Hurricane Andrew

Ethnicity, gender and the sociology of disasters

Edited by
Walter Gillis Peacock, Betty Hearn Morrow and Hugh Gladwin

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Hurricane Andrew has proved to be the most costly natural disaster in US history. This book documents how Miami prepared for, coped with and responded to the hurricane, which slammed into one of the largest and most ethnically diverse metropolitan areas of the United States – Miami. With sustained winds of 145 mph, the infrastructure in the southern metropolitan area was laid to waste – nearly all public buildings were severely damaged or destroyed. Approximately 49,000 private homes were rendered uninhabitable, leaving more than 180,000 people homeless. Total losses were in excess of $28 billion.

This book explores how social, economic and political factors set the stage for Hurricane Andrew by influencing who was prepared, who was hit the hardest, and who was most likely to recover. Disasters are often seen as natural physical phenomena that impact our communities in impartial ways. As a result, the damage they inflict and the difficulties experienced in recovering are simply seen as a function of the strength of the agent itself and where it happens to hit the hardest. But disasters are inherently social events. The nature of our communities – how they are organized, how they exploit and use the natural environment and how scarce resources such as housing are distributed – is a critical factor for understanding disaster impact and recovery.

Employing data they collected over three years using qualitative and quantitative techniques, the authors of Hurricane Andrew analyze the consequences of conflict and competition, especially those associated with race, ethnicity and gender, on preparation, response and recovery.

Walter Gillis Peacock is Director of Research at the International Hurricane Center, Florida International University, and Betty Hearn Morrow and Hugh Gladwin are Associate Professors of Sociology and Anthropology at Florida International University.
Dedicated to
Frederick L. Bates,
pioneer in the application of
socio-political ecology
to the study of
human systems and disasters
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We are most grateful for the time and information shared with us by thousands of victims and responders. The insights and understandings we gained would not have been possible without their willingness to participate, often under very difficult circumstances.

We wish to acknowledge a number of individuals who assisted in obtaining funding, gaining access to information or otherwise provided their unique insights and support. They include: Juanita and Steve Mainster (Centro Campesino), Beth von Werne (Catholic Services and later Lutheran Ministries),
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Frederick L. Bates, of the University of Georgia, must be accorded a special acknowledgment. While Fred would probably argue – with or without a bottle of Scotch – that we got many things wrong, his ideas and work were the foundation upon which much of this is based. In recognition of his contributions to the field, and to our professional development, it is dedicated to him.

Our appreciation is extended to Dave Lawrence, Publisher and Chairman, and the staff of the *Miami Herald*. They allowed full access to their fine collection of photos documenting the aftermath of Hurricane Andrew, many of which are included in this book. Equally important was the astute and in-depth reporting of the complexities associated with South Florida’s experiencing of this event which provided us with a relevant stream of fresh information and data. The awards the *Miami Herald*, its reporters and photographers received following Hurricane Andrew do not begin to adequately recognize their extraordinary work in bringing to light not just the physical event, but also the full scope of its social and political consequences. The *Herald* has played and must continue to play a pivotal role in educating the public if we are to be better prepared the next time.

Finally, we want to offer a special thanks and acknowledgment to our families, who have had to endure our obsession with this research and this book. Eve, Bert, and Mary, you may hope that the *ménage à trois* is over, but the next project looms on the horizon.
## ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ARC</td>
<td>American Red Cross</td>
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<tr>
<td>BEBR</td>
<td>Bureau of Economic and Business Research</td>
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<td>CDBG</td>
<td>Community Development Block Grant</td>
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<tr>
<td>DAC</td>
<td>Disaster Assistance Center</td>
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<tr>
<td>DIRC</td>
<td>Disaster Information and Response Center</td>
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<tr>
<td>EOC</td>
<td>Emergency Operations Center</td>
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<tr>
<td>FEMA</td>
<td>Federal Emergency Management Agency</td>
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<tr>
<td>FIRE</td>
<td>Finance, Insurance and Real-Estate</td>
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<td>FIU</td>
<td>Florida International University</td>
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<tr>
<td>GIS</td>
<td>geographical information systems</td>
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<td>HRS</td>
<td>Health and Rehabilitative Services</td>
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<td>IA</td>
<td>Individual Assistance</td>
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<td>ICARE</td>
<td>Interfaith Coalition for Andrew Recovery Effort</td>
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<tr>
<td>IFG</td>
<td>Individual Family Grant</td>
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<td>NHC</td>
<td>National Hurricane Center</td>
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<tr>
<td>NOAA</td>
<td>National Oceanic and Atmosphere Administration</td>
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<tr>
<td>NSDPC</td>
<td>New South Dade Planning Charrette</td>
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<tr>
<td>PTSD</td>
<td>post traumatic stress disorder</td>
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<tr>
<td>SBA</td>
<td>Small Business Administration</td>
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<tr>
<td>SOPs</td>
<td>standard operating procedures</td>
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<tr>
<td>VISTA</td>
<td>Volunteers in Service to America</td>
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<tr>
<td>VOAAD</td>
<td>Voluntary Organizations Active in Disasters</td>
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<td>VOLAG</td>
<td>Voluntary Agencies</td>
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<td>WWR</td>
<td>We Will Rebuild</td>
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It was a dark and stormy night...  

