". Bacigalupi depicts a society that appears to be thriving today and what happens when we keep up with over consuming, destructive, and selfish behaviors into the future. This novel brings a harsh reality

check that many may need to hear in order to understand what type of future this world could become without proper care from people today.

This novel plays with the theme of climate fiction, also known as cli-fi. According to Environmental Humanities scholar Stephanie LeMenager, this genre seeks to raise awareness and knowledge on the scale of climate change realities. This type of fiction sheds light on the truth of the world we live in today and can “provide a means of familiarizing climate change as an aspect of the human condition and of our planetary ecology for those who either are not yet directly experiencing climate change or are not aware that they are experiencing it” (LeMenager 156). This type of writing also visually represents the critiques of how the world’s future may look if we keep consuming and destroying the environment at the rate we are today. Cli-fi is such an important tool in literature today to educate the public and provide better understanding how we might prepare for less fearful and more desirable future environments than the one Bacigalupi describes.

However, creating a desirable future for the environment is usually tasked to the natural and physical science fields. Understandably, as climate issues have always been seen to be only studied in the scientists. Except the field of the Environmental Humanities is also tackling the issues and concerns of how this world can create a desirable future. As scholars admit, “business and education leaders are declaring the ‘environmental humanities’ crucial to addressing the anthropogenic factors contributing to increasingly extreme weather related events” (Adamson “Humanities” 135). The climate related issues that Bacigalupi portrays in his novel are not only science related, they deal with harsh humanitarian and environmental issues that concern the future of communities today.

In the field on the Environmental Humanities, ecocritics find connections to the environment through novels. As ecocritic Greg Garrard explains, “it should be the business of ecocriticism to bring critical intelligence and humanistic scholarship to bear, and seek either to resolve or, more likely, to help us endure them” (Garrard 4). Garrard explains that it is the job of ecocritic to bring in the intelligence and humanist perspective to our approaches to help solve and understand the environmental futures of the world. By using an ecocritical approach we may better understand the realities of climate change through this full-circle approach. In this chapter, I engage in an ecocritical analysis to argue that this novel disrupts societal denial of climate change in order to call upon readers to think about how we might all work together to avoid the apocalyptic future the novel imagines.

To understand the effectiveness of a cli-fi novel, like *The Water Knife*, it is important to understand the role of apocalypse, as a concept present since biblical times. Professor Karen Renner explains, the “*apocalypse* in its purest form refers to a very specific set of occurrences laid out in the Bible: a divinely ordained cataclysm that will result in a New Jerusalem for the faithful” (Renner 204). The bible prophecies that one day, the end will come, and there will be a better place for the faithful. This idea that a God-like ending will occur and bring forth a better world than we live in now has been accepted by generations of Christians. Renner explains how there has become an “appeal” or fantasy with the idea of the apocalypse.

The appeal of the apocalypse is seen all over in pop culture today. Apocalyptic novels are now *New York Times* best sellers and award-winning movies such as *The Hunger Games* series, episodes from *Black Mirror*, and even young adult novels such as *Matched* by Ally Condie. A common theme throughout many of these texts is that they envision a post-apocalypse, where all of our problems today are just a distant past. This has created distaste for the current state of the

world and a fantasy-like idea of the future, “they do far more than simply affirm our suspicions that our current world is corrupt and encourage us to delight in its destruction” (Renner 206). It has become so much easier to see the world as “too far from saving” than to put fourth effort now. This is why reading into the actuality of an *apocalypse* is extremely important to help contextualize a potential future for this world.

Contextualizing a potential apocalypse can be a pessimistic standpoint when it comes to environmental issues. This is probably why many have chosen to take the post-apocalyptic standpoint. It appears that it is more enjoyable for society to see all of the problems today as something of a distant past. In *Ecocriticism on the Edge* Timothy Clark argues “Environmental criticism in the Anthropocene is likely to be more and more about unacknowledged denial” (Clark 160). The denial that serious changes need to occur now seem to be what most of society has been looped into. This is why analyzing this cli-fi to see what a not-so-distant reality could potentially look like can be extremely impactful. By doing so society could come to grips with what their children or their children’s children could be facing if realistic changes do not occur today.

