

# HURRICANE KATRINA: A TOXIC MIX OF SOCIAL AND GEOGRAPHIC VULNERABILITY

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SEVERAL MONTHS AFTER HURRICANE KATRINA struck in late August 2005, the National Hurricane Center issued this report:

Katrina was an extraordinarily powerful and deadly hurricane that carved a wide swath of catastrophic damage and inflicted large loss of life. It was the costliest and one of the five deadliest hurricanes to ever strike the United States. Katrina first caused fatalities and damage in southern Florida as a Category 1 hurricane on the Saffir-Simpson Hurricane Scale. After reaching Category 5 intensity over the central coast of Mexico, Katrina weakened to Category 3 before making landfall on the northern Gulf coast. Even so, the damage and loss of life inflicted by this massive hurricane in Louisiana and Mississippi were staggering, with significant effects extending into the Florida panhandle, Georgia, and Alabama. Considering the scope of its impacts, Katrina was one of the most devastating natural disasters in United States history.<sup>1</sup>

The storm drove approximately 1 million people from their homes and caused \$100 billion in property damage across an estimated 90,000 square miles in Louisiana, Mississippi, and Alabama.<sup>2</sup> The full extent of the loss of human life may never be known. John Mutter, an international disaster specialist at Columbia University's Earth Institute, notes that getting an accurate count of the dead and missing has been at least as difficult as the challenge of determining the extent of human loss from the Indian Ocean tsunami of 2004 and Pakistani earthquake of 2005. Mutter's most recent estimate places the number of dead or missing from Katrina at over 1,800.<sup>3</sup>

For New Orleans, which sits below sea level, Katrina actually struck twice—first, when the storm made landfall on August 29, 2005; and second, when the levees were breached the next day. Within four and a half hours of Katrina's initial storm surge, the century-old levees system (designed by the Army Corps of

Engineers to protect New Orleans from being engulfed by the surrounding waters of the Mississippi River, Lake Borgne, and Lake Pontchartrain) had been breached in multiple places. By midday on September 1, 2005 (when the waters of Lake Pontchartrain and the city's flooding had reached the same level), 80% of New Orleans lay under water and remained so for weeks.

Hurricane Katrina was both a natural and human-caused disaster. As has been widely noted, its impact on New Orleans depended as much on the failure of engineering, unfulfilled promises of protection, and governmental ineptness as it did on Hurricane Katrina.<sup>4</sup> Indeed, even the White House report on the federal response to Hurricane Katrina, issued in February 2006, acknowledged the government's fault in preventing and addressing the consequences of the storm. Other analysts such as Irwin Redlener, who directs the National Center for Disaster Preparedness, came to the same conclusion, warning Americans of the degree to which the incompetent handling of Hurricane Katrina bodes ill for the country when another "megadisaster" strikes.<sup>5</sup>

To label Katrina a *natural disaster* is misleading since it underplays the longstanding contribution of a set of factors related to politics, policy, and human decision-making to its devastating aftermath. For our purposes, we distinguish natural disasters from human-caused ones since this usage aligns our chapter with so much that has been written about Katrina, even though it differs from the usage in other parts of this Bulletin.

The reasons for the extent of the Katrina catastrophe are multiple. On the one hand, this is a story of geographic vulnerability since so much of New Orleans, especially the newer residential areas outside the French Quarter, lies below sea level. The fragility of these newer residential landscapes has been aggravated by ongoing destruction of the wetlands from exploitation of the region by its petroleum, petrochemical, and shipbuilding industries. Likewise, Louisiana's subsidence at an accelerated pace due to dredging for oil and gas extraction, as

well as poorly constructed levees among other factors, contributed significantly to raising the odds of destruction from severe weather events.<sup>6</sup>

On the other hand, this is also a story of social vulnerability, involving race and poverty. The storm preyed upon the old and the poor in its path—most of whom were African American. Race and poverty were key factors in determining who fled New Orleans and who evacuated. Preparedness programs worked reasonably well in some areas (Mississippi and Alabama coasts) but failed miserably in the city of New Orleans. As noted by Cutter and Emrich, “Those with resources left in advance of the approaching hurricane; those without (largely the poor, African Americans, elderly, or residents without private cars) remained, trapped in the rising floodwaters.”<sup>7</sup>

Hurricane Katrina provoked unsettling questions among many Americans who witnessed images of their fellow citizens—many of them poor and African American—caught in the flooding, apparently beyond the reach of government help. Worldwide, the media broadcast pictures of individuals seeking rescue from their homes by Coast Guard, private boats, and helicopters. Many Americans and others worldwide asked: How could the most powerful nation in the world seem so ill-equipped to handle a hurricane and its aftermath in a region where violent storms are a predictable seasonal occurrence?

