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The Perspective of Riverkeepers and Environmental Groups on Poor Water Quality in Georgia

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THE PERSPECTIVE OF RIVERKEEPERS AND ENVIRONMENTAL GROUPS ON POOR WATER QUALITY IN GEORGIA

by

JACOB CRAWFORD

(Under the Direction of Chad Posick)

ABSTRACT

Riverkeepers and environmental groups currently face the complex task of defending watersheds. In Georgia, these efforts are complicated by the vast geographical and racial diversity within the state. This study examined the riverkeepers and environmental groups need to improve advocacy abilities to defend communities they serve from poor water quality, what communities in Georgia are being impacted by poor water quality, what disconnects exist between riverkeepers, environmental groups, and governmental agencies, and how COVID-19 has challenged the riverkeepers and environmental groups. Using qualitative interviews with eleven riverkeepers and environmentalists, the findings suggest that collaboration with riverkeepers, enforcement of current policy, defending communities of color, and educating the public on water quality are all critical to maintaining watersheds in Georgia. Minoritized groups, instances of environmental racism, and other challenges presented barriers to water conservation. The riverkeepers and environmental groups provided strategies to address these barriers and improve water quality.

INDEX WORDS: Riverkeeper, Environmental group, Watershed, Water quality, Communities of color, Environmental racism, Neoliberalism, Flint Michigan, Sustainability, Collaboration, COVID-19, Government policy, Enforcement, Minoritized groups, River conservation, Education

THE PERSPECTIVE OF RIVERKEEPERS AND ENVIRONMENTAL GROUPS ON POOR WATER
QUALITY IN GEORGIA

by

JACOB CRAWFORD

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DEDICATION

This study is wholeheartedly dedicated to my mom and loving family. Without your support and guidance, this journey would not have been possible.

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TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS.....	3
LIST OF TABLES.....	5
LIST OF FIGURES.....	6
CHAPTER	
1 INTRODUCTION.....	7
2 LITERATURE REVIEW.....	11
Environmental Racism.....	11
Neoliberalism.....	14
Sustainability.....	15
Environmental Degradation.....	17
COVID-19.....	20
3 METHODS.....	22
Setting.....	22
Participants.....	22
Data Collection.....	25
Data Analysis.....	26
4 FINDINGS.....	27
Collaboration With Riverkeepers.....	27
COVID-19.....	29
Government Policy and Enforcement.....	32
Most Pressing Problems of River Conservation.....	34
Educating the Public.....	35
Minoritized Groups.....	37
Conclusion.....	42
5 DISCUSSION.....	45
Limitations and Future Research.....	46
REFERENCES.....	49
APPENDIX: INTERVIEW QUESTIONS.....	54

LIST OF TABLES

	Page
Table 1: Demographics of Riverkeepers and Environmentalists.....	22

LIST OF FIGURES

	Page
Figure 1: Location of Riverkeepers and Environmentalists.....	23
Figure 2: Georgia’s River Basins.....	24

CHAPTER 1

INTRODUCTION

Conservation work, especially in terms of water quality, often excludes the use of the social sciences. Social sciences, specifically sociology, need to be included in conversations about water conservation. For instance, Bennett et al. (2017:57) point to the critical importance of social sciences being included in discussions of conservation issues because of the complex social dimensions of conservation. Due to the fact that someone's socioeconomic status, race, and other factors have tangible influences on if they have issues when it comes to water quality, social sciences can and should inform efforts to improve water quality. Natural sciences alone may be able to see what is occurring along a river or what is in the water a person is drinking. However, it can be challenging to see who is being impacted by poor water quality or to promote potential solutions to help without social science methods. Kareiva and Marviera (2012:963) describe a more integrative approach in which the centrality of humans is recognized in the conservation agenda.

To incorporate social sciences in the conversation of water conservation means identifying who is being impacted by poor water quality. Typically, poor water quality tends to arise in communities that face economic hardships. Hahn, Kerstein, and Falk (2017:10) emphasize this by including factors such as geography, gender gaps, economic segregation, and lack of economic mobility in their analysis. This can be emphasized even further when these communities of color lack the resources to defend themselves from corporate greed.

One type of group attempting to answer these questions is riverkeeper organizations. A riverkeeper organization is a nonprofit organization that has the job of advocating for the communities in a watershed, addressing various environmentally related issues, such as degradation events committed by corporations, and educating the public on the current status of their specific watershed. A watershed "is an area of land that channels rainfall and snowmelt into creeks, streams, and rivers, and eventually to outflow points such as reservoirs, bays, and the ocean" (NOAA 2017). The original riverkeepers were fishermen along the polluted and neglected Hudson River in New York in the 1960s. The river pollution

was described as "run-down factories choking it with hazardous waste, poisoning fish, threatening drinking water supplies, and ruining world-class havens for boating and swimming" (Riverkeeper 2022). The fisherman banded together and created an association to combat the pollution. This same association is now known as Riverkeeper, which is one example of a riverkeeper organization around the world. These organizations have different names, such as waterkeepers, but generally, their missions of protecting watersheds and improving water quality for their communities are the same. Eventually, their work turned into policy, and a decade later, the Clean Water Act (CWA) was passed. The CWA is described as:

The basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. Clean Water Act became the Act's common name with amendments in 1972 (EPA).

The research could be used to defend communities of color and educate those who might be making decisions regarding policy, both at the local and state level. A community of color is a community that shares a distinct racial identity, typically a minoritized population. It is important to note that providing information and resources to communities of color about the harmful impacts of poor water quality can be a catalyst for improvement. No one wants to have contaminated drinking water, stare at a river full of debris, or not be able to use the beautiful bodies of water around them. To prevent these instances from happening or correct what is already an issue, we must first understand what is going on through these critical groups. This research will approach the issue through the eyes of those who help keep our water clean and usable, the environmental groups and riverkeepers in the state of Georgia.

The problems that this research will address are the situations that riverkeepers and environmental groups face. This includes what resources they need to improve their advocacy ability to improve water quality in their watershed, what communities in Georgia are facing poor water quality, what disconnects occur between the groups and government agencies, such as The Environmental Protection Agency (EPA) and The Environmental Protection Division of Georgia (EPD), and how COVID-19 has challenged the groups. The rivers must remain clean and usable for those who live in each

respective watershed. The riverkeepers and environmental groups are usually third parties defending their respected areas and often have reporting services for community members. When a new issue arises in a watershed, someone in the community reports it. These reports can vary from illegal trash dumping to the beginning of a fish kill or other illegal activity.

These groups of people defending our watersheds know them better than anyone, yet they are often overlooked in research about water conservation. Prior research focused on this subject has government organizations, such as EPA or Georgia's EPD, as the main focus. If riverkeepers or environmental groups are mentioned at all, their work on sustainability and prevention of environmental degradation is not usually the focus. Instead, court cases are the discussion (Anderson 2021). Water conservation and environmental research usually focus on more significant issues, such as climate change (Latkin et al. 2021). Although that research is essential, there are more pressing issues at the local level, such as water quality and people falling victim to large-scale business. This overlook leads to research on policy-making through the eyes of the community, but the riverkeepers and environmental groups seem to be missed. The riverkeepers and environmental groups often advocate for these communities that are impacted by pollution and know how to make strives at improving river health and poor water quality. Making the issues known, specifically how they occur in Georgia, can be the first step in solving poor water quality.

The COVID-19 pandemic has amplified poor water quality problems. At the beginning of the pandemic many of the riverkeepers and environmental groups had to shut down due to safety concerns. Despite efforts from many of both the riverkeepers and environmental groups to continue combating environmental concerns, variants of COVID-19 still play a major concern across the world. This uncertainty has caused riverkeepers and environmental groups to adapt their business model to the pandemic and plan for the future.

The main goal and scope of this research is to provide information on poor water quality in Georgia and shed light on what is occurring through the eyes of riverkeepers and environmental groups. The environmental groups are primarily nonprofit and volunteer-based organizations with similar goals

and relations to riverkeepers. In this research, I hope to find the answers to the following questions: What do the riverkeepers and environmental groups of Georgia need to improve their advocacy abilities, specifically to help defend the communities they serve from poor water quality? What communities are being impacted by water quality issues in Georgia? Is there a disconnect between riverkeepers, environmental groups, and governmental agencies (EPA/EPD)? Finally, has COVID-19 challenged the riverkeepers and environmental groups? This research will provide a unique perspective on rivers and poor water quality in Georgia.

The state of Georgia was chosen for the project due to its unique diversity. According to the latest census data, Georgia's white population sits at 60.2%, Black sits at 32.6%, Asian sits at 4.4%, and Hispanic or Latino is at 9.9% as of July 1st, 2021 (United States Census Bureau). The diverse population that Georgia has allows for comparisons to be made between different riverkeepers and environmental groups that serve different populations. An organization that serves a community that is diverse in terms of race might have completely different experiences than one who serves a more homogenous population.

The riverkeepers and environmental groups attempt to defend our watersheds from individuals who have little regard for water quality. While doing so, it is important to remember that taking on large corporations takes money, and collaboration from a multitude of different organizations. The riverkeepers and environmental groups are nonprofit organizations that do not have unlimited funding. The groups use what little resources they have to attempt to keep their specific watersheds healthy and defend the communities they serve.

CHAPTER 2

LITERATURE REVIEW

In this chapter, I will discuss the vital research that has been conducted on the topics of environmental racism, neoliberalism, sustainability, and environmental degradation. I will define environmental racism and its relation to communities of color's demand for a political voice. This term, communities of color, is also how I will refer to communities with a prevalent minoritized population throughout the thesis. I will also discuss the ideology of neoliberalism and its actors. This will relate to how neoliberalism has allowed environmental degradation to occur. I will discuss sustainability and how current environmental practices are not sustainable for the future. I will then discuss environmental degradation and how neoliberal agendas and environmental racism influenced the situations at the national and local levels. Finally, I will give an overview of the COVID-19 pandemic.

Environmental Racism

Environmental racism is “any policy, practice, or directive that differentially affects or disadvantages (whether intended or unintended) individuals, groups, or communities based on race or color” (Bullard 1993:1037). This has resulted “in minoritized and low-income communities facing disproportionate environmental harms and limited environmental benefits” (Taylor 2014:2). As sociologists, we know that race can be a determining factor in many social issues, and environmental racism is no exception. The research on environmental racism shows that communities of color often fall victim to poor water quality disproportionately because a lack of political power, economic mobility, and poverty (Pace et al. 2022).