Considered in literary circles to be the best example of a bad opening line, this hokum phrase somehow seems appropriate. In preparing this account of the consequences of Hurricane Andrew on the people of South Florida, we have encountered, as well as personally experienced, a full range of human emotions — beginning with the fear of that night and continuing through often unpredictable vacillations between depression and optimism, joy and despair. Throughout the long process of recovery, however, has run a thread of courage, often expressed as humor. We first noticed it in the hundreds of messages, such as “For sale – half off,” “Life begins at 165 mph,” “Looters will be eaten,” “Is this the best you’ve got, Andy?” and “Customized by Andrew,” defiantly painted on the walls of destroyed homes. We saw it again in the whimsical way some homeless victims decorated the fronts of their tents as though they were palace entrances. In that same vein, when learning about our book project, several Andrew survivors wryly suggested this opening line.

There is little need for an explanation as to how we became interested in this project. We lived it. Only two of us had previously worked in the sociology of disasters field and only one, Walt Peacock, had extensive experience and training in the area. I had completed a small project on the social effects of Hurricane Hugo on St. Croix several years ago. Walt’s prior research had included the long-term consequences of disasters and aid delivery programs in developing countries, particularly Guatemala. Ironically, having just moved to Miami to join the faculty at Florida International University when Hurricane Andrew hit, he was often asked why he had to bring his work with him. From its impact, there was no doubt that we would analyze the social impact of this hurricane. We had yet to realize, however, that we were in the middle of what would turn out to be the most destructive natural disaster the United States had experienced.

Our first trip deep into the most southern part of Dade County was in a police car, since normal transportation was quite impossible. The devastation was beyond our worse expectations. Soon we were observing and interviewing
B.H. MORROW

in the tent cities established by the military to house thousands of homeless victims. For our team this was the beginning of three years of data collection and immersion into a difficult and seemingly endless project. We hope the results do justice to the story of the thousands of people – victims and responders – who have enlightened us along the way. It is also important that the projects chronicled in this book make a contribution to the growing body of knowledge on the social impact of disasters and, in some small way, enlighten efforts to mitigate the effects of future events. Thus, we end most chapters with a discussion of the policy implications of our work.

THE EVENT

When first named, Andrew did not make much of an impression. On Friday 21 August 1992 (three days before it would make landfall) the National Hurricane Center advisories referred to it as barely a tropical storm moving slowly across the Atlantic. It was expected to blow apart. The Center’s director, Bob Sheets, briefed emergency managers to “enjoy their weekend” and check back in on Sunday (Sheets 1993b). By Saturday morning, however, Andrew had picked up speed, intensifying into a hurricane. That evening a Hurricane Watch was issued for the southeastern coast of Florida and at 8 a.m. Sunday it was upgraded to a Warning – about 21 hours before Andrew would make landfall (USDC 1993). Thus, the people of South Florida had a relatively short time in which to take this storm seriously. The early advisories were virtually ignored by many. In the 100 years or so for which records are available, South Florida has been the most hurricane-prone area of the continental United States. However, more than 30 years had passed since the last major hurricane, Donna, caused serious damage. In the interim, the region had grown rapidly and, as a consequence, most people living in South Florida in 1992 had never experienced a hurricane.