The Water Knife shows the gruesome reality of a potential apocalypse in the American West. Lucy, one of the central characters comes to Phoenix and sees water scarcity in the most extreme way: “The chain-link and barbed wire were to keep people from getting to the open water flowing in the concrete-lined canal. When she’d first come to Phoenix, she’d written stories about refugees cutting through the chain-link, only to be shot dead by Phoenix militias” (207). In this future Phoenix there are little to no resources for its people. Since the US had divided into sovereign countries one could not travel from state to state as easily as we do today, leaving resource-deprived countries out to dry. However, this East-coast journalist sees all the

stories that need to be told of the many in this dying place. While Lucy sees how awful this society has become, she is trying to help in the best way she knows how, storytelling.

Storyteller and author Bacigalupi did an interview with the National Public Radio about his writing philosophy. He explains his view to the environmental future of the world, “I think that, when I think about the future that *The Water Knife* represents, it's one where there's a lack of oversight, planning and organization. That's really the disaster. There's the drought and there's climate change, and those things are horrible — and then there's how people react to it. And this is, this world is built on the assumption that people don't plan, don't think and don't cooperate — which makes for a pretty bad future!” (NPR 2015). Bacigalupi is clearly frustrated with the current state of uncalculated decisions by extremely political stakeholders who clearly care more for profit than for the continuance of life.

While consumption is a contributing factor to climate change, Environmental Studies professors Andrew Szasz unpacks the factors that go into the term itself. Szasz agrees the consumption is a part of environmental problems considering that ‘The United States has 4.5 percent of the world’s population but consumes about 25 percent of the world’s resources’ (Szasz 44). With such power in this country comes great responsibility. As Szasz notes, while changing the way that consumers consume is a great place to start “the relationship between consumption and environmental impacts is more complex than the overconsumption condemned by environmentalists” (Szasz 44). Throughout the novel it is clear that the issues that have created an apocalyptic world for these communities are not just one issue or one person. Catherine Case, the “villain’ and leader of the water knives in this novel believes that “If we can’t describe our reality accurately, we can’t see it” (57). Catherine Case’s point touches exactly on Szasz’s point, since society has a way of shifting the blame, many of the times due to political

agenda, therefore, if we cannot see where our environment stands after all political agendas are taken away then how do we fix it? Bacigalupi is suggesting that since our society has trouble describing climate change and accepting its impact, we can't really see it or the potential future.

Szasz also notes that inequality is a substantial factor when consumption is brought up. While poverty is at an all-time high, the overconsumption is not done by all of society. Critics explain "In the United States, income and wealthy inequality have been increasing for thirty years and are now up to levels not seen since before the Great Depression" (Szasz 45). The availability to live a more sustainable life seems to be targeted to those with the funds to support it. In fact, these are the same people that may rather consume and cover money with any environmental problems they encounter. This disproportionately informs society on the truth of where the environment is headed and what they can do to prevent it.

For our society to understand and see the harsh truths of today's world in a fictional tale helps readers and the public to "see it" and understand what is happening. In the future world depicted in *The Water Knife*, the Chinese have taken over due to their more efficient planning as environmental issues were calculating to not slow down in the future. As Lucy was thinking about past interviews, she recalls one with an "biotect" "One of the biotects at Taiyang International had told Lucy about it. Used to illustrate how China knew how to see the world clearly and planned ahead. And because of it, China was resilient in comparison to the brokeback version of America where he'd been stationed" (20). The US, in this novel, becomes known as broken and a failure, all because seriousness was taken to prepare for the future.

While Phoenix in this text shows the apocalypse it also shows that not the entire West is experiencing it. The large gap between the rich and poor in this novel reflect what is slowly occurring today in society. Characters in this text who have enough money to live in better living

circumstances can pretend that right outside their walls their city isn't crumbling. The best places to live in this fictional Phoenix are structures called arcologies. An arcology in *The Water Knife* is the combination of ecology and architecture to create living places for humanity that are self-sustained. While Maria, a Texan refugee was selling water to the builders of the arcology, knows that these builds are the future. The arcologies have people, the environment, and the future all involved in their process.

“Working on something like that, you’re building the future. The people who do that... you’ve got to make all these models: software and water flows and population. Figure out how to balance all the plants and animals, how to clean up the waste and turn it into fertilizer they can use in their greenhouses, how to clean the water, too. You run black water down through filters and mushrooms and reeds and let it into lily ponds and carp farms and snail beds and by the time it comes out the other end, that water, it’s cleaner than what they pump up from underground. Nature does all the work, all the different little animals working together, like gears fitted inside an engine. Its own kind of machine” (Bacigalupi 89).