Bullard (1993:1039) describes, “All levels of government have done a poor job protecting people of color from the ravages of pollution and industrial encroachment. It has thus been an uphill battle convincing white judges, juries, government officials, and policymakers that racism exists in environmental protection, enforcement, and policy formulation.” Bullard explains the picture that communities of color are carrying the burden of the negative consequences of industry and pollution. This is at the expense of communities of color because all levels of government, federal, state, and local, have

directly allowed this to happen. An uphill battle exists between these communities, those that defend them, such as riverkeepers, environmentalists, the organizations creating the harmful impacts, and different levels of government.

As this uphill battle between low-income communities of color and government started, the environmental justice movement was born. Romero and Margolis (2005:148) describe this movement as “a political response to the deterioration of the conditions of everyday life as our society reinforces existing social, particularly racial, inequalities.” As this push for environmental justice started, the research followed. The United States General Accounting Office conducted a study responding to civil rights and environmental activists to examine disparities in toxic facilities in the southern United States. The United States General Accounting Office (1983:3) found that “Blacks make up the majority of the population in three of the four communities where landfills are located. At least 26 percent of the population in all four communities have income below the poverty level, and most of this population is Black.”

Mohai (2018) discusses that the mean income levels, mean housing values, and other characteristics of the communities were considered in a multivariate statistical analysis. The racial composition of the communities was found to be the best predictor of which communities contained commercial hazardous waste facilities and which did not. Mohai (2018) also discusses another example of environmental racism impacting a groundbreaking study conducted in 1990. This study was one of the first examples of environmental justice for Blacks, as the survey brought the public's attention to the forefront of the media. The survey made comparisons in two ways; first by comparing Blacks and whites by socioeconomic categories and second by race (Mohai 1990:754). The survey looked at how environmental activism differs between Blacks and whites. The data showed no differences in the level of concern for the environment but rather pointed out that environmental activism was instead limited by socio-demographic factors, such as education, income, occupational status, and knowledge of government.

Other studies followed, and the understanding came to be that these communities of color needed grassroots involvement to raise their political voice, which the riverkeepers and environmental groups attempt to do. Grassroots organizations often start from nothing and have goals that often involve promoting change in a particular community. These communities of color need this, and since they demand a political voice, this is how it begins. Godsil (1991:426) stated, "To keep politicians from lobbying agencies to prevent equitable siting, a vocal grassroots effort is needed to raise the political capital of minorities. Minoritized communities are beginning to demand political accountability on issues of environmental risks."

Environmental racism can be seen in other types of pollution as well. Washington (2020) recently published, *A Terrible Thing to Waste: Environmental Racism and Its Assault on the American Mind*, and it describes environmental racism to perfection. Washington (2020:123) cites information on how African Americans disproportionately live in areas within half a mile of an oil well, gas well, or oil processing plant. Washington also notes other forms of pollution that one might not necessarily think about. For instance, Washington (2020:122) looks at New York City and how trash collection is completed routinely in white neighborhoods, and there are harsh fines and signage to eliminate noise and pet pollution. When comparing these to nonwhite neighborhoods, Washington (2020:122) notes that the situation is the opposite; trash collection is not routine, and any fines that could be enforced are not.

Dumping is another issue that Washington discusses in her book, and one example discussed is in Fort Myers, Florida. A historically Black community, called Dunbar, was victim to the dumping of arsenic-filled sludge in the heart of their community. This created an issue where children would often play in and even drink tainted water. The EPA ran testing on the dumping site and found that "the toxic sludge dump exceeded the EPA safety levels by five times" (Washington 2020:143). If we look back at Bullard's definition of environmental racism, this is just one example of low-income communities being disproportionately affected by these issues. The issues discussed can all play roles in river conservation and water quality. If there is dumping occurring along or in a river, the riverkeeper or environmental

group will want to know about it. This process of targeting these communities with a lack of political power are generally impoverished and is the direct result of the withdrawal of government.

Neoliberalism

Since the push of neoliberalism in the 1970s, the state has created a system of deregulation, privatization, and the withdrawal of government (Harvey 2005). Most notably, US President Ronald Reagan and British Prime Minister Margaret Thatcher pushed campaigns on deregulating government for the first time on public platforms (Steger and Roy 2010). Deregulation is the removal and withdrawal of government activity in the market. Politicians that argue for deregulation as a tactic for economic growth see regulation as overbearing and a hindrance to economic opportunity (Kenton 2022). Deregulation then allows for extreme levels of privatization, which is the private function of the business. In *The Value of Everything: Making and Taking in The Global Economy*, Mazzucato (2018) discusses how deregulation allows for increased levels of austerity. Mazzucato (2018:232) describes austerity as "the logical conclusion that government should be curbed, stripped back: perhaps by budget cuts, privatization of public assets, or outsourcing." This thought is based on fear of the government spending money ineffectively. This ideology of privatization and withdrawal of government promoted by the Reagan administration and Prime Minister Thatcher only allowed those living within the country to suffer due to their socioeconomic positions in society.

A government engaged in neoliberalism goes to create markets, even where one could argue it should not. Privatization in healthcare, land, and even drinking water have all been created with the goal of profit. Branning and Vater (2016) describe the health system in the United States as the only profit-motivated and privately insured healthcare system in the world. Perhaps it is no coincidence that this country also has the most expensive healthcare of any nation (Turner 2007). The goal of neoliberalists is not to protect the people living on the land but rather to privatize the free-market system that it has created.

The issues of environmental racism discussed in the previous section are one example of the impacts of a neoliberal agenda. Going back to the fear of government, Mazzucato disagrees that

government spending is wasteful and relies on the Keynesian approach. Mazzucato (2018:248) states, "Every pound that the government spent would be multiplied because the demand it created would lead to several rounds of additional spending." This additional demand and spending are known as the multiplier effect. Also described by Mazzucato (2018:248), this is "the effect that an increase in expenditure has on total production." This multiplier effect disagrees with the neoliberal point of view, as government spending could positively impact nonprofits, such as the riverkeepers or environmental groups, to help keep our environment clean.

Even recently, presidential administrations are curbing regulations in the environmental sector. The Trump Administration undermined governmental agencies, blocked information to justify regulation, and deconstructed environmental regulation to promote the goals of neoliberalism (Perls 2021). The goals of neoliberalism are to liberate individual entrepreneurial freedoms within an institutional framework through solid privacy rights and a free market (Harvey 2005). When this occurs, the victims are those who are impoverished. Neoliberalism also uses the word freedom to justify its agenda and do almost anything. Harvey (2005:39) describes, "Freedom resonates so widely within the common-sense understanding of Americans that it becomes a button that elites can press to open the door to the masses to justify almost anything." Whether this is environmental deregulation or other action, using this freedom button is a fallacy and is misconstruing. This freedom is just an excuse to promote the neoliberal agenda.

Sustainability

Sustainability in its broadest sense is "the development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs" (Kotob 2011:1). In Diamond's (2011) book, *Collapse: How Societies Choose to Fail or Succeed*, Diamond, critiques the chemical industry and many others due to their impacts on the planet. Diamond (2011:491) discussed this as:

The chemical industry and many other industries manufacture or release chemicals into the air, soil, oceans, and lakes, some of them 'unnatural' and synthesized only by humans, others present naturally in tiny concentrations (e.g., mercury) or else synthesized by living things but synthesized and released by humans in quantities much larger than natural ones. The chemicals that change hormone levels and are

synthesized by our population, especially those that are more sensitive to them, such as pregnant women and children, create unsustainable environments for our future.

These chemicals, such as lead, can have long-lasting effects on someone's health. Landrigan and Goldman (2011) discuss four reasons that make children far more sensitive to toxic materials. First, children eat more calories per pound of body weight, second, children lack metabolic processes to break down and remove toxic materials from the body, third, early developmental processes get disrupted by toxic materials, and finally, children are alive longer than adults and have more time to develop chronic diseases (Landrigan and Goldman 2011). Beyond the cost to a population's health, the monetary cost of these activities is extreme.

Industries dumping toxic chemicals into environments and the excessive emission of carbon into our atmosphere is leading to the acceleration of climate change. Climate change is a long-term change in the average weather patterns that have come to define Earth's local, regional, and global climates (NASA). This change in climate is especially a problem in the Southeastern United States due to its unique and vulnerable geography. The Southeastern United States is located close to the Atlantic Ocean and the Gulf of Mexico. Many will be faced with rising sea levels, hurricanes, and heatwaves. Gutierrez and LePrevost (2016) state that "populations living along the Atlantic and Gulf coasts will be affected by rising sea-levels and subsequent land loss, and many inhabitants of the Southeast will experience increasing temperatures and more frequent, intense, and sustained extreme heat events."

With climate change being a polarizing topic on the political spectrum, there have to be movements within our political system to create policy regarding sustainability. The Environmental Defense Fund (EDF), one of the largest pro-environment groups globally, calculated the social cost of these impacts is growing. EDF (2021) described the costs as they "can cost businesses, families, governments and taxpayers hundreds of billions of dollars through rising health care costs, destruction of property, increased food prices, and more." Kettering (2021) focuses on how to create a strategic plan to address the effects of climate change on human health. The first change is to create a "progressive, comprehensive national climate change action plan by passing key legislation that will support the health

sector” (Kettering 2021:42). Second, Kettering (2021:42) states how “heat, one of the most important climate factors, affects more vulnerable populations and communities.” Finally, Kettering (2021:43) stated the need to “focus on enhancing the preparation and response to natural disasters and public health emergencies that have seen a steady increase in frequency and severity as a result of climate change.”

Environmental Degradation

As neoliberalism and environmental racism have plagued communities across the country, environmental degradation has become more common. Environmental degradation is defined as “a process through which the natural environment is compromised in some way, reducing biological diversity and the general health of the environment. This process can be entirely natural in origin, or it can be accelerated or caused by human activities” (GEMET 2021). This process of degrading the environment can be specifically seen in individual events that will impact certain communities or watersheds.

