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Community Recovery in Eastern Kentucky after the July 2022 Flooding

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Community Recovery in Eastern Kentucky after the July 2022 Flooding

by

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ABSTRACT

This thesis addresses the questions of how eastern Kentucky activists understand the July 2022 flooding, its impact on their lives, the lives of flood survivors, and what they and flood survivors want for the future and how eastern Kentucky are communities recovering from disaster. The goal of this research project was to collect community experiences, perspectives, and goals and to document recovery efforts. After analyzing 11 interviews with eastern Kentucky activists and participant observation data, I argue that the structural inequities related to coal mining influenced vulnerability, flood experiences, and recovery efforts. I also argue that the strong sense of community present in eastern Kentucky serves as a basis for improved recovery and resilience efforts. Better understanding the context of the flooding can aid eastern Kentucky activists, flood survivors, and allies in recovering, addressing structural violence, and preparing for the future.

INDEX WORDS: Disaster, Resilience, Recovery, Appalachia, Mutual aid, Coal mining

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DEDICATION

I dedicate this thesis to the amazing people of eastern Kentucky, especially those who took the time to participate in this research project. Thank you.

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I would like to thank my wonderful and supportive friends Cassie and Emma. Y'all are the reason I stayed in this program, and I wouldn't have been able to complete my thesis without you. I love you immensely. To my friends Barbara and Jade, your support has been invaluable. I greatly appreciate your friendship, and I love you both. I would also like to thank my incredible boyfriend, Justin. I am so thankful for your love and support, and I love you so much.

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1 INTRODUCTION

We arrived at the FEMA camp followed by a cloud of dust. I stepped outside of a tiny red Prius carrying hundreds of salads onto a patch of grass in the middle of a circle of campers inhabited by flood survivors. Although I could only see a row of trailers, Betty, another volunteer, community activist, and a project manager at the University of Kentucky College of Public Health, said that there were dozens more out of my line of sight. But, the only people around were other volunteers. As Betty informed me, everyone was simply in their trailers. They had lost everything, and they were too depressed to leave. Betty told me that some campers had up to eight people living in them, and soon, some of those family members began to venture out for some spaghetti, garlic bread, and salad. Every single person picking up their meals was visibly tired and defeated. It was rare to catch a glimpse of a smile. Betty took me with her while she spoke with flood survivors to ask for their contact information and what they lost in the flooding. She would give that information to the Kentuckians for the Commonwealth (KFTC) organization which planned to distribute small sums of money to as many flood survivors as possible. I listened as they talked about everything they lost: their homes, their cars, their sense of safety and hope. It was easy to get lost in despair, as so many people did. But Betty's work showed me that there was hope. People were trying to recover and rebuild. Amid disaster, eastern Kentucky activists and flood survivors were working together to create better futures for themselves and their fellow survivors.

When I visited the Mine Made Adventure Park in Knott County, Kentucky in September of 2022, dozens of people from all around eastern Kentucky came to the FEMA camp with Betty and me. Some, like Betty, were representatives of aid organizations, such as Kentuckians for the Commonwealth (KFTC), or local community groups, like the Christian Appalachian Project

(CAP). Others were community members trying to give back to those less fortunate than themselves. Then, there were those living in the FEMA camp. Walking around the camp with Betty showed me the intense level of destruction and loss. But, in the conversations we had with survivors, they showed hope for the future and recovery. Some survivors were already planning their next steps. They had goals to move from the FEMA trailers to friends' or relatives' homes or to move back into their own homes. Betty's work with KFTC, documenting loss, was aimed at helping survivors recover and reach their goals. Based on what someone lost, they would receive a payment from KFTC to help them get back on their feet and replace some of the items that were damaged or destroyed during the flooding.

In February of 2023, I again traveled to eastern Kentucky to conduct participant observation. I worked with one of my interview participants, Betty, and her friend Karen, a nun, and a member of the Mt. Tabor Benedictines, to deliver food to flood survivors living in trailers at Jenny Wiley State Park. In the wake of the flooding, Betty, Karen, and other eastern Kentucky activists continuously worked to establish mutual aid networks to help flood survivors recover. In September of 2022, Betty was aided by the Christian Appalachian Project and Feeding East Kentucky in her efforts to provide flood survivors with food. In February of 2023, Betty was working with the Mt. Tabor Benedictines and a small number of eastern Kentucky community volunteers to buy and deliver food to flood survivors remaining in the FEMA camps at the Mine Made Adventure Park and Jenny Wiley State Resort Park.

In late July of 2022, eastern Kentucky communities faced unprecedented disaster. Prolonged heavy rains in the area led to record levels of flooding, causing the deaths of 39 people and injuring hundreds more. Homes, roads, and hollers were washed away and destroyed (Waldron 2022). While popular perception considers disasters "natural," some eastern Kentucky

activists recognized that the flooding was anything but natural. The impacts of the coal industry on the economy, such as poverty, society, such as coal culture, and environment, such as mountaintop removal, created the hazards, inequalities, and vulnerabilities that led to this immense disaster. The flooding revealed these structures and the violence they wrought, both daily and in the extreme case of disaster. For example, every day, eastern Kentuckians lived with the effects of coal mining practices on land ownership. Because coal companies owned land on higher ground, Appalachians were forced to live in the floodplains. Eastern Kentuckians were more vulnerable to flooding because they lived in areas more likely to flood (Geisler 2015, x).

Before the flooding in eastern Kentucky, my research focused on the relationships of Appalachian people to their environments in the context of climate change and the coal industry. I planned to analyze how Appalachian people worked within environmental organizations to make decisions regarding their communities and environments. I hoped to better understand the level at which Appalachian community members' perspectives, needs, and goals were considered by these organizations. However, after the July 2022 flooding, I had to refocus my project. I knew that conducting my research in eastern Kentucky would both require and ensure that my research would be meaningful and beneficial for those recovering from the flooding.

At the onset of refocusing my research project, I was still hoping to focus on relationships between eastern Kentuckians and their physical environments. However, after my first field visit to eastern Kentucky, I realized that I needed to broaden my focus to research recovery and resilience. In mid-September of 2022, I traveled to eastern Kentucky to volunteer and conduct participant observation. After talking with helpful, informative, and passionate eastern Kentucky activists, who were primarily concerned with recovery, I realized that for my project to be used as a tool for change, I had to concentrate on the topics the activists I worked with were interested

in and passionate about, which were eastern Kentucky activists' responses to the flooding and their recovery efforts after the disaster. The people I met in eastern Kentucky were focused on recovery efforts. Therefore, I decided to concentrate on the aftermath of the flooding and the recovery efforts of activists. While this new focus was also concerned with the relationships between eastern Kentucky activists and the environments they lived in, it encompassed many more types of relationships such as those between activists and flood survivors, between activists and aid organizations, and between activists and different levels of government.

My research questions were: In the wake of the 2022 flooding, how do eastern Kentucky activists understand the disaster, its impact on their lives, the lives of flood survivors, and what they and flood survivors want for the future? How are eastern Kentucky activists helping flood survivors recovering after the disaster? The ultimate goal of this project was to collect activists' experiences, perspectives, and goals and to document the recovery efforts of eastern Kentucky activists. After conducting this research and analyzing the data, I argue that the coal industry is significantly responsible for macrostructural contexts that caused the vulnerabilities to flooding and the barriers to recovery that eastern Kentucky activists and flood survivors faced. I also contend that the strong sense of community and the mutual aid networks developed by eastern Kentucky activists, flood survivors, and other community members present a great deal of hope for recovery and resiliency. This was an applied project that aimed to work with eastern Kentucky activists to contribute to their recovery efforts. This project took a praxis approach and utilized applied anthropology to design the research, conduct the research, and analyze the data. Working with flood survivors to understand their perspectives of the flooding and its aftermath enabled eastern Kentucky activists, especially those in positions of power and advocacy, to consider the needs of flood survivors in their decisions regarding recovery and plans for the

future. Additionally, working with eastern Kentucky activists to document recovery efforts helped them improve their recovery and resiliency by collecting information regarding barriers to recovery, strengths of the recovery process, and vulnerabilities that led to the severity of the impact of the flooding.

To avoid the ethnographic present and position eastern Kentucky activists and community members, especially flood survivors, as timeless and unchanging, I apply the past tense to interviews, participant observation, and analysis of data. The data collected for this research project shows only a small snapshot of recovery occurring between September 2022 and March 2023. This thesis was finalized in March of 2023, at the beginning of the transition between short-term and long-term recovery for eastern Kentucky. At the time of this writing, eastern Kentucky activists and flood survivors are actively working towards recovery and resiliency.

2 BACKGROUND

2.1 Flooding

The flood devastated eastern Kentucky. Thirteen counties were declared disaster zones: Breathitt, Clay, Floyd, Johnson, Knott, Leslie, Letcher, Magoffin, Martin, Owsley, Perry, Pike, and Whitley (Barton 2022). The Kentucky River rose over 20 feet, causing destruction and leading to the deaths of 39 people. Although floods are often referred to as "natural disasters," in my interviews and news articles, eastern Kentucky activists spoke of their understanding that the flooding was in large part a result of human practices. They recognized that the coal mining operations in the area irreparably changed the Appalachian environment and climate, increasing the vulnerability of eastern Kentucky communities to flooding and hindering their abilities to recover from increasingly prevalent flooding in the future. The impact of coal mining operations on the landscape in eastern Kentucky was one of the most significant contributors to the region's high levels of vulnerability to flooding. Coal mining practices stripped off the tops of mountains, contaminated waterways, and destroyed forests, which were all impacts that increased vulnerability by accelerating flooding (Waldron 2022).

Starting on July 25th, 2022, eastern Kentucky was subjected to rainstorms that culminated into a major flood event on July 28th (Ray 2022; Calhoun 2022). Over 1,400 people in the area had to be rescued. Homes and infrastructure, such as roads and bridges, were damaged and destroyed (Kelley, Rojas, and Robertson, 2022). People were left without water and electricity for days (Burns and Frazin 2022). The National Oceanic and Atmospheric Administration (NOAA) declared that the eastern Kentucky flooding, which also partially affected Missouri, caused over $1 billion in damage (Mudd 2023). While some houses were damaged, others were destroyed or carried away by floodwaters. The flooding was also

accompanied by landslides, which further impacted roads and infrastructure in the area (Gibson 2022).

While the July 2022 flooding was devastating, it was not unprecedented. Central Appalachia, especially eastern Kentucky and West Virginia, experienced flooding before. 1957 was the year in which the last record flooding occurred in eastern Kentucky. This flood event set records for destruction. The July 2022 flooding managed to break those records. For example, the most recent flood waters were 6 feet higher than in 1957 (Gibson 2022). In February of 1972, a dam break at Buffalo Creek in West Virginia killed over 125 people and left more than 4,000 survivors without homes (Erikson 1998, 153). In 1977, the Tug River flooded, leading to the loss or damage of over 5,000 homes (Geisler 2015, x; Appalachian Land Ownership Task Force 2015, 108). In 2020, damage from flooding in eastern Kentucky totaled more than $72 million (Gibson 2022). More recently, in July of 2021, eastern Kentucky faced a flash flood event that led to the death of one woman and the stranding of 11 people in their houses (Gross 2021). In addition to more damaging floods, Central Appalachia regularly experienced smaller flood events (Appalachian Land Ownership Task Force 2015, 108).

The flooding of eastern Kentucky in 2022 was eerily reminiscent of the 1977 flooding in Kentucky and West Virginia. After the flooding in 1977, thousands of people were left without homes (Giesler 2015, xxvii). Over 1,200 homes in Tug Valley and Harlan County were completely destroyed and more than 5,000 homes were damaged (Appalachian Land Ownership Task Force 2015, 108). While relief trailers were provided for flood survivors, there was no available land to put them on (Giesler 2015, xxvii). The 1977 flood caused Appalachians to consider the effects of coal mining on the region. In a report on the 1977 flood, The Kentucky

Department of Natural Resources determined that mining practices significantly impacted the severity of the flooding (Appalachian Land Ownership Task Force 2015, 122).

In addition to prior experiences of flooding, eastern Kentucky, the state as a whole, and the region of Central Appalachia have faced a myriad of disasters. For example, in 2021, eastern Kentucky experienced an ice storm, which left 150,000 people without power (Kelley, Rojas, and Robertson 2022). In the same year, tornadoes hit western Kentucky, leaving 74 people dead and over 25,000 people without power for days (Robertson et al. 2023). The tornadoes affected around 15,000 buildings and caused "damage and economic losses" estimated at $3.7 billion (The New York Times 2021).

2.2 Land Ownership

Land ownership in eastern Kentucky also significantly contributed to the extreme levels of devastation from historic flood events and the most recent flooding. The majority of land in eastern Kentucky was not owned by local people. Instead, external coal corporations had control. They kept the properties as potential mine sites. However, they were often left unused. Additionally, the land these external entities owned was usually located on higher ground, outside of floodplains. Therefore, the majority of eastern Kentucky community members only had the resources to buy land located in floodplains along the Kentucky River, where their vulnerability to flooding was significantly increased (Waldron 2022).

Land ownership had a long relationship with flooding in Appalachia. Before the timber and coal industries invaded Appalachia, Appalachians were mainly subsistence farmers. In the 1870s, timber companies moved into the region to meet the demand for lumber. Appalachian farmers normally only titled the land they used for farming, leaving the land they used for hunting and fishing untitled. Because these lands were untitled, timber companies were able to

legally take large portions of Appalachian farmers' lands, making it more and more difficult for the practice of subsistence farming to continue (Appalachian Land Ownership Task Force 2015, 82).

The coal industry quickly followed timber companies to Appalachia. Like timber companies, coal corporations swindled Appalachian farmers out of their land through a variety of means. The coal industry also significantly contributed to the decline of farming in Appalachia. Some farmers in the region turned to work in the coal mines, but most stayed on their remaining land. However, instead of continuing to be subsistence farmers, they had to adapt to supply the food and resources needed to sustain the coal camps. The need for increased yields led farmers to overuse the soil, leading to its degradation and inability to produce sufficiently. Additionally, because coal corporations managed to evade taxation, the burden of taxes was placed upon the farmers, making it more difficult for them to survive (Appalachian Land Ownership Task Force 2015, 82). In the 1930s, with the onset of the Great Depression, farmers had to again transition, this time from commercial agriculture back to subsistence agriculture. Coal companies no longer needed their resources and could not pay them. Appalachian farmers then had to sell their land to timber and coal corporations to afford their taxes (Appalachian Land Ownership Task Force 2015, 82-83). Therefore, with the decrease in farming came a decrease in land owned by local people.

The connection between the loss of land and absentee ownership continued. Land owned by coal companies, which had increased over the years, could not be used for farming, housing, or commerce. Because land owned by coal companies could not be accessed by local people, farmland was reappropriated and much of it was used for housing (Appalachian Land Ownership Task Force 2015, 83-84). In 2013, 25% of land in Knott County was owned by outside coal

companies, preventing local people from using it to their advantage. Due to the large percentage of land that was owned by coal corporations, little land was left for Appalachians to purchase. Therefore, if Appalachians wanted to own land, often, their only option was to inherit it (Waldron 2022).

Appalachia had long faced a housing crisis. The lack of adequate housing in Appalachia was facilitated by absentee ownership of land. Much of the land that would have been safe for locals to use for housing was already owned by coal companies, preventing anyone from living there and exacerbating the housing crisis (Appalachian Land Ownership Task Force 2015, 95). Coal companies typically owned land that was located in higher areas, preventing locals from obtaining safe housing outside of the floodplain. Higher land was more desirable for coal companies because it was easier to obtain from farmers and had more accessible coal seams (Appalachian land Ownership Task Force 2015, 108). Additionally, coal companies often purchased rights to minerals through broad-form deeds. Broad-form deeds enabled coal corporations to have control of surface land. Coal companies could use land owned by others "to build roads, railroads, impoundments, and other structures to support coal mining" (Childers 2022). Therefore, most of the available, and affordable, land was located in the floodplain (Appalachian Land Ownership Task Force 2015, 108).

2.3 Appalachian Environment

Living in the floodplains increased the vulnerabilities of Appalachian people. Coal mining practices, especially strip mining, led to increased environmental degradation, which significantly contributed to increased and more severe flooding (Appalachian Land Ownership Task Force 2015, 109; 121). Strip mining erodes soil, which then builds up in bodies of water. The increased soil decreases the amount of water rivers can hold and increases the possibility

that they will flood (Appalachian Land Ownership Task Force 2015, 122). For example, 75% of Cranks Creek, located in Harlan County, Kentucky, was impacted by strip mining operations, negatively impacting both the water and the land around it (Appalachian Land Ownership Task Force 2015, 91).

Mountaintop removal was an incredibly serious issue facing Appalachian communities and their environments. Mountaintop removal mining (MTR), a newer practice that began in the 1970s, was even more destructive to the Appalachian landscape and environment than traditional mining methods. MTR resulted in the alteration of "thousands of square miles of mountain topography" (Schumann and Fletcher 2016, 6). MTR was a coal mining practice used to access coal seams. It consisted of the stripping of mountaintops to expose those coal seams and dumping the resulting waste into valley fills (Morrone and Buckley 2011, 13-14). Filling the valleys with waste, blasting, and using chemicals negatively impacted local wildlife and people (Schumann and Fletcher 2016, 6). The practice of mountaintop removal grew in the Appalachian region, contributing to the further destruction of eastern Kentucky environments and negative externalities for local community members (Morrone and Buckley 2011, 13-14). The coal industry's impact on Appalachia was most severe in Kentucky. Around 58% of all mountaintops removed in Appalachia were located in the state (Biesel 2014, 6). Appalachian communities saw some success through legal measures, such as the 1977 Surface Mining Control and Reclamation Act (SMCRA), which required coal companies to try to restore the environments of mountaintop removal sites. However, while laws like SMCRA were in place, they were rarely enforced, allowing for further destruction of Appalachian environments and the continuation of negative effects on local communities (Motavalli 2007, 36).

While coal mining companies were legally required to "remediate" the land they impacted, they often did not live up to those standards (Osnos 2021). To bypass their responsibilities to the environment, coal companies spent millions of dollars to support the political campaigns of politicians who in turn supported the coal mining industry. By bankrolling politicians, coal companies created "a regulatory framework that is supportive of MTR" (Schumann and Fletcher 2016, 6).

2.4 Appalachian Economy

For generations, coal mining had been the dominant industry in the eastern Kentucky region. While at its peak the coal industry employed more than 35,000 eastern Kentucky community members, at the time of this writing, less than 3,000 jobs in the coal industry remained for workers, leading to significant detriments to the local economy. These devastating impacts included widespread poverty as well as the inability of local governments to improve infrastructure, both leading to increased vulnerability for eastern Kentucky communities (Waldron 2022).

Coal mining significantly impacted the economy of Appalachia. The coal industry was dominant in the region for over 100 years, and Kentucky, at the time of this writing, was still the "third largest coal producing state in the nation" (Biesel 2014, 8-9). Because of its supremacy, other industries were either unable or unwilling to move into the region, which tied the Appalachian economy to the boom-and-bust cycles of the coal industry (Biesel 2014, 8).

While many people in eastern Kentucky recognized the devastating effects of coal mining on Appalachian cultures, such as community division, environment, such as strip mining, and economy, such as poverty, many still supported the coal industry. Long histories of coal mining in the region and the fact that, although significantly reduced, coal mining was still the dominant

industry in the area reinforced support of the coal industry, contributing to its ability to persist in the eastern Kentucky area. Coal mining also provided job opportunities and long-term employment, furthering its endurance in Appalachia (Biesel 2014, 7-8).

While Appalachia was not, and should not have been, defined by its levels of poverty, poverty was a prevalent problem in the region. Eastern Kentucky had some of the highest rates of poverty in Appalachia (Billings and Kingsolver 2018, 54). Kentucky's poverty rate was extremely high, around 25.1%, compared to the rate for Appalachia (16.6%) and the United States. In addition to the significant impacts on poverty stemming from the coal industry's dominance in the region, a lack of social services, job opportunities, and education exacerbated poverty in Appalachia (Schumann and Fletcher 2016, 5-6).

Contrary to popular stereotypes, poverty in Appalachia was not caused by an inherent failure in the culture and lifeways of the Appalachian people. Instead, it was both produced by and perpetuated through systemic inequalities influenced by coal companies' exploitation of local people to increase profit (Morrone and Buckley 2011, 9-10). Poverty in Appalachia was caused and perpetuated by the extractive nature of the coal-based economy. Non-local entities owned local land and coal mining operations. They made a great deal of profit off of the coal industry. However, that profit was not translated to Appalachian communities. While eastern Kentuckians suffered the effects of harmful coal mining practices, they did not gain any profit from their sacrifices, leading to their inequitable vulnerabilities and high levels of poverty (Halbert 2004, 377-378).

2.5 Appalachian Health

The coal industry had a significant negative impact on public health in Appalachia. In areas where surface mining occurred, there were "increased rates of pulmonary and

cardiovascular disease, cancer, and birth defects" (Biesel 2014, 6-7). From 1979 to 2005, 70 Appalachian counties heavily reliant on coal mining experienced the excess deaths of more than 2,000 people (Osnos 2021). Coal mining slurry impacted health through contamination of well water, making it dangerous for Appalachians to drink out of their taps (Bell 2013, 61-62).

In addition to the negative health effects of coal mining practices, the industry as a whole led to a reduction in the capacity of Appalachians to rely on traditional medicines. The herbs and other medicines they gathered from the mountains became inaccessible to them due to coal companies' ownership of land in the region (Bell 2013, 15-16).

2.6 Appalachian Culture and Identity

The Appalachian region had a long history characterized by rich culture. While Appalachians shared a strong sense of identity, it was important to remember that Appalachia was a diverse region with many diverse culturally organized groups (Morrone and Buckley 2011, 9). However, hollow communities were very important to and representative of an overarching Appalachian culture. Original settlers to Appalachia formed hollow communities, which were made of extended families that passed land down through generations (Grenoble 2012, 344). The isolation from other communities and the strong communal connections in hollows established extended communities of people who shared a collective Appalachian identity. Appalachian communities were characterized by their commitment to caring for one another and their abilities to function as families. Neighbors were seen as brothers and sisters; they were part of the Appalachian family (Grenoble 2012, 344-345). These strong relationships contributed to an integral social structure of "surviving as one" (Grenoble 2012, 355). The history of Appalachian community and identity was more complex than could be fully described in this project. However, participants and I needed to understand the importance and impacts of Appalachian

culture. Aspects such as social networks and hollow living patterns could inform recovery approaches and community rebuilding efforts after the most recent disaster, thereby strengthening the resilience of eastern Kentucky communities (Grenoble 2012, 343).

While the coal industry created a basis for a common identity in Appalachia, the industry also caused negative changes to Appalachian culture. At the time of the flooding, Appalachian culture was more divided than ever. The debate over whether coal mining had an impact on the environment, the effects of that impact, and what should be done about the industry divided communities. Because Appalachian communities were traditionally based on strong relationships and support networks, the degradation of community structure and values led to a reduction in the aspects of Appalachian identity that were focused on community (Grenoble 2012, 342).

Widespread and pervasive hegemonic and neoliberal discourse oppressed eastern Kentucky community members and influenced them to continue to support the coal mining industry (Biesel 2014, 10-11). Coal companies utilized cultural "conceptions of gender, class, race, and citizenship" to connect the coal industry to Appalachians' senses of culture and identity (Biesel 2014, 3-4). They worked to develop an Appalachian identity that was defined by relationships with the coal industry. People in the region saw themselves through the lens of the coal industry, contributing to their reluctance to denounce the coal industry and move towards other economic possibilities, allowing the coal industry to continue to dominate the economy and culture, furthering its negative impacts on communities and their environments (Biesel 2014, 3-4). Coal companies used various methods of cultural influence to achieve their desired impact on communities. One such strategy was political lobbying. Coal companies portrayed themselves as allies, emphasizing their capacities to support Appalachians and their communities, by giving out scholarships, working with local groups, and sponsoring sports teams. Additionally, coal

corporations maintained their influence through lobbying efforts aimed at convincing Appalachians, from politicians to constituents, that deregulation of the industry would lead to economic improvements in the region (Biesel 2014, 7-8).

The coal industry further influenced culture and identity through programs such as "Friends of Coal" and CEDAR (coal education, development, and resource). Friends of Coal was a public relations campaign in which coal companies gave out "Friends of Coal" merchandise to promote support for the coal industry (Biesel 2014, 14-15). CEDAR was an educational program that taught students about coal mining and the coal industry (Biesel 2014, 9-10).

The persistence of coal mining in Appalachia was also connected to masculinity. Hegemonic narratives concerning what men in Appalachia "should" be were tied to the coal mining industry. The archetypes of the "family man," the "tough guy," and the "modern man" contributed to the development of "a cultural context in which the mining industry makes sense" (Biesel 2014, 12-13). The "family man" was seen as a miner who worked to provide for his family. The "tough guy" was understood as the justification for the physical labor required for underground mining. "Tough guys" were masculine because they worked hard and withstood extremely dangerous conditions. Finally, the "modern man" was the figure of a coal miner who supported the idea of economic progress, through MTR and other technical innovations, as promoted by coal companies (Biesel 2014, 12-13). These archetypes were pushed forward by coal companies, and they served to influence Appalachian men to become coal miners by putting societal pressure on them to fill these roles.

There were many different views on the coal mining industry and its impacts on the Appalachian people, environment, and economy. While the number of jobs available for Appalachians in the coal industry dwindled, many Appalachians supported coal mining. Heavily

influenced by hegemonic discourses surrounding coal mining, they cited job opportunities and long-term employment as reasons for continuing to support the industry (Biesel 2014, 7-8). Some Appalachians appreciated coal mining because of their ancestors. Their ancestors were miners, and some saw continuing to support the coal industry as a method of honoring them (Biesel 2014, 8-9). Additionally, even if Appalachians did not support coal companies' environmental effects, some did not wish to do away with the whole industry. Many people had relatives that worked for coal companies. They did not wish for their family members to lose their livelihoods by destroying the coal industry. Some of them simply wanted coal mining companies to be held accountable for their actions and to be made to follow the laws that protected Appalachian people and their environments (Bell 2013, 20-21). Economic reasoning also explained enduring support for the coal mining industry. Securing employment required Appalachians to engage in coal mining practices, like strip mining or MTR, that lead to negative consequences on the health of community members and the local environment. While Appalachians might have supported the coal industry because of hegemonic narratives that tied coal mining to economic prosperity, they often had mixed feelings about the work that they did due to coal mining's capacity to harm their communities and environments (Biesel 2014, 8-9).

2.7 Mutual Aid

In the wake of disasters, mutual aid often emerges to address the lack of aid from governments and non-governmental organizations. For this project, mutual aid was defined as "a form of political participation in which people take responsibility for caring for one another and changing political conditions … by actually building new social relations that are more survivable" (Spade 2020, 136). Mutual aid consists of survivors of disasters more directly helping members of their communities through common care. It enables community members to

use their experiences to help their communities recover and prevent the same results in the future by collectively developing improved structural contexts (Spade 2020, 136). As disasters reveal structural inequities, mutual aid reveals how those inequities can be changed for an improved future (Spade 2020, 137). Mutual aid also strengthens community bonds by bringing disparate people, who have collectively experienced an event, such as a flood, together and providing them with opportunities to generate relationships and promote collaboration (Spade 2020, 137-138).