Maria, a Texan refugee in this novel had a typical “street job” in Phoenix selling water to construction workers. She survived off of her earnings and did her best to stay out of trouble. One morning Maria finds herself in a wealthy man’s arcology-home and is quickly astonished at the life someone could live in what, for most people, was a time of the apocalypse. Before Maria found herself in this arcology her friend had told her of what life was like inside, “the fountains

and waterfalls. The plants growing everywhere. Air that never smelled like smoke or exhaust. It might as well have been lost Eden as far as Maria was concerned” (87). This was a salvation for anyone concerned but it was only available to those with enough political connections and cash to front. While sitting in the arcology home Maria watches this man and is easily shocked to see someone live like this, “He pulled eggs from his refrigerator and cracked them into a bowl while Maria took in the apartment. She couldn’t help but feel astonished at the place’s luxury. Navajo carpets on hardwood in the living room” (176). The everyday act of this man seems quite ordinary for life today, but in this cli-fi text it is viewed as a luxury. This is just another example of how easily the everyday things we take for granted could disappear

While this type of self-sustaining and filtering structure that Maria sees first had may seem fictional, it has a basis in fact. Italian architect named Paolo Soleri coined the term back in the 1970s when he began the first arcology in the middle of the desert in Arizona. This structure exists today in Arcosanti Arizona, near Prescott. As Soleri describes, “Arcology recognizes the necessity of the radical reorganization of the sprawling urban landscape into dense, integrated, three-dimensional cities in order to support the diversified activities that sustain human culture and environmental balance” (Arconsanti.org). The main issue with such a structure, as also translated into Bacigalupi’s text, is the cost to live and build such a place is a hefty amount that most people today, and into the future, will never be able to afford.

The struggle for clean, safe, and healthy resources is one of the deeper humanitarian issues when dealing with consumption and environmental issues in society. Environmental Justice professor Giovanna Di Chiro explains “The quest for environmental justice is a social, political, and moral struggle for human rights, healthy environments, and thriving democracies led by residents of communities most negatively impacted by economic and ecological

degradation” (Di Chiro 100). The harsh environmental factors many people in and outside of the US experience have been specifically targeted based upon their economic statuses. With the growing gap in the US between rich and poor and a greater influx of environmental issues it is important to consider what this type of path this will lead the world into.

Bacigalupi imagines society in the US in which extreme environmental injustices have lead characters such as Maria to seek the “relief pumps” for water and “bonfires burning two-by-fours hacked from the husked-out corpses of five-bedroom houses...Doctors and volunteers wearing filter masks against the dust and valley fever fungus, tending to refugees lying on cots, and crouching over infants with cracked sandy lips as they took saline drips into their hollowed bodies” (38). Bacigalupi shows that in the future, people will not have enough money to survive because of poor choices about where to build in the past. More

When people first began to build civilization in the U.S. it started on the East coast. This was land full of lush resources and land for them to expand. With so much of the U.S. “unclaimed” and unexplored it was only American to go out and conquer the rest of the land. While in this new Western land the explorers “found” seemed barren and incapable of sustaining life, they persisted in moving people here. In *The West Without Water* Lynn Ingram describes, “Humans tend to perceive climate as a force of nature, one to be measured, classified, and ultimately conquered” (Ingram 13). The conquering of the West is just another episode of humans thinking they could out-smart nature to obey as they see fit.

In the early years of the Western U.S. it became common “fact” that “water follows the plow”. It was after a few years of good years of rain in the US West that many farmers claimed this sort of saying. This common fact, while not scientifically true, inspired many to take the risk of taking up land on the other side of the US. After farmers moved over to take over land and re-

directed water to more populated places, the West began to expand. There were promises of going from rags to riches if families decided to relocate, and this was the only free place in the world offering so much. There were stories published in railroad newspapers “full of so-called testimonials from alleged Kansas farmers who were raised a hundred bushels of corn to the acres, from settlers who had traded rags to riches in five years” (Reisner 38). Historian Marc Reisner, author of *Cadillac Desert*, explains, the railroads and politicians at this time were all in business with each other doing anything to make profit off this land. The people building on this side of the country knew the climate and land was much different than the Northeast but continued to believe that this climate would adapt to them, instead of the other way around. It seems that making money at the price of the environment always comes easily when too much power is given over it.