One specific example of how neoliberal ideologies essentially destroyed a residential area and came to the forefront of national media is Flint, Michigan, and its water crisis. The Flint, Michigan water crisis came to national attention in the late spring of 2014. Budget shortages caused the city of Flint to change its water source from a water treatment facility in Detroit to Lake Huron. The water supply from the pipeline going to Lake Huron would not be accessible for some time. The estimated 100,000 residents that lived in the area still needed water, and the Flint River would be used without proper testing and preparation (Shen 2017). Shen (2017:1) described the Flint River as "over sixteen times more corrosive than the city's regular water supply source." Immediately, residents began noticing water contaminated with carcinogenic materials.

The city of Flint announced a boil water advisory after water tests revealed e-Coli bacteria in the water. The Center for Disease Control (2021) states that if local officials issue a boil water advisory, you should be using bottled water or boiling tap water because the community’s water source has been tainted with germs or other harmful materials. As time went on, citizens complained that city water was rusting car parts at car washes, tap water was miscolored, and citizens were in fear that the water was not safe to consume. The Michigan area has a large automotive industry and water is a primary part of the assemble

process. In order to shape metal into engines and other robust car parts, high pressure water is used. In Flint, General Motors, who also happens to be the largest employer in the area, noticed corrosion of metals during its assembly processes (Colias 2016). The city was found in violation of the Safe Drinking Water Act of 1974. The city attempted to reassure the city's citizens that the water was potable (Goodwin 2016). During the summer of 2015, different agencies, health departments, and universities conducted research and found evidence of lead contamination in the drinking water, but there was no response from the state (Ruckart et al. 2019).

After compelling evidence that the water supply in Flint was leading to an exponential increase in lead poisoning cases in children, the state added water filters to Flint and swapped the water supplies back to the original source (Goodwin 2016). The damage from the contaminated water supply was already done, and the health complications were being seen, especially in children and pregnant women. Children and pregnant women are more sensitive to lead poisoning. Craft-Blacksheare (2017:260) described this sensitively to lead in detail:

Approximately 99% of the lead taken into an adult's body will be excreted in waste within a couple of weeks compared with only about 32% of the lead taken into a child's body. Additionally, childhood lead exposure can later affect women in their childbearing years because lead stored in the bones during prior exposure is mobilized in pregnancy. During lactation, the lead can be released into maternal blood and breast milk and can adversely affect the fetus and infant.

The Flint water crisis is an example of how through both environmental racism and neoliberal agendas, a population has been poisoned with lead. Michigan has a Department of Environmental Quality (MDEQ) that is the state's body to regulate environmental concerns and is responsible for responding to potential health hazards. Since the neoliberal agenda came to light in the 1970s, this environmental department has been the victim of budget cuts, staffing problems, and an overall decline in staffing knowledge (Benz 2017). The situation in Flint, Michigan, is one of the more well-known examples of environmental racism and how a lack of regulations became an issue of basic infrastructure. However, issues of this magnitude have occurred since neoliberalism has dominated our lives.

Another example of an environmental degradation event is the 2011 Ogeechee River fish kill. This event was more localized and occurred along the Ogeechee River in Georgia. The company that is

believed to be responsible for the event is Milliken, one of the largest textile companies in the world. A fish kill is a localized event where a large number of fish die-off in a short time due to a lack of oxygen, toxicity, or algae bloom and is usually one of the first signs of environmental stress in a watershed. Ogeechee Riverkeeper stated, "The Ogeechee River experienced one of the largest fish kills in our state's history. An estimated 38,000 fish were killed along with alligators, turtles, and birds over a 77-mile stretch of the river" (Ogeechee Riverkeeper 2011). The value of these fish was roughly \$125,000, and the investigation conducted by the Department of Natural Resources (DNR) in Georgia cost an additional \$25,000 (Barrett and Joel 2011). Barrett and Joel (2011) note that over 20 species of fish were killed over a 70-mile section of the Ogeechee River. The fish kill occurred only below a discharge pipe, and the company that was discharging was only given minor fines. A discharge pipe is how contaminated material runs from the factory's operation to where it is eventually dumped into a body of water. Milliken is the largest producer of flame-resistant cloth in the world, which specifically protects workers from hazards such as flames, molten metal, and other hazards. This is important, but there needs to be measures to help prevent violations in discharge permits (Keiser and Shapiro 2018). These measures to ensure companies are following their permits could be done through riverkeeper organizations acting as a third party between government organizations.

Another issue that arose during the investigation process was determining the official cause of the fish kill. Although investigations demonstrated that the fish kill began directly below the Milliken discharge pipe, there was disagreement on courses of action to hold the organization accountable. Residents that lived along the river were upset by the sight of the fish kill and the condition of the river, but Milliken had to pay little compensation. According to WTOC in Savannah (2011), Milliken had to perform roughly one million dollars in environmentally beneficial projects with the immediate goal of improving the condition of the Ogeechee River, specifically below their discharge pipe. In Milliken's statement, they said, "We are not aware of any operations by Milliken that would have adversely affected water quality or the fish in the Ogeechee River. The Consent Order quotes EPA's June 3, 2011, memorandum which concludes that as to the May 2011 Ogeechee River fish kill that, 'It may be

impossible to ever know for certain exactly what happened" (WTOC 2011). Regardless of any official cause being determined, the result remains the same. Residents that lived along the river suffered during this time, and the ecosystem in the Ogeechee River was devastated.

Finally, an example of environmental degradation in Georgia that did not come to fruition due to the grassroots efforts of riverkeepers was the proposed Mayfield Natural Resources quarry in Hancock County, Georgia. According to the most recent census, in terms of per capita income, Hancock County was the second poorest county in Georgia (United States Census Bureau 2019). This quarry would be a large mining facility that could have catastrophic consequences for the Hancock County community. Ogeechee Riverkeeper (2021) stated that residents' concerns included "complications from silica dust, negative health effects to livestock, infrastructure damage, social and housing inequities, disturbance to local businesses and tourism industry, historic property damage, and more." Thankfully, due to the efforts of third-party organizations, such as the Ogeechee Riverkeeper, the Hancock County Commission denied the application request to build the quarry. At the time of this writing, it still has not taken shape (Ogeechee Riverkeepers 2021). Questions remain about how to empower communities to confront issues that may have long-term negative impacts on local environments. Nevertheless, as a sociologist, it is crucial to take a step back and ask why Mayfield Natural Resources wants to build this quarry here.

COVID-19

On December 31st, 2019, the World Health Organization (WHO) was informed of a cluster of pneumonia cases in Wuhan City, China that were identified as an unknown strain of coronavirus (Jensen 2020). This coronavirus was later designated as COVID-19 (WHO 2022). The virus quickly spread to other countries. These countries included Thailand, Japan, The Republic of Korea, Vietnam, Germany, Italy, and Singapore (Wu, Chen, and Chan 2020). The first case of COVID-19 in The United States was reported on January 21st, 2020. These infections evolved into a worldwide pandemic to which the modern world has never seen before. There have been almost five hundred million cases of COVID-19 reported across the world and just over six million deaths (WHO 2022).

Variants of the initial virus have played into its continual infection around the globe. In The United States, the Delta and Omicron variants have seen the most infections. The CDC (2022) describes the Delta variant as more likely to spread and is considered to cause more severe cases than other variants. The Omicron variant was described as less likely to cause severe cases in general, but the variant spreads more easily than other variants (CDC 2022). In both cases, being up to date on recommended vaccines is effective at preventing illness, hospitalization, and death (CDC 2022).

The Omicron and Delta variants are only two examples of variants that have been seen around the world. Alpha, Beta, Gamma, Kappa, and Zeta variants have been seen around the world and could spell trouble for riverkeepers and environmental groups defending their watersheds (Otto et al. 2021). If the riverkeepers and environmental offices have to shutdown due to a new COVID-19 variant emerging in The United States, this would impact the services they provide for their watersheds. The riverkeepers and environmental groups attempt to defend our watersheds from individuals who have little regard for water quality, communities of color are currently facing the harsh impacts of resource extraction and poor water quality, and the COVID-19 pandemic has limited the riverkeepers and environmental groups to some capacity. This creates the opportunity to research how their organizations function to defend watersheds.

CHAPTER 3

METHODS

Setting

To further understand water quality in Georgia, I have conducted eleven qualitative semi-structured interviews with riverkeepers and environmental groups within the state. Previous research suggests that the actors promoting neoliberalism has created a state has created a system of deregulation, privatization, and the withdrawal of government (Harvey 2005). This has allowed the degradation of the environment around us. Companies are attempting to build quarries among the poorest counties in Georgia and fish kills are plaguing the state due to industry (Ogeechee Riverkeeper 2021; Ogeechee Riverkeeper 2011). The riverkeepers and environmental groups were located in different areas of Georgia with some being in more urban or rural areas.

