



LUND UNIVERSITY

# Countries Divided, Shared Pollution: Whose Mess is it?

A Case Study on the issue of Transnational Border Sewage  
in the Tijuana River Valley Watershed

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“Tijuana Sewage Dumping into the Pacific Ocean”. Image Credit: Surfrider.org (2017)

### Abstract:

This thesis critically examines the issue of shared border sewage between San Diego and Tijuana. In light of the recent sewage spill in February of 2017, dumping 143 million gallons of raw sewage into the Tijuana River, the phenomena of border sewage in the transnational environment of the Tijuana River Watershed has been a topic of interest in local and international contexts; raising questions of how this issue came about, what is causing it, and why it’s still happening. The aim of this thesis is to investigate and understand the historical context of the U.S. and Mexico in relation to the issue of transnational border sewage in the San Diego – Tijuana border region. This study enquires into the historical relationship between the U.S. and Mexico, with regard to Wallerstein’s world-systems theory and ecologically unequal exchange, and asserts that this issue is a contemporary example of environmental load displacement that has backfired. Using primary and secondary data in the form of EPA & IBWC environmental assessment and planning documents, previously conducted research, and dialogue between Imperial Beach Mayor Serge Dedina and IBWC Commissioner Edward Drusina, this study draws connections between economic, social, and political aspects as to why the issue is not being dealt with, and resulting in an ecological stand-off between two divided nations sharing one sewage problem.

*Keywords: San Diego, Tijuana, Border Sewage, Transnational Sewage, Unequal Exchange, Environmental Load Displacement.*

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List of Acronyms:

BIP – Border Industrialization Program

CWA – Clean Water Act

EA— Environmental Assessment

ELD—Environmental Load Displacement

EPZs—Export Processing Zones

IBWC—International Boundary & Water Commission

MXIBWC— Comisión Internacional de Limites y Aguas, Seccion Mexicana (Mexico Section of IBWC)

NAFTA—North American Free Trade Agreement

TNCs—Transnational Corporations

TRE—Tijuana River Estuary

TRW—Tijuana River Watershed

U.S.—United States

USIBWC—International Boundary & Water Commission, U.S Section

## 1. Introduction

Working for a local environmental non-profit organization in San Diego is something I wanted to experience for a long time. Being born and raised in the city known for its beautiful weather, beaches, and diverse culture made me proud to represent and fight for the health and preservation of one of its most compelling assets—the ocean. Spending many years and countless hours on the beachfront, the ocean has become a large part of what *home* is to me. It was at my grandma's house in Solana Beach where I took some of my first steps, learned to swim, and conquered my fears of the ocean through sport and some of my favorite hobbies. Ultimately, it is even the influence of the beach that has led me to pursue environmental sustainability scholarship. Undeniably, apart from the evident surf culture, San Diego is a community that has situated itself around matters of the Pacific, with residents feeling personal connections to the ocean as much more than just a body of water.

In light of this, after an estimated 143 million gallons of raw sewage was spilled into the Pacific Ocean in February of 2017 continuously for about 2 weeks, prompting elongated beach closures and sickening beachgoers, the San Diego community became irate and passionate about getting to the bottom of the issue. The sewage flow came about through the Tijuana river, which originates in Mexico and naturally flows through the border area and eventually out into the Pacific Ocean north of the border. The sewage spill was unannounced by the Mexican government, so many were unknowingly swimming in harshly contaminated waters as the sewage flowed in for days. Unsurprisingly, the reaction to this is one of anger and confusion, as sewage from another country is taking away what the San Diego community values most, and with no control or way to ensure that it doesn't happen again. This sparked quite an outrage and movement in the San Diego community; people want answers as to why this happened and also want to hold Mexico responsible for this problem that has continued to happen afterwards on multiple, yet smaller scales.

Upon hearing the news of the spill, I was also very curious to understand what's going on and how it all came to this point. Although my observations while working with the non-profit, who organized local committee meetings discussing the issue, was that the ultimate blame and anger is put on Mexico with many believing that these spills are out of an act of negligence, or even done on purpose. Through this experience, I realized that many San Diegan's seem to not acknowledge the fact that our shared border area has always (since rapid industrialization of the border) had a sewage problem. Large amounts of sewage washes into the Tijuana River Valley and waterways after rain, and an almost continuous flow enters the river more than half of the year that is not treated at all. After refusing to assume that Mexico

maniacally just decided to dump millions of gallons of sewage into a shared waterway out of arbitrary spite or negligence; I decided to take research matters into my own hands, to better understand this issue of ‘shared’ sewage at the border: when it began, what has caused it, and why it’s still happening.

The aim of this thesis is to investigate and understand the historical context of the U.S. and Mexico in relation to the issue of transnational border sewage in the San Diego – Tijuana border region. Further, it is my hypothesis that the phenomena of this border sewage issue may be seen as a contemporary example of environmental load displacement that has backfired. The theoretical base to this hypothesis primarily results from a world-systems approach on forms of unequal power relations and exchange in the region, ultimately resulting in the current environmental dilemma at hand.

The questions guiding my research are:

*(1) In what ways has the historical context of the U.S and Mexico had an influence on the current issue of pollution on the border of Tijuana and San Diego?*

*(2) Why is there still pollution in the area? Who takes responsibility?*

The issue of shared sewage within the San Diego-Tijuana border region is a complicated one. In this thesis, it is not my intention to point fingers and place blame, but rather investigate the problem in a different light than it is currently being seen by many. In doing so, it is my hope that this thesis will aid in understanding the entirety of the issue at hand, as well as towards possible solutions going forward.

## 2. Background and Context of the San Diego-Tijuana Border Region

The scope of the research area for this case takes place between two very different countries and cultures, due to their relative histories and complex relationship, at a very close proximity. The two nations share environments and waterways that have been segmented by a border— sometimes imaginary, sometimes literal, and hopefully not doomed to Donald Trump’s farcical vision of what it should be. In this thesis, I will be focusing on the border region between San Diego and Tijuana, with specific interest in the shared watershed and waterways that bisect the two nations.

## 2.1 The Border Region as a Geographic and Social Space

When crossing the U.S-Mexico border, from either side, it is typically a natural reaction of the person observing to be in shock at the realization of such clear contrasts between the two sides. These contrasts highlight the difference of culture, economy, government and environment. The U.S. - Mexico border in its entirety is very large, stretching nearly 2,100 miles from the Pacific Ocean to the Gulf of Mexico. Spanning across 4 states (California, Arizona, New Mexico, and Texas) and having multiple entry points, the border provides a unique environment where both local and global settings seem to clash. The San Diego-Tijuana border region is defined as including 60 miles of territory along both sides of the border, and consists of approximately 250,000 square miles of land (Frey, 2003: p. 319). This border region specifically, as a geographic, natural, economic and social space is a unique area that has much to offer through research due to its complex nature.

The San Diego -Tijuana border region alludes itself as a static area comprised of continuous mobilization and sectional cultures, acting as an entity that is connected historically and geographically, driven economically, yet hindered culturally and governmentally (Sparrow, 2001). The relationship between these neighboring cities, otherwise called ‘sister cities’, can be described as a fractured - a setting historically constructed where land and natural systems are divided by barriers that have been simply imagined by humans (Haines, 2015). Carruthers (2008: p.557) explains that the border area has developed far from what it once was; first as stone obelisks that were installed along the Rio Grande to the Pacific, and now as barriers with much more agency and consequence than ever before. “Far from imaginary, today the barriers are physical, linguistic, cultural and distributional, bisecting two communities grown to millions of inhabitants, with different development patterns, densities, infrastructures, populations, incomes, and access to natural resources” (ibid, p.557). These barriers constitute much more than a wall, or a body of water. Arguably, they represent a symbolic divider implemented both historically and culturally through time, by a means of distinguishing power and sectioning political and environmental rights.

Creating what Carruthers (2008) calls a ‘microcosm’ of North-South relations, the border continually exudes consequences and tensions from the global economic structure and modes of cultural integration experienced through its history. “It is simultaneously prosperous and poor, urban and rural, Anglo American and Latin American, First World and Third World; and the residents feel this with great intensity” (Carruthers, 2008: p.557). With such a stark divide, maintaining a cordial and cohesive correspondence with one another has shown

harsh shortcomings in border relations, specifically in regard to mutual trust and the lack of international governance. While the two cities seem to be strong business partners by means of a lasting economic relationship, they lack in a social, political & environmental correspondence.

This region particularly makes for an intriguing case, because not only are the sister cities sharing environments and ecological processes, they also share a global focal point that situates itself in the middle of both economic and human mobility. The movement of people and products has gathered momentum throughout the years, and the continuous growth has proven to give unfavorable results along with the praised economic benefits.

## 2.2 Area of Focus: The Tijuana River Watershed & Waterways

The Tijuana River Watershed (TRW) is a binational watershed on the westernmost portion of the U.S.-Mexico border, encompassing much of the city of Tijuana in Mexico, and portions of the city and county of San Diego in the United States (Englert et al., 2011: p.81).