Bacigalupi writes *Cadillac Desert* into the heart of *The Water Knife*. When this historical text is first mentioned, the political character, Michael Ratan, claims this book to be as holy as the Bible, “The beginning of everything. When we thought we could make deserts bloom, and the water would always be there for us. When we thought we could move rivers and control water instead of it controlling us” (179). The contribution of *Cadillac Desert* in this fictional text brings criticism to the over-looked importance that was written in this history book decades ago. However, this historical text was only first published back in 1987, nearly 30 years ago today, and this novel still holds true in its historical facts and predictions about the future. Bacigalupi choose this novel out of all the ones he could have chosen to include to provide clear indication that the warning of the future of the environment were given, we just chose not to listen to them.

This true historical text spans over the immense history of the expansion in the U.S. West. It describes the need for an abundance of water from the early expansion years to

Reisner's present. One of the biggest controversies is the fight between the surrounding states for rights over the Colorado River. After Reisner explains how California came into its earliest water rights he is repetitive in describing California's persistence to have more, "While Lake Crowley was filling, the city was already completing its aqueduct to the Colorado River, whose construction almost precipitated a shooting war with Arizona, a rival as formidable as the Owens Valley was weak" (Reisner 102). Owens Valley is the water passage that created Los Angeles, but with the city growing beyond resource capability California had, and still is, to find more water availability for their people. The controversies over who had rights to the Colorado River go back as old as time. All Western states still fight today over who is allowed to take from or dam off the river because there was, and is only, so much to go around.

The fight over the rights to the Colorado River is also central to the plot of *The Water Knife*. One of the characters, Angel, is employed to move/steal rights and passages of water wherever his boss tells him to. Angel is what they call a 'water knife'. With water scarcity controlling the current state of the U.S. West, those who have taken control, mostly by force, are those who thrive, and they are called "water knives". The issue that keeps the powerful people in the courtrooms is the fight over who has the most senior rights to the Colorado River. The Colorado River in this novel, while shrunken in size, is the last vein keeping the West alive. Through corruption and wars, the most senior rights to this river have been lost up until a journalist did his research in the right places.

Lucy, the main journalist in *The Water Knife*, explains to Angel how Arizona came into rights of the Colorado. There was a Native American tribe called the Pima Tribe who had the first and most senior rights to the Colorado river. However, "Phoenix needed that water when the rivers around here started drying up, so it was a win-win. Phoenix got the water it wanted to keep

growing, and the Pima got a massive cash settlement” (230). Lucy’s journalist friend had been trying to research and find these old rights of the indigenous Pima, so he could either sell them in exchange for life in an arcology or give them to Arizona to revive itself. Not surprisingly, he was killed all too soon as he knew too much. This was not unusual for people trying to find safe passage out of Phoenix; anyone was subject to the brutal border control protecting water from outsiders. Protecting states water supplies from others was a length people were willing to go to at any cost.

Imagining Phoenix 50 years in the future shows how Bacigalupi wants his readers to think about all the bad outcomes for an environmental catastrophe that will happen if we don’t change our behavior and plan and act on what we know. As critics argue, “Within the shared traits of apocalyptic narratives, then, we should be able to detect collective beliefs about what makes contemporary life unsatisfying as well as what needs to change” (Renner 205). Renner explains that apocalyptic novels can play with the environmental realities many people don’t want to picture by providing a fictional outlet to gather warning around such issues. This warning that Bacigalupi provides has the potential to disrupt the common acceptance many have about the reality of environmental issues.

A major issue today is climate denial and continued resource exploitation. Many admit understanding of climate change today, but the lack of major initiatives to address it or behavioral changes says otherwise. Cultural critic Andrew Ross explains that most of the public thinks that there is no urgency in society today. Andrew Ross explains that since small disasters that do happen in the world are not big or “mainstream” they are hard to notice on the grand scale of it all. As he explains, “because these declines are not abrupt, they are not perceived as catastrophic” (Ross 37). It has become a generational phenomenon to avoid big issues as long as

they do not affect us personally. It seems only when a catastrophic event happens societal urgency is re-directed to the environment but just until something else pulls it away. Acceptance and initiative are huge when it comes to making a difference in the environmental sector.