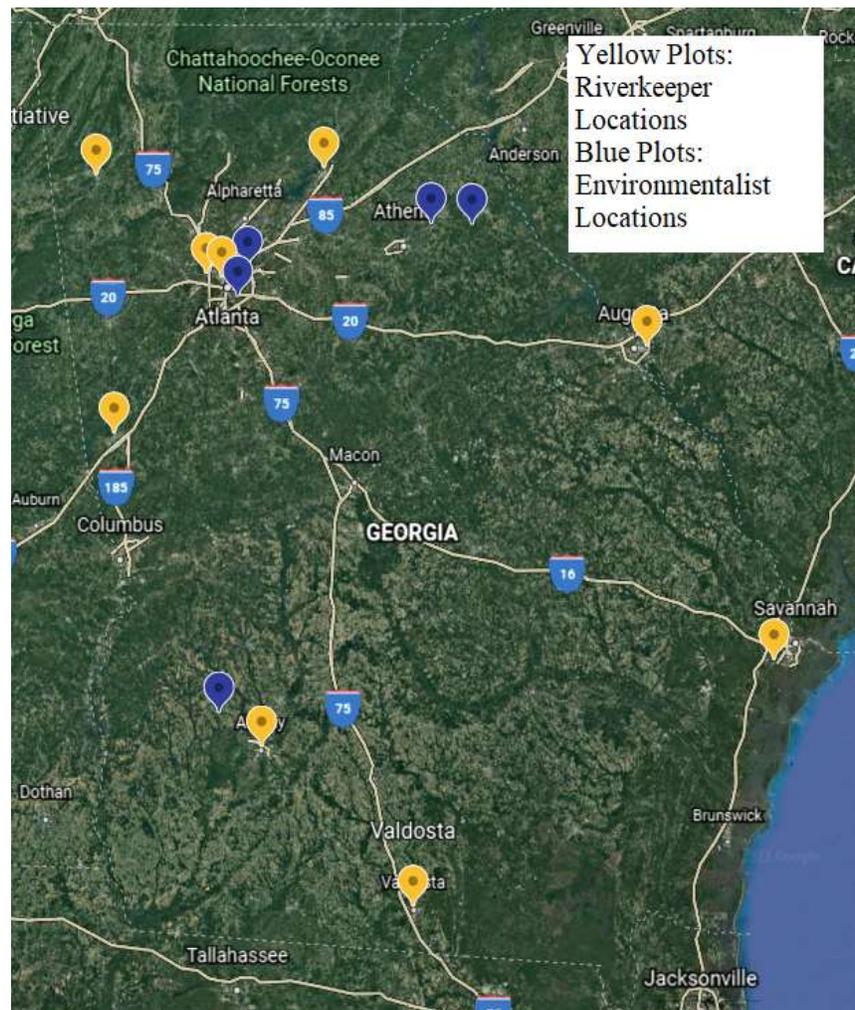
Participants**Table 1: Demographics of Riverkeepers and Environmentalists**

	Age	Gender	Race	Marital Status	Education Level	Living Staus
Riverkeeper Evan	40	Male	White	Married	Bachelors Degree	Home Owner
Riverkeeper Joseph	62	Male	White	Married	Bachelors Degree	Home Owner
Riverkeeper Morgan	42	Female	White	Married	Bachelors Degree	Home Owner
Riverkeeper Griffin	67	Male	White	Married	Bachelors Degree	Home Owner
Riverkeeper Cole	45	Male	White	Married	Master's Degree	Home Owner
Riverkeeper Scott	35	Male	White	Married	Bachelor's Degree	Home Owner
Environmentalist Grace	70	Female	Black	Divorced	Doctoral Degree	Home Owner
Environmentalist Shannon	65	Female	White	Married	Bachelor's Degree	Home Owner
Environmentalist Quinn	68	Female	White	Married	Master's Degrees	Home Owner
Enivornmentalist Rachel	70	Female	White	Married	Bachelor's Degree	Home Owner
Environmentalist Bailey	52	Female	White	Single	Some College	Renter

The participants were asked a variety of demographic questions. These included age, gender identity, race, marital status, the highest level of education, and living status. Riverkeepers were younger on average, with the six participants being 35, 40, 42, 45, 62, and 67 (Average Age 48.5). The Environmental group participants' ages were 52, 65, 68, 70, and 70 (Average Age 65). Almost all of the riverkeepers identified themselves as cisgender males, with only one of the six identifying as a cisgender female. The environmental groups were almost the complete opposite. They all identified as cisgender

females. Three of the five environmental group participants were married, one was divorced, and one was single. All of the riverkeepers were married. Every riverkeeper had at least a bachelor's degree, while one also had a master's degree. In the environmental group, one participant had a Ph.D., one had taken some college-level courses, one had a master's degree, and the remaining two had bachelor's degrees. The specific degrees varied greatly from environmentally specific degrees to business, political, and even medical degrees. Six participants had degrees related to the environment or in biology, one had a business degree, one had a computer science degree, one had a political science degree, one had a medical degree, and one did not have any degree.

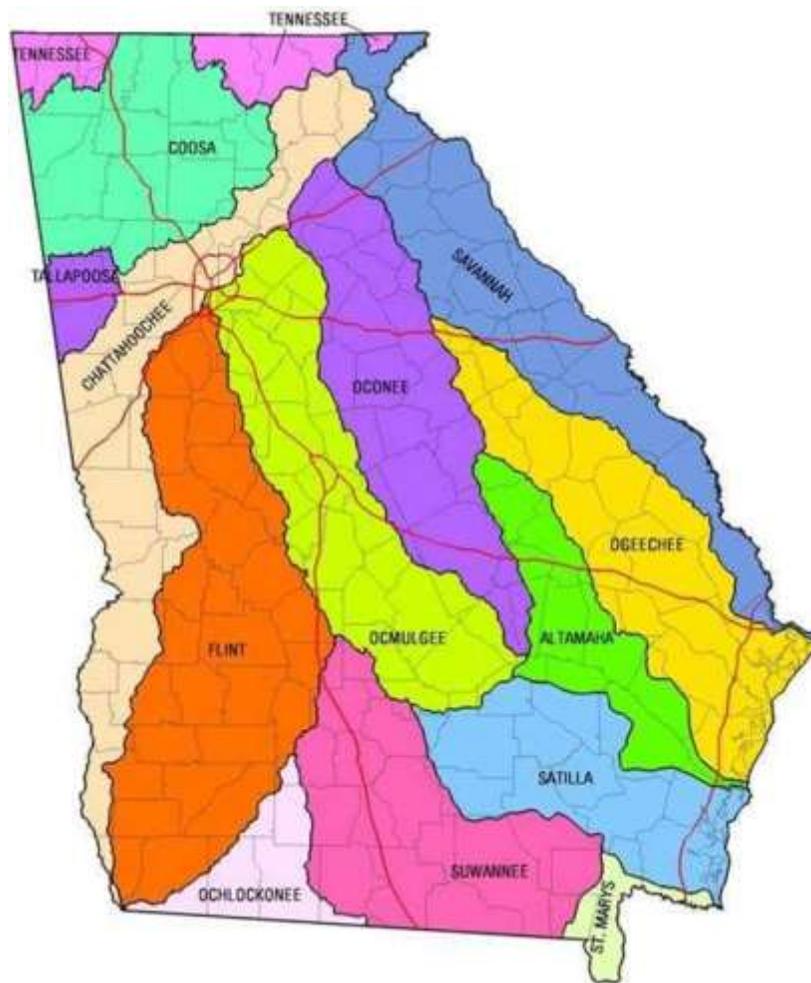
Figure 1: Location of Riverkeepers and Environmentalists



Google Earth. Retrieved March 10, 2022 (<https://earth.google.com/web/>).

This graphic represents the locations of both the environmental groups and the riverkeepers that participated in the study. Google Earth was used to plot the points, and a capture tool was used to create the figure. The blue plots represent the environmentalists that were interviewed. Two of the participants interviewed were based around the Atlanta area, two were based near Athens, and one was based in South Georgia near Albany. The riverkeepers that were interviewed were more evenly spread across the state. One riverkeeper was around the Valdosta area, another was near Savannah, one was near Augusta, one was around Albany, one was near Rome, and another larger riverkeeper organization had four offices split around the Atlanta area.

Figure 2: Georgia's River Basins



Georgia River Network. 2020. "Georgia Rivers." Retrieved February 23, 2022

(<https://garivers.org/georgia-rivers/>).

Georgia has 14 river basins that flow through the state. Most of them have a riverkeeper and smaller environmental groups defending them. The Tallapoosa River basin is the only river basin that does not have a specific riverkeeper or riverkeeper-like organization defending it. Every basin had riverkeepers or environmental groups that were initially reached out to. Participants in the research project were in the Coosa, Chattahoochee, Flint, Oconee, Savannah, Ogeechee, Suwannee, and Ochlocknee basins. No interviews were conducted for the riverkeepers and environmental groups within the Tennessee, Tallapoosa, Ocmulgee, Satilla, Altamaha, and St. Mary's River basins.

Data Collection

The study is approved through Georgia Southern Institutional Review Board (IRB) as protocol H22069. I, Jacob Crawford, am a primary investigator under the direction of Dr. Chad Posick. Chad Posick is an Associate Professor in the Criminal Justice and Criminology Department at Georgia Southern University. Thematic analysis was used as a basis for the research (Braun and Clarke 2006; Braun and Clark 2012; Braun and Clark 2016). Braun and Clark (2006:82) described thematic analysis as "a method for identifying, analyzing, and reporting patterns within data" and "a flexible approach that can be used across a range of epistemologies and research questions."

Initially the search process started with searching for the riverkeepers and environmental groups of Georgia on Google. Any contact information that was found was put into an Excel spreadsheet. All of the Georgia riverkeepers were aware of the project and a number of volunteer-based environmental organizations spread the word of the research project. This method of recruiting is snowball sampling. In total forty five contacts were collected on the Excel spreadsheet. All of the emails were contacted and eleven agreed to an interview. Six of the eleven participants were riverkeepers and five were environmentalists. Each participant agreed to an interview time and the interview was conducted over a recorded Zoom call. The shortest interview was 36 minutes and 30 seconds, and the longest interview was 1 hour 30 minutes and 39 seconds. After the interview, the file was uploaded to a premium transcription

service called SONIX. The file was also stored on a backup Google Drive folder. The transcript was then edited into a product and uploaded into a coding software, NVIVO12. Pseudonyms were used to ensure the anonymity of the participants.

Data Analysis

In the first step of data analysis, I coded the transcribed interviews in NVIVO12. I went through the transcribed material to check for errors in the process, as the SONIX service was not entirely accurate. This initial process also helped me familiarize myself with the data. I then used open coding, which is a process of identifying distinct concepts and themes for categorization in the data. There were 26 nodes coded in NVIVO12 during the open coding process. Some of the nodes included political affiliation, advocacy efforts, combined sewer systems, population using watershed, and environmental related education.

After this process, I used focus coding to find themes in the data. This involves collapsing the nodes into larger themes. The thematic analysis approach that Braun and Clarke draw out allow for flexibility in this process to identify themes. Braun and Clarke (2006:10) describe themes as something that “captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set.” In this research project, the six identified themes were collaboration with riverkeepers, COVID-19, government policy and enforcement, most pressing problems of river conservation, educating the public, and minoritized groups. The minoritized group’s theme had three subthemes of most vulnerable groups for poor water quality, specific examples of defending communities of color, and environmental racism. These six focused themes were produced by the process outlined by Braun and Clark (2012). This flexibility allows to keep the rich details described by the participants.