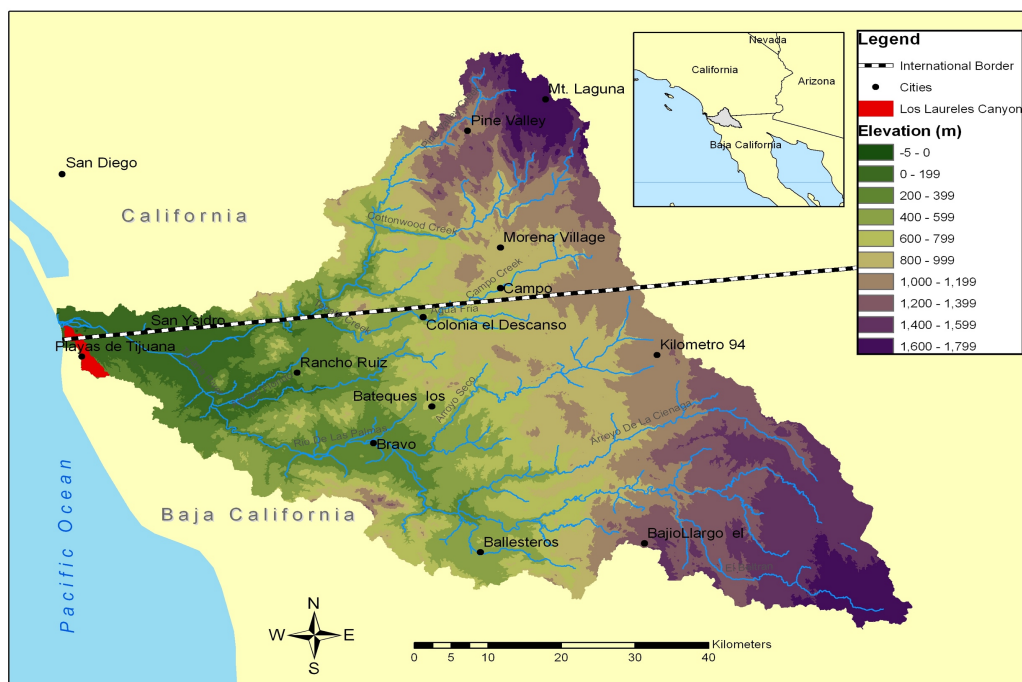


Figure 1. Image Reference: CAL/EPA. (California Environmental Protection Agency)

As shown in Figure 1, a sizable portion of the watershed (approximately 75%) is within Mexican territory and encompasses the densely urbanized city of Tijuana. The watershed then



drains into the Tijuana River Estuary in the U.S, and ultimately into the ocean through Imperial Beach in San Diego (CAL/EPA, 2018).

The Tijuana River, which is 17 miles long, originates in Mexico about 11 miles southeast of the city of Tijuana, and from there flows northward through the city and crosses the U.S.-Mexico boundary, where it flows for 5 miles before emptying into the Pacific Ocean (Fischhendler, 2005). For decades, raw sewage from the Mexican city of Tijuana has flowed into the Tijuana River and across the international border into the Tijuana Estuary, with the problem heightening in recent years from substantial population growth and intensive industrial development associated with the maquiladora; which will be revisited and explained further in section (2.4.1) (Englert et. al., 2011: p.82). Transboundary water management has proven to be problematic and challenging because of the underlying relationship of these countries and industrial elements shared in the area. Additionally, insufficient infrastructure for the collection, treatment, and disposal of sewage originating in Tijuana has long affected the watershed, as wastewater flows have chronically outpaced the ability of infrastructure to manage them (ibid., 2011: p.82). This has resulted to sewage spills within the river, that then flow out into the Pacific Ocean north of the border.

This shared environment between countries at the U.S.-Mexico border region has proven to be complex, as well as problematic. The creation of a boundary-spanning, quasi-governmental entity, namely the International Boundary and Water Commission (IBWC), is seen as the most important bi-national body monitoring and managing the border environment, and mandates the construction and upkeep of international sewage treatment plants (Sparrow, 2001: p.80). The institution is both praised and criticized for its presence as an inter-boundary mediator, and will be revisited and explained further in section (2.4.2).

### 2.3 A Historically Laborious Relationship: Maquiladoras

Understanding the history of this border region may give a better perspective of the past and present socio-environmental issues the cities are facing. Historically, the relationship between San Diego and Tijuana has been one of action and reaction; when there is a shortage of something north of the border, the Mexican city south of the border comes to fulfill those needs (Sparrow, 2001: p. 75). This has been highly apparent in industries such as cheap manual labor and agriculture, but also notably seen in industries that are illegal in California, concerning club scenes like ‘gentleman’s clubs’, prostitution, weapons, and drugs. But predominantly, the meeting of the First and Third World along the U.S.-Mexico border was based upon an established economic relationship of an industrialized country in need of cheap

labor, and a developing country in need of foreign investment (ibid.). The United States' utilization of Mexico as a cheap form of labor created a relationship that led to inequalities, pollution, and the rapid industrialization and eventual overpopulation of the border area in the South. The Maquiladora program provides one of the most prominent examples of this.

Starting in 1965, the maquiladora program was implemented as an alternative to Mexican migration into the U.S. by providing Mexicans with national low-skilled jobs, that in return, provided large American multinationals with the ability to manufacture goods at cheaper costs (Hermansen, 2016). The desire for this program came about shortly after the dismantling of the Bracero Program, which had legally allowed Mexican workers into the US border cities for mainly agricultural sector jobs (ibid.,). The Bracero program took place during the second World War, and was conceived as a temporary measure to ease the manpower shortage created in the U.S. by the need to expand the number of men under arms during the war (Guo, 2005: p.178). When no longer needed, the Mexicans were sent back and immigration enforcement was increased; ultimately terminating the labor scheme when there was no longer a need for cheap foreign labor in the U.S (Sparrow, 2001: p.76). When the war ended, Mexico came to rely heavily on the labor given in the States, and resulted in hundreds of thousands of unemployed Mexican workers at the border (Guo, 2005: p.178, ibid.).

With the result of many Mexicans in the US returning to Mexico, the promise of maquiladora factory jobs along the border initiated by the Border Industrialization Program (BIP) ushered in the newly unemployed workers under the Bracero, as well as ambitious workers from rural communities in the country (Hermansen, 2006). The BIP was presented as a solution to this new labor excess, and intended to generate jobs for the unemployed workers. It aimed to upgrade workers skills, provide for technology transfer, and stimulate the Mexican national industry through raw materials and components, all by generating taxes and foreign exchange for Mexico (Clement et. al, 1989: p.8 in Sparrow, 2001:p.7).

Maquiladoras are internationally owned plants or factories that are utilized as an export processing zone, mostly found along the U.S.- Mexico border (Guo, 2005: p.178). By use of maquiladoras, international firms can import, process, assemble, and transform goods to a finished or partially finished product, while later exporting them overseas without paying export tax. *Maquila* means “measure” in Spanish, in the sense that a miller of grain kept a measure of the grain in payment for their service; or referring to the miller's portion, being the share a miller received for grinding other people's grain (Castree et. al, 2013, Guo, 2005: p.178). The parallel seen here is that the Mexican plants/factories only provide the labor services, while never actually owning the products they're manufacturing. The plants in

which they work are also referred to as “in-bond” plants, since the products they assemble never legally leave the parent company, although they may be out of the home country (Goddard, 1985: p.141 in Guo, 2005: p.178).

The maquiladora program implemented by the BIP would then allow duty free imports of machinery, equipment, raw materials and components into plants located inside a 20km strip of the border region, as long as their output was then exported again (Clement et. al., 1989: p.8 in Sparrow, 2001: p.77). Some industries represented within the maquila sector include those of television receivers and parts, semi-conductors, toys, textiles, office machines, scientific instruments, electric motors, electrical equipment, batteries, and motor vehicle parts, among many others (Goddard, 1985: p.141 in Guo, 2005: p.179).

#### 2.4 NAFTA and Rapid Industrialization on the Border

Apart from the established work relationship of the BIP, the restructuring of the Mexican economy in response to the economic crisis in the 1980s and the ratification of the North American Free Trade Agreement (NAFTA) in 1994 resulted in a massive out-migration from rural areas all over Mexico; abandoning traditional farming livelihoods now unprofitable with the influx of cheap American corn, to enter the urban, industrial economy (Carruthers, 2008: p.557). The agreement aimed to essentially blur the commercial borders between the USA, Canada, and Mexico, and has inherently turned these border areas into highly industrialized zones specifically for the utilization of foreign-owned factories (ibid.). Since NAFTA, the Americas rely on a static and cheap labor force in Mexico to assemble imported raw components into commodities, including TVs, radios, batteries, and other small electronic items (Orihuela & Hageman, 2011).

It isn't really surprising that Mexico and the United States have such a static economic relationship, given their interdependent reliance on labor and production in an extremely close, albeit shared space. Still regarded as a developing, semi-peripheral country, Mexico shares a nearly 3,000 km border with one of the world's largest producers, and is unquestionably considered more accessible and cost-effective when compared to overseas trade and production (Guo, 2005: p.178). Tijuana, with its concentration of business parks and privileged location near the lucrative markets of the US, has been a powerful attractor for this out-migration to the border area, and many of the ecological problems in the region as a whole are complicated and intensified by the exponential and unplanned nature of population growth and informal development on the Mexican side of the border (Carruthers, 2008: p. 557).

#### 2.4.1 The Environmental Aftermath of NAFTA & Maquiladoras

The result of the BIP paired with the implementation of NAFTA came precipitated and unlimited industrial growth in the borderland along with massive overpopulation of the border region (Ibarra-Bigalondo, 2014). The California - Baja California area, which includes the California counties of San Diego and Imperial and the Mexican municipalities of Tijuana, Tecate, and Mexicali, constitute the most populous and rapidly growing areas of the entire US-Mexican Border area (Guo, 2005: p.179). Because of the density of processes and movements in this area, water quality has been deteriorating along the border largely due to the root causes of over-development and overpopulation.

Unfortunately, some of the greatest long-term effects of NAFTA are interrelated with the negative environmental impacts of the maquiladora industry within the Mexican cities that incorporate them along the border. The rapid expansion and development of the production factories on the Mexican side of the US-Mexico border have resulted in uncontrollable levels of population growth in the area, making the unplanned creation of working-class quarters, or *colonias*. According to Ibarra-Bigalondo (2014), within these colonias, the most basic human living conditions are nonexistent; families live in wooden shacks with no running water, electricity, or other basic sewage facilities. Most commonly, these areas have become home for many of the maquiladora workers (ibid, 2014).