After environmental hazards occur, society rarely puts the blame back on itself for its negligence. Some climate deniers, after researching how the drought is and will affect Western civilization claim this is a “normal” part of a changing climate. As climatologist Don Wilhite explains “the quantification of impacts and the provision of disaster relief is far more difficult task for drought than it is for other natural hazards” (Wilhite 2). Through Wilhite analysis he explains how the West is a tragic place to live and the future for such a place is quite daunting due to the many impacts that drought can have on a land. Since this part of the country is not full of lush water resources, the abuse of them can have serious repercussions for the reality of the environment’s future.

The big question is how and why is society still pushing growth in the Western part of the U.S. and especially Phoenix, Arizona? Wilhite explains the political help to sustain water in the West is pretty sloppy. He explains, “drought only receives the attention of decision makers when it is a peak level of intensity and spatial extent and when water management options are quite limited” (Wilhite 3). This goes back to the critique of environmental injustices, only when the issue is affecting enough people the attention is directed to it. But when the issue no longer is “out of control” urgency is redirected, and the cycle continues without a permanent solution.

Bacigalupi’s novel critiques the very use and conservation (or lack thereof) of water today. For example, California has been in a drought for years but has this dramatically changed the way people use water? For most, no, “researchers predict that similar patterns of polarized weather will continue to define California’s climate well into the 21st century, particularly if

greenhouse gas emissions are not immediately and significantly reduced. If emissions continue to grow until 2100, the drastic wet-dry weather patterns could double in frequency, wreaking havoc in the state” (Beach). With society growing at such large rates, consumption in the U.S. at an all time high, and poverty growing by the days, the need for reliable natural resources has never been so great.

Reisner draws the lines between the water shortage issue in the West and the issues we will face into the future. This novel, published nearly 30 years prior to *The Water Knife*, fears for a future like how *The Water Knife* describes. Reisner is baffled with how the West came to be “In the West, of course, where water is concerned, logic and reason have never figured prominently in the scheme of things” (14). Having Reisner’s historical text in the center of *The Water Knife* really brings this cli-fi story back to reality. Reisner insists that there are serious repercussions that we could face into our future if we do not listen to past predictions of the environmental future of the world.

While Angel is a part of the fight over water, he is one of the characters most frustrated with the death of Phoenix. He sees the death of this city as unsurprising, “Lot’s of people knew this was a stupid place to grow a city, from a long way back, but Phoenix just stuck its head in the sand and pretended disaster wasn’t coming” (179). Society in this futuristic Phoenix now faces dust storms with such pollution that people must wear facemasks daily to help them breathe outside. This society experiencing the apocalypse show the repercussions of our actions today, and what it could be like for the people trying to survive through it.

Bacigalupi plays around with the idea of what happens when the urgency that had been redirected countless times stopped having any sort of effect on helping society. As the water knife, Angel, makes his way for his assignment in Phoenix he begins to see the reality of the

apocalypse when money could no longer save you. After spending a few days in Phoenix Angel starts to feel empathetic towards this crumbling place, “This was the Phoenix after everyone stopped giving a damn. This was Phoenix with a murder rate that approached Cartel States’ births. This was a Phoenix where people just gave up and sold their children” (138). Most of the people who are fighting for survival in this tale show that they are not that different than people today. Life will always continue even in the darkest of times for the world, but Bacigalupi questions if this is something people really would want anyone to live through.

The persistence of life in *The Water Knife* proves life can continue on, even in the hardest of times. Environmental critic Annette Magid explains, “nearly every apocalyptic text presents the same paradox which reveals the end is never really the end. The texts predict and describes the end of the world, but the text does not end, nor does the world within the text end” (Magid 228). There is always a hopeful side to any text that consults with the ending of everything; it is never really the end. This novel allows readers to consider what it would mean if life were to persist in the wake of the apocalypse. More specifically, what would it mean for life to persist in a time where people cannot escape a corrupt society, resource scarcity, and disease.

Lucy, the journalist in this fictional text chooses to stay in Phoenix even though she has the connections to live in a safe place. She is one of the characters most concerned with where the conditions in Phoenix could lead to, “She’d come to Phoenix to see as place dying, but she’d stayed for the living. Trying to divine something meaningful from this place’s suffering. What does a place that falls apart look like? What did mean?” (270). Lucy struggles with coming to a conclusion of how the West could come to be like this, she doesn’t understand how anyone from the past would want this for their future. This type of internal struggle Lucy encounters pushes

the blame and problems back to the reader. With such a realistic connection to life today the characters actions speak specifically to the people reading this text.