CHAPTER 4

FINDINGS

The riverkeepers and environmental groups were asked questions about demographics, collaboration among different organizations, relationship to the community, and COVID-19 impacts. After using thematic analysis (Braun and Clarke 2006; Braun and Clark 2012; Braun and Clark 2016), the six highlighted themes were collaboration with riverkeepers, COVID-19, government policy and enforcement, most pressing problems of river conservation, educating the public, and minoritized groups. The minoritized group theme has three subthemes which are most vulnerable groups for poor water quality, specific examples of defending communities of color, and environmental racism. Each theme will be discussed individually in this chapter.

Collaboration With Riverkeepers

The Georgia riverkeepers and environmental groups often work with each other every day. The challenges that each group faces might have been seen before in another watershed or impact multiple watersheds at once. The groups often need each other to face the often seemingly impossible goals that these small organizations have. Collaboration among these different organizations is often the key to their success. Without the collaborative efforts that both the riverkeepers and environmentalists have, the constant success of defending Georgia's watersheds might not exist.

The most impactful form of collaboration in the state of Georgia is the Georgia Water Coalition. The coalition is a group that is led primarily by the Georgia riverkeepers. Riverkeeper Scott stated, "If you're talking to riverkeepers, you're talking to the Georgia Water Coalition. The Georgia Water Coalition is not an organization. It's just a group, and so most of the riverkeeper organizations and a handful of others, including Sierra Club, Filthy Environment Georgia, make up the leadership team." Their mission is "to protect and care for Georgia's surface water and groundwater resources, which are essential for sustaining economic prosperity, providing clean and abundant drinking water, preserving diverse aquatic habitats for wildlife and recreation, strengthening property values, and protecting the quality of life for current and future generations" (Georgia Water Coalition 2022). Some of the environmental groups

interviewed were members of the Georgia Water Coalition but did not serve as committee leaders like some of the riverkeepers. This network of groups creates a platform that is invaluable for different environmentally-minded groups to collaborate on current water quality issues within the state.

The collaboration among riverkeepers and the environmental groups regarding events, fundraising opportunities, advocating for policy, and promoting ideas is active and occurs daily. The participants in the environmental groups relied the riverkeepers for training opportunities and advice on handling their situations as the riverkeepers tended to be more experienced. As most of the environmental groups interviewed are purely volunteers, their degree paths and education were not as niched as the riverkeepers. Environmentalist Griffin stated, "I sent money to a Riverkeeper, and they did our training for Adopt-A-Stream, as they are also trainers for this." Adopt-A-Stream is a program run through Georgia's EPD and is purely voluntary. Its sole basis is to help monitor Georgia's waterways to detect, monitor, and document water quality. The riverkeepers are not volunteer-based and are required to have paid full-time positions as a riverkeeper and an executive director in their organizations. In smaller riverkeeper organizations, sometimes both the executive director and riverkeeper role can be because of their specialized nature, these environmental organizations often collaborate with the riverkeepers, as many government agencies and even citizens do.

Environmentalist Bailey stated that their group interacted with different organizations and riverkeepers. Environmentalist Bailey described her interaction with other organizations:

The Riverkeeper organizations have a lot more teeth to them because they will go after people, and they will prosecute them. My organization does not do that. We don't cross that line. We have never crossed that line. That is not what our mission, vision, and goals are for our 501C3.

This environmentalist works with other organizations, but only when the agenda pursues something more significant than what their organization could handle. The riverkeepers have certain rights to enforce the CWA and have won multimillion-dollar lawsuits doing this. Environmentalist Bailey also stated that interaction "with state and federal agencies and then what they decide to do with the police departments is completely something that my organization does not touch." This leads me to

believe that the organization's work is solely local, and any collaboration work among other organizations is limited.

The collaboration between riverkeepers is unique to its own. Riverkeeper Morgan describes this by stating, “Those are my brothers and sisters. It's deep, it's blood. In fact, many of us have tattoos on our bodies, suggesting exactly that. It is an absolute brotherhood. We could do more, and COVID has hurt us all because we can't get face to face.” Being a riverkeeper is more than a job, it is often a total dedication to learning how your watershed functions. These groups collaborate almost daily about what they need help with, provide each other materials that might have worked for one riverkeeper, and even sometimes might have a friendly competition for fundraising to reach a common goal. Riverkeeper Scott stated, “We funded a joint fundraiser, and another riverkeeper hurt my feelings because he won. But we, you know, we opened the water quality lab that we now share together.” Another riverkeeper, Riverkeeper Cole, stated:

We try to work together because we have common goals, and generally speaking, it is always a case of David versus Goliath in our world. You know, it's our small, scrappy organizations trying to fight the government or big industry or powerful people. And if we don't work together, then you know, it really hinders how much we can do.

If the riverkeepers did not have Georgia Water Coalition, the fundraising sources that they often share, and most importantly, each other, their work might not be as impactful as it currently is.

COVID-19

The impact of COVID-19 has been felt across the board in all groups. However, it has been felt more in the environmental groups, as the entirety of their operations relied on public meetings, attempting to pass legislation through the state, or conducting workshops. The only environmental group in the sample that did not see a complete shutdown in operations due to COVID-19 was the most prominent organization, which was most similarly structured to the riverkeepers. The results also followed suit, and the same organization saw utterly different results in dealing with the pandemic.

The environmentalists had to adapt in their own ways. Their work was often more unique and personal to their different situations; adapting to the pandemic meant keeping their cause alive.

Environmentalist Shannon stated, “We haven’t met in two years now because typically our meetings ran in March. It’s engaging for people to come to, and I could probably do it by Zoom, which I’ve thought about doing, and I will try to organize because we need to elect new officers.” Environmentalist Rachel, who was dealing with the pandemic and attempting to get legislation passed to eliminate the burning of railroad ties before the state legislator was going to shut down stated:

We had to stop having public meetings, so that was a big blow, and we struggled with that when we were to get that bill passed. We do some Zoom meetings, but just contacting the legislators during the three months of shutdown was enough, we did not want to be forgotten. We made packets of information and mailed them to their home offices.

The riverkeepers had more money to stay afloat, and this allowed the riverkeepers to plan for the future and restructure as needed.

One riverkeeper, Riverkeeper Morgan, stated, “COVID hit, and the challenge for us was everybody went and bought a kayak.” Initially, riverkeepers dealt with what the rest of the world was dealing with. The world was shutting down. Their main offices, water monitoring labs, and in-person events had to close. Riverkeeper Evan stated:

Everything just collapsed. So we, you know, 16 people, we didn't want to have any interaction. So we started texting everybody, we all just ran to the office, going in one at a time, grabbing our computers, grabbing anything out of the office and locked the doors and shut down our lab, shut down the classrooms, shut down trash cleanups, volunteer interactions, and did what everybody else is just going to hunker down and learn how to use Zoom and teams and communicated with each other.

This was the initial story for all organizations, but as the pandemic progressed, people wanted to get outside and do so safely. This desire of the public had a beneficial effect on outings, as stated by Riverkeeper Griffin. Riverkeeper Griffin stated, “COVID has actually been a boom to our outings because people want to go outside and do something, and these paddle outings are ways to do that.”

Another riverkeeper discussing their paddling trips, Riverkeeper Evan, stated, “Mostly what we're doing now is private schools, home schools and community groups like church groups. So we're probably running about 50 percent capacity and the schedules are pretty full in the fall.” This, however, should be seen as fragile. The covid variants that are constantly on the radar can change this rather quickly.

Riverkeeper Evan mentioned this, stating, “Because of Omicron, it's not really certain.” The one

environmental group that facilitated paddle trips saw similar results and broke records in the number of people that joined them on the river. Environmentalist Grace described their organizations experiences by stating:

We had more people on the river last year than ever before. Well it's because they wanted to get out and they can social distance on the river and you're in a kayak alone, so you automatically social distance. So, yeah covid has had its impacts, but from a funding standpoint things kind of shutdown. The same environmentalist attributes this to the unique structure of the types of organization.

Environmentalist Grace stated, "From a COVID-19 standpoint, we probably survived a lot better than most organizations." Both this environmental organization and the riverkeepers rely on different kinds of funding, which was also changed throughout the pandemic.

The most popular forms of funding for the riverkeepers are through paid membership of the organization, donations, fundraising events such as music festivals, grants, and paycheck protection program (PPP) loans. The different riverkeeper organizations across Georgia have different methods of paying their bills, and some rely more on some methods than others. They have all been impacted by COVID-19, and some have even changed their methods. One riverkeeper, Riverkeeper Joseph, stated that they relied more on significant music events to fundraise and described their situation as:

not sustainable because people like to get together. I mean you can do that once or twice, but nobody's going to go to a rock concert that's on their laptop. Year after year, they're going to get burnt out on that. I mean, the fun is being there and listening to the music, whether you're in a chair or down in the pit, having a meal with people and having some good scotch and a cigar or whatever you enjoy doing with folks.

With COVID-19, having a large-scale music festival is impossible in a safe setting. Riverkeeper Joseph was hopeful, however, and stated, "COVID is a coronavirus, it's not going away. It's here to stay and that's what coronaviruses do. There's no getting rid of it, but I'm ready for the deadly piece of this global event to be over and I'm sure everybody else is too."

Other riverkeepers have had entirely different experiences as they relied on larger-scale fundraising events and chose to move away from them. Riverkeeper Scott stated, "When I took over, they probably had six or seven big fundraising events every year. It was an insane amount, and I told the board we can't do this, this is just not sustainable." When the pandemic started, this reduction of significant

fundraising events went a step further, and Riverkeeper Scott stated, “We were down to just essentially one and a half fundraising events a year, which we were able to replace with PPP loans and some new grant sources, that kind of thing. So we ended up financially doing really well, but really struggled connecting with membership and communicating what we were up to.” Each method has its benefits and downfalls, as each watershed is unique.

Government Policy and Enforcement

The participants from both the riverkeepers and environmental groups had strong opinions about the enforcement of the Clean Water Act (CWA) and the severe underfunding of the Environmental Protection Division of Georgia (EPD). The main discussion points during the interviews pointed more towards enforcement rather than updating policy. All of the riverkeepers and environmental groups believed that policy should be updated, and the focus should be on how to create a sustainable future. However, the current environmental issues in Georgia stem from enforcement from EPD. This is often where the riverkeepers and environmental groups have to act as a third party.