These small border cities are often unable and/or unwilling to cope with the influx of industrial expansion, thus, unsuitable infrastructure and lax government regulation regarding illegal dumping in these areas result in the greatest ecological impacts that they have to face (Orihuela & Hageman, 2011). Unregulated toxic dumping in border cities around maquiladora factories have also been heavily prominent in the pollution issue, contaminating the air with the burning of toxic plastics, resulting in toxic runoffs into local rivers and communities and causing illness to the local people that consume the area or come in contact with the toxic water. The magnitude of this hasn't all just been necessarily 'accidental' as well. While it is Mexican law that hazardous wastes produced by maquiladoras must be treated or returned to the country of origin, Hinojosa-Ojeda (1999 in Frisvold and Caswell, 2000: P.103) asserts that 85% of the hazardous wastes produced in Baja California remains in the area and never gets treated properly. This isn't an underground issue, many owners and residents know what is going on and the ramifications and effects it has caused. Yet, there has been a lack of reliable data and studies to support this assertion, and when analyzed, it is usually grossly misrepresented by the EPA, giving little to no fault to the companies who

caused it (Ganster, 1996 in Frisvold and Caswell, 200: 103). This unnecessary ambiguity is what puts researchers and activists at a loss; when economic interests seem to foreshadow all else, it proves to be a tough fight towards environmental justice.

#### 2.4.2 Transnational Border Sewage & IBWC

As previously stated, due the lack of basic infrastructure and sewage systems on the heavily populated border area, both industrial and human wastes comprise the excess sewage on the environment that would eventually, with rainfall, flow into the Tijuana River Valley and out into the Pacific Ocean. The sewage problem started becoming unmanageable in the 1960s, as a result of the influx of people seeking work in an environment that was not suited to maintain the large amount of people in such a short amount of time (Guo, 2005: p. 182). With the continuously expanding maquiladora industry in Tijuana came an equally growing population of people living along the border, creating a constant issue unless treated.

Due to the shared waterways between Tijuana and San Diego, namely the Tijuana River, the toxic waters then continually flow North into U.S. territory through the shared watershed, and eventually into the Pacific Ocean, making this toxicity a transnational issue. The expansion of the maquiladora industry, combined with the growth of urban population and domestic manufacturing, has largely increased the industrial waste and other pollutants in the U.S.- Mexico border area, and because of the overall size and magnitude of waste entering the rivers and waterways, the treatment systems put in place is not able to process all of the waste produced effectively (Guo, 2005: p.182). Both consequently and inevitably, this put great stress on the area's water and wastewater infrastructure, resulting in millions of gallons of raw sewage having been spilled into the waterways and eventually flow up into the Pacific Ocean and on to San Diego County beaches (Frisvold & Caswell, 2000, p.109).

In an attempt to highlight the severity of this sewage, Ganster illustrates that (1996 in Guo, 2005: p.180) in 1991, the Council on Scientific Affairs of the American Medical Association described the border area as a "virtual cesspool" of pollution and disease, noting that 46 million liters of raw sewage flow each day into the Tijuana River. "The majority of the sewage that enters the river in Mexico crosses the border, and travels through aged, inadequate or non-existent pipelines. Because of this, surface and groundwater supplies are threatened everywhere along the California-Baja California border due to raw sewage dumping, agricultural runoff, and industrial hazardous waste pollution" (ibid.). Sewage at this type of magnitude is understandably tough to contain, and the transnational setting of the issue makes the handling of it all the more confusing. More so, transboundary water pollution

control along the border is complicated due to the large income disparities between the two countries, leading to disparities to the countries' ability to fund treatment projects and regulate pollution (Frisvold & Caswell, 2000: p.101).

The IBWC was established to ease these disparities, as it is made up of both U.S. and Mexican sections and ultimately work towards overseeing binational water management issues. The jurisdiction of the IBWC is specific and narrow, extending only to water management issues that are fundamentally binational— it may address water sanitation problems through projects called “Minutes”, but must be mutually agreed upon by both nations, and after will become a binding agreement with the force of the 1944 Water Treaty behind it (Frisvold & Caswell, 2000: p.103). While the IBWC has been praised over being the only institution able to successfully conduct bilateral negotiations between U.S. and Mexico, it has also been subject to criticism. One of the main critiques described against the institution is that of ambiguity in the commission's mandate over water quality issues. As an example, Frisvold & Caswell (2000: p.105) explain that in the case of hazardous waste effecting water quality, it is not strictly a sewage *or* sanitation issue, which then leaves open the question of whether the commission can address the issue or if it left to the EPA to handle. This can lead to an institutional stand-off where responsibility is assumed by the other party, and action towards an issue gets delayed, or in some cases, neglected completely.

#### 2.4.3 Mass Sewage Spill and Lawsuit : San Diego vs. US-IBWC

Contemporarily, sewage spills from Mexico leading back into the United States waterways and beaches are still happening, and arguably on a larger scale than ever before. While sewage from Mexico's local colonias are still present and relatively continuous, California has felt that it has been hit with a more serious issue that affects more of its local residences by mass pollution of the ocean water that affects local San Diego beaches. As stated previously, in February of 2017, an estimated 143 million gallons of raw sewage was spilled into the Pacific Ocean over a span of 2 weeks (IBWC, 2017). Sparking outrage and mobilization within the San Diego community, this event marked the beginning of a battle between the city of San Diego and the IBWC.

In March of 2018, the City of Imperial Beach, the San Diego Unified Port District, and the City of Chula Vista filed a lawsuit against the International Boundary and Water Commission- United States Section (USIBWC), for “ongoing, severe, and dangerous violations of the Federal Water Pollution Control Act, also known as the Clean Water Act (CWA)” (Lawsuit Document, 2018: 3). Further, the lawsuit document (2018) states that the

pollution discharge events, such as the one that happened in February have become routine, and that the USIBWC has utterly failed to fulfil their legal and moral mandates of the issue. “Human sewage, enormous volumes of sediment, industrial wastes, pesticides, massive amounts of trash, and a host of other nefarious pollutants from the Defendants’ (IBWC’s) facilities barrage the Tijuana River, its Estuary, the Pacific Ocean, and the Imperial Beach beachfront as unclean and unsafe, and sickening members of the public who use the Tijuana River Valley, the beach, and the ocean for recreation”. (ibid.: 4).

The city of San Diego feels at a loss, with seemingly no help from either side of the border, and no reassurance of the issue being handled in a way that would stop the continuous spills into the ocean. While still holding the blame on Mexico for the issue, suing the USIBWC for negligence and violations to the CWA seem to be the only legal way to hold a government responsible, even if it is their own. The San Diego community has made their point clear; they don’t care how or why there is a sewage issue, they just want it taken care of so it doesn’t end up on their side of the border, or on their beaches.

### 3. Theoretical Framework

This section of the paper will present the theoretical framework. This theoretical framework is comprised of both theories and concepts that are believed to offer a constructive and complementary approach to analyzing the historical relationship between the U.S. and Mexico in regard to the issue of border sewage. The world-systems theory by Immanuel Wallerstein (2004) will be the principal theory guiding my arguments, followed by related notions of ecologically unequal exchange and environmental load displacement as described by Alf Hornborg (2011).

#### 3.1 World-Systems Theory/Analysis

World-Systems analysis, or otherwise known and communicated as world-systems theory, was chiefly developed by Immanuel Wallerstein (2004), and has been used as a theoretical basis of understanding the overarching structure of our global system. The worldwide phenomenon of globalization and its vast interconnectedness led to unique power relations within the world capitalist system, eventually leading to a sharply delineated division of labor and production processes between different countries. This division is described by Wallerstein (2004) through the differences in geographical area as well as the ‘strength’ of economy, being categorized as either the Core, Semi-periphery, and Periphery.

Within what he calls ‘world-systems’, Wallerstein (2004: p.17) explains that we are dealing with a spatial zone which cuts across many political and cultural units; one that represents an integrated zone of activity and institutions which obey certain systemic rules and ideologies. When dealing with international trade between countries not on the same level distinction, meaning having a weaker economy, living in an unfavorable geographic space, or historically colonized and oppressed; international trade is just simply not a trade between equals. Wallerstein (2004: p.12) explains this as the ‘core’ being represented as the countries that were much stronger than the others, and were therefore able to trade on terms that allowed surplus value to flow from the weaker countries, being the ‘periphery’, back to the core. This process would later be labeled as ‘unequal exchange’, following Andre Gunder Frank’s coined phrase of “the development of underdevelopment”, to describe the results of the policies of large corporations, major states in the core zones and interstate agencies which promoted “free trade” in the world economy (Ibid, 2004: p.13).

Wallerstein (2004) implements this analysis as a tool to delineate structures of knowledge and early thought about global issues, coupled as both a method as well as a point of view; urging one to essentially ‘unthink’ what they’ve learned from their early age on to the present time, as these thoughts and ideas have been reinforced daily by the mass media (Wallerstein, 2004: p.xi). In this way, Wallerstein (2004: p.xii) encourages the sense of a new perspective on contemporary social reality, adding, “It is only by confronting directly how we have come to think the way we do, that we can begin to liberate ourselves to think in ways that I believe permit us to analyze more cogently and more usefully of our contemporary dilemmas”. As personally having a background interest in Human Ecology ‘thinking’ and scholarship, it is only natural for me to assess global environmental issues in a way that combines the understanding of multiple disciplines, mainly through the exploration of historical, cultural, and socio-environmental contexts and studies. Although, I think the comparison between my human/political ecology ‘lens’ and that of Wallerstein’s vision are not too few and far between.



### 3.1.1 Ecologically Unequal Exchange and it's zero-sum game

Shortly mentioned in the previous section (3.1), Wallerstein's (2004) notion of world-systems and Gunder-Frank's founding ideology of the "development of underdevelopment" has given the basis of what is largely understood as 'unequal exchange' in international trade of labor and resources. Drawing on this theory and emphasizing ecological significance, Alf Hornborg (2011: p.3) connects the idea that the global development gaps that we have been cultured to perceive as reflecting stages in time, can more clearly be recognized as inequalities in societal space.