It became obvious on Sunday that Hurricane Andrew was going to make landfall somewhere along the southeast coast by Monday morning. Fortunately, it was a weekend when most people were at home, making it easier to get ready. Andrew strengthened and came through the Bahamas rated on the Saffir–Simpson Scale as a Category 4, nearly 5, hurricane. When a veteran of over 100 incursions into the eyes of hurricanes flew his Storm Tracker aircraft through Andrew on Sunday, he reported it as the roughest flight he had ever had (Historic Publications 1992: 18). Readings of 186 mph were recorded at a flight level of 10,000 feet (USDC 1993). By Sunday afternoon, it was undeniably clear that a dangerous storm was coming ashore in Florida somewhere between Palm Beach and the Keys. Hundreds of thousands of residents took to the roads to get supplies or to evacuate, creating the largest traffic jam the area has ever known. It is fair to say that most people, including local and state officials, were caught unprepared for a storm of this magnitude.

Sunday night was a restless one. It passed quietly, but in the early hours of
Monday morning, 24 August, the media began reporting Andrew’s approach and most areas lost their electric service. At about 4 a.m. a radio report announced that leading winds had blown the radar from the roof of the National Hurricane Center in Coral Gables. Many, myself included, later described this as the moment they became truly alarmed. About an hour later the eye of the storm made landfall approximately 20 miles to the south of Coral Gables, near Homestead Air Force Base and the Leisure City area, continuing westward across the towns of Homestead and Florida City. Figure 1.1 depicts Hurricane Andrew’s track and the pattern of the damage it left behind. Those at the storm’s center were first hit with winds mostly from the north, followed by a very brief calm and second blast from the south, while the more populated areas just north of the eye were continuously battered (Wakimoto and Black 1994). Exact wind speeds continue to be debated, but Andrew is officially recorded as the third most intense hurricane to ever hit the continental United States, with sustained winds of at least 145 mph, gusting to at least 175 mph (Sheets 1993a).

In attempting to explain the damage patterns, experts collected evidence that this may have been an unusual hurricane with either vortices (Gore 1993) or tornadoes (Wakimoto and Black 1994) near or within its eye wall, and with some areas receiving higher second winds on the back side. It was a compact storm with hurricane-force winds confined to a relatively small area. As is common, it was asymmetrical – extending about 5 miles to the south and 15 miles to the north of the eye’s path. The storm surge was estimated to have reached nearly 17 feet above normal sea level but, fortunately, it was limited to a short distance of shoreline. The rainfall associated with Andrew averaged between 4–5 inches, relatively little by sub-tropical standards (USDC 1993).

THE DAMAGE

The massive destruction inflicted on South Florida has been well documented. It was not confined to a narrow path, but houses, cars, and community infrastructure were damaged throughout the Miami area. Debris blocked the streets in nearly every neighborhood. Life as we knew it had been severely disrupted. The numbers are impressive: 1.4 million without electricity; 150,000 homes without telephones; 3,300 miles of power lines destroyed; 9,500 traffic signs and signals out of order (Governor’s Disaster Planning and Response Review Committee 1993). Everywhere, trees had been ripped up from their roots and whatever vegetation was left standing had been stripped of its leaves – our lush, green paradise had turned brown and barren overnight. The sights were so upsetting that people throughout the Miami area later reported assuming their neighborhoods had experienced the worse the storm had to offer. With no electricity, and thus no television, few people realized the extent of the tragedy which lay to the south.
Andrew had cut an 18 mile-wide path across the southern portion of Dade County — the area we will refer to as South Dade — creating what one journalist described as "a zone of destruction larger than the city of Chicago, or equal to 12 Manhattan Islands" (Gore 1993: 15). The infrastructure that had sustained a population of more than 375,000 had been virtually laid to waste. Nearly all public buildings, including 59 health facilities, 31 schools, and most fire and
Plate 1.1 A dazed man returned to his destroyed mobile home in Florida City to find everything he owned was gone except for this pair of pants.

Source: C.M. Guerrero/Miami Herald
police stations, were severely damaged or destroyed, along with about 8,000 businesses. Entire communities were literally wiped out. In the final analysis, about 108,000 private homes were damaged, with about 49,000 of these rendered uninhabitable (Miami Herald 1994, 24 August). More than 180,000 people were left homeless for some period of time (Governor's Disaster Planning and Response Review Committee 1993). There had been 6,600 trailers or mobile homes in South Dade (Metro Dade Planning Department 1992) and all but nine were destroyed. Total losses have been placed in excess of $28 billion, making this the costliest natural disaster in US history (Hebert, Jarrell and Mayfield 1996). Yet experts warn that it could have been far worse.