### **Civic Education: Disasters, Rights, and Hurricane Katrina**

Hurricane Katrina and its aftermath can be considered not only a story of geographic and social vulnerability, but also a civic issue to be deliberated by all American citizens. Although it may have been a unique occurrence due to the confluence of climate, geography, politics, and demography, Katrina’s implications for the United States demand discussion in classrooms.

The tragedy raises larger questions related to America’s identity as a democratic nation, one that not only values personal responsibility but also expects certain things of its government. Analyzing Katrina in this light serves as the basis for a curriculum produced at Teachers College, Columbia University that was built upon Spike Lee’s award-winning film, *When the Levees Broke*. The overarching questions posed in the curriculum are: What kind of country are we? What kind of country do we want to be? Thanks to funding by the Rockefeller Foundation, over 30,000 copies of the curriculum have been distributed nationwide to schools, colleges, and community groups.<sup>8</sup> An online copy of the curriculum is available for download at [www.teachingthelevees.org](http://www.teachingthelevees.org).

We encourage educators to use a democratic-dialogue teaching method to explore these issues. Raising questions about controversial issues promotes development of social studies skills such as the critical use of sources, perspective taking, argumentation based on evidence, and reliance on analytical reasoning in support of positions. Each topic introduced here is complex; none affords easy answers. By engaging controversial issues in social studies classrooms, teachers and students bring rational deliberation and civic engagement into citizenship education.<sup>9</sup>

The perspective presented here results from several years investigating these matters in preparing the Teaching *The Levees* curriculum. Teachers engaged in implementing an issues-based social education process may deviate somewhat from the necessarily simplistic sketch presented here. In teaching social issues, teachers or students pose a question, such as those presented here, and then students are guided in seeking evidence, weighing opinions, and considering arguments. Students’ answers should be held tentatively and tested against further evidence and competing interpretations. Structuring students’ learning experiences in open-ended ways will allow them to reach their own conclusions about these issues, especially the matter of personal and governmental responsibility, more fully explored in the Teaching *The Levees* curriculum.

### **An Eco-Justice Perspective**

An eco-justice framework examines human relations to the earth, taking into consideration issues of equity and fairness in determining who is most vulnerable to environmental catastrophes and why certain groups often experience more harm than others. It also asserts that it is the underserved who tend to experience the most severe long-term consequences from natural disasters, such as those brought on by cataclysmic flooding.<sup>10</sup> Further, Bullard and Wright suggest that the impact of most natural disasters is far from natural, and is rooted in the segregation of impoverished communities from the larger society, both geographically and socially.<sup>11</sup>

Research documents more than 20 years of environmental discrimination in which New Orleans’ African American population has been far more negatively affected than other groups. In the early twentieth century, federal policies helped create a racially segregated city. Jim Crow laws, which denied access to education, employment, and public facilities to African Americans, created the first round of trouble; and then, in the second half of the century, the placement of a disproportionate number of polluting industries in African

American communities along Louisiana's portion of the Mississippi River exacerbated the problems based in segregation. Resulting health problems and increased poverty generated what Cutter and Emrich refer to as a set of "social vulnerabilities," or race- and class-based inequalities, which are rarely taken into account during disaster preparedness and response efforts.<sup>12</sup>

In the context of social studies education, a range of curricular subject matter can foster a critical and inclusive understanding of these themes. Comparative studies of poverty and environment may clarify the multiple ways in which different societies prepare for and respond to weather-related risks. For instance, students could consider what other societies have done to address the needs of citizens living in coastal flood-prone urban areas. The Netherlands' experience is particularly noteworthy in this regard, in that much of the nation is below sea level. In February 1953, after a massive storm surge submerged more than 700 square miles of the country, killing 1,835 people, the government vowed that its citizenry would never experience such destruction again. A floodgate made up of two giant arms, each as long as the Eiffel Tower, was then constructed. In the event of a massive storm surge, the barrier automatically closes the waterway, thus shielding Rotterdam, Europe's busiest port, from any damage.<sup>13</sup>