While mutual aid is often equated with charity, mutual aid is more respectful of and beneficial to communities, especially those recovering from disasters. Charity tends to be ephemeral and emphasizes the role of donors. Mutual aid emphasizes respect, and mutual aid programs prioritize community members. Mutual aid leads to community empowerment through the focus on community-led organizations and actions. Additionally, mutual aid provides a social basis for community connectivity and collaboration, facilitating better recoveries as well as improved social contexts (Soto 2020, 305-306).

Mutual Aid Disaster Relief (MADR) is a mutual aid organization specifically aimed at bringing communities together after disasters to prioritize the needs of disaster survivors by bypassing authorities and embarking on their journeys of recovery (Spade 2020, 138-139). Disasters are caused and/or exacerbated by inequitable structural contexts. Mutual aid aims to develop methods of changing those contexts to improve community conditions and prepare for future disasters. In relation to disaster, mutual aid increases the resources and networks available for disaster victims, improving their abilities to survive and recover. For example, after Hurricane Maria hit Puerto Rico, existing mutual aid projects kept survivors fed and able to access healthcare (Spade 2020, 139).

Mutual aid work has often been recorded following disasters. The collapse of structures requires community members to collaborate to meet community needs (Spade 2020, 146). After Hurricane Maria in Puerto Rico, communities did not have access to disaster aid. Governments were in no hurry to provide much-needed resources to survivors. In response, Puerto Ricans utilized previously existing grassroots organizations to develop mutual aid programs. These programs organized and distributed resources to community members who could not survive the time it would take for governmental organizations to supply them with aid (Soto 2020, 304).

3 THEORETICAL FRAMEWORKS AND PREVIOUS RESEARCH

3.1 Praxis

The primary framework for this project is anthropological praxis. Praxis is described by Kozaitis (2000) and Baba (2000) as the integration of theory and intervention aimed at meeting community needs and solving local problems. By integrating theory and action, and generating theory through action, applied anthropologists contribute solutions to address the problems communities face (Kozaitis 2000, 56). Taking a praxis approach to research in eastern Kentucky improved the capacity of this project to contribute to the emancipation and self-determination of eastern Kentucky community members by providing a basis for addressing macrostructural inequities.

Kozaitis argues that praxis researchers must always ask whose interests their work serves (2000, 48). The goal of this project was to serve the interests of eastern Kentucky community members, including activists, flood survivors, and others. Although completing this research enabled me to obtain a master's degree, the primary concern of this project was to help empower eastern Kentucky communities to recover from flooding. Although anthropologists in the past were primarily concerned with objectivity, today, anthropologists recognize that subjectivity is a vital component of meaningful praxis. Exploring community resilience in eastern Kentucky after the flooding emphasized care and required me to be accurate, honest, and transparent. Fulfilling the ethical responsibility of support and advocacy of community needs improved the research and its ability to meet community goals (Kozaitis 2000, 48; Baba 2000, 29). Additionally, empathy and compassion were utilized in this project to ensure community engagement and to secure the future development of meaningful solutions to the problems eastern Kentucky communities face (Kozaitis 2000, 61).

Another component of the ethics of praxis is the requirement of research to gain an understanding of the subjective experiences of community members and use those understanding to take action that contributes to the self-determination of community members. Baba argues that "action is ethical" (2000, 27). In order for research to be ethical, anthropologists have to take action aimed at facilitating the capacity of communities to control their lives and futures. Praxis theory can inform social interventions by illuminating the intersections of objective knowledge, subjective experience, and "emergent social reality" (Kozaitis 2000, 55). Anthropological praxis "advances anthropologically informed humanitarianism in the best interests of those whom planned intervention will affect directly" (Kozaitis 2000, 55). While developing interventions with eastern Kentucky activists, who were also community members, was outside of the scope of this project, the data analysis completed for this thesis provided the basis for eastern Kentucky activists to take informed action. By providing eastern Kentucky activists with a resource prioritizing their own perspectives, this project served to enable eastern Kentucky activists to better take actions aimed at securing their visions of the future. Additionally, the subjective experiences of eastern Kentucky activists working with flood survivors collected for this research project allowed for the best interests of activists and flood survivors to be prioritized in their intervention plans.

Rappaport understands praxis through the lenses of holism and community prioritization. Rappaport argues that praxis requires anthropologists to understand what causes problems to develop culturally appropriate and lasting methods of addressing them (1993, 296-297). Anthropologists must holistically investigate society's problems to see how those problems affect every aspect of communities (Rappaport 1993, 297). Rappaport's conception of praxis also requires anthropologists to center local knowledge. Rappaport argues that community members

are perfectly suited to addressing the disorders they face. Community members deeply understand their contexts and the problems they face, allowing the programs they develop to be more culturally specific, more beneficial, and more empowering to communities (Rappaport 1993, 302). Rappaport contends that praxis requires anthropologists not only to understand and identify disorders but also to empower comm unity members to "strengthen whatever capacities local systems have to correct themselves of disorders they themselves experience" (1993, 302). By focusing on the perspectives of eastern Kentuckians, activists addressing the flooding as well as their understanding of flood survivors' experiences, this research attempted to support holism in praxis. Collecting community-centered information contributed to the empowerment of eastern Kentucky activists through the collective identification of local disorders. Additionally, this research, centered on community perspectives, empowered eastern Kentucky activists by reporting on their understanding of their local context, their identification of disorders, their goals for the future, and how they sought to change their lives, structures, and systems after the flooding. This research served as an aggregation of local perspectives, making it easier for eastern Kentucky activists to find information that they could use to develop culturally specific programs for addressing macrostructural inequities.

Baba sees praxis as "action that is organized explicitly around specific values and purposes, namely, those of liberating individuals from alienating and exploitative processes" (2000, 26). Praxis requires anthropologists to be actors in the social reality of communities, allowing them to better understand the interaction between subjective experience and larger social structures. Understanding how social structures affect the lived experiences of community members enables anthropologists to "be ethically responsible and politically effective" (Baba 2000, 27). Baba argues that in order to be ethical, anthropologists must take action that facilitates

the self-determination of community members, contributes to the production of knowledge, and leads to political effectiveness (2000, 27). Praxis requires anthropologists to not only produce knowledge but also to use it to foster the self-determination of communities. Using praxis to contribute to the self-determination of communities also helps to mitigate social disorders (Baba 2000, 38). To become an actor in eastern Kentucky communities and better understand how the inequitable structures and systems in the area contributed to local experiences of flooding and recovery, I traveled to eastern Kentucky and volunteered with the Christian Appalachian Project, Feeding East Kentucky, and the "rolling refrigerator" sponsored by the Mt. Tabor Benedictines. I worked with eastern Kentucky activists to collect their stories, which contributed to the production of knowledge regarding systemic inequities, recovery, and eastern Kentucky activists' perspectives on the July 2022 flooding. The knowledge of local contexts garnered through this research project promoted self-determination for eastern Kentucky activists by prioritizing local perspectives, emphasizing the capacity of communities to recover, and providing resources activists could use to address systemic and structural inequities.

Warry defines praxis as "activity based on knowledge informed by theory and performed according to certain ethical and moral principles for political ends" (1992, 157). He emphasizes activities aimed at securing political goals. For this research project, activity for political ends was the creation of a resource that could be used by eastern Kentucky activists to develop plans for the future and to work with governments to hold the coal industry accountable for their role in the flooding. Like Baba, Warry also ties praxis to action. He argues that, in a way, praxis tests theories. Using theories to inform action reveals what theories are valid. Praxis requires anthropologists and communities to work together to determine what theories should be used to inform strategic actions aimed at finding solutions to the issues communities face (Warry 1992,

156). Theory reveals the structural forces that lead to the problems communities experience, and, after those forces are known, community members and anthropologists can work together to determine how anthropological theory should inform strategic community action (Warry 1992, 157). While working with eastern Kentucky activists to develop strategic action plans was outside of the capacity of this project, the theories and goals discussed by eastern Kentucky activists and me provided a foundation for eastern Kentucky activists to determine how theory could influence their actions. Warry also contends that praxis produces knowledge that is specifically meant to be used to influence decision-making and to contribute to the self-determination of communities (1992, 156-157). Warry argues that communities should ultimately be the leaders in the development of strategic action plans. They should be empowered to make their own decisions regarding their futures (Warry 1992, 157). While the development of a strategic action plan was outside of the scope of this project, the qualitative data collected and the analysis completed, focused on community perspectives and goals, was meant to be used by eastern Kentucky activists to aid them in planning for their futures.

To be both ethical and effective, a vital component of this research project was making data and research available to eastern Kentucky communities. Research can only truly benefit communities if they can access it. Access consists of both the ability to find information and the capacity to understand it (Kozaitis 2000, 51-52). Therefore, for this project to be truly beneficial and the research to be utilized by eastern Kentucky activists, they had to have access to understandable data and products of research. Rappaport also argues for the dissemination of information, which he sees as a necessary component of praxis (1993, 302). Baba and Warry further contend that information gained from research should be returned to communities for their use (Baba 2000, 33; Warry 1992, 157). The rough draft of the thesis was sent to Ethan, an

employee, and member of Kentuckians for the Commonwealth (KFTC), and Betty, two helpful project participants. Their inputs were taken into consideration and used to edit the thesis. The final product of the thesis was emailed to all interviewees. They were instructed to send the thesis to any interested people or organizations.

This project employed Kozaitis' Model CARE: cultural assessment research and engagement. Model CARE is a humanitarian approach that utilizes "insights gained from successful efforts to improve systems, communities, and organizations" to address problems in communities (Kozaitis, 56-57). Developing appropriate and meaningful interventions that empower communities requires an understanding of a community's historical, economic, political, and cultural context. Additionally, meaningful and effective research projects empower communities to take charge of addressing the problems they wish to ameliorate (Kozaitis 2000, 57).

While the flooding in eastern Kentucky exposed much of the underlying structural violence affecting local communities, Kozaitis' Model CARE required further assessment of the situation. Assessment enables researchers to understand and recognize problems societies face and utilize the contexts of the local communities, such as their needs and goals, to develop approaches for ameliorating the issue. Assessment is collaborative and continuous, which enables community members to identify issues with the solution and change the approach as necessary (Kozaitis, 58). This project completed Model CARE's requirement of assessment by identifying factors that contributed to the flooding, barriers flood survivors faced to recovery, and activists' goals for recovery and the future. The assessment was completed by reviewing participant observation data and interview data to identify themes of vulnerabilities, barriers, hopes, and goals for recovery. Interviewees were empowered to assess the flooding. They

provided their perspectives on vulnerabilities, barriers, and recovery. While I was unable to work with eastern Kentucky activists and flood survivors to collectively develop plans for intervention, I collected local perspectives on the needs and goals of activists, who were also community members, to help empower them to address the problems they face.

Research is another component of Model CARE. Research in this model is designed to identify "perceptions, resources, barriers, and opportunities" of the community and to evaluate and ensure the efficacy of implemented solutions to local problems. Additionally, utilizing Model CARE in the context of recovery after the flooding in eastern Kentucky improved the capacity of this research project to empower eastern Kentucky activists to develop plans to address the problems they faced (Kozaitis 2000, 59). The sustainability of this research project was further improved through active engagement. Community members participated, ensuring that the research properly and successfully addressed their needs and goals (Kozaitis 2000, 59-60). Additionally, the participation of community members ensures that their perspectives and interests are considered, contributing to the empowerment of communities (Baba 2000, 33). Activists, who were also community members, in eastern Kentucky were involved in the project from its start to its completion, ensuring the project's success and impact (Kozaitis 2000, 59-60). While I originally aimed to ask activists to continuously review the project data and goals to contribute to the project's sustainability and success, flood survivors in eastern Kentucky were focused on their recovery, limiting their capacities to donate their time and energy to this project (Kozaitis 2000, 60). Therefore, I interviewed only local activists, who, while still extremely busy and focused on aiding in recovery efforts, had more opportunities to provide their insight and perspectives. To be respectful of the activists' time and energy, I did not ask them to continually

review the data collected and the research progress. Instead, during interviews, I updated activists and asked for their insight on the progress of the project.

Warry also discusses the theoretical importance of anthropology as praxis, which he describes as theory that "is integrated with practice at the point of intervention" (1992, 156). While many anthropologists in the past have believed that community members are not interested in theory, Warry argues that they are. Communities are interested in theorizing, and they theorize informally by explaining and interpreting their experiences. While formal theories may be outside of their spectrum of knowledge, they still understand and engage with theory. For applied anthropology to be considered praxis, Warry contends that researchers must engage with community members in discussions "concerning the nature of theory and its relationship to intervention" (1992, 156). While community members may not be familiar with the formal theories and terms used in relevant academic literature, such as disaster anthropology, they still can understand and engage with theories in meaningful ways. Although the eastern Kentucky activists did not have a great deal of knowledge regarding anthropological theories, they understood and engaged with anthropological theory. Activists and I discussed theories and their potential relationships to interventions aimed at addressing vulnerabilities and barriers to recovery.

3.2 "Maladaptation"

Rappaport describes the concept of "maladaptations" as "disorderings of structure that in their nature both generate troubles and impede the capacity of social systems to respond actively to them" (1993, 300). These disorderings of value result from society valuing "the instrumental," the economy, over "the fundamental," human life. In eastern Kentucky, the economic value of coal led to the development of a system where concerns of profit outweighed human and

environmental life, thus causing the troubles that led to increased vulnerability and destruction from the most recent flooding. Additionally, these disorderings prevented communities from effectively addressing the troubles they face (Rappaport 1993, 300). Eastern Kentucky activists, flood survivors, and other community members were unable to combat the troubles they faced in large part due to the economic, social, political, and environmental contexts that resulted from these disorderings. Rappaport's model of "maladaptations" enables researchers to identify structural disorders, critique policies and programs, and develop approaches to address problems in communities. These approaches must also work to "restore adaptiveness" to systems harmed by the disorderings of structure (Rappaport 1993, 301). Developing approaches that adequately and effectively combat structural disorderings requires researchers to make community perspectives "intelligible and audible" (Rappaport 1993, 301). Prioritizing the perspectives of community members enables anthropologists to determine how to best utilize their understanding of structural problems to address and combat those troubles instead of worsening them (Rappaport 1993, 301). Working with eastern Kentucky activists to solve the disorderings of structure was outside of the scope of this project. However, by collectively identifying the structural and systemic inequities that contributed to the vulnerabilities to flooding and the barriers to recovery, this project provided a basis to address those disorderings of structure. Additionally, this project worked to ensure that eastern Kentucky activists' perspectives, goals, and ideas were prioritized, contributing to the creation of this thesis as a potential resource activists could use to develop plans to address disorderings of structure.

3.3 Trauma-Informed Research

Hitchcock and Johnson contend "that all research should be trauma-informed research" (2021, 16). They argue that since researchers cannot know the full background and experiences

of every participant that researchers should automatically use a trauma-informed research approach to be respectful of participants' potential traumas and to ensure that their research is human-centered (Hitchcock and Johnson 2021, 16). A trauma-informed approach to ethnography requires researchers to construct and conduct their research "in a way that assumes a history of trauma" (Hitchcock and Johnson 2021, 17). While a trauma-informed research approach is useful outside of contexts of disaster, it was especially pertinent to this research focused on perspectives of activists and flood victims who survived flooding, considering the traumatic nature of their flood experiences.

Hitchcock and Johnson utilize trauma-informed principles of research from the Substance Abuse and Mental Health Services Administration (SAMHSA). The five principles they focus on are safety; trustworthiness and transparency; empowerment, choice, and voice; collaboration and mutuality; and cultural, historical, and gender issues (Hitchcock and Johnson 2021, 18). Each principle was relevant to and important for the eastern Kentucky research context. In the methodologies section, the impact of these principles on the research design will be expanded.

3.4 Resilience and Disaster

While there had not yet been any anthropological research done on eastern Kentucky connected to the most recent flooding at the time of this writing, a great deal of research, in anthropology and related fields, had been done on disasters and the subsequent work of communities to rebuild, recover, and become more resilient. Disaster and community resilience are two separate theoretical frameworks. However, they can be and have been used together to generate informative ethnographies that work to understand disaster's impact on community resilience. For this research project, previous work examining the connections between disaster and community resilience was particularly relevant in understanding community visions of the

future and in pinpointing potential approaches to improving community resilience, reaching community goals, and recovering from disaster.

Resilience has many definitions. It has been used in a variety of ways by anthropologists and experts from other related fields. The concept of resilience utilized in this project was defined as "the adaptive capacity of a system, community, or society to adapt to hazards by resisting or changing in order to reach and maintain an acceptable level of functioning and structure" (Barrios 2016, 29). The concept of resilience utilized in this project distinctly differs from the ecological understanding of resilience, which is "too simple to account for the political entanglements and social movements that routinely characterize disasters" (Barrios, 29-30). Ecological resilience is seen as the capacity of systems to "return to a preshock state" (Barrios 2016, 29). Human communities are constantly changing, and there is no way for them to remain stable due to both internal and external forces (Barrios 2016, 30). Disasters also enable the formation of new "enunciatory" communities, providing opportunities for previously unconnected people to develop relationships based on disaster responses (Barrios 2016, 30).

Disasters can be contextualized through their production. Even disasters that are considered "natural" are produced by human actions that increase the ability of natural occurrences to destroy communities. Additionally, the structural and systemic inequities in place before the disaster result in different effects on community members, their experiences, and their perspectives of the disaster based upon the intersections of their identities. The same inequities that influence the disaster's effects on community members also influence the abilities of community members to recover from those disasters. Although some entities try to understand disaster and resilience by blaming the disaster's effects on survivors, disaster and resilience cannot be adequately understood or addressed by targeting survivors. The structural and

historical contexts, such as the macrostructural inequities the coal industry created in eastern Kentucky, contribute to vulnerability. Therefore, this systemic violence must be targeted to address inequities and reduce the vulnerability of communities (Barrios 2016, 30-31).

This project also utilized a "vulnerability-reduction centered approach" to the flooding in eastern Kentucky (Barrios 2016, 32). This approach to disaster promotes community resilience by critiquing and seeking to change the practices and policies that make disasters more devastating and cause inequitable effects for survivors depending on their identities. Resilience cannot be facilitated, and disasters cannot be adequately addressed by attempting to adapt the harmful structures and contexts of communities that resulted in inequitable experiences of disaster. That approach only serves to reinforce disaster. Instead, in order to become more resilient, communities have to target their structural contexts that cause inequities, and they have to develop structures and contexts that facilitate equity (Barrios 2016, 32).

Barrios outlines "an analytical checklist to help ensure conceptualizations of resilience do not help sustain vulnerability-making practices but actually contribute to disaster risk reduction" 35). Barrios argues that disasters are formed by the interaction of hazards with policies. Therefore, instead of targeting hazards, approaches to resilience must target the policies and practices that create and reinforce vulnerabilities (2016, 35). Next, Barrios contends that approaches to resilience must consider the connections between communities that have survived disaster and other groups and contexts to best understand and address vulnerabilities (2016, 35). Barrios also argues that resilience approaches must address the systems that cause vulnerabilities and inequalities if they hope to transform the systems and not simply reinforce their capacities for violence (2016, 35). Finally, Barrios recommends that the voices of the most vulnerable and historically marginalized survivors of disasters must be prioritized in resilience efforts. Their

perspectives can reveal the systemic and structural violence that limits their resilience and result in their inequitable experiences of disaster, thereby enabling them to better design and implement recovery and resilience approaches (Barrios, 35-36).

Anthony Oliver-Smith provides a framework for understanding the intersections of resilience, adaptation, and vulnerability. He defines resilience as "the ability to prepare and plan for, absorb, recover from, or more successfully adapt to actual or potential adverse events," adaptation as "adjustment to the hazardous features of the environment," and vulnerability as "the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist, and recover from the impact of a natural hazard" (Oliver-Smith 2013, 277-278). Vulnerability helps researchers and communities understand how systemic inequalities interact with hazards to produce disaster. Resilience also requires an understanding of structural violence and community contexts to find methods for communities to adapt to better address those systemic causes of their vulnerabilities (Oliver-Smith 2013, 277-278). Oliver-Smith is careful to emphasize that the vulnerabilities communities face are not a result of their failure to adapt. Vulnerabilities are the result of structural violence and inequalities in power, not the failure of communities (Oliver-Smith 2013, 278). Therefore, to increase resilience, communities must adapt by finding long-term and sustainable methods of addressing and changing the systems that cause their vulnerabilities.

This research project followed Aidan Seale-Feldman's concept of *the work of disaster*, which he describes as concerning "what is generated through the event and what is destroyed, what is accomplished through narratives of crisis and what is foreclosed, and the process by which affiliation is made visible or rendered invisible" (2020, 238). Seale-Feldman also contends that disasters enable researchers and community members to understand the underlying structural

violence community members face as well as methods of addressing them and recovering from the disaster (2020, 238-239). Disasters reveal how systemic and structural violence affects communities every day, making the suffering community members experienced before the disaster visible (Seale-Feldman 2020, 252).

While disasters destroy, they also provide an opportunity for communities to transform. Disasters reveal structural and systemic violence that contributed to the disaster and its impact, and they also provide opportunities for community members who are most vulnerable and therefore most affected by the disaster to have their voices heard (Seale-Feldman 2020, 239). Disasters can enable community members, especially those most affected by the disaster, to challenge hegemonic narratives and contribute to the development of new worldviews and approaches to "the management of life" (Seale-Feldman 2020, 239). Seale-Feldman presents the concept of "building back better," which is strongly linked to community resilience and recovery frameworks (2020, 242). This concept links disaster to opportunity, arguing that disasters can provide communities with the opportunity to reform the current working of their world. Seale-Feldman also argues that anthropological research on disaster should utilize a critical phenomenological lens, a concept that he terms "the phenomenology of disaster" (2020, 244). This framework enables researchers to understand how a priori frames of disaster, the existing perspectives and understanding of disaster and recovery, both encourage and discourage communities to "build back better" (Seale-Feldman 2020, 244).

As he mentions, a priori frames of disaster intervention are focused on short-term care and intervention. Therefore, many aid organizations and the interventions they put in place will not effectively address the structural and systemic violence that contributed to the disaster (Seale-Feldman 2020, 249). Seale-Feldman emphasizes the importance of interventions being long-term

and addressing systemic problems for them to truly enable communities to "build back better" (2020, 255). Seale-Feldman also contends that the work of disaster shows researchers how both the present recovery work of communities and their visions of their future worlds can inform interventions aimed at "building back better" (2020, 256). He ultimately argues that researchers concerned with disasters must "find a way to sustain this ethics of care with each other and with the world" to help communities "build back better" (Seale-Feldman 2020, 257).

Barrios (2016) complicates Seale-Feldman's understanding of "building back better" by arguing that it is not only disaster survivors whose perspectives are utilized to rebuild after disasters. Instead, people both inside and outside of survivor communities will utilize the opportunity to rebuild to establish or reinforce their power instead of helping communities become more resilient (Barrios 2016, 33). People with power will utilize opportunities to reform society after disaster to further their goals and increase their power. However, in these same spaces of recovery and world-building, disaster survivors who have less power and more vulnerabilities can "challenge dominant narratives of what it means to "rebuild better" (Barrios 2016, 33).

Zhang (2016) also recognizes the problematic focus of organizations and communities on short-term disaster aid, where both the underlying systemic issues are not addressed and the "unintended long-term costs" of inappropriately addressing disasters are not considered (87). Zhang critiques this type of disaster aid and explores its impact on communities and their abilities to recover from disaster through the lens of gift exchange (2016, 87; Mauss 2016). He argues that short-term disaster aid results in power imbalances where entities such as corporations use the "gift" of their resources to make communities feel indebted to them, thereby reproducing vulnerabilities for communities impacted by disaster (Zhang 2016, 87). By

providing communities with only short-term aid, entities can increase community vulnerability, not alleviate it. Entities will use the perceived "gift" of aid to institute a system of gift exchange where the aid enables those entities to gain and control more power (Zhang 2016, 87).

Short-term aid also has unintended consequences for the resilience and recovery of communities after disaster. When outside forces give disaster aid to communities, they introduce unsustainable resources to communities. Therefore, when communities plan to recover, they incorporate unreliable aid resources in their intervention approaches, weakening their abilities to become more resilient and address future disasters (Zhang 2016, 87). Additionally, utilizing the social and political power of the "gift," as described by Mauss, Zhang argues that communities can be pushed to act in the interest of the gift-giving entity, further increasing their vulnerability (Zhang 2016, 87; Mauss 2016). Therefore, it was important for the researcher and eastern Kentucky activists to consider how outside interests could influence activists' and flood survivors' goals for the future to prevent, as much as possible, those outside interests from impacting the plans for addressing systemic problems and recovering from the flooding.

Schuller and Maldonado's model of disaster capitalism was useful in understanding disaster and resilience in the context of eastern Kentucky. They define disaster capitalism as "national and transnational governmental institutions' instrumental use of catastrophe (both so-called "natural" and human-mediated disasters, including postconflict situations) to promote and empower a range of private, neoliberal capitalist interests" (2016, 62). Disaster capitalism has two components: (non)profiteering and world ordering. (Non)profiteering comprises the act of governments entering into contracts with non-profit and for-profit corporations for rebuilding efforts. World ordering in the context of disaster capitalism consists of "radical policy reform" where social change after disaster is meant to serve the needs of "transnational capitalist elite

groups" (Schuller and Maldonado 2016, 62). Schuller and Maldonado contend that natural disasters, such as the flooding in Kentucky, provide opportunities for elite groups to work to implement neoliberal policies (2016, 62). Local governments need money and other forms of aid, causing them to accept aid under any conditions, thereby making them susceptible to the neoliberal and capitalist agendas of corporations (Schuller and Maldonado 2016, 63). However, it is important to note that not all aid after disaster can be considered disaster capitalism. Disaster capitalism is defined as the intentional use of aid to serve the neoliberal interests of corporations (Schuller and Maldonado 2016, 66). Disaster capitalism was important to keep in mind in the recovery efforts of eastern Kentucky activists and flood survivors. This project aimed to discover and prioritize activists' and flood survivors' perspectives of their imagined futures. It was important to consider that the hopes activists in eastern Kentucky had for their futures might have been impacted by disaster capitalism efforts. While it was difficult to determine if and to what extent those imagined futures are impacted, I remained cognizant of and analyzed data for potential influences of disaster capitalism in narratives of imaginaries of the future. I was unable to determine the extent to which disaster capitalism affected the recovery efforts of eastern Kentucky activists. Three interviewees did note that the well-intentioned actions of aid organizations sometimes contributed to barriers. However, no interview participants connected the aid provided by organizations to the promotion of neoliberal agendas. Although interviewees did not speak of these connections, it is still very possible that aid organizations utilized their aid to further neoliberal goals. If disaster capitalism was a factor in eastern Kentucky activists' and flood survivors' recovery efforts, then it would have presented a further barrier to recovery and would have prevented activists from reaching their goals of addressing structural inequities.

