Historical Development of Environmental Racism in Louisiana's Cancer Alley

A Research Paper submitted to the Department of Engineering and Society

Presented to the Faculty of the School of Engineering and Applied Science

University of Virginia • Charlottesville, Virginia

In Partial Fulfillment of the Requirements for the Degree

Bachelor of Science, School of Engineering

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Spring 2024

On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Introduction

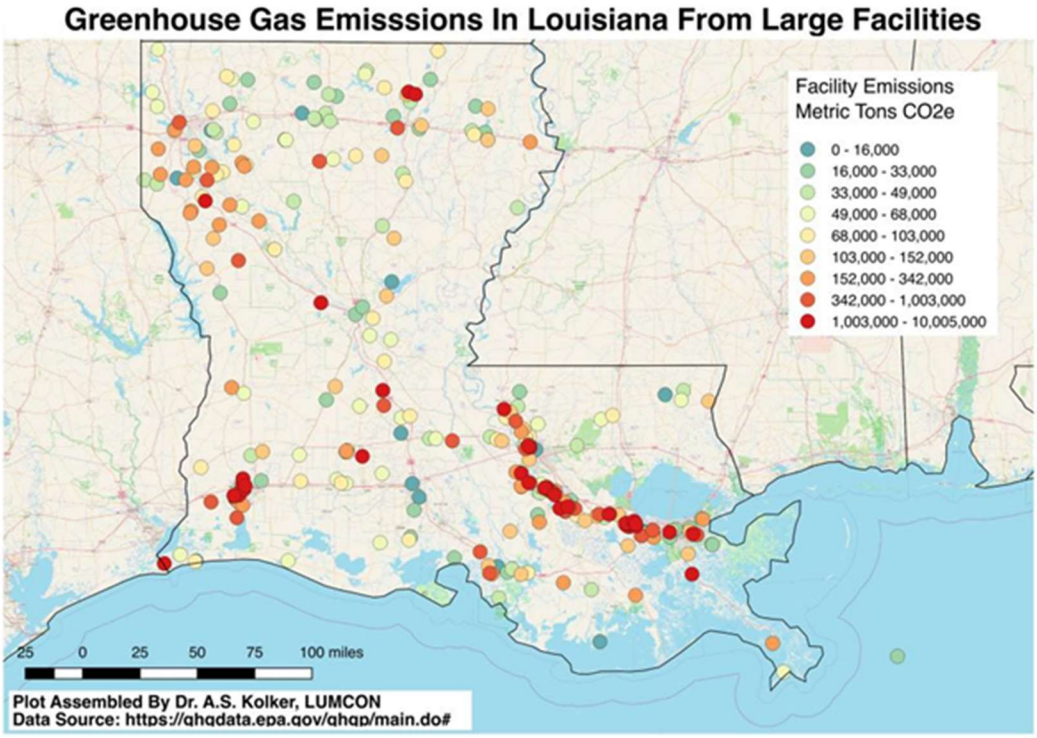
For most people, Louisiana is known for its rich culture; a unique blend of French, African, and Spanish influences that manifest through Mardi Gras celebrations, Creole cuisine, and jazz music. For those who actually live there, however, the reality can be much less idyllic - beyond the glitz and glamour of parades and the French Quarter is a state often defined by the petroleum industry, accompanied by "noxious smelling fumes," flares releasing "plumes of black and brown polluting smoke," and the release of carcinogenic and teratogenic pollutants with well-documented detrimental effects on health (Juhasz, 2024, p. 8).

The State of Louisiana is home to 15 oil refineries and almost 450 petrochemical plants (Juhasz, 2024). Within the state itself, exists a stretch of the Mississippi River, between Baton Rouge and New Orleans, that is occupied by over 150 petroleum processors, industrial plants, and petrochemical plants – a broad group of chemicals derived from petroleum and natural gas(Allen, 2006; Britannica, 2024). While there are many major facilities throughout the state, a large cluster with high production capacity can be seen in the Southeast (Figure 1). The Louisiana State government officially refers to this area as the "Industrial Corridor," but the residents have colloquially dubbed it Cancer Alley(Juhasz, 2024). While the state as a whole has cancer rates 17 percent higher than the national average, residents within Cancer Alley face many severe threats to their health (Singer, 2011). In addition to overwhelming anecdotal evidence from Cancer Alley residents, a recent study by Juhasz and colleagues found that residents in the Industrial Corridor experience "elevated burdens and risks of cancer, reproductive, maternal, and newborn health harms, and respiratory ailments" (2024, p. 4). Despite this, the concerns of the people living in Cancer Alley have been largely dismissed by

state officials, who maintain that “there is no evidence of adverse health outcomes” (Terrell & Julien, 2022, p.2).