The map in Figure 1.2 shows the location of the communities, as well as neighborhoods, regions, and four bands we will be referring to throughout the book. As you can see, if the storm had crossed 20 miles to the north, a distance described by Bob Sheets as “a gnat’s eyelash” in meteorological conditions and too small to forecast even an hour before landfall, it would have passed over the most populated area of Dade County (Sheets 1993a: 15). This includes the islands of Miami Beach and Key Biscayne, the high rises of downtown Miami, and dozens of communities, such as Liberty City, Hialeah, Miami Springs, and
Figure 1.2 Bands of damage from Hurricane Andrew
Source: Hugh Gladwin/IPOR
Coral Gables – an area inhabited by about 1.6 million people and having property with tax values in excess of $60 billion (USDC 1993: 130). As stated by Kate Hale, then Dade County’s Director of Emergency Management, “This was not the Big One of my nightmares” (Hale 1993). It was relatively small in area, moved quickly, carried little water, and hit the least-populated region of Dade County, home to only 18 per cent of the county’s population.

In lectures around the country, Sheets emphasized that the damage would have been even worse if Andrew had hit outside of South Florida. While there were problems with Dade County’s building codes necessitating that they be revised to deal with new building materials and construction technologies, at the time of Hurricane Andrew, Dade had the strongest wind-related building codes in the country. Code violations and shoddy construction practices have been highly touted as contributing to the damage, but it is now estimated that they accounted for less than 10 per cent of the losses (Sheets 1993a: 10). Considering the extent of the damage, the death toll was small – only 15 fatalities directly associated with the storm, nine of which occurred outdoors or in trailers, campers, or boats (USDC 1993). If Hurricane Andrew had hit elsewhere in the US with the same force, experts speculate that many more lives would have been lost.

THE VICTIMS

Our study goes beyond the physical damage caused by the storm to focus on the people, households, neighborhoods, and communities caught in its path. When Hurricane Andrew reduced much of South Florida to rubble, it destroyed the homes, jobs, institutions, and communities which sustained the lives of tens of thousands of households. Within a few hours, victims’ previously taken-for-granted environments were drastically changed or completely lost, beginning with the roofs of their homes and extending outward for miles of nearly total destruction.3

No one in South Dade escaped unscathed. It could be argued that just trying to live and function in the area during the next couple of years was enough to qualify as an Andrew victim. Not everyone was equally affected, however. While the post-Andrew rhetoric often included comments that the storm was a “great equalizer,” this was far from the case. As we will document, homes were not equally damaged. The same level of emergency and relief response did not reach every neighborhood. Recovery assistance was not equally distributed among those with similar needs. And, perhaps most important, individuals, households, neighborhoods, and even communities did not have the same recovery resources, either human or material.

An important focus of our research has been the extent to which victim attributes, such as social class, race/ethnicity, and gender, are associated with recovery progress and outcomes. At the time of the 1990 Census about half of the population of Dade County was composed of what traditionally are termed
Plate 1.3  A mother and daughter were able to rescue their cat but not much else
Source: Peter Andrew Bosh/Miami Herald

Plate 1.4  A man retrieves some of the family's belongings from their destroyed home
Source: C.W. Griffin/Miami Herald
minority households and the diversity within ethnic groups was interesting. As expressed by Portes and Stepick (1993: 8), "In Miami, the fragments of the [ethnic] mosaic are loose and do not come together in any familiar pattern." As shown in Table 1.1, the Hispanic component, roughly 49 per cent, is primarily Cuban, but also includes sizable proportions from throughout Latin America and the Caribbean. Similarly, while nearly 21 per cent of Dade Countians identified themselves as Black, only about half of these gave their origin as the United States. And, of course, the two classifications – Hispanic and Black – are not mutually exclusive, further defying simple categorization of South Florida ethnicity. For lack of a better term, the non-Hispanic, non-Black population is commonly referred to as Anglo, a label we use throughout this book. About 30 per cent of Dade County’s 1990 population was Anglo. The area’s households were also structurally diverse, with almost 15 per cent of the families headed by women, and it was not uncommon for non-nuclear kin to live together (Bureau of the Census 1992).