Fast forward to New Orleans in 2010, and the contrast could not be more extreme. It has been five years since Hurricane Katrina devastated the Gulf Coast, and there is still no plan at the federal, state, or local level to consider a new infrastructure project on a par with what has been constructed in the Netherlands.<sup>14</sup> Clearly, students should consider the reasons why this is so, asking, for example: Why isn't the rebuilding of New Orleans deemed a priority in the U.S.? What should be expected of government in protecting its citizenry? Such questions are indispensable in social studies, in that it is the primary area of the curriculum in which the deliberation of contemporary public policy, as well as a commitment to civic engagement, play such a vital role.<sup>15</sup> Unfortunately, for the students involved and for society, resistance exists in many American classrooms to having the kind of meaningful dialogues necessary for addressing these issues. Often when race and class inequalities are central topics, as occurs in much discourse on disasters and human rights, many teachers are reluctant to encourage classroom dialogue. Katrina provides remarkable evidence that race and class remain human and social issues in disasters, a topic worthy of social studies education.

Four issues are among those introduced in the Teaching *The Levees* curriculum:

- ▶ Social vulnerability and Katrina
- ▶ "The Blame Game"
- ▶ Media framing of the tragedy
- ▶ Climate change and New Orleans' future

Consideration of these issues can draw upon the conceptual framework of "eco-justice," the set of ideas that emphasizes our responsibilities as human beings to the rest of the natural world. Each issue is briefly described, then research-based perspectives are offered. Alternative perspectives can and should be developed and examined in classes.

#### Social Vulnerability and Katrina

*What do we know about who died as a result of Katrina? Was any group more vulnerable than another? If so, then why?*

Every estimate of the proportion of Katrina's victims in New Orleans who were African American concludes that it was very high. Some estimates put it as high as 91%, and others, at 76%. Of the more than 1,800 dead or missing from Katrina, according to a Katrina List estimate, 914 came from New Orleans. Of the 914 from New Orleans, 830 were African American.<sup>16</sup> The population of New Orleans at the time of Katrina was about two-thirds African American. Some might argue, therefore, that race influenced one's odds of living or dying as a result of the storm.

Even so, flooding affected lower, middle, and upper-middle class neighborhoods. The worst flooded areas included affluent Lakeview, the lower-class but largely home-owning Lower Ninth Ward, and middle-class New Orleans East—all of these were among the 20<sup>th</sup> century subdivisions made habitable due to the draining of swamps and the building of levees. As historical geographer Richard Campanella commented about Katrina, "The city's ancient geographies of risk, supposedly subjugated by technology a century ago, came rushing back to life."<sup>17</sup>

In addition to the statistical point that a large proportion of dead and missing were African American, more than would be expected based on chance, numerous authors have pointed to poverty's impact, noting, for example, that many poor African Americans did not own cars—about 27% of the adult population, according to Cutter and Emrich.<sup>18</sup> As a result, they were unable to get out of the city on the eve of the storm. Even had they decided to heed the warnings early on (which came from New Orleans' Mayor Ray Nagin too late to be effective, some have argued) and fled on public transportation days before the storm, they lacked credit cards or cash sufficient to secure shelter in suburban hotels. Many poor African Americans were also older, which, in combination with poverty, inhibited their

ability to leave. Some older New Orleans citizens also chose to stay because they felt they had successfully weathered previous storms, and so could manage through this one as well.

In the end, 96% of all New Orleans residents evacuated prior to the hurricane, while most of those who stayed lacked the means to leave.<sup>19</sup>

Campanella, who makes a lower estimate than the one cited above of the proportion of Katrina victims who were African Americans, concludes that:

- ▶ African Americans made up 67% of New Orleans's population but 76% of its flood victims
- ▶ Whites made up 28% of New Orleans's population and 20% of its flood victims
- ▶ Hispanics made up 3% of New Orleans's population and 3% of its flood victims
- ▶ Asians made up 2% of New Orleans's population and 3% of its flood victims.<sup>20</sup>

He also finds that “African American victims outnumbered white victims by more than double; they comprised 66 percent of the storm deaths in New Orleans and whites made up 31 percent, fairly proportionate to pre-storm relative populations.”<sup>21</sup> He goes on to conclude: “There is no question, however, that those who were stranded in the inundated city and suffered excruciatingly long delays in rescue were overwhelmingly African American and poor—in both absolute and relative terms.”<sup>22</sup>