Figure 1

Greenhouse Gas Emission from Large Facilities in Louisiana



Note: This figure shows the heavy concentration and processing capacity (reflected by CO_2 emissions) of large industrial facilities in Cancer Alley. From Human Rights Watch “We’re Dying Here,” by Antonia Juhasz, 2024, https://www.hrw.org/report/2024/01/25/were-dying-here/fight-life-louisiana-fossil-fuel-sacrifice-zone

Despite compelling initial evidence, there is a striking lack of research into the area’s ongoing human health crisis, which makes this a complex case to study. There are many conflicting reports as to whether cancer rates within Cancer Alley are actually higher than the

state's average(Simonsen et al., 2010). However, even if the evidence clearly showed elevated cancer rates, it would still be difficult to determine whether the phenomenon is a result of proximity to petrochemical facilities, poverty levels, inadequate access to health care, or some other root cause entirely (Terrell & Julien, 2022). What cannot be debated, however, is the history of the region resulting in one of the biggest petrochemical areas in the world. It is also a fact that Black communities disproportionately carry the burden of its presence. Examining the history of the region, it is evident that Black communities' proximity to industrial facilities is not a result of mere coincidence which begs the question: How have the growth of the petrochemical industry and environmental racism shaped the health crisis affecting Louisiana's Cancer Alley?

Historical Foundations and Current Realities

While the petrochemical industry did not move into the Cancer Alley area until the 1900s, the history of the region began much earlier. For millennia, the Chitimacha and Choctaw people called the banks of the Mississippi home until the 1700s when European Colonization began establishing plantations and displacing First Nation peoples (Orleans & Us, n.d.). Between Baton Rouge and New Orleans, the river was lined with indigo, cotton, and sugar plantations that flourished due to the access to river transportation and reliance on slave labor(Allen, 2006). For plantation owners, the goal of cultivating the southeast Mississippi delta was to generate economic output, as, according to Kang "the plantation was shaped by the settler's insistence on turning land into value" (2021, pg. 108). This mentality, when coupled with the region's reliance on high-output plantations and enslaved laborers led to its association with substantial economic output and industry. These pre-industrial historical factors defined the trajectory of the region and are reflected in its development, industrialization, and policy that its influence still

persists to this day. After the Civil War, the land around the Mississippi started to change ownership. While large plantations - many located directly along the river - remained in the hands of White owners, the Freedmen's Bureau provided numerous small land grants to groups of newly liberated slaves (Allen, 2006). Many of these grants were for properties adjacent to the larger ones, which resulted in a pattern of large blocks of land along the river under single ownership bordered by small communities of freed slaves and poorer white people (Allen, 2006; Meaders, 2021)

Crucially, this distribution of land set the stage for modern industries to embed themselves within the area. When the state of Louisiana established one of the world's most productive oil wells in 1901, oil companies began snapping up land in the area (*Gas and Oil In Louisiana*, n.d.). When making acquisitions, they would make offers on would buy large plots of land from single owners as this was often the most practical course of action; As a result, the land where oil companies took root and began to grow their industry abutted low-income Black communities(Allen, 2006).

