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THE WHITE HOUSE
PRESIDENT GEORGE W. BUSH

CHAPTER ONE: KATRINA IN PERSPECTIVE

Hurricane Katrina was one of the worst natural disasters in our Nation's history and has caused unimaginable devastation and heartbreak throughout the Gulf Coast Region. A vast coastline of towns and communities has been decimated.
President George W. Bush, September 8, 2005¹

Terrorists still plot their evil deeds, and nature's unyielding power will continue. We know with certainty that there will be tragedies in our future. Our obligation is to work to prevent the acts of evil men; reduce America's vulnerability to both the acts of terrorists and the wrath of nature; and prepare ourselves to respond to and recover from the man-made and natural catastrophes that do occur. The magnitude of Hurricane Katrina does not excuse our inadequate preparedness and response, but rather it must serve as a catalyst for far-reaching reform and transformation. To do this, we must understand Hurricane Katrina in its proper context.

Hurricane Katrina Among Other Disasters

Hurricane Katrina was the most destructive natural disaster in U.S. history.² The overall destruction wrought by Hurricane Katrina, which was both a large and powerful hurricane as well as a catastrophic flood, vastly exceeded that of any other major disaster, such as the Chicago Fire of 1871, the San Francisco Earthquake and Fire of 1906, and Hurricane Andrew in 1992.³

Hurricane Katrina's devastating effects were felt before the storm even reached the Gulf Coast on August 29, 2005. In the Gulf of Mexico, Hurricane Katrina battered the offshore energy infrastructure and forced the evacuation of more than 75 percent of the Gulf's 819 manned oil platforms.⁴ Two days before landfall, U.S. energy companies estimated that the approaching storm had already reduced Gulf of Mexico oil production by more than a third.⁵

Seventy-five hurricanes of Katrina's strength at landfall—a Category 3—have hit the mainland United States since 1851, roughly once every two years.⁶ Yet Katrina was anything but a "normal" hurricane. First, Katrina was larger than most. Hurricane Camille, a Category 5 storm that devastated the Gulf Coast in 1969,⁷ had top wind speeds that exceeded those of Katrina upon landfall, but Camille's hurricane force winds only extended seventy-five miles from its center,⁸ whereas Katrina's extended 103 miles from its center.⁹ As a result, Hurricane Katrina's storm surge affected a larger area than did Hurricane Camille's.¹⁰ In all, Hurricane Katrina impacted nearly 93,000 square miles across 138 parishes and counties.¹¹ The extreme intensity that Hurricane Katrina reached before landfall on the Gulf Coast, as well as its size, meant that its storm surge was consistent with a more powerful storm. In fact, the National Hurricane Center concluded that the height of Hurricane Katrina and Camille's respective storm surges were comparable to each other.¹²

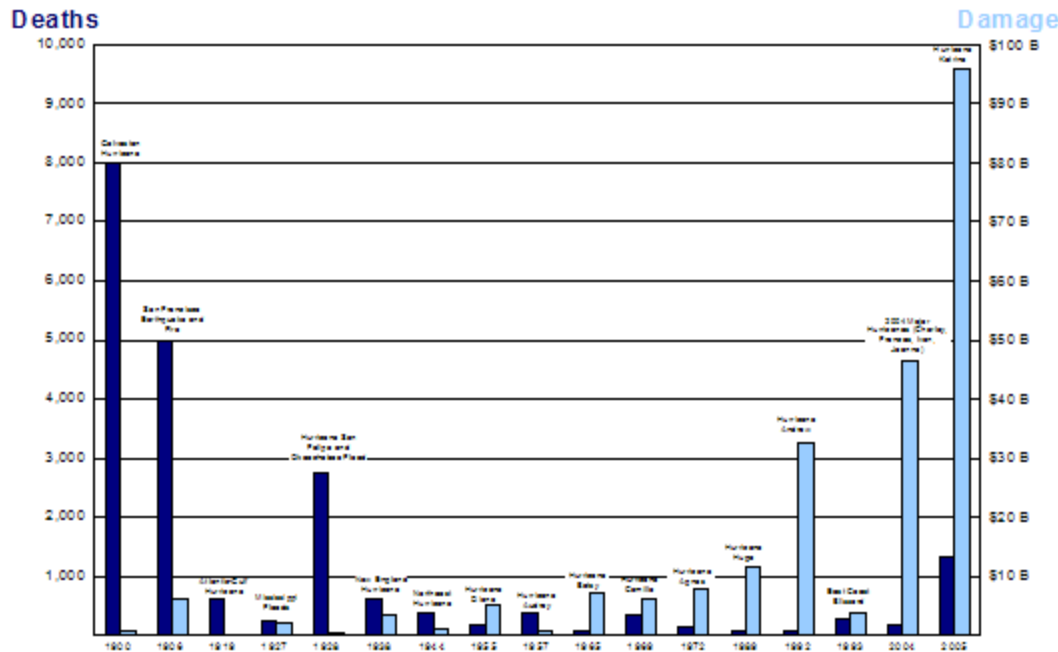
Hurricane Katrina's winds and a storm surge that crested up to twenty-seven feet high dealt a ferocious blow to homes, businesses, and property on the coast and for many miles inland.¹³ This storm surge overwhelmed levees all along the lowest reaches of the Mississippi River and the edges of Lake Pontchartrain.¹⁴ The consequences for New Orleans, which sits mostly below sea level, were dire. Significant levee failures occurred on the 17th Street Canal, the Industrial Canal, and the London Avenue Canal. Approximately 80 percent of the city was flooded.¹⁵