According to Riverkeeper Evan, “the overall problem that we have is not the laws on the book. It's enforcing the laws that are already here. They're already on the books and EPA is the federal enforcers, EPD are the state enforcers. They are both heavily underfunded, understaffed, and don't have the resources.” Another riverkeeper, Riverkeeper Scott, “EPA's budget has been kept at anemic levels for decades. And that's by design. They can't address environmental issues holistically across the state comprehensively because they never have the manpower to do so. And that's a huge issue that, you know, we just run into year after year.” Georgia has a lot of different environmental issues throughout the state, and they vary depending on where you are geographically.

Some of the riverkeepers interviewed gave specific examples of giving the CWA more details to improve water quality standards. Riverkeeper Joseph stated, “We need to have groundwater quality standards that are enforceable throughout Georgia, we also need better enforceability on our surface water standards, and they need to be fine-tuned, and then we need a citizen suit clause in each.” This is what Riverkeeper Joseph wanted to drive home the most. Riverkeeper Joseph continued by stating, “If there's a

giant greenhouse-like a state road 96 west of Warner Robins that lights up the night sky for seven miles around to where people can't sleep, that may not be against the law, but it's sure a nuisance.” There has to be a point where citizens can take control for themselves, report issues, and try to rectify situations. That currently does not exist in Georgia.

One approach that other states are taking to ensure citizens have clean water for drinking and recreation is to have a right to clean water, air, land, and clean environment law. This would encompass everything regarding the environment and require the necessary EPD funding. One riverkeeper, Riverkeeper Griffin discussed this by stating:

You know what would make a huge difference to every single thing we deal with? We need a right to clean water, air, land, and clean environment. You may have heard New York State just passed one of those in November. It's the first statewide constitutional amendment since the seventies. The only other two states with effective versions of these are Montana and Pennsylvania. There's no reason Georgia and Florida can't do this.

Riverkeeper Griffin then dove into the differences between the states and explained how difficult it is to get policy implanted into Georgia. In Florida, there is a statewide petition process to get items on a ballot to vote. In Georgia, there is no process to do this. Riverkeeper Griffin explained how you have to “get it through the Legislature, two-thirds majorities in each House in Georgia. At least the governor doesn't have to do anything with that. That's the only way you can get a statewide petition on the ballot.”

Previously, Riverkeeper Griffin helped on another environmental-related issue that was seen on the ballot through these intricate pathways, with a rather hostile political climate.

The political climate of our country and state can also have ramifications on environmental policy. One example of this stated by Environmentalist Quinn is the burning of railroad ties for energy. Environmentalist Quinn stated, “Railroad ties were banned in the United States for years as well as Europe and then Trump came in and he ended the ban and all of a sudden, railroad ties were now considered green energy.” Burning railroad ties for energy resulted in waste that often leaked into groundwater and rivers. This caused issues for private well owners as these plants are often in rural areas of the state. Because of this lack of regulatory approach to policy, the victims then become those who rely on private wells as their drinking water. As mentioned in the section about COVID-19 implications,

Environmentalist Rachel set out and helped pass legislation at the state level banning the burning of these railroad ties. This speaks to the importance of both the riverkeepers and these environmental groups.

Most Pressing Problems of River Conservation

The issue of river conservation varies widely in Georgia. Each riverkeeper and environmental group had a unique answer to their watershed problems, as their size, populations, and issues are different.

For Riverkeeper Cole, a key issue was the regulation of discharge permits. There was a fish kill in the largest river in the watershed, and a company was held responsible. Riverkeeper Cole stated:

There was no oversight or monitoring at the state level. It resulted in a huge fish kill in the river. And then even after that, the response was not what it should have been. All forms of the government regulatory apparatus failed us from the permitting, to regulating, to enforcing, and then punishing and holding them accountable. It was just a poster child for what's wrong with the system.

This event was a decade ago, and Riverkeeper Cole spoke on the facility's attempts to continue operations. Riverkeeper Cole stated, "The facility that was responsible for the fish kill is still operating, they sold to a different company after the fish kill, and EPD tightened up the permitting on the facility. But they are proposing to relax that permit now, and we're aggressively pushing back against that."

Although it is a different type of permit issued by the EPD, Riverkeeper Scott had similar statements about permits issued by EPD.

Riverkeeper Scott's story involves another fish kill in north Georgia. Riverkeeper Scott stated:

There was a forklift driver accident that punctured a barrel of sulfuric chloride, and the barrel was not being stored where it ought to be. It made it into their stormwater system, they thought that they had blocked it off in time and didn't report it. Well, they had not blocked it off, and a couple of employees of the city of Dawsonville started seeing dead fish.

The company was supposed to have a stormwater pollution prevention plan, but due to EPD's lack of funding and enforcement, it did not exist and was not checked on. Riverkeeper Scott went on to discuss why this plan did not exist and why EPD did not check on it; he stated:

They were inspected for their stormwater industrial permit, and the person that I spoke to said they had no record of having ever inspected their stormwater system and that the entire industrial stormwater permit office for the state was two full-time staff, and their goal each year was to test about two sites. They have more than 2000 industrial stormwater permits, so that's a timetable of one site visit every two decades.

EPD's system for industrial stormwater permits is just one example of how EPD has failed to correct its system, and this does not even mention how entire communities have been forgotten about. Environmentalist Grace discusses the specific problems that have impacted their county, which is local to the Atlanta area. The main issue discussed in their interview was the issue of DeKalb County's combined sewer system (CSS).

Environmentalist Grace stated, "The big issue from a clean water, pollution, and regulatory standpoint is sewage. It goes to DeKalb County, where the system is not separated." A combined sewer system means a rainwater and sewage system combine during weather events, and when there is enough rain, there is overflow, and the combined material runs into rivers. The water is laced with bacteria and causes serious problems with E. coli levels, a dangerous bacterium that can cause unsafe water for drinking, recreation, and other activities.

The CCS is outdated, and plans for updating it have been in place, but little has come to fruition. Environmentalist Grace discussed the issue by stating, "The reason we stepped up, from a financial standpoint and the decision to take this to court, it's because of the deadline issue. You have to have a deadline to fix the system." There is no deadline on when the issue has to be fixed, so the issue is often forgotten. South Dekalb county is home to traditionally Black neighborhoods, and Environmentalist Grace stated, "When you look at who these issues impact, you cannot miss the issue of equity and who is being impacted."

Educating the Public

Education about water quality initially might seem like email blasts, information on websites, and generally fewer interactive methods, but that is only part of helping educate communities about what is occurring in their watershed. Riverkeeper Cole stated:

You make it personal. When it is their drinking water or a place they love, then they get interested, and they learn more and then get involved. If you can do that and get them outside and show them how beautiful the outdoors experience can be, then they grow to appreciate the natural world and want to protect it.

This process can take the form of paddle trips, nature centers, or camping trips, just to name a few.

Riverkeeper Evan described one of their programs that involved a large floating boat. The program focused on educating younger children on conserving water at home and took them out on the water. Riverkeeper Evan stated:

We operate the state's only two floating classrooms, and pre-covid we were taking about 11 to 12 thousand kids a year out on these boats, and hands-on water quality education where we take out, they test water samples for pH, dissolved oxygen, and they get to look at plankton through a microscope, and they learn where their water is coming from. We actually get to take them to some of the drinking water intakes.

This method allows the unique experience to see how these systems work and why it is essential to conserve water when possible.

Another challenge that these groups go through is to change the stigmas associated with rivers that contain pollution. As these environmentalists and riverkeepers work to keep our watersheds clean, some of them have had great success; however, stigmas about rivers being polluted and dangerous can be deeply rooted in a community's culture. Breaking these ties and promoting the true beauty of a river can be challenging. Environmentalist Grace stated:

All they knew was the pollution. All they knew is that they couldn't use the river, so they stayed away. There was no advocacy in support of it. They just stayed away. And we've really been able to dismantle some of that culture that has grown up. It's not completely ameliorated at this time, but things are a lot better now than they were ten years ago.

The paddle trips have been the most successful aspect of this organization. Each year there has been a steady increase in numbers. Environmentalist Grace discussed this by stating, "We have a lot of folks bringing their own kayaks and canoes. We provide the insurance and safety kinds of features. I mean, last year, I'm sure we had probably four or five hundred people on the river, and that's a lot of folks."

The demographics of the population in a watershed can play into how an environmentalist or a riverkeeper can approach educating the community about water quality within their watershed. Another riverkeeper, Riverkeeper Scott, discussed how their watershed was more rural and focused on the idea of economic prosperity. Riverkeeper Scott stated:

We live in a pretty rural, very conservative part of Georgia. Marjorie Taylor Greene is our House Representative, and we are very keen on making common sense economy first arguments for why waterways need to be protected. We have just been kind of handed a couple of really excellent case

studies that have demonstrated how failing to protect water quality can seriously jeopardize economic development in the region.

The cost of cleanup efforts when there is an environmentally degrading event such as a fish kill can jeopardize promises for economic development, and this remains true for all watersheds. For Riverkeeper Scott, this is the main focus when conversing with the community because of the community's demographics. If the people believe in economic development being a key role in voting, policy, and personal decision-making, then it has to be at the forefront of their education.

Minoritized Groups

Most Vulnerable Groups for Poor Water Quality

Georgia is a diverse state in terms of its geography and race. There is the sprawling urban complex of Atlanta and its suburbs, the North Georgia Appalachian Mountains, coastal Georgia, rural farmland, and everything in between. This creates problems in the state as both the riverkeepers and environmental groups serve different demographics around the state. One riverkeeper or environmentalist might serve a more homogenous population while another's population might be more mixed in terms of race. These distinctions in race are essential when addressing policy changes and implementation. One riverkeeper, Riverkeeper Scott, serves a primarily rural white demographic and stated, "I think some of the most vulnerable people in our basin for water quality issues are folks on private wells. But that being said, there was a legacy of other race-related issues." Due to someone living in a rural setting, that person does not rely on a city water supply that goes through treatment facilities. Instead, they have wells on their property that can be susceptible to contamination. Riverkeeper Scott goes on to discuss how issues today are related to poor whites being on private water.