3.5 Disaster Case Studies

The following section concerns the applications of disaster and resilience frameworks. Case studies of Hurricane Sandy, Hurricane Katrina, and the Nepalese earthquake were examined to incorporate previous anthropological approaches to disaster research in this project's design and implementation. The ethnographic accounts of disaster research demonstrated potential shared experiences between previous disaster survivors and eastern Kentucky flood victims. Previous work on disaster also helped to illuminate the connections between structural forces and the lived experiences of disaster.

3.5.1 Hurricane Sandy

Lee et al. explore the concept of resilience concerning the recovery of communities after Hurricane Sandy. Lee et al. define resilience as "a communicative process involving collectives interacting to cope with and adapt to changing circumstances" (2020, 439). The authors argue that resilience after disaster is predicated upon community networks characterized by support (Lee et al. 2020, 439). The authors' definition of resilience in relation to disasters, such as Hurricane Sandy and the July 2022 flooding in eastern Kentucky, emphasizes the importance of strong relationships between community members. These connections make communities more resilient and emphasizing support for one another helped eastern Kentucky activists make their communities more resilient.

Lee et al. also emphasize the need for permanent housing in recovery efforts. They contend that those without housing have limited recovery options because they are unable "to carry out normal activities and establish routines" (Lee et al. 2020, 439-440). Additionally, the authors argue that recovery from disasters is complex and is significantly affected by various structural contexts (Lee et al. 2020, 439-440). In eastern Kentucky, there was a housing crisis

prior to the flooding that left community members vulnerable to flooding and presented barriers to their recovery. Because of the limited housing available to flood survivors, many were still living in camps as of February 2023, seven months after the flooding. This lack of housing presented a barrier to recovery because eastern Kentucky flood survivors were unable to reestablish normality.

Additionally, Lee et al. investigate "how support and barriers impacted the processes of resilience" (2020, 440). The authors emphasize that the capacity of communities to be resilient are reliant upon the relationships between those communities as well as "individuals, households, organizations, and governments" (Lee et al. 2020, 440). Resilience after a disaster requires communities to address the problems that contributed to the disaster (Lee et al. 2020, 441). Lee et al. discuss neighbors' roles in recovery, emphasizing the immediate support neighbors provided one another once Hurricane Sandy hit (2020, 448). In eastern Kentucky, community members began helping one another immediately after the flooding hit, contributing to recovery efforts. Additionally, eastern Kentucky activists were interested in addressing problems they faced due to the structural and systemic contexts of the region, and they recognized that addressing these issues would enable them to become more resilient.

Lee et al. also discuss FEMA in relation to hurricane survivors. They contend that the bureaucratic nature of FEMA and similar non-profit organizations do not help communities recover. FEMA presented a significant barrier to recovery for Hurricane Sandy survivors. Survivors were unable to adequately navigate relationships with FEMA, preventing them from obtaining support (Lee et al. 2020, 448-449). FEMA also presented a significant barrier to recovery for flood survivors in eastern Kentucky. The bureaucracy of FEMA made it difficult for flood survivors to obtain support, thereby limiting their capacities for recovery.

Hernandez et al. utilize their work in New York after Hurricane Sandy to present the framework of resilience reserve. The resilience reserve framework aids in the analysis of the recovery of marginalized people after a disaster. They define resilience reserve as "an inventory of potential capacity to confront unanticipated challenges" (Hernandez et al. 2018, 705). Marginalized people affected by disasters like Hurricane Sandy have fewer resources, posing an extra barrier to recovery due to their excess vulnerability (Hernandez et al. 2018, 705). Hernandez et al. also discuss that Hurricane Sandy intensified structural inequities that were present in people's lives before the disaster. Those facing hardships before the disaster had limited opportunities for recovery, prolonging their experience of disaster and preventing them from becoming resilient (Hernández 2018, 711).

The authors also recognize how resilience can be depleted for marginalized populations that are constantly having to expend resources and energy to address the increased difficulties they face. Therefore, those constantly having to use their resources for daily life have fewer resources available to aid them in recovery after disaster (Hernandez et al. 2018, 712). Hernandez et al. conclude that marginalized populations are more vulnerable to disaster, will experience the impacts of disaster longer, and will take more time to recover than populations with more structural power (2018, 712). Activists expressed that eastern Kentuckians who were members of marginalized populations were more likely to face difficulties in recovery. It was expected that, due to their constant expenditure of resources, the recovery of marginalized flood survivors would take longer and be more difficult than for flood survivors with more structural power.

Checker et al. discuss the role of anthropologists in disaster research. They contend that anthropologists can overestimate the potential impact of their work on the communities they

engage with. While they encourage anthropologists to engage in activism and emphasize the necessity of activism, they caution them to temper the expectations of their research's capacity to enact beneficial change for communities (Checker et al. 2014, 409). Melissa Checker discusses anthropologists' roles in activism related to her research in New York and New Jersey after Hurricane Sandy. She contends that when anthropologists overestimate their capacities for change and ignore the limitations of their work, they risk creating unattainable goals and hindering their abilities to work with local community activists. She further contends that anthropologists must recognize and consider their limited capabilities in relation to the contexts of the communities their work centers on. Checker asked her research participants how she could help them in their activist efforts. By engaging with them, she partially repaid their time and efforts in participating in this thesis research. Additionally, engaging in activism gave her more information to use in her work (Checker et al. 2014, 416). Checker also contends that anthropologists should inform participants of the limited capacities of research to enact transformative change. Doing so facilitates better relationships with research participants, allowing researchers and participants to collectively develop realistic expectations for one another (Checker et al. 2014, 418). I originally wanted to work with eastern Kentucky activists to develop strategic action plans to aid in recovery and increase resilience. However, this was beyond my capacity for change. I chose to recognize the limitations of my thesis research, preventing this project from negatively impacting eastern Kentucky's resilience and recovery. As Checker et al. recommend, I explained the limitations to participants and asked them how their time could be repaid. In response, I volunteered with the Christian Appalachian Project, Feeding East Kentucky, and the "rolling refrigerator" operated by the Mt. Tabor Benedictines to engage in activism.

3.5.2 Hurricane Katrina

Beverly Wright focuses on how people of color were disproportionately affected by Hurricane Katrina. She explores how the structural contexts of New Orleans have resulted in unequal capacities of African Americans to recover from the hurricane. Wright contends that understanding the mechanisms of how racism "presents structural biases for minorities will affect the extent of our ability to adequately respond to future disasters" (Wright 2011, 4). Likewise, in eastern Kentucky, community recovery required activists to understand how structural violence, significantly developed by the coal industry, created conditions of vulnerability and barriers to their recovery. Understanding these structural contexts and their impacts on recovery could enable eastern Kentucky activists to better develop plans that improve their capacities to respond to and recover from flooding in the future.

Wright also focuses on housing in New Orleans, arguing that housing inequities, such as the decline in public housing, prior to the flooding hindered the recovery of African Americans after Katrina (2011, 5-6). In the case of New Orleans, the Hope VI program displaced African Americans living in public housing. In eastern Kentucky, housing inequities related to land ownership caused local people to be more susceptible to and less able to recover from flooding. Because coal companies owned most of the land located higher up in the mountains, community members had to live in the floodplains, leaving them at increased risk of flooding. Additionally, because coal companies owned much of the land, community members seeking safer housing elsewhere, outside of the floodplain, could not find land to house themselves on (Appalachian Land Ownership Task Force 2015, 108;122).

Browne also studied the recovery of survivors after Katrina. She found that FEMA failed at facilitating recovery for flood survivors. Instead of listening to community members and

prioritizing their needs and input, FEMA followed institutionalized rules and did not consider the local context of Louisiana when attempting to aid in recovery efforts (Browne 2013, 56-57). In the case of communities recovering after Katrina, FEMA's insistence on ignoring local cultures, structures, and contexts hindered recovery efforts instead of facilitating them (Browne 2013, 57). Browne argues that miscommunication between FEMA and local communities attempting to recover after Katrina led to failures in recovery and a "collective sense of alienation and frustration (2013, 57-61). Similarly, FEMA's role in the recovery of eastern Kentuckians was unproductive and hindered the ability of flood survivors to recover from the flooding. FEMA's lack of knowledge surrounding housing and land ownership problems in the area led to an inadequate response. While FEMA provided some eastern Kentucky flood survivors with money for housing, the lack of land and housing options prevented flood survivors from moving out of FEMA's trailers. So, while flood survivors may have had the money to secure housing, there was nowhere for them to go, leading to increased frustration and stagnation.

Inspired by her work studying recovery in New Orleans after Hurricane Katrina, Dawdy argues that investigating disaster impacts and recovery can reveal the structural inequities that led to the disaster's impact and the strengths and barriers of recovery. She contends that studying disasters can give us more insight into the societies present before the disaster (Dawdy 2006, 720). Katrina revealed that the structural inequities of racism and poverty led to disproportionate vulnerabilities that caused more severe impacts of flooding and fewer capacities for recovery for people of color and the poor (Dawdy 2006, 723-725). Examining what communities in eastern Kentucky were most affected by the flooding demonstrated what structural inequities need to be addressed to prevent further damaging impacts of flooding on vulnerable populations. Furthermore, gaining a better understanding of the difficulties eastern Kentucky activists and

flood survivors faced in recovery revealed what community members were most vulnerable to flooding and faced more barriers to recovery, allowing eastern Kentucky activists to better aid in the recovery of disproportionately affected populations.

Colten's work in New Orleans examining the structural contexts that facilitated differential and disproportionate vulnerabilities and capacities for recovery revealed that New Orleans residents in poverty were more likely to be flooded due to their increased likelihood of living in the floodplain (2006, 731-732). Those residents that were poor could not afford to live in areas with higher elevations, forcing them to live in the floodplain and making them more vulnerable to flooding (Colten 2006, 732-733). In eastern Kentucky, those in poverty were also more likely to live in floodplains and were therefore more vulnerable to flooding. Eastern Kentuckians in poverty did not have the socioeconomic power to live higher up in the mountains where they would have been safe from flooding. Coal companies owned the land outside of the floodplains, preventing those in poverty from accessing it and leaving them more vulnerable to flooding and less able to recover.

3.5.3 Nepalese Earthquake

Seale-Feldman investigates how the context of mental health in Nepal before the 2015 earthquake influenced the insufficient mental health resources available for survivors of the earthquake (2020, 240-241). Similarly, in eastern Kentucky, the structural violence in place before the disaster affected the ability of flood survivors to access resources after the disaster. Seale-Feldman also discusses how the earthquake in Nepal revealed the inadequate mental health services in the country and led to increased interest in addressing those insufficiencies. Additionally, he contends that the increased availability and efficacy of mental health resources in Nepal can contribute to the resilience of affected communities (Seale-Feldman 2020, 241-

242). The flooding in eastern Kentucky revealed previous contexts of inequality that needed to be addressed to improve community resilience. This research project was aimed at identifying structural violence so that it could inform community development of resilience frameworks. However, it remains to be seen whether aid organizations and different levels of government will choose to address the underlying violence in eastern Kentucky to improve community resilience.

Seale-Feldman also discusses the impact of short-term care and interventions on mental health resources and community resilience in Nepal. He contends that transient care can result in both limitations and possibilities for community resilience. He concludes that the earthquake was able to reveal the inequalities of mental health governance in Nepal, contributing to improvements in and developments of mental health governments. However, he also acknowledges that increased work to "improve" mental health governance in Nepal revealed that "improvement" means different things for different people and has the capacity to invite visions of the future that look a great deal like visions of the past (Seale-Feldman, 255-257). In the context of this fieldwork in eastern Kentucky, it was important to acknowledge the perspectives of people who wished to return the organization of their society and world to what it was before the flooding. However, I spoke with eastern Kentucky activists about their goals for the future regarding plans for recovery and resiliency. They expressed their desire to address the macrostructural inequities that caused the flooding, thereby avoiding returning their contexts to past states.

4 RESEARCH METHODS

4.1 Ethical Considerations

Ethical considerations were a top priority in this research project. The researcher followed The Statement on Ethics: Principles of Professional Responsibility from the American Anthropological Association. This research project did no harm and required the researcher to be open and honest with participants about the project. I obtained informed consent from participants, weighed ethical obligations, made the results of the project accessible to participants, protected records, and maintained respectful and ethical professional relationships (American Anthropological Association 2012). Ethics are essential to applied research, and they transcend the American Anthropological Association Code of Ethics.

McGranahan argues that researchers have an ethical responsibility to the communities with whom they collaborate (2022, 290). Relationships are the cornerstone of ethics, and ethical research requires ethnographers to recognize and fulfill their obligations and commitments to communities (2022, 294). Most importantly, McGranahan recognizes that ethics are essential to applied research. In order to ethically engage in ethnographic research, anthropologists must use the data they collect to inform actions that are meant to benefit communities (McGranahan 2022, 295). Ethnography requires anthropologists to collect data and "recognize as theoretical the cultural ways we shape the world and meet each other in it" (McGranahan 2022, 289). Ethnography is both method and theory; it enables anthropologists to generate both data and knowledge (McGranahan 2022, 291). Ethnography as theory is an ethical form of research because it requires anthropologists not just to utilize and generate theory, but to also use that theory to inform actions (McGranahan 2022, 295). Additionally, ethnography as theory is ethical because it is developed through relationships with community members and prioritizes their

experiences (McGranahan 2022, 298). This project utilized ethical methods by researching with communities instead of just about them. Activists in eastern Kentucky were empowered to tell their stories and experiences and the stories and experiences of flood survivors, enabling them "to be in dialogue with an academic literature rather than to be data for it" (McGranahan 2022, 297). This research project prioritized activists' experiences and perceptions of flood survivors' experiences of the July 2022 flooding and subsequent recovery efforts primarily through interviews. I asked eastern Kentucky activists to discuss their experiences of flooding and recovery. Additionally, during interviews, I asked activists about their thoughts on certain theories regarding resilience and recovery. Following Warry's arguments that research participants are interested in theory and participate in theorization, eastern Kentucky activists and I engaged in co-theorization. While these theories were described rather than named, speaking to eastern Kentucky activists about them helped to empower them to put forth their views of theories, enabling them to engage with academic literature.

For this research project to be truly emancipatory and empowering and to be used as the basis for strategic actions, the research methods followed Warry's (2020) recommendations for applied anthropology as praxis. Generally, this required equitable collaboration between activists and me that consisted of ongoing dialogues that focused on theory and ethics, equal partnerships, and discussions surrounding solutions to the problems activists and flood survivors faced (Warry 2020, 156).

4.2 Data Collection

4.2.1 Field Site and Project Duration

The field site for this project was activists in eastern Kentucky involved in recovery efforts from the July 2022 flooding. I utilized rapid assessment methods, which are traditional

ethnographic methods compressed to fit into a smaller duration of research (Bernard 2011, 57). Due to time constraints, the research began in September of 2022 and continued into March of 2023. I spent this time traveling to relevant areas in eastern Kentucky to meet research participants and to volunteer to deliver meals to flood survivors. I made two trips to eastern Kentucky. One occurred in September of 2022, two months after the flood, and one occurred in February of 2023, seven months after the flood. I conducted participant observation by volunteering with participants and relevant organizations to contribute to flood relief efforts. In September, I volunteered with the Christian Appalachian Project and Feeding East Kentucky. I joined research participants Ethan and Betty, both volunteers working with Feeding East Kentucky, at the Mine Made Adventure Park FEMA camp to distribute meals to flood survivors. I rode with Betty to the FEMA camp where we met other volunteers in a central location to set up a meal tent. We made takeout boxes of freshly made spaghetti, garlic bread, and salad. Flood survivors living in trailers came to pick up their meals from us. I met Ethan at an online meeting held by Kentuckians for the Commonwealth (KFTC). Ethan later introduced me to Betty when I traveled to eastern Kentucky in September of 2022 to conduct participant observation. In February, I volunteered with Betty and Karen, a nun and member of the Mt. Tabor Benedictines, to distribute meals to flood survivors living in trailers at Jenny Wiley State Resort Park. Unlike in September of 2022, the food Karen and I delivered consisted of grocery essentials such as milk, eggs, and bread. We went to each trailer and knocked on doors. Those who answered received grocery bags filled with these essentials.

I attended an online meeting in early September of 2022 held by Kentuckians for the Commonwealth, a non-profit organization aiding in recovery from the flooding. In that meeting, I established a relationship with a contact, Ethan. He was a resident of eastern Kentucky and a

member of Kentuckians for the Commonwealth, and he showed great interest in this research project. Ethan was employed by Kentuckians for the Commonwealth as a community organizer, and he worked with local organizations such as Feeding East Kentucky to help flood survivors recover. He connected me with other contacts that he felt could potentially be relevant to the project. While I aimed to interview both activists aiding in recovery and flood survivors directly affected by the flooding, the contacts available to be interviewed were only local activists aiding in recovery efforts. However, eastern Kentucky flood survivors were engaged with during participant observation conduction. Once Ethan reached out to contacts, he provided me with the contact information for the potential participants. I then emailed them to explain the project and ask for interviews. Five people responded. Four people were formally interviewed, and one was informally interviewed. Ethan was interviewed four times. Betty was interviewed three times. Dean was interviewed twice. Mary and Kaitlin were both interviewed once.

The research design for this project was a rapid ethnographic assessment aimed at better understanding flood survivors' and activists' perspectives and experiences of flooding and recovery. While activists' perspectives were accessed through interviews, flood survivors' perspectives were relayed to the researcher by activists from eastern Kentucky working with flood survivors. Additionally, I was able to access flood survivors' perspectives when visiting FEMA camps to conduct participant observation. Rapid ethnographic assessment is often recommended for applied research projects. Because I was unable to complete long-term fieldwork in eastern Kentucky, I had to utilize rapid ethnographic assessment for this project (Bernard 2006, 352). While I utilized the same methods, interviews and participant observation, as those utilized in ethnographies, the research was conducted in a relatively rapid time frame: from September 2022 to March 2023 (Bernard 2011, 57). The main difference between long-

term fieldwork and rapid ethnographic assessment is that rapid ethnographic assessment is done without developing the same level of rapport as is possible with long-term fieldwork. For this project, rapid assessment of community perspectives required me to interview activists and travel to eastern Kentucky to focus on collecting data on community perspectives and recovery efforts to answer the project's research questions (Bernard 2006, 352).

The methodology for this research project utilized trauma-informed methodologies, especially the "FRAMES" model of interviewing as recommended by Hitchcock and Johnson (2021, 24). The principle of safety required me to respect and protect the mental health of participants. During interviews, participants were informed of their right to stop the interview. Trustworthiness and transparency called for me to fully inform participants of the research and its goals. Empowerment, choice, and voice ensured that participants were aware of their agency and could share as little or as much information as they wished. Collaboration and mutuality required me to collaborate with participants for the research and to collectively make decisions. I also had to acknowledge and consider the increased trauma caused by the July 2022 flooding and its aftermath as experienced by vulnerable participants (Hitchcock and Johnson 2021, 18).

This research project utilized non-probability sampling. As Bernard notes, non-probability sampling should be used for "labor-intensive, in-depth studies" (2011, 143). Non-probability sampling requires researchers to purposefully choose participants, which helps to ensure that data collected from participants will be of use to the research project (Bernard 2011, 143). Non-probability sampling was especially necessary for this research project as fewer than 50 participants were interviewed (Bernard 2011, 143). Participants were purposefully selected to ensure that only relevant participants were interviewed, maximizing efficiency and time in the research process.

I planned to utilize purposive and respondent-driven sampling (RDS). Both of these sampling methods would have been appropriate for hard-to-find populations, such as flood survivors in eastern Kentucky, many of whom did not have time or interest to devote to a research project as they were mainly concerned with recovering from the flooding (Bernard 2011, 145-149). Purposive sampling requires researchers to determine the purpose they need participants to serve and, based on the intended purpose, find participants who fit those criteria (Bernard 2011, 145). Additionally, purposive sampling enables researchers to try and find different types of participants without having to reach a certain quota for each type (Bernard 2011, 145). In eastern Kentucky, there were both flood survivors and activists/volunteers working toward recovery efforts. While it was not feasible to try to determine a quota for both categories, the researcher attempted to find participants who fit into each category. However, due to the difficulty in locating flood survivors with time or interest, no flood survivors were directly interviewed. Their informal conversations with me during participant observation were recorded in field notes. All interviews were with activists from eastern Kentucky who were participating in recovery efforts.

Respondent-driven sampling was used to find participants in eastern Kentucky. While snowball sampling is similar to respondent-driven sampling, for this project, respondent-driven sampling was preferred because it ensured that all participants were voluntarily engaging in research. Instead of having participants give researchers the names of other potential participants, respondent-driven sampling relies on voluntary participation where participants inform other potential participants of the study so that they may decide whether or not they would like to make their existence known to researchers (Bernard 2011, 149). While participants were not paid, due to the limited funds of this research project, all other aspects of respondent-driven

sampling were used. Participants were asked to inform members of their social networks of the project so that potential participants could voluntarily decide whether or not to engage with the project (Bernard 2011, 149). Ethan and Betty asked relevant contacts if they would like to be put in contact with me. Those who agreed had their information sent to me, and I then emailed them to ask them to participate in the research project. While other researchers have asked participants to recruit a certain number of other participants (Bernard 2011, 149), in the context of research in eastern Kentucky, participants were asked to recruit as many or as few others as they felt comfortable.

4.2.2 Interviews

This project primarily utilized data collection methods pertinent to person-centered ethnography. These data collection methods are recommended by Levy and Hollan (2014). They discuss the necessity of studying individuals to understand community contexts. Because this project focused on individual and activist experiences aimed at informing an understanding of the impact of the flooding on Appalachian survivors' and activists' lives and recovery, this project utilized Levy and Hollan's (2014) recommendations of methods for person-centered ethnography. I considered participants as informants and respondents. I utilized interviewees as informants by asking participants in interviews questions regarding how flood survivors and other local community members understood the disaster and the recovery. I also utilized interviewees as respondents by asking participants in interviews questions regarding their personal experiences and perspectives on the disaster and recovery (Levy and Hollan 2014).

The project included participant observation and semi-structured interviews. Semi-structured interviews were conducted with 5 eastern Kentucky activists who were also members of eastern Kentucky communities. One participant, Ethan, was interviewed four times. One

participant, Betty, was interviewed three times. One participant, Dean, was interviewed twice. Two participants, Mary and Kaitlin, were interviewed once. While Karen, another nun and member of the Mt. Tabor Benedictines, was a significant contributor to the project through participant observation, she was not interviewed. I collected a total of 11 interviews. Guest, Bruce, and Johnson determined that 12 interviews are enough to reach theoretical saturation (2006, 65,74). While I did not obtain the minimum number of interviews as recommended by Guest, Bruce, and Johnson (2006), combined with participant observation, this research project can be considered to have reached theoretical saturation. Following Levy and Hollan's (2014) recommendations for person-centered interviews, the semi-structured interviews treated each eastern Kentucky community member as an informant as well as a respondent. This dual engagement allowed me to gain information on visions of an improved future and the interviewees' thoughts, experiences, and behaviors (Levy and Hollan 2014). These interviews consisted of questions focused on gaining informant and respondent information on flood experiences, goals for the future, recovery efforts, and hopes for community recovery and resiliency. As Levy and Hollan recommended, probes and questions that were both closed and open-ended were utilized in the semi-structured interviews (2014). I generated an interview guide. This interview guide consisted of closed and open-ended probes and questions focused on eastern Kentucky activists' experiences of the flooding, their understanding of flood survivors experiences, and the impact of those flood experiences on recovery and goals for the future.

Interviews were conducted only with eastern Kentucky activists. While I described the interviewees as "activists," this was an etic definition I developed to characterize the project participants and their role in their communities and recovery efforts. I chose the term "activist" to describe the project participants because they engaged with flood survivors directly to achieve

social goals of recovery. The participants I interviewed, in addition to being activists, were also members of different eastern Kentucky communities, providing them with strong connections to flood survivors from those same communities. For this project, flood survivors were defined as members of eastern Kentucky communities who were directly affected by the flooding. Flood survivors were those community members who lost family members, friends, homes, land, cars, and other resources and/or were displaced due to the flooding. Activists had intimate knowledge of the perspectives and experiences of flood survivors because they worked directly with them in recovery efforts. However, because flood survivors were not interviewed directly, their thoughts on the flooding and recovery cannot be known. Additionally, many flood survivors were in poverty, making them more vulnerable to flooding. The activists interviewed for this project were not in poverty, providing them with the time and resources to contribute to aid. Because of the disconnect in socioeconomic status, activists' perspectives on recovery cannot directly correlate with those of flood survivors. While not requiring flood survivors to participate could be seen as a limitation, praxis approaches do not require everyone in a community to participate in research projects. I understood that flood survivors did not have the time, energy, or resources to devote themselves to this project. However, some eastern Kentucky activists did, making them ideal candidates for project participants.

Ethan was the most interviewed activist. He was a member of Kentuckians for the Commonwealth, a nonprofit organization aiding in recovery efforts. Additionally, he worked for them as a Chapter Organizer. He also lived in Floyd County, one of the counties severely affected by the flooding. Therefore, in addition to providing aid to flood survivors as an activist, he was also considered a community member. Ethan's roles as an activist and as a community member gave him strong connections and insight into the experiences and recovery efforts of

flood survivors. However, Ethan was not directly affected by the flooding, and he had the benefit of higher education, giving him different perspectives on this disaster than other community members and flood survivors.

Betty was a member of Kentuckians for the Commonwealth, and she was a nurse who had been a part of and served eastern Kentucky communities for decades. Betty was one of the first people to help flood survivors after the disaster. She traveled to different areas she knew were affected. She asked residents what they needed, and she secured those resources for them. She lived in eastern Kentucky for her whole life, making her a community member as well as an activist. Silas House wrote about Betty's activism fighting against mountaintop removal in eastern Kentucky in his book *Something's Rising: Appalachians Fighting Mountaintop Removal* (2009). While Betty's education did separate her from some eastern Kentuckians who did not have access to higher education, her work and intense connections to local community members gave her intimate knowledge of flood survivors' perspectives.

Dean was another project participant. He was the Coordinator of Cultural Diversity at Hazard Community and Technical College. He was also a member of many different community organizations. While Dean was not originally from Kentucky, he lived in eastern Kentucky at the time of the flooding. Additionally, he worked to establish strong relationships with local community members through his involvement in organizations and his work at Hazard Community and Technical College. After the flooding, Dean worked to secure equitable resources for flood survivors of color in eastern Kentucky.

Mary was a pastor in eastern Kentucky who started her own church. After the flooding, she organized her church to collect and distribute resources and aid to flood survivors. She was

also the Executive Director of the Southeast Kentucky African American Museum and Cultural Center, which highlights the history of African Americans in Eastern Kentucky.

Kaitlin was a nun of the Mt. Tabor Benedictines. She moved to eastern Kentucky in 2005. She aided in recovery efforts as part of the monastery. Kaitlin's role in recovery was connecting organizations, resources, and flood survivors. Kaitlin had survived a prior flood event that led to her displacement and subsequent residency at the Monastery on Mt. Tabor.