<table>
<thead>
<tr>
<th>Self-identified ethnic group</th>
<th>Number</th>
<th>%</th>
<th>% of total</th>
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<tbody>
<tr>
<td><strong>Hispanics</strong></td>
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<td></td>
</tr>
<tr>
<td>Cuba</td>
<td>563,979</td>
<td>59.2</td>
<td></td>
</tr>
<tr>
<td>Nicaragua</td>
<td>74,244</td>
<td>7.8</td>
<td></td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>72,827</td>
<td>7.6</td>
<td></td>
</tr>
<tr>
<td>Colombia</td>
<td>53,582</td>
<td>5.6</td>
<td></td>
</tr>
<tr>
<td>Dominica</td>
<td>23,475</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>23,112</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>Honduras</td>
<td>18,102</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>Peru</td>
<td>16,452</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>Guatemala</td>
<td>8,242</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>Ecuador</td>
<td>7,986</td>
<td>0.8</td>
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<tr>
<td>Salvador</td>
<td>7,339</td>
<td>0.8</td>
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</tr>
<tr>
<td>Panama</td>
<td>6,729</td>
<td>0.7</td>
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<tr>
<td>other</td>
<td>77,338</td>
<td>8.1</td>
<td></td>
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<tr>
<td><strong>Total Hispanics</strong></td>
<td>953,407</td>
<td>100.0</td>
<td>49.2</td>
</tr>
<tr>
<td><strong>Blacks</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>281,621</td>
<td>70.6</td>
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<tr>
<td>Haiti</td>
<td>45,339</td>
<td>11.4</td>
<td></td>
</tr>
<tr>
<td>Jamaica</td>
<td>27,204</td>
<td>6.8</td>
<td></td>
</tr>
<tr>
<td>Bahamas</td>
<td>7,485</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>other and uncoded</td>
<td>37,322</td>
<td>9.3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Blacks</strong></td>
<td>398,971</td>
<td>100.0</td>
<td>20.6</td>
</tr>
<tr>
<td><strong>Anglos</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic Whites</td>
<td>584,816</td>
<td>30.2</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,937,194</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Metro Dade Planning, Development, and Regulation Department based on 1990 Census data*
The hurricane's major impact area, as defined by the Metro Dade Planning Department (1992), included all of Dade County south of Kendall Drive (S.W. 88th Street). There were pockets of heavy damage north of this boundary, but most of the destruction occurred in the 270-square-mile area we refer to as South Dade. For purposes of description, Metro Dade divided South Dade into the four bands (illustrated in Figure 1.2). Population density declined as you moved southward—about 150,000 people lived in Band 1 near Kendall Drive, while Band 4 contained only 70,000 residents at the time of the hurricane. The area includes rural, suburban, and even some urban areas, high-rise office complexes and extensive farmlands, expensive homes and farmworker trailer camps. While there are some well-defined suburban communities, such as Country Walk and the retirement community of Americana Village, most of South Dade can best be described as a vast area of scattered, ill-defined neighborhoods, shopping strips and centers, pockets of industrial buildings and warehouses, and undeveloped agricultural areas.

Ethnic diversity in South Dade prior to Andrew was somewhat different from the county as a whole. With the population consisting of about 30 per cent Hispanics and 18 per cent Blacks, compared to 49 per cent and 21 per cent countywide, the area included some of the more predominantly Anglo neighborhoods in Dade County. Blacks were concentrated in older communities such as Perrine, Goulds, Florida City, and the suburban development of Richmond Heights. Hispanics, while less segregated, tended to reside in the more affluent suburbs near Kendall Drive, in the working class community of South Miami Heights, and in the southernmost band where sizable concentrations of Mexicans and Haitians lived, including many agricultural workers.

Most of the Greater Miami area is unincorporated, and governed by Metropolitan Dade County. At the time of the storm, there were only two incorporated towns in South Dade—Homestead and Florida City—and they differed dramatically. In 1990, Homestead had about 27,000 residents, compared to less than 6,000 in Florida City. Historically, Homestead was generally thought of as a town of middle class and well-to-do Anglo farmers, while Florida City was the poor Black community across the tracks. In truth, according to 1990 Census data, most of the residents of both towns were renters with modest or low incomes. Homestead Air Force Base was a vital part of the economy and social environment of the entire area. It is estimated that the base’s destruction by Andrew caused the disappearance of 8,000 jobs and $405 million in the local economy (Office of County Manager 1994).