The depiction of what life would look like in the time of the apocalypse is a tool that Bacigalupi uses to allow the reader to consider their impact in society today. As Magid explains “The focus for most apocalyptic writers and film makers seems to be an urge to reveal the ultimate apocalyptic event that will inspire the ultimate ethical and moral change needed for Mankind to move in a direction away from the abyss of total annihilation” (Magid 228). *The Water Knife* is an example of the way a fictional text can urge people to analyze their place in society. This pushes people to no longer believe it is someone else’s job to protect and save the environment.

Due to the lack of understanding of climate change I predict the number of climate fiction novels will only increase. With Environmental Humanities taking a huge step into academia it is clear the study of the environment is stepping into all disciplines of life. This discourse, as outlined in my analysis, show there are so many intersecting disciplines that must be considered in the study of the environment. This provides guidance for readers to think about when they are considering how we will create a livable world for our future.

The Water Knife is an example of how an apocalyptic text can interrupt common acceptance of climate change in order to advocate for change. Through examples that connect the fictional to the real-life issue’s society faces today it forces the reader to consider what their role in climate change is. Bacigalupi’s gruesome examples hit home considering the examples and structures he uses in the novel are real outside of the fictional text. By inserting literary, historical and scientific illustrations Bacigalupi tries to connect to wide audience and spread awareness of such issues. All these sources show that for our world to create a livable future we

must change the way we think, view, and learn about the environment today, so that our world will have a sustainable future.

CONCLUSION

Throughout my research on this project I realize there is still so much to say and still so much more work to be done. During my time in Iceland I felt inspired to engage in research that mattered to the future of the world and educated the public about the effects of climate change. By visiting Iceland, a country esteemed for its sustainability and eco-friendly practices it was alarming to find out that even such a Northern country was facing many challenges in the wake of climate change. This encouraged me to research further and see how to contribute more to environmental studies and environmental humanities.

We must also realize that these novels that depict the past, present, and future all show what happens when we don't set limits. Even from the beginning of colonization of the western US to the early settlement in Iceland, in both occurrences we see the creation of expansion with no limits, no orders, and no practices that have consideration for the environment they are impacting. This method of expansion created a practice of others not setting limits when colonizing a new land that reverberated into the future. While expansion in early colonization days was viewed as great and full of new opportunity, this set the world in a trajectory that had no limits and that our world would always give us what we needed, no matter how much we took.

One of the most important learnings I've had from that this research is that there is not one reason to how climate change has occurred or just one answer to how we can fight environmental issues. While we can try and pinpoint these direct causes, this is a global phenomenon that will take every country and community in order to establish and maintain global sustainable practices. This research points at key moments and actions in our history and predictions of the future that give us indication of the things that have contributed to the

degradation of the world's environment. While my research only speaks to some of our environments greatest challenges it is clear that we must change the way our world thinks and acts towards our environment.

My research on climate migration and trade between countries showed one the “unforeseen” consequences of climate change. So often the major decisions that policy makers put into place do not account for the whole population and are fueled by greed. With Karen Tie Yamashita's novel readers can see the connections between the US's border countries and the abuse of resources that has been inflicted. This chapter analyses how the magical-real components that Yamashita uses actual derive from much greater political, societal, and economic issues that our world faces into the future due to climate change.

The climate novel, *The Water Knife*, that I chose to use to bring an end to my analysis of climate change in literature over time serves to bring reality of a not so distant future. Society in the US is still in the beginning stages of implementing real regulation around environmentally responsible choices as well as integrating this into the education of the future humans of the world. Since I am a resident of Arizona and the fact that this novel takes place here really hits home to the issues I see today in my community. The future of a place like Arizona seems very unlikely if measures to protect and sustain the environment are not dramatically enforced and put into place.

This entire project aims to continue the research in the environmental humanities and bring discussion to the pieces of literature that can help us better understand the past, present, and future environments we live in. By connecting literature, history, and science we can see clear lines in the interdisciplinarity to it all and by recognizing this we see how important it is to always integrate this field. I see than an interdisciplinary approach is quintessential to the future

of the environment, climate change, and the Anthropocene. By doing so we may better understand our past so that we may prepare for the future.

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