Hitchcock's and Johnson's trauma-informed methodologies utilize the FRAMES model of motivational interviewing to be respectful of participants who have experienced trauma (2021, 24). In the case of eastern Kentucky where participants experienced trauma from the flooding, it was important to utilize the FRAMES model for the semi-structured interviews. In an article regarding the trauma experienced in another flood in Buffalo Creek, Vest Virginia, psychiatrists found that 93% of flood survivors suffered from post-traumatic neurosis (Erikson 1998, 153). It was inferred that experiencing a tragedy such as the July 2022 flooding caused similar trauma for eastern Kentucky activists and flood survivors. Additionally, some participants in this project discussed the effect of the flooding on the mental health of flood survivors. When speaking with Dean and his role in flood recovery efforts, he discussed the importance of mental health resources due to the significant trauma flood survivors experienced. I fully informed the participants of the purpose of the research and the relevance of the information she asked. I also emphasized the participant's right to participate at the level at which they were comfortable. Additionally, I gently and respectfully directed the participant to keep the interview focused on relevant information. Participants were also informed of their rights to stop the interview at any time. I expressed empathy during the interviews. Finally, I thanked the participants for their

participation and acknowledged their courage in sharing their experiences (Hitchcock and Johnson 2021, 24).

Hitchcock and Johnson also emphasize the need to replace some commonly used phrases in ethnographic interviews to help ensure that participants are not re-traumatized during the interviewing process (2021, 24). For example, instead of the researcher telling the interviewee "I understand how you feel," the researcher should say "thank you for sharing that" to reinforce that participants can share as much information as they are comfortable with and to ensure that participants understand that the researcher respects their experiences (Hitchcock and Johnson 2021, 25). I replaced commonly used phrases with more sensitive ones to make interviewees more comfortable in the wake of trauma.

I asked potential participants for their consent to participate in the research and to be recorded during their interviews. While traditionally consent has been obtained through signatures, for this research project, given the context of eastern Kentucky, Georgia State University's Institutional Review Board (IRB) approved for participants to only give their oral consent. As Wynn and Israel (2018) note, requiring written consent can make community members distrust researchers, impeding the research process and the development of collaborative relationships (797-798). Additionally, Wynn and Israel specifically mention that many communities with a history of mining will be especially wary of giving written consent due to the companies' land appropriation enabled by written consent (2018, 798). Eastern Kentucky communities had complicated relationships with mining companies and land ownership. The lack of land ownership by local people and the abundance of land ownership by outside companies made asking community members for written consent of participation even more unreasonable. It was important that activists trusted me and that the research project did not

make them uncomfortable or further traumatize them. Therefore, only oral consent for participation in interviews was obtained.

With participant consent, each interview was audio recorded for accurate transcription and analysis (Levy and Hollan 2014). Verbal consent from each interviewee was required for them to participate in the research, be interviewed, and be audibly recorded. Interviews lasted between 30 minutes and 1.5 hours. Originally, I planned for interviews to last between 1 hour and 2 hours. However, this time frame was modified as needed depending my time constraints or those of the participants (Levy and Hollan 2014).

While conducting interviews, I typed notes. While Levy and Hollan (2014) argue that detailed notes should not be taken during interviews, for this project, I took as many detailed notes as possible while still maintaining attentiveness so that interviewee responses were not lost if audio recordings failed (Levy and Hollan 2014). This proved prudent as some interviews were of low audio quality, making it necessary for me to refer to my interview notes when checking the interview transcriptions against those generated by Otter.ai. More detailed notes were written after each interview was completed. These notes discussed in detail what was spoken about in each interview. Additionally, they included analyses of the information gained and how to improve future interviews (Levy and Hollan 2014). I included preliminary insights, explanations, and interpretations in these notes for future reference. Field notes were both observational and based on interview data. They also included insights, explanations, and interpretations I returned to when conducting the formal analysis of ethnographic findings and themes. When possible, interviews were conducted in private areas without other people to avoid behavioral alterations (Levy and Hollan 2014). After each interview, I transcribed the audio recordings using Otter.ai, a transcription service. This cut down on time spent transcribing and gave me more time to

conduct research and analyze data. Once transcriptions were generated, the transcripts were checked against the audio recordings and interview notes to ensure their accuracy (Levy and Hollan 2014). After coding transcript data and determining relevant quotes to be used in the chapters of this thesis, I removed duplicated words and irrelevant adverbs such as "like." Additionally, context was added when necessary to understand certain sentences. I placed brackets around the context words I added into quotes from interview transcripts.

In order to protect the privacy of participants and ensure their anonymity, data was stored in a secure file on a password-protected computer only accessible to me. Additionally, information collected regarding participants' names and other identifying information was removed from the data to preserve privacy.

4.2.3 Participant Observation

I recorded a variety of events and activities, such as observations and conversations, in her field notes. She took jottings during participant observations (Bernard 2011, 292). These notes were rough, but they enabled me to remember details I was unable to record while conducting their participant observation (Bernard 2011, 292). At the end of each day of research, I wrote more detailed field notes. This prevented me from forgetting important details of their participant observations that did not appear in my jottings from that day (Bernard 2011, 291).

When writing field notes, I utilized my jottings to generate three types of field notes: methodological, descriptive, and analytic (Bernard 2011, 297). I wrote methodological notes to record the research approaches she utilized to collect data (Bernard 2011, 297). Then, I developed descriptive notes that illustrated my understanding of relationships between activists, flood survivors, recovery efforts, and visions for their futures (Bernard 2011, 299). After descriptive notes were generated, I wrote analytic notes in which I outlined my understanding of

how eastern Kentucky activists hoped to reach their goals for the future and recover from the flooding (Bernard 2011, 299).

I engaged in participant observation during several different activities between September 2022 and February 2023. On September 7th, 2022, I attended an online meeting held by Kentuckians for the Commonwealth, a grassroots organization aiding in recovery. The meeting focused on community support, needs, and recovery. Over the course of this meeting, I connected with several attendees. One attendee, Ethan, became a great asset to the research project, and he aided me in establishing her next conduction of participant observation.

On September 16th, 2022, I traveled to eastern Kentucky for the first time. I stayed the night at an Airbnb about an hour away from Floyd County, Kentucky, where the participant observation would take place. On September 17th, 2022, I met Ethan and Betty in Floyd County to travel between Floyd and Letcher counties to deliver and distribute meals to eastern Kentucky flood survivors staying in the Mine Made Adventure Park, which had been transformed into a FEMA camp to accommodate flood victims. After meeting Ethan and Betty at the Christian Appalachian Project site to load their cars with meals, I rode with Betty to the Mine Made Adventure Park. Upon arrival, I worked with volunteers from Feeding East Kentucky to set up a meal distribution center and prepare meals for flood survivors. I also walked through the camp with Betty to speak with flood survivors.

I attended another online meeting held by Kentuckians for the Commonwealth (KFTC) and led by the Kentucky Just Transition Coalition (KJTC). This meeting was held in January of 2023, and it focused on the connections between mutual aid and climate resiliency. I spoke with several eastern Kentucky activists, including Ethan, about increasing resilience in the region and how mutual aid could potentially influence resilience.

On February 11th, 2023, I traveled from Georgia to Whitesburg, Kentucky. That night, I visited the Kentucky Mist Distillery in Whitesburg where I spoke to one of the workers for around an hour. We discussed his work as well as his and the store's flood experiences and subsequent recovery. The next morning, February 12th, I traveled to Floyd County to meet Betty and Karen at Save A Lot. After gathering groceries, I rode with Karen to Jenny Wiley State Resort Park to distribute meals to flood survivors living in trailers. I spent several hours with Karen riding around the campground, knocking on trailer doors, and providing food to flood survivors who answered their knocks. Over the course of these hours, I spoke with several flood survivors in a very informal manner.

4.2.4 CASPER Report

In December of 2022, interview participant Betty sent me a copy of the recently completed Community Assessment for Public Health Emergency Response (CASPER). CASPER is a survey method that was used to conduct a rapid needs assessment of eastern Kentucky counties affected by the flooding. The CASPER report assessed the impact of the flooding on mental health, housing, the environment, community preparedness, and communication. The report was generated to utilize the assessment of needs to inform action and planning to facilitate community recovery in eastern Kentucky. The CASPER report's identification of barriers flood survivors faced to recovery and its presentation of goals for the future made it extremely useful for this project. I utilized data gathered in the CASPER report to supplement the qualitative data collected through interviews and participant observation. The CASPER data was coded alongside interview and participant observation data.

4.2.5 Collaboration

While community involvement and participation were vital parts of this research project, due to the trauma experienced by eastern Kentucky flood survivors and their limited available time, especially in the wake of the flooding where they had many other priorities, community-based research was, at times, difficult to conduct. Therefore, in order to emphasize participation, I revised the research design to better work with eastern Kentucky activists and meet their needs (Warry 2020, 158; 161). I interviewed only eastern Kentucky activists, who were not actively recovering as flood survivors, to be respectful of flood survivors' time. While conducting participant observation, I spoke with flood survivors to better understand their perspectives and needs without taking too much of their time. De Vidas problematizes the theoretical concept of collaboration, recognizing that collaboration in practice with communities in different contexts may not resemble the collaboration researchers expect (2020). While I had expectations of how activists would engage in this research project, I had to constantly work with them to find a shared understanding of collaboration that considered their autochthonous worldviews and to pinpoint ways of exchanging efforts (De Vidas 2020, 298-301).

Academic information and resources were given to interviewees Ethan and Betty to provide them with the tools that they might not have access to otherwise to engage with academic scholarship and relevant theoretical frameworks. I provided participants Ethan and Betty with relevant articles utilized in the project's literature review, the development of theoretical frameworks, and the research plan. Whether or not these participants utilized these resources, they were able to engage with relevant theories. I presented interview participants with theories I thought potentially relevant, and, in their discussions and interviews, they discussed these ideas. Additionally, interview participants presented me with their theories, and

they discussed those theories' relationships to academic ones. Interview participants provided me with their perspectives on academic theory. These activists represented the local knowledge and experiences of eastern Kentucky communities, including flood survivors (Warry 2020, 158). While I originally hoped to meet with participants every two weeks to discuss the research design, research implementation, community engagement, and the importance of data, this proved to not be feasible for this project due to the compressed ethnographic research timeframe as well as the limited availability of research participants (Warry 2020, 158). In an amendment to the research design, I held several meetings and conducted interviews with participants Ethan and Betty between September 2022 and February 2023. Each meeting and interview were held between one participant and me. In each meeting and at the beginning of each interview, I spoke with the participant about research progress and updated plans. The participant updated me on recovery efforts and provided me with their perspectives on the research and how it could be improved. We continuously worked together to ensure that activists had equitable opportunities to contribute to this research project and to guarantee that their perspectives, goals, and needs were prioritized and met by the research process and outcomes.

4.3 Data Analysis

I utilized the qualitative data analysis software NVIVO to code for themes present in the semi-structured interviews, CASPER report, and participant observation data collected. I used in vivo coding approaches (Bernard 2011, 302-303). I utilized repetition, unfamiliar terms, analogies, transitions, comparing data, comparing expressions, and comparing texts to search for and pinpoint themes in the data (Ryan and Bernard 2003, 89-92).

After utilizing qualitative data analysis software to find themes in the data, I generated a codebook consisting of operational definitions, conceptual definitions, and examples. Conceptual

definitions were utilized to define themes found in the data. Operational definitions outlined how to find and measure these themes (Bernard 2011, 30-32). This codebook allowed for the standardization of themes. Additionally, this codebook will allow future researchers to determine the reliability and replicability of the data and analysis discovered in this project (Bernard 2011, 42).

5 COAL MINING AND VULNERABILITY

Oliver-Smith defines vulnerability as "the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist, and recover from the impact of a natural hazard" (2013, 277-278). The coal mining industry caused eastern Kentuckians to be more vulnerable to flooding. Eastern Kentuckians were unable to anticipate the flooding, adequately cope with or resist the disaster, or recover from the flooding. The connection between coal mining and the vulnerability of eastern Kentuckians was well-established in the relevant literature, and it appeared heavily in the participant observation and interview data. Anthony Oliver-Smith defines vulnerability as "the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist, and recover from the impact of a natural hazard (2013, 277-278). The coal industry negatively impacted eastern Kentuckians and limited their capacities to prepare for, cope with, resist, and recover from flooding (Oliver-Smith 2013, 277-278). The coal industry created inequitable structures that left some eastern Kentuckians, especially those who were in poverty, more vulnerable to flooding.

In the wake of the July 2022 disaster, eastern Kentucky activists understood the flooding through the lens of structural inequities caused by the coal mining industry. Dean explained:

The coal industry was one of the biggest contributors to this flooding.

The coal industry's extractive presence in eastern Kentucky created a structural context in which flood survivors and other community members were vulnerable. Coal culture, poverty, environmental degradation, and absentee land ownership were recognized by eastern Kentuckian activists as significant factors that led to the flooding and its severity. Dean recognized that the coal industry played a large role in the flooding, supporting the idea that the industry's creation of inequitable structures led to increased vulnerabilities to flooding for marginalized eastern

Kentuckians. Additionally, Dean's understanding of the coal industry's role in creating the conditions necessary for flooding is supported by background literature from the Appalachian Land Ownership Task Force report. The group found that coal mining practices caused more severe flooding (Appalachian Land Ownership Task Force 2015, 122).

Coal companies' presence in eastern Kentucky created structural conditions that led to vulnerability for local people. The activists I interviewed during this research were aware of the coal industry's impact on the region and how that impact made them more vulnerable to flooding. However, they noted that, in their experience, those who were directly impacted by the flooding often did not recognize that they were disproportionately at risk. Activists attributed flood survivors' perceived inability to recognize the coal industry's role in vulnerability to the coal industry's significant influence on the economy, culture, identity, and the environment.

While the eastern Kentucky activists interviewed primarily understood the flooding as a result of structural inequities, activists explained to me that they thought flood survivors in the region primarily understood the flooding through their experiences of flooding and the barriers they faced to recovery. Additionally, the activists argued that flood survivors did not always connect structural inequities, such as those stemming from coal mining, to the flooding and their experiences. The activists I spoke with for this research project informed me that the disconnect between flood survivors, macrostructural inequities, and coal mining was due to the coal industry's impact on Appalachian culture and identity as well as the fact that flood survivors' primary concerns surrounded their immediate recovery. Betty explained that she believed flood survivors did not make the connections between coal mining, vulnerability, and barriers to recovery because they sometimes were unaware of coal mining's true impact on their local environment:

> *It never entered her mind that this strip job she'd never paid attention to could have had that impact. People go on about their lives and aren't even conscious of their proximity to mining because most of the time you can't see it from your house. It's in the hills, and you're not aware that there's a huge sediment pond right above your house. And you can't go and look 'cause the coal company will get upset.*

Seale-Feldman argues that disasters have the ability to reveal to communities what and how structural inequities affect them every day (Seale-Feldman 2020, 252). According to Betty, flooding in eastern Kentucky revealed to some flood survivors the negative impacts of coal mining on local environments.

5.1 Coal Culture

While eastern Kentucky activists did not refer to the coal industry's impact on their culture as "coal culture," they did understand and recognize that the coal industry impacted their traditions and resulted in the widespread acceptance of and support for coal mining. Coal culture is a phenomenon recorded in the literature regarding coal mining and its influence on Appalachia (Biesel 2014). The hegemonic narratives perpetuated by the coal mining industry secured continued support for coal from eastern Kentuckians. While not all eastern Kentuckians supported coal, the presence and embeddedness of coal culture contributed to the vulnerability of eastern Kentuckians to flooding. Coal culture prevented some eastern Kentuckians from pushing back against the industry, leading to the continued negative impacts of coal mining. Additionally, according to the activists interviewed, coal culture prevented some flood survivors from recognizing the role of the coal mining industry in creating vulnerabilities to flooding. The coal mining industry and coal mining practices created a system of inequity, where eastern

Kentuckians were at a strong disadvantage, by destroying the environment, creating the structural conditions necessary for widespread poverty, and controlling the available land. The interview and participant observation data largely agreed with Biesel (2014) on the impact of coal culture on eastern Kentuckians. Eastern Kentucky activists recognized that the persistence of coal culture led to increased vulnerabilities to flooding and decreased flood survivor recognition of the coal industry's role in creating those vulnerabilities.

Coal culture was exemplified by my experience exploring the Black Gold Festival in Hazard, KY. While visiting eastern Kentucky for the first time, I explored some of the more well-known towns in the region. When I stopped in Hazard, KY, I soon realized they were having a festival. After parking and entering the festival grounds, I saw a sign explaining that this fair was called the "Black Gold Festival." The Black Gold Festival was aimed at celebrating the region's legacy of coal mining. Just a couple of months after catastrophic flooding, largely understood by interviewees to be a result of coal mining's impact on the environment, eastern Kentuckians were celebrating the coal industry. Even though the rubble of buildings that had fallen into the Kentucky River was still visible, hundreds of people were in attendance, excitedly weaving between stalls. There were signs listing local companies and businesses as supporters of this event. There were also many people campaigning for local government positions, as the Black Gold Festival took place right before the November 2022 elections. Some of these candidates were running on platforms in which they promised continued support for the coal mining industry in eastern Kentucky, demonstrating the strong persistence of coal culture in eastern Kentucky even after the flooding.

Although the activists I interviewed were adamant that coal mining significantly contributed to the flooding, the eastern Kentuckians I observed during the Black Gold Festival

were honoring and supporting the coal mining industry by celebrating its legacy in the region. One of the reasons for this continued support for the coal industry and the lack of desire for holding coal mining companies accountable was because of the impact of coal culture in the region. Eastern Kentucky activist Dean explained why the eastern Kentuckians in Hazard for the Black Coal Festival might have continued to support coal mining:

> *The coal industry was one of the biggest contributors to this flooding. People still want to praise them because it's fed their families forever. Other people are starting to see things, but a handful of people still side with the coal companies.*

Dean's argument aligned with Biesel's (2014) contention that coal culture persisted in the region because some Appalachians sought to honor their ancestors through the support of the coal industry (7-8). The coal industry's link to family members led to continued support for the industry, which in turn enabled the industry to perpetuate the vulnerabilities that led to the July 2022 flooding.

Ethan discussed the economic nature of coal culture, noting that some eastern Kentuckians still supported the coal industry and were unaware of its negative impacts because they believed in its economic viability and its role in supporting their families:

> *They're scared that they will lose their livelihood and that's how their dad fed their family when they were kids, and they're attached to it. They've bought into this thing of where they identify their well-being with the coal industry.*

Ethan's understanding that coal culture's economic aspects limited eastern Kentuckians' capacities to recognize the role the coal industry played in the flooding aligns with Biesel's (2014) argument that coal culture persists in the region due to connections between economic and familial narratives surrounding the industry (7-9). Because eastern Kentuckians' families

were historically reliant on the coal industry, activists explained that local people felt both familial and economic ties to the industry, contributing to coal mining's perpetuation in the region.

Another interviewee, Kaitlin, an eastern Kentucky resident and a nun of the Mount Tabor Benedictines, explained the connection between coal mining and Appalachian identity:

> *As far as the mining goes, people in eastern Kentucky, West Virginia, eastern Tennessee, and the coal fields area, have been coal miners for generations now. It's not just a job. It's an identity. To say that mining did this or added to this thing - you're going to get a fight every time. … You can't blame coal for anything. It's attacking someone's lineage.*

Eastern Kentucky activists recognized coal mining's connection to Appalachian identity. Kaitlin's argument agreed with Biesel's (2014) contention that coal companies worked to connect the industry to identity in order to ensure continued support for mining (3-4; 10-11). Additionally, the continued support for the industry contributed both to mining's ability to cause vulnerabilities to flooding and to eastern Kentuckians' inability to adequately address those vulnerabilities.

The coal industry's pervasive hold on eastern Kentuckians was, at least in part, due to mining companies' impact on culture and identity in the region. Eastern Kentuckians' ancestors were coal miners, and they structured their identities around the legacy of the coal industry. According to activists and relevant background literature, eastern Kentuckians understood themselves through economic and historical lenses imposed upon them by coal companies, which aimed to support and perpetuate an identity based upon coal to ensure their continued presence in the region.

Eastern Kentucky activists argued that eastern Kentuckians often saw attacks on coal as attacks on their identities and livelihoods. Activists argued that criticizing the coal industry was understood by eastern Kentuckians who still used coal mining to identify themselves and connect to their ancestors as a threat to their way of life. They found familiarity with the coal industry and attempts to change the economy to focus on less-extractive industries were met with apprehension. As Ethan explains, activists felt that those eastern Kentuckians with identities deeply rooted in the coal industry continued to support coal mining and viewed criticisms of coal mining as personal attacks:

> *This is not "we have to get rid of coal miners." This is "we've got to change the extraction economy. You should have a safe, well-paying job and safe housing. And you don't need the coal industry to give that to you.*

Biesel (2014) discussed that Appalachians viewed the coal industry as capable of providing jobs, thus giving eastern Kentuckians employment opportunities (7-8). Likewise, Ethan recognized that coal culture was able to persist in the region, enabling the coal industry to continue to cause vulnerabilities because, in his experience, some eastern Kentuckians believed that supporting the industry would provide them with economic security.

According to the activists interviewed, some flood survivors still had significant loyalty to the coal industry. The industry's history in the area and ties to ancestors made it difficult for some flood survivors to recognize that coal mining practices contributed to the flooding. While flood survivors did have a more difficult time connecting coal mining to the impacts of the flooding, Ethan also noted that there were flood survivors who did understand the coal industry's role in the flooding:

> *People have a quick reaction that coal is good. Most of the people I've talked to may or may not be ready for a bigger conversation about climate change, but they do recognize the damage to their holler vs. other hollers. The people hardest hit are the people downstream from mines.*

The perceived abilities of some flood survivors to recognize the connections between coal mining and increased vulnerability to flooding aligned with Bell's (2013) argument that while some Appalachian people might not have been ready to do away with the coal mining industry entirely, they did recognize that coal mining had negative impacts on their communities (20-21). In Ethan's experience, some flood survivors may not have been ready for conversations regarding climate change, but their experiences of the flooding showed them coal mining's role in creating vulnerabilities to flooding.

5.2 Poverty

The eastern Kentucky activists I interviewed understood that the high levels of poverty in Central Appalachia stemmed from the extractive nature of the coal industry. They also recognized that eastern Kentuckians suffering from poverty were more vulnerable to flooding and had a harder time recovering from the disaster than other flood survivors. They understood the flooding through the lens of structural inequities. The data gathered and analyzed regarding poverty's connections to inequitable vulnerabilities to flooding aligns with research conducted regarding Hurricane Katrina in New Orleans. Colten (2006) found that those New Orleanians in poverty were more vulnerable to flooding because of their increased likelihood to be in floodplains due to structural inequities surrounding housing (731-732). Likewise, impoverished eastern Kentuckians were more vulnerable to flooding because they were more likely to live in the floodplain. The structural inequities regarding housing in eastern Kentucky were due to

historic landownership patterns where coal companies had control over land located at higher elevations (Appalachian Land Ownership Task Force 2015, 108).

The interview and participant observation data regarding the relationships between vulnerability and poverty strongly align with Hernández et al.'s resilience reserve. Resilience reserve is defined as "an inventory of potential capacity to confront unanticipated challenges" (Hernández et al. 2018, 705). The authors argue that members of marginalized populations have fewer resources than those of privileged populations, which makes them more vulnerable to disasters (Hernández et al. 2018, 705). Additionally, they contend that disasters intensify the structural inequities that existed prior to the disaster (Hernández et al. 2018, 711). Eastern Kentuckians in poverty were more vulnerable to flooding than other flood survivors. They had fewer resources before the flooding, leading to an increased vulnerability to the disaster. Additionally, their lack of resources and therefore their vulnerability was caused by the existing structural inequities, largely created by the coal industry, which intensified after the flooding.

Rappaport's concept of "maladaptations," which he describes as "disorderings of structure that in their nature both generate troubles and impede the capacity of social systems to respond actively to them" (1993, 300). He contends that when societies value economy over human life, then disorderings of structure arise and create problems for communities (Rappaport 1993, 300). While eastern Kentucky activists did not directly mention Rappaport's theoretical framework in their analyses of poverty in the region, they did recognize that the coal industry's focus on economic gain caused poverty, a disordering of structure. Additionally, eastern Kentucky activists understood that poverty generated troubles for local people by making them more susceptible to flooding.

While conducting participant observation and discussing my inability to secure flood survivors as interviewees with research participants, eastern Kentucky activists informed me that, in their understanding, flood survivors often did not connect the legacy of coal mining in the region to their experiences of poverty and their inability to recover. Activists argued that flood survivors' lack of connection between coal mining, macrostructural inequities, vulnerability, and poverty was due to their preoccupation with recovery as well as the persistence of coal culture.

Although I was unable to interview flood survivors, I did have the opportunity to informally speak to flood survivors still living in the FEMA camps when I traveled to eastern Kentucky in September of 2022 and February of 2023 to conduct participant observation. During my trip to Jenny Wiley State Resort Park in February 2023, I spoke to one man whose poverty led to his increased vulnerability to the July 2022 flood and hindered his efforts toward recovery in the wake of the disaster. Prior to the flooding, this individual had suffered through difficult times. He was almost back on his feet after ending a long-term relationship when the flood hit. When the floodwaters came, his house was picked up and carried miles away. The water placed it down in the middle of a bridge. It was cut in half, and he lost everything. Due to his precarious financial situation before the flooding, the loss of his house and belongings significantly set his recovery back. Living in a FEMA trailer seven months after the flood, he struggled to obtain enough money to secure permanent housing. Additionally, his lack of reliable transportation in and out of the park limited his job opportunities, further preventing him from finding stable work. His poverty caused him to be more vulnerable to flooding and to face more barriers to recovery. His experience of poverty's connections to inequitable experiences of vulnerability and recovery aligned with Hernández et al.'s resilience reserve framework (2018, 705;711). Because

this individual had fewer resources before the disaster due to his inequitable burden of poverty, he was more vulnerable to flooding.

While activists saw that flood survivors were concerned with issues of poverty, especially how their lack of socioeconomic resources hindered their recovery, activists contended that flood survivors did not focus on the relationships between poverty, vulnerability, and the coal industry. But, the activists I interviewed did recognize that those in poverty had increased vulnerability to flooding. During one of my interviews with Dean, he explained that:

> *A lot of the communities were poor that got wiped out.*

Another eastern Kentucky activist, Kaitlin, also recognized that impoverished eastern Kentuckians were more vulnerable to flooding:

> *So, often, the people that are hurt the most are the extremely poor and marginalized.*

Dean and Kaitlin, as well as other eastern Kentucky activists, understood that flood survivors in poverty were disproportionately vulnerable to flooding. Dean's realization followed Hernández et al.'s resilience reserve framework (2018, 705;711). Those flood survivors in poverty had limited resources before the flooding, leading to their increased vulnerability. After the flooding occurred, flood survivors in poverty were disproportionately affected due to their lack of capacity for facing disasters (Hernández et al. 2018, 705;711). Additionally, Dean and Kaitlin's realizations of the connections between poverty and flooding were supported by Colten's (2006) research in New Orleans after Hurricane Katrina where they found that New Orleanians in poverty were also more vulnerable to flooding (731-733).

