

# The Geography of Social Vulnerability: Race, Class, and Catastrophe

By [Susan L. Cutter](#)

It was bound to happen. The scenario had been researched, rehearsed, and replayed over and over again among emergency managers. It was just a matter of when and where the major hurricane would strike a large American city. Two specific scenarios had been considered—a major hurricane with 20 foot plus storm surge inundation affecting the Gulf Coast region or a hurricane-induced levee failure in New Orleans. Both captured the imagination of emergency planners designing training scenarios. Hurricane Pam, the fictional FEMA-funded emergency exercise for federal, state, and local officials in Louisiana, encapsulated both scenarios. Hurricane Katrina played them out in real time.

The revelations of inadequate response to the hurricane's aftermath are not just about failures in emergency response at the local, state, and federal levels or failures in the overall emergency management system. They are also about failures of the social support systems for America's impoverished—the largely invisible inner city poor. The former can be rectified quickly (months to years) through organizational restructuring or training; the latter requires much more time, resources, and the political will to redress social inequities and inequalities that have been sustained for more than a half century and show little signs of dissipating.

How did we arrive at such a confluence of natural and social vulnerabilities manifested as the Hurricane Katrina disaster? This complex emergency began with geography—the spatial interaction of humans and their environment over time. Officially founded in 1718 by Jean-Baptiste Le Moyne de Bienville, New Orleans was strategically located at the crossroads of three navigable water bodies, Lake Pontchartrain, the Gulf of Mexico, and the Mississippi River. Important primarily as a trading depot for French fur trappers, the city evolved into one of the most important ports in America providing a gateway to the nation's agricultural riches.<sup>1</sup>

The original settlement was on the highest ground in the bayou, Vieux Carré (the French Quarter), which later became the heart and soul of the modern city. How prescient for the early settlers to build on the highest ground available. As the settlement grew in the ensuing decades, New Orleans became a major American port city and a sprawling metropolis sandwiched between and surrounded by water. The siting and growth of New Orleans was inevitable given its access to water-borne transportation routes, but that access also contributed to the extremely precarious and peculiar range of environmental risks. The human transformation of the physical environment enabled the city to grow and prosper.<sup>2</sup>

To reduce the natural risks of flooding, the physical environment surrounding New Orleans was re-engineered, spawning an era of structural river control.<sup>3</sup> Levees were built to control the flow of the mighty Mississippi, but they were also built to contain flooding from Lake Pontchartrain, especially useful during hurricane season. The ideology of conquering and taming nature (an inherited European ideal that man could actually control nature), rather than living in harmony with it, was (and still is) the driving force in the production of the physical vulnerability of the metropolitan area. Instead of seeing the deposition of alluvium that one expects in a deltaic coastline, the levees channeled the river and its sediment, destroying protective wetlands south and east of the city. With many areas of the city below sea level, even heavy rainfall became a problem filling the city with water just like a giant punchbowl. An elaborate pumping system was required to keep the city dry during heavy rains, let alone tropical storms. What would happen during a hurricane, a levee failure, or an intentional levee breach used to divert floodwaters away from the city as was done in 1927? <sup>4</sup>

Concurrent with the physical transformation of the city, a new social geography was being created as well. The South's segregated past was best seen in the spatial and social evolution of southern cities, including New Orleans. Migration from the rural impoverished areas to the city was followed by white flight from urban areas to more suburban communities. Public housing was constructed to cope with Black population influxes during the 1950s and 1960s and in a pattern repeated throughout America, the

housing was invariably located in the most undesirable areas—along major transportation corridors, on reclaimed land, or next to industrial facilities. Employment opportunities were limited for inner city residents as jobs moved outward from the central city to suburban locations, or overseas as the process of globalization reduced even further the number of low skilled jobs. The most impoverished lived in squalor-like conditions concentrated in certain neighborhoods within cities, with little or no employment, poor education, and little hope for the future for their children or grandchildren. It is against this backdrop of the social geography of cities and the differential access to resources that we can best understand the Hurricane Katrina disaster.

Socially created vulnerabilities are largely ignored in the hazards and disaster literature because they are so hard to measure and quantify. Social vulnerability is partially a product of social inequalities—those social factors and forces that create the susceptibility of various groups to harm, and in turn affect their ability to respond, and bounce back (resilience) after the disaster.<sup>5</sup> But it is much more than that. Social vulnerability involves the basic provision of health care, the livability of places, overall indicators of quality of life, and accessibility to lifelines (goods, services, emergency response personnel), capital, and political representation.

Race and class are certainly factors that help explain the social vulnerability in the South, while ethnicity plays an additional role in many cities. When the middle classes (both White and Black) abandon a city, the disparities between the very rich and the very poor expand. Add to this an increasing elderly population, the homeless, transients (including tourists), and other special needs populations, and the prospects for evacuating a city during times of emergencies becomes a daunting challenge for most American cities. What is a major challenge for other cities became a virtual impossibility for New Orleans. Those that could muster the personal resources evacuated the city. With no welfare check (the hurricane struck near the end of the month), little food, and no help from the city, state, or federal officials, the poor were forced to ride out the storm in their homes or move to the shelters of last resort. This is the enduring face of Hurricane Katrina—poor, black, single mothers, young, and old—struggling just to survive; options limited by the ineffectiveness of preparedness and the inadequacy of response.