These poor whites on private wells in Riverkeeper Scott's watershed are the most vulnerable because of a considerable lack of knowledge of what is coming out of the ground. Riverkeeper Scott continued the conversation by stating:

There is just an enormous lack of knowledge of what's coming out of the ground, and it's really up to them to figure out whether or not their water is being contaminated by local industry. It's a lofty expense if you're looking at something like trying to test for poly-fluoroalkyl substances (PFAS), it's an emerging contaminant and becoming an enormous issue up here in northwest Georgia.

These PFAS come from mainly paper products and they help grease not destroy the boxes of fast food containers. They often end up in private wells, as our water systems are connected. Riverkeeper Scott finished discussing this issue by stating it did not take much of this chemical to cause health problems. He stated, “The health advisory threshold is like 70 parts per trillion, which is hard to even communicate.” Typically, someone does not have any PFAS related chemicals in their water supply.

Another riverkeeper that works in a more diverse watershed, Riverkeeper Cole, discussed how “minoritized low-income folks that don't have the resources or the connections to advocate and fight back against the predatory natural resource extraction or abuse” are the most vulnerable groups for poor water quality in their watershed. This refers to resource extraction in South Georgia, as the rural land allows for large-scale operations, often where these rural communities are. On the flip side to this, Atlanta houses some of the most populous Black communities in the country. One riverkeeper, Riverkeeper Evan, serves some of these communities and stated, “We've done a lot of water quality research and testing in the urbanized core of Atlanta and where we've seen the highest level of polluted waterways is in the poorest underserved communities of color.” Both of these populations are on opposite sides of the state and have different pollutant sources, yet both are victims of poor water quality.

An environmentalist, Environmentalist Grace, based in Dekalb county and is home to one of the largest percentages of Black residents in the country, believed water quality issues are tied explicitly to race. When discussing poor water quality and the specific sewage issues, Environmentalist Grace stated, “These are traditionally Black neighborhoods, and the majority of folks there are Black and poor, even in moderate-income neighborhoods. So, yeah, I mean, if when you look at who these issues impact, you cannot miss the issue of equity.” This point neighborhoods that would classify as moderate or middle income should be emphasized. These water quality problems throughout the county have put these communities in harm's way for some time.

The one common trait that all of the environmental groups and riverkeepers agreed contributed to being a victim of poor water quality in any form was being impoverished. One riverkeeper, Riverkeeper

Morgan, stated, “So the answer is poor. That's the biggest indicator, in my opinion, across the board.”

Another environmentalist that was based in rural Georgia took a different approach and believed everyone in their counties could fall victim to poor water quality. Environmentalist Bailey, stated,

All of our counties have vulnerable groups in them, and we treat them the way that we do everybody else.

We know that there is a disparity between them and the resources that they have and what they are able to do. So we have very specific grants that are targeted to the underserved communities, regardless of what race you are. And we go out and we target the underserved in all of our communities to ensure that they are receiving the services that everyone else receives, regardless of race, color, or financial situation.

Specific Examples of Defending Communities of Color

The work of the environmental groups and riverkeepers can strive beyond monitoring water. Partnering with organizations to create a system within communities of color is one way the riverkeepers and environmental groups have done this. In New York, in response to the Black Lives Matter movement, Riverkeeper New York (2020) stated, “We ask that you consider becoming familiar with and supporting the work of environmental justice organizations in Minneapolis, MN, and the following environmental justice organizations in our watershed.” This was in response to the murder of George Floyd, as the organization has strong ties withstanding with all communities of color. The organization then pointed to its alliance around the state and its advocacy campaign efforts for waste equity, climate justice, and transportation justice that often go beyond water and involve communities of color.

Both the riverkeepers and environmentalists interviewed gave specific examples of how they have defended communities of color within Georgia. Some examples involved money and grants, some were through education, and some included updating local ordinances. Each watershed has its specific problems in dealing with water quality that need to be addressed. The examples given are only a teardrop in the bucket regarding what these organizations have done for them. One riverkeeper, Riverkeeper Cole, stated:

We're making a concerted effort to go into these communities and through grassroots organizing, try to get the local authorities, whether it be a municipality or county, to update their ordinances. That really puts the onerous task on the applicant to do the studies and the research to say who's going to be impacted

and what impact this will have on those communities. So really just update the ordinances to make them more protective of natural resources, but also the vulnerable communities that could be impacted.

By applicant, Riverkeeper Cole refers to companies that might want to build a factory near them. By going into these communities and promoting the need to update ordinances, the local communities become able to defend themselves from companies as they have to explain to the councils approving their projects. They would have to hire professionals and provide evidence to show the local and environmental impacts their company would bring. Riverkeeper Cole went on to say, “So, when somebody applies for a permit to do X, Y or Z, they have to, you know, give the commission or whoever makes that decision all the information in their hands to see who's going to be impacted and what the impacts are going to be.”

Riverkeeper Morgan also highlighted this topic of ordinances but talked about it from the perspective of access to data. The local governments, especially in communities of color, need access to the data necessary to update their ordinances appropriately. Riverkeeper Morgan stated:

Access to data is such a huge one. A lot of this data exists, and another riverkeeper as a leader in this and we're trying to do it alongside them is to get environmental justice ordinances put into local governments requiring that his projects move in, that they need to look at a series of different other factors besides the return on investment for the community and trying to put a different lens on some of these projects.

This also speaks to the magnitude of how complex grassroots efforts can be. This project of getting local governments to improve their ordinances has taken the collaboration of multiple riverkeepers to pursue.

Another riverkeeper, Riverkeeper Evan, empower a community of color as a creek local to them in the Atlanta area was listed as one of the most polluted creeks in the country. They created a neighborhood watch program that offered small paid stipends to do water testing of the polluted creek to those living around the predominantly Black community. Riverkeeper Evan stated:

In that specific watershed, we learned that a lot of people did not have transportation. They were coming by bus to deliver their samples and it was a lot more burdensome for them to participate in the program. So then we started offering them stipends for each sample that they collected, which is like twenty dollars a sample. So eighty dollars a month is not a huge amount of money, but it's something, it's a bus ticket, it's a cell phone bill.

Riverkeeper Evan secured this money through a grant, and with the community's help around the river, helped collect data and paid them. This payment system was not set up for other groups within the neighborhood watch group.

Environmental Racism

The riverkeepers and environmentalists often work with issues that disproportionately impact communities of color. Whether the issue is outdated sewer systems, landfills, pipelines, factories, or something else affecting water quality, in Georgia, the interviewed groups have heard of or dealt with an environmental-related problem that had specific ties to race.

Riverkeeper Scott discussed the legacy of race in their watershed and how today he primarily deals with poor whites being on private drinking water, but he stated, “A polluter here in Floyd County, from the fifties to the early nineties, there was a medium transformer plant from General Electric that was using polychlorinated biphenyl (PCBs) in the early 2000s.” PCBs are a dangerous chemical and, when ingested or absorbed into the body, can cause serious health concerns. Riverkeeper Scott went on to say:

They were giving barrels of the PCBs to employees to spread around their house as an herbicide, and a whole bunch of property in Floyd County and around Garden Lakes was contaminated. There was a particular neighborhood that was downstream of the plant itself, and back then, there was a railroad that would bring in big tankers of PCBs. When they had unloaded the chemicals, they would just open the taps and wash them out. They heavily contaminated this whole area. Immediately adjacent to this, there was quite a large African-American population predominantly that owned the homes there.

This African-American community fell victim to health-related issues from the PCBs and was only aware of the issue because of someone taking classes at a local college. Riverkeeper Scott continued the story by stating:

One woman who was living in one of those houses was attending a class at a local technical college, and they were given the task to collect water samples somewhere in town and bring it in. She went in her backyard and to this creek and pulled in a sample, and they asked where she found it. She stated that it was in her backyard, and it set off quite a lot of testing in that area, and a lot of people moved. The site itself was never listed as a superfund site because of a lot of pressure from local city and county commissioners who didn't want it to be a drag on property values. Most of the community, after it was found out, moved away, and were replaced by Latino families, who were less likely to be aware of the contamination.

A superfund allows the EPA to “clean up contaminated sites and force the responsible parties to either perform cleanups or reimburse the government for EPA-led cleanup work” (EPA). This cleanup never happened due to the fear of falling property values shows the racist rhetoric of the county commissioners and leaders in Floyd County. Riverkeeper Scott finished the story by stating, “So it's interesting, the largely impacted Black community started to move out after it found out about the

contamination and the county commissioners were largely ignoring it, and when they moved out, the legacy of that impact is going to continue in another minoritized community. Another minoritized group who may have had language barriers or maybe just economically needed the properties at the lower price point, and the sad part is you just end up exposing the children in the backyard to PCBs.”

Another example of environmental racism in Georgia is the story of Proctor Creek. Riverkeeper Evan initially describes this creek by stating, “The EPA actually designated that one little, tiny creek as one of the 13 of 20 national priority watersheds, which included the Chesapeake Bay, for example. Proctor Creek is eight miles, and it made that list of 18 priority waterways because it was so polluted.” The list of priority water locations included much larger locations than Proctor Creek. Some of these locations included The Los Angeles River, Lake Pontchartrain, and The Bronx and Harlem Rivers, which traditionally all have communities of color (EPA 2019).

Riverkeeper Evan continued the description of the Proctor Creek community by stating, “we had 90 percent African-American demographics in that watershed. Our downtown office is actually located within that watershed.” The research and efforts that the riverkeeper organization has completed have helped the Proctor Creek community for over a decade. Riverkeeper Evan stated:

There have been a lot of efforts over the past 15 years to revitalize Proctor Creek, and we've done a lot of work on it, and through our research, we've documented an 80 percent reduction in e-coli rates in the creek, which is fantastic, but there is still a long way to go.

Conclusion

The successes of both the riverkeepers and environmental groups can be looked at due to their collaboration. This collaboration has been complexed through the COVID-19 pandemic; however, due to their work's outdoor nature, there have been notable successes that have proved their resilience. The environmental groups have relied on the riverkeepers due to their niched training, the riverkeepers have helped create the Georgia Water Coalition, and the groups try to engage with each other because of the nature of the work. If they attempted to do the work independently, the success they achieved likely would not have been there.