Other activists I interviewed also recognized the connections between poverty, vulnerability, and the coal mining industry. They understood that flood survivors in poverty were

more vulnerable to flooding. Additionally, they recognized that the coal industry's impact on the economy significantly contributed to increased levels of poverty for eastern Kentuckians. Therefore, they argued that coal companies, through their influence on increasing levels of poverty, contributed to the vulnerabilities of flood survivors to the disaster. Ethan explained:

> *Most towns are coal mining communities that are built around the coal mining industry. There were several booms and busts in the industry, and eventually, they saw a decrease.*

Many eastern Kentuckians were employed in the coal industry in previous decades. However, the overall decrease in coal mining jobs negatively affected the economy, causing a decrease in employment opportunities. Additionally, no other industry moved into the region, leaving eastern Kentuckians without other job opportunities (Biesel 2014, 8-9). The limited availability of jobs led to increased poverty in the region, which increased vulnerability to flooding (Waldron 2022). Therefore, the coal industry's impact on the economy created the conditions of poverty that left impoverished eastern Kentuckians more susceptible to flooding.

Some interviewees took the connection between coal mining and poverty further, arguing that coal mining companies intentionally harmed the economies of eastern Kentucky to force people into poverty. Kaitlin explained that coal companies purposefully harmed eastern Kentucky communities by paying them unfair wages to ensure their continued participation in the coal industry:

> *The "hillbillies," the mountain folk, have been throw-away people for generations. [Coal companies] keep them poor and ignorant so that they work for a dollar and be glad that they got a job.*

Kaitlin used the term “hillbilly” to describe eastern Kentuckians in this context because the term had a negative connotation. Kaitlin saw coal companies as purposefully exploitative of eastern Kentuckians, and she used the term “hillbilly” to demonstrate the significant power imbalance between coal companies and local people.

Like Kailin, Betty was also extremely cognizant of the coal industry’s aim to oppress eastern Kentuckians so that they did not have access to education or socioeconomic power. She explained:

> *They [coal companies] also benefited from having a very poor school system. They created it by not paying property taxes, and they benefited from low educational attainment ‘cause if someone did well in high school, they could go and not work in the mines.*

While I did not find mention of the coal industry’s purposeful impoverishment of eastern Kentuckians in the background literature, it was well-established that the coal industry prioritized monetary profit over the interests of local people (Bell 2013; Biesel 2014; Osnos 2021; Waldron 2022). Although they did not prove that coal companies purposefully caused poverty in order to perpetuate their presence in eastern Kentucky, Morrone and Buckley (2011) and Halbert (2004) did note that the impoverishment of eastern Kentuckians was a result of the exploitative practices of coal companies (9-10; 377-378). Eastern Kentucky activists’ understanding of poverty and its impact on flood vulnerability followed Rappaport’s (1993) theory of “maladaptations.” The coal companies’ prioritization of their own economic gain over the education and well-being of eastern Kentuckians was a maladaptation, resulting from disorderings of structure, that led to poverty. Because of that poverty, eastern Kentuckians faced increased troubles, which made them more vulnerable to flooding (Rappaport 1993, 300-301).

5.3 Land Ownership and Housing

Land ownership and housing patterns were responsible for significant vulnerabilities and barriers to recovery for eastern Kentucky flood survivors. The eastern Kentucky activists I interviewed were intensely focused on the relationship between the coal industry and housing and land ownership. They argued that coal companies' impacts on historical and present land ownership patterns led to the housing conditions that contributed to increased vulnerability to flooding for eastern Kentuckians. The background literature supported eastern Kentucky activists' understanding of the connections between coal mining, land ownership, housing, and vulnerability. As soon as the coal industry came to eastern Kentucky, coal companies began securing local land. Often, this land was located at high elevations that were outside of the floodplain. Because coal companies owned land safe from flooding, eastern Kentuckians were forced to build their homes in the floodplain. Eastern Kentuckians were more vulnerable to flooding because they lived in the floodplain. Therefore, the ownership of land by coal companies created inequitable housing and land ownership access, causing eastern Kentuckians to become more vulnerable to flooding (Appalachian Land Ownership Task Force 2015, 82-84; 95; 108; Waldron 2022).

Coal companies spent generations buying land in eastern Kentucky (Appalachian Land Ownership Task Force 2015, 82). They often owned the land higher up in the mountains, away from the floodplains. Because they had control over large parcels of land outside of the floodplains, the only option for many eastern Kentuckians was to live in the floodplain. Betty explained:

> *If the higher ground is all owned by coal companies, it forces the remaining populations into the floodplain.*

These land ownership patterns, established when coal companies first began moving into the region, caused eastern Kentuckians to be more susceptible to flooding (Appalachian Land Ownership Task Force 2015, 122). The only land available to eastern Kentuckians was in the floodplain, leading to their increased vulnerability (Appalachian Land Ownership Task Force 2015, 83-84; 95; 108).

Eastern Kentuckians often could not afford land or housing located at higher elevations due to high instances of poverty. Ethan explained that the eastern Kentuckians oppressed by poverty were the hardest hit by the flooding due to their location in the floodplain:

The people who lived in these hardest-hit places were poor and in the floodplain.

According to interviewees, because coal companies owned a large portion of the land outside of the floodplain, eastern Kentuckians in poverty were unable to find higher-elevation land to live on. They could not afford to buy land from coal companies or from private interests who were able to afford land at higher elevations. While some people and other corporations were also able to purchase land outside of the floodplain due to their socioeconomic power, eastern Kentuckians were often not offered the same opportunities regarding land ownership. Many were in poverty and did not have the resources necessary to secure land safe from flooding. Eastern Kentucky activists' understanding of the connections between land ownership patterns and flood vulnerability were supported by Wright's (2011) and Colten's (2006) research in New Orleans after Hurricane Katrina. Wright found that the Hope IV program led to the displacement of impoverished New Orleanians (2011, 5-6). Colten found that those displaced New Orleanians, due to their poverty, could only afford to live in the floodplain, making them more vulnerable to flooding (2006, 731-733).

Land ownership by coal companies also harmed the economies of eastern Kentucky communities. The owners of land were entitled to use their land for economic gain. Because coal mining companies or other corporations owned much of the land in the region, eastern Kentuckians were unable to use that land for their economic gain. Betty argued:

> *Land ownership determines the economic use of a parcel of land, and if you have a great portion of that sitting idle in the hands of absentee landowners or if it is being used as an extractive industry, then that crowds out other types of industry and other types of ways people can make a living.*

By controlling the land, coal companies also controlled the economy in the region, preventing other types of industry from diversifying the economy. Doing so harmed the economy and kept eastern Kentuckians in poverty, increasing their susceptibility to flooding. Betty's connection between the coal industry, land ownership, and the economy was supported by the background literature on land ownership in Appalachia that detailed the coal industry's role in creating the economic and land ownership conditions that caused excess vulnerabilities to flooding (Appalachian Land Ownership Task Force 2015, 83-84).

5.4 Environment

The coal industry's impact on the environment was recognized by both flood survivors and activists. Traditional coal mining methods impacted the environment, but, with the increased difficulty in reaching coal, more environmentally damaging methods such as strip mining and mountaintop removal became common. The environmental damage enacted by coal companies had significant consequences for eastern Kentucky communities and increased their vulnerability to flooding. The data gathered from interviews with eastern Kentucky activists was supported by background literature from the Appalachian Land Ownership Task Force. The Appalachian Land

Ownership Task Force, which found that strip mining caused environmental degradation which in turn increased flooding and its severity in Appalachia, reached the same conclusions as eastern Kentucky activists as to the connections between coal mining, mining's environmental impact, and flood vulnerability (2015, 109;121).

Eastern Kentucky activists expressed to me that while the rain would still have fallen during the storm that facilitated the July 2022 flood, the extreme flooding only occurred because of the coal mining companies' impact on the environment. Dean explained that abandoned mines and strip-mining practices combined with the rain caused the flooding:

> *The cause of the flooding was epic rainfall but also those abandoned mines that were holding pockets of water. If you add more to it, it bursts. … Strip mining has caused a lot of problems, especially with erosion and trees being removed. Personal opinion - if strip mining didn't go on, some of the damage could have been prevented.*

Likewise, Ethan spoke to me about the impact of coal mining practices on waterways, facilitating flooding and increasing the vulnerability of those living in the floodplain:

> *The water rose up incredibly fast. It went from the creek being high to having water inside in a matter of minutes. And part of that is these landslides and these releases out of these silt ponds where everything is building up on the strip-mined land and the land can't hold the water and the land and water all comes downstream and slides happen.*

Dean's and Ethan's understanding of strip mining's impact on the environment and vulnerability to flooding directly aligned with the Appalachian Land Ownership Task Force's description of the mechanisms behind strip mining's connection to increased flood vulnerability (2015, 122).

The findings of the Appalachian Land Ownership Task Force also supported Dean's and Ethan's recognitions of the connections between strip mining practices and flooding, lending credence to eastern Kentucky activists' contentions that coal mining's impact on the environment caused increased vulnerability to flooding.

During my interviews and participant observation, eastern Kentucky activists conveyed to me that they recognized the connections between coal mining's impact on the environment, land ownership patterns established by the industry, and increased vulnerability to flooding. During one of our interviews, Betty expressed to me:

> *Coal ownership of land increases vulnerability of communities to floods. Looking at the lay of the land where people drowned, where flooding was the worst, it's clearly related to mining. And you can see the places where the water just shot off of the mountains and into the creek and people just couldn't get away in time.*

Betty's recognition that the combination of the coal industry's impact on the environment and its role in establishing inequitable home ownership patterns in eastern Kentucky led to some community members being more susceptible to flooding was supported by the findings of the Appalachian Land Ownership Task Force. The Task Force found that the interaction of land ownership patterns in Appalachia and coal mining's damage to the environment led to increased instances of flooding and caused flood events to become more severe (Appalachian Land Ownership Task Force 2015, 108-109; 121).

According to Betty, coal mining companies were aware of their negative impacts on the environment. She argues that instead of acknowledging and trying to combat their harmful impact, coal companies intentionally bypassed laws and policies aimed at remediating the land

and reducing vulnerabilities. Ethan explained their point of view to me during one of our interviews:

> *Their [coal companies'] primary goal is to get out of the surface mining act so they don't have to reclaim it [the land], return it to the approximate original contour and make it look like they didn't mine it. … They're angling - "Can we get out of SMCRA by putting solar panels on the strip mines? Can we use these retention ponds for hydro-storage? How can we weasel out of all of these regulations?*

The Surface Mining Control and Reclamation Act of 1977 (SMCRA) was a federal law that regulated active coal mining sites and helped to ensure that coal mining companies reclaimed the land they had previously used for coal mining (Motavalli 2007, 36). While the act was meant to hold coal companies accountable for their impact on the environment, coal mining companies often found ways to avoid following this law. Violating this law helped coal mining companies save time, energy, and money. But, by failing to adhere to federal regulations and failing to remediate the land they negatively impacted, coal mining companies left eastern Kentucky environments in vulnerable states. In turn, the damaged environment left eastern Kentucky communities more vulnerable to flooding. Additionally, eastern Kentucky activists' arguments that the coal industry purposefully avoided following SMCRA while disregarding the detriments to eastern Kentucky environments and communities aligned with Schumann and Fletcher's (2016) regarding the political efforts of coal mining companies. The authors determined that coal mining companies utilized their socioeconomic resources to support politicians. In return, they would require politicians to support decreased regulation of the coal industry, thereby increasing their capacity to harm eastern Kentucky environments (Schumann and Fletcher 2016, 6).

The coal industry's impact on identity, the economy, land ownership and housing patterns, and the environment caused vulnerabilities for eastern Kentuckians, leading marginalized community members to be more susceptible to flooding. Eastern Kentucky activists understood that the coal mining industry created social inequities, such as poverty, which caused marginalized eastern Kentuckians to be more vulnerable to flooding. The activists recognized that the coal industry's prioritization of their economic gain over the socioeconomic well-being of eastern Kentuckians was a maladaptation that caused poverty, which made local people more vulnerable to flooding (Rappaport 1993, 300-301). My data also support Colten's (2006) connection of poverty to vulnerability in the context of Hurricane Katrina. Like in New Orleans, those eastern Kentuckians in poverty were more vulnerable to flooding. Because this theme is shared in our research findings, I think that the connections between poverty and vulnerability can be applied to other disaster studies. Additionally, activists perceived that flood survivors often did not connect their vulnerability to coal mining due to coal culture's impact on the region. Their observations support Biesel's (2014) findings that coal culture, through connections to identity, ancestry, and the economy, obscures the industry's negative effects (3-4; 10-11). My interview and participant observation data also support Hernandez et al.'s concept of resilience reserve, which contends that because marginalized people do not have as many resources as privileged individuals, they are more vulnerable to disaster (2018, 705; 711). The framework of resilience reserve was highly applicable in eastern Kentucky, as activists and I recognized that flood survivors tended to have less resources than eastern Kentuckians who were not directly impacted by the flooding, making marginalized community members more vulnerable.

6 BARRIERS TO RECOVERY

While all of the eastern Kentucky activists I interviewed understood the disaster primarily through a lens of structural inequities, they emphasized in their interviews that, in their understanding, survivors mainly understood the flood's impact on their lives through the difficulties in recovery that they experienced. The coal industry's influence on the structural conditions of eastern Kentucky created some of the barriers to recovery that flood survivors faced. The most significant and pervasive barrier to recovery was housing issues, which interviewees recognized as tied to the history of land ownership in the region and its connections to coal companies. The Federal Emergency Management Agency (FEMA) presented a bureaucratic obstacle that many flood survivors struggled to overcome. Eastern Kentucky activists' recognition that structural inequities caused flood survivors of marginalized identities to face increased barriers to recovery aligns with Hernández et al.'s resilience reserve framework. Because marginalized flood survivors had limited resources, they had more difficulty recovering from the flooding. Additionally, due to their lack of resources, their experiences of the flooding lasted longer than for other flood survivors (Hernández et al. 2018, 705;711).

6.1 Housing

According to activists, a lack of available housing was one of the biggest barriers to recovery that eastern Kentucky flood survivors faced. Eastern Kentucky activists recognized that inadequate housing resources prevented flood survivors from actively recovering from the disaster. Activists' connections of the relationships between housing and disaster recovery were supported by previous disaster literature. Lee et al. (2020) argued that flood survivors of Hurricane Sandy took more time to recover because, without housing, they had fewer resources

to recover and less capacity to reestablish their normal routines (439-440). Further supporting the relevance of Lee et al.'s argument, Giesler (2015) found that connections between permanent housing and recovery were also seen after the 1977 flood in Kentucky and West Virginia. Giesler argued that because thousands of Central Appalachians were left without homes because of the 1977 flooding, they faced more barriers to their recovery efforts. Additionally, Giesler connected the difficulties in recovery due to limited housing opportunities to coal mining's impact on land ownership patterns in eastern Kentucky. Giesler argued that the lack of available housing, because of significant ownership of land in eastern Kentucky by coal companies, presented a barrier to recovery (2015, xxvii).

Eastern Kentucky activists' realizations that the flooding exposed previously existing structural inequities aligned with Dawdy's (2006) argument that Hurricane Katrina revealed the structural inequities present prior to the disaster (720). Dawdy contended that examining Hurricane Katrina's impacts on New Orleans and the barriers flood survivors faced uncovered housing inequities (2006, 720). Likewise, flood survivors' experiences of flooding and the barriers they faced to recovery related to housing revealed to eastern Kentucky activists the housing inequities in the region that existed prior to the disaster and were exacerbated by the flooding. Additionally, eastern Kentucky activists' engagement with Dawdy's (2006) theory regarding the capacity of disasters to expose structural inequities aligns with Warry's (2000) argument that community members were interested in theory and were capable of engaging with it in meaningful ways (156).

There were existing issues with housing prior to the July 2022 flooding. Mary explained that the flooding exacerbated the housing crisis:

> *And so it's gonna be a long recovery because housing is an issue. There was a housing crisis before the flood, and, so, it intensified after the flood.*

Mary's connection of the housing crisis to the flooding demonstrates that the disaster enabled eastern Kentucky activists to better recognize housing inequities and how they both contributed to the flooding as well as prevented flood survivors from recovering. Aligning with Dawdy (2006), eastern Kentucky activists like Mary understood that the exacerbation of the housing crisis after the flooding meant that flood survivors would face more barriers to recovery due to the difficulties in finding adequate housing (720). Additionally, Mary's engagement with theory agreed with Warry's (2000) contention that community members are interested in and capable of engaging with theory (156).

The housing crisis was inextricably tied to land ownership patterns related to the coal industry. Coal companies owned land that could be used for safe housing, land that was outside of the floodplain, making it inaccessible to flood survivors. Ethan explained that land that was not used for coal mining could be used to gain future profits, giving coal companies incentive not to sell or donate land that could have been used to alleviate the housing crisis:

> *Finding new locations for housing is actually really difficult. Even land not strip-mined is owned by coal companies anyways. … Ownership of land is a real problem in terms of housing people. The land that would be ideal is all in private hands. Places with housing are expensive and inaccessible.*

Because there was a lack of adequate housing before the flooding due to coal companies' ownership of land, an increased amount of people without homes worsened the housing crisis. Betty explained that the influx of people needing safe housing led to all of the available homes for rent being filled:

The main need is housing. It is impossible to rent places. They're all taken up.

Eastern Kentucky activists' understanding of the coal industry's role in creating the housing crisis and how that crisis presented flood survivors with increased barriers to recovery agrees with the findings of the Appalachian Land Ownership Task Force (2015). The Task Force determined that the inequitable land ownership and housing patterns were the result of coal companies' ownership of a significant amount of land that was located at higher elevations. Because coal companies had control over land outside of the floodplains, they limited the ability of flood survivors to find affordable housing, thereby negatively impacting their recovery (Appalachian Land Ownership Task Force 2015, 82-84; 95; 108). Additionally, Ethan's and Betty's recognition that the housing crisis was exacerbated by the flooding demonstrated alignment with Dawdy's (2006) theory that disasters reveal structural inequities (720).

While FEMA was notoriously unhelpful in its response to the flooding, as evidenced later in this chapter, they provided some eastern Kentucky flood survivors with the monetary resources necessary to rent homes. However, during one of our interviews, Betty explained to me that even with FEMA's financial aid, flood survivors could not always find housing:

A lot of folks have gotten checks from FEMA, and they're ready to make their move, but there's no place to go.

Because of the coal industry's impact on housing and land ownership, the destruction of homes from the flooding caused an intensification of the already-present housing crisis (Appalachian Land Ownership Task Force 2015; Waldron 2022). Because coal companies owned the land where safe housing could be built, those flood survivors with the money to rebuild lacked the resources necessary to secure housing, presenting further barriers to their recovery from the flooding.

The eastern Kentucky activists I interviewed noted that the people who were facing the most barriers to securing safe and adequate housing after the flood were marginalized eastern Kentuckians. The most marginalized flood survivors, who were also those having the most difficulty recovering from the flooding and securing adequate housing, were eastern Kentuckians of color or those in poverty. Kaitlin discussed with me that marginalized flood survivors did not have the monetary resources to rebuild their homes, making it more difficult for them to recover:

> *So, often, the people that are hurt the most are the extremely poor and marginalized - the people up in the hollers who have lost everything and the only thing that they still own is the land, and they don't have the money to rebuild.*

According to activists, marginalized flood survivors did not have access to the economic resources necessary to secure adequate or permanent housing, which, aligning with Hernández et al.'s resilience reserve framework, meant that they had more difficulty in trying to recover from the disaster (2018, 705; 711-712). Additionally, eastern Kentucky activists' recognition that housing inequities caused impoverished flood survivors to face increased difficulties in recovery agreed with Dawdy's findings that New Orleanians in poverty did not have enough resources to adequately recover from Hurricane Katrina (2006, 720; 723-725).

Another barrier to recovery for flood survivors related to housing was a result of greed. Flood survivors had been living at Jenny Wiley State Resort Park since the onset of the flooding. Some lived in trailers, and some lived in the lodge, which was similar to a hotel. However, due to the onset of the tourist season, Jenny Wiley State Resort Park stopped housing flood survivors in the lodge to accommodate paying customers wishing to stay at the park. Betty explained:

> *I was in a meeting last week where someone said all of the flood victims had been cleared out of the lodge. It wasn't an accomplishment. They evicted people. They didn't find them other housing.*

The Kentucky Department of Parks' aim to make money outweighed its obligation to provide safe housing for flood survivors. Removing flood survivors from the lodge presented them with a significant barrier to recovery. Additionally, their eviction of flood survivors exacerbated the housing crisis even further, causing an influx of people looking for housing. The Kentucky Department of Parks' actions agree with Zhang's (2016) argument that short-term aid increased vulnerability instead of alleviating it. Because flood survivors relied on housing that was soon removed, they became more vulnerable and therefore had more difficulty recovering from the flooding than other flood survivors (Zhang 2016, 87).

Data from the CASPER report supports the data gathered from interviews and participant observation regarding barriers to recovery due to housing issues. The CASPER report determined that the barriers eastern Kentucky flood survivors faced to securing permanent housing were related to a lack of resources:

> *Common barriers reported by households to their home repair were money/cost (13.3% and 14.9%, respectively). … in Kentucky River District, a quarter of households reported that they were waiting on an insurance claim or loan. Households also reported time (10% and 9.4%, respectively) and availability of contractors (10.9% and 12%, respectively) as key barriers to their home repair.*

Without the resources identified through the CASPER report, eastern Kentucky flood survivors could not adequately repair their houses, preventing them from securing permanent living situations, and further limiting their capacities for recovery. While housing was recognized as a

barrier to recovery in disaster literature (Dawdy 2006; Giesler 2015), the common barriers to recovering adequate housing were not discussed. The CASPER report's information regarding specific barriers flood survivors faced to housing recovery supplemented the background information by providing more details regarding what types of barriers disaster survivors might face in recovering adequate housing after their experiences of disaster.

6.2 FEMA

The Federal Emergency Management Agency (FEMA) presented a large barrier to recovery for flood survivors. While FEMA came to eastern Kentucky to help flood survivors recover from the disaster, their methods of operating created barriers to recovery. There were still dozens of families living in the FEMA camps at Jenny Wiley State Resort Park and the Mine Made Adventure Park at the time of this writing. Those living in the trailers were there because of FEMA's inability to provide them with the necessary resources to secure adequate alternative housing. While FEMA's role in preventing recovery did not directly relate to the coal industry, FEMA's actions in eastern Kentucky, aimed at recovery, interacted with the coal industry's legacy and impact on the structures and local contexts of the region. The combination of FEMA's response with housing and land ownership patterns related to coal mining presented a barrier to flood survivors, hindering their abilities to recover. Additionally, FEMA's bureaucratic and insufficient response to the flooding presented further difficulties in recovery.

While FEMA came to eastern Kentucky to aid flood survivors and did not purposefully present a barrier to recovery, their policies and organizing methods hindered the recovery of flood survivors. It is well-established in disaster literature that FEMA can present a hindrance to recovery from disaster. Lee et al. (2020) examined the impact of FEMA's bureaucracy on recovery from Hurricane Sandy. They contended that FEMA's bureaucratic nature prevented

disaster survivors from adequately establishing and navigating relationships with the agency, which prevented them from obtaining support and created barriers to their recovery (Lee et al. 2020, 448-449). FEMA's role as a barrier to recovery from disasters was also established by Browne (2013). Browne found that FEMA's insistence on following institutionalized rules prevented them from considering local needs and recovery methods in their recovery efforts. FEMA ignored the local culture and structural inequities in New Orleans, causing their work to become a barrier to recovery. Additionally, Browne argued that difficulties in communication between FEMA and Hurricane Katrina survivors made recovery harder (2013, 57-61). Following this disaster literature, eastern Kentucky activists also argued that FEMA's recovery efforts presented barriers to recovery for flood survivors.

Activists recognized that FEMA's lack of aid that considered the structural inequities present in eastern Kentucky presented a significant barrier to recovery for flood survivors. FEMA had a one-size-fits-all approach to aid. They did not consider local contexts in recovery efforts. In the case of eastern Kentucky, FEMA did not consider the history of the region and how the structural inequities might interact with their policies to introduce more barriers to recovery for flood survivors. During my first trip to eastern Kentucky to conduct participant observation, I took the following field notes:

> *FEMA sucks. They want people to move off of the floodplain to higher ground. So, they will buy the land that was flooded for a very small amount of money and then bulldoze the buildings so that no one can ever live there again. FEMA now owns the land and people have to move. The small amount can't cover what people need for a new house, though.*

While the intention behind this process was beneficial, it was harmful to recovery in eastern Kentucky. Due to the housing crisis, there was insufficient housing for flood survivors relocated by FEMA to secure housing or to purchase land and rebuild. In conjunction with the housing crisis, FEMA's policies of relocation were more harmful to recovery than they were helpful. FEMA's lack of consideration for the structural inequities in eastern Kentucky aligned with Browne's findings that FEMA's institutionalized approach caused the agency to become a barrier to recovery for Hurricane Katrina survivors because their solutions did not consider how structural inequities contributed to the disaster and its impacts (2013, 56-61).

FEMA's failure to account for the housing and land ownership contexts of the region in their recovery efforts introduced another barrier to flooding. FEMA's response to the flooding also presented eastern Kentucky flood survivors with further barriers to recovery by requiring documentation to secure aid. As Dean explains, FEMA did not provide monetary aid to flood survivors who did not have documentation of ownership:

> *People who have heir's property, property being passed down from generation to generation with no documentation, lost everything in the flood. So, FEMA denied people.*

The history of heir's property in the region was not considered by FEMA during their development of recovery plans, causing further difficulty in recovery for flood survivors. FEMA's lack of consideration for local contexts was established by Browne (2013) in their research on Hurricane Katrina. Like in New Orleans, FEMA's adherence to institutionalized rules instead of considering the history and structural inequities led their recovery efforts to hinder eastern Kentucky flood survivors' recovery (Browne 2013, 56-61).

Interviewees and flood survivors I met while conducting participant observation highlighted the significant barriers to recovery that FEMA's recovery process presented. FEMA applications, caseworkers, and the distribution of aid were all made more difficult by an extremely bureaucratic process. Receiving aid from FEMA took a great deal of time and persistence. Flood survivors truly had to work to receive their help. The time and energy necessary to secure aid from FEMA made recovery for flood survivors considerably more difficult. Ethan described the FEMA process:

> *So there's definitely been a kind of non-profit industrial complex response to this that has been very corporate and a pain in the ass like the FEMA process.*

Eastern Kentucky flood survivors faced great difficulty in securing help from FEMA, preventing them from taking other actions for recovery or from having the resources to secure aid from other organizations. Instead of aiding in recovery, in eastern Kentucky, FEMA presented a barrier to recovery because of their bureaucratic nature. Eastern Kentucky activists' recognition of FEMA's role in creating barriers to recovery was supported by Lee et al.'s (2020) research with survivors of Hurricane Sandy. Lee et al. contended that Hurricane Sandy survivors faced difficulty in interacting with FEMA and navigating its bureaucratic channels (2020, 448-449). Because FEMA's application process was difficult for flood survivors to navigate, the agency's recovery efforts served to hinder recovery instead of facilitating it.