The flooding destroyed New Orleans, the Nation's thirty-fifth largest city.¹⁶ Much as the fire that burned Chicago in 1871 and the earthquake and fire that leveled San Francisco in 1906 destroyed the economic and cultural centers of an entire region, so too did Hurricane Katrina destroy what many considered to be the heart of the Gulf Coast. The destruction also called to mind the Galveston Hurricane of 1900, which thoroughly devastated the town of Galveston, Texas. At the time, Galveston was an economic and cultural center of Texas and was the State's fourth largest city.¹⁷

Even beyond New Orleans, Katrina's span of destruction was widespread. Indeed, one of the gravest challenges presented by this particular disaster was the vast geographic distribution of the damage. Towns and cities, small and large, were destroyed or heavily damaged up and down the Gulf Coast and miles inland. From Morgan City, Louisiana, to Biloxi, Mississippi, to Mobile, Alabama, Hurricane Katrina's wind, rain, and storm surge demolished homes and businesses. Large parts of the coastal areas of these States were devastated. As Mississippi Governor Haley Barbour stated, "The 80 miles across the Mississippi Gulf Coast is largely destroyed. A town like Waveland, Mississippi, has no inhabitable structures—none."¹⁸

Hurricane Katrina contradicts one side of an important two-part trend. For at least a century, America's most severe natural disasters have become steadily *less* deadly and *more* destructive of property (adjusted for inflation).¹⁹ Figure 1.1 depicts this trend. Yet, Hurricane Katrina not only damaged far more property than any previous natural disaster, it was also the deadliest natural disaster in the United States since Hurricane San Felipe in 1928. The dark blue bars in the figure below show the decreasing number of deaths caused by natural disasters in the period from 1900 – 2005. The light blue bars show the increasing amount of damage caused by these same natural disasters adjusted to third quarter 2005 dollars.²⁰

Figure 1.1 U.S. Natural Disasters that Caused the Most Death and Damage to Property in Each Decade, 1900-2005, with 2004 Major Hurricanes Added²¹ Damage in Third Quarter 2005 Dollars