A population's perceptions of technology, economy, and ecology are conditioned by its position within global systems or resource flows, and how mainstream modern perceptions of 'development' can be viewed as a cultural illusion confusing a privileged position in a social space with an advanced position in historical time. (Hornborg, 2011: p.7)

Ecologically unequal exchange, coined by Hornborg (2011: p.6) as a 'zero-sum game' between core and periphery nations, conceptualizes the current global connections through market exchange and technologies of trade as generating devastating ecological deterioration and increasingly severe inequalities with and between nations. The idea behind the zero-sum concept is that even though 'we', being people of both the core and periphery nations, believe or have been taught to believe that this interconnectedness in terms of trade, wealth, and labor is wholly beneficial—celebrated as a road towards a more integrated, prosperous, and even egalitarian 'future-world'—when it has thoroughly been proven to produce the opposite result globally (United Nations Development Program 1998, Millenium Ecosystem Assessment 2005, in Hornborg, 2011: p.6). The perspective then argues that modern technology is largely used by means of accumulation, rather than ingenuity, to locally save time and space and the expense of time and space lost elsewhere in the world; in this sense technology is not just simply a relation between humans and their natural environment, but more fundamentally a way of organizing human society (ibid., 2011: 4).

The common misconception around unequal exchange, usually highly debated amongst economists past and present, is that monetary flows and interconnected labor partnerships between countries, will inevitably lead to economic growth, which is inherently always shed in a positive light. Hornborg (2011: p.2) highlights and furthers the argument by saying:

Even today, and most obviously during the nineteenth century when the science of economics was emerging, it reflects the outlook of a particular category of people, positioned in economically affluent regions of the world. This view of international trade, which continues to dominate official thought and policy, is focused on the opportunities to generate monetary profits (somewhat euphemistically referred to as 'economic growth'), while more or less completely disregarding the inequitable material consequences of trade in terms of the state of the biophysical environment, human health, and disparities in the distribution of technological infrastructure. Such material parameters have been left out of the picture. (Hornborg, 2011: p.2)

This outlook is an issue, but one that isn't necessarily perceived as an issue to all disciplines of social science academia. If we leave these ideological perceptions to clash, it is the worry of this author as well as many others that there will never be a consensus on how to proceed, what is right and wrong, and will inevitably lead us to further catastrophe.

### 3.1.2 Environmental Load Displacement

The notion of environmental load displacement is also evidently linked to world systems theory and unequal exchange. Common to those theories, belie the concerns of uneven deterioration of the natural environment, and with the relations of power that generate and maintain unevenly distributed environmental impacts on global society (Hornborg, 2011: p.15). Though environmental load displacement, as explained by Hornborg, (ibid.,p.15) suggests that the wastefulness and unsustainability of industrial resource management is made possible by displacing environmental impacts to other areas, populations, or social categories.

Many times, this type of uneven deterioration and environmental impacts come in the form of waste by processes of technological plants or production warehouses, located outside of the home country of origin and located where the waste won't reach back 'home'. This is generally because of many semi-periphery countries' willingness to provide labor, usually at a much cheaper cost, and the lax environmental regulations usually don't hinder any production processes that may be illegal in a more developed 'core' country.

One can argue that this is possible by power relations dating back to colonialism, as (semi-) periphery countries many times do not have the political power to 'pick and choose' the type of treatment they will get, or have a strong basis of authority when coming to environmental issues on their land left by international powers that incorporate the area. According to Hornborg (2011: p.14, cf. Hettne, 1990), in peripheral nations, attempts by politicians to challenge global inequalities and power structures have backfired in various

ways; for instance through military interventions sponsored by the core, loss of economic benefits and support linked to established trade patterns, and the inability to offer credible and attractive political programs. Historically, this has put many peripheral nations in a bit of a sticky situation, with little leeway and high risk of negative outcomes as a result of retaliation. But is this a one way street? What roles are at play when it comes to environmental load displacement? The spatial dynamics of this theory could be questioned, as contemporary space, in a globalized world, is becoming more and more shared.

### 3.1.3 Theories in Relation to the Border Sewage Issue:

World-Systems theory, ecologically unequal exchange, as well as environmental load displacement all play a specific role in aiding my research on the shared border issue. With World-systems theory acting as the chief theory explaining the power structure of our global system, ecologically unequal exchange then compliments it by describing the ‘cultural illusion’ of development and global connections between the core and periphery through market exchange and technologies of trade, and environmental load displacement acts as the ‘result’ explanation of global relations of power generating and maintaining unevenly distributed environmental impacts on global society, by displacing environmental waste and impacts to other areas, populations, and social categories.

Ultimately, these theories provide the best explanatory base towards my hypothesis of the current issue of border sewage in the San Diego- Tijuana region; being a contemporary case of environmental load displacement that has backfired due to the underlying power relations of the world-systems and as a result of ecologically unequal exchange.

### 4. Methodology and Methods

This research has been undertaken as a case study, critical of both the past and present relationship between the U.S and Mexico at the border area, specifically within the shared environment of the Tijuana River Watershed, that incorporates both Tijuana and San Diego. As both a San Diego native as well as a Human Ecology scholar, my observations of the reactions North of the border from the recent mass sewage spills led me to question, ‘Whose fault is it, really?’. San Diegans are furious about the health and condition of their coastline and waterways, don’t understand why this this happening, and want change *now*. It seems that the natural reaction has been to point the finger at Mexico, because after all, that’s where the sewage is coming from, right? Their sewage, their fault. But I believe that there’s more to the story than that. Contrary to the perception or belief that Mexico is just negligent, or worse,

allowing these mass sewage spills to happen on purpose - I believe that this issue spans and is rooted much further into the past than many realize. Additionally, it is my chief hypothesis of this study, and intend to explore the possibility that the underlying power structures between the U.S and Mexico, both past and present, have contributed in a case of environmental load displacement that has essentially backfired.

While there has been much literature and study on trade relations between the U.S and Mexico, Maquiladoras, and sewage conflict contributing to environmental degradation in the area, very little address what isn't seen - a toxic relationship between two countries sharing the same environment and waterways, divided between culture, politics, and power - by a border. It is my intention to shed light on what may not be on-the-surface knowledge, and attempt to unravel certain power structures in a way that may better explain this shared toxic phenomenon, and not simply point blame in an indefensible direction.

In this thesis, I will use both primary and secondary data by the use of a literature review of theory and previously conducted studies in the form of books, articles, scientific journals, news interviews, and previous studies on the phenomena. Documents from the EPA and IBWC will also be analyzed, along with letters from Imperial Beach Mayor Serge Dedina and IBWC Commissioner Edward Drusina related to the current issues regarding the recent sewage spills. With this type of data, I intend to build upon previous theory and knowledge regarding this area and the interconnected conflict regarding sewage and action.

#### 4.1 Methodology

In this research, it is important to note that I have taken a critical realist approach to this study. Within a critical realism standpoint, ontologically, and in regard to how reality is constructed, it is my belief that there is an objective reality independent of human perception. Epistemologically, it is also believed that acquiring knowledge of this reality is arguably not immediately fixed and empirically accessible; and furthermore contains a dimension, not immediately observable, where we find mechanisms which produce the empirically observable events (Danermark et.al, 2005: p.10). Relating this to my study, realities of the same issue, in the same space, may be perceived differently on opposite sides of the border. Unveiling this reality that may not generally be seen or understood on-the-surface, is what I'd like to explore.

## 4.2 Triangulation

As a part of my methodological approach, the use of triangulation will be present as a tool to use more than one method. Denzin (1978) argues that many researchers perceive their research method as an atheoretical tool and because of this, they fail to recognize that methods impose certain perspectives on reality, with each method revealing a different line of sight towards the same point, observing social and symbolic reality (Berg, 2001: p.5). The idea behind this, is that by combining more ‘lines of sight’ or different ways of receiving data, will unveil a clearer version of reality or truth; and gives less room for error when cross analyzing with each other. This method then allows researchers to offer perspectives other than their own, while characterizing the use of multiple data collection technologies, multiple theories, multiple researchers, multiple methodologies, or combinations of these categories of research activities (ibid.,:p.5). This specific methodology is particularly useful for this study as there already seems to be a disconnect of ‘reality’, with differentiating perceptions on the same issue, coming from different backgrounds. With the aid of theories, past studies, governmental documents, and local news interviews, I will be able to observe and attempt to understand the data in more viewpoints than just one. These ‘lines of sight’ can therefore be combined from backgrounds of academic researchers, state government, local government, and the dialogue surrounding the issue in San Diego news media.

## 4.3 Case Study

Additionally, I am using a case study approach, which is described by Yin (2009: p.1) as an essential tactic used by researchers to use multiple sources of evidence, whereby the evidence and data later converge in a triangulating fashion. This is useful as the nature of case studies are typically quite compounded, and tend to relay more variables than data points, given the richness and complexity in understanding social phenomena. Schramm (1971, emphasis added) illuminates the essence of a case study being a decision or set of decisions: investigating *why* they were taken, *how* they were implemented, and with *what* result (Yin, 2009: p.18). This particular method is fitting for the case of border sewage between Tijuana and San Diego in the sense that this issue is something that needs to be investigated in-depth, as the boundaries between context and real-life are not clearly evident, or on the surface. This approach to the research has aided me to really delve into my research questions as an investigation; in decisions of historical trade policy, contemporary action and inaction of the EPA and IBWC, as well as why the border sewage is still an issue.

#### 4.4 Document Analysis:

Apart from the research overview, the use of document analysis as a qualitative research method is utilized as a main point of analysis in documents from the EPA, IBWC, as well as in the letters from Imperial Beach Mayor Serge Dedina and IBWC Commissioner Edward Drusina. Like other analytical methods in qualitative research, document analysis requires that the data be examined and interpreted in order to elicit meaning, gain understanding, and develop empirical knowledge; with documents many times being referred to as ‘social facts’, which are produced, shared and used in socially organized ways (Atkinson & Coffey; in Bowen, 2009). The analytic procedure entails finding, selecting, and making sense of data contained in documents such as excerpts, quotations, and or entire passages that are then organized into major themes and case examples (Bowen, 2009).