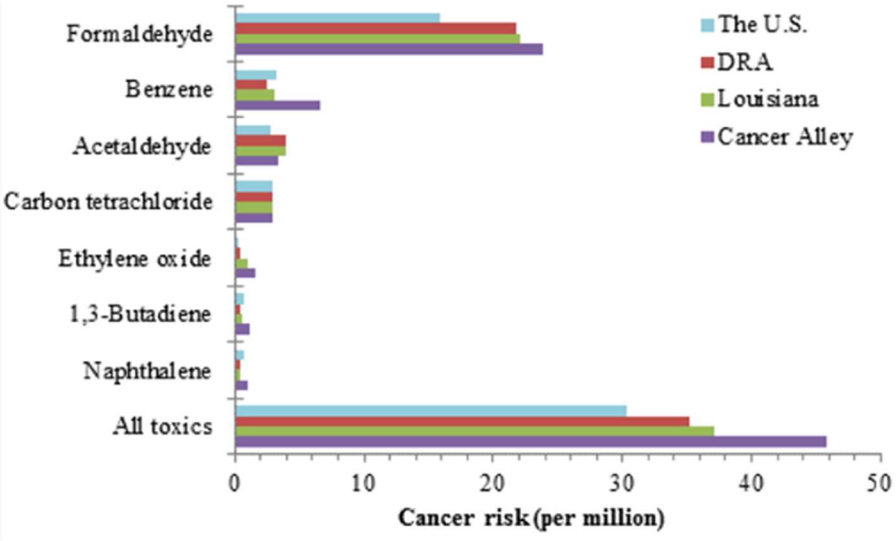
In the modern day and age, Louisiana is just one of many places with clustered petrochemical plants and oil refineries; although the United States is one of the world's leading producers, there are petrochemical plants found throughout the world(Domingo et al., 2020). Hence, many communities worldwide share similar experiences with the residents of Cancer Alley, as the adverse health effects they face are mirrored globally(Brender et al., 2011). Many adverse effects claimed by Cancer Alley residents have been observed and documented throughout the world in communities, all with close proximity to petrochemical facilities (Domingo et al., 2020). Regarding cancer, in particular, a 2020 study of such communities found significantly elevated rates of leukemia, bladder, liver, and lunger cancer in communities near

petrochemical and oil refineries in Taiwan, Spain, Italy, and the United Kingdom (Domingo et al., 2020).

Although government officials often cite a lack of evidence to justify their policy, it is painfully clear that the processing of petrochemicals releases many toxic and carcinogenic chemicals linked to adverse health effects, including many that have been proven carcinogenic (James et al., 2012). Some pollutants originating from industrial facilities in Louisiana (Figure 2), including formaldehyde, benzene, 1,3-butadiene, and many more are linked to increased risks of cancer; Notably, these are often found in higher concentrations within Cancer Alley(James et al., 2012).

Figure 2

Mean Cancer Risks for the U.S, Delta Region Authority (DRA) ,Louisiana, and Cancer Alley



Note: Many of these carcinogenic chemicals are found higher quantities related to higher risk in Cancer Alley compared to Louisiana and the U.S. as a whole. From "Uneven Magnitude of Disparities in Cancer Risks from Air Toxics," by Wesley James, 2012, *International Journal of Environmental Research and Public Health*, *9(12)*, p. 4370. https://www.mdpi.com/1660-4601/9/12/4365

Currently, almost half a million people live among these chemicals within Cancer Alley (Terrell & Julien, 2022). A report by Human Rights Watch observed greatly elevated accounts of cancer in communities, including breast, prostate, and liver cancer (Juhasz, 2024). In addition to increased incidence of cancer, teratogenic health effects have also been reported, including miscarriage, stillbirths, infertility, and overall low birth rates; severe respiratory ailments were also more common among Cancer Alley residents, such as chronic asthma, bronchitis, and childhood asthma, likely due to the ceaseless expulsion of pollutants from petrochemical plants(Juhasz, 2024).