In the actual planning for emergencies, social vulnerability is captured under the heading of “special needs populations.” While small communities can identify their special needs populations, it becomes a daunting task in major cities. What is the homeless population and where are they? How many tourists are in town that may need help in evacuating? How full are the large hospitals, outpatient clinics, and mental health care facilities? What about nursing homes? Prisons? The healthy poor are rarely considered as a special needs population, even though they lack the financial resources to respond to emergencies.

As a nation, we have very little experience with evacuating cities from natural hazards let alone technological failures or willful acts. Crisis relocation planning was the norm during the height of the Reagan administration, but many social scientists scoffed at the implausibility of the effort as a precautionary measure against a nuclear attack. Our collective experience with evacuations is based on chemical spills or toxic releases, planning for nuclear power plant accidents, and hurricanes. In most cases, but certainly not all, the evacuations have been in rural or suburban places, not a major U.S. city. Florida’s hurricane experience has been a suburban phenomena not an inner city one. The potential differences in response are critical and highlight the difficulties in emergency preparedness for major cities. The number of large urban hospitals, the dependence on public transportation, and the need for mass sheltering all complicate preparedness efforts in these dense multi-ethnic and multi-racial cities. In addition to the sheer number of people at risk, emergency managers have the additional task of identifying those residents who may be the most vulnerable—the poor, the infirmed, the elderly, the homeless, women, and children. The nescient result is an ever-widening disparity in society’s ability to cope with more persistent social and economic problems in urban areas, let alone a potential mass impact event of unknown origin. This is the story of Hurricane Katrina and its aftermath.

Scale, of course, is also an important element to consider. While the terrorist attacks of September 11, 2001 affected two major cities (New York and Washington D.C.), the actual damage swath in New York

City, for example was quite small (tens of acres, not hundreds of square miles) and involved one local jurisdiction. Hurricane Katrina affected a much larger region, geographically, encompassing more than 600 miles of the Gulf coastline stretching from Grand Isle, LA to Gulf Shores, AL; three states; and hundreds of local jurisdictions. This is not meant to minimize the social, economic, or political importance of 9-11, but rather to place the response and recovery in perspective in terms of its geographical scale.

Just as there is variation in the physical landscape, the landscape of social inequity has increased the division between rich and poor in this country and has led to the increasing social vulnerability of our residents, especially to coastal hazards.<sup>6</sup> Strained race relations and the seeming differential response to the disaster suggests that in planning for future catastrophes, we need to not only look at the natural environment in the development of mitigation programs, but the social environment as well. It is the interaction between nature and society that produces the vulnerability of places. While physical vulnerability is reduced through the construction of disaster-resistant buildings, changes in land use, and restoration of wetlands and floodways, a marked reduction in social vulnerability will require an improvement in the overall quality of life for the inner city poor. We should not have the equivalent of developing world conditions in a nation as wealthy as the United States. This is the tragedy of Hurricane Katrina. Few outside of the region knew of the impoverished conditions for many New Orleanians, which is why one of the city's nicknames, "The City that Care Forgot," seems so poignant.

Disasters will happen. To lessen their impacts in the future, we need to reduce our social vulnerability and increase disaster resilience with improvements in the social conditions and living standards in our cities. We need to build (and rebuild) damaged housing and infrastructure in harmony with nature and design cities to be resilient to environmental threats even if it means smaller, more livable places, and fewer profits for land and urban developers and a smaller tax base for the city. Disasters are income neutral and color-blind. Their impacts, however, are not.

## References

<sup>1</sup> Peirce F. Lewis, 2003. *New Orleans: The Making of an Urban Landscape, 2nd Edition*. Charlottesville, VA: University of Virginia Press.

<sup>2</sup> Craig E. Colten, 2001. *Transforming New Orleans and its Environs: Centuries of Change*. Pittsburgh: University of Pittsburgh Press.

<sup>3</sup> Craig E. Colten, 2004. *An Unnatural Metropolis: Wrestling New Orleans from Nature*. Baton Rouge, LA: Louisiana State University Press.

<sup>4</sup> John M. Barry, 1997. *Rising Tide: The Great Mississippi Flood of 1927 and How it Changed America*. New York: Simon & Schuster.

<sup>5</sup> Susan L. Cutter, Bryan J. Boruff, and W. Lynn Shirley, 2003. "Social Vulnerability to Environmental Hazards," *Social Science Quarterly* 84 (1):242-261.

<sup>6</sup> The Heinz Center, 2002. *Human Links to Coastal Disasters*. Washington D.C.: The H. John Heinz III Center for Science, Economics and the Environment.

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