In this way, the documents will allow me to explore what institutions like the EPA and IBWC both know and imply about the border sewage issue, as well as any agenda put forth, or lack thereof. The documents will provide a means of tracking change and development of the issue by validating the time period towards the action or inaction of proposed solutions, as well as if they ever took place or were implemented. The letters from Dedina and Drusina allow a glimpse into the dialogue taking place in an otherwise unseen view; illuminating emotions, concerns, expectations, and proposed action in mediating the issue.

Accordingly, content analysis was also used as an approach to the analysis of documents and texts, as well as to quantify and understand content in television news media. As defined by Holsti (1969:14 in Bryman, 2012: p. 289), content analysis is any technique for making inferences by objectively and systematically identifying specified characteristics of messages. This approach aided specifically in the analysis of the local San Diego News (KUSI) interview with Serge Dedina, in a way where manifest content as well as latent content were used as tool to analyze dialogue within the interview. In this case ‘manifest content’ as well as ‘latent content’ was looked out for; meaning taking the apparent content of the message in question as well as any underlying meanings that may lie beneath the surface.

#### 4.5 Limitations of the Study

The issue of border sewage in the San Diego-Tijuana border region is complex—historically, economically, ecologically, culturally, and socially. Consequently, not all possible aspects related to the issue could be investigated for this research. The most important of these aspects left out, I believe, would be the social perceptions and observations from the Mexican side of the border. But due to time constraints as well as scope of the thesis, I decided to focus

primarily on perceptions on the U.S. side of the border because of my experience in the area, as well as observations working with the local environmental organization and dealing with the border issue specifically.

Further, while there are some clear advantages to working with an existing body of data including cost, time, and quality of what is found in the field; there are also criticisms that follow. A main criticism is that difference or difficulty of interpretation of the data grounds the inevitable possibility that it is not always relevant to the present problem, by a means of ‘forcing data’ to fit with your research (Punch, 2005: p.103). Therefore, it is necessary and important to note that careful consideration of the data in light of the proposed research will be undertaken and thoroughly assessed in this study.

### 5. Findings and Analysis

In this section, I will present my findings through research of the Tijuana - San Diego border area, as well as the current and historical discourses around the shared issue of border sewage. Through my research, guided from my background in Human Ecology, it is my belief that this issue cannot possibly be understood fully without examining the entirety of the environment of the U.S-Mexico border area; including social, political, economic, and environmental aspects. In doing so, I gathered research through the previous case work done in the area by Frey (2003) and Heyman (2007), an EPA document on a socio-environmental analysis and planning of the region, an IBWC analysis of environmental damage and planning after the mass sewage spill, a local news interview on the issue with the Mayor, and a letter from the Mayor to the IBWC regarding the ongoing sewage issue and inaction.

#### 5.1 EPA Environmental Assessment of Deteriorated Sewage Lines in Tijuana

In an environmental assessment published by the United States Environmental Protection Agency (EPA) in 2014, alternatives to the issue of addressing the deteriorated conditions of major sewer collector lines within the city of Tijuana were explored. This assessment only served as a plan for the possibility of an alternative action if funded or granted by the state. As explained in the governmental document, the necessity of this research was due to raw sewage leaks to ground and surface water within the Tijuana River watershed, potentially impacting the Tijuana River, and thus ‘on those days’ when the Tijuana River flows reach the U.S, the implementation of the proposed project would reduce the potential adverse impacts to the U.S. surface water and environmental health (EPA, 2014). The proposed project claimed that it would improve public health and water quality concerns by eliminating the

discharge of sewage to Tijuana streets, while also addressing public safety concerns by reducing the risk of potential for collapse of major sewer collectors—as it reads:

The lack of reliable wastewater collection lines has had consequences for the environment of Tijuana, as well as for the quality of life of its inhabitants. All of the collection lines (13 included) that are part of the proposed action have shown evidence of damage, often in the form of leaks and collapses. (EPA, 2014: section 1.2)

While this assessment is openly confirming the issue of the dated sewage collection lines in Mexico, after initially introducing the issue as a ‘potential harm’, as well as the concern for the quality of life of Mexico’s inhabitants, the document makes clear that “although the project is located in Mexico, this environmental assessment (EA) evaluates the impacts to the *relevant* environmental resources within the defined area of concern in the United States.” (EPA, 2014: Section 1.3 emphasis added). What I take from this, is that the U.S feels compelled or responsible for fixing these lines, although painting it in a way that would enrich the livelihoods for Mexican citizens, but ensuring that the only reason there is interest in this project is to ultimately ensure that the U.S. is not as vulnerable to the pollution as Mexico is. According to the (2014) document, the project area would take place in the vicinity of the Tijuana River, which flows north through Mexico and into the United States before draining into the Pacific Ocean on the U.S side of the border. The document also acknowledges that the flows into the Tijuana River are a combination of groundwater, natural runoff, effluent discharges, sewer leaks, and toxic spills which is intercepted through a dated pump station (CILA) before crossing the border, stating:

The CILA pump station currently removes up to 22.8 MGD (1,000L/s) of river flows and stops operating in wet weather when river flows exceed that capacity. At these times, water is allowed to flow into the U.S., discharging to the Pacific Ocean via the Tijuana River estuary. (EPA, 2014: Section 2.3, emphasis added).

While I wasn’t able to find exactly who, when, what law, or action, prompted the sewage flows to drain into the TRE (Tijuana River Estuary) during wet weather, I was shocked to find out that it was something that was actually allowed by the U.S. government. As the U.S environmental assessment reads:



Mexico has agreed to intercept the flow of the Tijuana River during the dry season. . . . During the rainy season, however, the Tijuana River flow is allowed to continue into the U.S. and to discharge into the estuary whenever the flow exceeds 22.8 MGD (1,000 L/s). Flow records from the U.S International Boundary and Water Commission (USIBWC) show that in 2008 and 2009, the two most recent years for which the data are available, there were 111 and 116 days, respectively, on which surface water flowed from Mexico to the U.S. These days occurred mostly during the typically rainy season of December through March. (EPA, 2014: Section 3.3.1).

While weather patterns evidently fluctuate constantly, and some years see more rain than others, it is still quite appalling that a flow of sewage enters the Tijuana river and eventually exits through the Pacific Ocean for about a third of the year – due to excess flows that the pump station cannot withhold. But another thought on the matter is that, as a Southern California native and a fan of classic rock, in the words of musician Albert Hammond, “It Never Rains in Southern California”. While Hammond later goes on to contradict that statement by saying that “it pours”; I’m pretty sure he was only using a metaphorical reference to his heartbreak, as it rarely does rain in Southern California, and definitely not a third of the year on average. To me, this could mean that the low tolerance of this CILA pump station might not take much stress before the flows are then allowed to pass through, and may not always be due to heavy weather conditions.

The EA, after explaining the issue of the border sewage area, gave two alternatives for the future of this issue. The first alternative, being named the “No Action Alternative”, means exactly how it sounds. Under the no action alternative, no sewer collector line repair or rehabilitation would take place; all sewage collectors would continue to be used in their current states, with repairs occurring only following major incidents such as collapses (EPA, 2014: Section 2.4). The second alternative, named the preferred alternative, would either rehabilitate or replace the five miles of main collector lines, rehabilitate current structures and construct additional necessary ones. This alternative recognizes that improving the environment, even in a country separate from its own, would also have great residual benefits for the U.S.:

Public health in Tijuana would be positively affected by the proposed alternative since the alternative has the potential to eliminate exposure to raw sewage from that overflow of collection lines. The overall improvement of sanitary conditions within the project area would promote better overall public health conditions and further provide transboundary benefits by reducing health

risks within the immediate area of the border due to the frequency of U.S./Mexico border crossing. (EPA, 2014: Section 4.11)

The quote above highlights the fact that the EPA knows very well what the options are to fix the issue, and what the repercussions would be if left unfixed. The two options are one, to do nothing; and two, to fix 5 miles of collector lines in Mexico, and aid in a health and environmental issue that is shared and affects both nations. What would be the reasoning behind not implementing the latter option? The U.S. arguably has a means to fix 5 miles of sewage collector lines, and significantly aid health and environmental issues in the region as whole –controlling a large part of the sewage issue at the border. Inaction, in this sense, could only mean that the health and environment of the border region is not a pivotal concern for the U.S. government, or simply not feeling responsible to have to fix an issue outside of U.S. territory. Or, essentially, both.

## 5.2 IBWC Letter & Report

### 5.2.1 Introductory Letter by Edward Drusina

This document was prepared by the Minute 320 Binational Technical Team of Water Quality in the United States section of the International Boundary and Water Commission of the United States and Mexico (USIBWC) as a report titled: Transboundary Bypass Flows into the Tijuana River. This report was released in April of 2017, a short time after the mass sewage spill that lasted around 2 weeks and sparked controversy in Imperial Beach, San Diego. This document begins with an attached letter to California Regional Water Quality Control Board in San Diego, from highly criticized IBWC Commissioner Edward Drusina. The tone received from reading the letter was one of explanation in a position responsible for the issue. Not necessarily one of remorse, but one of clarification, and admittance of the need to improve. The letter attached to the report document is seemingly a presentation of their understanding of why and how the issue happened, and an explanation of what will be done to ensure it doesn't happen again; as it reads:

The Minute 320 work group will incorporate the lessons learned from this spill and will develop implementation plans to achieve improvements to eliminating spills, capacity building, and improved notification and response. ... The IBWC has invested over 157 million dollars in improvements to wastewater treatment facilities since 1995, which has had a positive impact towards the reduction of untreated waste and a cleaner environment. But there is more that needs

to be done and the IBWC recognizes its role in addressing border sanitation and remains committed to helping Tijuana and the communities in the Greater San Diego area in Achieving a healthy and safe Tijuana River. (IBWC, 2017 in Letter).

While acknowledging the “lessons learned”, the IBWC also noted at the very end of the letter, that they have invested a lot of money in wastewater treatment facilities, giving an added emphasis to the seemingly underlying message of, ‘we’ve handled this before, we’ll continue to handle it now, sorry for the mistake’.