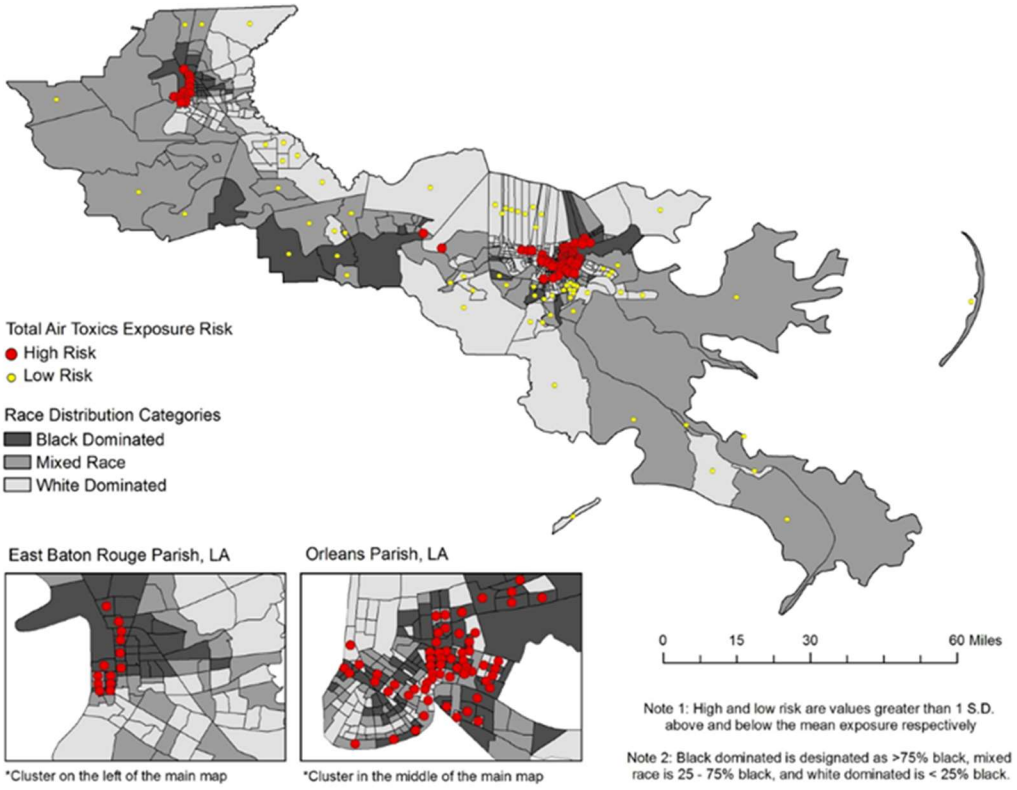
Demographically, the composition of Cancer Alley is 55% White and 40% Black contrasted to the state and national averages which are 64% White and 32% Black and 75% White and 12% Black (James et al., 2012). Within Cancer Alley, a significant number of census tracts within parishes are demographically 90% Black or greater. Moreover, it is apparent from Figure 3 that many of the areas within Cancer Alley include higher percentages of Black populations in areas of high calculated risk.

It is also important to note that although residents can smell the pollutants in the air and can see plumes of smoke coming off from the factory flares, it is often not possible to leave. Likely due to the property's proximity to industry, residents have reported they would not be able to sell their houses for enough money to relocate to another area. Additionally, some of the residents are direct descendants of former slaves who lived on the land after the Civil War and their families have lived in the area for generations, creating strong familial and cultural ties to the land they call home (Meaders, 2021). Additionally, regardless of the reasons they cannot or will not leave, these residents are entitled to live in their communities, and they are also entitled to do so with an adequate quality of life free from harmful pollutants. The continued failure to

reconcile these two rights is a direct result of environmental racism, industry, and policy which I analyze below.

Figure 3

Cumulative Risks of all Toxins in Cancer Alley tracts by Race



Note: Calculated exposure risk overlayed over population demographics shows areas with higher risk are generally mixed race or Black dominated . From "Uneven Magnitude of Disparities in Cancer Risks from Air Toxics," by Wesley James, 2012, *International Journal of Environmental Research and Public Health*, *9(12)*, p. 4373. https://www.mdpi.com/1660-4601/9/12/4365

Methodology

Environmental racism can provide a framework for understanding Cancer Alley as a combination of political policies, social practices, and other factors that all contribute to creating and upholding a system where communities of color are at a disadvantage. The historical context of the area is important for understanding why the region attracted so many industrial facilities, and how the facilities ended up bordering so many Black communities. Although the history of slavery in the region set the stage for the demographic makeup of the area, the analysis will largely be focused on the 20th century to today as this was the time that environmental justice challenges started to take root and grow.

Environmental racism is defined as "environmental policies, practices, or directives that differentially affect or disadvantage (whether intentionally or unintentionally) individuals, groups, or communities based on race or colour"(Bullard, 2002, p.2). Bullard also classifies it as a form of institutionalized discrimination where the actions or practices of a dominant racial group negatively impact the members of the minority group (2002).