A great deal more could be said about the interrelated geographic and social vulnerability of Katrina's victims. Students should surely research these factors along with the city's long history of residential segregation.<sup>23</sup> In the context of Katrina and many other disasters, social vulnerability includes race and class but also may include age, gender, physical ability, and other demographic attributes. All these factors can alter one's risk and raise or lower one's chance of getting assistance after a disaster strikes.<sup>24</sup>

#### “The Blame Game”

*Who was responsible for emergency preparedness in the City of New Orleans? Were preparations sufficient to the task of protecting residents before the storm and rescuing them afterwards? Why or why not?*

Given the delayed and widely acknowledged ineffective governmental response to rescue those left behind after Katrina struck, social vulnerability became “social catastrophe”:

The preexisting social vulnerabilities gave rise to the social catastrophe; the moral hazard occurred

with our collective inability to adequately respond. What good is a federal response plan when it clearly does not work and does not alleviate the suffering of the most vulnerable within our society? What does it say about the adequacy of preparedness when we know so little about the most disadvantaged within the communities—those that require additional assistance to get out of harm's way?<sup>25</sup>

Responses to disasters in the United States are supposed to bring intergovernmental cooperation that coordinates the resources of federal, state, and local governments to provide aid.<sup>26</sup> Not only was the federal government's response inadequate but so was that of Mayor Ray Nagin in New Orleans and Governor Kathleen Blanco in Louisiana. Coordinated responses relying on city, state, and national government leave a great deal of room for misunderstanding and misstep, especially when time is of the essence. Even so, some disaster specialists argue that citizens cannot depend for help on the government since it is often unreliable—they must take responsibility for their own preparedness.<sup>27</sup> Once again, we see that tension between personal and governmental responsibility provides an opening for dialogue among students about the “blame game” regarding Katrina.

Many pundits have written that there was plenty of blame to go around. Numerous analyses came to the same conclusion: city and state officials were overwhelmed and at odds, and the federal government's response was delayed, disengaged, and inadequate.<sup>28</sup> But could the damage have been lessened if individuals had taken the warnings more seriously and evacuated as requested? In other words, if 100% of the people evacuated, rather than 96%, would that have made much difference? Is this a reasonable expectation? Can we find evidence from other disasters as a comparison here?

Public and media reactions to the failures of government were sharp and critical. Two out of three Americans believed that President Bush could have done more to speed up relief efforts. In public opinion polls afterwards, the majority of Americans characterized themselves as angry or depressed about the situation. But, once again, race was a factor in shaping opinion—research indicates that African Americans were far more negative about the relief effort than non-African Americans.<sup>29</sup>

One question surfaced repeatedly: If the storm had occurred in an affluent area with a predominantly white population, would the reaction of local, state, and federal governments been different? Such a question, like the one above, could stimulate

an interesting comparison of the government's response to other hurricanes in the last 10 years, the forest fires in southern California in 2007, or other similar episodes.

#### How Did Media Frame the Event?

*Did the ways in which American media reported news of Hurricane Katrina and its aftermath bias the story?*

Media play a critical role in framing public perception of contemporary events, no less so in the case of Katrina.<sup>30</sup> Prior to Katrina, evidence existed that African Americans have often been presented in a negative light by the news media, as an underclass in American society.<sup>31</sup> The ways in which certain dimensions of a story get emphasized have a profound influence on “what we think about a particular issue.”<sup>32</sup> The media's choice, for example, of the word “refugees” to describe individuals displaced by Katrina triggered a fire storm of public reaction. Likewise, rumors circulating about rapes, murders, and general mayhem in the first week after New Orleans flooded, and the use of the term “looting,” associated with African Americans, as opposed to “taking,” used with Whites, when getting food and other supplies from stores, confirmed for many a belief that the U.S. media was reporting the story of Katrina in a racially biased fashion.<sup>33</sup>

As of September 6, 2005, the Pew Research Center's Project for Excellence in Journalism reported that the topics “Katrina and refugees” could be found in 26,200 articles, “Katrina and looting” in 13,000 articles, and “Katrina and levees” in 13,100. News media around the United States, according to this analysis, doubled their references to both “race” and “African American” over the weekend after Hurricane Katrina struck.