The smaller environmental groups have struggled due to their volunteer status. Meetings that were generally in-person where collaborative efforts were maximized turned into Zoom meetings. This meant considerable null periods of progress for the environmental groups. However, outdoor activities became a considerable success for more prominent groups, mainly the riverkeepers and one larger environmental group. As the pandemic progressed, people were finding unique ways to engage themselves, and this turned into a boom for the paddle trips that some of the riverkeepers and environmental groups held. It became a safe way to social distance and enjoy outdoor activities. These trips were also a tool for education, as described by the riverkeepers and environmentalists.

Both the riverkeepers and environmentalists stated that they had more traditional educational methods such as social media and email blasts. However, the accurate method that everyone relied on was getting the populations they serve on the rivers. This was an effort to show how the organizations cleaned pollution, changed cultural stigmas about bodies of water, or showed the true beauty of the outdoors.

Perhaps one of the most significant findings was discussing government enforcement of policy. The main issue discussed is enforcing the policy that already exists. Every single interview conducted mentioned this in some way and explained the low levels of funding in Georgia's EPD. The environmental groups and riverkeepers wanted to continue to strive and create policy that protected Georgia's watersheds.

The most vulnerable groups for poor water quality shared the common trait of being impoverished. Due to Georgia's diversity, some riverkeepers and environmental groups have entire watersheds that look entirely different than others. One riverkeeper discussed their primary issue being poor whites being stuck on private drinking water, while another environmentalist discussed communities of color dealing with sewage spills. The problem of vulnerability ties back to EPD's lack of ability to enforce existing standards.

Environmental racism exists in Georgia, and both the stories on PCBs in Floyd County and the devastation to Proctor Creek demonstrate this. Both events demonstrate the lack of initial response from government agencies, such as EPA and Georgia's EPD, and local officials. These events also show how

communities of color can be largely ignored and targeted through environmental degradation events. The environmental groups and riverkeepers have stepped in an attempt to mitigate the degradation of the environment, but their work could be driven further if local officials, Georgia EPD, and EPA did their part.

CHAPTER 5

DISCUSSION

The study aimed to identify how riverkeepers and environmental groups in Georgia advocate for the communities they serve to improve water quality standards, see what disconnects exist between each other and governmental agencies, such as EPA and EPD, see which communities in Georgia are being impacted by poor water quality, and to see how COVID-19 has challenged the groups specifically. The study showed that Georgia is no stranger to poor water quality.

The literature on neoliberalism discusses how the state has created a system of deregulation, privatization, and the withdrawal of government (Harvey 2005). Kenton (2022) discussed how politicians who argue for deregulation as a tactic for economic growth see regulation as overbearing. The findings shown have been quite the opposite. When there are environmental degrading events such as a fish kill, the economic costs of cleaning the location and court costs can have detrimental impacts on economic impacts in any area a politician might believe in economic prosperity.

The same finding can be discussed through environmental racism. Environmental racism is “any policy, practice, or directive that differentially affects or disadvantages (whether intended or unintended) individuals, groups, or communities based on race or color” (Bullard 1993:1037). In this research, actions were seen in sewer systems and companies around the state of Georgia that directly took action that fit this definition. Relating environmental racism to economics, if Georgia politicians argue for deregulation promoting economic growth, the same politicians must understand that people have left their homes due to environmentally degrading events. It will drive down housing prices and result in economic loss.

Both the riverkeepers and environmental groups discussed that the lack of enforcement is one of Georgia's most plaguing issues. If Georgia's EPD had the funding to enforce the CWA and update policy to the standards of leading environmentalists, scientists, and riverkeepers, Georgia's situation could be vastly improved. However, the situation is different because EPD's annual budget is kept at such low levels that environmental groups and riverkeepers around the state often have to fill the gaps.

A solution to the central issue of this enforcement problem would be allocating our resources appropriately to EPD and creating a system where its staff can function appropriately with the necessary funding. This means EPD would be able to enforce the current policy on the books. It would be able to issue permits, make sure that each company follows the guidelines set, and then create an idea for the future that we should be protecting our environment, not letting industry ruin it. An umbrella policy that goes beyond the CWA would be a significant step in this direction. Clean and potable water should be a right for every person and allocating resources at the state level is a first step. If other states around the country have already done this, so can Georgia.

COVID-19 has had its impacts felt around the globe, and neither the riverkeepers nor the environmental groups have escaped these impacts. Although they have had some success due to people wanting to explore the outdoors safely, COVID-19 continues to be a serious problem. The riverkeepers and environmental groups both had to create unique methods of keeping their nonprofits afloat. Some groups tried virtual music festivals, while others had to try unique paddle trips to promote safe activities during the pandemic. Both groups, especially the riverkeepers, had the chance to promote themselves during the pandemic because their business model was significantly related to the outdoors.

Limitations and Future Research

The study was limited to Georgia riverkeepers and environmental groups. I wanted to specifically look at how Georgia's environmental issues were unique due to its diversity of race and geography. However, this is also a limitation. This study could be used as a model to examine other states to see how their environmental groups and riverkeepers are observing and combating poor water quality. Other states have different levels of funding for governmental agencies, different numbers of riverkeepers and environmental groups, different types of communities, and problems that need to be addressed. They might look completely different than Georgia and comparing them could make for another interesting study on the topic.

Another limitation that this study had is the diversity of the participants themselves. If we discuss environmental racism, it is vital to learn from those impacted. All but one of the participants identified

themselves as white, while only one identified themselves as Black. Another study could specifically look at environmental groups and riverkeepers who are of minoritized status and compare their opinions to those who are not.

One demographic question that had some issues with diversity was gender. Most of the riverkeepers identified themselves as cisgender males, with only one of the six identifying as a cisgender female. In the environmental groups, all of the participants identified themselves as cisgender females. This gender difference could have implications for answers to the questions, and if the project was reproduced, you could ask further questions relating to gender to see if differences exist.

Another limitation was using the snowball sampling. Although snowball sampling is cost-efficient and allows for referrals in the process, representativeness of the sample cannot be guaranteed, and issues of bias can be present.

Finally, a limitation that the interviews had was that there was not an interview for every single watershed in Georgia. After conducting the interviews, not every watershed has a riverkeeper or environmental group. The Tallapoosa watershed often relies on other riverkeepers or environmental groups for their needs. Other than this instance, every watershed had a riverkeeper, and environmental group contacted. Participants in the research project were in the Coosa, Chattahoochee, Flint, Oconee, Savannah, Ogeechee, Suwannee, and Ochlocknee basins. There were no interviews conducted for the riverkeepers and environmental groups within the Tennessee, Tallapoosa, Ocmulgee, Satilla, Altamaha, and St. Mary's watersheds. To visualize this, refer back to figures one and two. This lack of interviews is a limitation as these watersheds could have situations valuable to the study.

Taking this research into the future, the project could be a model for others to interview riverkeepers and environmental groups in other states around the country. Environmental racism, neoliberalism, and the devastating impacts of COVID-19 are not limited to Georgia. The qualitative methods used can be applied to another project. The project could even be used as a comparison to other states. There are states around the country that have different levels of diversity than Georgia, more or less funding to its respective environmental agencies, and different political climates.

This study shows how Georgia's riverkeepers and environmental groups are at the forefront of defending our watersheds. Between the vast grasp of the lack of funding within EPD and the push of industry taking advantage of communities of color, Georgia's situation is unique due to its demographics. This research on environmental groups and riverkeepers in Georgia was exploratory to see from their perspective how they advocate and defend communities from poor water quality, interact with governmental agencies such as EPA and EPD, and to see how COVID-19 has shaped their jobs. Without their hard work and dedication to their job, our watersheds and situations regarding poor quality might be exponentially more severe.

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APPENDIX: INTERVIEW QUESTIONS

- 1) What is the day-to-day like for your position?
 - a. Directors
 - b. Workers
 - c. Volunteers
- 2) What is your background? Why did you decide to pursue this job?
- 3) Demographics
 - a. Age
 - b. Gender Identity
 - c. Race
 - d. Marital Status
 - e. Education Level (highest level)
 - f. Living Status (homeowner or renter)
- 4) Are you affiliated with any political parties or groups?
- 5) What is currently needed to enhance advocacy ability?
- 6) What are the best strategies for educating the community about water conservation?
- 7) Do you think any government policy or regulation could help solve water quality issues?
- 8) What is the collaboration like among similar organizations?
 - a. What are differences among organizations?
 - i. What are the reasons for these differences?
 - b. What are similarities among organizations?
- 9) What are some events that illustrate the most pressing problems of river conservation?
 - a. Is there an activity that happens over-and-over that needs to be addressed?
 - b. Are problems emerging from locals or from “outsiders?”
 - c. Do these problems impact certain communities?
 - d. would government regulations curb these events?

- 10) What are relationships among citizens that live on/near the river?
 - a. Do people who live along the river request more activity?
 - b. Do people who live along the river “police themselves?”
 - c. What are relationships between your organization and citizens along the river?
- 11) What are relationships like between your organization and law enforcement (police, prosecutors)?
 - a. What is the variability in policing violations of environmental laws?
 - b. What types of evidence are collected and shared with law enforcement that motivates action?
 - c. What might be the missing ingredients to engaging more fully with law enforcement?
- 12) What are the biggest challenges of working on river conservation?
 - a. What are strategies that you regularly employ to overcome barriers?
 - i. Are there COVID management strategies that are seen to work or not work?
- 13) Has COVID-19 impacted the activities of your organization?
- 14) Who are the most vulnerable groups for poor water quality?
 - a. Are indigenous people disproportionately impacted by environmental problems?
 - b. Are black Americans disproportionately impacted by environmental problems?
 - c. Do you think communities of color are targeted more?
- 15) Are there any events that you can think of that have impacted certain racial groups?
- 16) Are there any specific areas or communities that you can think of that have been impacted by those events?
- 17) Are there specific actions that you are doing to support those communities that are impacted for river quality?
- 18) How do you think the communities along the river use it? (Recreation, Fishing, Other

Activities)

19) Do you have any photographs or videos of any issues that have been discussed?