In 1990, there were 130,000 dwellings in South Dade. Most were owner-occupied, single-family homes, but there were multi-family units scattered throughout the area, with low-rent housing heavily concentrated in the lower band. Virtually all of the public housing units in South Dade—over 1,600 federally funded and 5,500 state funded units—were destroyed by the hurricane, along with most subsidized (Section 8) rental housing (Metro Dade 1994b). The households of South Dade, compared to county averages, had a
higher proportion of family units (about 76 per cent), were slightly larger (2.96 people), and had more children under age 18 (23 per cent). While only 8.4 per cent of the population was over 65 years old, it was concentrated in some of the worse hit areas, such as Naranja and Goulds. The elderly population was disproportionately poor, with about 73 per cent relying solely on Social Security income (Atkins, et al. 1993). The median household income in South Dade of about $38,000 belies the diversity. The more affluent areas, such as Gables by the Sea, West Kendall, the Hammocks, and Country Walk, are located in the northern portion of the impacted area. Moving southward, socioeconomic status tended to decrease, as illustrated by an increase in the proportion of households with incomes under $15,000 — from 11 per cent in Band 1 to 29 per cent in Band 4 (Metro Dade Planning Department 1992). In general, it can be said that the heterogeneity of the victims of Andrew, in terms of class, ethnicity, and household structure, is in line with projected trends for the United States as a whole (O’Hare 1992; Ahlburg and DeVita 1992). This makes South Florida a particularly exciting and relevant setting for disaster research.

THE RESEARCH TEAM

Within a week after the storm a disaster team of faculty and graduate students from Florida International University (FIU) was assembled by Walter Peacock (Associate Professor of Sociology and Research Director of the International Hurricane Center), with initial support from President Modesto Maidique and the Division of Sponsored Research. Our team of sociologists and anthropologists included Elaine Enarson (Adjunct Professor of Sociology), Chris Girard (Associate Professor of Sociology), Hugh Gladwin (Associate Professor of Anthropology and Director of FIU’s Institute for Public Opinion Research), Guillermo Grenier (Associate Professor of Sociology and Director of the Center for Labor Research and Studies), Barry Levine (Professor of Sociology), Betty Morrow (Associate Professor of Sociology), and Kevin Yelvington (Assistant Professor of Anthropology). It profited from the contributions of several dedicated graduate students, including Nicole Dash, Linda Beer, Manny Alba, and Donna Kerner. The entire manuscript benefited from the expert editing skills of Kathleen Ragsdale. While our interests, expertise, and preferred research methodologies varied, we were united by a common interest in studying the effects of Hurricane Andrew on the households and communities of the area.

In a very real sense, team members were both researchers and victims. Most of our homes were damaged, some to a considerable degree — Walt’s family was without a permanent residence for months, and it was nearly a year before Elaine returned to her home. The University’s main campus sustained considerable damage, delaying the opening of fall classes. Nevertheless, we were soon in the field, beginning the first of eight major projects which form the basis for this book. We begin with a brief overview of each. (Further details about funding
sources, sampling, data collection, and methodologies are provided in the appendix.)

OUR PROJECTS

Tent city study
We began by studying the experiences of some of Andrew's most severely impacted victims - residents of the tent cities established by the federal government, for displaced victims with no other housing alternatives. We conducted over fifty open-ended interviews with personnel from the US Army and Marine Corp, the American Red Cross (ARC), the Federal Emergency Management Agency (FEMA), and, most importantly, homeless individuals and families. This qualitative project provided important insights into the circumstances of severely impacted victims including their experiences prior to, during, and after the storm, helping us to identify problems and issues for subsequent research activities.

FIU Hurricane Andrew survey
While the tent city interviews provided detailed information about an important group of victims, we wanted a more representative picture of the impact of Andrew on South Florida households. We were also interested in learning about household preparation and evacuation activities while the memories were still relatively fresh. Funded by a grant from the National Science Foundation, about four months after the storm we conducted a telephone survey of a random sample of over 1,000 households in Dade County. In spite of the damage sustained to the infrastructure, a telephone survey was a viable option since service had been restored in most areas. The telephone company had also instituted call-forwarding and recorded message services, allowing us to track down many dislocated or moved households. Utilizing supplemental funding from the John S. and James L. Knight Foundation's sponsorship of FIU's Lessons Learned from Hurricane Andrew conference, an additional over-sample of 300 South Dade households was undertaken to better insure coverage of the most heavily impacted area. Respondents were asked about household preparation and evacuation activities, dislocation and relocation, household damage, insurance settlements, and other sources of assistance.