My participant observation in eastern Kentucky in September of 2022 and in February of 2023 gave me a great deal of insight into the barriers FEMA presents to flood survivors. On my first trip to the Mine Made Adventure Park, which had been converted into a FEMA camp of dozens of trailers, I spoke to many flood survivors who faced difficulties in receiving aid from FEMA. One man spoke to Betty and me about the loss of his house. My field notes read:

> *He told Betty that his house was gone. It would have had flood damage, but he might have been able to save it. But FEMA instructed people not to clean their houses and remove debris and water until FEMA sent people to document the damage. Otherwise, they wouldn't be reimbursed or given the funds to clean it. But FEMA would sometimes take weeks to come. So, this man was told to wait, but he had around 18 inches of standing water in his house. Since he waited, he had black mold covering everything. He couldn't salvage the house anymore. It just has to be torn down.*

In February, I again traveled to eastern Kentucky to help distribute food to a FEMA camp. This time, I visited Jenny Wiley State Resort Park, where there were over a dozen families still living in trailers. While conducting participant observation and volunteering with the rolling refrigerator program, I had the opportunity to speak to one flood survivor who also faced increased barriers to recovery due to the adverse effects of FEMA's intervention. This individual lost his house during the flooding. The floodwaters swept his home miles away and placed it down on top of a bridge. Because this bridge needed to be used to access flood survivors, FEMA removed his home so that it would not block their way. In my field notes, I wrote:

> *His house was in the way, so FEMA demolished it without letting him get anything he could out first.*

According to both activists and flood survivors, FEMA's policies prevented flood survivors from attempting to save their homes. During my participant observation at the Mine Made Adventure Park and at Jenny Wiley State Resort Park, I learned that flood survivors feared that if they tried to work on their homes themselves, then they would be unable to receive desperately needed aid, further hindering their recovery. FEMA's lack of consideration for the

local needs of flood survivors in eastern Kentucky caused the agency to become a barrier to their recovery. Eastern Kentucky activists' understanding of FEMA as bureaucratic and inconsiderate of structural inequities and the needs of flood survivors aligned with Browne's research on Hurricane Katrina. Browne found that FEMA prioritized following their own institutionalized rules instead of listening to the input and needs of Hurricane Katrina survivors. FEMA's insistence on ignoring local cultures and structural inequities caused the agency to become a barrier in the recovery efforts of both Hurricane Katrina survivors as well as eastern Kentucky flood survivors (Browne 2013, 56-61).

During my participant observation in February of 2023, many flood survivors living in the FEMA trailers at Jenny Wiley State Resort Park spoke about the difficulties they faced in recovery due to FEMA. I spoke with one flood survivor in particular whose experience with FEMA caseworkers exemplified FEMA's role in presenting barriers to recovery:

> *A lot of people had stories about difficulty contacting FEMA caseworkers. One woman, especially. She said that she couldn't find her caseworker. Her original caseworker had left, and they'd replaced her. But, the replacement hadn't shown up in over 2 weeks.*

This flood survivor's experience with FEMA exemplifies Lee et al.'s (2020) argument that FEMA presented a barrier to recovery from disasters because of its bureaucratic nature and insistence on following institutionalized rules. Hurricane Sandy survivors had difficulty working with FEMA and securing their aid, thus hindering their recovery. Similarly, through my participant observation data, I found that eastern Kentucky flood survivors could not establish helpful relationships with FEMA, which prevented them from adequately recovering from the disaster (Lee et al. 2020, 448-449).

The inadequacy of FEMA's aid process, both in terms of monetary compensation and in the length of time required to receive help, also presented a significant barrier to recovery for flood survivors. I first engaged with eastern Kentucky by conducting participant observation of a Kentuckians for the Commonwealth online meeting concerning recovery efforts in eastern Kentucky. At that meeting, one individual spoke about an extreme case of negligence on FEMA's part:

> *FEMA isn't helping. People have been living in their houses their whole lives. Someone was offered $62 [for their home]. Appealing that could take 90 days. What are they supposed to do in the meantime?*

While FEMA's policies and actions regarding housing might have been helpful in other contexts, because they did not consider the economic and housing inequities in eastern Kentucky, flood survivors faced additional difficulties in recovery. As Browne (2013) found in her research on recovery after Hurricane Katrina, FEMA's bureaucratic nature caused the agency to ignore the local needs, histories, and structural inequities of New Orleans, thus securing the agency's role as a barrier to recovery for hurricane survivors. Similarly, in eastern Kentucky, FEMA's insistence on following pre-established rules without considering the local context caused the agency to serve as a barrier to recovery (Browne 2013, 56-61).

Data from the CASPER report also supports the interview and participant observation data that FEMA presented a significant barrier to recovery for flood survivors. The CASPER report demonstrated that the difficulty of flood survivors to successfully work with FEMA presented a barrier to their recovery by preventing them from obtaining assistance:

> *The top barriers for receiving flood-related assistance were issues with FEMA (10.8% and 12%, respectively), the process to get assistance being difficult or confusing (9.1% and 10.9%, respectively)*

The rapid needs assessment conducted for eastern Kentucky after the flooding supported eastern Kentucky activists' contentions that flood survivors faced barriers to recovery due to issues with FEMA and the confusing application process. Additionally, the report's findings related to FEMA supported and was supported by the research of Lee et al. (2020) and Browne (2013) by demonstrating that FEMA made it more difficult for flood survivors to recover from disasters.

6.3 Trauma

The trauma and loss that resulted from the flooding were significant barriers to recovery found throughout my interview and participant observation data. Those affected by the flooding, or even those with connections to people affected by the flooding, were severely traumatized by the July 2022 disaster. Due to the substantial impact of the flood on mental health, flood survivors struggled to recover due to the negative impact of the flood and subsequent difficulties on their mental health. While organizations such as the Red Cross and FEMA provided eastern Kentucky flood survivors with mental health resources after the flooding, eastern Kentucky activists focused more on local mental health resources (American Red Cross 2023; FEMA 2022). However, even with mental health resources, the trauma from flooding still presented barriers to recovery.

Eastern Kentucky activists' recognition of trauma as a barrier to recovery made it necessary to utilize Hitchcock and Johnson's "FRAMES" model of interviewing (2021, 24). Hitchcock and Johnson contend that all research should strive to be trauma-informed, but they stress that trauma-informed interviewing should be utilized in instances where interviewees are

likely to have experienced trauma. Due to activists' and flood survivors' experiences of disaster, participants in this research project were assumed to be potentially vulnerable, further necessitating the utilization of the "FRAMES" model (Hitchcock and Johnson 2021, 18;24). One of the reasons flood survivors were not directly interviewed for this research was that they were more likely to have experienced trauma and were more likely to be vulnerable than eastern Kentucky activists. Additionally, interviewing flood survivors directly could have potentially traumatized them further (Hitchcock and Johnson 2021, 18;42). While eastern Kentucky activists did not experience the flooding directly, they were still assumed to be traumatized by the flooding. Erikson argued that previous flooding in Central Appalachia caused widespread trauma, making it reasonable to assume that all eastern Kentuckians, flood survivors as well as activists, experienced trauma and therefore needed to be interviewed utilizing trauma-informed methodologies (Erikson 1998, 153; Hitchcock and Johnson 2021, 18; 24-25).

According to the activists interviewed, eastern Kentuckians were unprepared for the flooding. They were not warned that a flood of this magnitude was possible and could result from the storm. The night of the flooding, people went to bed, but, as Ethan explained, they later found out about the flooding in a disturbing way:

People woke up at night hearing water inside their house and it was pitch black.

Waking up and experiencing a disaster in their home in the middle of the night was terrifying, and eastern Kentucky activists contended that the memory of this incident haunted many survivors.

Depression as a result of experiencing the disaster was very common, both among flood survivors and those with connections to flood survivors. During my first trip to eastern Kentucky in September of 2022, I met many people living in the Mine Made Adventure Park FEMA camp

who were suffering from severe depression. They had lost important items, their homes, and, sometimes, even family members to the flood. While conducting participant observation at the FEMA camp, Feeding East Kentucky and the Christian Appalachian Project handed out home-cooked meals to flood survivors. I was surprised to notice that not many people came to receive food. Those that did were quiet and somber. When I asked Betty why so few people came to receive meals, Betty and a worker at the camp spoke to me about the high instances of depression among flood survivors in the camp:

> *Betty and the woman at the main building explained to me that a lot of the people there were extremely depressed. They had lost everything. They didn't feel like getting out of bed. Not even getting out of their trailers. They were just kinda stuck.*

The intense depression experienced by flood survivors posed a barrier to their recovery by preventing them from putting time and energy into recovery efforts.

In February of 2023, when I traveled to eastern Kentucky to conduct more participant observation, I spent a little over an hour at the Kentucky Mist Distillery speaking with one of the workers. When I asked the worker, Randall, about the impact of the flooding on the local community in Whitesburg, KY, he explained that people's first reactions were ones of grief and depression:

> *He told me that people after the flooding came into the distillery and just cried because they needed someone to talk to. A lot of people are hurting. … He told me that he could never have known what it was like to live through a disaster until he had been through it. It's something you just can't imagine. People were depressed.*

Those who survived the flooding had a difficult time recovering due to the flood's impact on their mental health. They had lost a great deal, and they saw the people they cared about lose a great deal, too. The levels of trauma survivors felt, especially directly after the flooding, were acute and intense. Flood survivors' intense experiences of flooding harmed their mental state and left them shocked and unable to successfully devote their time and energy to recovery efforts. Therefore, their trauma presented a further barrier to their recovery.

The CASPER report's section regarding shelter sites supported the idea that trauma presented a barrier to recovery for eastern Kentucky flood survivors. The assessment of flood survivors living at shelter sites found that over a quarter of the flood survivors residing in FEMA camps utilized mental health services. Additionally, the report found that flood survivors living at the shelter sites experienced poor mental health:

> *Households living at shelter sites were asked if they or members of their household had experienced any of several different mental health indicators since the flood. Households indicated that they or some member of their household had experienced nightmares (62.3%), difficulty concentrating (47.5%), loss of appetite (36.1%), agitation (36.7%), witnessed violent behavior or threats (9.8%), or suicidal thoughts/self-harm (6.6%).*
>
> *More than a third of participants (36.7%) reported their mental health was "not good," which includes stress, depression, and problems with emotions for at least half the days or more out of the past 30 days.*

Flood survivors living in the FEMA camps suffered negative mental health effects from the flooding. Because of these effects, flood survivors faced increased barriers to recovery. Their stress and depression made it difficult for them to function and actively work toward recovery.

The trauma flood survivors faced prevented them from adequately recovering from the flooding. While the barrier of recovery that trauma from the flooding presented did not directly relate to the coal mining industry, the industry's role in creating vulnerabilities led to the severity of the flooding, which in turn traumatized flood survivors. Therefore, although indirectly, the coal industry's relationship to trauma tied coal mining practices to increased barriers to recovery, making the coal mining industry at least partially responsible for trauma's prevention of flood survivors' recovery.

Land ownership and housing patterns, the Federal Emergency Management Agency (FEMA), and Trauma were recognized by activists and me as barriers to recovery for flood survivors. Land ownership and housing patterns were strongly tied to the coal mining industry, as the industry created the housing crisis in eastern Kentucky, which was further exacerbated by the flood. Eastern Kentucky activists' arguments that a lack of permanent housing presented a barrier to flood survivors' recovery aligned with Lee et al.'s (2020) and Giesler's (2015) findings on the connections between housing and recovery. Lee et al.'s determination that survivors of Hurricane Sandy without permanent housing took more time to recover shows that housing as a barrier to recovery is a theme that can potentially be generalized to other experiences of disaster (2020, 448-449). Giesler's research was even more closely aligned with the observations of activists. Giesler and eastern Kentucky activists both determined that a lack of housing opportunities due to the land ownership inequities caused by the coal mining industry created barriers to recovery after flooding, which shows how the persistence of structural inequalities caused by coal mining causes the same disasters and barriers to recovery over time and space (2015, xxvii).

Activists' determinations and my experience with flood survivors demonstrated that the bureaucratic nature of FEMA presented a large barrier to the recovery of flood survivors. Our observations of and interactions with flood survivors aligned with Browne's (2013) findings that FEMA's one-size-fits-all approach to disaster recovery led to increased difficulties in recovery for flood survivors in New Orleans after Hurricane Katrina (56-61). The combination of this study's determinations with those of Browne (2013) demonstrate a theme in disaster research in which FEMA, while made to aid in recovery, operates as a barrier. My interview and participant observation data demonstrate that recovery efforts conducted without considering local structural inequities and histories are ineffective, presenting FEMA as a barrier and showing that the agency needs to make significant changes to its practices to help survivors of disasters. Additionally, this project's participant observation and interview data show trauma from the flooding as a barrier to recovery. The theme of trauma stemming from disaster as a barrier to recovery was found exclusively in this project's participant observation and interview data, demonstrating that trauma is a new theme regarding barriers to recovery.

7 RECOVERY AND HOPE FOR THE FUTURE

The activists I interviewed expressed their goals for the future of eastern Kentucky, and they emphasized their desire to address the structural and systemic inequities that they recognized as leading to the disaster and preventing the recovery of flood survivors. Eastern Kentucky activists understood the flooding through the lens of structural inequities, and I contended that the structures and systems eastern Kentucky activists sought to combat were strongly related to the coal mining industry. Additionally, I argued that mutual aid and eastern Kentucky's unique sense of community connectivity emphasized hopes for the future and were the best facilitators of recovery and resilience. Activists contended that flood survivors were understandably more focused on their personal recovery efforts than on addressing the macrostructural contexts. However, because they were not preoccupied with personal recovery, eastern Kentucky activists were able to envision a future in which the macrostructural contexts of the region would be addressed, facilitating recovery and promoting resilience.

The connections between disaster, recovery, and resilience were well established in the background literature. Rappaport's (1993) theory of maladaptations was particularly relevant in eastern Kentucky activists' recovery and resilience efforts. Rappaport defined maladaptations as disorderings of structure that result from communities valuing the economy over human life, which he saw as fundamental. He argued that maldaptations, which could also be understood as structural inequities, led to problems and prevented communities from solving those problems (Rappaport 1993, 300). Eastern Kentucky activists recognized the maladaptations stemming from the coal industry's influence on the region. Coal mining companies prioritized their own economic gain over protecting the lives and well-being of eastern Kentuckians, leading to maladaptations, or structural inequities, that resulted in vulnerabilities for community members.

Additionally, the identified maladaptations prevented eastern Kentuckians from addressing the vulnerabilities the coal mining industry caused (Rappaport 1993, 300-301). Rappaport also argued that community perspectives and needs needed to be considered in efforts to address maladaptations. Following Rappaport's logic, eastern Kentucky activists sought to focus on flood survivors' needs in their recovery efforts. Also aligning with Rappaport's suggestions, eastern Kentucky activists sought to use their understanding of maladaptations to inform their approaches to recovery and resilience and their visions of the future (1993, 300-301).

Eastern Kentucky activists' recovery work and attempts to secure better futures to become more resilient aligned with Seale-Feldman's contention that disasters reveal how structural inequities affect communities. The flooding showed eastern Kentucky activists what structural inequities needed to be addressed in order to alleviate the suffering of flood survivors and other local people (Seale-Feldman 2020, 238-239; 252). Additionally, eastern Kentucky activists' efforts aligned with Seale-Feldman's concept of building back better. They utilized their recovery work, understanding of flood survivors' needs, and determination of structural inequities to imagine better futures. Eastern Kentucky activists began planning for those futures in which their communities, including themselves and flood survivors, would be recovered and more resilient (Seale-Feldman 2020, 239-244; 249; 255-257).

7.1 Just Transition

For this project, a Just Transition was defined as "an all-in, inclusive, and place-based process to build economic and political power to shift from an extractive economy to a regenerative one" (Kentuckians for the Commonwealth 2023). Facilitating a Just Transition required community members to "ensure the well-being of workers and communities; address racial, economic and gender injustice; protect our health, environment and climate; and create

meaningful, good jobs and a thriving and sustainable economy" (Kentuckians for the Commonwealth 2023). Eastern Kentucky activists participated in a Just Transition process by seeking to address structural inequities and create better futures for flood survivors and other local people. While the ultimate aim of the Just Transition in eastern Kentucky was to develop a regenerative economy, the Just Transition process required all other harmful structures to be addressed. Activists' understanding of how a Just Transition could be facilitated and/or what the Just Transition would look like in eastern Kentucky was expanded upon below.

In eastern Kentucky, the Just Transition was focused on transitioning from an extractive economy based on coal to a more sustainable economy. Some of the activists I interviewed expressed their beliefs that transitioning away from an economy based on coal to a more sustainable economy could lead to significant improvements in the lives of eastern Kentuckians. Transitioning to an economy based on cleaner industries could help eastern Kentucky activists combat the influence of the extractive nature of coal mining and address structural inequities. While the Just Transition focused on changing the economy, the framework was also concerned with combating inequity in other structural aspects affecting eastern Kentucky communities (Kentuckians for the Commonwealth 2023). Ethan explained that a just transition also required activists to ask important questions:

> *How do we decide where to build housing and how people get access to it? How do we decide to reclaim land? … About who can decide how we decide how to use the land we live on and live with it.*
>
> *How do we create livelihoods that are sustainable, safe, and healthy for the whole community?*

The questions eastern Kentucky activists asked related to a Just Transition process followed Seale-Feldman's (2020) concept of building back better. By determining what types of structural inequities needed to be addressed and by asking how they could be addressed, eastern Kentucky activists sought to achieve their visions of improved futures (Seale-Feldman 2020, 249; 255-257).

In the context of eastern Kentucky, the Just Transition was primarily concerned with shifting from an economy based on the coal industry to an economy based on a clean energy industry. The Just Transition framework pushed eastern Kentucky activists to recognize that simply removing the coal industry from eastern Kentucky would not sufficiently lead to a better economic situation in the region. Ethan explained that the extractive coal mining industry had to be replaced with another, cleaner industry so that the economy of eastern Kentucky did not collapse, leaving eastern Kentuckians in an even more dire situation:

> *The economic thread - we don't want to move all of these new clean energy jobs outside of the regions that have been a big part of energy economies because it will hollow out the economies. [We have] a social justice focus on transitioning to other energy sources.*

Eastern Kentucky activists recognized that facilitating an economic transition away from coal would require the introduction of another type of economy. In order to achieve an improved future, eastern Kentucky activists expressed their support for a transition to a clean energy economy. They recognized that transitioning to a clean energy economy would help improve the economy while simultaneously addressing other structural inequities caused by the coal mining industry.

Eastern Kentucky activists interested in facilitating a Just Transition also recognized and sought to address the disproportionate effects of the coal mining industry on marginalized people. It was not a coincidence that coal mining was the dominant industry in eastern Kentucky, a region with higher-than-average levels of poverty and vulnerability. Eastern Kentucky activists argued that the coal industry created the conditions of poverty and vulnerability for those living in areas the industry controlled. Ethan spoke to me about the Just Transition's emphasis on alleviating the negative externalities forced upon marginalized communities living in eastern Kentucky due to the coal industry's extractive nature:

> *A focus on the climate threat - that we need to transition away from these energy sources and dirty industries that are located in places that are located near poor people and in places where they suffer.*

The Just Transition in eastern Kentucky focused on addressing the injustices perpetrated by the coal industry by transitioning the region's economy to cleaner energy industries. The transition to a clean energy economy would have facilitated the reduction of poverty and suffering, thereby addressing the disproportionate impacts of the extractive coal-based economy on marginalized eastern Kentuckians. Additionally, eastern Kentucky activists' aims for a Just Transition align with Seale-Feldman's concept of building back better. By seeking to address systemic inequities through economic transition, eastern Kentucky activists aimed to reach an improved future where more equitable structures were created, alleviating disproportionate suffering for marginalized flood survivors and other vulnerable members of their communities (Seale-Feldman 2020, 249; 255-257).

The goals of the Just Transition movement aligned with the hopes of activists for the future of eastern Kentucky. Following the movement's emphasis on clean energy, activists, like Ethan, hoped to have former coal mining sites used for clean energy industries:

> *I would love to see clean energy options, especially on mined land since it has been damaged. Ways that we can use that land better since it has already been flattened out. How do we mitigate harm in places where harm can't be undone - can we use it for something positive?*

Coal mining's negative impact on the environment where mining sites were located prevented the previous environment from returning to that area. Since the land had already been damaged by mining and could no longer fulfill its original environmental role, placing clean energy options in former mining sites would have helped those areas to become beneficial to eastern Kentucky again. Ethan's visions of the future aligned with Seale-Feldman's concept of building back better. Ethan and other Eastern Kentucky activists sought to use the Just Transition to create a better future where structural inequities were addressed, alleviating suffering stemming from the extractive nature of the coal mining industry. Additionally, aligning with Seale-Feldman, the visions and goals eastern Kentucky activists had for their futures related to a Just Transition enabled them to see the opportunities they had for alleviating structural inequities and creating more positive structures (Seale-Feldman 2020, 239-244; 249; 255-257).

The Just Transition movement also aimed to include even the most marginalized in the development of new structural contexts. Movement members hoped that marginalized people in eastern Kentucky, who were negatively impacted by the extractive economy in the region, could combat inequities regarding energy efficiency by learning how to become more energy efficient and implementing those changes on personal levels. While conducting participant observation at

a Kentuckians for the Commonwealth meeting in January of 2023, one of the hosts of the meeting advertised an energy efficiency workshop:

> *Teams at KFTC have an upcoming energy saver's workshop where they're helping people to make their homes more energy efficient. To make sure their homes are sealed and weatherized. Also, just a way of saying that our energy companies and our local governments and systems are not working for us or providing us with the energy efficiency programs that they could be. They're taking it into their own hands to become energy efficient.*

Although there were steps that eastern Kentucky activists, flood survivors, and local people could take to increase their energy efficiency, extractive energy production corporations, like coal mining companies, did not attempt to help them reduce their costs. To address this injustice, eastern Kentucky activists sought to facilitate a Just Transition through energy workshops. The efforts of eastern Kentucky activists to generate a new structural context related to energy aligned with Barrios' (2016) vulnerability-reduction centered approach. Their work in developing the energy efficiency workshops was an example of the creation of a new structural context that facilitates equity instead of promoting inequity (Barrios 2016, 32).

In addition to increasing energy efficiency, these workshops empowered eastern Kentuckians by illuminating the inequities present in the structures around them. Ethan, a member of Kentuckians for the Commonwealth and a proponent of the Just Transition, explained that these workshops not only increased energy efficiency but also taught eastern Kentuckians how they were unjustly affected by structural inequities:

> *The first one [workshop] is focusing on lowering their home energy bills and partnering with mutual aid groups to hand out kits. Hand out stuff people need.*

> *[The workshop] also touches on the policies that influence power, and here is the funding that is available for you.*

Ethan revealed that one of his goals, as well as one of the goals of other activists and aid organizations like KFTC, for the future of eastern Kentucky, was addressing differences in power. By explaining how coal companies and other utility companies used their power to take advantage of them, eastern Kentuckians could better combat these inequities themselves. Additionally, providing eastern Kentuckians with educational opportunities gave them greater power, helping them to dismantle the disproportionate levels of power held by extractive energy companies. Eastern Kentucky activists' further efforts to develop a new energy structure illustrated Barrios' vulnerability-reduction centered approach (2016, 32). Additionally, eastern Kentucky activists' creation of a new and more equitable energy context aligned with Barrios' requirements for resilience by prioritizing marginalized peoples. Eastern Kentucky activists focused on helping impoverished eastern Kentuckians, including flood survivors and others, who had been harmed by the coal industry and its influence on inequities and vulnerabilities, which enabled the activists to utilize flood survivors' insights to develop better structures and approaches to resilience (Barrios 2016, 35-36).

While conducting my first participant observation at the KFTC online meeting in September of 2022, the attendees were asked to state their goals for the future of eastern Kentucky. Although the question was not necessarily geared towards the Just Transition movement specifically, transitioning to clean energy was a common theme I found in the answers given by attendees. One hope for the future contributed by an attendee focused on an idealized future:

> *I would love for everybody to have energy-efficient houses with energy-efficient appliances and creating their own energy through solar farms or panels.*

While the reality of a future in which every eastern Kentuckian could have access to clean energy may or may not have been possible, the effect of such a future would be momentous. If every eastern Kentuckian could produce their own energy and become as energy efficient as possible, then the extractive industry of coal mining and the predatory nature of utility companies in the region could be addressed and a Just Transition could be facilitated. This goal of energy efficiency and energy self-production aimed to address some of the structural inequities preying on eastern Kentuckians, thereby promoting recovery and resilience. Additionally, eastern Kentucky activists' goals for a future Just Transition align with Barrios' argument that facilitating resilience requires addressing structural inequities and reducing vulnerabilities (2016, 35).

7.2 Land Ownership and Housing

The activists I interviewed recognized land ownership and housing issues to be the greatest vulnerability eastern Kentuckians faced both prior to and after the flooding. During interviews, the activists expressed their hope for addressing the inequities of land ownership and housing that presented significant vulnerabilities to flooding and barriers to recovery. Additionally, the activists interviewed expressed their understanding that the structural inequities surrounding housing and land ownership were a result of the coal industry's influence on the region. The efforts of eastern Kentucky activists to address the structural inequities of housing and land ownership related to the coal mining industry exemplified Barrios' vulnerability-reduction centered approach. Eastern Kentucky activists sought to become more resilient after the flooding by targeting the structural inequities that led to disproportionate suffering and

imagining new structures that would have facilitated equity. In order to address structural inequities surrounding housing and land ownership, eastern Kentucky activists sought to combat the structures developed by the coal industry and create new housing and land ownership patterns where eastern Kentuckians would have had equitable access to housing and land (Barrios 2016, 32).

Additionally, eastern Kentucky activists' understanding of the vulnerabilities and barriers to recovery that the inequitable structures created by the coal mining industry caused enabled them to envision reforms and new, equitable structures, facilitating their ability to follow Seale-Feldman's recommendations for building back better. Because of the flooding, eastern Kentucky activists were able to pinpoint that housing and land ownership patterns were the result of structural inequities created by the coal mining industry. The recognition of the structural inequities causing disproportionate experiences of disaster enabled activists to imagine better systems where the land ownership and housing patterns were based on equitable structures, providing themselves with potential plans for developing new, equitable housing and land ownership structures (Seale-Feldman 2020, 239-249; 252).

While discussing the possibility of disaster as presenting opportunities, Ethan expressed that the flooding in eastern Kentucky did allow for considerations of different futures regarding housing and land ownership:

> *I think times like this can make dreaming possible. Like doing housing in other ways - housing co-ops and condos higher up and shared housing to get people out of the floodplain.*

If housing and land ownership were to remain the same, then eastern Kentuckians would be just as vulnerable and face the same barriers housing presents to recovery as before. However,

Ethan's recommendations for the establishment of new housing and the relocation of housing presented potential methods eastern Kentuckians could use to reduce their vulnerability to flooding and prevent themselves from facing the same barriers to recovery in the future. Ethan's visions of an improved future where housing and land ownership structures were equitable followed Seale-Feldman's concept of building back better by facilitating the development of alternative structures (2020, 239-249; 252).