### 5.2.2 IBWC Report

The report itself came as a response to the San Diego community, as multiple cities and agencies reached out to the IBWC for answers:

Starting on February 6, 2017, and over a period of the next two weeks, the United States section, International Boundary and Water Commission, (USIBWC) received complaints from various entities in the United States, including Customs and Border Protection, City of Imperial Beach, California Regional Water Quality Control Board, San Diego Region (San Diego Water Board), San Diego County air Pollution Control District, and local residents of strong wastewater odors in the Tijuana River Valley and adjoining neighborhoods as well as the beach areas of Imperial Beach, California. (IBWC, 2017: p.1).

These complaints had come from concerns of wastewater sewage in the Tijuana River Valley, and the IBWC (2017) states that on February 17, 2017, the strong odors were confirmed by U.S Section personnel several times during a period in which they tried to contact the MXIBWC (known in Spanish as Comisión Internacional de Límites y Aguas, Sección Mexicana), to no avail. It was later confirmed on February 23, 2017 that wastewater flows had bypassed into the Tijuana River during the repairs of a highly damaged collector in central Tijuana, and members of the USIBWC filed a spill report with the California Office of Emergency Services and the San Diego Water Board the next day for an estimated volume of 143 million gallons of raw sewage spilled (IBWC, 2017).

The report goes on to mention that since the late 80s and early 90s, the dry-weather flows of untreated wastewater in the river that reached the U.S have been greatly reduced due to treatment facility construction projects in both countries that were addressed under IBWC Minutes numbers 270, 283 and 298 have been controlled to a greater extent but not completely. This is mainly due to pump station CILA, located closest to the region border, not

being able to withstand pump station capacity, with dry weather flows into the Tijuana River continuously increasing. Additionally, the report travelled to the most critical collectors ranging in the area, and documented 4 collector and sub-collectors in critical status that are currently collapsed, and 35 concrete collectors in critical status that could collapse again at any time (IBWC, 2017: Table 4 & 5). While highlighting what has already been done to aid the issue (but still isn't working), the IBWC also identified the issues that still need attention, in order to resume control of the sewage issue.

### 5.2.3 Recommendations from the Minute 320 Water Quality Work Group

Concluding their report, the Minute 320 Water Quality Work Group of the IBWC stated that they believe there are specific areas of concern that were highlighted because of this event. This included equipment that is needed to address these emergency situations properly, better communication between U.S and Mexico, more frequent infrastructure assessments, updated data collection, and exchange of wastewater treatment plant data. Because of these recommendations, according to the report (IBWC, 2017: pp. 26-27), the development of a written protocol for operation and maintenance of pump station CILA, a flow meter installation to enable real time flow information and status via email, and quarterly meetings and inspections of the river and drains in Mexico by the IBWC were already implemented for immediate action.

### 5.3 KUSI News Interview with Mayor Dedina

On April 1st, 2018 with local San Diego news channel KUSI News, Serge Dedina, the mayor of Imperial Beach was interviewed about the recent lawsuit against the USIBWC, and asked to explain the issue of these sewage flows and why they're happening. Dedina then explained a quick timeline of industrialization on the border, shortly addressing NAFTA and Mexico's continuous and rapid industrialization, and specifically addressing Mexico's incorporation of faulty sewage collectors as 'the perfect storm' for San Diego. Dedina's cry of victimization was apparent, and notably stated that Mexico 'has a lot to do' to fix the issue enough to where it no longer affects U.S territory.

Much of the emotion I perceived during this interview was one of anger and resentment towards Mexico, even though the lawsuit is against the USIBWC. It was reported in the interview that Mexico had recently pledged to pay 4.3 million dollars towards reparations of the sewage collectors and cleaning up, even after going through a recent deadly and costly natural disaster in Oaxaca, but was not recognized as any sufficient act of help. It

was recognized, at best, as a band-aid, with Dedina saying that Mexico needs to be more responsible and a “better neighbor”, as Dedina expressed:

Mexico has to pony-up and do the right thing, because you know, Tijuana is one of the largest cities in Mexico and you can't be a modern 21st century city if you allow your neighbor to basically receive all of your sewage flows because you're too cheap to invest in the sewage system... (KUSI News Interview video, 2018, 6:00).

In what I think is an ironic juxtaposition, it is expressed that it isn't fair to have land, where people work and live, poisoned out of negligence and easy accessibility by another country. The lack of control on the U.S side, being on the receiving end of the flows with no actual control over the collector lines, is also seemingly a main contributor for this anger:

...even though these sewage spills are affecting our water, land, and people, we don't control where it's coming from, and it's coming from across the border! So we demand action for this problem that has been going on for far too long. (KUSI News interview video, 2018, 12:02).

The action from the IBWC would be to mediate between both countries on the issue of border pollution, and Dedina as well as the local news interviewer didn't seem to like the idea of investigation into the issue, and saw it more as a tactic of negligence. The news reporter asked:

So, there was a meeting with the IBWC on this issue...what exactly came out of that? Because, really, there was a lot of ‘...well maybe we should study this a little more...’ but we, we already know what the problem is, right... (KUSI News interview video, 2018, 16:10).

When the interview came to a discussion about possible solutions, it was concluded that no action would take place without a lawsuit, and somebody being held accountable; because “money and political will rule everything”. This interview illuminated Mayor Dedina's feelings of helplessness, in the sense that he every available source for solution is working against him and the community of Imperial Beach and San Diego. Mexico's contribution is only a ‘band-aid’, and the EPA as well as the IBWC are just pushing back the issue and choosing not to address it.

#### 5.4 Dedina's Letter to the IBWC

In a letter from Imperial Beach Mayor Serge Dedina to USIBWC Commissioner Edward Drusina dated February 22, 2018; Dedina voiced his anger, impatience, and displeased stance on the USIBWC's measures toward aiding the issue of border sewage:

Since December 12, 2017, when I and members of my tireless staff met with USIBWC and other interested public entities at the San Diego Regional Water Quality Control Board's office to discuss, yet again, a path forward in the Tijuana River Valley, there have been at least 16 more spills. Quite frankly, the increasing frequency of pollutant discharges in the Valley undermines and discredits International Boundary and Water Commission – U.S Section's ("USIBWC") ongoing assurances that it intends to solve water quality problems in the Valley. (Dedina Letter, 2018).

This letter illuminates the distrust behind the belief that the IBWC will handle the sewage issue in a way that the city of San Diego will deem acceptable – which is no trace of sewage on U.S territory at all. "The time for bland assurances has surely long passed", says Dedina, and "While we were impressed at the December meeting with the participation of certain federal officials new to the ongoing dialogue on the Valley, we were also discouraged by the USIBWC's failure to bring any novel ideas to the table." (ibid., 2018). As stated in the previous section (5.2.2), the IBWC had put together a comprehensive report on why the issues are happening, what needs to be fixed, how much it will cost, and the future improvements that will be implemented to avoid the sewage issue. But instead of action, Dedina and San Diego residents feel that the IBWC is just avoiding the situation because of the high cost to fix it:

We heard again from USIBWC what we have heard before: trumpeting of past accomplishments; lamentation over lack of funding; and the absence of a plan or commitment to solve pollution problems in the valley. (Dedina Letter, 2018)

With many projects that have already been researched, budgeted, and planned – like the EPA project in section (5.1)— it seems that these are rarely followed through. The issue seems that it is not the lack of understanding on an infrastructure and planning level to fix the issue, but one of actually implementing it.

...it is clear that, had those projects been implemented already, the sixteen spills that have occurred since December 12th, almost certainly would have been prevented. Those spills, totaling well over a million gallons, including garbage, pesticides, industrial waste, and human sewage, demonstrate both the magnitude of the problem and the consequences of USIBWC's inaction. (Dedina Letter, 2018).

Once more, by the tone portrayed in this text, Mayor Dedina— as a representative for the San Diego community— feels cornered into an issue that they have no control over, and no power in fixing. With the lawsuit coming as a tactic to be taken seriously by the U.S government, albeit embarrassing the government by cries of neglect, this has been the last hope for serious change for the TRW and Imperial Beach. Dedina expressed:

My constituents and I are at a loss. This problem is real, it is getting worse, and we do not understand why the government's tactic appears to be avoidance. We are not going away until the Tijuana River Valley, and Imperial Beach, are clean. The time for USIBWC to take control of this pollution is long-passed. The City of Imperial Beach demands that USIBWC take meaningful action to remedy the discharges of pollutants in the Tijuana River Valley now. Responding to the Regional Boards proposal with an accounting of funds raised toward those infrastructure proposals is a critical first step. But we expect a complete resolution of the problem, and we expect it now. We look forward to your agency demonstrating its commitment to that resolution with action now. (Dedina Letter, 2018).

The urgency demanded by Dedina most obviously implies that he is serious and wants to be taken seriously, but to me it also may imply that he believes the solution is easy enough as just fixing a couple sewer lines to get rid of the entirety of the sewage that reaches San Diego. While it would absolutely aid the issue of sewage significantly, it would not completely fix the issue.

### 5.5 Maquiladoras & The Political Economy of Environmental Load Displacement from the Core to the Periphery

This section will focus primarily on Scott Frey's (2003) article: The Transfer of Core-Based Hazardous Production Processes to the Export Processing Zones Of The Periphery: The Maquiladora Centers of Northern Mexico. In this study, Frey (2003) focuses heavily on hazardous products, production processes, and wastes from the core, that are transferred to the peripheral zones of the world-system by transnational corporations (TNCs). Incorporating

Wallerstein's world systems analysis as described in section (3.1), Frey (2003) argues that very few peripheral countries have the ability to adequately assess and manage the risks associated with these hazardous transfers, and that TNC export practices increase health, safety, and environmental risks for peripheral countries, especially those who have established export processing zones (EPZs); similarly seen between the relationship of the U.S and Mexico at the border between San Diego and Tijuana.