Measuring Hurricane Katrina: The Path of Destruction

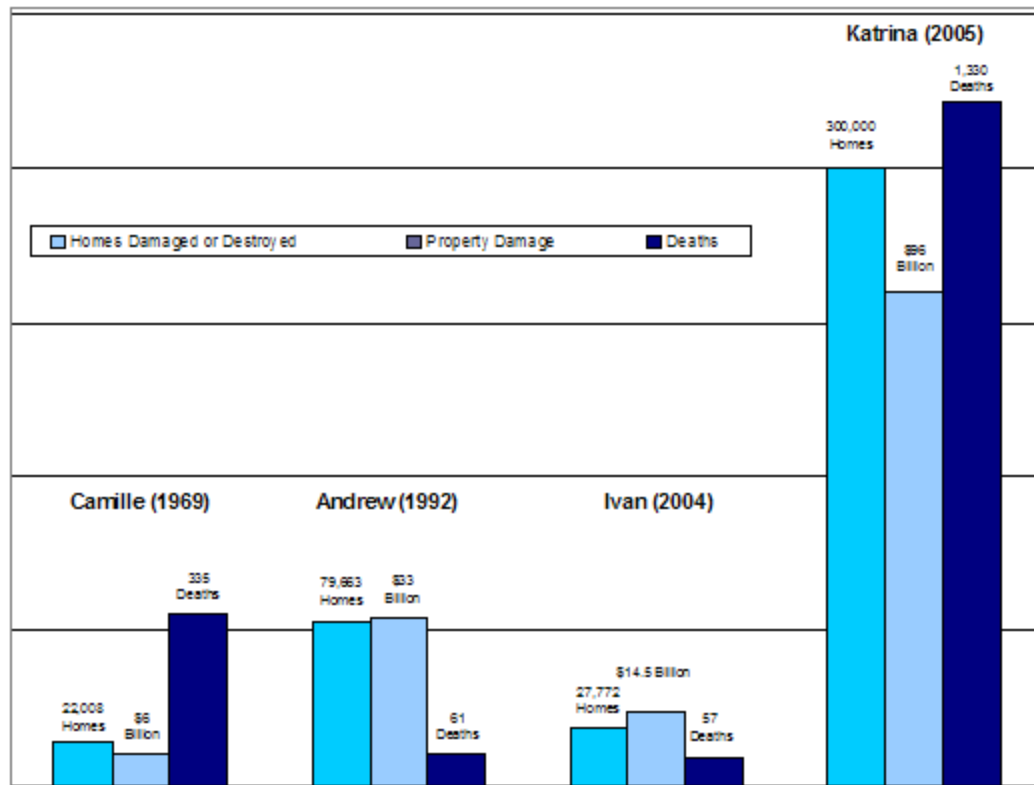
Estimating disaster damage is not an exact science, and, in the case of Hurricane Katrina, it is further complicated by ongoing recovery efforts. Estimates vary but, considering property damage alone, Hurricane Katrina is America's first disaster—natural or man-made—to approach the \$100 billion mark (See Table 1.1).²²

Table 1.1 Estimated damage from Hurricane Katrina and the New Orleans Flood²³

Housing	\$67 billion
Consumer durable goods	\$7 billion
Business property	\$20 billion
Government property	\$3 billion
Total	\$96 billion

Hurricane Katrina devastated far more residential property than had any other recent hurricane, completely destroying or making uninhabitable an estimated 300,000 homes.²⁴

This far surpasses the residential damage of Hurricane Andrew, which destroyed or damaged approximately 80,000 homes in 1992.²⁵ It even exceeds the combined damage of the four major 2004 hurricanes, Charley, Frances, Ivan, and Jeanne, which together destroyed or damaged approximately 85,000 homes.²⁶ Figure 1.2 charts the effects of Hurricane Katrina against other major hurricanes in recent U.S. history, comparing homes damaged or destroyed, property damage, and deaths.

Figure 1.2: Hurricane Katrina Compared to Hurricanes Ivan, Andrew, and Camille²⁷

Hurricane Katrina's damage was extensive. The storm destroyed so many homes, buildings, forests, and green spaces that an extraordinary amount of debris was left behind—118 million cubic yards all told.²⁸ In comparison, Hurricane Andrew created 20 million cubic yards of debris.²⁹ The debris from Katrina, if stacked onto the space of a football field, would reach over ten and a half miles high.³⁰

Hurricane Katrina's effects on the economy have yet to be fully reckoned. The worst consequences were local: between August and September, the unemployment rate doubled from 6 to 12 percent in the most affected areas of Louisiana and Mississippi.³¹ In Louisiana, Mississippi, and Alabama, salaries and wages fell by an estimated \$1.2 billion in the third quarter of 2005.³² But short-term, economic ripples reached the entire country through the rising cost of gasoline. The approach of the storm forced the temporary shutdown of most crude oil and natural gas production in the Gulf of Mexico. In the immediate wake of Hurricane Katrina, gasoline prices rose sharply nationwide.³³ The combined effects of Hurricane Katrina and Hurricane Rita, which made landfall on the border between Texas and Louisiana early on September 24, 2005, were such that, between August 26, 2005, and January 11, 2006, 114 million barrels of oil production capacity were left unused, equivalent to over one-fifth of yearly output in the Gulf of Mexico.³⁴

The storm devastated the regional power infrastructure. In Louisiana, Mississippi, and Alabama, approximately 2.5 million power customers reported outages.³⁵ By contrast, Hurricane Ivan denied 1.8 million customers power.³⁶