Many scholars who analyzed U.S. coverage found the story of Katrina framed in terms of the poor and African Americans.<sup>34</sup> Differences in media treatment of these issues contributed to shaping views about victimization and Katrina according to one's political worldview.<sup>35</sup> An encouraging development is the adoption by NCSS in 2009 of a position statement about the importance of media literacy.<sup>36</sup> This may lead to greater attention to this important topic in our nation's classrooms.

#### Climate Change and New Orleans' Future

As noted by climatologist James Hansen, climate change is expected to be one of the most challenging public policy issues of the 21<sup>st</sup> century.<sup>37</sup> After all, scientific consensus now indicates that the earth's climate is undergoing substantial and, in some cases, alarming changes.<sup>38</sup> Additionally, much of this problem may be irreversible and will only get worse as time goes on.<sup>39</sup>

Without substantial changes in emissions rates, climate change from the buildup of greenhouse gases is likely to lead to extensive transformations of ecosystems and coastlines later this century, thus posing a significant risk to low-lying New Orleans and other coastal areas.<sup>40</sup>

Increased sea-surface temperatures, in return, may be leading to more extreme U.S. weather-related disasters that could destroy flood-prone urban areas that already suffer from significant economic disparities, racism, a lack of health care, and a lack of accessibility to lifelines, such as emergency response personnel, capital, and political representation.<sup>41</sup> Social studies educators' efforts to address these social and geographic vulnerabilities are important since today's learners will be the ones likely to witness and experience climate change's devastating impact on the U.S. Within a social studies context, discussion of climate change—in terms of both mitigation and adaptation—becomes one of citizenship, in which learners are faced with hard questions, such as: Am I a part of the problem, or part of the solution? Why are some of my elected officials still denying that there is even a problem, when the scientific consensus suggests that doing nothing will result in catastrophe? How is media framing these issues in their reporting?”

As shown by Hurricane Katrina, several coastal urban areas of American cities possess significant geographic and social vulnerabilities, the latter often due to inequalities involving race and class. Within such locations, thousands of citizens live in flood-prone areas without any means to evacuate from major storms and no disaster plan to guide them when a mega-disaster occurs.<sup>42</sup> Rozario asserts that catastrophic floods, and our discourses about them, have played a long and influential role in the construction of American identities, power relations, economic systems, and environmental practices.<sup>43</sup> What if increased sea-surface temperatures lead, as predicted, to rising tides and more extreme weather-related disasters in low-lying areas? Who is responsible for ensuring that such events will have a limited impact on American society's most vulnerable?<sup>44</sup> Are there aspects of our historical and cultural worldview about the earth and its relation to human life that are inhibiting our ability to deal with these problems effectively?

U.S. politicians are beginning to take note of climate change and its implications for public policy, albeit rather slowly. For instance, while speaking at the National Press Club in Washington, DC, on July 29th, 2008, House Majority Whip James Clyburn, D-S.C., noted:

It is critical [that] our community be an integral and active part of the debate because African-Americans

are disproportionately impacted by the effects of climate change economically, socially, and through our health and wellbeing.<sup>45</sup>

Rep. Clyburn further commented that the U.S. African American population is more vulnerable to higher energy bills, unemployment, and recessions caused by global energy price shocks than other groups. He sees Hurricane Katrina's impact on New Orleans as a preview of coming problems for such communities. Such comments remind us that "natural disasters" have less to do with nature than with equity and fairness. Their inclusion in social studies education needs to be a primary aim. Social studies scholars and teacher educators have begun to call—once again—for more attention to these issues in citizenship education.<sup>46</sup> Such calls echo earlier efforts at "greening America" through the social studies.<sup>47</sup>

### Conclusion

Geographic and social vulnerability converged in various ways during Hurricane Katrina and its aftermath, producing an American disaster. The issues briefly explored here include the ways in which environmental degradation, government failure in protecting its citizens, and the role of media in shaping public opinion all interacted with those vulnerabilities to produce a toxic mix. Drawing upon an eco-justice framework, teachers can pose critical questions and encourage democratic dialogue about these issues in ways that enhance students' social studies knowledge and skills.

Katrina was a major tragedy in American history. Recent reports about the civic outlook of the Millennial Generation (the large and rising group of young people born between 1978 and 2000) give us optimism that the issues around Katrina will be acknowledged and debated.<sup>48</sup> We call upon social studies educators to provide space for young people to consider what's at stake in our collective futures from the threats of such disasters and what we can do as individuals and as a nation to better address these risks. 🌍

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