South Miami Heights survey
To provide more in-depth insight into the process of household recovery, our next project focused on one heavily impacted neighborhood, South Miami Heights. This working class, culturally diverse community sustained major damage, yet was virtually ignored by authorities and agencies in the immediate
aftermath. After remapping the community, a random sample was drawn and interviews conducted at approximately 200 South Miami homes. Our interview schedule included questions about damage, sources and amounts of assistance, insurance, contractors, community recovery, persistent family and community problems, and the impact of this experience on household members. Observations made while canvassing the neighborhoods and visiting homes were also a valuable source of information.

**Family impact study**

Andrew destroyed homes, not just houses. The disruption in South Dade took many different forms, including household and job loss or dislocation, extended commuting patterns, living in crowded and often badly damaged structures, dealing with the maze of paperwork and tasks associated with loss recovery and household reconstruction, as well as the lack of community infrastructure, such as parks and recreation facilities, neighborhood stores, and local services. To address the effects of these daily hardships on families, Enarson and Morrow conducted open-ended interviews with care providers, counselors, school and church personnel, and women's groups. Focus groups with single mothers in a public housing project, low-income Haitian women, family day care providers, and battered women were also held. The goal was to understand better the dynamics of family response to disaster, with special emphasis on groups appearing to be having great difficulty. Since women continue to be the primary homemakers in most families, they were likely to be in the best position to reflect on the household effects of a disaster. Input from these experts is seldom solicited by community leaders and those responsible for making policy and resource decisions that directly impact on households.

**South Dade population impact study**

Population change can be seen as either a cause or an effect of long-term community recovery, depending upon your perspective. People will return if the economy comes back, but the economy is not likely to recover if people do not return. In addition, state funding and revenue sharing are typically based on the size of the population of an impacted area. Thus, demographics can dramatically impact the resources allocated for long-term recovery. Each year the Bureau of Economic and Business Research (BEBR) at the University of Florida derives estimates of statewide population changes. Tax assessments and building permit records are used to estimate the stock of housing which, combined with information on average household size, is then used to project US Census estimates to the current year. The utilization of this standard methodology in post-hurricane South Dade, however, would have resulted in a major undercount since the housing stock had been drastically reduced and the size of many households altered. Furthermore, higher rental densities and more people living in
non-standard housing arrangements were anticipated. For these reasons, BEBR sub-contracted with us to provide a more accurate estimate of Dade's population. Large sections of South Dade were remapped and nearly 3,000 field inspections and interviews were conducted in inhabited housing to determine occupancy rates, average household size, how many were living in non-standard arrangements, and to provide information on post-Andrew movement and insurance settlements. This more accurate picture of population change was then incorporated into BEBR's 1993 estimates.

American Red Cross project

In a study funded by the American Red Cross (ARC), its unprecedented Hurricane Andrew Recovery Project was evaluated as part of an organizational effort to determine the most effective ARC long-term recovery function after a high-impact disaster. Through in-depth interviews with about fifty key informants from the ARC and other agencies involved in the recovery effort, Morrow, Enarson, and Peacock identified several areas in which agency resources and expertise were especially needed to promote long-term recovery. ARC's special long-term client intervention project met with limited success and was the subject of considerable intra- as well as inter-agency controversy. We
recommended that ARC consider providing long-term assistance indirectly through other agencies working in a stricken area, focusing its attention on providing leadership and training in case management. The organization's unique relationship with FEMA places it in a central position to serve as a clearinghouse for client information. While the major product of this project was an internal report for the ARC, valuable information about victims and providers enriches several chapters of the book.

Homestead housing needs and demographic study

Hurricane Andrew altered Homestead in dramatic fashion. According to BEBR's estimates, by 1 April 1993 its population had dropped by over 30 per cent. Therefore, 1990 Census data were nearly useless to town officials trying to determine the needs of post-Andrew residents, particularly related to housing. The only viable solution was to conduct a more thorough study, utilizing sampling procedures to obtain population estimates and demographic information. With Thomas Wilson of the FIU/Florida Atlantic University Joint Center for Environmental and Urban Problems, a randomly selected sample of approximately 1,000 households were surveyed by telephone regarding housing characteristics, such as adequacy, costs, and state of repair, as well as demographic information about household members.

Plate 1.6 Hand-painted messages throughout South Dade communicated useful information, prayers, and poignant appeals, as well as humor

Source: Charles Trainor, Jr./Miami Herald

16
Florida City study

From the onset, it was clear that South Dade's other incorporated community, Florida City, was having a difficult time with recovery. Utilizing tax and business data, supplemented by information from a variety of sources, Nicole Dash studied this community as a thesis project. In her analysis, she compared Florida City to its neighbor of Homestead in terms of hurricane impact, as well as business and economic recovery.