During my interviews with Ethan, he continually expressed the need for eastern Kentucky activists to address issues of housing and land ownership. As discussed in the section regarding housing and land ownership and vulnerability, there was a housing crisis in eastern Kentucky prior to the flooding that was exacerbated by the disaster. Ethan's observations of the lack of adequate housing and how it presented significant vulnerabilities and barriers for eastern Kentuckians led to his recommendations on future housing:

> *We need to think about housing for the whole community and housing solutions that are space-efficient but still high-quality housing. We need to consider what makes sense in different places.*

Because of the coal industry, there was not enough land for housing to be built on before the flooding, and with the recognition that those homes in the floodplain were more vulnerable to flooding, there was less land to be used for housing afterward (Appalachian Land Ownership Task Force 2015, 95; 108). Ethan and other activists' consideration of changing housing structures to increase equity, decrease vulnerability, and increase resilience demonstrated alignment with Rappaport's argument that finding solutions to maladaptation required the development of context-specific approaches to addressing inequities and the development of structures that consider the unique needs of each community (1993, 297; 302).

Further expanding upon the need for context-specific housing, Ethan expressed that housing solutions that adequately addressed structural inequities had to be developed considering the local contexts of the communities in need:

> *Are we trying to house people just to house people or are we building a community that serves all of the people's needs? Are we thinking about housing solutions in relation to the local economy and safety from floods? And are they resilient to other issues exacerbated by climate change?*

Ethan's goals for eastern Kentucky aligned with the requirements for the development of equitable structures as described by Barrios (2016). Barrios argued that in order to increase resilience, communities had to consider the needs of the most marginalized in their plans to address structural inequities to improve their futures (2016, 35-26). Ethan's consideration of all eastern Kentuckians' needs in his visions of a more equitable future also served as a basis for facilitating the development of new systems in which even the most marginalized eastern Kentuckians would be able to live equitably also followed Barrios' requirements for the facilitation of resilience after disaster (2016, 32). While Ethan's vision of the future could have been used to facilitate resilience, his goals were idealistic, making them difficult to achieve. As of this writing, Ethan's goals for the future were dreams that were not yet concretized into actionable steps. However, Ethan's dreams for the future of eastern Kentucky could be reached if activists worked together to find organizations willing to aid them in their procurement of land.

Although Ethan did not have concrete steps to realize his specific visions for the future of eastern Kentucky concerning housing and land ownership structures, Betty's experience with Knott County demonstrated how Ethan's goals might have been able to be achieved. Ethan, Betty, and other eastern Kentucky activists expressed their hope for a change in local land

ownership patterns, which would address the coal industry's disproportionate control over land and housing. Betty and I discussed at length how activists had begun to work with local governments to reapportion land to help address vulnerabilities to flooding and barriers to recovery related to a lack of land available for housing. Firstly, we discussed Knott County's potential role in helping eastern activists address the inequities present in land ownership patterns. Betty explained:

> *To actually change who owns the land? That's something that's never been done in the U.S., except in Hawaii, of figuring out how to reapportion land that was claimed through colonialism. … As far as I know, the Knott County fiscal court deciding to seize property from a coal company is the first and only effort of true land reform. That's not happened yet, but if it happens it will be a big deal.*

While Knott County had not fully committed to reapportioning land in the county when Betty and I spoke, the possibility of their intervention presented significant hope for developing methods for addressing inequities regarding housing and land ownership. Reapportioning the land in eastern Kentucky would have given eastern Kentuckians more access to housing, alleviating the housing crisis, addressing vulnerabilities, and preventing the continuation of housing as a barrier to recovery. Additionally, reapportioning the land would combat the structural inequities related to land ownership and housing that resulted from the coal industry's control over the land and housing in eastern Kentucky.

7.3 Accountability

Accountability after disaster was not present in the background data collected. Therefore, the theme of holding the coal industry and governments responsible was developed solely from the interview and participant observation data. Holding the entities responsible for the flooding,

vulnerabilities to flooding, and barriers to recovery was very important to eastern Kentucky activists. They expressed that addressing the structural inequities causing eastern Kentuckians harm would require coal mining companies and governments to be held accountable for their role in the flooding and its impacts.

While, according to activists, most flood survivors were preoccupied with recovery efforts and therefore unable to seek justice from coal companies, the activists I interviewed expressed their intense desire to hold the coal industry accountable for its role in the creation of the disaster and the difficulty in recovery for flood survivors after the flooding. Because coal companies had a great deal of socioeconomic and political power, they had escaped responsibility and accountability for their role in flooding in the past. Coal companies had also not been held accountable for their part in creating the conditions of vulnerability to flooding and the barriers to recovery from flooding. As of this writing, eastern Kentucky activists had begun working to find ways of proving that coal companies were responsible for the flooding and its effects and to hold them accountable for their actions.

While it was well-known to eastern Kentucky activists as well as some flood survivors that coal mining companies had negatively impacted the environment in the region, coal companies had escaped responsibility and punishment for harming the environment. Ethan discussed with me his desire for local, state, and federal governments to recognize and hold coal companies accountable for damaging the environment:

> *There's of course all the back and forth with the industry people and agencies and such about if strip mining makes things worse and if other mining destabilizes land. A. They do make it worse. B. We should be taken care of by various*

> *governments, and we … should make companies remediate land they damaged in effective ways.*

Coal companies would not admit to the negative impacts their practices had on the environment. However, it was readily recognized by Ethan, and other activists and flood survivors, that coal companies damaged the environment, contributing to vulnerabilities and barriers. If coal companies were truly expected to try and reverse their negative environmental impact, then eastern Kentuckians would have a better future in which environmental damage was minimized. Ethan's determination that governments could help eastern Kentuckians become more resilient by holding coal mining companies accountable for their role in the creation of the flooding, vulnerabilities to flooding, and barriers to recovery aligned with Barrios' vulnerability-reduction centered approach. By holding coal companies accountable, governments could have addressed structural inequities and aided in the development of new structures that facilitated equity, thus aiding eastern Kentucky activists, flood survivors, and other local people in becoming more resilient (Barrios 2016, 32).

The most significant effort towards holding coal mining companies accountable for their role in the flooding was the writing of a letter to the Department of the Interior asking for an investigation. Before the completion of the letter, Ethan explained the reasoning behind the letter and what activists hoped it would accomplish:

> *The thing we would like to happen is that we want the Department of the Interior and the EPA … We want them to investigate the relationship to strip mining and flooding and other kinds of disasters and investigate the degree to which companies have followed the law (SMCRA). To what extent have they followed*

this law in flood regions specifically? What are sort of the remediations that need to be made on these mined sites, including active sites and abandoned mines?

The letter was intended for the Department of the Interior and the Environmental Protection Agency. It called for an investigation into the role coal mining practices' impacts on the environment played in the flooding. Additionally, it asked these government entities to investigate if and how much coal mining companies followed the Surface Mining Control and Reclamation Act (SMCRA). The Surface Mining Control and Reclamation Act of 1977 (SMCRA) was a federal law that regulated coal mining and helped to ensure that coal mining companies reclaimed the land they had previously used for coal mining (Motavalli 2007, 36). It also sought for the government to examine how the negative environmental impacts made by coal companies could be addressed. Eastern Kentucky activists' demands for the federal government to officially determine the coal industry's role in the flooding could definitively prove that the structural inequities created by the coal industry harmed eastern Kentuckians and created the conditions of vulnerability and the barriers to recovery flood survivors faced. Additionally, the broad recognition of the coal industry's role in creating vulnerabilities could aid eastern Kentucky activists in addressing the structural inequities created by the industry.

During my first trip to eastern Kentucky in September of 2022, Betty mentioned to me that she was helping to make a map of the drowning deaths that occurred during the July 2022 flooding. In December of 2022, Betty emailed me the fatality map that she had helped create, illuminating to me that the areas that had been mined were strongly connected to the locations in which people died during the flooding. In the article sent to me by Ethan, written by James Bruggers for Inside Climate News, Bruggers noted that the map, in large part created by Betty, was sent to the government along with the letter. This letter was developed by KFTC, of which

both Betty and Ethan were members. The letter, which was formally addressed to Interior Secretary Deb Haaland of the Interior Department's Office of Surface Mining, Reclamation and Enforcement, asked the federal government to investigate the efficacy of SMCRA in the wake of the July 2022 flooding and determine if it should be amended (Bruggers 2023).

Bruggers gave further details of the letter, noting that it asked the federal government for an "active, independent, well-resourced, and comprehensive federal investigation into the extent to which the cumulative impact of surface mining, past and ongoing, exacerbated the devastating toll of lives, homes, businesses and property lost during the flood" (2023). In addition to seeking information about SMCRA, the letter also asked the federal government to determine how the Kentucky Division of Mine Reclamation and Enforcement failed to enact SMCRA and secure coal companies' reclamation of land (Bruggers 2023). By asking the federal government to officially investigate how coal mining companies contributed to the severity of the July 2022 flooding and the difficulty of recovery, eastern Kentucky activists attempted to secure a better future for themselves and their communities. This letter was proof that they were actively working to address the structural inequities in place that allowed coal companies the freedom to destroy the local environment and economy. Depending on whether the federal government would agree to investigate coal mining's role in the flooding, the structural inequities, such as government oversight and insufficient SMCRA regulations, could be addressed. Addressing the structural inequities that enabled the coal industry to alter the local context to their advantage and the detriment of local communities could enable eastern Kentucky activists to prevent the coal industry's continual creation of vulnerabilities and barriers to recovery.

7.4 How Flooding Revealed Pre-Existing Structural Inequities

The capacity of disasters to reveal structural inequities that caused harm to communities prior to the disaster as well as led to disproportionate vulnerabilities to disaster and difficulties in recovery was well-established in the background literature on disaster and resilience. Seale-Feldman argued that disasters made the structural inequities that harmed communities daily visible (2020, 252). Likewise, Dawdy contended that Hurricane Katrina revealed the structural inequities that caused the disaster and led to the barriers New Orleanians faced to recovery (2006, 720). Eastern Kentucky activists demonstrated the relevance of the background literature by engaging with theories regarding disasters' abilities to reveal structural inequities and pinpointing and discussing what structural inequities the July 2022 flooding revealed.

Additionally, the importance of disasters' abilities to reveal structural inequities is discussed thoroughly in the background literature. Demonstrating what structural inequities were harming communities and causing vulnerabilities and barriers to recovery enabled communities to begin to address those inequities and therefore become more resilient. Oliver-Smith argued that in order for communities to become resilient, they had to recognize and address the systems that led to the disaster and their inequitable experiences of it (2013, 277-278). Likewise, Seale-Feldmann contended that becoming more resilient requires communities to address the structural violence that affected them every day and caused inequitable experiences of disaster. Additionally, he contends that pinpointing structural inequities and recognizing their impact enabled communities that had survived disaster to develop new, more equitable structures (Seale-Feldman 2020, 238-239; 252). Eastern Kentucky activists' discussions of how they needed to recognize and address the structural inequities, stemming from the coal industry, to

become more resilient by developing new structures that were more equitable aligned with both Oliver-Smith's (2013) and Seale-Feldman's (2020) arguments.

The eastern Kentucky activists I interviewed understood the impact of the flooding through the lens of structural inequities. They described how the flooding uncovered and emphasized the structural inequities often related to the coal industry's impacts on eastern Kentucky, revealing the causes of the vulnerabilities to flooding and the barriers flood survivors faced to recovery. The flooding enabled eastern Kentucky activists to fully comprehend the extent to which structural inequities affected their susceptibility to disaster and their capacities for recovery. Additionally, by understanding how the structural inequities present in eastern Kentucky affected their experiences of disaster, eastern Kentucky activists were also better able to discern how these structures affected their daily lives. The activists I interviewed told me of their beliefs that the flooding revealed existing structural inequities that were harming eastern Kentuckians. Additionally, interviewees expressed to me that they hoped to address those previously existing structural inequities in the future. They were determined to address the structural inequities that caused the flooding, vulnerabilities, and barriers, contributing to their resilience.

One of the structural inequities the flooding exposed was inequitable access to food. While some eastern Kentucky activists may have recognized that food access was a problem before the flooding, the full scale of the problem was only revealed after the flooding. Ethan explained that food access maps of eastern Kentucky were deceiving:

> *If you measured food access in terms of driving time it looks okay on paper, but it's not because of lack of transportation and the driving times listed aren't accurate. It [food access] is a broader scale problem. It's been highlighted for us*

> *in these camps. Folks just don't have good food on top of all the other health problems.*

Having flood survivors residing in FEMA camps allowed more activists to recognize that food access was a significant problem facing eastern Kentucky communities, especially flood survivors. Flood survivors living in FEMA camps often did not have access to reliable transportation, presenting an additional barrier to their food access. They were also located in more remote areas even further away from stores, making it more difficult for them to acquire food. Aligning with Oliver-Smith's (2013) and Seale-Feldman's (2020) arguments that disasters reveal structural inequities, the flooding exposed the extent of the inequity of food access affected eastern Kentuckians, especially flood survivors.

As discussed in the sections above on vulnerabilities to flooding and barriers to recovery, there was a housing crisis in eastern Kentucky that was exacerbated by the flooding. Although eastern Kentucky activists were aware of the housing crisis, the flooding revealed the extent to which structural inequities regarding housing and land ownership negatively impacted eastern Kentuckians. Mary explained:

> *Sometimes it takes a catastrophic event like what happened to bring the focus on the needs in the area, to expose things like the housing crisis.*

Aligning with the literature on disasters, Mary noted that disasters had the capacity to expose structural inequities. In the case of eastern Kentucky, because the flooding intensified the housing crisis, the structural inequities surrounding housing and land ownership, significantly related to coal mining in the region, were exposed (Oliver-Smith 2013; Seale-Feldman 2020). Additionally, Mary's engagement with theory agreed with Warry's (2000) argument that communities were interested in theory and were capable of meaningfully engaging with it (156).

7.5 Mutual Aid and Strong Community Connections

Spade defines mutual aid as "a form of political participation in which people take responsibility for caring for one another and changing political conditions … by actually building new social relations that are more survivable" (2020, 136). Spade argues that mutual aid strengthens the bonds between community members, facilitating collaboration (2020, 137-138). Mutual aid helps form a social basis that facilitates relationships between community members and promotes better social contexts that aid in recovery efforts (Spade 2020, 305-306). Similarly, Barrios contends that "enunciatory" communities that form after disasters make the bonds between community members stronger, thus facilitating the development of relationships based on disaster responses (2016, 30). Following Spade (2020) and Barrios (2016), Lee et al.'s research on Hurricane Sandy demonstrated that support from one's neighbors aided in recovery (2020, 448). Aligning with the background literature, eastern Kentucky activists heavily focused on how they believed that strong community connections and mutual aid were important in their recovery and resiliency efforts. I argued that the strong bonds between community members as described in the background literature and demonstrated by eastern Kentucky activists and flood survivors in their recovery and resiliency efforts provide hope for the future of eastern Kentucky. Eastern Kentucky activists' discussions of eastern Kentuckians' levels of dedication to one another showed that they had the capacity to work together to facilitate recovery and resilience by taking one another's experiences of flooding into consideration when addressing structural inequities, especially those related to coal mining, and developing new structures.

Mutual aid is the one form of aid that persisted throughout the recovery process. During an online meeting of KFTC, the organizers explained their definition of mutual aid:

> *What is mutual aid? Mutual aid is when everyday people join together to meet the needs of our communities, recognizing that the system is not working for us. Mutual aid is not charity. It's when we are working together to meet our collective needs as a community.*

Mutual aid and charity are not the same. Mutual aid is more respectful of communities and more beneficial to them because it empowers communities to lead organizations and actions aimed at recovery. Comparatively, charity is more ephemeral. It is focused on donors instead of on the communities in need of aid (Soto 2020, 305-306). Mutual aid was incredibly significant to the recovery of flood survivors and eastern Kentucky as a whole. The significant strengths mutual aid presented to recovery was heavily connected to the unique sense of community present in eastern Kentucky. Eastern Kentucky activists expressed their pride in the sense of community that motivated eastern Kentuckians to take care of one another in the wake of tragedy. The eastern Kentucky sense of community and the mutual aid networks established during recovery efforts were the strongest hope for recovery I found throughout my research. The devotion eastern Kentuckians had to one another was unparalleled, and I argued that it enabled them to recover and create better futures for one another.

Mutual aid networks in eastern Kentucky were vital to recovery efforts. The strength of mutual aid in eastern Kentucky was facilitated by the powerful sense of community in the region. Eastern Kentucky activists demonstrated exceptional levels of connection. Everyone cared for one another, and the simple fact that someone was an eastern Kentuckian was enough for others to feel compelled to come to their aid when they were needed. Although a short sentiment, Kaitlin's description of eastern Kentuckians exemplified the eastern Kentucky sense of community:

Mountain people really do care for each other. Nobody goes hungry in hollers.

Kaitlin's recognition of the strong connections between eastern Kentucky community members, including activists and flood survivors, was supported by the background literature on Appalachian culture. As Grenoble argued, Appalachian communities were characterized by their unique sense of care for one another and their capacities to function as extended families (2012, 344-345).

During interviews, I asked eastern Kentucky activists how the recovery efforts were coming along. In every interview, participants noted the significant role eastern Kentucky's unique sense of community connectivity played in recovery. When I asked Dean about recovery, he noted:

> *We're all one Kentucky. We all came together regardless of race to make sure that everyone got help.*

Eastern Kentucky activists did not account for race in their decisions to aid flood survivors. All eastern Kentuckians came together to facilitate recovery efforts due to their significant levels of care for one another, supporting the background literature arguing that were "surviving as one" (Grenoble 2012, 355).

In another interview, Mary also discussed community connectivity and its importance in facilitating aid for flood recovery. She noted that neighbors, even if they had also been affected by the flooding, sought to help flood survivors:

> *But one thing that I saw in the community was the community coming together to help each other. … But just ordinary individuals coming together to help. And we saw many that may have lost their own homes, but they were out helping their neighbors.*

The strong sense of community ties outweighed the need for personal recovery, facilitating collective recovery efforts and promoting community resilience.

During my first trip to eastern Kentucky, Betty discussed with me an example of community connectivity that occurred directly after the flooding. My field notes read:

> *A lot of women would cook and collect supplies and then send their husbands on four-wheelers and ATVs and such to have things delivered. They had to hang up ropes from one side of the river to the other to deliver supplies across. The community and its members really came together.*

These community members could have utilized their resources to facilitate their recovery. However, because of their strong sense of community, the women and men providing direct aid to their neighbors after the flooding contributed to a collective recovery and further cemented their ties to the local community.

Mutual aid networks in eastern Kentucky were facilitated by strong relationships between activists, flood survivors, and other local people, and they further increased the strong sense of community present in the region. While we were driving to the Mine Made Adventure Park FEMA camp, Betty spoke to me of her and other eastern Kentucky activists' mutual aid efforts to facilitate community recovery. My field notes read:

> *She's pinpointed communities people can help out. She has been volunteering since the flooding. She explained that the people in eastern Kentucky came to help their neighbors immediately after the flooding before the rain had even stopped. Neighbors went to check on the people around them in their hollers. They brought food and medicine.*

Betty used her knowledge of the region and her familiarity and strong sense of care for and connection to flood survivors and activists in eastern Kentucky to facilitate their receipt of recovery aid. Her efforts contributed to a broader, informal mutual aid network of eastern Kentucky activists and other community members with resources necessary to aid flood survivors. These eastern Kentucky activists used her information regarding what flood survivors were most in need of aid in order to distribute resources efficiently, facilitating recovery and resiliency efforts. Betty's mutual aid connections and the role they played in the development of relationships between eastern Kentucky flood survivors, activists, and other community members demonstrated Spade's argument that mutual aid facilitated recovery efforts and strengthened community relationships and collaboration (2020, 136-137).

Betty was also involved in the creation of another mutual aid effort aimed at providing food to flood survivors living in FEMA camps. Betty's connection to flood survivors, activists, and other community members and her determination to provide flood survivors with desperately needed resources led her to develop what was later called the "rolling refrigerator:"

> *I got the basic fresh fruit you would have in your fridge and bread and fruit. Just went around and knocked on doors and asked if they needed stuff. … So, I covered the whole campground. Loaves and fishes deal - miraculous. Everyone got something.*

Betty's biblical reference demonstrated that she found mutual aid miraculous and extremely important for community recovery and resilience. Betty's work aligned with Spade's perception of mutual aid as common care (2020, 136). Because Betty directly aided her fellow flood survivors after the flooding, she contributed to recovery efforts and addressed their needs when aid organizations and governments could not (Spade 2020. 136; Soto 2020, 304).

While the "rolling refrigerator" began as an individual effort to aid in recovery, it soon became a larger project. Betty had significant mutual aid connections in eastern Kentucky communities, and she utilized them to secure the aid of Feeding East Kentucky in distributing food to flood survivors. Betty explained:

> *Feeding East Kentucky picked it up and called it the rolling refrigerator, and they've been doing it at all camps since Thanksgiving.*

Betty's connections to Feeding East Kentucky as well as other people and organizations in eastern Kentucky enabled the "rolling refrigerator" program to aid an increasing number of flood survivors through the distribution of food. The increased efficacy of mutual aid in the context of the rolling refrigerator aligned with Spade's argument that bringing organizations and community members together led to increased capacities for survival and recovery (2020, 139). By bringing flood survivors, activists, and aid organizations together, Betty promoted mutual aid, which significantly contributed to the capacity of eastern Kentucky flood survivors to recover from the flooding.

Feeding East Kentucky eventually disbanded, and Betty had to utilize connections with other organizations in the region to secure more help so that the "rolling refrigerator" program could continue. During one of our interviews, Betty explained to me:

> *The rolling refrigerator has a new home, the Benedictine nuns at Mt. Tabor. So, they're gonna take care of getting the milk and bread for the FEMA campers. Got a nice little crop of volunteers who are doing the deliveries.*

It was not sustainable for Betty to take over Feeding East Kentucky's role in the "rolling refrigerator" program. She did not have the resources the non-profit did. But, instead of giving up on the program, Betty used local mutual aid networks to find a replacement organization, the

Mt. Tabor Benedictines, that had the appropriate resources to run the "rolling refrigerator" program. Betty's knowledge and utilization of mutual aid networks facilitated recovery by promoting the continuation of an extremely beneficial resource distribution program. Additionally, her use of mutual aid networks demonstrated significant resilience by facilitating adaptation that promoted survival.

Mary, a pastor in eastern Kentucky, described the role of churches in flood recovery. During our interview, she explained that churches, including her church, utilized mutual aid networks to identify flood survivors in need:

> *A lot of churches in the very beginning reached out to people and helped with clothing, food, supplies, etc. And we, our ministry, we were led to one of the FEMA trailer camps that was set up in Perry County. … We were led to take care of those who were housed there.*

Churches were common throughout eastern Kentucky, and they had many resources and connections, making them ideal components of mutual aid networks. Aligning with Barrios' recommendations that recovery and resilience efforts must take marginalized survivors' needs and perspectives into consideration, Mary's church, and other churches in eastern Kentucky, utilized their connections to identify flood survivors and their needs. They then utilized that information to provide adequate aid to flood survivors living in the FEMA camps, facilitating recovery and resilience (Barrios 2016, 35-36).

In January of 2023, I attended an online meeting held by KFTC and led by the Kentucky Just Transition Coalition (KJTC) that was focused on climate resiliency and mutual aid. During the meeting, attendees spoke about how eastern Kentucky can become more resilient. KFTC and KJTC defined climate resiliency for the meeting's attendees:

> *What is climate resiliency? The ability to prepare for, recover from, and adapt to climate-related impacts. Climate resiliency comes from a combination of community-level systems of support: mutual aid networks and energy democracy (people actively shaping the transition of our energy system).*

Utilizing the significant mutual aid networks developed by eastern Kentucky activists, flood survivors, and other local people enabled eastern Kentucky activists to better recover and adapt. Eastern Kentucky activists sought to build back better by utilizing and relying upon mutual aid networks to reach their visions of an improved future (Seale-Feldman 2020, 256).

If this disaster had happened in another community, recovery efforts would not have been as successful. Eastern Kentucky is unique in its community connectivity. Historical settlement patterns facilitated the development of these strong community bonds. Settlers of this region established their homesteads in hollow communities. These communities were made up of extended families, and through isolation from other groups, strong communal connections were established (Grenoble 2012, 344-345; 355). While these strong connections were weakened with industrialization, eastern Kentucky has still retained some of this original sense of community connectivity. This sense of community resulted in community members, such as the activists interviewed for this project and other volunteers, helping other members of their community, the flood survivors. These strong bonds ensured that flood survivors received the resources they needed, facilitating recovery and resilience.

7.6 Resilience

There are many definitions of resilience in the background literature on resilience and disaster. Barrios defines resilience as “the adaptive capacity of a system, community, or society to adapt to hazards by resisting or changing in order to reach and maintain an acceptable level of

functioning and structure" (2016, 29). Human communities are constantly changing. After experiencing disasters, communities cannot return to the state they were in prior to disasters (Barrios 2016, 29-30). Barrios contends that resilience requires communities to address structural inequities and develop new structures that promote equity (2016, 32). Disasters are formed by the interaction of hazards with policies, which means that communities must target those policies and practices that create and reinforce structural inequities and vulnerabilities in order to prevent further disasters (Barrios 2016, 32; 35). Barrios further argues that pinpointing the policies and practices that need to be changed to address structural inequities can be revealed by the perspectives of marginalized community members. Therefore, prioritizing their experiences and needs can demonstrate what inequities limit community capacities for resilience, allowing activists to better design and implement recovery and resilience approaches (Barrios 2016, 35-36).

Oliver-Smith defines resilience as "the ability to prepare and plan for, absorb, recover from, or more successfully adapt to actual or potential adverse events" (2013, 277-278). Oliver-Smith's definition of resilience builds upon Barrios' (2016) by emphasizing preparation. Communities must be able to prepare for future disasters if they are to be truly resilient. Lee et al. define resilience as "a communicative process involving collectives interacting to come with and adapt to changing circumstances" (2020, 439). Lee et al.'s definition of resilience also differs from Barrios' and Oliver-Smith's by focusing on community networks. Supporting my argument that mutual aid and strong community connections will enable eastern Kentucky activists, flood survivors, and other local people to recover from the flooding and become more resilient, Lee et al. argue that if communities seek to become resilient after disasters, then they must focus on facilitating community networks of support (2020, 439).

Hernandez et al.'s resilience reserve framework was also helpful in understanding how eastern Kentucky activists could facilitate and promote building resilience after the flooding. Their resilience reserve framework is described as "an inventory of potential capacity to confront unanticipated challenges" (Hernandez et al. 2018, 705). Because marginalized community members have fewer resources available, they face extra barriers to recovery, thereby preventing them from becoming resilient (Hernandez et al. 2018, 711). However, as Hernandez et al. argue, if the structural inequities were addressed, then some community members would not be disproportionately vulnerable to disaster or face disproportionate barriers to recovery, thus facilitating their resilience (2018, 705; 711).