The conditions that led to the establishment and expansion of the petrochemical industry within Cancer Alley – including geographic, economic, and political motivations – will be outlined first to understand why this area was prime for this industry. Next, societal standards and practices occurring in tandem with the growth of the industry will be analyzed to understand how industrial facilities ended up bordering Black communities. The interaction of these factors will be evaluated to see how environmental racism applies to the crisis at hand. Lastly, more recent government regulations and the failure to enforce them at the state and federal level will be discussed to understand how environmental racism has continued into the 21st century to create the environment seen today.

This research will be compiled mainly through secondary and tertiary sources about the history of the area. Literature about environmental racism both generally within the United States and Cancer Alley specifically will be used to provide insight into the complex intersection of industry and society. Lastly, articles and reports by activists and activist groups will be used to understand the current state of Cancer Alley and to investigate the shortcomings of more recent environmental policies and government action. With this methodology, both a complete history of the region and an understanding of how the Cancer Alley Region came to will be uncovered and contextualized by the pollution, race, and health risks that define environmental racism.

Tracing the Roots of Environmental Disparity

The story of the petrochemical industry began in 1901 when the first oil well in the state was established. Shortly after, in 1909, the first oil refinery was built in Baton Rouge, which lies at the eastern end of Cancer Alley; this refinery still operates today and is one of the largest in the North American Continent (*Gas and Oil In Louisiana*, n.d.). The "rapid exploration and development" within the early 1900s is partly due to the natural resources and landscape of the area (Colten, 2012, pg. 92). Louisiana has an abundance of oil reserves, natural resources necessary for oil production, and the Mississippi River which allows for the navigation of large ships (Colten, 2012). Moreover, the Louisiana state government further bolstered the appeal for new oil industries in the area through indirect subsidies and accommodating policies for the plants (Colten, 2012). Between 1940 and 1980 World War II brought rapid growth of the industry through federal funding, and war production board investments invigorated the expansion and creation of new refineries (Colten, 2012). By 1947, Louisiana was home to 25

refineries and 147 chemical facilities, but by 1977 these grew to 57 and 236, respectively(Colten, 2012).

Technological advancements, discoveries, and public demand for refineries and other industrial facilities explain why the industry was able to grow so rapidly, but it does not offer insight as to how the demographic makeup of Cancer Alley came to be. Along with the history of slavery, other racist societal standards and practices engineered rural areas with higher Black populations and little political power. In general, the placement of environmental hazards, like waste sites or certain industrial facilities, end up near Black and low-income communities with little political power. A groundbreaking study in 1987 by the United Church of Christ found that the "proportion of minority residents in communities with a hazardous waste facility is about double the proportion of minorities in communities without such a facility" (Blodgett, 2006, pg. 648). This happens largely because state zoning regulation often favors wealthier white communities leading to restrictions on industrial land use in these areas(Blodgett, 2006). In the case of Louisiana, local parishes, the equivalent of a county, have power over local regulations for land use and zoning (Mizutani, 2019). Within Cancer Alley, there are many unincorporated communities, originally founded by former slaves, with a high Black population; unfortunately, they have little to no political power within their parishes and have no control over how their land is zoned or used (Mizutani, 2019). To make matters worse practices like redlining forced more segregation within Louisiana communities. Redlining is a process where institutions, like banks, refuse loans or insurance to areas where financial risk is deemed poor (Mizutani, 2019). This tactic was widely used in New Orleans to keep white residents in areas of high elevation and push Black residents to areas of low elevation(Castellon, 2021). In general, this practice

prevents poor African Americans from moving into primarily white neighborhoods, and in some cases, pushing them further out into rural areas and unincorporated towns (Castellon, 2021).