Using the example of Maquiladoras, Frey (2003) asserts that political and economic forces operating at the intranational, international, and supranational levels have ultimately promoted the transfer of core-based hazardous industries to the periphery; as the Mexican state has pursued export-oriented industrial policies to attract industry, and in an effort to expand markets and curb production costs, many core-based TNCs have moved hazardous production facilities to sites located in Northern Mexico. Additionally, powerful international organizations such as the World Bank, the International Monetary Fund, and the World Trade Organization multilateral trading system have enacted policies promoting and supporting TNC practices and policies of the Mexican state (ibid., 2003: p.320). To many, the belief of these organizations is to promote fair and equal relationships on the grounds of shared prosperity; but the promotion of the dispersion of hazardous industries to the periphery has given grounds to debate this, while economic profitability overshadows the negative effects to the periphery.

National policies that followed scientific and public concern of the health, safety and environmental risks of industrial production gave rise to a host of regulations in the U.S. When corporations were no longer allowed, or became much more difficult to produce hazardous products in the U.S., they relocated to so-called 'pollution havens' located in the periphery, to curb production costs as well as avoiding pollution abatement costs (Frey, 2003). Although studies regarding this tend to be highly polarized, either claiming that pollution abatement costs have had a major effect on the movement of industries, or not at all; which leave the research community at a loss. But coincidences in studies such as many U.S corporations lobbying for NAFTA were major polluting industries (Anderson, Cavanagh, and Gross, 1993), and the U.S factories being sued for work-related illness and disease relocating to Mexico after a lawsuit, bears further questioning and consideration (Frey, 2003).

Though factors other than health and environmental regulations have also certainly contributed to the movement of industries, such as international economic conditions including exchange rates and comparative resource endowments, tax avoidance, labor, energy, transport costs, and overall business investment conditions (ibid., 2003). With



international organizations, national and international policy creating what Daly (1996:152 in Frey) calls an “absolute advantage” in industrial production, the interrelated forces of core-based TNCs have found it economically advantageous and increasingly accessible to transfer hazardous industrial activities to the border cities of Northern Mexico and export processing zones located elsewhere in the world.

Another important point made by Frey (2003: p.328) is that the environmental effects of maquiladoras take numerous forms: soil contamination and erosion, groundwater pollution and depletion, biodiversity loss, contamination of rivers and coastal regions, air pollution, threats to plant and animal health and survival, as well as changes and variability in climate. It’s important to note that these effects aren’t only local, but global because they are embedded in global commodity chains stretching across both time and space (ibid., 2003: 329). When seen in the light of a global ecological perspective on maquiladoras and export processing, these industries are not just contributing to environmental degradation in just one space; the flows are more commonly affecting the rest of the world. From what we can see from this case, is that maquiladoras contribute to water sewage pollution on both sides of the border and flow into rivers that ultimately drain out into the Pacific Ocean. But on a larger scale, “the inputs for maquila productions are dispersed throughout the globe. For example, the aluminum, copper, tin, steel ceramics, and plastics contained in maquila assembly components come from mining, milling, and fabrication in North America, Indonesia, and other parts of Southeast Asia, Africa, and South America” (Pena, 1997:p.295 in Frey, 2003: p.329). While hazardous environmental practices are relocated and processed elsewhere in the world, it can still ultimately have a backfiring effect in terms of the modern global setting. Can the age of environmental load displacement still be relevant, or will it always, ultimately, backfire?

#### 5.6 The Unequal-Relational aspect of the Border Area

This section will primarily draw upon Heyman’s (2007) work titled “Environmental issues at the U.S.- Mexico Border and the Unequal Territorialization of Value” with focus on his case study regarding the U.S- Mexico border and maquiladoras. Much like the previous section (5.5), Heyman (2007) also draws heavily on a world-systems perspective, and additionally one of unequal exchange within processes between the core and periphery. While unequal exchange primarily deals with resource flows, labor, and energy; Heyman (2007) takes a social-psychological view of the U.S.-Mexico border region and environment. He argues:

...we have unconsciously but significantly departed from standard geographic assumptions of public environmentalism. Such perspectives view the problems of the rich and poor nations as separate, and indeed they tend to view nations (equated with societies) as separate and coherent units laid over a preexisting “natural” terrain. Border problems in such a view are ones of incomplete connection and cooperation, and examples of failed or ‘bad’ development. (Heyman, 2007: p.341).

With an apparent divide between Mexico and the U.S, and contemporary issues such as border sewage, historically rooted socio-cultural dispositions in thinking and perception may make collaboration between nations a bit more tough. In his case study of the U.S.-Mexico border and maquiladoras, Heyman (2007: p.341) argues that the world-system perspective draws our attention to the processes that combine both human and biophysical actions in making and remaking spaces, and in this case, a bounded territory. Additionally, it tends to emphasize the unity of apparently differentiated people and places, and the causes of environmental disequilibrium in “successful” cases of development (ibid.,2007: p.341). With this perspective, he highlights the relationships between the apparently opposite “sides”—meaning spaces, social classes, cultures, levels of wealth and waste, etc. This is apparent in recent attitudes towards nations in light of issues, both political and environmental.

Further, Heyman (2007) describes the border as a setting for territorial-crossing consumption, pointing out that it is not just that the two terrains are divided, but that individuals within them also seek particular sets of resources causing peculiar dynamics in border urbanism. The different territories mean different things, depending on the audience. For example (Vila, 2000 in Heyman, 2007: p.333), to TNCs, Mexico may mean cheap labor and lax regulation; Mexico to the U.S. residents tends to mean both poverty and leisure, and a certain kind of exotic tropical otherness; and the U.S. to Mexican residents may mean power, honesty, and efficiency- as well as attractive wealth and modernity, but also a corrosive, immoral, and antifamilial, permissive individualism. Vila and Peterson (2003, in Heyman, 2007: p.338) additionally document how U.S ‘side’ residents focus on poverty, lax regulation, and backwardness as a cause of Mexican pollution, and Mexican ‘side’ residents focus on the unfairness of the United States coming to make money in their country but leaving behind social and environmental damage. Vila (2000) points out that this is a type of social construction created on the border that often leads to polarization, especially in the case of border sewage:

This is a genuine problem, which gives rise to a lot of arrogant hue and cry among American's who take sewage treatment for granted, and who also tend to hold stereotypes that all problems of dirt and poverty come from Mexico. In turn, Mexicans, overwhelmed by needs that surpass their collective fiscal capacities, feel bullied by the United States into taking action on the sewage problem which may not be the first demand of most households, although it objectively harms them. After negotiation between the two nations, the US funds most of the cost of the new infrastructure while a smaller, perhaps symbolic amount is paid by Mexico. US officials and activists perceive Mexico as not doing its share or taking responsibility, while Mexican officials find themselves bullied into choices they might not otherwise take by a superpower that is profiteering off the region as a whole. (Vila, 2000 in Heyman, 2007: p.340).

As complex as the border issue is, it is still a shared issue that needs to be dealt with, cooperatively. The best solutions would suggest some form of coordination, but with unequal funding, political participation, and social tensions across the border, environmental reform would be a project that needs to start from the ground up.

## 6. Discussion

### 6.1 The Contemporary 'Backfiring' of Environmental Load Displacement

The case of border sewage in the San Diego-Tijuana region, as both a past a present issue, has related much to what Hornborg (2011) describes as environmental load displacement (ELD), along with many forms of unequal exchange between nations in a world-systems perspective. As stated previously in section (3.1.2), ELD derives from the wastefulness and unsustainability of industrial resource management -- in this case the utilization of U.S-owned Maquiladoras -- and is made possible by displacing the environmental impacts to other areas, populations or social categories. While the concept of ELD has generally been viewed as a way for 'core' countries to reap the benefits of hazardous or environmentally unsafe practices to that of the 'periphery' without feeling the effects first-hand; it is my belief that ELD is becoming inescapable, and its effects will ultimately be felt globally.

In this specific case, the environmental burden of hazardous production sent to the periphery has gotten to the point where it has reached back to the core through shared waterways and improper handling through the lack of sufficient bi-national cooperation. Accordingly, the backfiring of ELD can be seen as a repercussion of globalization in an unequal world-system. As can be seen through the history of the

relationship between the two countries, policies promoting rapid industrialization, development in light of economic gain through foreign investment, and convenient utilization through power relations has led to the inevitable outcome of this issue. San Diego and Tijuana is a unique case in this sense, as a region connected by shared space and waterways, economic and political relations, and human mobility. While this ‘backfiring’ theory seems more likely due to its relative geographical location, it still works in other contemporary examples in relation to environmental degradation and pollution.

As Frey (2003) pointed out, when illuminated in a global-ecological perspective on maquiladoras and export processing, it is no longer just one space being affected by polluting industries; the flows are spreading further around the world as globalization allows countries to be more interconnected than ever before, and the effects are being felt in the same way. Creating a type of time and space complex, nothing is inherently far away or out of reach anymore, and negative impacts can be felt and seen as an example of this. One of the largest examples can be related to human-induced climate change through the meticulous burning of fossil fuels; while highly industrialized spaces tend to put out the most pollution, the effects will still be felt around the world. From our changing climate, to air pollution and water pollution into our oceans and streams, it is no longer ‘easy’ for humans to purposely displace environmentally degrading processes out of reach without it eventually backfiring in some way. The case of San Diego and Tijuana epitomizes this argument, as core-induced waste in the periphery has been mismanaged long enough for the effects to spread, and be felt back ‘home’.

## 6.2 The issue of Border Sewage in the U.S and Mexico: Whose fault is it?

So, whose fault is it? Who is responsible for the sewage that is polluting the Tijuana River Valley waterways, prompting beach closers for more than half of the year, and sickening citizens on both sides of the border who come in contact with it? Why is this still an issue? What we know is that the sewage is coming from the Mexican side of the border, it is Mexico’s infrastructure that’s failing, but it’s the United States’ negligence to address the issue. I believe that this question has to be looked at in more angles than just one to truly cover all the aspects of the matter, and to avoid just ‘pointing the finger’ in an indefensible direction.