Resilience was a complex and controversial topic in the context of eastern Kentucky. Some of the activists I interviewed saw resilience as a useful term that applied to their efforts to change the structural contexts that caused the disaster. Others saw resilience as a buzzword that promoted a standard to which eastern Kentuckians and other vulnerable populations should not be held. Despite the personal views of eastern Kentucky activists on the term resilience, the activists I interviewed imparted their visions of a future eastern Kentucky that was more resilient because of their abilities to adapt to and prepare for future disasters, aligning with Barrios' and Oliver-Smith's definitions of resilience (2016; 2013). Additionally, while the exact terms varied, the eastern Kentucky activists I spoke with connected their capacities for recovery with an increase in community resilience.

In one of my interviews with Dean, when I asked him his opinion of the term resilience as applied to recovery after the July 2022 flooding, he explained:

> *I like the term of overcoming, rising up. Not just resilience. Rising up to the occasion.*

During our interview, Dean said that he felt that the terms “overcoming” or “rising up” were broader than the term resilience and better described the recovery efforts taking place in eastern Kentucky. For Dean, “rising up” and “overcoming” encompassed the significant sense of community present in eastern Kentucky recovery. Dean’s understanding of the term resilience did not emphasize the importance of community, and, indeed, Barrios’ (2016) and Oliver-Smith’s (2013) definitions of resilience did not incorporate community relationships. However, Lee et al.’s definition of resilience aligned with Dean’s concepts of “rising up” and “overcoming” because of the author’s contention that resilience after disaster is predicated upon community networks characterized by support (2020, 439).

In my interviews and conversations with Ethan, he also expressed a similar aversion to resilience. However, Ethan’s objections were not only to the term resilience but also to the concept. He explained:

> *We’re tired of being resilient and tough. We should have the infrastructure and resources to prevent this kind of thing from happening to us over and over. We don’t have to be resilient or tough all of the time. We should be able to be proactive.*

Ethan understood the concept of resilience as the capacity to recover; resilient communities were those that were tough and could recover from disaster well by adapting. Instead of being resilient, Ethan felt that eastern Kentucky activists, flood survivors, and other local people should be proactive. They should have the capacity to prevent disasters from occurring in the first place. While some definitions of resilience in the background literature, such as Barrios’ (2016) or Lee et al.’s (2020) did not include preparing for disasters, Oliver-Smith’s definition of disaster emphasized preparation as an important aspect of resilience (2013, 277-278). Therefore, Ethan,

while not supporting the term resilience, was not arguing against definitions of resilience that emphasized planning for disasters as a vital component of resilience, such as Oliver-Smith's (2013) definition.

While Dean and Ethan were not entirely comfortable with resilience as a term or a concept, their ideas of alternatives to resilience still aligned with community resilience as described in the relevant literature. For example, Ethan argued that eastern Kentucky activists should plan for disaster:

> *We shouldn't be tough and be inventive with solutions. We should be planning ahead and should have resources.*

Oliver-Smith's (2013) definition of resilience incorporates the idea of planning to prevent disasters from occurring again and from necessitating further recovery (29-30). While Ethan separated the idea of resilience from that of planning, being proactive was part of being resilient. Therefore, while activists may not have supported the term resilience and understood it differently than it appeared in the literature on disasters, their goals for the future of eastern Kentucky did align with resilience as defined by Oliver-Smith (2013).

Although Dean and Ethan were not fully supportive of the term and/or concept of resilience in the context of eastern Kentucky, other activists I interviewed did describe local communities as being resilient. During one of our interviews, Betty described eastern Kentucky communities:

> *That's how I think of my community - able to weather storms. We do have an element of resiliency about us.*

Betty's understanding of the concept of resilience was connected to the capacity of eastern Kentuckians to recover from disaster. Because Betty's understanding of resilience was focused

on survival, the ability of eastern Kentuckians to adapt to the change in their circumstances, made them resilient. Because survival was a crucial aspect of resilience, Betty's understanding of the term aligned with the definitions of resilience provided by Barrios (2016), Oliver-Smith (2013), and Lee et al. (2020).

Likewise, Mary also described eastern Kentuckians as resilient. She focused on their capacities to adapt to disasters and to continue to survive in their aftermath. Mary described resiliency in Eastern Kentucky:

> *People are resilient. … People are very creative in doing things. There is a will to survive and to keep going.*

Mary described eastern Kentucky communities as resilient because of their capacity for change. Similarly, Barrios' (2016), Oliver-Smith's (2013), and Lee et al.'s (2020) definitions of resilience emphasize the need for communities to adapt and change to better recover from disasters, enabling them to continue to survive.

While Dean had previously expressed his ambivalent view of the term resilience, in one of our interviews, he did describe eastern Kentuckians as resilient. Interestingly, Dean connected resilience to the high levels of community connectivity found in eastern Kentucky:

> *People in eastern Kentucky are very resilient, and when shit hits the fan, people always come together and help each other out. In a time of crisis and in a time of need, people come together.*

Dean's understanding of resilience as being related to community ties aligned with Lee et al.'s definition of resilience, which required strong relationships between community members. The authors argued that for communities to become more resilient after disaster, then they would

have to establish and promote community networks based upon mutual support (Lee et al. 2020, 439).

At the online meeting run by the Kentucky Just Transition Coalition (KJTC) and hosted by KFTC, attendees also discussed the need for eastern Kentuckians to find methods of fixing broken systems in order to become more resilient. Some attendees discussed how addressing the energy systems in eastern Kentucky could allow for more resilient communities. My notes from the meeting read:

> *Some were talking about the fact that there's these big systems that are broken, our energy systems. They're not doing enough on the federal or state level for climate resilience. Not even resilience, just be able to survive every day without being burdened by energy bills.*

The meeting attendees' emphases on changing the structural inequities that caused marginalized flood survivors' vulnerabilities to flooding and barriers to recovery agreed with Barrios' vulnerability-reduction centered approach where in order to become resilient, activists and other community members had to address the practices and policies that caused inequities (2016, 32). Further aligning with Barrios' definition of resilience, the meeting attendees understood that becoming resilient required changing the systems such as energy systems related to the coal industry (2016, 35). Additionally, the attendees' understanding of facilitating resilience for eastern Kentucky communities agreed with Seale-Feldman's concept of building back better. In order to achieve their visions of the future, eastern Kentucky activists had to work with flood survivors and other eastern Kentucky community members to address the structural inequities causing harm (Seale-Feldman 2020, 238-239).

In the same meeting, organizers spoke of the need for eastern Kentucky activists to prepare for disasters in order to become more resilient. Organizers argued that the lack of planning and preparation for the flooding contributed to the difficulties in community recovery and resilience. Additionally, the organizers contended that disaster plans should be tailored to fit the needs and contexts of specific communities. My notes from the meeting read:

> *We encourage towns and counties to be more prepared for the kinds of disasters that happen all the time. Having a stockpile of water or having a plan to respond. In Letcher County, it wasn't clear that government officials had any plan. … Lack of planning traditionally when it comes to climate resilience and climate disasters.*

Eastern Kentucky activists' emphases on planning and preparing for disasters in order to become more resilient are most closely aligned with Oliver-Smith's definition of resilience (2013). Additionally, as meeting attendees noted, preparation for future disasters would be increasingly important for building resilience in eastern Kentucky as flooding occurred frequently in Central Appalachia (Appalachian Land Ownership Task Force 2015, 108).

During my interviews, eastern Kentucky activists also spoke of the necessity of finding solutions to the inequitable impacts of the structures and systems created by the coal industry. Some eastern Kentucky activists argued that bringing attention to how the coal industry made eastern Kentuckians more vulnerable and hindered their recovery was necessary to address the coal industry's negative impacts. Ethan described his friend Terry's advice concerning recovery and resilience:

> *Terry Blanchett said that we have to talk about coal or we can't address it. We have to talk about it because we can't solve the problem if we're not going to talk about strip mining on the floods.*

Aligning with Oliver-Smith's and Seale-Feldman's arguments that increasing resilience requires addressing systemic inequities, Terry and Ethan recognized that to become resilient, they needed to address the coal mining industry's role in creating the vulnerabilities and barriers to recovery that flood survivors faced after the flood (2013, 278; 2020, 238-239; 252). Additionally, Terry's emphasis on understanding the coal industry's role in the creation of structural inequities, supported my argument that the coal industry's impacts on eastern Kentucky significantly contributed to the flooding, vulnerabilities to flooding, and barriers to recovery.

In the literature on disaster and resilience, it is generally acknowledged that returning to the contexts present before the flooding is not an example of resilience (Barrios 2016, 29-30; Oliver-Smith 2013 277-278). The concept of resilience as returning to a pre-disaster state is relegated to ecological concepts of resilience. Instead, in the context of community recovery in eastern Kentucky, resilience required addressing the structures and systems that led the disaster to happen. Following this logic, Ethan argued:

> *I don't want to go back to normal. I think it would be bad. It didn't work. If it did, we wouldn't be here.*

As Ethan notes, returning to "normal" or the structural and systemic context existing prior to the July 2022 flooding would be detrimental to eastern Kentucky activists', flood survivors', and other local peoples' recovery and resilience efforts. Ethan's argument against returning to "normal" especially aligned with Barrios' contention that returning to a pre-disaster state would only harm communities (2016, 30). Additionally, all of the authors that discussed resilience in

the background literature on disaster emphasized that becoming more resilient required communities to address the structural inequities causing vulnerabilities and barriers to recovery (Barrios 2016; Lee et al. 2020, Oliver-Smith 2013, Seale-Feldman 2020). Therefore, if eastern Kentucky activists wanted to return to "normal," then they would be becoming less resilient.

In my interviews with Ethan, we discussed the necessity of eastern Kentucky activists to address the structures causing suffering to better recover from the disaster and to prepare for future disasters. Ethan recognized that small-scale changes were not enough to address structural and systemic inequities. For eastern Kentucky activists to combat vulnerabilities and barriers to recovery, Ethan argued:

> *We need broad enough social movements and the culture as a whole to shift the way we do things.*

While Ethan had ambivalent feelings regarding the term resilience, his goals for a future in which social movements and culture were able to address the problems, vulnerabilities, and barriers to recovery caused by structural inequities showed a desire for increasing resilience as the term appears in the relevant literature (Barrios 2016; Lee et al. 2020; Oliver-Smith 2013; Seale-Feldman 2020). Ethan's emphasis on addressing structural inequities to support recovery and resilience efforts was most closely aligned with Barrios' vulnerability-reduction centered approach. Barrios' recommendation of critiquing and changing practices and policies related to coal mining that caused disproportionate experiences of flooding, vulnerability, and barriers to recovery in order to become more resilient resembled Ethan's contention that recovery in eastern Kentucky required the whole structural context to be changed (2016, 32; 35).

While the eastern Kentucky activists I interviewed for this research project expressed their desires for a future in which the systems causing vulnerabilities and barriers were addressed

and altered, they often recognized that it would take a great deal of time and energy to reach their goals. During one of my interviews with Ethan, he expressed to me his hope that the broader systems causing injustices and inequalities could be addressed. However, he also recognized that there were many steps that eastern Kentucky activists would have to go through to begin to fully restructure and/or dismantle current systems:

> *There are simply ways this could be made better even if it isn't solved in the current system we have. But, because of the way that we decide who has control over land and resources, we have to change that first. The revolution isn't coming in 2023.*

Ethan's, and other eastern Kentucky activists', goals for recovery and for the future concerned addressing the structures and systems that impacted the lived conditions of flood survivors made them vulnerable to flooding and hindered their capacities for recovery. While Ethan expressed his desire to immediately find solutions to address those structures and systems, he also understood that finding solutions would be part of a long process. As previously discussed in the sections on vulnerability and barriers to recovery, the coal industry's control over the land led to a housing crisis that was further exacerbated by the flood. Finding solutions to these structural inequities would allow eastern Kentucky activists to begin to alter and dismantle harmful systems, thereby increasing community resilience.

The eastern Kentucky activists I interviewed were also highly concerned with long-term recovery efforts. After the initial critical aid provided to flood survivors after the disaster, activists began to work to reach their goals of securing flood survivors the resources necessary to recover and become more resilient. However, activists explained that aid organizations and governments were disinterested in long-term recovery efforts. While activists worked to ensure

that flood survivors were able to successfully transition into long-term recovery, thereby facilitating resilience, the apathy of aid organizations and governments presented an extra barrier to recovery and resilience. Ethan described the general atmosphere of long-term recovery meetings in one eastern Kentucky county. The meetings involved aid organizations, mutual aid groups, and local governments. Ethan described them as bureaucratic and indifferent to long-term recovery goals:

> *This isn't a criticism of individual people in the meeting, but there's a lot of bureaucracy happening and not a lot of how are we actually going to do stuff? A function of the space is very top-down organized. … The nature of it is not geared toward radical change.*
>
> *There are people in these communities and in these meetings who care about these things and want to do things differently. There's still people helping. But, as far as restructuring and recognizing it's a problem for the system - no one wants to do that.*

Ethan's emphasis on supporting long-term recovery goals in order to promote recovery and resilience aligned with Seale-Feldman's argument that becoming more resilient required organizations and communities to address systemic inequities in order to build back better (2020, 255). Additionally, Ethan's contention that some organizations and/or attendees at recovery meetings in eastern Kentucky were not concerned with long-term recovery was supported by Seale-Feldman's argument that many organizations will not put in place interventions that adequately address the structural inequities that contributed to disaster (2020, 249; 255). Ethan, Seale-Feldman, and Zhang all recognized that organizations' focus on short-term recovery

prevented communities, such as those in eastern Kentucky, from becoming more resilient (2020, 249; 255; 2016, 87).

The data from the CASPER report also demonstrated eastern Kentucky activists' efforts to recover and become more resilient. The report focused on assessing community needs after the July 2022 flooding. The data analysis of the CASPER report was intended to be used to facilitate recovery and increase resilience:

> *The information generated can be used to initiate public health action, facilitate disaster planning, and assess new or changing needs during the disaster recovery period.*

The CASPER report utilized data gathered on the recovery efforts of eastern Kentucky activists to inform strategies that would address flood survivors' needs and facilitate their recovery. The intention of the report to utilize the specific needs of flood survivors to generate recovery plans and long-term methods of addressing the problems flood survivors faced showed a strong interest in furthering eastern Kentucky's recovery and resilience.

The CASPER report also illustrated that the assessment of flood survivors' needs was utilized to increase the capacity of eastern Kentucky activists, flood survivors, and other community members to recover and become more resilient. Informed by the needs of eastern Kentucky flood survivors and their experiences of flooding and recovery, the report found that better allocation of resources and future planning could make eastern Kentucky activists, flood survivors, and other local people better able to recover and become more resilient:

> *The results may be useful to allocate resources in response to the flood, evaluate and implement best practices for mental health services, enhance housing status and address the needs of households still rebuilding and recovering from the*

> *flood, increase broadband access to increase cellular and internet service, and promote household and community education for public health and preparedness pertaining to future emergencies through effective communication messaging. These results can help improve future communication messaging, promote the public's health, and strengthen preparedness capacity of eastern Kentucky as well as the Commonwealth of Kentucky.*

The CASPER report demonstrated that eastern Kentucky activists sought to increase recovery and resilience by contextualizing recovery efforts. By finding ways to prepare for future disasters, the CASPER report aided eastern Kentucky activists in becoming more resilient by facilitating better recovery in the future. The report's emphasis on planning for the future and becoming more prepared for disasters aligned with Oliver-Smith's definition of resilience (2013, 277-278).

While eastern Kentucky activists' goals for the future of local communities, including themselves and flood survivors, follow resilience as defined in the background literature on disaster, as discussed above, the activists I interviewed rejected the term (Barrios 2016; Oliver-Smith 2013). Dean presented the terms "overcoming" or "rising up" as alternatives to resilience, since, to him, they highlighted the importance of community relationships in recovery efforts. However, I do not think that these emic terms adequately encapsulate Ethan's perception of preparing for the future, which I believe needs to be included in alternative terms for resilience. I propose the term "revitalization" be utilized instead of resilience in the context of eastern Kentucky. Wallace (1956) defines revitalization as "a deliberate, organized, conscious effort by members of a society to construct a more satisfying culture" (265). I believe that this term sufficiently incorporates all the characteristics the eastern Kentucky activists I interviewed have

in mind for the future of their communities. Dean's concept of "overcoming" can be seen in this term, since overcoming the obstacles flood survivors face would require addressing systemic inequities to develop better systems. Additionally, the term "revitalization" encapsulates Ethan's desire for planning for future disasters because the "better" culture that eastern Kentucky activists want to construct would be one that plans for disasters to become prepared for them in the future.

While I determined that "revitalization" was a better term to use than resilience, activists' and flood survivors' recovery efforts and goals for the future strongly aligned with resilience frameworks as found in disaster literature. According to Seale-Feldman (2020), Barrios (2016), and Oliver-Smith (2013), addressing structural inequities is part of becoming more resilient. The activists interviewed were highly focused on addressing structural inequities and creating new structures as part of their recovery and revitalization efforts, which followed the recommendations of Seale-Feldman (2020), Barrios (2016), and Oliver-Smith (2013). These authors argued that disasters reveal how structural inequities affect communities and that imagining better futures required communities to address those issues by creating more equitable structures. Likewise, activists recognized the necessity of changing their structural contexts by creating new ones to make better futures for themselves. Additionally, the activists interviewed recognized that the systemic problems they needed to fix resulted from the coal mining industry, supporting my argument that the industry is responsible for the flooding and its subsequent impact.

Interview and participant observation data also supported my argument that the unique and strong community connections between eastern Kentucky activists, flood survivors, and other community members would be the greatest hope for recovery, resilience, and revitalization.

Additionally, the importance of community bonds in recovery is well-established in background literature on disaster. Following Spade's (2020) contention that mutual aid enables communities to change structural inequities and recover better through improved social connections, activists recognized that in order to create better futures for themselves, they had to rely on their pre-established networks (136-138; 305-306). Because the activists interviewed were focused on respect, their mutual aid networks served to empower other activists, flood survivors, and other community members. Additionally, following Soto's (2020) findings, activists understood that recovery efforts were improved when they were conducted through mutual aid networks to secure resources and take action (136). Activists also connected mutual aid to resilience and revitalization, following Lee et al.'s contention that improving community networks improves resilience (2020, 439).

8 CONCLUSION

This thesis addressed the questions of how eastern Kentucky activists understood the July 2022 flooding, its impact on their lives, its impact on the lives of flood survivors, and what they and flood survivors wanted for the future as well as how eastern Kentucky communities were recovering from disaster. The ultimate goals of this research project were to collect activists' experiences, perspectives, and goals and to document recovery efforts. I sought to answer: how did eastern Kentucky activists understand the flooding and its impact on their lives and the lives of flood survivors? How did the flooding impact their goals for the future? How did eastern Kentucky activists and flood survivors work to recover after the disaster? Working with eastern Kentucky activists to find answers to these questions illuminated the macrostructural inequities that need to be addressed to facilitate better recovery and resiliency. Eastern Kentucky activists understood the flooding through the macrostructural inequities, significantly linked to the coal industry. Activists argued that flood survivors mainly understood the flooding through their experiences of barriers to recovery. While flood survivors' goals, as explicated by activists, for the future were mostly focused on their immediate and personal recovery efforts, the goals of eastern Kentucky activists were informed by their desires to change the structural inequities that caused the flooding, eastern Kentuckians' vulnerabilities, and barriers to recovery. They sought to recover and become more resilient by finding solutions to the structures in place, significantly related to the coal mining industry, thereby restricting the capacity of those systems to cause vulnerabilities and present barriers in the future. I argued that the structural and systemic inequities related to coal mining influenced vulnerability, flood experiences, and recovery efforts. Additionally, I contended that the strong sense of community present in eastern

Kentucky promoted recovery, resilience, and revitalization by serving as a basis for collectively finding solutions to structural inequities and developing new and more equitable structures.

This project contributed to the anthropology of disaster and resilience by describing the subjective experiences of eastern Kentucky activists and their understanding of the experiences of flood survivors who experienced disaster. Understanding how disasters affect communities helps anthropologists better comprehend how global forces and structural inequities manifest in lived experiences of local communities. The interview and participant observation data largely aligned with disaster and resilience literature. Eastern Kentucky activists sought to address the structural inequities, such as those related to coal mining, that caused the flooding, vulnerabilities to the disaster, and barriers to recovery. While activists were not always supportive of the use of the term resilience, they did seek to become more resilient as the term was defined in the background literature (Barrios 2016; Lee et al. 2020; Oliver-Smith 2013; Seale-Feldman 2020). I chose to use the term "revitalization" as described by Anthony Wallace to replace resilience, as I believe it addresses the issues activists had with resilience as a term.

This project contributed to the field of applied anthropology by further demonstrating the increased success research has through the use of engagement and collaboration methods. Additionally, it helped to center applied anthropology and its scholarship in the wider field of anthropology (Rappaport 1993). Applied work not only creates better and more effective research, but it also contributes to the alleviating of human suffering. This project demonstrated the importance and value of applied anthropology and helped applied anthropology to become standard in anthropological practice.

Most importantly, the data collected was meant to inform the recovery, resilience, and revitalization efforts of eastern Kentucky activists. If eastern Kentucky activists attempted to

recover without combatting the structures, such as the coal industry, that led to their increased vulnerability to flooding, they would only be reinforcing these harmful structures, leading them to become even more vulnerable. However, by working to understand the disaster's root causes, impacts on eastern Kentucky activists and flood survivors, and their goals for the future, activists and flood survivors can utilize the information gathered in this research project to address the structural and systemic context that contributed to the flooding. Doing so could contribute to making these communities more resilient and revitalize them by empowering them to create new, more equitable, systems that can reduce their vulnerabilities to disaster and improve their communities and their futures.

Activists' visions for a more equitable future will require a Just Transition away from the coal mining industry. Transitioning away from the coal mining industry will affect the economy, society, and environment of eastern Kentucky. A new industry must take the place of coal mining to ensure the economic and social well-being of eastern Kentucky communities. Eastern Kentucky activists indicated that they wanted to transition the local economy to one based on more sustainable, non-extractive industries. These cleaner energies would ensure that the eastern Kentucky economy would not be hollowed out, and they would not require harming the environment. Additionally, transitioning to an economy based on cleaner industries would help increase social justice in eastern Kentucky by improving health and job security. While solar energy could potentially serve as the basis for a new economy in eastern Kentucky, the ultimate determination of the right industry or industries for the region must be made by activists and flood survivors, as they are intimately aware of the impacts of the coal mining industry on the lives of eastern Kentuckians.

The recovery, resilience, and revitalization efforts of eastern Kentucky activists and flood survivors are ongoing. Their dedication, hard work, and love for one another are responsible for the recovery and resiliency I witnessed. While eastern Kentucky activists, flood survivors, and other community members have a long road to recovery and resiliency ahead of them, I am confident that their strong connections will further enable their recovery and will provide them with the determination and the means necessary to reach their goals, eliminate their vulnerabilities, prevent barriers to recovery, and hold coal mining companies accountable for their role in the flooding and its subsequent impact.

APPENDICES

Interview Guide

Georgia State University

Interview Guide – Kentucky Activists

Student Investigator: Margaret L. Smith, Georgia State University

Interview format: Semi-structured

After the purposes of the research have been explained and the informed consent procedure has been completed, the student investigator will begin the interview by asking general questions about the interviewee and their community before proceeding to more sensitive topics such as environmental degradation. Not all topics will be covered in all interviews. Not all questions will be asked of all interviewees.

List of topics to be covered and sample questions:

Reminder: When answering questions please try NOT to use names or personal information that can identify someone.

Interview Guide: structure the flow of questions and think of follow-ups

- General Questions:
  - Tell me about yourself, your age, your background
  - Follow up probes:
    - Who are you?
    - Who are your people?
    - How old are you?
    - What is your gender?
    - What is your race?
    - What is your ethnicity?
- Home:
  - Where do you call home?
    - You said X is home. Why?
  - Time:
    - How long have you lived in Appalachia?
    - How long has your family lived in Appalachia or When did you move here?
    - Why did you move here?

    - Where in Appalachia do you live?
        - How long have you lived there?
        - Did your family live here?
        - What is the environment like in your neighborhood / area?
        - Are there any changes to your neighborhood environment that you are noticing?
            - What are they?
            - How have they impacted your neighborhood?
- Relationships to Flooding
    - Where were you when the flooding hit?
    - Were you expecting the flooding?
    - Did you lose anything in the flooding?
    - What do you think caused the flooding?
    - Have you experienced previous floods?
    - How do they compare to this flooding?
    - How did the people around you respond?
    - Were people helping one another?
    - Why do you think that is?
    - What was your response?
    - Did you help people? Why or why not?
- Goals / Visions
    - What are your goals for eastern Kentucky?
    - What were those goals before the flooding?
    - Has the flooding changed those goals? If so, how and why?
    - What do you feel can be done to prevent further flooding?
    - Instead of resilience, what should the goal be? How will you reach this goal?
    - What is being done for recovery?
    - What barriers are there to recovery efforts?
    - What structural inequities do you think contributed to the flooding and its impacts
    - What people were impacted the most? Were people impacted disproportionately?
    - If so, who?
    - Are you a member of KFTC? If so, what is this organization doing for recovery and to prevent further flooding?
    - What steps must be taken?
    - What is your role in this organization's plans for the future?
    - What are your specific plans for the future?
    - What do you feel would be most beneficial for eastern Kentucky?
    - How have people's lives changed since the flooding?
    - What has the community response to the flooding been like?
    - What structural changes need to be made to reach these goals?
    - Do you think the coal industry has contributed to the flooding? Why or why not? If so, how?
    - What long-term solutions do you think will aid in recovery?
    - How will you implement those solutions?
    - What is the state of eastern Kentucky communities and recovery at this moment?
    - Are there any events coming up?

- Has the flooding affected your worldview? Has it affected your view / understanding of eastern Kentucky communities? Has it affected your view / understanding of structural inequities?
- Do you think the flooding has affected Appalachian culture? If so, how?
- Land ownership - can you elaborate on how land ownership led to disproportionate experiences of flooding?
- Are there still people without housing? What steps are being taken to address this problem?
- What are the most pressing problems? What short term plans are in place to alleviate those issues? What long-term plans are in place?
- How do you develop plans?
- What do you hope this project could do for you and/or for your community? How do you think it could benefit eastern Kentucky and its flood recovery?
- What do you think of the recovery plans? Would you change them? If so, how? What plans would you offer as alternatives?
- What barriers are there to recovery? What barriers are there to the plans that might aid in recovery? How do you think those barriers can be addressed?
- Do you think there is anything positive that has come out of the flooding? If so, what and why?
- Have any opportunities arisen as a result of the flooding?
- How do most people in eastern Kentucky understand the flooding and its impacts? How do people imagine recovery?
- How do you think the history of eastern Kentucky contributed to the flooding?
- Do you think there are policies at the local, state, and federal levels of gov't and/or by non-governmental organizations that create/reinforce vulnerabilities? What are they and how do they do this?
- How do you (and others and KFTC and such) plan to address those policies? How do you think those plans will change those policies and their effects?
- Short-term vs. long-term care?
- Do you think that outside organizations / forces have influenced the views and recovery efforts of eastern Kentuckians? If so, how and why? What are their motives and who are they?
- Do you think that some groups are using aid to garner power in eastern Kentucky? If so, why and how? Who is it?

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