Before moving into rural areas, industrial facilities were relatively close to populous areas with large buffers between them and residential spaces. However, as the industry grew, refineries continued to push into more rural areas, and the buffer zones between plants and residential spaces decreased as "new industrial construction was not inhibited by zoning or other regulations from building near populated areas" (Colten, 2012, pg. 6). In these areas, the neighboring communities were predominately Black (Colten, 2012). Even though new industrial facilities pushed closer and closer to rural communities as time went by, little was done to protect the well-being of said communities. While the industry was initially self-regulated with the notion that they would select safe locations and control their pollution outputs, these good intentions quickly gave way to progress and industry as "accidents and environmental contamination increased in tandem with the growth of the … petrochemical corridor" (Colten, 2012, pg. 9). Colten refers to these rural areas with large Black populations as environmental sacrifice zones – an area that has been "degraded by modern industrial societies in the pursuit of economic and military gain." (2012, p. 1).

Ultimately, freed slaves were able to create their own unincorporated communities, which continued to grow as racist practices continued to push Black residents into the rural areas. Industrial facilities were able to capitalize and move into the regions with low political power. The support from the government and their laissez-faire attitude toward the regulation of facilities led to Black communities being stuck within environmental sacrifice zones. This intersection of history, societal standards, technological development, and government action can be interpreted as environmental racism as they all played some hand in contributing to this

environmental inequity. However, there are more recent events that have bolstered the environmental racism felt by the region. This is largely on the part of the Louisiana State Government and the Federal Government failing to protect citizens under existing policies and limiting the political power of Cancer Alley residents.

Government Policy and Regulatory failures: Perpetuating injustice

The Petrochemical industry was largely unregulated until 1970 when the Environmental Protection Agency (EPA) was established due to growing concern about industrial pollution across the county(Juhasz, 2024); the Louisiana Department of Environmental Quality was not Established until 1984(Juhasz, 2024). The Louisiana state government and the federal government both contribute to the environmental racism imposed on the region through their complete lack of oversight - and in some cases complete disregard - when it comes to regulating emissions from industry and protecting the health of fenceline communities.

The main branch of the Louisiana State government that regulates the emissions of air toxins within the state is the Louisiana Department of Environmental Quality (LDEQ). It is up to the State to enforce the standards set by the EPA; however, the state government has failed to do so and, in some cases, seemingly refused to do so. The State of Louisiana is ranked in the lowest quartile of all US states for the enforcement of the Clean Air Act (CAA) and the Resource Conservation and Recovery Act (Juhasz, 2024). In 2021, an investigation by the Louisiana State government exposed the disregard on behalf of the LDEQ to adequately track the reported emissions from industrial facilities and enforce penalties for sites exceeding emission standards (Juhasz, 2024). They found that some facilities failed to submit reports entirely and, in some cases, it was poorly tracked whether or not civil penalties were even paid (Juhasz, 2024). Even if penalties and civil penalties were tracked and well-enforced, the LDEQ’s fines are often too

small to deter emission violations; a 2021 study from 2004 to 2014 found that “punishments for environmental violations were rare and ineffective at preventing further violations, finding fault with both state and federal officials” (Juhasz, 2024, p. 70). In 2022, a bill was proposed to the State’s House of Representatives to increase the fees for exceeding emission standards, but it did not pass. The State has a culture of prioritizing the protection of industrial endeavors at the sacrifice of public and environmental health. This trend is echoed by state officials, scholars, and even residents of Cancer Alley themselves; the Human Rights Watch 2024 report on the region found community members felt that the LDEQ and the Louisiana Department of Health were “deriding and undermining their concerns” (Juhasz, 2024, p. 70).

Blame for the lack of regulation of emissions cannot be based solely on the Louisiana State government. The federal government is responsible as well. According to the official website of the United States Environmental Protection Agency, “the mission of the EPA is to protect human health and the environment,” and to accomplish this goal they “develop and enforce regulations” (US EPA, 2013). It is the EPA’s responsibility to ensure that federal mandates and programs are applied nationwide (Juhasz, 2024). This is mainly done through delegating its roles to state agencies; for Louisiana, the EPA has delegated its responsibilities to the LDEQ. However, they fail to ensure that the LDEQ adequately enforces regulations and thus fail to protect and uphold its mission statement (Juhasz, 2024). Accordingly, many recommend that the EPA investigate where or not they should withdraw state authorization for the enforcement of the CAA and revoke authority from the LDEQ; the EPA has never revoked a state’s authorization, but it has been seen that investigation from the federal level can show improvement from the state in response (Juhasz, 2024).