Emergency management organizational analysis

We are pleased to be able to supplement the work of our disaster team with an analysis of early governmental response by two of our colleagues at Florida International University – Harvey Averch (Professor of Public Administration) and Milan Dluhy (Professor of Public Administration and Director of the Institute of Government). In order to analyze intergovernmental decision making and response during the emergency phase of this disaster, they interviewed key decision makers at different levels of government.

Our work has been a cooperative endeavor in which we have all shared. While we have taken turns authoring various parts of the book, we have collaborated on nearly all research projects, data analysis, and writing tasks. In a similar fashion, there is no clear delineation regarding which project is reported in which chapter; rather, we set out to learn whatever we could, using whatever methodology seemed most appropriate to the task, and we have combined the findings from the various projects around several themes. The results reflect the eclecticism of our personal styles and backgrounds, as well as that of our subjects.

ORGANIZATION OF THE BOOK

From the onset our work was guided by the perspective that the process of responding to a natural disaster should be conceptualized as an inherently social one occurring within a broader context – a socio-political ecological field, as we prefer to think of it. In Chapter 2, Walt Peacock, with Kathleen Ragsdale, discusses this theoretical perspective and argues that it is within an inherently competitive and conflictual atmosphere that individuals, families, and communities, compete for the resources to respond to a disaster.

Guillermo Grenier and I elaborate on the socio-political context of Greater Miami, with its unique pattern of racial, ethnic, class, and gender relations. Experiencing a disaster of the magnitude of Hurricane Andrew in a metropolitan area with the diversity and dynamism of Miami provides a truly unique opportunity to study the sociology of disaster. Of particular relevance are ways in which economic and political conditions predisposed certain segments of the community to be disproportionately impacted and placed them at a disadvantage during the competitive recovery period.
Our Andrew story begins with Gladwin and Peacock describing events of the hectic weekend preceding Hurricane Andrew. In Chapter 4, they utilize information from various field and telephone interviews to discuss how South Floridians received information about the storm’s progress and what they should do, how they prepared their homes, and who evacuated. Throughout this project it has been important to us that our work should have practical application, and the chapter ends with a discussion of several policy implications. In the following chapter Averch and Dluhy provide an organizational analysis of emergency response during the first six days of the crisis.

The next three chapters focus on the experiences of the victims. Yelvington discusses life in the tent cities and issues surrounding their establishment, management, and closure. Enarson and I focus on the crucial, yet typically overlooked, roles of women at all levels of community and household response. In our qualitative analysis, we develop several composite profiles to represent the experiences of the women we interviewed. In Chapter 8, I draw from a variety of sources to discuss the families of Hurricane Andrew, including the extent to which kin networks were important, the effects of family attributes on response and recovery, and the internal effects of this experience on family life.

In Chapters 9 and 10, Girard and Peacock report findings from several survey projects on the experiences of Andrew’s victims related to housing damage, insurance, and relocation, with particular focus on the consequences of race and ethnicity on the outcomes. Along this same line, Dash, with Peacock and Morrow, presents her work on the disadvantaged position of the small Black community of Florida City throughout this entire process. She provides ample evidence of how preexisting economic and political conditions at the community level influence the effects of a disaster on its residents. In the final chapter, we use examples from these studies to illustrate how natural disasters initiate community changes, including adaptations in institutional responses, inter-organizational relationships, stratification, and population patterns. Many changes have occurred as a result of this experience. Three years later Dade County, particularly South Dade, is a different place in some respects, which we will discuss, but it is also unchanged in many ways, including its persistent patterns of racial, ethnic, and gender stratification.

NOTES

1 Often quoted from Charles Schultz’ Peanuts cartoon, this was the opening line in the 1832 novel Paul Clifford by Edward George Bulwer-Lytton.

2 Several documentary books provide details about Hurricane Andrew and its effects on the environment and people of South Florida, such as The Big One – Hurricane Andrew published by the Miami Herald (1992a), Andrew! Savagery from the Sea by the Sun-Sentinel in Fort Lauderdale (1992), and Hurricane Andrew: Path of Destruction by Historic Publications. A local television station, WTVJ, compiled an excellent documentary video, Hurricane Andrew: As It Happened (1992).
4 For more information on strategies used by the residents of this retirement village of prefabricated homes to manage their own community recovery, see Guillette, The Role of the Aged in Community Recovery Following Hurricane Andrew (1993).


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