Communications suffered as well. The storm crippled thirty-eight 911 call centers, disrupting local emergency services,³⁷ and knocked out more than 3 million customer phone lines in Louisiana, Mississippi, and Alabama.³⁸ Broadcast communications were likewise severely affected, as 50 percent of area radio stations and 44 percent of area television stations went off the air.³⁹

Much more than any other hurricane, Katrina's wrath went far beyond wind and water damage. In fact, Hurricane Katrina caused at least ten oil spills, releasing the same quantity of oil as some of the worst oil spills in U.S. history. Louisiana reported at least six major spills of over 100,000 gallons and four medium spills of over 10,000 gallons.⁴⁰ All told, more than 7.4 million gallons poured into the Gulf Coast region's waterways, over two thirds of the amount that spilled out during America's worst oil disaster, the rupturing of the *Exxon Valdez* tanker off the Alaskan coast in 1989.⁴¹

The wave of destruction created environmental and health hazards across the affected region, including standing water, oil pollution, sewage, household and industrial chemicals, and both human and animal remains. The storm surge struck 466 facilities that handle large amounts of dangerous chemicals, thirty-one hazardous waste sites, and sixteen Superfund toxic waste sites, three of which flooded. The surge also destroyed or compromised 170 drinking water facilities and dozens of wastewater treatment facilities.⁴²

Most terrible of all and most difficult to measure, however, were Hurricane Katrina's human effects.

Measuring the Immeasurable: The Human Toll

When the winds and floods of Hurricane Katrina subsided, an estimated 1,330 people were dead as a result of the storm.⁴³ The vast majority of the fatalities—an estimated 80 percent—came from the New Orleans metropolitan area; Mississippi suffered greatly as well, with 231 fatalities.⁴⁴ Many of the dead were elderly or infirm. In Louisiana, approximately 71 percent of the victims were older than sixty, and 47 percent of those were over seventy-five.⁴⁵ At least sixty-eight were found in nursing homes, some of whom were allegedly abandoned by their caretakers.⁴⁶ Of the total known fatalities, there are almost two hundred unclaimed bodies remaining at the Victim Identification Center in Carville, Louisiana.⁴⁷ As awful as these horrifying statistics are, unfortunately they are not the end of the story. As of February 17, 2006, there were still 2,096 people from the Gulf Coast area reported missing.⁴⁸

For the survivors, the aftermath of Hurricane Katrina has been characterized by a mixture of grief, anxiety, and frustration. Around 770,000 people were displaced—the largest since the Dust Bowl migration from the southern Great Plains region in the 1930s.⁴⁹ After Hurricane Katrina, housing options often arrived slowly to those who could not return to their ruined homes; by the end of October, there were still more than 4,500 people staying in shelters. The numbers of evacuees residing in such transient emergency shelters had dropped significantly by January 2006, and families have slowly begun to find permanent housing.⁵⁰

Moreover, many victims found it difficult to reconstruct their shattered lives. In many cases, they had either lost or forgotten basic documents, such as insurance information, birth certificates, and marriage licenses, which would later prove essential to rebuilding their lives.⁵¹ Most of the evacuees did not have access to their medical records, which increased the risk of complications when receiving medical treatment.⁵² For those who returned to their homes in the Gulf region, basic services were still wanting. By January, 85 percent of public schools in Orleans parish had still not reopened; in the metropolitan area, approximately two-thirds of the retail food establishments, half of the bus routes, and half of the major hospitals remained closed.⁵³ For Katrina's victims, a sense of "back to normal" still seems far away.

Of the 1.1 million people over the age of sixteen who evacuated in August 2005, approximately 500,000 of those evacuees had not returned home by late December. For the evacuees who have not returned to their homes, jobs have been scarce. Their unemployment rate was just below 28 percent in November and over 20 percent in December. The former evacuees who did return to their homes in the Gulf region had better access to work with an unemployment rate of 12.5 percent in November, which fell to 5.6 percent in December.⁵⁴ In July, before Katrina hit, the unemployment rate in the most affected areas of Louisiana and Mississippi had been 6 percent.⁵⁵

By any measure, Hurricane Katrina was a national catastrophe. Similar to the images of grief and destruction on September 11, 2001, the images of suffering and despair from Hurricane Katrina are forever seared into the hearts and memories of all Americans. Those painful images must be the catalyst for change.

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