Even after the formation of the Environmental Protection Agency, marginalized communities within Louisiana disproportionally bear the consequences of polluting industries. Laws and regulations aimed at combating pollution do little to rectify racial disparities brought about by the presence of this technology. The lack of concern and urgency only upholds the environmental racism that characterizes the area. Residents of Cancer Alley have been seeking environmental justice - tools, strategies, or policies to get rid of unfair or inequitable environments - for decades, but their lack of political power proves this to be a difficult task (Bullard, 2002). Some of the Cancer Alley regions are still unincorporated, and many are low-income making it hard for them to obtain legal aid(Juhasz, 2024; Meaders, 2021). Unfortunately, the Louisiana state government has actively tried to decrease their access to resources that can help them seek environmental justice. This is evident through regulations placed against the Tulane Environmental Law Clinic (TELC). In the 90s, the Shintech company sought to build a PVC plant in Convent, Louisiana. A group of residents concerned about the emission of carcinogenic pollutants accompanying the plant enlisted the help of the TELC students to provide legal aid and were successful in preventing the plant from being built (Castellon, 2021). In 1998, soon after the cancelation of the project, the Louisiana Supreme Court implemented restrictions on student law practice that limited the scope of the community that they could serve (Castellon, 2021). Adding insult to injury, further regulations against practicing law students were proposed by elected officials. These included prohibiting law students from practicing environmental law and prohibiting university clinics with federal funding from suing government agencies; luckily neither of these attempts were successful (Castellon, 2021).The attack against the TELC reflects the values and position of the Louisiana state government. By both proposing and imposing stringent regulations onto groups trying to represent underserved

communities it's evident that their interests lay in favor of the petrochemical industries, rather than the well-being of many of their constituents(Blodgett, 2006). Through these means, the LDEQ perpetuated the environmental racism felt by Cancer Alley.

Today, Cancer Alley is characterized by low-income-Black communities living with pollution which subjects them to adverse health conditions and high risks of cancer. This region was shaped by the environmental racism of the past as the industrial power of the area grew rapidly, but when state and federal governments failed to protect communities, they further perpetuated environmental racism into the present.

Conclusion

Environmental racism highlights how the intersection of race, history, technology, and policy results in people of color having to carry a disproportionate load of environmental burdens. Cancer Alley exists today because of environmental racism both in its past and present. The discovery of oil and the growing technological advancements brought about by it led to a rapid increase in the need for petrochemicals and other industrial facilities. Louisiana's landscape, history of slavery, societal standards, and government interest in the industry all contributed to the environmental racism still felt by Cancer Ally communities today. Even in the face of this, Cancer Alley communities still push for environmental justice. With little political power, these communities result in largely grassroots activism to seek environmental justice and bring awareness to the issue (Blodgett, 2006). For example, Rise St. James of St. James Parish, is a grassroots community organization currently fighting a proposed industrial complex that would include 14 petrochemical facilities (Castellon, 2021); they are currently calling upon President Biden to revoke the permits for the facilities and "stay true to his commitment to environmental justice" (*Rise St. James*, n.d.).

In order for residents to feel healthy and safe within Cancer Alley, it is imperative that justice is sought out at the local, state, and federal levels. Residents should have the power to influence local ordinances and zoning decisions, state governments must uphold federal regulations, and the federal government must create stringent regulation and ensure state governments enforce them. While there is no substitute for legislation and policy, action can be taken on the individual level. Individuals can educate themselves, speak up, and donate to community organizations that seek environmental justice in Cancer Alley. Most importantly, individuals can vote; The EPA is severely underfunded and understaffed contributing to its inability to adequately enforce federal laws like the Clean Air Act (Juhasz, 2024). Even if you don't reside in Louisiana, you can vote for representatives who will fight for adequate resources for the EPA and alternative sources of energy to phase out existing petrochemical operations.

Although the residents of Calley Alley have been fighting for decades, there is no reason to give up now. As recently as January 2024, Human Rights Watch published a Case study of the region within which they directly call upon the President of the United States, the US Senate, The EPA, and the Louisiana state government to address environmental and health issues. Local organizations work tirelessly for the health of their community, so at the very least, we can continue to raise awareness on this issue and prevent environmental racism from persisting into the coming decades.

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