### 6.2.1 Historical/Economic Significance to the issue of Border Sewage

Firstly, I will argue that this situation is a deeply rooted historical issue gone wrong, as a result of ‘bad’ development, as described by Heyman (2007) in section (5.6). But it is one that could only be accomplished by the unequal distribution of power in the world-system, backing up Wallerstein’s (2004) world-system’s theory, and through ecologically unequal exchange by means of the U.S. saving time and environmental space at the expense of their international neighbor, Mexico. By revisiting the historical relationship between the sister cities with knowledge of these theories, the roots of the issue become a bit more clear when seen from a human ecology perspective.

The U.S. has historically, and still presently, utilized Mexico as a cheaper form of labor and in turn has created a relationship that has led to inequalities, environmental degradation, and the rapid industrialization and eventual overpopulation of the border area in the South. Ranging from the need for national labor during WWII under the Bracero Program, the promise of maquiladora factory jobs under the Border industrialization & Maquiladora Programs, leading to the ratification of the North American Free Trade Agreement that essentially blurred the commercial borders between the U.S. and Mexico; Tijuana, with its convenient geographical location and concentration of business parks, became a powerful attractor for outward migration and created unplanned and exponential population growth resulting in many of the ecological problems the region is facing (Carruthers, 2008 & Guo, 2005). Apart from that, Maquiladoras have arguably also been used as a toxic dumping loophole for some U.S. TNCs as stricter national environmental policy emerged and prohibited hazardous production, while lax regulation allowed it, or didn’t enforce it as strictly in Mexico (Frey, 2008).

It can be argued that without this obvious power dynamic of North-South relations, or that of the core and periphery which promotes ‘development’ at the expense of the most vulnerable; this issue would not exist. Following the lead of their ‘big sister’, Mexico’s strive for foreign investment and development put them in a more vulnerable position. Without NAFTA, it can be assumed that there wouldn’t be uncontrolled growth at the border. Without the BIP, and the majority of U.S. TNCs, it can be assumed that there would be significantly less production factories and toxic dumping. The industrial relationship at the border is not one sided, and was not (although unequal) profited from on only one side. So in light of the border sewage issue, in shared space, and in shared relations, how can it still be seen as *mainly* Mexico’s responsibility to fix? Why is it that the U.S. is able to pave the way for this issue, profit highly from it, not *bat an eye* when polluting the environments of Mexico, but

become irate when it flows back up-stream? The U.S' power and presence is felt both historically and presently, and still seems to assume minor responsibility in the environmental issues that they have directly contributed to.

### 6.2.2 Transboundary Management and the Issue of Border Sewage

As stated in previously in sections (2.4.2, 2.4.3 & 5.4) governmental assistance on both sides of the border have worked to organize a mediating institution to the issue of transboundary sewage flows, yet is still highly criticized for not performing up to par. The IBWC, with both the U.S. and Mexico branch, has performed studies and written reports of how and why sewage gets spilled into the Tijuana river, how to fix it, and how much it will cost – although little to no action has taken place on it. With the recent lawsuit of Imperial Beach against the U.S. section of the IBWC, the problem states exactly this issue of inaction, and blames the U.S as well as Mexico for negligence on moving forward in a productive way. The EPA, as stated in section (5.1) has also outlined an environmental assessment of the deteriorated conditions of the major sewer collector lines in Tijuana. The assessment made clear that the study was only conducted to evaluate the impacts to the relevant environmental resources within the defined area of concern in the United States, but at the same time recognized that infrastructure must be fixed across of the border to be able to ensure a fix on the U.S side.

It seems as though there isn't a lack of organization and research, but just plainly a lack of action. The answer for the question of 'who takes responsibility?' is essentially no one... and that is the problem. While issues of funding seem to be the leading excuse, I believe it is the lack of assuming responsibility on both sides of the border that mainly contribute to this issue, and in turn, evades any improvement. In terms of money, it can be assumed that the U.S. has a higher means of investing towards fixing a long-standing and important problem effecting both sides of the border, but doesn't seem to make it enough of a priority to budget for and eventually implement. Could this be because the majority of the infrastructure improvement would be on the Mexican side? Even if that was the reason, then the U.S is still evading the problem, and showing more interest in saving money than the health of the environment and the community of the San Diego – Tijuana border region. While Mexico, readily offering even a 'symbolic' amount of 4.3 million dollars towards fixing the issue after encountering a devastating natural disaster; seems like the more proactive player in the relationship than the U.S evading responsibility and payment, while also claiming to have an 18 million dollar budget to build a 'symbolic' border wall between

the two countries. Political priorities, in this sense, seem to be more in favor of detaching from the Mexican nation, and the issue, rather than working together to fix it.

### 6.2.3 Us vs. Them: Social significance to the issue of border sewage

The relationship between the U.S and Mexico, both contemporarily and historically, has seemingly been one unequal in nature. It appears as though these sister cities work together by means of mutual benefit, but also in a segmented power relationship; almost like the U.S is the big sister and Mexico is the little sister. When examined using this metaphor, the big sister is more powerful, 'wiser', and tends to have an influence on the little sister. Yet in this example, the little sister is blamed for following the lead of her big sister, and the big sister assumes little influence in the matter to stay out of trouble. Like this metaphor of siblings, the conflict and motive arises from the lack of taking responsibility in a privileged position. Unlike the metaphor, though, the sister cities do not have an underlying familial kinship, and are very much distinguished in a divisive way. The border alludes social tensions in this way, as a narrative between us & them, right and wrong, better and worse.

The socio-cultural disconnect between nations is not a new occurrence, and is arguably a main contributor to the border sewage issue not yet being solved. Mentioned in both the EPA (2014) assessment and the IBWC (2017) report of the recent mass sewage spill, a main contributor to these reoccurring issues is lack of communication and cooperation. While matters of governmental collaboration is typically examined at the forefront of transnational issues such as this, the case of San Diego is different as the city and local government has taken a stand against the issue themselves.

Spearheading the border sewage issue in San Diego's corner, is mayor Serge Dedina, who has amplified the cries of victimization to the ears of Washington and the IBWC. Through both Dedina's (2018) letter to the IBWC and the local news interview done with KUSI, tones of anger, impatience, and confusion embody the distrust within their own government as well as the intentions of Mexico handling the issue. But it is my belief that misunderstanding mixed with socio-cultural tensions have more so illuminated the underlying issue of the adverse disconnect between the two nations sharing an environmental space. It seems like this relationship between the U.S. and Mexico is perceived by Dedina as one-sided, with Mexico riding on the back of the U.S. towards unlimited growth and prosperity while the U.S. suffers environmentally from it. This ideological disconnect is what I believe adds fire to the flames of what is already a heated tension on the border. It appears to be rarely acknowledged that the U.S. plays a large role, and has historically established, this toxic

relationship between the countries through a privileged position of power in the world-system. The two nations cannot, or should not, be perceived as global equals in the debate of ‘whose responsibility is it?’, because they simply are not; the relationship did not begin as equals, and it certainly is still not the case.

## 7. Conclusions

The aim of this thesis was to investigate and understand the historical context of the U.S. and Mexico in relation to the issue of transnational border sewage in the San Diego – Tijuana border region. Further, it was my intention to explore this issue in speculation of a world-systems approach, with ecologically unequal exchange explaining the possibility of the border sewage issue being a contemporary representation of environmental load displacement that has backfired. Investigated with the use of both primary and secondary data taking form of local and national U.S. governmental documents by the EPA and IBWC, letters from San Diego Mayor Serge Dedina and IBWC commissioner Edward Drusina, an interview with local San Diego news media, and the use of previously conducted research of the area; I was able to look deeper into the issue of border sewage in the region and better understand how this issue came about, what is causing it, and why it is still happening.

While not commonly expressed by the U.S, I argue that the research suggests the shared border sewage issue has very much relevance to the historical context and relationship between the U.S. and Mexico at the border. The U.S has historically, and still presently, utilized Mexico as a cheaper form of labor as well as a weaker player in the world-system, and in turn has created a relationship that has led to inequalities, environmental degradation, and the rapid industrialization and overpopulation of the border area in the south. Ranging from the need for national labor during the WWII era under the Bracero Program, and the promise of maquiladora factory jobs under the Border Industrialization and Maquiladora programs, leading to the ratification of the North American Free Trade Agreement that essentially aimed to blur the commercial borders between the U.S. and Mexico; Tijuana, with its convenient geographical location, willingness for foreign investment, has been led down a pathway of inherently ‘bad’ development, which has followed the result of overpopulation and prominent ecological issues in the region. In light of this, this research asserts the idea that the ecological crisis in the San Diego region is a contemporary example of environmental load displacement that has backfired. I argue that this case epitomizes this assertion, as core-induced waste in the periphery has been mismanaged long enough for the effects to spread back to the country of origin.



Additionally, it is suggested that this issue has yet to be solved due to a combination of the lack of political will and interest, as well as the lack of action and responsibility from both sides of the border. As this research mainly investigated U.S. perceptions of the issue apart from the binational nature of the IBWC, it can assert that there isn't a deficiency of organization and research, but just a lack of action. While issues of funding seem to be the leading excuse, I believe that it is the lack of assuming responsibility that mainly contributes to this issue, and in turn, evades any improvement, on a local and international level. Contributing to this ecological 'stand-off', I believe, is also the socio-cultural disconnect between nations. As tensions between the two nations have always been high, it is only heightened by the U.S' privileged perception of itself. Quick to point the finger, but the last to step-up, the U.S. assumes little to no responsibility in the environmental issues that it has directly contributed to.

The border sewage issue between San Diego and Tijuana is very complex, and does not have a straightforward understanding or easy fix. This is an important ecological crisis that needs to be handled on both sides of the border, and in my opinion hasn't, because we're still pointing fingers on who should be responsible for fixing it. In order for there to ever be a way forward, proper collaboration between nations by means of a mutually benefitting, other than economic, agenda needs to be established—for the wellbeing of our shared environment.

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